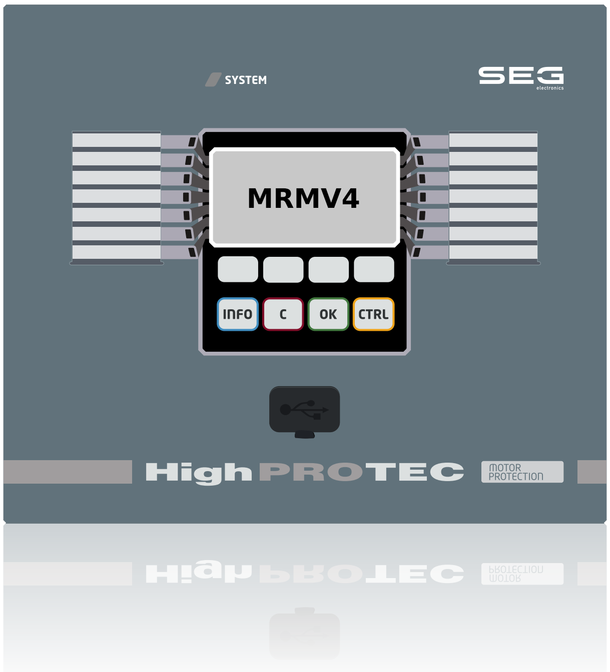
REFERENCE MANUAL

HighPROTEC | PROTECTION TECHNOLOGY MADE SIMPLE

MRMV4 |



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Original reference manual

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Table of Contents

1 About This Reference Manual

This document is a reference of all the Setting Values, Direct Commands and Signals of the MRMV4. In other words, it lists all parameters that are available (or can be made available) with the (optionally) full featured versions of the MRMV4 protection device.

CAUTION!

This document does not intend to give long and/or detailed description, nor does it intend to replace the full Technical Manual in any way. Only a quite short description is given for each parameter.

This document is a reference of all the Setting Values, Direct Commands and Signals of the MRMV4.

Every HighPROTEC protection device operates using a lot of digital values of various types. Throughout our Technical Documentation, we are talking of “settings” (or “parameters”) or “signals” or “(measured) values”, depending on the type.

Please consult the Technical Manual, in particular Chapter “Modules, Settings, Signals and Values”, for details of the existing data types.

Modules

The firmware of every HighPROTEC protection device can be thought of being sub-divided in several independent function blocks, the so-called “modules”. Every protection function, for example, is a module of its own. But one of the fundamental concepts of a HighPROTEC protection device is to implement this with great consequence.

For example, the functionality of calculating statistical data is a module (named »Statistics«), every communication protocol is a module, the control of switchgear devices is a module (named »Ctrl«), but the properties of the switchgear itself is part of another module.

There is even a general protection module (named »Prot«) that interacts all specific protection modules.

Every parameter, every value and every signal is therefore a member of some module.

But note that the settings dialogs (on the panel (HMI) or in the *Smart view* operating software) often omit the module name whenever it is clear from the menu branch. This means the parameters are often displayed only with their individual parameter names, i. e. simply *»Function«* instead of the full-blown *»I2>[1] . Function«*. This increases the overview and simplifies all configuration and operation work; however, it is good to know that the writing *»Function«* is just an abbreviation. In fact, **every** parameter **always** belongs to a module, and therefore – to make this concept absolutely clear – the reference tables have always the module name added in front of every parameter name

Especially for protection functions it is often required to have several instances active. For example, overcurrent protection usually has several “stages”, and all of these are running at the same time (using their individual setting values). Therefore it is an important feature of every HighPROTEC protection device that a lot of modules exist in several “instances”, which are numbered (in brackets), for example: »I2>[1]«, I2>[2]«

In the reference tables, usually every module has its own dedicated chapter, which lists the available number of instances at the beginning. Then, however, in the sub-chapters listing the various parameter types, only the first instance (e. g. »I2>[1]«) is mentioned, because all the other instances are identical anyway.

Structure of a Reference Table

Since (almost) every module can be activated or deactivated independently of the other modules and all parameters of an inactive module disappear from the menu branch it would not be helpful if this Reference Manual would list parameters sorted according to the menu structure. Instead, we list categories of modules (e. g. “Protection Functions”) and all the modules within a category.

For each parameter, there is a table with its properties, looking like this:

Module . Parameter	[Menu Path to This Parameter]	
Default Value For some parameters: • Availability restrictions	Value Range	Perm.
Type	*Short descriptive text explaining the functionality of this parameter.*	

“Type” is the data type of the parameter, which is denoted by a small icon. The following types are possible:

- Setting Parameter
- Direct Control
- Input State
- Signal (Output State)
- Statistical Value
- Counter
- (Measuring) Value
- Dialog — Such a dialog can feature several data objects using a special representation and/or functionality.

“Perm.” means “permission”, i. e. the access level and password that is required to modify the parameter. (Please refer to the “Security” chapter in the full Technical Manual for details.)

“ Adapt. Param.” means that this parameter supports Adaptive Parameter Sets. (See the “Adaptive Parameter Sets” section in the User Manual.)

For some parameter types (e. g. Input and Output States), the second row (default, value range, permission) is useless and therefore omitted.

Example of a parameter:

ExP[1] . **Mode**	[Device planning]	
use	-, use Mode	S.3
	general operation mode	

This means that one can find the parameter in the menu [Device planning], and its values are picked from a selection list named “Mode”. The “⮑” arrow indicates a cross-reference (hyperlink) into the “Selection Lists” chapter, and a click takes you to a table that lists all available choices.

The access level “S.3” means the access level “Supervisor-Lv3”, which is required to modify the parameter.

Audience of This Manual

The manual serves as working basis for:

- Engineers in the protection field,
- commissioning engineers,
- people dealing with setting, testing and maintenance of protection and control devices,
- as well as trained personnel for electrical installations and power stations.

All functions concerning the MRMV4 are listed. Should there be a description of any functions, parameters or inputs/outputs which do not apply to the device in use, please ignore that information.

This manual describes the (optionally) full featured versions of the devices.

All technical information and data included in this manual reflect their state at the time this document was issued. We reserve the right to carry out technical modifications in line with further development without changing this manual and without previous notice. Hence no claim can be brought based on the information and descriptions this manual includes.

We do not accept any liability for damage and operational failures caused by operating errors or disregarding the directions of this manual.

No part of this manual is allowed to be reproduced or passed on to others in any form, unless *SEG* have approved in writing.

This Reference Manual is part of the delivery scope when purchasing the device. In case the device is passed on (sold) to a third party, the manual has to be handed over as well.

Information Concerning Liability and Warranty

SEG does not accept any liability for damage resulting from conversions or changes carried out on the device or planning (projecting) work, parameter setting or adjustment changes done by the customer.

The warranty expires after a device has been opened by others than *SEG* specialists.

Warranty and liability conditions stated in *SEG* General Terms and Conditions are not supplemented by the above-mentioned explanations.

2 Hardware

2.1 Device Configuration

MRMV4	**-2**	**#**	**#**	**#**	**#**	**#**
Hardware Variant 1						
8 digital inputs | 7 binary output relays Stabilization Range | Voltage measuring inputs: 0-800VAC		**A**				
8 digital inputs | 13 binary output relays Stabilization Range | Voltage measuring inputs: 0-800VAC		**C**				
Hardware Variant 2						
Phase Current 5A/1A, Ground Current 5A/1A			**0**			
Phase Current 5A/1A, Sensitive Ground Current 5A/1A			**1**			
Housing						
Flush mounting				**A**		
19 inch mounting (semi-flush)				**B**		
Customized Version 1				**H**		
Customized Version 2				**K**		
Communication						
Without					**A**	
RS 485: Modbus RTU | IEC 60870-5-103 | DNP3 RTU					**B**	
Ethernet: Modbus TCP | DNP3 UDP/TCP | IEC 60870-5-104					**C**	
Fiber Optics: Profibus-DP					**D**	
D-SUB: Profibus-DP					**E**	
Fiber Optics: Modbus RTU | IEC 60870-5-103 | DNP3 RTU					**F**	
RS 485/D-SUB: Modbus RTU | IEC 60870-5-103 | DNP3 RTU					**G**	
Ethernet: IEC 61850 communication | Modbus TCP | DNP3 UDP/TCP | IEC 60870-5-104					**H**	
RS 485, Ethernet: Modbus TCP/RTU | IEC 60870-5-103 | IEC 60870-5-104 | DNP3 UDP/TCP/RTU					**I**	
Ethernet/Fiber Optics: IEC 61850 communication | Modbus TCP | DNP3 UDP/TCP | IEC 60870-5-104					**K**	
Ethernet/Fiber Optics: Modbus TCP | DNP3 UDP/TCP | IEC 60870-5-104					**L**	
RS 485, Ethernet: IEC 61850 | Modbus TCP/RTU | IEC 60870-5-103 | IEC 60870-5-104 | DNP3 UDP/TCP/RTU					**T**	

MRMV4	**-2**	**#**	**#**	**#**	**#**	**#**
Printed Circuit Board						
Standard						**A**
printed circuit boards are conformal coated						**B**

2.2 Digital Inputs

2.2.1 “DI8-X1”

2.2.1.1 DI Slot X1: Settings

DI Slot X1 . **Nom voltage**	[Device Para / Digital Inputs / DI Slot X1 / Group 1] [Device Para / Digital Inputs / DI Slot X1 / Group 2] [Device Para / Digital Inputs / DI Slot X1 / Group 3]	
24 VDC	24 VDC, 48 VDC, 60 VDC, 110 VDC, 230 VDC, 110 VAC, 230 VAC ⮡ Nom voltage.	S.3
Nominal voltage of the digital inputs		

DI Slot X1 . **Inverting 1** **. . .** DI Slot X1 . **Inverting 8**	[Device Para / Digital Inputs / DI Slot X1 / Group 1] [Device Para / Digital Inputs / DI Slot X1 / Group 2] [Device Para / Digital Inputs / DI Slot X1 / Group 3]	
inactive	inactive, active ⮡ Mode.	S.3
Inverting the input signals.		

DI Slot X1 . **Debouncing time 1** **. . .** DI Slot X1 . **Debouncing time 8**	[Device Para / Digital Inputs / DI Slot X1 / Group 1] [Device Para / Digital Inputs / DI Slot X1 / Group 2] [Device Para / Digital Inputs / DI Slot X1 / Group 3]	
no debouncing time	no debouncing time, 20 ms, 50 ms, 100 ms ⮡ Debouncing time.	S.3
A change of the state of a digital input will only be recognized after the debouncing time has expired (become effective). Thus, transient signals will not be misinterpreted.		

2.2.1.2 DI Slot X1: Signals (Output States)

DI Slot X1 . **DI 1** . . . DI Slot X1 . **DI 8**	[Operation / Status Display / DI Slot X1]
⇧ *Signal: Digital Input*	

2.3 Binary Outputs

2.3.1 6 Binary Outputs

2.3.1.1 BO Slot X2: Settings

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ╚═▷ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
inactive	inactive, active ╚═▷ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state ╚═▷ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X2 . **Assignment 1**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
SG[1] . TripCmd	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Inverting 1** **. . .** BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X2 . **Assignment 2** **. . .** BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 1]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ↳ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
inactive	inactive, active ↳ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X2 . **Assignment 1**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
Prot . Alarm	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Inverting 1** . . . BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
inactive	inactive, active ⮑ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X2 . **Assignment 2** . . . BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 2]	
“-”	“-” . . . Sys . Internal test state ⮑ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ⮑ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
inactive	inactive, active ⮑ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
inactive	inactive, active └═▷ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X2 . **Assignment 1**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
SG[1] . ON Cmd	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Inverting 1** **. . .** BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
inactive	inactive, active └═▷ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X2 . **Assignment 2** **. . .** BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 3]	
“-”	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ⮡ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
inactive	inactive, active ⮡ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X2 . **Assignment 1**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
SG[1] . OFF Cmd	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
Assignment		

BO Slot X2 . **Inverting 1** . . . BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
inactive	inactive, active ⮡ Mode.	S.3
Inverting of the state of the assigned signal.		

BO Slot X2 . **Assignment 2** . . . BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 4]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
Assignment		

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ⮡ 1...n Operating Modes.	S.3
Operating Mode		

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
0.00s	0.00s . . . 300.00s	S.3
To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.		

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
0.00s	0.00s . . . 300.00s	S.3
Switch Off Delay		

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
inactive	inactive, active ⮡ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X2 . **Assignment 1**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
MStart . Blo	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Inverting 1** **. . .** BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X2 . **Assignment 2** **. . .** BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 5]	
“-”	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X2 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
Normally open (NO)	Normally open (NO), Normally closed (NC) └═▷ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X2 . **t-hold**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X2 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X2 . **Latched**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
inactive	inactive, active └═▷ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X2 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
“-” *Only available if:* • BO Slot X2 . Latched = active	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X2 . **Inverting**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
inactive	inactive, active ↳ Mode.	S.3
Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).		

BO Slot X2 . **Assignment 1** **. . .** BO Slot X2 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
Assignment		

BO Slot X2 . **Inverting 1** **. . .** BO Slot X2 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X2 / BO 6]	
inactive	inactive, active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

BO Slot X2 . **DISARMED Ctrl**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X2]	
inactive	inactive, active ↳ active/inactive.	S.3
Enables and disables the disarming of the relay outputs. This is the first step of a two step process, to inhibit the operation or the relay outputs. Please refer to "DISARMED" for the second step.		

BO Slot X2 . **Disarm Mode**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X2]	
permanent	permanent, timeout ↳ Mode.	S.3
CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.		

BO Slot X2 . **t-Timeout DISARM**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X2]	
0.03s *Only available if:* • BO Slot X2 . Disarm Mode = timeout	0.00s . . . 300.00s	S.3
	The relays will be armed again after expiring of this time.	

BO Slot X2 . **Force Mode**	[Service / Test (Prot inhibit) / Force OR / BO Slot X2]	
permanent	permanent, timeout ↳ Mode.	S.3
	By means of this function the normal Output Relay States can be overwritten (forced) in case that the Relay is not in a disarmed state. The relays can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.	

BO Slot X2 . **t-Timeout Force**	[Service / Test (Prot inhibit) / Force OR / BO Slot X2]	
0.03s *Only available if:* • BO Slot X2 . Force Mode = timeout	0.00s . . . 300.00s	S.3
	The Output State will be set by force for the duration of this time. That means for the duration of this time the Output Relay does not show the state of the signals that are assigned on it.	

2.3.1.2 BO Slot X2: Direct Controls

BO Slot X2 . **DISARMED**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X2]	
inactive	inactive, active ↳ active/inactive.	S.3
◉	*This is the second step, after the "DISARMED Ctrl" has been activated, that is required to DISARM the relay outputs. This will DISARM those output relays that are currently not latched and that are not on “hold” by a pending minimum hold time. CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.*	

BO Slot X2 . **Force all Outs**	[Service / Test (Prot inhibit) / Force OR / BO Slot X2]	
Normal	Normal, De-Energized, Energized Relay operating modes.	S.3
◉	*By means of this function the normal Output Relay State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state. Forcing all outputs relays of an entire assembly group is superior to forcing a single output relay.*	

BO Slot X2 . **Force OR1** ... BO Slot X2 . **Force OR6**	[Service / Test (Prot inhibit) / Force OR / BO Slot X2]	
Normal	Normal, De-Energized, Energized Relay operating modes.	S.3
◉	*By means of this function the normal Output Relay State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.*	

2.3.1.3 BO Slot X2: Signals (Output States)

BO Slot X2 . **BO 1** ... BO Slot X2 . **BO 6**	[Operation / Status Display / BO Slot X2]
	Signal: Binary Output Relay

BO Slot X2 . **DISARMED!**	[Operation / Status Display / BO Slot X2]
	Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Self Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance

BO Slot X2 . **Outs forced**	[Operation / Status Display / BO Slot X2]
	Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.

2.3.2 6 Binary Outputs

2.3.2.1 BO Slot X6: Settings

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ↳ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
0.00s	0.00s ... 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
0.00s	0.00s ... 300.00s	S.3
	Switch Off Delay	

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
inactive	inactive, active ↳ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
“-” *Only available if:* • BO Slot X6 . Latched = active	“-” ... Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X6 . **Assignment 1** . . . BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
"-"	"-" . . . Sys . Internal test state └▷ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X6 . **Inverting 1** . . . BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 1]	
inactive	inactive, active └▷ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
Normally open (NO)	Normally open (NO), Normally closed (NC) └▷ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
inactive	inactive, active └▷ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
"-" *Only available if:* • BO Slot X6 . Latched = active	"-" . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
inactive	inactive, active └═▷ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X6 . **Assignment 1** . . . BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
"-"	"-" . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X6 . **Inverting 1** . . . BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 2]	
inactive	inactive, active └═▷ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
Normally open (NO)	Normally open (NO), Normally closed (NC) └═▷ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
0.00s	0.00s . . . 300.00s	S.3
To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.		

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
0.00s	0.00s . . . 300.00s	S.3
Switch Off Delay		

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
inactive	inactive, active ╚═▷ Mode.	S.3
Defines whether the Relay Output will be latched when it picks up.		

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
“-” *Only available if:* • BO Slot X6 . Latched = active	“-” . . . Sys . Internal test state ╚═▷ 1..n, Assignment List.	S.3
Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.		

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
inactive	inactive, active ╚═▷ Mode.	S.3
Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).		

BO Slot X6 . **Assignment 1** **. . .** BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
“-”	“-” . . . Sys . Internal test state ╚═▷ 1..n, Assignment List.	S.3
Assignment		

BO Slot X6 . **Inverting 1** ... BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 3]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ↳ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
0.00s	0.00s ... 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
0.00s	0.00s ... 300.00s	S.3
	Switch Off Delay	

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
inactive	inactive, active ↳ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
“-” *Only available if:* • BO Slot X6 . Latched = active	“-” ... Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X6 . **Assignment 1** . . . BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X6 . **Inverting 1** . . . BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 4]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ⮡ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
inactive	inactive, active ↳ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
“-” *Only available if:* • BO Slot X6 . Latched = active	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X6 . **Assignment 1** **. . .** BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X6 . **Inverting 1** **. . .** BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 5]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **Operating Mode**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
Normally open (NO)	Normally open (NO), Normally closed (NC) ⮡ 1...n Operating Modes.	S.3
	Operating Mode	

BO Slot X6 . **t-hold**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
0.00s	0.00s . . . 300.00s	S.3
	To clearly identify the state transition of a binary output relay, the "new state" is being hold, at least for the duration of the hold time.	

BO Slot X6 . **t-Off Delay**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
0.00s	0.00s . . . 300.00s	S.3
	Switch Off Delay	

BO Slot X6 . **Latched**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
inactive	inactive, active ⮡ Mode.	S.3
	Defines whether the Relay Output will be latched when it picks up.	

BO Slot X6 . **Acknowledgement**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
"-" *Only available if:* • BO Slot X6 . Latched = active	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement Signal - An acknowledgement signal (that acknowledges the corresponding binary output relay) can be assigned to each output relay. The acknowledgement-signal is only effective if the parameter "Latched" is set to active.	

BO Slot X6 . **Inverting**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the collective signal (OR-gate/disjunction). In combination with inverted input signals an AND-gate can be programmed (Conjunction).	

BO Slot X6 . **Assignment 1** ... BO Slot X6 . **Assignment 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
“-”	“-” . . . Sys . Internal test state └⊳ 1..n, Assignment List.	S.3
	Assignment	

BO Slot X6 . **Inverting 1** ... BO Slot X6 . **Inverting 7**	[Device Para / Binary Outputs / BO Slot X6 / BO 6]	
inactive	inactive, active └⊳ Mode.	S.3
	Inverting of the state of the assigned signal.	

BO Slot X6 . **DISARMED Ctrl**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X6]	
inactive	inactive, active └⊳ active/inactive.	S.3
	Enables and disables the disarming of the relay outputs. This is the first step of a two step process, to inhibit the operation or the relay outputs. Please refer to "DISARMED" for the second step.	

BO Slot X6 . **Disarm Mode**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X6]	
permanent	permanent, timeout └⊳ Mode.	S.3
	CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.	

BO Slot X6 . **t-Timeout DISARM**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X6]	
0.03s *Only available if:* • BO Slot X6 . Disarm Mode = timeout	0.00s ... 300.00s	S.3
	The relays will be armed again after expiring of this time.	

BO Slot X6 . **Force Mode**	[Service / Test (Prot inhibit) / Force OR / BO Slot X6]	
permanent	permanent, timeout ↳ Mode.	S.3
	By means of this function the normal Output Relay States can be overwritten (forced) in case that the Relay is not in a disarmed state. The relays can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.	

BO Slot X6 . **t-Timeout Force**	[Service / Test (Prot inhibit) / Force OR / BO Slot X6]	
0.03s *Only available if:* • BO Slot X6 . Force Mode = timeout	0.00s ... 300.00s	S.3
	The Output State will be set by force for the duration of this time. That means for the duration of this time the Output Relay does not show the state of the signals that are assigned on it.	

2.3.2.2 BO Slot X6: Direct Controls

BO Slot X6 . **DISARMED**	[Service / Test (Prot inhibit) / DISARMED / BO Slot X6]	
inactive	inactive, active ↳ active/inactive.	S.3
	This is the second step, after the "DISARMED Ctrl" has been activated, that is required to DISARM the relay outputs. This will DISARM those output relays that are currently not latched and that are not on “hold” by a pending minimum hold time. CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.	

BO Slot X6 . **Force all Outs**	[Service / Test (Prot inhibit) / Force OR / BO Slot X6]	
Normal	Normal, De-Energized, Energized Relay operating modes.	S.3
	By means of this function the normal Output Relay State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state. Forcing all outputs relays of an entire assembly group is superior to forcing a single output relay.	

BO Slot X6 . **Force OR1** ... BO Slot X6 . **Force OR6**	[Service / Test (Prot inhibit) / Force OR / BO Slot X6]	
Normal	Normal, De-Energized, Energized Relay operating modes.	S.3
	By means of this function the normal Output Relay State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.	

2.3.2.3 BO Slot X6: Signals (Output States)

BO Slot X6 . **BO 1** ... BO Slot X6 . **BO 6**	[Operation / Status Display / BO Slot X6]
	Signal: Binary Output Relay

BO Slot X6 . **DISARMED!**	[Operation / Status Display / BO Slot X6]
	Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Self Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance

BO Slot X6 . **Outs forced**	[Operation / Status Display / BO Slot X6]
	Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.

2.4 Analog Outputs

2.4.1 AnOut[1] . . . AnOut[4] – Analog Output

2.4.1.1 AnOut[1]: Settings

AnOut[1] . **Assignment**	[Device Para / Analog Outputs / AnOut[1]]	
“-”	“-” . . . PQSCr . Wq- ↳ 1..n, AnalogOutputList.	S.3
Assignment		

AnOut[1] . **Range**	[Device Para / Analog Outputs / AnOut[1]]	
0...20mA	0...20mA, 4...20mA, 0...10V ↳ Type of Output.	S.3
Adjustable range		

AnOut[1] . **Range max**	[Device Para / Analog Outputs / AnOut[1]]	
1.00°C	-999999.00°C . . . 999999.00°C	S.3
Adjustable range maximum.		

AnOut[1] . **Range min**	[Device Para / Analog Outputs / AnOut[1]]	
0.00°C	-999999.00°C . . . 999999.00°C	S.3
Adjustable range minimum.		

AnOut[1] . **Force Mode**	[Service / Test (Prot inhibit) / Analog Outputs / AnOut[1]]	
permanent	permanent, timeout ↳ Disarm.	S.3
For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).		

AnOut[1] . **t-Timeout Force**	[Service / Test (Prot inhibit) / Analog Outputs / AnOut[1]]	
0.03s *Only available if:* • AnOut[1] . Force Mode = timeout	0.00s . . . 300.00s	S.3
	The Analog Output Value will be set by force for the duration of this time. That means for the duration of this time the Analog Output does not show the value of the signals that are assigned on it.	

2.4.1.2 AnOut[1]: Direct Controls

AnOut[1] . **Function**	[Service / Test (Prot inhibit) / Analog Outputs / AnOut[1]]	
inactive	inactive, active └▷ active.	S.3
◉	*Permanent activation or deactivation of module/stage.*	

AnOut[1] . **Force Value**	[Service / Test (Prot inhibit) / Analog Outputs / AnOut[1]]	
0%	0.00% . . . 100.00%	S.3
◉	*By means of this function the Analog Output Value can be overwritten (forced).*	

2.4.1.3 AnOut[1]: Signals (Output States)

AnOut[1] . **Force Mode**	[Operation / Status Display / Analog Outputs / AnOut[1]]
	For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).

2.5 LEDs

2.5.1 LEDs group A – LEDs at the left side of the display

2.5.1.1 LEDs group A: Settings

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 1]	
active	inactive, active, active, ack. by alarm └⇨ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 1]	
“-”	“-” . . . Sys . Internal test state └⇨ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 1]	
red	green, red, red flash, green flash, “-” └⇨ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 1]	
“-”	green, red, red flash, green flash, “-” └⇨ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 1]	
SG[1] . TripCmd	“-” . . . Sys . Internal test state └⇨ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** **. . .** LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 1]	
inactive	inactive, active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs group A . **Assignment 2** **. . .** LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 1]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 2]	
active	inactive, active, active, ack. by alarm ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 2]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.		

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 2]	
red	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 2]	
“-”	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 2]	
Prot . Alarm	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** **. . .** LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 2]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group A . **Assignment 2** **. . .** LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 2]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 3]	
active	inactive, active, active, ack. by alarm ↳ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 3]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 3]	
red	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 3]	
“-”	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 3]	
ThR . Alarm	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** **. . .** LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 3]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group A . **Assignment 2**	[Device Para / LEDs / LEDs group A / LED 3]	
I[1] . Alarm	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Assignment 3** LEDs group A . **Assignment 4** LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 3]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 4]	
active	inactive, active, active, ack. by alarm ⮡ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 4]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 4]	
red	green, red, red flash, green flash, "-" ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 4]	
"-"	green, red, red flash, green flash, "-" ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 4]	
MStart . Blo	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** . . . LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 4]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group A . **Assignment 2** . . . LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 4]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 5]	
inactive	inactive, active, active, ack. by alarm ⮡ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 5]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 5]	
red flash	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 5]	
"-"	green, red, red flash, green flash, "-" ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 5]	
MStart . Start	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** **. . .** LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 5]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group A . **Assignment 2** **. . .** LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 5]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 6]	
inactive	inactive, active, active, ack. by alarm ⮡ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 6]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 6]	
red	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 6]	
“-”	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 6]	
MStart . Run	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** **. . .** LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 6]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group A . **Assignment 2** **. . .** LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 6]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Latched**	[Device Para / LEDs / LEDs group A / LED 7]	
inactive	inactive, active, active, ack. by alarm ↳ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group A . **Ack signal**	[Device Para / LEDs / LEDs group A / LED 7]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group A . **LED active color**	[Device Para / LEDs / LEDs group A / LED 7]	
green	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group A . **LED inactive color**	[Device Para / LEDs / LEDs group A / LED 7]	
“-”	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group A . **Assignment 1**	[Device Para / LEDs / LEDs group A / LED 7]	
MStart . Stop	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group A . **Inverting 1** ... LEDs group A . **Inverting 5**	[Device Para / LEDs / LEDs group A / LED 7]	
inactive	inactive, active ⮑ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs group A . **Assignment 2** ... LEDs group A . **Assignment 5**	[Device Para / LEDs / LEDs group A / LED 7]	
“-”	“-” . . . Sys . Internal test state ⮑ 1..n, Assignment List.	S.3
Assignment		

2.5.2 LEDs group B – LEDs at the right side of the display

2.5.2.1 LEDs group B: Settings

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 1]	
inactive	inactive, active, active, ack. by alarm ⮡ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 1]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.		

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 1]	
red	green, red, red flash, green flash, "-" ⮡ LED active color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 1]	
"-"	green, red, red flash, green flash, "-" ⮡ LED active color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is untrue.		

LEDs group B . **Assignment 1** . . . LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 1]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
Assignment		

LEDs group B . **Inverting 1** ... LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 1]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 2]	
inactive	inactive, active, active, ack. by alarm ↳ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 2]	
“-”	“-” ... Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 2]	
red	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 2]	
“-”	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group B . **Assignment 1** **. . .** LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 2]	
"-"	"-" . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** **. . .** LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 2]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 3]	
inactive	inactive, active, active, ack. by alarm ↳ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 3]	
"-"	"-" . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 3]	
red	green, red, red flash, green flash, "-" ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 3]	
“-”	green, red, red flash, green flash, “-” ⮡ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group B . **Assignment 1** . . . LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 3]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** . . . LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 3]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 4]	
inactive	inactive, active, active, ack. by alarm ⮡ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 4]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 4]	
red	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 4]	
“-”	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group B . **Assignment 1** **. . .** LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 4]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** **. . .** LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 4]	
inactive	inactive, active ↳ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 5]	
inactive	inactive, active, active, ack. by alarm ↳ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 5]	
“-”	“-” . . . Sys . Internal test state ⮱ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 5]	
red	green, red, red flash, green flash, “-” ⮱ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 5]	
“-”	green, red, red flash, green flash, “-” ⮱ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group B . **Assignment 1** **. . .** LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 5]	
“-”	“-” . . . Sys . Internal test state ⮱ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** **. . .** LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 5]	
inactive	inactive, active ⮱ Mode.	S.3
	Inverting of the state of the assigned signal.	

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 6]	
inactive	inactive, active, active, ack. by alarm └⇒ Mode.	S.3
	Defines whether the LED will be latched when it picks up.	

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 6]	
“-”	“-” . . . Sys . Internal test state └⇒ 1..n, Assignment List.	S.3
	Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.	

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 6]	
red	green, red, red flash, green flash, “-” └⇒ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is true.	

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 6]	
“-”	green, red, red flash, green flash, “-” └⇒ LED active color.	S.3
	The LED lights up in this color if the state of the OR-assignment of the signals is untrue.	

LEDs group B . **Assignment 1** **. . .** LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 6]	
“-”	“-” . . . Sys . Internal test state └⇒ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** **. . .** LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 6]	
inactive	inactive, active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs group B . **Latched**	[Device Para / LEDs / LEDs group B / LED 7]	
inactive	inactive, active, active, ack. by alarm ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs group B . **Ack signal**	[Device Para / LEDs / LEDs group B / LED 7]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
Acknowledgement signal for the LED. If latching is set to active the LED can only be acknowledged if those signals that initiated the setting are no longer present.		

LEDs group B . **LED active color**	[Device Para / LEDs / LEDs group B / LED 7]	
red	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs group B . **LED inactive color**	[Device Para / LEDs / LEDs group B / LED 7]	
“-”	green, red, red flash, green flash, “-” ↳ LED active color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is untrue.		

LEDs group B . **Assignment 1** . . . LEDs group B . **Assignment 5**	[Device Para / LEDs / LEDs group B / LED 7]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment	

LEDs group B . **Inverting 1** . . . LEDs group B . **Inverting 5**	[Device Para / LEDs / LEDs group B / LED 7]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting of the state of the assigned signal.	

2.6 HMI – front-panel

Password	[Device Para / Security / Password]
	This item represents a special dialog. (See the Technical Manual for details.) *Changing the password*

Access Level	[Device Para / Security / Access Level]
	This item represents a special dialog. (See the Technical Manual for details.) *Access Level*

2.6.1 HMI: Settings

HMI . **Display Off**	[Device Para / HMI]	
180s	20s . . . 3600s	S.3
	The display back light will be turned off when this timer has expired.	

HMI . **Menu language**	[Device Para / HMI]	
English	English . . . Romanian Selection.	S.3
	Selection of the language	

HMI . **Display ANSI Device No.**	[Device Para / HMI]	
active	inactive, active Mode.	S.3
	Display ANSI Device Numbers	

HMI . **t-max Edit/Access**	[Device Para / Security / General Settings]	
180s	20s . . . 3600s	S.3
	If no other key(s) is pressed at the panel, after expiration of this time, all cached (changed) parameters are canceled. The device access will be locked by falling back into Read-only level Lv0.	

2.6.2 HMI: Direct Controls

HMI . **Contrast**	[Device Para / HMI]	
50%	0% . . . 100%	S.3
◉	*Contrast*	

HMI . **Config. Device Reset**	[Device Para / Security / General Settings]	
"Fact.def.", "PW rst"	"Fact.def.", "PW rst", Only “Fact.defaults”, Reset deact. ⮡ Config. Device Reset.	S.3
◉	*If the »C« key is pressed while the device is performing a cold restart a general Reset Dialog appears on the screen. Select which options shall be available with this dialog.*	

2.6.3 HMI: Values

HMI . **Config. Device Reset**	[Operation / Security / Security States]	
"Fact.def.", "PW rst"	"Fact.def.", "PW rst", Only “Fact.defaults”, Reset deact. ⮡ Config. Device Reset.	
✎	*If the »C« key is pressed while the device is performing a cold restart a general Reset Dialog appears on the screen. Select which options shall be available with this dialog.*	

3 Security

- Ctrl . Switching Authority: ╘▷ Table
- HMI . Config. Device Reset: ╘▷ Table
- HMI . t-max Edit/Access: ╘▷ Table
- HMI . Config. Device Reset: ╘▷ Table
- Password: ╘▷ Table
- Access Level: ╘▷ Table

Sys . **Smart view via USB**	[Operation / Security / Security States]
active	inactive, active ╘▷ Mode.
✎	*Information whether or not the Smart view access via the USB interface is activated (allowed).*

Sys . **Smart view via Eth**	[Operation / Security / Security States]
active *Avail. depends on device type.*	inactive, active ╘▷ Mode.
✎	*Information whether or not the Smart view access via the Ethernet interface is activated (allowed).*

Sys . **Passw. for USB conn.**	[Operation / Security / Security States]
disabled	disabled, default, def. by user ╘▷ Type of passw. def..
✎	*Type / Security-level of the connection password that is used for a USB connection.*

Sys . **Passw.remote net.conn.**	[Operation / Security / Security States]
disabled *Avail. depends on device type.*	disabled, default, def. by user ╘▷ Type of passw. def..
✎	*Type / Security-level of the connection password that is used for a Smart view connection via some network interface.*

Sys . **TLS Certificate**	[Operation / Security / Security States]	
Device-specific	Device-specific, Basic, Corrupt └▷ TLS Certificate.	
✎	*Type of certificate that the device uses for the encrypted communication. This value is directly related to the security-level of the communication.*	

Security Logger	[Operation / Security / Security Logger]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *Security-related messages*

Sys . **Smart view via USB**	[Device Para / Security / Communication]	
active	inactive, active └▷ Mode.	S.3
◉	*Activate (allow) or inactivate (disallow) the Smart view access via the USB interface.*	

Sys . **Smart view via Eth**	[Device Para / Security / Communication]	
active *Avail. depends on device type.*	inactive, active └▷ Mode.	S.3
◉	*Activate (allow) or inactivate (disallow) the Smart view access via the Ethernet interface.*	

4 Field settings

4.1 Field Para: Settings

Field Para . **Phase Sequence**	[Field Para / General Settings]	
ABC	ABC, ACB ↳ Phase Sequence.	S.3
	Phase Sequence	

Field Para . **f**	[Field Para / General Settings]	
50Hz	50Hz, 60Hz ↳ fN.	S.3
	Nominal frequency	

4.2 VT – Voltage Transformer

4.2.1 VT: Settings

VT . **V Cutoff Level**	[Device Para / Measurem Display / Voltage]	
0.005Vn	0.0Vn . . . 0.100Vn	S.3
	The Phase Voltage shown in the Display or within the PC Software will be displayed as zero, if the Phase Voltage falls below this Cutoff Level. This parameter has no impact on recorders. This parameter is related to the voltage that is connected to the device (phase-to-phase or phase-to-earth).	

VT . **VG meas Cutoff Level**	[Device Para / Measurem Display / Voltage]	
0.005Vn	0.0Vn . . . 0.100Vn	S.3
	The measured Residual Voltage shown in the Display or within the PC Software will be displayed as zero, if the measured Residual Voltage falls below this Cutoff Level. This parameter has no impact on recorders.	

VT . **VG calc Cutoff Level**	[Device Para / Measurem Display / Voltage]	
0.005Vn	0.0Vn . . . 0.100Vn	S.3
	The calculated Residual Voltage shown in the Display or within the PC Software will be displayed as zero, if the calculated Residual Voltage falls below this Cutoff Level. This parameter has no impact on recorders.	

VT . **V012 Comp Cutoff Level**	[Device Para / Measurem Display / Voltage]	
0.005Vn	0.0Vn . . . 0.100Vn	S.3
	The Symmetrical Component shown in the Display or within the PC Software will be displayed as zero, if the Symmetrical Component falls below this Cutoff Level. This parameter has no impact on recorders.	

VT . **VT pri**	[Field Para / VT]	
10000V	60V . . . 500000V	S.3
	Nominal voltage of the Voltage Transformers at the primary side. Note that always the phase-to-phase voltage must be entered here.	

VT . **VT sec**	[Field Para / VT]	
100V	60.00V . . . 520.00V	S.3
	Nominal voltage of the Voltage Transformers at the secondary side. Note that always the phase-to-phase voltage must be entered here.	

VT . **VT con**	[Field Para / VT]	
Phase to Ground	Phase to Phase, Phase to Ground └▷ VT con.	S.3
	This parameter has to be set in order to ensure the correct assignment of the voltage measurement channels in the device.	

VT . **EVT pri**	[Field Para / VT]	
10000V	60V ... 500000V	S.3
	Primary nominal voltage of the e-n winding of the voltage transformers, which is only taken into account in the direct measurement of the residual voltage (GVT con=measured/broken delta).	

VT . **EVT sec**	[Field Para / VT]	
100V	35.00V ... 520.00V	S.3
	Secondary nominal voltage of the e-n winding of the voltage transformers, which is only taken into account in the direct measurement of the residual voltage.	

VT . **V Block f**	[Field Para / Frequency]	
0.5Vn	0.15Vn ... 0.90Vn	S.3
	Threshold for the release of the frequency stages	

VT . **delta phi - Mode**	[Field Para / Frequency]	
two phases	one phase, two phases, three phases └▷ delta phi - Mode.	S.3
	The delta phi element (vector surge) trips, if the permissable voltage angle shift (delta phi) of the three measured voltages (phase-ground or phase-phase) in: one phase, two phases or within all phases is exceeded.	

VT . **Stab. window f**	[Field Para / Frequency]	
4	0 ... 10	S.3
	Stabilizing window, for stabilizing the frequency values against momentary fluctuations. The setting value is in cycles at the rated frequency.	

VT . **Stab. window f for df/dt**	[Field Para / Frequency]	
3	2 ... 10	S.3
	Stabilizing window, for stabilizing the frequency values that are used as input for df/dt calculation against momentary fluctuations. The setting value is in cycles at the rated frequency.	

VT . **Window df/dt**	[Field Para / Frequency]	
4	1 . . . 10	S.3
	Window for the determination of df/dt (ROCOF). The setting value is in cycles at the rated frequency.	

VT . **Stab. window df/dt**	[Field Para / Frequency]	
5	0 . . . 10	S.3
	Stabilizing window, for stabilizing the df/dt (ROCOF) values against momentary fluctuations. The setting value is in cycles at the rated frequency.	

4.2.2 VT: Signals (Output States)

VT . **Phase seq. wrong**	[Operation / Status Display / Supervision / Phase Sequence]
	Signal that the device has detected a phase sequence (L1-L2-L3 / L1-L3-L2) that is different from the one that had been set at [Field settings / General Settings] »Phase Sequence«.

4.2.3 VT: Values

VT . **f**	[Operation / Measured Values / Voltage]
	Measured value: Frequency

VT . **VL12**	[Operation / Measured Values / Voltage]
	Measured value: Phase-to-phase voltage (fundamental)

VT . **VL23**	[Operation / Measured Values / Voltage]
	Measured value: Phase-to-phase voltage (fundamental)

VT . **VL31**	[Operation / Measured Values / Voltage]
	Measured value: Phase-to-phase voltage (fundamental)

VT . **VL1**	[Operation / Measured Values / Voltage]
	Measured value: Phase-to-neutral voltage (fundamental)

VT . **VL2**	[Operation / Measured Values / Voltage]
	Measured value: Phase-to-neutral voltage (fundamental)

VT . **VL3**	[Operation / Measured Values / Voltage]
✎	*Measured value: Phase-to-neutral voltage (fundamental)*

VT . **VX meas**	[Operation / Measured Values / Voltage]
✎	*Measured value (measured): VX measured (fundamental)*

VT . **VG calc**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): VG (fundamental)*

VT . **V0**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): Symmetrical components Zero voltage(fundamental)*

VT . **V1**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): Symmetrical components positive phase sequence voltage(fundamental)*

VT . **V2**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): Symmetrical components negative phase sequence voltage(fundamental)*

VT . **%(V2/V1)**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): V2/V1, phase sequence will be taken into account automatically.*

VT . **phi VL12**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): Angle of Phasor VL12* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

VT . **phi VL23**	[Operation / Measured Values / Voltage]
✎	*Measured value (calculated): Angle of Phasor VL23* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

VT . **phi VL31**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle of Phasor VL31*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi VL1**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle of Phasor VL1*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi VL2**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle of Phasor VL2*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi VL3**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle of Phasor VL3*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi VX meas**	[Operation / Measured Values / Voltage]

✎ *Measured value: Angle of Phasor VX meas*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi VG calc**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle of Phasor VG calc*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi V0**	[Operation / Measured Values / Voltage]

✎ *Measured value (calculated): Angle Zero Sequence System*

Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.

VT . **phi V1**	[Operation / Measured Values / Voltage]
	Measured value (calculated): Angle of Positive Sequence System *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

VT . **phi V2**	[Operation / Measured Values / Voltage]
	Measured Value (calculated): Angle of Negative Sequence System *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

VT . **df/dt**	[Operation / Measured Values / Voltage]
	Measured value (calculated): Rate-of-frequency-change.

VT . **delta phi**	[Operation / Measured Values / Voltage]
	Measured value (calculated): Vector surge

VT . **VL12 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-phase voltage (RMS)

VT . **VL23 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-phase voltage (RMS)

VT . **VL31 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-phase voltage (RMS)

VT . **VL1 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-neutral voltage (RMS)

VT . **VL2 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-neutral voltage (RMS)

VT . **VL3 RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value: Phase-to-neutral voltage (RMS)

VT . **VX meas RMS**	[Operation / Measured Values / Voltage RMS]
	Measured value (measured): VX measured (RMS)

VT . **VG calc RMS**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): VG (RMS)*

VT . **V/f**	[Operation / Measured Values / Voltage RMS]
✎	*Ratio Volts/Hertz in relation to nominal values.*

VT . **%VL12 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V12 Total Harmonic Distortion / Ground wave*

VT . **%VL23 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V23 Total Harmonic Distortion / Ground wave*

VT . **%VL31 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V31 Total Harmonic Distortion / Ground wave*

VT . **%VL1 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): VL1 Total Harmonic Distortion / Ground wave*

VT . **%VL2 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): VL2 Total Harmonic Distortion / Ground wave*

VT . **%VL3 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): VL3 Total Harmonic Distortion / Ground wave*

VT . **VL12 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V12 Total Harmonic Distortion*

VT . **VL23 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V23 Total Harmonic Distortion*

VT . **VL31 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): V31 Total Harmonic Distortion*

VT . **VL1 THD**	[Operation / Measured Values / Voltage RMS]
✎	*Measured value (calculated): VL1 Total Harmonic Distortion*

VT . **VL2 THD**	[Operation / Measured Values / Voltage RMS]
	Measured value (calculated): VL2 Total Harmonic Distortion

VT . **VL3 THD**	[Operation / Measured Values / Voltage RMS]
	Measured value (calculated): VL3 Total Harmonic Distortion

4.2.4 VT: Statistical Values

VT . **f max**	[Operation / Statistics / Max / Voltage]
	Max. frequency value

VT . **VL12 max RMS**	[Operation / Statistics / Max / Voltage]
	VL12 maximum value (RMS)

VT . **VL23 max RMS**	[Operation / Statistics / Max / Voltage]
	VL23 maximum value (RMS)

VT . **VL31 max RMS**	[Operation / Statistics / Max / Voltage]
	VL31 maximum value (RMS)

VT . **VL1 max RMS**	[Operation / Statistics / Max / Voltage]
	VL1 maximum value (RMS)

VT . **VL2 max RMS**	[Operation / Statistics / Max / Voltage]
	VL2 maximum value (RMS)

VT . **VL3 max RMS**	[Operation / Statistics / Max / Voltage]
	VL3 maximum value (RMS)

VT . **VX meas max RMS**	[Operation / Statistics / Max / Voltage]
	Measured value: VX maximum value (RMS)

VT . **VG calc max RMS**	[Operation / Statistics / Max / Voltage]
	Measured value (calculated):VX maximum value (RMS)

VT . **V1 max**	[Operation / Statistics / Max / Voltage]
☑	*Maximum value: Symmetrical components positive phase sequence voltage(fundamental)*

VT . **V2 max**	[Operation / Statistics / Max / Voltage]
☑	*Maximum value: Symmetrical components negative phase sequence voltage(fundamental)*

VT . **%(V2/V1) max**	[Operation / Statistics / Max / Voltage]
☑	*Measured value (calculated):V2/V1 maximum value, phase sequence will be taken into account automatically*

VT . **V/f max**	[Operation / Statistics / Max / Voltage]
☑	*Maximum value: Ratio Volts/Hertz in relation to nominal values.*

VT . **f min**	[Operation / Statistics / Min / Voltage]
☑	*Min. frequency value*

VT . **VL12 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL12 minimum value (RMS)*

VT . **VL23 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL23 minimum value (RMS)*

VT . **VL31 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL31 minimum value (RMS)*

VT . **VL1 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL1 minimum value (RMS)*

VT . **VL2 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL2 minimum value (RMS)*

VT . **VL3 min RMS**	[Operation / Statistics / Min / Voltage]
☑	*VL3 minimum value (RMS)*

VT . **VX meas min RMS**	[Operation / Statistics / Min / Voltage]
☑	*Measured value: VX minimum value (RMS)*

VT . **VG calc min RMS**	[Operation / Statistics / Min / Voltage]
☑	*Measured value (calculated):VX minimum value (RMS)*

VT . **V1 min**	[Operation / Statistics / Min / Voltage]
☑	*Minimum value: Symmetrical components positive phase sequence voltage(fundamental)*

VT . **V2 min**	[Operation / Statistics / Min / Voltage]
☑	*Minimum value: Symmetrical components negative phase sequence voltage(fundamental)*

VT . **%(V2/V1) min**	[Operation / Statistics / Min / Voltage]
☑	*Measured value (calculated):V2/V1 minimum value , phase sequence will be taken into account automatically*

VT . **V/f min**	[Operation / Statistics / Min / Voltage]
☑	*Minimum value: Ratio Volts/Hertz in relation to nominal values.*

4.3 CT – Current Transformer

4.3.1 CT: Settings

CT . **IL1, IL2, IL3 Cutoff Level**	[Device Para / Measurem Display / Current]	
0.005In	0.0In . . . 0.100In	S.3
	The Current shown in the Display or within the PC Software will be displayed as zero, if the Current falls below this Cutoff Level. This parameter has no impact on recorders.	

CT . **IG meas Cutoff Level**	[Device Para / Measurem Display / Current]	
0.005In	0.0In . . . 0.100In	S.3
	The measured Earth Current shown in the Display or within the PC Software will be displayed as zero, if the measured Earth Current falls below this Cutoff Level. This parameter has no impact on recorders.	

CT . **IG calc Cutoff Level**	[Device Para / Measurem Display / Current]	
0.005In	0.0In . . . 0.100In	S.3
	The calculated Earth Current shown in the Display or within the PC Software will be displayed as zero, if the calculated Earth Current falls below this Cutoff Level. This parameter has no impact on recorders.	

CT . **I012 Cutoff Level**	[Device Para / Measurem Display / Current]	
0.005In	0.0In . . . 0.100In	S.3
	The Symmetrical Component shown in the Display or within the PC Software will be displayed as zero, if the Symmetrical Component falls below this Cutoff Level. This parameter has no impact on recorders.	

CT . **CT pri**	[Field Para / CT]	
10A	1A . . . 50000A	S.3
	Nominal current of the primary side of the current transformers.	

CT . **CT sec**	[Field Para / CT]	
1A	1A, 5A Ratio prim/sec.	S.3
	Nominal current of the secondary side of the current transformers.	

CT . **CT dir**	[Field Para / CT]	
0°	0°, 180° └─▷ Polarity.	S.3
	Protection functions with directional feature can only work properly if the connection of the current transformers is free of wiring errors. If all current transformers are connected to the device with an incorrect polarity, the wiring error can be compensated by this parameter. This parameter turns the current vectors by 180 degrees.	

CT . **ECT pri**	[Field Para / CT]	
50A	1A ... 50000A	S.3
	This parameter defines the primary nominal current of the connected earth current transformer. If the earth current is measured via the Holmgreen connection, the primary value of the phase current transformer must be entered here.	

CT . **ECT sec**	[Field Para / CT]	
1A	1A, 5A └─▷ Ratio prim/sec.	S.3
	This parameter defines the secondary nominal current of the connected earth current transformer. If the earth current is done via the Holmgreen connection, the primary value of the phase current transformer must be entered here.	

CT . **ECT dir**	[Field Para / CT]	
0°	0°, 180° └─▷ Polarity.	S.3
	Earth fault protection with directional feature depends also on the correct wiring of the earth current transformer. An incorrect polarity/wiring can be corrected by means of the settings "0°" or "180°". The operator has the possibility of turning the current vector by 180 degrees (change of sign) without modification of the wiring. This means, that - in terms of figures - the determined current indicator was turned by 180° by the device.	

4.3.2 CT: Signals (Output States)

CT . **Phase seq. wrong**	[Operation / Status Display / Supervision / Phase Sequence]
	Signal that the device has detected a phase sequence (L1-L2-L3 / L1-L3-L2) that is different from the one that had been set at [Field settings / General Settings] »Phase Sequence«.

4.3.3 CT: Values

CT . **IL1**	[Operation / Measured Values / Current]
	Measured value: Phase current (fundamental)

CT . **IL2**	[Operation / Measured Values / Current]
	Measured value: Phase current (fundamental)

CT . **IL3**	[Operation / Measured Values / Current]
	Measured value: Phase current (fundamental)

CT . **IG meas**	[Operation / Measured Values / Current]
	Measured value (measured): IG (fundamental)

CT . **IG calc**	[Operation / Measured Values / Current]
	Measured value (calculated): IG (fundamental)

CT . **I0**	[Operation / Measured Values / Current]
	Measured value (calculated): Zero current (fundamental)

CT . **I1**	[Operation / Measured Values / Current]
	Measured value (calculated): Positive phase sequence current (fundamental)

CT . **I2**	[Operation / Measured Values / Current]
	Measured value (calculated): Unbalanced load current (fundamental)

CT . **%(I2/I1)**	[Operation / Measured Values / Current]
	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.

CT . **phi IL1**	[Operation / Measured Values / Current]
	Measured value (calculated): Angle of Phasor IL1 *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi IL2**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Phasor IL2* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi IL3**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Phasor IL3* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi IG meas**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Phasor IG meas* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi IG calc**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Phasor IG calc* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi I0**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle Zero Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi I1**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Positive Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **phi I2**	[Operation / Measured Values / Current]
✎	*Measured Value (calculated): Angle of Negative Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **IL1 RMS**	[Operation / Measured Values / Current RMS]
✎	*Measured value: Phase current (RMS)*

CT . **IL2 RMS**	[Operation / Measured Values / Current RMS]
✎	*Measured value: Phase current (RMS)*

CT . **IL3 RMS**	[Operation / Measured Values / Current RMS]
✎	*Measured value: Phase current (RMS)*

CT . **IG meas RMS**	[Operation / Measured Values / Current RMS]
✎	*Measured value (measured): IG (RMS)*

CT . **IG calc RMS**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IG (RMS)*

CT . **%IL1 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL1 Total Harmonic Distortion*

CT . **%IL2 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL2 Total Harmonic Distortion*

CT . **%IL3 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL3 Total Harmonic Distortion*

CT . **IL1 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL1 Total Harmonic Current*

CT . **IL2 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL2 Total Harmonic Current*

CT . **IL3 THD**	[Operation / Measured Values / Current RMS]
✎	*Measured value (calculated): IL3 Total Harmonic Current*

4.3.4 CT: Statistical Values

CT . **IL1 avg RMS**	[Operation / Statistics / Demand / Current Demand]
☑	*IL1 average value (RMS)*

CT . **IL2 avg RMS**	[Operation / Statistics / Demand / Current Demand]
☑	*IL2 average value (RMS)*

CT . **IL3 avg RMS**	[Operation / Statistics / Demand / Current Demand]
☑	*IL3 average value (RMS)*

CT . **IL1 Peak (Demand)**	[Operation / Statistics / Demand / Current Demand]
☑	*IL1 Peak value, RMS value*

CT . **IL2 Peak (Demand)**	[Operation / Statistics / Demand / Current Demand]
☑	*IL2 Peak value, RMS value*

CT . **IL3 Peak (Demand)**	[Operation / Statistics / Demand / Current Demand]
☑	*IL3 Peak value, RMS value*

CT . **IL1 max RMS**	[Operation / Statistics / Max / Current]
☑	*IL1 maximum value (RMS)*

CT . **IL2 max RMS**	[Operation / Statistics / Max / Current]
☑	*IL2 maximum value (RMS)*

CT . **IL3 max RMS**	[Operation / Statistics / Max / Current]
☑	*IL3 maximum value (RMS)*

CT . **IG meas max RMS**	[Operation / Statistics / Max / Current]
☑	*Measured value: IG maximum value (RMS)*

CT . **IG calc max RMS**	[Operation / Statistics / Max / Current]
☑	*Measured value (calculated):IG maximum value (RMS)*

CT . **I1 max**	[Operation / Statistics / Max / Current]
☑	*Maximum value positive phase sequence current (fundamental)*

CT . **I2 max**	[Operation / Statistics / Max / Current]
☑	*Maximum value negative sequence current (fundamental)*

CT . **%(I2/I1) max**	[Operation / Statistics / Max / Current]
☑	*Measured value (calculated): I2/I1 maximum value, phase sequence will be taken into account automatically*

CT . **IL1 min RMS**	[Operation / Statistics / Min / Current]
☑	*IL1 minimum value (RMS)*

CT . **IL2 min RMS**	[Operation / Statistics / Min / Current]
☑	*IL2 minimum value (RMS)*

CT . **IL3 min RMS**	[Operation / Statistics / Min / Current]
☑	*IL3 minimum value (RMS)*

CT . **IG meas min RMS**	[Operation / Statistics / Min / Current]
☑	*Measured value: IG minimum value (RMS)*

CT . **IG calc min RMS**	[Operation / Statistics / Min / Current]
☑	*Measured value (calculated):IG minimum value (RMS)*

CT . **I1 min**	[Operation / Statistics / Min / Current]
☑	*Minimum value positive phase sequence current (fundamental)*

CT . **I2 min**	[Operation / Statistics / Min / Current]
☑	*Minimum value unbalanced load current (fundamental)*

CT . **%(I2/I1) min**	[Operation / Statistics / Min / Current]
☑	*Measured value (calculated): I2/I1 minimum value, phase sequence will be taken into account automatically*

5 System

5.1 Sys: Settings

Sys . **Scaling**	[Device Para / Measurem Display / General Settings]	
Per unit values	Per unit values, Primary values, Secondary values ↳ Scaling.	S.3
	Display of the measured values as primary, secondary or per unit values	

Sys . **Ack via »C« key**	[Device Para / Acknowledge]	
Ack LEDs w/o passw.	Nothing, Ack LEDs w/o passw., Ack LEDs, Ack LEDs and relays, Ack Everything ↳ Ack via »C« key.	P.2
	Select which acknowledgeable elements can be reset via pressing the »C« key.	

Sys . **Remote Reset**	[Device Para / Acknowledge]	
active	inactive, active ↳ Mode.	P.2
	Enables or disables the option to acknowledge from external/remote via signals (assignments) and SCADA.	

Sys . **Ack LED**	[Device Para / Acknowledge]	
"-" *Only available if:* • Sys . Remote Reset = active	"-" . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	All acknowledgeable LEDs will be acknowledged if the state of the assigned signal becomes true.	

Sys . **Ack BO**	[Device Para / Acknowledge]	
"-" *Only available if:* • Sys . Remote Reset = active	"-" . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	All acknowledgeable binary output relays will be acknowledged if the state of the assigned signal becomes true.	

Sys . **Ack Scada**	[Device Para / Acknowledge]	
“-” *Only available if:* • Sys . Remote Reset = active	“-” . . . Sys . Internal test state ⮑ 1..n, Assignment List.	S.3
	Latched SCADA signals are acknowledged if the state of the assigned signal becomes true.	

Sys . **Program Mode**	[Field Para / General Settings]	
Either Motor Stopped or Running	Either Motor Stopped or Running, Motor Stop ⮑ .	P.2
	Program Mode	

Sys . **PSet-Switch**	[Protection Para / PSet-Switch]	
PS1	PS1, PS2, PS3, PS4, PSS via Inp fct, PSS via Scada ⮑ PSet-Switch.	P.2
	Switching Parameter Set	

Sys . **PS1: activated by** **. . .** Sys . **PS4: activated by**	[Protection Para / PSet-Switch]	
“-”	“-” . . . Logics . LE80.Out inverted ⮑ 1..n, PSS.	P.2
	This Setting Group will be the active one if: The Parameter Setting Group Switch is set to "Switch via Input" and the other three input functions are inactive at the same time. In case that there is more than one input function active, no Parameter Setting Group Switch will be executed. In case all input functions are inactive, the device will keep working with the Setting Group that was activated lastly.	

5.2 Sys: Direct Controls

Sys . **Ack BO LED Scd Trips**	[Operation / Reset/Acknowledge / Acknowledge]	
inactive	inactive, active ⮑ Mode.	P.1
	Acknowledge (reset) latched binary output relays, LEDs, SCADA and Trips.	

Sys . **Ack LED**	[Operation / Reset/Acknowledge / Acknowledge]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*All acknowledgeable LEDs will be acknowledged.*	

Sys . **Ack BO**	[Operation / Reset/Acknowledge / Acknowledge]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*All acknowledgeable binary output relays are acknowledged.*	

Sys . **Ack Scada**	[Operation / Reset/Acknowledge / Acknowledge]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Latched SCADA signals are acknowledged.*	

Sys . **Res OperationsCr**	[Operation / Reset/Acknowledge / History]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Reset all counters in history group operations*	

Sys . **Res AlarmCr**	[Operation / Reset/Acknowledge / History]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Reset all counters in history group alarms*	

Sys . **Res TripCmdCr**	[Operation / Reset/Acknowledge / History]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Reset all counters in history group Trip Commands*	

Sys . **Res TotalCr**	[Operation / Reset/Acknowledge / History]	
inactive	inactive, active └⊳ Mode.	P.1
◉	*Reset all counters in history group total*	

Sys . **Res All**	[Operation / Reset/Acknowledge / History]	
inactive	inactive, active └⊳ Mode.	P.1
◉	*Reset of all Counters*	

Sys . **Setting Lock Bypass**	[Field Para / General Settings]	
inactive	inactive, active └⊳ Mode.	P.1
◉	*Short-period unlock of the Setting Lock*	

Sys . **Reboot**	[Service / General]	
no	no, yes └⊳ yes/no.	S.3
◉	*Rebooting the device.*	

5.3 Sys: Input States

Sys . **Ack LED-I**	[Operation / Status Display / Sys]
⇩	*Module input state: LEDs acknowledgement by digital input*

Sys . **Ack BO-I**	[Operation / Status Display / Sys]
⇩	*Module input state: Acknowledgement of the binary Output Relays*

Sys . **Ack Scada-I**	[Operation / Status Display / Sys]
⇩	*Module input state: Acknowledge latched SCADA signals.*

Sys . **PS1-I** **...** Sys . **PS4-I**	[Operation / Status Display / Sys]
⇩	*State of the module input respectively of the signal, that should activate this Parameter Setting Group.*

5.4 Sys: Signals (Output States)

Sys . **Reboot**	[Operation / Status Display / Sys]
⇧	*Signal: Rebooting the device.* *Device Start-up Codes: 1=Normal Start-up; 2=Reboot by the Operator; 3=Reboot by means of Super Reset; 4=outdated; 5=outdated; 6=Unknown Error Source; 7=Forced Reboot (initiated by the main processor); 8=Exceeded Time Limit of the Protection Cycle; 9= Forced Reboot (initiated by the digital signal processor); 10=Exceeded Time Limit of the Measured Value Processing; 11=Sags of the Supply Voltage; 12=Illegal Memory Access.*

Sys . **Act Set**	[Operation / Status Display / Sys] [Protection Para / PSet-Switch]
⇧	*Signal: Active Parameter Set*

Sys . **PS 1**	[Operation / Status Display / Sys]
⇧	*Signal: The currently active Parameter Set is PS 1*

Sys . **PS 2**	[Operation / Status Display / Sys]
⇧	*Signal: The currently active Parameter Set is PS 2*

Sys . **PS 3**	[Operation / Status Display / Sys]
⇧	*Signal: The currently active Parameter Set is PS 3*

Sys . **PS 4**	[Operation / Status Display / Sys]
⇧	*Signal: The currently active Parameter Set is PS 4*

Sys . **PSS manual**	[Operation / Status Display / Sys]
⇧	*Signal: Manual Switch over of a Parameter Set*

Sys . **PSS via Scada**	[Operation / Status Display / Sys]
⇧	*Signal: Parameter Set Switch via Scada. Write into this output byte the integer of the parameter set that should become active (e.g. 4 => Switch onto parameter set 4).*

Sys . **PSS via Inp fct**	[Operation / Status Display / Sys]
⇧	*Signal: Parameter Set Switch via input function*

Sys . **min 1 param changed**	[Operation / Status Display / Sys]
⇧	*Signal: At least one parameter has been changed*

Sys . **Setting Lock Bypass**	[Operation / Status Display / Sys]
⇧	*Signal: Short-period unlock of the Setting Lock*

Sys . **Ack LED**	[Operation / Status Display / Sys]
⇧	*Signal: LEDs acknowledgement*

Sys . **Ack BO**	[Operation / Status Display / Sys]
⇧	*Signal: Acknowledgement of the Binary Outputs*

Sys . **Ack Scada**	[Operation / Status Display / Sys]
⇧	*Signal: Acknowledge latched SCADA signals*

Sys . **Ack TripCmd**	[Operation / Status Display / Sys]
⇧	*Signal: Reset Trip Command*

Sys . **Ack LED-HMI**	[Operation / Status Display / Sys]
⇧	*Signal: LEDs acknowledgement, triggered at the HMI*

Sys . **Ack BO-HMI**	[Operation / Status Display / Sys]
⇧	*Signal: Acknowledgement of the Binary Outputs, triggered at the HMI*

Sys . **Ack Scada-HMI**	[Operation / Status Display / Sys]
⇧	*Signal: Acknowledge latched SCADA signals, triggered at the HMI*

Sys . **Ack TripCmd-HMI**	[Operation / Status Display / Sys]
⇧	*Signal: Reset Trip Command, triggered at the HMI*

Sys . **Ack LED-Sca**	[Operation / Status Display / Sys]
	Signal: LEDs acknowledgement, triggered via SCADA

Sys . **Ack BO-Sca**	[Operation / Status Display / Sys]
	Signal: Acknowledgement of the Binary Outputs, triggered via SCADA

Sys . **Ack Counter-Sca**	[Operation / Status Display / Sys]
	Signal: Reset of all Counters, triggered via SCADA

Sys . **Ack Scada-Sca**	[Operation / Status Display / Sys]
	Signal: Acknowledge latched SCADA signals, triggered via SCADA

Sys . **Ack TripCmd-Sca**	[Operation / Status Display / Sys]
	Signal: Reset Trip Command, triggered via SCADA

Sys . **Res OperationsCr**	[Operation / Status Display / Sys]
	Signal:: Res OperationsCr

Sys . **Res AlarmCr**	[Operation / Status Display / Sys]
	Signal:: Res AlarmCr

Sys . **Res TripCmdCr**	[Operation / Status Display / Sys]
	Signal:: Res TripCmdCr

Sys . **Res TotalCr**	[Operation / Status Display / Sys]
	Signal:: Res TotalCr

5.5 Sys: Values

Sys . **Hours Counter**	[Operation / History / TotalCr]
	Resettable device operation hours counter. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.

Sys . **Operating hours Cr**	[Operation / Count and RevData / Sys]
	Operating hours counter of the protective device

Sys . **DM version**	[Device Para / Version]
3.7.b	3.7.b .
✎	*Version of the device model*

Sys . **SW version**	[Device Para / Version]
✎	*Version of the device firmware*

Sys . **Build**	[Device Para / Version]
✎	*Build Number*

Sys . **CAT No**	[Device Para / Version]
✎	*»CAT No.«, Order Code as printed on the nameplate of the device.*

Sys . **REV.**	[Device Para / Version]
✎	*Revision (as printed on the nameplate of the device).*

Sys . **S/N**	[Device Para / Version]
✎	*The serial number of the device.*

Sys . **Bootloader Build**	[Device Para / Version]
✎	*Build number of the bootloader*

6 Measured Values

- HMI – front-panel: ⇨ “2.6.3 HMI: Values”
- VT – Voltage Transformer: ⇨ “4.2.3 VT: Values”
- CT – Current Transformer: ⇨ “4.3.3 CT: Values”
- System: ⇨ “5.5 Sys: Values”
- PQSCr – Power and Energy: ⇨ “6.1.4 PQSCr: Values”
- Modbus: ⇨ “8.5.5 Modbus: Values”
- IEC 61850 – IEC 61850 communication: ⇨ “8.6.4 IEC 61850: Values”
- IEC103 – IEC 60870-5-103 communication: ⇨ “8.7.4 IEC103: Values”
- IEC104 – IEC 60870-5-104 communication: ⇨ “8.8.4 IEC104: Values”
- Profibus – Profibus Module: ⇨ “8.9.5 Profibus: Values”
- SNTP – SNTP-Module: ⇨ “8.11.5 SNTP: Values”
- MStart – Motor Start: ⇨ “9.5.6 MStart: Values And Counters”
- URTD – Universal Resistance Temperature Detector: ⇨ “9.20.4 URTD: Values”
- RTD – Temperature Protection Module: ⇨ “9.21.6 RTD: Values And Counters”
- Control: ⇨ “10.6 Ctrl: Values”
- Breaker Wear: ⇨ “10.7.5.4 SG[1]: Values”
- Disturb rec – After a trigger event has become true, the disturbance recorder writes analogue and digital tracks: ⇨ “12.2.5 Disturb rec: Values”
- Sgen – Sine wave generator: ⇨ “15.1.6 Sgen: Values”

6.1 PQSCr – Power and Energy

6.1.1 PQSCr: Settings

PQSCr . **Power Units**	[Device Para / Measurem Display / General Settings]	
Power Auto Scaling	Power Auto Scaling, kW/kVAr/kVA, MW/MVAr/MVA, GW/GVAr/GVA ↳ 1..n Power Scaling.	S.3
	Power Units	

PQSCr . **Energy Units**	[Device Para / Measurem Display / General Settings]	
MWh/MVArh/MVAh	Energy Auto Scaling, kWh/kVArh/kVAh, MWh/MVArh/MVAh, GWh/GVArh/GVAh ↳ 1..n Energy Scaling.	S.3
	Energy Units	

PQSCr . **S, P, Q Cutoff Level**	[Device Para / Measurem Display / Power]	
0.005Sn	0.0Sn . . . 0.100Sn	S.3
	The Active/Reactive/Apparent Power shown in the Display or within the PC Software will be displayed as zero, if the absolute value of the corresponding Power falls below this Cutoff Level. This parameter has no impact on recorders.	

6.1.2 PQSCr: Direct Controls

PQSCr . **Res all Energy Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ↳ Mode.	P.1
◉	*Reset of all Energy Counters*	

6.1.3 PQSCr: Signals (Output States)

PQSCr . **Cr OflwW Ws Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Ws Net will overflow soon

PQSCr . **Cr OflwW Wp Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Wp Net will overflow soon

PQSCr . **Cr OflwW Wp+**	[Operation / Status Display / PQSCr]
	Signal: Counter Wp+ will overflow soon

PQSCr . **Cr OflwW Wp-**	[Operation / Status Display / PQSCr]
	Signal: Counter Wp- will overflow soon

PQSCr . **Cr OflwW Wq Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Wq Net will overflow soon

PQSCr . **Cr OflwW Wq+**	[Operation / Status Display / PQSCr]
	Signal: Counter Wq+ will overflow soon

PQSCr . **Cr OflwW Wq-**	[Operation / Status Display / PQSCr]
	Signal: Counter Wq- will overflow soon

PQSCr . **Cr Oflw Ws Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Ws Net

PQSCr . **Cr Oflw Wp Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wp Net

PQSCr . **Cr Oflw Wp+**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wp+

PQSCr . **Cr Oflw Wp-**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wp-

PQSCr . **Cr Oflw Wq Net**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wq Net

PQSCr . **Cr Oflw Wq+**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wq+

PQSCr . **Cr Oflw Wq-**	[Operation / Status Display / PQSCr]
	Signal: Counter Overflow Wq-

PQSCr . **Res all Energy Cr**	[Operation / Status Display / PQSCr]
	Signal: Reset of all Energy Counters

6.1.4 PQSCr: Values

PQSCr . **S**	[Operation / Measured Values / Power]
	Measured Value (Calculated): Apparent power (fundamental)

PQSCr . **P**	[Operation / Measured Values / Power]
	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (fundamental)

PQSCr . **Q**	[Operation / Measured Values / Power]
	Measured value (calculated): Reactive power (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) (fundamental)

PQSCr . **cos phi**	[Operation / Measured Values / Power]
	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)

PQSCr . **P 1**	[Operation / Measured Values / Power]
	Measured value (calculated): Active power in positive sequence system (P- = Fed Active Power, P+ = Consumpted Active Power)

PQSCr . **Q 1**	[Operation / Measured Values / Power]
	Measured value (calculated): Reactive power in positive sequence system (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power)

PQSCr . **S RMS**	[Operation / Measured Values / Power RMS]
	Measured Value (Calculated): Apparent power (RMS)

PQSCr . **P RMS**	[Operation / Measured Values / Power RMS]
	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (RMS)

PQSCr . **cos phi RMS**	[Operation / Measured Values / Power RMS]
	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)

PQSCr . **Wp+**	[Operation / Measured Values / Energy]
	Positive Active Power is consumed active energy

PQSCr . **Wp-**	[Operation / Measured Values / Energy]
	Negative Active Power (Fed Energy)

PQSCr . **Wq+**	[Operation / Measured Values / Energy]
	Positive Reactive Power is consumed Reactive Energy

PQSCr . **Wq-**	[Operation / Measured Values / Energy]
	Negative Reactive Power (Fed Energy)

PQSCr . **Ws Net**	[Operation / Measured Values / Energy]
	Absolute Apparent Power Hours

PQSCr . **Wp Net**	[Operation / Measured Values / Energy]
	Absolute Active Power Hours

PQSCr . **Wq Net**	[Operation / Measured Values / Energy]
	Absolute Reactive Power Hours

PQSCr . **Start Date/Time**	[Operation / Measured Values / Energy]
	Energy counters run since... (Date and time of last reset)

6.1.5 PQSCr: Statistical Values

PQSCr . **S avg (Demand)**	[Operation / Statistics / Demand / Power Demand]
☑	*Average of the apparent power*

PQSCr . **P avg**	[Operation / Statistics / Demand / Power Demand]
☑	*Average of the active power*

PQSCr . **Q avg (Demand)**	[Operation / Statistics / Demand / Power Demand]
☑	*Average of the reactive power*

PQSCr . **VA Peak (Demand)**	[Operation / Statistics / Demand / Power Demand]
☑	*VA Peak value, RMS value*

PQSCr . **Watt Peak (Demand)**	[Operation / Statistics / Demand / Power Demand]
☑	*WATTS Peak value, RMS value*

PQSCr . **VAr Peak (Demand)**	[Operation / Statistics / Demand / Power Demand]
☑	*VARs Peak value, RMS value*

PQSCr . **S max**	[Operation / Statistics / Max / Power]
☑	*Maximum value of the apparent power*

PQSCr . **P max**	[Operation / Statistics / Max / Power]
☑	*Maximum value of the active power*

PQSCr . **Q max**	[Operation / Statistics / Max / Power]
☑	*Maximum value of the reactive power*

PQSCr . **cos phi max RMS**	[Operation / Statistics / Max / Power]
☑	*Maximum value of the power factor: Sign Convention: sign(PF) = sign(P)*

PQSCr . **cos phi max**	[Operation / Statistics / Max / Power]
☑	*Maximum value of the power factor: Sign Convention: sign(PF) = sign(P)*

PQSCr . **S min**	[Operation / Statistics / Min / Power]
☑	*Minimum value of the apparent power*

PQSCr . **P min**	[Operation / Statistics / Min / Power]
☑	*Minimum value of the active power*

PQSCr . **Q min**	[Operation / Statistics / Min / Power]
☑	*Minimum value of the reactive power*

PQSCr . **cos phi min RMS**	[Operation / Statistics / Min / Power]
☑	*Minimum value of the power factor: Sign Convention: sign(PF) = sign(P)*

PQSCr . **cos phi min**	[Operation / Statistics / Min / Power]
☑	*Minimum value of the power factor: Sign Convention: sign(PF) = sign(P)*

7 Statistics

- VT – Voltage Transformer: ⮡ “4.2.4 VT: Statistical Values”
- CT – Current Transformer: ⮡ “4.3.4 CT: Statistical Values”
- PQSCr – Power and Energy: ⮡ “6.1.5 PQSCr: Statistical Values”
- MStart – Motor Start: ⮡ “9.5.7 MStart: Statistical Values”
- URTD – Universal Resistance Temperature Detector: ⮡ “9.20.5 URTD: Statistical Values”

7.1 Statistics: Settings

Statistics . **Start I Demand via:**	[Device Para / Statistics / Demand / Current Demand]	
Duration	Duration, StartFct ⮡ Duration.	S.3
	Statistics/Demand Management: Start Current demand by the set trigger.	

Statistics . **Start I Demand Fc**	[Device Para / Statistics / Demand / Current Demand]	
“-” *Only available if:* • Statistics . Start I Demand via: = StartFct	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	If the trigger for Current Demand has been set to “StartFct”: Start of the calculation as soon as the assigned signal becomes true.	

Statistics . **ResFc I Demand**	[Device Para / Statistics / Demand / Current Demand]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Resetting of Statistics - Current Demand (avg, peak avg)	

Statistics . **Duration I Demand**	[Device Para / Statistics / Demand / Current Demand]	
15 s *Only available if:* • Statistics . Start I Demand via: = Duration	2 s . . . 30 d ⮡ Duration.	S.3
	Recording time	

Statistics . **Window I Demand**	[Device Para / Statistics / Demand / Current Demand]	
sliding	sliding, fixed ⮡ Window configuration.	S.3
	Window configuration	

Statistics . **Start P Demand via:**	[Device Para / Statistics / Demand / Power Demand]	
Duration	Duration, StartFct ⮡ Duration.	S.3
	Statistics/Demand Management: Start Active Power demand by the set trigger.	

Statistics . **Start P Demand Fc**	[Device Para / Statistics / Demand / Power Demand]	
"-" *Only available if:* • Statistics . Start P Demand via: = StartFct	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	If the trigger for Active Power Demand has been set to "StartFct": Start of the calculation as soon as the assigned signal becomes true.	

Statistics . **ResFc P Demand**	[Device Para / Statistics / Demand / Power Demand]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Resetting of Statistics - Power Demand (avg, peak avg)	

Statistics . **Duration P Demand**	[Device Para / Statistics / Demand / Power Demand]	
15 s *Only available if:* • Statistics . Start P Demand via: = Duration	2 s . . . 30 d ⮡ Duration.	S.3
	Recording time	

Statistics . **Window P Demand**	[Device Para / Statistics / Demand / Power Demand]	
sliding	sliding, fixed ⮡ Window configuration.	S.3
	Window configuration	

Statistics . **ResFc Max**	[Device Para / Statistics / Min / Max]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Resetting of all Maximum values	

Statistics . **ResFc Min**	[Device Para / Statistics / Min / Max]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Resetting of all Minimum values	

7.2 Statistics: Direct Controls

Statistics . **ResFc all**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
	Resetting of all Statistic values (Current Demand, Power Demand, Min, Max)	

Statistics . **ResFc Max**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
	Resetting of all Maximum values	

Statistics . **ResFc Min**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
	Resetting of all Minimum values	

Statistics . **ResFc I Demand**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Resetting of Statistics - Current Demand (avg, peak avg)*	

Statistics . **ResFc P Demand**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Resetting of Statistics - Power Demand (avg, peak avg)*	

7.3 Statistics: Input States

Statistics . **StartFc I Demand-I**	[Operation / Status Display / Statistics]
	State of the module input: Start of the Statistics of the Current Demand

Statistics . **StartFc P Demand-I**	[Operation / Status Display / Statistics]
	State of the module input: Start of the Statistics of the Active Power Demand

7.4 Statistics: Signals (Output States)

Statistics . **ResFc all**	[Operation / Status Display / Statistics]
	Signal: Resetting of all Statistic values (Current Demand, Power Demand, Min, Max)

Statistics . **ResFc I Demand**	[Operation / Status Display / Statistics]
	Signal: Resetting of Statistics - Current Demand (avg, peak avg)

Statistics . **ResFc P Demand**	[Operation / Status Display / Statistics]
	Signal: Resetting of Statistics - Power Demand (avg, peak avg)

Statistics . **ResFc Max**	[Operation / Status Display / Statistics]
	Signal: Resetting of all Maximum values

Statistics . **ResFc Min**	[Operation / Status Display / Statistics]
⇫	*Signal: Resetting of all Minimum values*

7.5 Statistics: Counters

Statistics . **Res Cr I Demand**	[Operation / Statistics / Demand / Current Demand]
#	*Number of resets since the last device restart. The timestamp shows date and time of the last reset.*

Statistics . **Res Cr P Demand**	[Operation / Statistics / Demand / Power Demand]
#	*Number of resets since the last device restart. The timestamp shows date and time of the last reset.*

Statistics . **Res Cr Max values**	[Operation / Statistics / Max / Voltage] **. . .** [Operation / Statistics / Max / URTD]
#	*Number of resets since the last device restart. The timestamp shows date and time of the last reset.*

Statistics . **Res Cr Min values**	[Operation / Statistics / Min / Voltage] [Operation / Statistics / Min / Current] [Operation / Statistics / Min / Power]
#	*Number of resets since the last device restart. The timestamp shows date and time of the last reset.*

8 Communication

8.1 Scada: Device Planning Parameters

Scada . **Protocol**	[Device planning]	
“-”	“-” . . . Profibus Used Protocol.	S.3
	Select the SCADA protocol to be used.	

8.2 Scada: Signals (Output States)

Scada . **SCADA connected**	[Operation / Status Display / Scada]
	At least one SCADA System is connected to the device.

Scada . **SCADA not connected**	[Operation / Status Display / Scada]
	No SCADA System is connected to the device

8.3 TcpIp

TCP/IP config	[Device Para / TCP/IP / TCP/IP config]
	This item represents a special dialog. (See the Technical Manual for details.) *configuration of the TCP/IP protocol*

8.3.1 TcpIp: Settings

TcpIp . **Keep Alive Time**	[Device Para / TCP/IP / Advanced Settings]	
720s	1s ... 7200s	S.3
	Keep Alive Time is the duration between two keep alive transmissions in idle condition	

TcpIp . **Keep Alive Interval**	[Device Para / TCP/IP / Advanced Settings]	
15s	1s ... 60s	S.3
	Keep Alive Interval is the duration between two successive keep alive retransmissions, if the acknowledgement to the previous keepalive transmission was not received.	

TcpIp . **Keep Alive Retry**	[Device Para / TCP/IP / Advanced Settings]	
3	3 ... 3	S.3
	Keep alive retry is the number of retransmissions to be carried out before declaring that the remote end is not available.	

8.4 DNP3 – Distributed Network Protocol

8.4.1 DNP3: Settings

DNP3 . **Function**	[Device Para / DNP3 / Communication]	
inactive	inactive, active ⮡ Mode.	S.3
	Permanent activation or deactivation of module/stage.	

DNP3 . **IP Port Number**	[Device Para / DNP3 / Communication]	
20000	0 ... 65535	S.3
	IP Port Number. *In general it is recommended to keep the default value. If this is not possible then select a number out of the private range 49152-52151 or 52164-65535 that is not yet in use within your network.*	

DNP3 . **Baud rate**	[Device Para / DNP3 / Communication]	
19200	1200 ... 115200 ⮡ Baud rate.	S.3
	Baud rate for communication	

DNP3 . **Frame Layout**	[Device Para / DNP3 / Communication]	
8E1	8E1, 8O1, 8N1, 8N2 ⮡ Byte Frame.	S.3
	Frame Layout	

DNP3 . **Optical rest position**	[Device Para / DNP3 / Communication]	
Light on *Avail. depends on device type.*	Light off, Light on ⮡ Optical rest position.	S.3
	Optical rest position	

DNP3 . **SelfAddress**	[Device Para / DNP3 / Communication]	
inactive	inactive, active ↳ Mode.	S.3
	Support of self (automatic) addresses	

DNP3 . **DataLink confirm**	[Device Para / DNP3 / Communication]	
Never	Never, Always, On_Large ↳ Communication Start Variants.	S.3
	Enables or disables the data layer confirmation (ack).	

DNP3 . **t-DataLink confirm**	[Device Para / DNP3 / Communication]	
1s	0.1s . . . 10.0s	S.3
	Data layer confirmation timeout	

DNP3 . **DataLink num retries**	[Device Para / DNP3 / Communication]	
3	0 . . . 255	S.3
	Number of repetition of data link packet sending after failing	

DNP3 . **Direction Bit**	[Device Para / DNP3 / Communication]	
inactive	inactive, active ↳ Mode.	S.3
	Enables Direction Bit functionality. The Direction Bit is 0 for SlaveStation and 1 for MasterStation	

DNP3 . **Max Frame Size**	[Device Para / DNP3 / Communication]	
255	64 . . . 255	S.3
	This value is used to limit the net Frame Size	

DNP3 . **Test Link Period**	[Device Para / DNP3 / Communication]	
0s	0.0s . . . 120.0s	S.3
	This value specifies the time period when to send a Test Link-Frame	

DNP3 . **AppLink confirm**	[Device Para / DNP3 / Communication]	
Always	Never, Always, Event ↳ _AL_ResponseType_k.	S.3
🔧	*Determines if the device will request that the Application Layer response be confirmed or not*	

DNP3 . **t-AppLink confirm**	[Device Para / DNP3 / Communication]	
5s	0.1s . . . 10.0s	S.3
🔧	*Application layer response timeout*	

DNP3 . **AppLink num retries**	[Device Para / DNP3 / Communication]	
0	0 . . . 255	S.3
🔧	*The number of times the device will retransmit an Application Layer fragment*	

DNP3 . **Unsol Reporting**	[Device Para / DNP3 / Communication]	
inactive	inactive, active ↳ Mode.	S.3
🔧	*Enables unsolicited reporting. This is available only for DNP3 TCP connections, and for DNP3 RTU in case of a peer-to-peer connection.*	

DNP3 . **Unsol Reporting Timeout**	[Device Para / DNP3 / Communication]	
10s	1.0s . . . 60.0s	S.3
🔧	*Set the amount of time that the outstation will wait for an Application Layer confirmation back from the master indicating that the master received the unsolicited response message.*	

DNP3 . **Unsol Reporting Retry**	[Device Para / DNP3 / Communication]	
2	0 . . . 255	S.3
🔧	*Set the number of retries that an outstation transmits in each unsolicited response series if it does not receive confirmation back from the master.*	

DNP3 . **TestSeqNo**	[Device Para / DNP3 / Communication]	
inactive	inactive, active ↳ Mode.	S.3
🔧	*Test if sequence number of request is incremented. If it is not correctly incremented the request will be ignored. It is recommended to have it inactive but some older DNP implementations need it activated.*	

DNP3 . **TestSBO**	[Device Para / DNP3 / Communication]	
active	inactive, active └⇒ Mode.	S.3
	It enables a stricter comparing of SBO and operate command. For older DNP versions it is recommanded to deactivated it.	

DNP3 . **Timeout SBO**	[Device Para / DNP3 / Communication]	
30s	1.0s . . . 60.0s	S.3
	DNP Outputs can be controlled in a two stage procedure (SBO: Select Before Operate). These outputs are to be selected first by a Select command. After this the bit is reserved for this Operate request. This setting defines the timer for this reservation: After the timer has elapsed the bit is released.	

DNP3 . **ColdRestart**	[Device Para / DNP3 / Communication]	
inactive	inactive, active └⇒ Mode.	S.3
	Enables support for Cold Restart function.	

DNP3 . **Deadb integr time**	[Device Para / DNP3 / Communication]	
1	0 . . . 300	S.3
	Deadband integration time.	

DNP3 . **BinaryInput 0** **. . .** DNP3 . **BinaryInput 63**	[Device Para / DNP3 / Point map / Binary Inputs]	
“-”	“-” . . . Sys . Internal test state └⇒ 1..n, Assignment List.	S.3
	Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.	

DNP3 . **DoubleBitInput 0** . . . DNP3 . **DoubleBitInput 5**	[Device Para / DNP3 / Point map / Double Bit Inputs]	
“-”	“-”, SG[1] . Pos ⮡ 1..n, Assignment List.	S.3
	Double Bit Digital Input (DNP). This corresponds to a double bit binary output of the protective device.	

DNP3 . **BinaryCounter 0** . . . DNP3 . **BinaryCounter 7**	[Device Para / DNP3 / Point map / BinaryCounter]	
“-”	“-” . . . Sys . Hours Counter ⮡ 1..n, Assignment List.	S.3
	Counter can be used to report counter values to the DNP master.	

DNP3 . **Analog value 0** . . . DNP3 . **Analog value 31**	[Device Para / DNP3 / Point map / Analog Input]	
“-”	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
	Analog value can be used to report values to the master (DNP)	

DNP3 . **Scale Factor 0** . . . DNP3 . **Scale Factor 31**	[Device Para / DNP3 / Point map / Analog Input]	
1	0.001 . . . 1000000 ⮡ Scale Factor.	S.3
	The scale factor is used to convert the measured value in an integer format	

DNP3 . **Dead Band 0** ... DNP3 . **Dead Band 31**	[Device Para / DNP3 / Point map / Analog Input]	
1%	0.01% ... 100.00%	S.3
	If a change of measured value is greater than the deadband value it will be reported to the master.	

8.4.2 DNP3: Direct Controls

DNP3 . **Res all Diag Cr**	[Operation / Count and RevData / DNP3] [Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	S.3
	Reset all diagnosis counters	

DNP3 . **Slave Id**	[Device Para / DNP3 / Communication]	
1	0 ... 65519	S.3
	SlaveId defines the DNP3 address of this device (Outstation)	

DNP3 . **Master Id**	[Device Para / DNP3 / Communication]	
65500	0 ... 65519	S.3
	MasterId defines the DNP3 address of master (SCADA)	

8.4.3 DNP3: Input States

DNP3 . **BinaryInput0-I** ... DNP3 . **BinaryInput63-I**	[Operation / Status Display / DNP3 / Binary Inputs]
	Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.

DNP3 . **DoubleBitInput0-I** ... DNP3 . **DoubleBitInput5-I**	[Operation / Status Display / DNP3 / Double Bit Inputs]
	Double Bit Digital Input (DNP). This corresponds to a double bit binary output of the protective device.

8.4.4 DNP3: Signals (Output States)

DNP3 . **busy**	[Operation / Status Display / DNP3 / State]
	This message is set if the protocol is started. It will be reset if the protocol is shut down.

DNP3 . **ready**	[Operation / Status Display / DNP3 / State]
	The message will be set if the protocol is successfully started and ready for data exchange.

DNP3 . **active**	[Operation / Status Display / DNP3 / State]
	The communication with the Master (SCADA) is active. *Note that for TCP/UDP, this state is permanently “Low” unless »DataLink confirm« is set to “Always”.*

8.4.5 DNP3: Counters

DNP3 . **NReceived**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of received characters*

DNP3 . **NSent**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of sent characters*

DNP3 . **NBadFramings**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of bad framings. A large number indicates a disturbed serial connection.*

DNP3 . **NBadParities**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of parity errrors. A large number indicates a disturbed serial connection.*

DNP3 . **NBreakSignals**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of break signals. A large number indicates a disturbed serial connection.*

DNP3 . **NBadChecksum**	[Operation / Count and RevData / DNP3]
#	*Diagnostic counter: Number of frames received with bad checksum.*

8.5 Modbus

8.5.1 Modbus: Settings

Modbus . **t-call**	[Device Para / Modbus / Communication / General Settings]	
10s	1s ... 3600s	S.3
	If there is no request telegram sent from Scada to the device after expiry of this time - the device concludes a communication failure within the Scada system.	

Modbus . **Scada CmdBlo**	[Device Para / Modbus / Communication / General Settings]	
inactive	inactive, active ↳ Mode.	S.3
	Activating (allowing)/ Deactivating (disallowing) the blocking of the Scada Commands	

Modbus . **Disable Latching**	[Device Para / Modbus / Communication / General Settings]	
inactive	inactive, active ↳ Mode.	S.3
	Disable Latching: If this parameter is active (true), none of the Modbus states will be latched. That means that trip signals wont be latched by Modbus.	

Modbus . **AllowGap**	[Device Para / Modbus / Communication / General Settings]	
inactive	inactive, active ↳ Mode.	S.3
	If this parameter is active (True), the user can request a set of modbus register without getting an exception, because of invalid address in the requested array. The invalid addresses have a special value 0xFAFA, but the user is responsible for ignoring invalid addresses. Attention: This special value can be valid, if address is valid.	

Modbus . **Optical rest position**	[Device Para / Modbus / Communication / General Settings]	
Light on *Avail. depends on device type.*	Light off, Light on ↳ Optical rest position.	S.3
	Optical rest position	

Modbus . **TCP Port Config**	[Device Para / Modbus / Communication / TCP]	
Default	Default, Private ↳ Port selection.	S.3
	TCP Port Configuration. This parameter needs to be set to "Private" only if another TCP Port than the default one shall be used.	

Modbus . **Port**	[Device Para / Modbus / Communication / TCP]	
502	If: Modbus . TCP Port Config = Default • 502 ... 502 If: Modbus . TCP Port Config = Private • 49152 ... 65535	S.3
	IP Port Number. *In general it is recommended to keep the default value. if this is not possible then select a number out of the private range 49152-52151 or 52164-65535 that is not yet in use within your network.*	

Modbus . **t-timeout**	[Device Para / Modbus / Communication / RTU]	
1s	0.01s ... 10.00s	S.3
	Within this time the answer has to be received by the SCADA system, otherwise the request will be disregarded. In that case the Scada system detects a communication failure and the Scada System has to send a new request.	

Modbus . **Baud rate**	[Device Para / Modbus / Communication / RTU]	
19200	1200, 2400, 4800, 9600, 19200, 38400 ↳ Baud rate.	S.3
	Baud rate	

Modbus . **Physical Settings**	[Device Para / Modbus / Communication / RTU]	
8E1	8E1, 8O1, 8N1, 8N2 ↳ Byte Frame.	S.3
	Digit 1: Number of bits. Digit 2: E=even parity, O=odd parity, N=no parity. Digit 3: Number of stop bits. More information on the parity: It is possible that the last data bit is followed by a parity bit which is used for recognition of communication errors. The parity bit ensures that with even parity ("EVEN") always an even number of bits with valence "1" or with odd parity ("ODD") an odd number of "1" valence bits are transmitted. But it is also possible to transmit no parity bits (here the setting is "Parity = None"). More information on the stop-bits: The end of a data byte is terminated by the stop-bits.	

Modbus . **Config Bin Inp1** ... Modbus . **Config Bin Inp32**	[Device Para / Modbus / Configb Registers / States]	
“-”	“-” . . . Sys . Internal test state └═▷ 1..n, Assignment List.	S.3
	Virtual Digital Input. This corresponds to a virtual binary output of the protective device.	

Modbus . **Latched Config Bin Inp1** ... Modbus . **Latched Config Bin Inp32**	[Device Para / Modbus / Configb Registers / States]	
inactive	inactive, active └═▷ Mode.	S.3
	Latched Configurable Binary Input	

Modbus . **Mapped Meas 1** ... Modbus . **Mapped Meas 16**	[Device Para / Modbus / Configb Registers / Measured Values]	
“-”	“-” . . . PQSCr . Wq- └═▷ 1..n, TrendRecList.	S.3
	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.	

Modbus . **Type of SCADA mapping**	[Device Para / Modbus / Config. Data Obj.]	
Standard	Standard, User-defined └═▷ Type of SCADA mapping.	S.3
	*This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.*	

8.5.2 Modbus: Direct Controls

Modbus . **Res Diagn Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active └⊳ Mode.	P.1
◉	*All Modbus Diagnosis Counters will be reset.*	

Modbus . **Unit ID**	[Device Para / Modbus / Communication / TCP]	
255	1 ... 255	P.1
◉	*The Unit Identifier is used for routing. This parameter is to be set, if a Modbus RTU and a Modbus TCP network should be coupled.*	

Modbus . **Slave ID**	[Device Para / Modbus / Communication / RTU]	
1	1 ... 247	P.1
◉	*Device address (Slave ID) within the bus system. Each device address has to be unique within a bus system.*	

8.5.3 Modbus: Input States

Modbus . **Config Bin Inp1-I** ... Modbus . **Config Bin Inp32-I**	[Operation / Status Display / Modbus / Configb Registers]
⇩	*State of the module input: Config Bin Inp*

8.5.4 Modbus: Signals (Output States)

Modbus . **Transmission RTU**	[Operation / Status Display / Modbus / State]
⇧	*Signal: SCADA active*

Modbus . **Transmission TCP**	[Operation / Status Display / Modbus / State]
⇧	*Signal: SCADA active*

Modbus . **Device Type**	[Operation / Status Display / Modbus / State]
	Device Type: Device type code for relationship between device name and its Modbus code. *Woodward:* *MRI4 - 1000* *MRU4 - 1001* *MRA4 - 1002* *MCA4 - 1003* *MRDT4 - 1005* *MCDTV4 - 1006* *MCDGV4 - 1007* *MRM4 - 1009* *MRMV4 - 1010* *MCDLV4 - 1011*

Modbus . **Comm Version**	[Operation / Status Display / Modbus / State]
	Modbus Communication version. This version number changes if something becomes incompatible between different Modbus releases.

Modbus . **Scada Cmd 1** **...** Modbus . **Scada Cmd 16**	[Operation / Status Display / Modbus / Commands]
	Scada Command

8.5.5 Modbus: Values

Modbus . **Mapped Meas 1** **...** Modbus . **Mapped Meas 16**	[Operation / Count and RevData / Modbus / Measured Values]
	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.

Modbus . **Config info**	[Device Para / Modbus / Config. Data Obj.]
	Configuration comment (entered by the user during SCADA configuration)

Modbus . **Config version**	[Device Para / Modbus / Config. Data Obj.]
	Version of the user-defined SCADA configuration

Modbus . **Config status**	[Device Para / Modbus / Config. Data Obj.]	
Changing	Changing, OK, Config. not avail., Error Config status.	
	Status of the user-defined SCADA configuration. *Possible values:* *- New SCADA configuration is being loaded, but not active yet.* *- The SCADA configuration is active.* *- The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).* *- Unexpected error. Please contact our service-team.*	

8.5.6 Modbus: Counters

Modbus . **NoOfRequestsTotal**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total number of requests. Includes requests for other slaves.*

Modbus . **NoOfRequestsForMe**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total Number of requests for this slave.*

Modbus . **NoOfResponse**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total number of requests having been responded.*

Modbus . **NoOfQueryInvalid**	[Operation / Count and RevData / Modbus / TCP]
#	*Total number of Request errors. Request could not be interpreted*

Modbus . **NoOfInternalError**	[Operation / Count and RevData / Modbus / TCP]
#	*Total Number of Internal errors while interpreting the request.*

Modbus . **NoOfFrameErrors**	[Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Frame Errors. Physically corrupted Frame.*

Modbus . **NoOfParityErrors**	[Operation / Count and RevData / Modbus / RTU]
#	*Total number of parity errors. Physically corrupted Frame.*

Modbus . **NoOfResponsTimeOverruns**	[Operation / Count and RevData / Modbus / RTU]
#	*Total number of requests with exceeded response time. Physically corrupted Frame.*

Modbus . **NoOfOverrunErros**	[Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Overrun Failures. Physically corrupted Frame.*

Modbus . **NoOfBreaks**	[Operation / Count and RevData / Modbus / RTU]
#	*Number of detected communication aborts*

8.6 IEC 61850 – IEC 61850 communication

8.6.1 IEC 61850: Settings

IEC 61850 . **Function**	[Device Para / IEC 61850 / Communication]	
inactive	inactive, active 1..n, OnOffList.	S.3
Permanent activation or deactivation of module/stage.		

IEC 61850 . **Deadb integr time**	[Device Para / IEC 61850 / Communication]	
0	0 ... 300	S.3
Deadband integration time.		

8.6.2 IEC 61850: Direct Controls

IEC 61850 . **ResetStatistic**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
Reset of all IEC61850 diagnostic counters		

8.6.3 IEC 61850: Signals (Output States)

IEC 61850 . **MMS Client connected**	[Operation / Status Display / IEC 61850 / State]
At least one MMS client is connected to the device	

IEC 61850 . **All Goose Subscriber active**	[Operation / Status Display / IEC 61850 / State]
All Goose subscriber in the device are working	

IEC 61850 . **SPCSO1** ... IEC 61850 . **SPCSO32**	[Operation / Status Display / IEC 61850 / ControlInputs]
Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).	

IEC 61850 . **GOSINGGIO1.Ind1.stVal** **. . .** IEC 61850 . **GOSINGGIO2.Ind32.stVal**	[Operation / Status Display / IEC 61850 / Virtual Inputs 1] [Operation / Status Display / IEC 61850 / Virtual Inputs 2]
	Signal: Virtual Input (IEC61850 GGIO Ind): State

IEC 61850 . **GOSINGGIO1.Ind1.q** **. . .** IEC 61850 . **GOSINGGIO2.Ind32.q**	[Operation / Status Display / IEC 61850 / Virtual Inputs 1] [Operation / Status Display / IEC 61850 / Virtual Inputs 2]
	Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input

8.6.4 IEC 61850: Values

IEC 61850 . **GoosePublisherState**	[Operation / Status Display / IEC 61850 / State]
Off	Off, On, Error State.
	State of the GOOSE Publisher (on or off)

IEC 61850 . **GooseSubscriberState**	[Operation / Status Display / IEC 61850 / State]
Off	Off, On, Error State.
	State of the GOOSE Subscriber (on or off)

IEC 61850 . **MmsServerState**	[Operation / Status Display / IEC 61850 / State]
Off	Off, On, Error State.
	State of MMS Server (on or off)

8.6.5 IEC 61850: Counters

IEC 61850 . **NoOfGooseRxAll**	[Operation / Count and RevData / IEC 61850]
#	*Total number of received GOOSE messages including messages for other devices (subscribed and not subscribed messages).*

IEC 61850 . **NoOfGooseRxSubscribed**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of subscribed GOOSE messages including messages with incorrect content.*

IEC 61850 . **NoOfGooseRxCorrect**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of subscribed and correctly received GOOSE messages.*

IEC 61850 . **NoOfGooseRxNew**	[Operation / Count and RevData / IEC 61850]
#	*Number of subscribed and correctly received GOOSE messages with new content.*

IEC 61850 . **NoOfGooseTxAll**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of GOOSE messages that have been published by this device.*

IEC 61850 . **NoOfGooseTxNew**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of new GOOSE messages (modified content) that have been published by this device.*

IEC 61850 . **NoOfServerRequestsAll**	[Operation / Count and RevData / IEC 61850]
#	*Total number of MMS Server requests including incorrect requests.*

IEC 61850 . **NoOfDataReadAll**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of values read from this device including incorrect requests.*

IEC 61850 . **NoOfDataReadCorrect**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of correctly read values from this device.*

IEC 61850 . **NoOfDataWrittenAll**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of values written by this device including incorrect ones.*

IEC 61850 . **NoOfDataWrittenCorrect**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of correctly written values by this device.*

IEC 61850 . **NoOfDataChangeNotification**	[Operation / Count and RevData / IEC 61850]
#	*Number of detected changes within the datasets that are published with GOOSE messages.*

IEC 61850 . **No of Client Connections**	[Operation / Count and RevData / IEC 61850]
#	*Number of active MMS client connections*

8.6.6 IEC 61850 – Virt.Outp.

8.6.6.1 IEC 61850: Settings

IEC 61850 . **COUTGGIO1.Ind1.stVal** **. . .** IEC 61850 . **COUTGGIO1.Ind32.stVal**	[Device Para / IEC 61850 / Virtual Outputs 1]	
“-”	“-” . . . Sys . Internal test state 1..n, Assignment List.	S.3
	Virtual Output. This signal can be assigned or visualized via the SCD file to other devices within the IEC61850 substation.	

8.6.6.2 IEC 61850: Input States

IEC 61850 . **COUTGGIO1.Ind1.stVal-I** **. . .** IEC 61850 . **COUTGGIO1.Ind32.stVal-I**	[Operation / Status Display / IEC 61850 / Virtual Outputs 1]
	Module input state: Binary state of the Virtual Output (GGIO)

8.7 IEC103 – IEC 60870-5-103 communication

8.7.1 IEC103: Settings

IEC103 . **Function**	[Device Para / IEC103 / General Settings]	
inactive	inactive, active ↳ Mode.	S.3
	Activation or deactivation of the IEC103 communication.	

IEC103 . **Baud rate**	[Device Para / IEC103 / General Settings]	
19200	1200, 2400, 4800, 9600, 19200, 38400, 57600 ↳ Baud rate.	S.3
	Baud rate	

IEC103 . **Physical Settings**	[Device Para / IEC103 / General Settings]	
8E1	8E1, 8O1, 8N1, 8N2 ↳ Byte Frame.	S.3
	Digit 1: Number of bits. Digit 2: E=even parity, O=odd parity, N=no parity. Digit 3: Number of stop bits. More information on the parity: It is possible that the last data bit is followed by a parity bit which is used for recognition of communication errors. The parity bit ensures that with even parity ("EVEN") always an even number of bits with valence "1" or with odd parity ("ODD") an odd number of "1" valence bits are transmitted. But it is also possible to transmit no parity bits (here the setting is "Parity = None"). More information on the stop-bits: The end of a data byte is terminated by the stop-bits.	

IEC103 . **Timezone**	[Device Para / IEC103 / General Settings]	
UTC	UTC, Local Time ↳ Timezone.	S.3
	Selection whether the timestamps in IEC103 messages shall be given as UTC or local time. (“Local time” always includes the actual daylight saving settings.)	

IEC103 . **Transfer Disturb Rec**	[Device Para / IEC103 / General Settings]	
inactive	inactive, active ↳ Mode.	S.3
	Activates the transmission of disturbance records	

IEC103 . **Energy Pulse Rate**	[Device Para / IEC103 / General Settings]	
0	0 ... 100	S.3
	The energy values are always transmitted as counter values (i.e. as integer numbers). This setting defines the unit: If “1” is set then each counter increment is 1 kWh, if “2” is set then each counter increment is 2 kWh,etc. The setting “0” has the effect that no energy values are transmitted.	

IEC103 . **t-call**	[Device Para / IEC103 / General Settings]	
60s	1s ... 3600s	S.3
	If there is no request telegram sent from Scada to the device after expiry of this time - the device concludes a communication failure within the Scada system.	

IEC103 . **DFC-Compat.**	[Device Para / IEC103 / General Settings]	
inactive	inactive, active ⮡ Mode.	S.3
	This setting is only required for certain substation implementations. If there should be communication problems related to the Command Response Queue this setting switches the device over to a different behavior.	

IEC103 . **Type of SCADA mapping**	[Device Para / IEC103 / Config. Data Obj.]	
Standard	Standard, User-defined ⮡ Type of SCADA mapping.	S.3
	*This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.*	

IEC103 . **Ex activate test mode**	[Service / Test (Prot inhibit) / Scada / IEC103]	
Sgen . Running	“-” ... Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	The signal assigned to this parameter switches the IEC103 communication into Test Mode.	

IEC103 . **Ex activate Block MD**	[Service / Test (Prot inhibit) / Scada / IEC103]	
“-”	“-” ... Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	The signal assigned to this parameter activates the blocking of IEC103 transmission in monitor direction.	

8.7.2 IEC103: Direct Controls

IEC103 . **Res all Diag Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	S.3
◉	*Reset all diagnosis counters*	

IEC103 . **Slave ID**	[Device Para / IEC103 / General Settings]	
1	1 ... 247	S.3
◉	*Device address (Slave ID) within the bus system. Each device address has to be unique within a bus system.*	

IEC103 . **Activate test mode**	[Service / Test (Prot inhibit) / Scada / IEC103]	
inactive	inactive, active ⮡ Mode.	S.3
◉	*This Direct Control parameter switches the IEC103 communication into Test Mode (or back to nomal mode).*	

IEC103 . **Activate Block MD**	[Service / Test (Prot inhibit) / Scada / IEC103]	
inactive	inactive, active ⮡ Mode.	S.3
◉	*This Direct Control parameter activates (or deactivates) the blocking of IEC103 transmission in monitor direction.*	

8.7.3 IEC103: Signals (Output States)

IEC103 . **Scada Cmd 1** ... IEC103 . **Scada Cmd 10**	[Operation / Status Display / IEC103]
⇫	*Scada Command*

IEC103 . **Transmission**	[Operation / Status Display / IEC103]
⇫	*Signal: SCADA active*

IEC103 . **Failure Event lost**	[Operation / Status Display / IEC103]
	Failure event lost

IEC103 . **Test mode active**	[Operation / Status Display / IEC103]
	Signal: IEC103 communication has been switched over into Test Mode.

IEC103 . **Block MD active**	[Operation / Status Display / IEC103]
	Signal: The blocking of IEC103 transmission in monitor direction has been activated.

8.7.4 IEC103: Values

IEC103 . **Config info**	[Device Para / IEC103 / Config. Data Obj.]
	Configuration comment (entered by the user during SCADA configuration)

IEC103 . **Config version**	[Device Para / IEC103 / Config. Data Obj.]
	Version of the user-defined SCADA configuration

IEC103 . **Config status**	[Device Para / IEC103 / Config. Data Obj.]
Changing	Changing, OK, Config. not avail., Error ⮡ Config status.
	Status of the user-defined SCADA configuration. *Possible values:* *- Changing: New SCADA configuration is being loaded, but not active yet.* *- OK: The SCADA configuration is active.* *- Config. not avail.: The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).* *- Error: Unexpected error. Please contact our service-team.*

8.7.5 IEC103: Counters

IEC103 . **NReceived**	[Operation / Count and RevData / IEC103]
	Total Number of received Messages

IEC103 . **NSent**	[Operation / Count and RevData / IEC103]
#	*Total Number of sent Messages*

IEC103 . **NBadFramings**	[Operation / Count and RevData / IEC103]
#	*Number of bad Messages*

IEC103 . **NBadParities**	[Operation / Count and RevData / IEC103]
#	*Number of Parity Errors*

IEC103 . **NBreakSignals**	[Operation / Count and RevData / IEC103]
#	*Number of Communication Interrupts*

IEC103 . **NInternalError**	[Operation / Count and RevData / IEC103]
#	*Number of Internal Errors*

IEC103 . **NBadCharChecksum**	[Operation / Count and RevData / IEC103]
#	*Number of Checksum Errors*

8.8 IEC104 – IEC 60870-5-104 communication

8.8.1 IEC104: Settings

IEC104 . **Function**	[Device Para / IEC104 / General Settings]	
inactive	inactive, active └─▷ Mode.	S.3
	Activation or deactivation of the IEC104 communication.	

IEC104 . **TCP Port Config**	[Device Para / IEC104 / General Settings]	
Default	Default, Private └─▷ Port selection.	S.3
	TCP Port Configuration. This parameter needs to be set to “Private” only if another TCP Port than the default one shall be used.	

IEC104 . **Port**	[Device Para / IEC104 / General Settings]	
2404	If: IEC104 . TCP Port Config = Default • 2404 ... 2404 If: IEC104 . TCP Port Config = Private • 49152 ... 65535	S.3
	IP Port Number. *In general it is recommended to keep the default value. if this is not possible then select a number out of the private range 49152-52151 or 52164-65535 that is not yet in use within your network.*	

IEC104 . **Timezone**	[Device Para / IEC104 / General Settings]	
UTC	UTC, Local Time └─▷ Timezone.	S.3
	Selection whether the timestamps in the transmitted communication telegrams shall be given as UTC or local time. (“Local time” always includes the actual daylight saving settings.)	

IEC104 . **Deadb integr time**	[Device Para / IEC104 / General Settings]	
1s	0s ... 1000s	S.3
	Deadband integration time.	

IEC104 . **Timeout SBE**	[Device Para / IEC104 / General Settings]	
30s	1s ... 60s	S.3
	The communication outputs can be controlled in a two-stage procedure (SBE: Select Before Execute). These outputs have to be selected first by a Select command. After this the bit is reserved for this Execute request. This setting defines the timer for this reservation: After the timer has elapsed the bit is released.	

IEC104 . **Timeout t0**	[Device Para / IEC104 / Advanced]	
30s	30s ... 30s	S.3
	Timeout of connection establishment	

IEC104 . **Timeout t1**	[Device Para / IEC104 / Advanced]	
15s	15s ... 15s	S.3
	Timeout of send or test APDUs	

IEC104 . **Timeout t2**	[Device Para / IEC104 / Advanced]	
10s	10s ... 10s	S.3
	Timeout for acknowledges in case of no data messages	

IEC104 . **Timeout t3**	[Device Para / IEC104 / Advanced]	
20s	20s ... 20s	S.3
	Timeout for sending test frames in case of a long idle state	

IEC104 . **Param k**	[Device Para / IEC104 / Advanced]	
12	12 ... 12	S.3
	Protocol parameter k	

IEC104 . **Param w**	[Device Para / IEC104 / Advanced]	
8	8 ... 8	S.3
	Protocol parameter w	

IEC104 . **Length of address**	[Device Para / IEC104 / Advanced]	
2	2 ... 2	S.3
	Number of bytes of the Common Address of the ASDU	

IEC104 . **Length of CoT**	[Device Para / IEC104 / Advanced]	
2	2 ... 2	S.3
	Number of bytes of the Cause of Transmission	

IEC104 . **Length of Inf Obj addr**	[Device Para / IEC104 / Advanced]	
3	3 ... 3	S.3
	Number of bytes of the address of the Information Object	

IEC104 . **Update time**	[Device Para / IEC104 / Advanced]	
1s	1s ... 60s	S.3
	This setting specifies the time after which measurement values are refreshed. If cyclic transmission is selected new values are reported after this time has elapsed.	

IEC104 . **Transmit Int. State**	[Device Para / IEC104 / Advanced]	
active	inactive, active ⮡ Mode.	S.3
	If this parameter is set to “active” (default) then the intermediate position of a switchgear, too, is transmitted. This needs to be changed to “inactive” only in the rare case that the substation communication does not support the reporting of intermediate positions.	

IEC104 . **Trans. Cmd. State**	[Device Para / IEC104 / Advanced]	
active	inactive, active ⮡ Mode.	S.3
	_ If false it suppress change events for command states (Same address as cmd)	

IEC104 . **Type of SCADA mapping**	[Device Para / IEC104 / Config. Data Obj.]	
Standard	Standard, User-defined ⮡ Type of SCADA mapping.	S.3
	*This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.*	

8.8.2 IEC104: Direct Controls

IEC104 . **Res all Diag Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	S.3
	Reset all diagnosis counters	

IEC104 . **Common address**	[Device Para / IEC104 / General Settings]	
1	1 . . . 65535	S.3
	Common Address of the ASDU	

8.8.3 IEC104: Signals (Output States)

IEC104 . **Scada Cmd 1** . . . IEC104 . **Scada Cmd 16**	[Operation / Status Display / IEC104]
	Scada Command

IEC104 . **busy**	[Operation / Status Display / IEC104]
	This message is set if the protocol is started. It will be reset if the protocol is shut down.

IEC104 . **ready**	[Operation / Status Display / IEC104]
	The message will be set if the protocol is successfully started and ready for data exchange.

IEC104 . **Transmission**	[Operation / Status Display / IEC104]
	Signal: SCADA active

IEC104 . **Failure Event lost**	[Operation / Status Display / IEC104]
	Failure event lost

8.8.4 IEC104: Values

IEC104 . **Config info**	[Device Para / IEC104 / Config. Data Obj.]
	Configuration comment (entered by the user during SCADA configuration)

IEC104 . **Config version**	[Device Para / IEC104 / Config. Data Obj.]
✎	*Version of the user-defined SCADA configuration*

IEC104 . **Config status**	[Device Para / IEC104 / Config. Data Obj.]
Changing	Changing, OK, Config. not avail., Error ╚▷ Config status.
✎	*Status of the user-defined SCADA configuration.* *Possible values:* *- Changing: New SCADA configuration is being loaded, but not active yet.* *- OK: The SCADA configuration is active.* *- Config. not avail.: The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).* *- Error: Unexpected error. Please contact our service-team.*

8.8.5 IEC104: Counters

IEC104 . **NReceived**	[Operation / Count and RevData / IEC104]
#	*Diagnostic counter: Number of received characters*

IEC104 . **NSent**	[Operation / Count and RevData / IEC104]
#	*Diagnostic counter: Number of sent characters*

IEC104 . **Num. of lost conn.**	[Operation / Count and RevData / IEC104]
#	*Diagnostic counter: Number of lost connections*

IEC104 . **NBadChecksum**	[Operation / Count and RevData / IEC104]
#	*Diagnostic counter: Number of frames received with bad checksum.*

8.9 Profibus – Profibus Module

8.9.1 Profibus: Settings

Profibus . **Little Endian**	[Device Para / Profibus / Bus parameters]	
active	inactive, active ↳ Mode.	S.3
	If this setting is “active” all numbers are transmitted with the byte order Little Endian, otherwise the byte order Big Endian is used. (If all numbers received by your SCADA system should be completely wrong, changing this setting might help.)	

Profibus . **Config Bin Inp 1** **. . .** Profibus . **Config Bin Inp 32**	[Device Para / Profibus / Config Bin Inp 1-16] [Device Para / Profibus / Config Bin Inp 17-32]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	Virtual Digital Input. This corresponds to a virtual binary output of the protective device.	

Profibus . **Latched 1** **. . .** Profibus . **Latched 32**	[Device Para / Profibus / Config Bin Inp 1-16] [Device Para / Profibus / Config Bin Inp 17-32]	
inactive	inactive, active ↳ Mode.	S.3
	Defines whether the Input is latched.	

Profibus . **Type of SCADA mapping**	[Device Para / Profibus / Config. Data Obj.]	
Standard	Standard, User-defined ↳ Type of SCADA mapping.	S.3
	*This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.*	

8.9.2 Profibus: Direct Controls

Profibus . **Slave ID**	[Operation / Status Display / Profibus / State] [Device Para / Profibus / Bus parameters]	
2	2 . . . 125	P.1
◉	*Device address (Slave ID) within the bus system. Each device address has to be unique within a bus system.*	

Profibus . **Reset Comds**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ╚▷ Mode.	P.1
◉	*All Profibus Commands will be reset.*	

8.9.3 Profibus: Input States

Profibus . **Assignment 1-I** **. . .** Profibus . **Assignment 32-I**	[Operation / Status Display / Profibus / Config Bin Inp 1-16] [Operation / Status Display / Profibus / Config Bin Inp 17-32]
⇩	*Module input state: Scada Assignment*

8.9.4 Profibus: Signals (Output States)

Profibus . **Data OK**	[Operation / Status Display / Profibus / State]
⇧	*Data within the Input field are OK (Yes=1)*

Profibus . **SubModul Err**	[Operation / Status Display / Profibus / State]
⇧	*Assignable Signal, Failure in Sub-Module, Communication Failure.*

Profibus . **Connection active**	[Operation / Status Display / Profibus / State]
⇧	*Connection active*

Profibus . **Scada Cmd 1** **. . .** Profibus . **Scada Cmd 16**	[Operation / Status Display / Profibus / Commands]
Scada Command	

8.9.5 Profibus: Values

Profibus . **Slave State**	[Operation / Status Display / Profibus / State]
Baud Search	Baud Search . . . Data exchange State.
Communication State between Slave and Master.	

Profibus . **Baud rate**	[Operation / Status Display / Profibus / State]
-.-	12 Mb/s . . . -.- Baud rate.
The baud rate that has been detected lastly, will still be shown after a connection issue.	

Profibus . **PNO Id**	[Operation / Status Display / Profibus / State]
0C50h	0C50h PNO Id.
PNO Identification Number. GSD Identification Number.	

Profibus . **Config info**	[Operation / Status Display / Profibus / State] [Device Para / Profibus / Config. Data Obj.]
Configuration comment (entered by the user during SCADA configuration)	

Profibus . **Config version**	[Operation / Status Display / Profibus / State] [Device Para / Profibus / Config. Data Obj.]
Version of the user-defined SCADA configuration	

Profibus . **Config status**	[Operation / Status Display / Profibus / State] [Device Para / Profibus / Config. Data Obj.]	
Changing	Changing, OK, Config. not avail., Error Config status.	
	Status of the user-defined SCADA configuration. *Possible values:*	

8.9.6 Profibus: Counters

Profibus . **Master ID**	[Operation / Status Display / Profibus / State]
#	*Device address (Master ID) within the bus system. Each device address has to be unique within a bus system.*

Profibus . **HO Id PSub**	[Operation / Status Display / Profibus / State]
#	*Handoff Id of PbSub*

Profibus . **t-WatchDog**	[Operation / Status Display / Profibus / State]
#	*The Profibus Chip detects a communication issue if this timer is expired without any communication (Parameterising telegram).*

Profibus . **Fr Sync Err**	[Operation / Count and RevData / Profibus]
#	*Frames, that were sent from the Master to the Slave are faulty.*

Profibus . **Num. CRC err.**	[Operation / Count and RevData / Profibus]
#	*Number of CRC errors that the subsystem manager has recognized in the received response frames from the subsystem. (Each error caused a subsystem reset.)*

Profibus . **Num. frame loss err.**	[Operation / Count and RevData / Profibus]
#	*Number of frame loss errors that the subsystem manager has recognized in the received response frames from the subsystem. (Each error caused a subsystem reset.)*

Profibus . **Num. trig. CRC err.**	[Operation / Count and RevData / Profibus]
#	*Number of CRC errors that the subsystem has recognized in the received trigger frames from the host.*

Profibus . **Num. subsys. res.**	[Operation / Count and RevData / Profibus]
#	*Number of subsystem restarts or resets that the subsystem manager has caused.*

8.10 IRIG-B – IRIG-B-Module

8.10.1 IRIG-B: Device Planning Parameters

IRIG-B . **Mode**	[Device planning]	
“-”	“-”, use ⮡ Mode.	S.3
	IRIG-B-Module, general operation mode	

8.10.2 IRIG-B: Settings

IRIG-B . **Function**	[Device Para / Time / TimeSync / IRIG-B]	
inactive	inactive, active ⮡ Mode.	S.3
	Permanent activation or deactivation of module/stage.	

IRIG-B . **IRIG-B00X**	[Device Para / Time / TimeSync / IRIG-B]	
IRIGB-000	IRIGB-000 . . . IRIGB-007 ⮡ IRIG-B00X.	S.3
	Determination of the Type: IRIG-B00X. IRIG-B types differ in types of included “Coded Expressions” (year, control-functions, straight-binary-seconds).	

8.10.3 IRIG-B: Direct Controls

IRIG-B . **Res IRIG-B Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
	Resetting of the Diagnosis Counters: IRIG-B	

8.10.4 IRIG-B: Signals (Output States)

IRIG-B . **IRIG-B active**	[Operation / Status Display / TimeSync / IRIG-B]
	Signal: If there is no valid IRIG-B signal for 60 sec, IRIG-B is regarded as inactive.

IRIG-B . **High-Low Invert**	[Operation / Status Display / TimeSync / IRIG-B]
⇪	*Signal: The High and Low signals of the IRIG-B are inverted. This does NOT mean that the wiring is faulty. If the wiring is faulty no IRIG-B signal will be detected.*

IRIG-B . **Control Signal1** **...** IRIG-B . **Control Signal18**	[Operation / Status Display / TimeSync / IRIG-B]
⇪	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*

8.10.5 IRIG-B: Counters

IRIG-B . **NoOfFramesOK**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Total Number valid Frames.*

IRIG-B . **NoOfFrameErrors**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Total Number of Frame Errors. Physically corrupted Frame.*

IRIG-B . **Edges**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Edges: Total number of rising and falling edges. This signal indicates if a signal is available at the IRIG-B input.*

8.11 SNTP – SNTP-Module

8.11.1 SNTP: Device Planning Parameters

SNTP . **Mode**	[Device planning]	
“-”	“-”, use ⮱ Mode.	S.3
	SNTP-Module, general operation mode	

8.11.2 SNTP: Settings

SNTP . **Server1**	[Device Para / Time / TimeSync / SNTP]	
inactive	inactive, active ⮱ Mode.	S.3
	Server 1	

SNTP . **IP Byte1** ... SNTP . **IP Byte4**	[Device Para / Time / TimeSync / SNTP]	
0	0 ... 255	S.3
	IP1.IP2.IP3.IP4	

SNTP . **Server2**	[Device Para / Time / TimeSync / SNTP]	
inactive	inactive, active ⮱ Mode.	S.3
	Server 2	

8.11.3 SNTP: Direct Controls

SNTP . **Res Counter**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Reset all Counters.*	

8.11.4 SNTP: Signals (Output States)

SNTP . **SNTP active**	[Operation / Status Display / TimeSync / SNTP]
⇪	*Signal: If there is no valid SNTP signal for 120 sec, SNTP is regarded as inactive.*

8.11.5 SNTP: Values

SNTP . **Used Server**	[Operation / Status Display / TimeSync / SNTP]	
None	Server1, Server2, None ⮡ Server State.	
✎	*Which Server is used for SNTP synchronization.*	

SNTP . **PrecServer1**	[Operation / Status Display / TimeSync / SNTP]
✎	*Precision of Server 1*

SNTP . **PrecServer2**	[Operation / Status Display / TimeSync / SNTP]
✎	*Precision of Server 2*

SNTP . **ServerQlty**	[Operation / Status Display / TimeSync / SNTP]	
“-”	GOOD, SUFFICIENT, BAD, “-” ⮡ State.	
✎	*Quality of Server used for Synchronization (GOOD, SUFFICIENT, BAD)*	

SNTP . **NetConn**	[Operation / Status Display / TimeSync / SNTP]
“-”	GOOD, SUFFICIENT, BAD, “-” └▷ State.
	Quality of Network Connection (GOOD, SUFFICIENT, BAD).

8.11.6 SNTP: Counters

SNTP . **StratumServer1**	[Operation / Status Display / TimeSync / SNTP]
#	*Stratum of Server 1*

SNTP . **StratumServer2**	[Operation / Status Display / TimeSync / SNTP]
#	*Stratum of Server 2*

SNTP . **NoOfSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Total Number of Synchronizations.*

SNTP . **NoOfConnectLost**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Total Number of lost SNTP Connections (no sync for 120 sec).*

SNTP . **NoOfSmallSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of very small Time Corrections.*

SNTP . **NoOfNormSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of normal Time Corrections*

SNTP . **NoOfBigSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of big Time Corrections*

SNTP . **NoOfFiltSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of filtered Time Corrections*

SNTP . **NoOfSlowTrans**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of slow Transfers.*

SNTP . **NoOfHighOffs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of high Offsets.*

SNTP . **NoOfIntTimeouts**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of internal timeouts.*

8.12 TimeSync – Time synchronisation

Date and Time	[Device Para / Time / Date and Time]
	This item represents a special dialog. (See the Technical Manual for details.) *(Re-)setting Date and Time*

8.12.1 TimeSync: Settings

TimeSync . **Time Zones**	[Device Para / Time / Timezone]	
UTC+0 London	UTC+14 Kiritimati . . . UTC-11 Midway Islands ⮡ Time Zones.	S.3
	Time Zones	

TimeSync . **DST offset**	[Device Para / Time / Timezone]	
60min	-180min . . . 180min	S.3
	Difference to wintertime	

TimeSync . **DST manual**	[Device Para / Time / Timezone]	
active	inactive, active ⮡ Mode.	S.3
	Manual setting of the Daylight Saving Time	

TimeSync . **Summertime**	[Device Para / Time / Timezone]	
inactive	inactive, active ⮡ Mode.	S.3
	Daylight Saving Time	

TimeSync . **Summertime m**	[Device Para / Time / Timezone]	
March	January . . . December ⮡ Month of clock change.	S.3
	Month of clock change summertime	

TimeSync . **Summertime d**	[Device Para / Time / Timezone]	
Sunday	Sunday . . . General day ↳ Date.	S.3
Day of clock change summertime		

TimeSync . **Summertime w**	[Device Para / Time / Timezone]	
Last	First, Second, Third, Fourth, Last ↳ Day of clock change.	S.3
Place of selected day in month (for clock change summertime)		

TimeSync . **Summertime h**	[Device Para / Time / Timezone]	
2h	0h . . . 23h	S.3
Hour of clock change summertime		

TimeSync . **Summertime min**	[Device Para / Time / Timezone]	
0min	0min . . . 59min	S.3
Minute of clock change summertime		

TimeSync . **Wintertime m**	[Device Para / Time / Timezone]	
October	January . . . December ↳ Month of clock change.	S.3
Month of clock change wintertime		

TimeSync . **Wintertime d**	[Device Para / Time / Timezone]	
Sunday	Sunday . . . General day ↳ Date.	S.3
Day of clock change wintertime		

TimeSync . **Wintertime w**	[Device Para / Time / Timezone]	
Last	First, Second, Third, Fourth, Last ↳ Day of clock change.	S.3
Place of selected day in month (for clock change wintertime)		

TimeSync . **Wintertime h**	[Device Para / Time / Timezone]	
3h	0h . . . 23h	S.3
	Hour of clock change wintertime	

TimeSync . **Wintertime min**	[Device Para / Time / Timezone]	
0min	0min . . . 59min	S.3
	Minute of clock change wintertime	

TimeSync . **TimeSync**	[Device Para / Time / TimeSync / TimeSync]	
“-”	“-”, IRIG-B . IRIG-B, SNTP . SNTP, Modbus . Modbus, IEC103 . IEC 60870-5-103, IEC104 . IEC104, DNP3 . DNP3 Used Protocol.	S.3
	Time synchronisation	

8.12.2 TimeSync: Signals (Output States)

TimeSync . **synchronized**	[Operation / Status Display / TimeSync / TimeSync]
	Clock is synchronized.

9 Protection Parameter

9.1 Prot: Settings

Prot . **Function**	[Protection Para / Global Prot Para / Prot]	
active	inactive, active └⇒ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

Prot . **ExBlo Fc**	[Protection Para / Global Prot Para / Prot]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) the external blocking of the global protection functionality of the device.	

Prot . **ExBlo1** Prot . **ExBlo2**	[Protection Para / Global Prot Para / Prot]	
“-”	“-” . . . Sys . Internal test state └⇒ 1..n, Assignment List.	P.2
	If external blocking of this module is activated (allowed), the global protection functionality of the device will be blocked if the state of the assigned signal becomes true.	

Prot . **Blo TripCmd**	[Protection Para / Global Prot Para / Prot]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the entire Protection.	

Prot . **ExBlo TripCmd Fc**	[Protection Para / Global Prot Para / Prot]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) the external blocking of the trip command of the entire device.	

Prot . **ExBlo TripCmd**	[Protection Para / Global Prot Para / Prot]	
"-"	"-" . . . Sys . Internal test state └─▷ 1..n, Assignment List.	P.2
	If external blocking of the tripping command is activated (allowed), the tripping command of the entire device will be blocked if the state of the assigned signal becomes true.	

9.2 Prot: Direct Controls

Prot . **Res FaultNo a GridFaultNo**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active └─▷ Mode.	P.1
	Resetting of fault number and grid fault number.	

9.3 Prot: Input States

Prot . **ExBlo1-I**	[Operation / Status Display / Prot]
	Module input state: External blocking1

Prot . **ExBlo2-I**	[Operation / Status Display / Prot]
	Module input state: External blocking2

Prot . **ExBlo TripCmd-I**	[Operation / Status Display / Prot]
	Module input state: External Blocking of the Trip Command

9.4 Prot: Signals (Output States)

Prot . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Prot]
	Signal: active

Prot . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Prot]
	Signal: General Alarm

Prot . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Prot]
⇧ *Signal: General Trip*	

Prot . **available**	[Operation / Status Display / Prot]
⇧ *Signal: Protection is available*	

Prot . **ExBlo**	[Operation / Status Display / Prot]
⇧ *Signal: External Blocking*	

Prot . **Blo TripCmd**	[Operation / Status Display / Prot]
⇧ *Signal: Trip Command blocked*	

Prot . **ExBlo TripCmd**	[Operation / Status Display / Prot]
⇧ *Signal: External Blocking of the Trip Command*	

Prot . **Alarm L1**	[Operation / Status Display / Prot]
⇧ *Signal: General-Alarm L1*	

Prot . **Alarm L2**	[Operation / Status Display / Prot]
⇧ *Signal: General-Alarm L2*	

Prot . **Alarm L3**	[Operation / Status Display / Prot]
⇧ *Signal: General-Alarm L3*	

Prot . **Alarm G**	[Operation / Status Display / Prot]
⇧ *Signal: General-Alarm - Earth fault*	

Prot . **Trip L1**	[Operation / Status Display / Prot]
⇧ *Signal: General Trip L1*	

Prot . **Trip L2**	[Operation / Status Display / Prot]
⇧ *Signal: General Trip L2*	

Prot . **Trip L3**	[Operation / Status Display / Prot]
⇪	*Signal: General Trip L3*

Prot . **Trip G**	[Operation / Status Display / Prot]
⇪	*Signal: General Trip Ground fault*

Prot . **Res FaultNo a GridFaultNo**	[Operation / Status Display / Prot]
⇪	*Signal: Resetting of fault number and grid fault number.*

Prot . **Fault No.**	[Operation / Count and RevData / Prot]
⇪	*Fault number*

9.5 MStart – Motor Start

9.5.1 MStart: Global Parameters

MStart . **Reversing**	[Field Para / Motor Nominal Values]	
inactive	inactive, active ⮡ active/inactive.	P.2
	This setting specifies whether or not the starter for this motor is designed to reverse the phase sequence and to make the motor run in either direction. *If set to “active”, either phase sequence is accepted during a motor start.* *If set to “inactive”, the reversed phase sequence leads to a trip.*	

MStart . **Ib**	[Field Para / Motor Nominal Values]	
10A	10A . . . 6000A	P.2
	Full load current (amperes). Set to maximum stator continuous RMS current primary (actual motor winding) amperes in each phase. Use motor nameplate or manufacturers data. Note that the ratio Ib/CT prim must lie between 0.25 and 1.5 in order to have reliable motor protection.	

MStart . **LRC**	[Field Para / Motor Nominal Values]	
3.00Ib	3.00Ib . . . 12.00Ib	P.2
	Set to the locked-rotor current (the current the motor draws when stalled), in times of Ib. Use motor nameplate or manufacturers data.	

MStart . **LRTC**	[Field Para / Motor Nominal Values]	
1s	1s . . . 120s	P.2
	Specifies how long a locked-rotor or stall condition can be maintained before the motor is damaged, in seconds, for a cold start. Use motor nameplate or manufacturers data.	

MStart . **STPC**	[Field Para / Motor Nominal Values]	
0.02Ib	0.02Ib . . . 0.20Ib	P.2
	Stop current threshold, in percent of Ib, if the actual current is below the threshold for at least 300 milliseconds. If a stop state occurs, the jogging functions Starts per Hour Allowed (SPH), Time Between Starts (TBS) and Anti-Backspin (ABS) are enforced. All phases of the current must be below this level before a stop will be declared.	

MStart . **k-Factor**	[Field Para / Motor Nominal Values]	
0.85	0.25 ... 1.50	P.2
	The k-Factor is to be calculated by the maximum allowed continuous current over the rated current transformer current (e.g. 1.2 times rated motor current over rated transformer current).	

MStart . **ExBlo TripCmd**	[Protection Para / Global Prot Para / MStart / Start Control]	
"-"	"-" ... Sys . Internal test state └▷ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

MStart . **TRN Criterion**	[Protection Para / Global Prot Para / MStart / Start Control]	
TRN T and I	TRN I, TRN TIME, TRN T and I, TRN T or I └▷ 1..n, TRN List.	P.2
	Start transition criterion	

MStart . **TRNT**	[Protection Para / Global Prot Para / MStart / Start Control]	
10s	0s ... 1200s	P.2
	Motor start transition time limit	

MStart . **TRNC**	[Protection Para / Global Prot Para / MStart / Start Control]	
1.30Ib	0.10Ib ... 3.00Ib	P.2
	Motor start transitions current level in Ib%	

MStart . **NOCS**	[Protection Para / Global Prot Para / MStart / Start Control]	
1	1 ... 5	P.2
	Number of cold starts limit	

MStart . **TBS Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active └▷ Mode.	P.2
	Time Between Starts on/off	

MStart . **TBS Timer**	[Protection Para / Global Prot Para / MStart / Start Control]	
60min	1min ... 240min	P.2
	Time Between Starts Limit	

MStart . **SPH Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ Mode.	P.2
	Starts Per Hour	

MStart . **SPH**	[Protection Para / Global Prot Para / MStart / Start Control]	
1	1 ... 10	P.2
	SPH	

MStart . **InSq Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, InSq Start2Run, InSq Stop2Start ↳ 1..n, InSq.	P.2
	Type of starting point for the Incomplete Sequence timer	

MStart . **InSq Time**	[Protection Para / Global Prot Para / MStart / Start Control]	
1s	1s ... 240s	P.2
	Report back time (time limit) for the detection of an Incomplete Sequence (of a motor start)	

MStart . **LAT Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ Mode.	P.2
	Long Time Acceleration Timer	

MStart . **LAT Timer**	[Protection Para / Global Prot Para / MStart / Start Control]	
1200s	1s ... 1200s	P.2
	Large motors with a high inertia may experience starting currents that exceed the locked rotor current and time. The protective relay has logic and provisions for a zero speed switch input to differentiate between a stall and start condition. If the motor is spinning then the relay will not trip on the normal locked rotor time allowing the motor to start.	

MStart . **ABS Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ Mode.	P.2
	For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The protective relay provides an anti-backspin timer to prevent starting the motor while it is spinning in the reverse direction. The timer begins counting from the moment a stop is declared by the relay.	

MStart . **ABS Timer**	[Protection Para / Global Prot Para / MStart / Start Control]	
3600s	1s ... 3600s	P.2
	For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The protective relay provides an anti-backspin timer to prevent starting the motor while it is spinning in the reverse direction. The timer begins counting from the moment a stop is declared by the relay.	

MStart . **ZSS**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ 1..n, Zero speed.	P.2
	Zero Speed Switch	

MStart . **EmgOvr**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, DI, HMI, DI or HMI ↳ EmgOvr.	P.2
	Emergency override options. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect.	

MStart . **RemStartBlo Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ Mode.	P.2
	RemStartBlo Fc	

MStart . **ThermBlo Fc**	[Protection Para / Global Prot Para / MStart / Start Control]	
inactive	inactive, active ↳ Mode.	P.2
	ThermBlo Fc	

MStart . **RemStartBlock**	[Protection Para / Global Prot Para / MStart / Motor Inputs]	
“-”	“-” . . . DI Slot X1 . DI 8 1..n, Dig Inputs.	P.2
	Remote Motor Start Blocking	

MStart . **EmgOvr**	[Protection Para / Global Prot Para / MStart / Motor Inputs]	
“-”	“-” . . . DI Slot X1 . DI 8 1..n, Dig Inputs.	P.2
	Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect	

MStart . **InSq**	[Protection Para / Global Prot Para / MStart / Motor Inputs]	
“-”	“-” . . . DI Slot X1 . DI 8 1..n, Dig Inputs.	P.2
	Incomplete Sequence	

MStart . **ZSS**	[Protection Para / Global Prot Para / MStart / Motor Inputs]	
“-”	“-” . . . DI Slot X1 . DI 8 1..n, Dig Inputs.	P.2
	Zero Speed Switch	

MStart . **STPC Blo**	[Protection Para / Global Prot Para / MStart / Motor Inputs]	
“-”	“-” . . . DI Slot X1 . DI 8 1..n, Dig Inputs.	P.2
	With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).	

MStart . **t-Blo-IOC**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
0.05s	0.03s . . . 1.00s	P.2
	Phase Overcurrent Start Delay.Phase Overcurrent elements are blocked for the time programmed under this parameter, while the motor is starting.	

MStart . **t-Blo-GOC**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
0.08s	0.03s ... 1.00s	P.2
	Ground Overcurrent Start Delay. Ground Overcurrent elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-I<**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
60s	0s ... 1200s	P.2
	Underload Start Delay. 37[x] elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-I2>**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
10.00s	0.03s ... 1200.00s	P.2
	Current Unbalance Start Delay. 46[x] elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-JAM**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
60.00s	0.03s ... 1200.00s	P.2
	Jam Start Delay. 50J[x] elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-U2>**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
1s	0s ... 1200s	P.2
	Voltage Unbalance Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting.	

MStart . **t-Blo-Undervoltage**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
1s	0s ... 1200s	P.2
	Undervoltage Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-Overvoltage**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
1s	0s ... 1200s	P.2
	Overvoltage Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-Power**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
0.03s	0.03s ... 1200.00s	P.2
	Power Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-PowerFactor**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
0.03s	0.03s ... 1200.00s	P.2
	Power Factor Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-Frequency**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
1s	0s ... 1200s	P.2
	Frequency Start Delay. These elements are blocked for the time programmed under this parameter, while the motor is starting	

MStart . **t-Blo-Generic1** ... MStart . **t-Blo-Generic5**	[Protection Para / Global Prot Para / MStart / Start Delay Timer]	
0s	0s ... 1200s	P.2
	Generic Start Delay. This value can be used to block any protective element.	

9.5.2 MStart: Setting Group Parameters

MStart . **Blo TripCmd**	[Protection Para / Set 1...4 / MStart / Start Control]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

MStart . **ExBlo TripCmd Fc**	[Protection Para / Set 1...4 / MStart / Start Control]	
inactive	inactive, active active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

9.5.3 MStart: Direct Controls

MStart . **RstForcedStart**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	S.3
	Reset Forced Start flag	

MStart . **EmergOverHMI**	[Operation / Reset/Acknowledge / EmgOvr]	
inactive	inactive, active Mode.	S.3
	Emergency override through front display	

9.5.4 MStart: Input States

MStart . **ExBlo TripCmd-I**	[Operation / Status Display / MStart / Start Control]
	Module input state: External Blocking of the Trip Command

MStart . **RemStartBlock-I**	[Operation / Status Display / MStart / Motor Inputs]
	State of the module input: Remote Motor Start Blocking

MStart . **EmgOvr-I**	[Operation / Status Display / MStart / Motor Inputs]
	State of the module input: Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect

MStart . **InSq-I**	[Operation / Status Display / MStart / Motor Inputs]
	State of the module input: Incomplete Sequence

MStart . **ZSS-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: Zero Speed Switch*

MStart . **STPC Blo-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).*

9.5.5 MStart: Signals (Output States)

MStart . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / MStart / Start Control]
⇧	*Signal: active*

MStart . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / MStart / Start Control]
⇧	*Signal: Trip*

MStart . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / MStart / Start Control]
⇧	*Signal: Trip Command*

MStart . **Start**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor is in start mode*

MStart . **Run**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor is in run mode*

MStart . **Stop**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor is in stop mode*

MStart . **Blo**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor is blocked for starting or transition to Run mode*

MStart . **SPHBlocked**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor is prohibited to start due to starts per hour limits*

MStart . **SPHBlockAlarm**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor is prohibited to start due to starts per hour limits, would come active in the next stop*

MStart . **TBSBlocked**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor is prohibited to start due to time between starts limits*

MStart . **ThermalBlo**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Thermal block*

MStart . **RemBlockStart**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor is prohibited to start due to external blocking through digital input DI*

MStart . **TransitionTrip**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Start transition fail trip*

MStart . **ZSSTrip**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Zero speed trip (possible locked rotor)*

MStart . **InSq Stop2Start Faill**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Fail to transit from stop to start based on reported back time*

MStart . **InSq Start2Run Fail**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Fail to transit from start to run based on reported back time*

MStart . **LATBlock**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Long acceleration timer enforced*

MStart . **Blo TripCmd**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Trip Command blocked*

MStart . **ColdStartSeq**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor cold start sequence flag*

MStart . **ForcedStart**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor being forced to start*

MStart . **TripPhaseReverse**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Relay tripped because of phase reverse detection*

MStart . **EmergOverrideDI**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Emergency override start blocking through digital input DI*

MStart . **EmergOverrideUI**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Emergency override start blocking through front panel*

MStart . **ABSActive**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Anti-backspin is active. For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The anti-backspin timer prevents starting the motor while it is spinning in the reverse direction.*

MStart . **I_Transit**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Current transition signal*

MStart . **T_Transit**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Time transition signal*

MStart . **MotorStopBlo**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor stop block other protection functions*

MStart . **Rotating forward**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Rotation Direction forward*

MStart . **Rotating backward**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Rotation Direction reverse*

MStart . **NOCSBlocked**	[Operation / Status Display / MStart / Start Control]
⇧	*Signal: Motor is prohibited to start due to number of cold start limits*

MStart . **Blo-GOCStart**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Ground Instantaneous Overcurrent Start Delay. GOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **Blo-IOCStart**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Phase Instantaneous Overcurrent Start Delay. IOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **Blo-I<Start**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Underload Start Delay. Underload(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **Blo-JamStart**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: JAM Start Delay. JAM(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **Blo-I2>Start**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Motor start block current unbalance signal*

MStart . **Blo-Generic1**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Generic Start Delay. This value can be used to block any protective element.1*

MStart . **Blo-Generic2**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Generic Start Delay. This value can be used to block any protective element.2*

MStart . **Blo-Generic3**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Generic Start Delay. This value can be used to block any protective element.3*

MStart . **Blo-Generic4**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Generic Start Delay. This value can be used to block any protective element.4*

MStart . **Blo-Generic5**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Generic Start Delay. This value can be used to block any protective element.5*

MStart . **Blo-U2>**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Motor start block voltage unbalance signal.*

MStart . **Blo-UnderV Start**	[Operation / Status Display / MStart / Start Delay Timer]
	Signal: Undervoltage Start Delay. Undervoltage elements are blocked for the time programmed under this parameter

MStart . **Block-OverVStart**	[Operation / Status Display / MStart / Start Delay Timer]
	Signal: Overvoltage Start Delay. Overvoltage elements are blocked for the time programmed under this parameter

MStart . **Blo-PowerStart**	[Operation / Status Display / MStart / Start Delay Timer]
	Signal: Power Start Delay. Power elements are blocked for the time programmed under this parameter

MStart . **Blo-PFacStart**	[Operation / Status Display / MStart / Start Delay Timer]
	Signal: Power Factor Start Delay. Power Factor elements are blocked for the time programmed under this parameter

MStart . **Blo-FrqStart**	[Operation / Status Display / MStart / Start Delay Timer]
	Signal: Frequency Start Delay. Frequency elements are blocked for the time programmed under this parameter

9.5.6 MStart: Values And Counters

MStart . **I3 PRMS avg**	[Operation / Measured Values / Current RMS]
	Average RMS current of all 3 phases

MStart . **IL1 Ib**	[Operation / Measured Values / Current RMS]
#	*Measured value: Phase current as multiple of Ib*

MStart . **IL2 Ib**	[Operation / Measured Values / Current RMS]
#	*Measured value: Phase current as multiple of Ib*

MStart . **IL3 Ib**	[Operation / Measured Values / Current RMS]
#	*Measured value: Phase current as multiple of Ib*

MStart . **I3 P (%Ib) avg**	[Operation / Measured Values / Current RMS]
#	*Average RMS current of all 3 phases as percentages of Ib*

MStart . **StartPerHour**	[Operation / Measured Values / Motor]
#	*StartPerHour*

MStart . **SPH Release**	[Operation / Measured Values / Motor]
#	*In case that the Motor is blocked by a SPH blocking, this timer needs to be expired before the blocking is released and the next motor start is permitted. The next Motor Start will increment the SPH counter again.*

MStart . **WaitTimeStarts**	[Operation / Measured Values / Motor]
#	*Wait time between starts remained*

MStart . **ColdStartPermit**	[Operation / Measured Values / Motor]
#	*Number of cold starts remaining*

MStart . **AntiBackSpin**	[Operation / Measured Values / Motor]
#	*Anti-BackspinTimer*

MStart . **OCNT**	[Operation / History / OperationsCr]
#	*Motor Operation count since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **RunTime**	[Operation / History / OperationsCr]
✎	*Motor Operation time since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **HighestStartI**	[Operation / History / OperationsCr]
#	*Highest starting phase current. The time stamp indicates the point in time when the maximum current has occurred. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **HighestRunI**	[Operation / History / OperationsCr]
#	*Highest running phase current. The time stamp indicates the point in time when the maximum current has occurred. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **Highest%I2/I1**	[Operation / History / OperationsCr]
✎	*Highest %I2/I1 value since last reset. The time stamp indicates the point in time when the maximum unbalanced load has occurred. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **nEmrgOvr**	[Operation / History / OperationsCr]
#	*Number of emergency overrides since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **nTRNTrips**	[Operation / History / TripCmdCr]
#	*Number of transition trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nRevTrips**	[Operation / History / TripCmdCr]
#	*Number of reverse spinning trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nZSWTrips**	[Operation / History / TripCmdCr]
#	*Number of zero speed switch trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nInSqTrips**	[Operation / History / TripCmdCr]
#	*Number of incomplete sequence trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nSPHBlocks**	[Operation / History / TripCmdCr]
#	*Number of start per hour blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nTBSBlocks**	[Operation / History / TripCmdCr]
#	*Number of time between start blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **TRunTime**	[Operation / History / TotalCr]
	Motor Operation (Motor run time) time since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.

MStart . **TOCS**	[Operation / History / TotalCr]
#	*Total Motor Operation count since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

9.5.7 MStart: Statistical Values

MStart . **IL1 avg Ib**	[Operation / Statistics / Demand / Current Demand]
☑	*IL1 average value as multiple of Ib*

MStart . **IL2 avg Ib**	[Operation / Statistics / Demand / Current Demand]
☑	*IL2 average value as multiple of Ib*

MStart . **IL3 avg Ib**	[Operation / Statistics / Demand / Current Demand]
☑	*IL3 average value as multiple of Ib*

MStart . **I3P Fla Demand**	[Operation / Statistics / Demand / Current Demand]
☑	*RMS current of all 3 phases calculated in a fixed demand window as percentages of Ib*

MStart . **IL1 max Ib**	[Operation / Statistics / Max / Current]
☑	*IL1 maximum value as multiple of Ib*

MStart . **IL2 max Ib**	[Operation / Statistics / Max / Current]
☑	*IL2 maximum value as multiple of Ib*

MStart . **IL3 max Ib**	[Operation / Statistics / Max / Current]
☑	*IL3 maximum value as multiple of Ib*

MStart . **IL1 min Ib**	[Operation / Statistics / Min / Current]
☑	*IL1 minimum value as multiple of Ib*

MStart . **IL2 min Ib**	[Operation / Statistics / Min / Current]
☑	*IL2 minimum value as multiple of Ib*

MStart . **IL3 min Ib**	[Operation / Statistics / Min / Current]
☑	*IL3 minimum value as multiple of Ib*

9.6 I[1] . . . I[6] – Phase Overcurrent Stage

9.6.1 I[1]: Device Planning Parameters

I[1] . **Mode**	[Device planning]	
non directional	“-”, non directional └⇨ I>.	S.3
	Phase Overcurrent Stage, general operation mode	

9.6.2 I[1]: Global Parameters

I[1] . **ExBlo1** I[1] . **ExBlo2**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
“-”	“-” . . . Sys . Internal test state └⇨ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

I[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
MStart . Blo-IOCStart	“-” . . . MStart . Blo-FrqStart └⇨ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

I[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
“-”	“-” . . . Sys . Internal test state └⇨ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

I[1] . **Ex rev Interl**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module by external reverse interlocking, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

I[1] . **AdaptSet 1**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 1	

I[1] . **AdaptSet 2**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 2	

I[1] . **AdaptSet 3**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 3	

I[1] . **AdaptSet 4**	[Protection Para / Global Prot Para / I-Prot / I[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 4	

9.6.3 I[1]: Setting Group Parameters

I[1] . **Function**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
active	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

I[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

I[1] . **Ex rev Interl Fc**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "Ex rev Interl Fc = active".	

I[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

I[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

I[1] . **Measuring method**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
Fundamental	Fundamental, True RMS, I2 └⇒ Measuring method.	P.2
	Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)	

I[1] . **I>**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
2.0In Adapt. Param.	If: I[1] . VRestraint = active • 0.10In ... 40.00In If: I[1] . VRestraint = inactive • 0.02In ... 40.00In	P.2
	If the pickup value is exceeded, the module/element starts to time out to trip.	

I[1] . **Char**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
DEFT Adapt. Param.	DEFT ... I4T Char.	P.2
	Characteristic	

I[1] . **t**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
0.5s Adapt. Param.	0.00s ... 300.00s	P.2
	Tripping delay	

I[1] . **tchar**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
1 Adapt. Param.	0.02 ... 20.00	P.2
	Time multiplier/tripping characteristic factor. The setting range depends on the selected tripping curve.	

I[1] . **Reset Mode**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
instantaneous Adapt. Param.	instantaneous, definite time, inverse time Reset Mode.	P.2
	Reset Mode	

I[1] . **t-reset delay**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
0s *Only available if:* • I[1] . Reset Mode = definite time Adapt. Param.	0.00s . . . 60.00s	P.2
Reset delay for intermittent phase failures (INV characteristics only)		

I[1] . **nondir Trip at V=0**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive Adapt. Param.	inactive, active active/inactive.	P.2
Only relevant for current protection modules/stages with directional feature! The device will trip non directional if this parameter is set to active and no direction could be determined because no reference voltage (V=0) could be measured any more (e.g. if there is a three-phase short circuit close to the device). If this parameter is set to inactive, the protection stage will be blocked in case of V=0.		

I[1] . **VRestraint**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
inactive Adapt. Param.	inactive, active Mode.	P.2
Voltage Restraint Protection		

I[1] . **Measuring Mode**	[Protection Para / Set 1…4 / I-Prot / I[1]]	
Phase to Ground *Only available if:* • I[1] . VRestraint = active Adapt. Param.	Phase to Ground, Phase to Phase Measuring Mode.	P.2
Measuring Mode		

I[1] . **VRestraint max**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
1.00Vn *Only available if:* • I[1] . VRestraint = active Adapt. Param.	0.04Vn ... 2.00Vn	P.2
	Maximum voltage restraint level. Definition of Vn: Vn is dependent on the System Parameter setting of "VT con". When the System Parameters "VT con" is set to "phase-to-phase" , "Vn = VT sec ". When the System Parameters "VT con" is set to "phase-to-ground", "Vn = VT sec/ SQRT(3)".	

I[1] . **Meas Circuit Superv**	[Protection Para / Set 1...4 / I-Prot / I[1]]	
Sys . inactive *Only available if:* • I[1] . VRestraint = active Adapt. Param.	Sys . inactive, LOP . active VTS Block.	P.2
	Activates the use of the measuring circuit supervision. In this case the module will be blocked if a measuring circuit supervision module (e.g. LOP, VTS) signals a disturbed measuring circuit (e.g. caused by a fuse failure).	

9.6.4 I[1]: Input States

I[1] . **ExBlo1-I**	[Operation / Status Display / I-Prot / I[1]]
	Module input state: External blocking1

I[1] . **ExBlo2-I**	[Operation / Status Display / I-Prot / I[1]]
	Module input state: External blocking2

I[1] . **ExBlo TripCmd-I**	[Operation / Status Display / I-Prot / I[1]]
	Module input state: External Blocking of the Trip Command

I[1] . **Ex rev Interl-I**	[Operation / Status Display / I-Prot / I[1]]
	Module input state: External reverse interlocking

I[1] . **AdaptSet1-I**	[Operation / Status Display / I-Prot / I[1]]
	Module input state: Adaptive Parameter1

I[1] . **AdaptSet2-I**	[Operation / Status Display / I-Prot / I[1]]
⇩	*Module input state: Adaptive Parameter2*

I[1] . **AdaptSet3-I**	[Operation / Status Display / I-Prot / I[1]]
⇩	*Module input state: Adaptive Parameter3*

I[1] . **AdaptSet4-I**	[Operation / Status Display / I-Prot / I[1]]
⇩	*Module input state: Adaptive Parameter4*

9.6.5 I[1]: Signals (Output States)

I[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: active*

I[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Alarm*

I[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Trip*

I[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Trip Command*

I[1] . **ExBlo**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: External Blocking*

I[1] . **Ex rev Interl**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: External reverse Interlocking*

I[1] . **Blo TripCmd**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Trip Command blocked*

I[1] . **ExBlo TripCmd**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: External Blocking of the Trip Command*

I[1] . **Alarm L1**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Alarm L1*

I[1] . **Alarm L2**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Alarm L2*

I[1] . **Alarm L3**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Alarm L3*

I[1] . **Trip L1**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: General Trip Phase L1*

I[1] . **Trip L2**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: General Trip Phase L2*

I[1] . **Trip L3**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: General Trip Phase L3*

I[1] . **DefaultSet**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Default Parameter Set*

I[1] . **AdaptSet 1**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Adaptive Parameter 1*

I[1] . **AdaptSet 2**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Adaptive Parameter 2*

I[1] . **AdaptSet 3**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Adaptive Parameter 3*

I[1] . **AdaptSet 4**	[Operation / Status Display / I-Prot / I[1]]
⇧	*Signal: Adaptive Parameter 4*

9.6.6 I[1]: Counters

I[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

I[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.7 IG[1] . . . IG[4] – Earth current protection - Stage

9.7.1 IG[1]: Device Planning Parameters

IG[1] . **Mode**	[Device planning]	
"-"	"-", non directional ↳ Earth overcurrent.	S.3
	Earth current protection - Stage, general operation mode	

IG[1] . **Superv. only**	[Device planning]	
no	no, yes ↳ yes/no.	S.3
	Earth current protection - Stage, if set to "Yes": Restriction of the function to a supervision functionality, i.e. there is no general alarm, no general trip and no trip command.	

9.7.2 IG[1]: Global Parameters

IG[1] . **ExBlo1** IG[1] . **ExBlo2**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

IG[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . MStart . Blo-FrqStart ↳ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

IG[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-" *Only available if:* • IG[1] . Superv. only = no	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

IG[1] . **Ex rev Interl**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module by external reverse interlocking, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

IG[1] . **AdaptSet 1**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 1	

IG[1] . **AdaptSet 2**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 2	

IG[1] . **AdaptSet 3**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 3	

IG[1] . **AdaptSet 4**	[Protection Para / Global Prot Para / I-Prot / IG[1]]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ AdaptSet.	P.2
	Assignment Adaptive Parameter 4	

9.7.3 IG[1]: Setting Group Parameters

IG[1] . **Function**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

IG[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

IG[1] . **Ex rev Interl Fc**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "Ex rev Interl Fc = active".	

IG[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive *Only available if:* • IG[1] . Superv. only = no	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

IG[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive *Only available if:* • IG[1] . Superv. only = no	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

IG[1] . **IG Source**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
CT . calculated	CT . sensitive measurement, CT . measured, CT . calculated ↳ Measuring Channel.	P.2
Selection if measured or calculated ground current should be used.		

IG[1] . **Measuring method**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
Fundamental	Fundamental, True RMS ↳ Measuring method.	P.2
Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)		

IG[1] . **VX Source**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
measured	measured, calculated ↳ VX Source.	P.2
Selection if VG is measured or calculated (neutral voltage or residual voltage)		

IG[1] . **Meas Circuit Superv**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
Sys . inactive *Only available if:* • IG[1] . VX Source = calculated	Sys . inactive, LOP . active ↳ VTS Block.	P.2
Activates the use of the measuring circuit supervision. In this case the module will be blocked if a measuring circuit supervision module (e.g. LOP, VTS) signals a disturbed measuring circuit (e.g. caused by a fuse failure).		

IG[1] . **IG>**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
0.02In Adapt. Param.	0.02In . . . 20.00In	P.2
If the pickup value is exceeded, the module/stage will be started.		

IG[1] . **IGs>**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
0.02In Adapt. Param.	0.002In . . . 2.000In	P.2
If the pickup value is exceeded, the module/stage will be started.		

IG[1] . **Char**	[Protection Para / Set 1...4 / I-Prot / IG[1]]	
DEFT ⟴ Adapt. Param.	DEFT ... RXIDG ↳ Char.	P.2
Characteristic		

IG[1] . **t**	[Protection Para / Set 1...4 / I-Prot / IG[1]]	
0.00s ⟴ Adapt. Param.	0.00s ... 300.00s	P.2
Tripping delay		

IG[1] . **tchar**	[Protection Para / Set 1...4 / I-Prot / IG[1]]	
1 ⟴ Adapt. Param.	0.02 ... 20.00	P.2
Time multiplier/tripping characteristic factor. The setting range depends on the selected tripping curve.		

IG[1] . **Reset Mode**	[Protection Para / Set 1...4 / I-Prot / IG[1]]	
instantaneous ⟴ Adapt. Param.	instantaneous, definite time, inverse time ↳ Reset Mode.	P.2
Reset Mode		

IG[1] . **t-reset delay**	[Protection Para / Set 1...4 / I-Prot / IG[1]]	
0.00s *Only available if:* • IG[1] . Reset Mode = definite time ⟴ Adapt. Param.	0.00s ... 60.00s	P.2
Reset delay for intermittent phase failures (INV characteristics only)		

IG[1] . **Dir n poss->Nondir Trip**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive Adapt. Param.	inactive, active active/inactive.	P.2
	Only relevant for current protection elements with directional feature! The device will trip non directional if this parameter is set to active and no direction could be determined. Direction detection is impossible e.g. if the required quantities for the direction detection cannot be measured or validated. Direction detection is also impossible if the frequency deviates significantly from the nominal frequency. Caution: If this parameter is set to inactive, the protective element will trip only if the direction can be detected.	

IG[1] . **VX Blo**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
inactive Adapt. Param.	inactive, active active/inactive.	P.2
	VX Blo = active means that the IG-stage will only excite if a residual voltage higher than the pickup value is measured at the same time. VX Blo = inactive means that the excitation of the IG stage does not depend on any residual voltage stage.	

IG[1] . **VG>**	[Protection Para / Set 1…4 / I-Prot / IG[1]]	
1.00Vn Adapt. Param.	0.01Vn . . . 2.00Vn	P.2
	If the pickup value is exceeded, the module/stage will be started.	

9.7.4 IG[1]: Input States

IG[1] . **ExBlo1-I**	[Operation / Status Display / I-Prot / IG[1]]
	Module input state: External blocking1

IG[1] . **ExBlo2-I**	[Operation / Status Display / I-Prot / IG[1]]
	Module input state: External blocking2

IG[1] . **ExBlo TripCmd-I**	[Operation / Status Display / I-Prot / IG[1]]
	Only available if: • IG[1] . Superv. only = no *Module input state: External Blocking of the Trip Command*

IG[1] . **Ex rev Interl-I**	[Operation / Status Display / I-Prot / IG[1]]
⇩	*Module input state: External reverse interlocking*

IG[1] . **AdaptSet1-I**	[Operation / Status Display / I-Prot / IG[1]]
⇩	*Module input state: Adaptive Parameter1*

IG[1] . **AdaptSet2-I**	[Operation / Status Display / I-Prot / IG[1]]
⇩	*Module input state: Adaptive Parameter2*

IG[1] . **AdaptSet3-I**	[Operation / Status Display / I-Prot / IG[1]]
⇩	*Module input state: Adaptive Parameter3*

IG[1] . **AdaptSet4-I**	[Operation / Status Display / I-Prot / IG[1]]
⇩	*Module input state: Adaptive Parameter4*

9.7.5 IG[1]: Signals (Output States)

IG[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / I-Prot / IG[1]]
⇧	*Signal: active*

IG[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / IG[1]]
⇧	*Signal: The alarm threshold has been exceeded.*

IG[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / I-Prot / IG[1]]
⇧	*Signal: Trip*

IG[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / I-Prot / IG[1]]
⇪	*Only available if:* • IG[1] . Superv. only = no *Signal: Trip Command*

IG[1] . **ExBlo**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: External Blocking*

IG[1] . **Ex rev Interl**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: External reverse Interlocking*

IG[1] . **Blo TripCmd**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Only available if:* • IG[1] . Superv. only = no *Signal: Trip Command blocked*

IG[1] . **ExBlo TripCmd**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Only available if:* • IG[1] . Superv. only = no *Signal: External Blocking of the Trip Command*

IG[1] . **DefaultSet**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: Default Parameter Set*

IG[1] . **AdaptSet 1**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: Adaptive Parameter 1*

IG[1] . **AdaptSet 2**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: Adaptive Parameter 2*

IG[1] . **AdaptSet 3**	[Operation / Status Display / I-Prot / IG[1]]
⇪	*Signal: Adaptive Parameter 3*

IG[1] . **AdaptSet 4**	[Operation / Status Display / I-Prot / IG[1]]
⇧	*Signal: Adaptive Parameter 4*

9.7.6 IG[1]: Counters

IG[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

IG[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.8 ThR – Thermal replica module

9.8.1 ThR: Global Parameters

ThR . **ExBlo1** ThR . **ExBlo2**	[Protection Para / Global Prot Para / I-Prot / ThR]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

ThR . **ExBlo TripCmd**	[Protection Para / Global Prot Para / I-Prot / ThR]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

ThR . **Use RTD values**	[Protection Para / Global Prot Para / I-Prot / ThR]	
inactive	inactive, active ⮡ Mode.	P.2
	Take RTD values into account for the calculation of the Thermal Model.	

ThR . **K2**	[Protection Para / Global Prot Para / I-Prot / ThR]	
6.01	0.10 . . . 10.00	P.2
	This value represents the negative sequence current weighting factor of the motor.	

ThR . **τ-cool**	[Protection Para / Global Prot Para / I-Prot / ThR]	
60s	5s . . . 240s	P.2
	Cooling time constant	

9.8.2 ThR: Setting Group Parameters

ThR . **Function**	[Protection Para / Set 1…4 / I-Prot / ThR]	
active	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

ThR . **ExBlo Fc**	[Protection Para / Set 1…4 / I-Prot / ThR]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

ThR . **Blo TripCmd**	[Protection Para / Set 1…4 / I-Prot / ThR]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

ThR . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / I-Prot / ThR]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

ThR . **Trip Function**	[Protection Para / Set 1…4 / I-Prot / ThR]	
active	inactive, active ⮡ Mode.	P.2
	Turn on or off the trip function	

ThR . **Trip Threshold**	[Protection Para / Set 1…4 / I-Prot / ThR]	
0.99	0.60 . . . 0.99	P.2
	Trip threshold at which the thermal model will trip, based on percentage of thermal capacity used. This value should typically always be set at 0.99	

ThR . **t-Trip Delay**	[Protection Para / Set 1…4 / I-Prot / ThR]	
0.0s	0.0s . . . 3600.0s	P.2
	Thermal capacity used trip delay	

ThR . **Alarm Function**	[Protection Para / Set 1…4 / I-Prot / ThR]	
active	inactive, active ⮡ Mode.	P.2
	Turn on or off the alarm function	

ThR . **Alarm Threshold**	[Protection Para / Set 1…4 / I-Prot / ThR]	
0.70	0.60 . . . 0.99	P.2
	Alarm threshold at which the thermal model will trip, based on percentage of thermal capacity used	

ThR . **t-Alarm Delay**	[Protection Para / Set 1…4 / I-Prot / ThR]	
1min	1min . . . 360min	P.2
	Thermal capacity used alarm delay	

9.8.3 ThR: Direct Controls

ThR . **Res I2T Used**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	S.3
◉	*Reset thermal capacity used.*	

9.8.4 ThR: Input States

ThR . **ExBlo1-I** ThR . **ExBlo2-I**	[Operation / Status Display / I-Prot / ThR]
⇩	*Module input state: External blocking*

ThR . **ExBlo TripCmd-I**	[Operation / Status Display / I-Prot / ThR]
⇩	*Module input state: External Blocking of the Trip Command*

9.8.5 ThR: Signals (Output States)

ThR . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / I-Prot / ThR]
⇧	*Signal: active*

ThR . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / ThR]
⇧	*Signal: Alarm*

ThR . **Alarm Pickup**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / ThR]
⇧	*Signal: Alarm Pickup*

ThR . **Alarm Timeout**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / ThR]
⇧	*Signal: Alarm Timeout*

ThR . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / I-Prot / ThR]
⇧	*Signal: Trip*

ThR . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / I-Prot / ThR]
⇮	*Signal: Trip Command*

ThR . **ExBlo**	[Operation / Status Display / I-Prot / ThR]
⇮	*Signal: External Blocking*

ThR . **Blo TripCmd**	[Operation / Status Display / I-Prot / ThR]
⇮	*Signal: Trip Command blocked*

ThR . **ExBlo TripCmd**	[Operation / Status Display / I-Prot / ThR]
⇮	*Signal: External Blocking of the Trip Command*

ThR . **RTD effective**	[Operation / Status Display / I-Prot / ThR]
⇮	*This state becomes true if the following conditions are all fulfilled:* *- the state “Load above SF” is true,* *- the Winding Temperature Trip has been activated in the RTD module,* *- for at least one temperature a valid value above 0°C (32°F) is being displayed.*

ThR . **Load above SF**	[Operation / Status Display / I-Prot / ThR]
⇮	*“Load above Service Factor”: If the current exceeds the set value of “UTC” (“Ultimate trip threshold”) then the used thermal capacity counts up and the state “Load above SF” is becoming true. If the current is below the “UTC” value this state is false.*

9.8.6 ThR: Counters

ThR . **I2T Used**	[Operation / Measured Values / ThR]
⊞	*Thermal capacity used.*

ThR . **I2T Remained**	[Operation / Measured Values / ThR]
⊞	*Thermal capacity remained.*

ThR . **nAlarms**	[Operation / History / AlarmCr]
⊞	*Number of alarms since the last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

ThR . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.9 Jam[1] . . . Jam[2] – Locked Rotor (JAM)

9.9.1 Jam[1]: Device Planning Parameters

Jam[1] . **Mode**	[Device planning]	
use	"-", use ╚═▷ Mode.	S.3
	Locked Rotor (JAM), general operation mode	

9.9.2 Jam[1]: Global Parameters

Jam[1] . **ExBlo1** Jam[1] . **ExBlo2**	[Protection Para / Global Prot Para / JAM-Prot / Jam[1]]	
"-"	"-" . . . Sys . Internal test state ╚═▷ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

Jam[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / JAM-Prot / Jam[1]]	
MStart . Blo-JamStart	"-" . . . MStart . Blo-FrqStart ╚═▷ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

Jam[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / JAM-Prot / Jam[1]]	
"-"	"-" . . . Sys . Internal test state ╚═▷ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.9.3 Jam[1]: Setting Group Parameters

Jam[1] . **Function**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

Jam[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

Jam[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

Jam[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

Jam[1] . **Pickup**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
10Ib	1.00Ib . . . 12.00Ib	P.2
	JAM based on a multiplier of Ib	

Jam[1] . **t**	[Protection Para / Set 1…4 / JAM-Prot / Jam[1]]	
2.0s	0.0s . . . 1200.0s	P.2
	Tripping delay	

9.9.4 Jam[1]: Input States

Jam[1] . **ExBlo1-I**	[Operation / Status Display / JAM-Prot / Jam[1]]
Module input state: External blocking1	

Jam[1] . **ExBlo2-I**	[Operation / Status Display / JAM-Prot / Jam[1]]
Module input state: External blocking2	

Jam[1] . **ExBlo TripCmd-I**	[Operation / Status Display / JAM-Prot / Jam[1]]
Module input state: External Blocking of the Trip Command	

9.9.5 Jam[1]: Signals (Output States)

Jam[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / JAM-Prot / Jam[1]]
Signal: active	

Jam[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / JAM-Prot / Jam[1]]
Signal: Alarm	

Jam[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / JAM-Prot / Jam[1]]
Signal: Trip	

Jam[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / JAM-Prot / Jam[1]]
Signal: Trip Command	

Jam[1] . **ExBlo**	[Operation / Status Display / JAM-Prot / Jam[1]]
Signal: External Blocking	

Jam[1] . **Blo TripCmd**	[Operation / Status Display / JAM-Prot / Jam[1]]
Signal: Trip Command blocked	

Jam[1] . **ExBlo TripCmd**	[Operation / Status Display / JAM-Prot / Jam[1]]
⇫	*Signal: External Blocking of the Trip Command*

9.9.6 Jam[1]: Counters

Jam[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

Jam[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.10 I<[1] . . . I<[3] – Underload / Undercurrent

9.10.1 I<[1]: Device Planning Parameters

I<[1] . **Mode**	[Device planning]	
use	“-”, use ↳ Mode.	S.3
	Underload / Undercurrent, general operation mode	

9.10.2 I<[1]: Global Parameters

I<[1] . **ExBlo1** I<[1] . **ExBlo2**	[Protection Para / Global Prot Para / Underload-Prot / I<[1]]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

I<[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / Underload-Prot / I<[1]]	
MStart . Blo-I<Start	“-” . . . MStart . Blo-FrqStart ↳ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

I<[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / Underload-Prot / I<[1]]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.10.3 I<[1]: Setting Group Parameters

I<[1] . **Function**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
inactive	inactive, active ↳ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

I<[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
inactive	inactive, active ↳ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

I<[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
inactive	inactive, active ↳ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

I<[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
inactive	inactive, active ↳ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

I<[1] . **Undercurrent**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
0.50Ib	0.05Ib . . . 0.90Ib	P.2
	Underload Pickup based on a multiplier of Ib	

I<[1] . **Alarm Mode**	[Protection Para / Set 1…4 / Underload-Prot / I<[1]]	
any one	any one, all ↳ Alarm Mode.	P.2
	Indicates if one, two of three or all phases are required for operation	

I<[1] . **t**	[Protection Para / Set 1...4 / Underload-Prot / I<[1]]	
10.0s	0.4s ... 1200.0s	P.2
Tripping delay		

I<[1] . **MeasCircSv Curr**	[Protection Para / Set 1...4 / Underload-Prot / I<[1]]	
Sys . inactive	Sys . inactive, CTS . active └▷ VTS Block.	P.2
Measuring Circuit Supervision Curent		

9.10.4 I<[1]: Input States

I<[1] . **ExBlo1-I**	[Operation / Status Display / Underload-Prot / I<[1]]
Module input state: External blocking1	

I<[1] . **ExBlo2-I**	[Operation / Status Display / Underload-Prot / I<[1]]
Module input state: External blocking2	

I<[1] . **ExBlo TripCmd-I**	[Operation / Status Display / Underload-Prot / I<[1]]
Module input state: External Blocking of the Trip Command	

9.10.5 I<[1]: Signals (Output States)

I<[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Underload-Prot / I<[1]]
Signal: active	

I<[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Underload-Prot / I<[1]]
Signal: Alarm	

I<[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Underload-Prot / I<[1]]
Signal: Trip	

I<[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / Underload-Prot / I<[1]]
⇧	*Signal: Trip Command*

I<[1] . **ExBlo**	[Operation / Status Display / Underload-Prot / I<[1]]
⇧	*Signal: External Blocking*

I<[1] . **Blo TripCmd**	[Operation / Status Display / Underload-Prot / I<[1]]
⇧	*Signal: Trip Command blocked*

I<[1] . **ExBlo TripCmd**	[Operation / Status Display / Underload-Prot / I<[1]]
⇧	*Signal: External Blocking of the Trip Command*

9.10.6 I<[1]: Counters

I<[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

I<[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.11 MLS – Mechanical Load Shedding

9.11.1 MLS: Device Planning Parameters

MLS . **Mode**	[Device planning]	
use	“-”, use ↳ Mode.	S.3
	Mechanical Load Shedding, general operation mode	

9.11.2 MLS: Global Parameters

MLS . **ExBlo1** MLS . **ExBlo2**	[Protection Para / Global Prot Para / MLS]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.11.3 MLS: Setting Group Parameters

MLS . **Function**	[Protection Para / Set 1…4 / MLS]	
inactive	inactive, active ↳ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

MLS . **ExBlo Fc**	[Protection Para / Set 1…4 / MLS]	
inactive	inactive, active ↳ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

MLS . **Pickup Threshold**	[Protection Para / Set 1...4 / MLS]	
0.90Ib	0.50Ib . . . 1.50Ib	P.2
	Mechanical load shedding pickup current as multiplier of Ib	

MLS . **t-Pickup Delay**	[Protection Para / Set 1...4 / MLS]	
1.0s	0.0s . . . 5.0s	P.2
	Trip delay time	

MLS . **Dropout Threshold**	[Protection Para / Set 1...4 / MLS]	
0.50Ib	0.50Ib . . . 1.50Ib	P.2
	Mechanical load reclosure current (Dropout of Load shedding) as multiplier of Ib	

MLS . **t-Drop Delay**	[Protection Para / Set 1...4 / MLS]	
1.0s	0.0s . . . 5.0s	P.2
	Dropout delay time	

9.11.4 MLS: Input States

MLS . **ExBlo1-I**	[Operation / Status Display / MLS]
	Module input state: External blocking1

MLS . **ExBlo2-I**	[Operation / Status Display / MLS]
	Module input state: External blocking2

9.11.5 MLS: Signals (Output States)

MLS . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / MLS]
	Signal: active

MLS . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / MLS]
	Signal: Alarm

MLS . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / MLS]
⇑	*Signal: Trip*

MLS . **ExBlo**	[Operation / Status Display / MLS]
⇑	*Signal: External Blocking*

9.12 V[1] ... V[6] – Voltage-stage

9.12.1 V[1]: Device Planning Parameters

V[1] . **Mode**	[Device planning]	
V>	"-", V>, V< ╘▷ Device planning.	S.3
	Voltage-stage, general operation mode	

9.12.2 V[1]: Global Parameters

V[1] . **ExBlo1** V[1] . **ExBlo2**	[Protection Para / Global Prot Para / V-Prot / V[1]]	
"-"	"-" ... Sys . Internal test state ╘▷ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

V[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / V-Prot / V[1]]	
MStart . Block-OverVStart	"-" ... MStart . Blo-FrqStart ╘▷ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

V[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / V-Prot / V[1]]	
"-"	"-" ... Sys . Internal test state ╘▷ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.12.3 V[1]: Setting Group Parameters

V[1] . **Function**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
active	inactive, active ↳ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

V[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
inactive	inactive, active ↳ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

V[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
inactive	inactive, active ↳ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

V[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
inactive	inactive, active ↳ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

V[1] . **Measuring Mode**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
Phase to Ground	Phase to Ground, Phase to Phase ↳ Measuring Mode.	P.2
	Measuring/Supervision Mode: Determines if the phase-to-phase or phase-to-earth voltages are to be supervised	

V[1] . **Measuring method**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
Fundamental	Fundamental, True RMS ╚═▷ Measuring method.	P.2
	Measuring method: fundamental or rms or "sliding average supervision"	

V[1] . **Alarm Mode**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
any one	any one, any two, all ╚═▷ Alarm Mode.	P.2
	Alarm criterion for the voltage protection stage.	

V[1] . **V>**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
1.1Vn	0.01Vn . . . 2.000Vn	P.2
	If the pickup value is exceeded, the module/element will be started. The definition of Vn is dependent on both the Field Parameter »VT con« and the Setting Group Parameter »Measuring Mode«: If the measuring inputs of the voltage measuring card are fed with phase-to-ground voltages (»VT con« = "Phase-to-Ground") then the setting »Measuring Mode« = "Phase-to-Ground" means that Vn=VTsec/SQRT(3), and »Measuring Mode« = "Phase-to-Phase" means that Vn=VTsec. However, if the measuring inputs of the voltage measuring card are fed with phase-to-phase voltages (»VT con« = "Phase-to-Phase") then the setting of "Measuring Mode" is ignored and internally set to "Phase-to-Phase" instead, so that Vn=VTsec.	

V[1] . **V> Reset%**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
98.5%	80% . . . 99.0%	P.2
	Drop Out (is in percent of setting)	

V[1] . **V<**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
0.80Vn	0.01Vn . . . 2.000Vn	P.2
	If the pickup value is exceeded, the module/element will be started. The definition of Vn is dependent on both the Field Parameter »VT con« and the Setting Group Parameter »Measuring Mode«: If the measuring inputs of the voltage measuring card are fed with phase-to-ground voltages (»VT con« = "Phase-to-Ground") then the setting »Measuring Mode« = "Phase-to-Ground" means that Vn=VTsec/SQRT(3), and »Measuring Mode« = "Phase-to-Phase" means that Vn=VTsec. However, if the measuring inputs of the voltage measuring card are fed with phase-to-phase voltages (»VT con« = "Phase-to-Phase") then the setting of "Measuring Mode" is ignored and internally set to "Phase-to-Phase" instead, so that Vn=VTsec.	

V[1] . **V< Reset%**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
101.5%	101% . . . 110.0%	P.2
	Drop Out (is in percent of setting)	

V[1] . **t**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
1s	0.00s ... 3000.00s	P.2
	Tripping delay	

V[1] . **Meas Circuit Superv**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
Sys . inactive	Sys . inactive, LOP . active └▷ VTS Block.	P.2
	Activates the use of the measuring circuit supervision. In this case the module will be blocked if a measuring circuit supervision module (e.g. LOP, VTS) signals a disturbed measuring circuit (e.g. caused by a fuse failure).	

V[1] . **Imin release check**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
inactive	inactive, active └▷ Mode.	P.2
	Enable a minimum current check. This monitors the current flow (in the CT on the VT side), to detect whether the circuit breaker is permanently in open state; in this case the undervoltage detection is blocked.	

V[1] . **Threshold Imin**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
0.05In *Only available if:* • V[1] . Imin release check = active	0.02In ... 10.00In	P.2
	Threshold value that is used for the Imin release (minimum current) check. If the current flow is below this value, it is assumed that the circuit breaker is permanently in open state.	

V[1] . **t-delay Imin**	[Protection Para / Set 1…4 / V-Prot / V[1]]	
0.03s *Only available if:* • V[1] . Imin release check = active	0.00s ... 3000.00s	P.2
	Release delay for the undervoltage detection. This delay is effective only after the minimum current check had blocked the undervoltage detection. When the circuit breaker has been closed and the current flow is re-establishing, this delay continues to block the undervoltage detection; during this time the voltage can rise above the pickup value »V<«.	

9.12.4 V[1]: Input States

V[1] . **ExBlo1-I**	[Operation / Status Display / V-Prot / V[1]]
	Module input state: External blocking1

V[1] . **ExBlo2-I**	[Operation / Status Display / V-Prot / V[1]]
	Module input state: External blocking2

V[1] . **ExBlo TripCmd-I**	[Operation / Status Display / V-Prot / V[1]]
	Module input state: External Blocking of the Trip Command

9.12.5 V[1]: Signals (Output States)

V[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / V-Prot / V[1]]
	Signal: active

V[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / V-Prot / V[1]]
	Signal: Alarm voltage stage

V[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / V-Prot / V[1]]
	Signal: Trip

V[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / V-Prot / V[1]]
	Signal: Trip Command

V[1] . **ExBlo**	[Operation / Status Display / V-Prot / V[1]]
	Signal: External Blocking

V[1] . **Blo TripCmd**	[Operation / Status Display / V-Prot / V[1]]
	Signal: Trip Command blocked

V[1] . **ExBlo TripCmd**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: External Blocking of the Trip Command*

V[1] . **Alarm L1**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: Alarm L1*

V[1] . **Alarm L2**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: Alarm L2*

V[1] . **Alarm L3**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: Alarm L3*

V[1] . **Trip L1**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: General Trip Phase L1*

V[1] . **Trip L2**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: General Trip Phase L2*

V[1] . **Trip L3**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal: General Trip Phase L3*

V[1] . **Imin release active**	[Operation / Status Display / V-Prot / V[1]]
⇧	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*

9.12.6 V[1]: Counters

V[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

V[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.13 VG[1] . . . VG[2] – Residual voltage-Stage

9.13.1 VG[1]: Device Planning Parameters

VG[1] . **Mode**	[Device planning]	
“-”	“-”, V>, V< ↳ Device planning.	S.3
	Residual voltage-Stage, general operation mode	

VG[1] . **Superv. only**	[Device planning]	
no	no, yes ↳ yes/no.	S.3
	Residual voltage-Stage, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general alarm, no general trip and no trip command.	

9.13.2 VG[1]: Global Parameters

VG[1] . **ExBlo1** VG[1] . **ExBlo2**	[Protection Para / Global Prot Para / V-Prot / VG[1]]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

VG[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / V-Prot / VG[1]]	
“-”	“-” . . . MStart . Blo-FrqStart ↳ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

VG[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / V-Prot / VG[1]]	
"-" *Only available if:* • VG[1] . Superv. only = no	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.13.3 VG[1]: Setting Group Parameters

VG[1] . **Function**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

VG[1] . **ExBlo Fc**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

VG[1] . **Blo TripCmd**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
inactive *Only available if:* • VG[1] . Superv. only = no	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

VG[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
inactive *Only available if:* • VG[1] . Superv. only = no	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

VG[1] . **VX Source**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
measured	measured, calculated VX Source.	P.2
	Selection if VG is measured or calculated (neutral voltage or residual voltage)	

VG[1] . **Measuring method**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
Fundamental	Fundamental, True RMS Measuring method.	P.2
	Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)	

VG[1] . **VG>**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
1Vn	0.01Vn ... 2.00Vn	P.2
	If the pickup value is exceeded, the module/stage will be started.	

VG[1] . **VG<**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
0.8Vn	0.01Vn ... 2.00Vn	P.2
	Undervoltage Threshold	

VG[1] . **t**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
0.00s	0.00s ... 300.00s	P.2
	Tripping delay	

VG[1] . **Meas Circuit Superv**	[Protection Para / Set 1...4 / V-Prot / VG[1]]	
Sys . inactive	Sys . inactive, LOP . active VTS Block.	P.2
	Activates the use of the measuring circuit supervision. In this case the module will be blocked if a measuring circuit supervision module (e.g. LOP, VTS) signals a disturbed measuring circuit (e.g. caused by a fuse failure).	

9.13.4 VG[1]: Input States

VG[1] . **ExBlo1-I**	[Operation / Status Display / V-Prot / VG[1]]
	Module input state: External blocking1

VG[1] . **ExBlo2-I**	[Operation / Status Display / V-Prot / VG[1]]
⇩	*Module input state: External blocking2*

VG[1] . **ExBlo TripCmd-I**	[Operation / Status Display / V-Prot / VG[1]]
⇩	*Only available if:* • VG[1] . Superv. only = no *Module input state: External Blocking of the Trip Command*

9.13.5 VG[1]: Signals (Output States)

VG[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / V-Prot / VG[1]]
⇧	*Signal: active*

VG[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / V-Prot / VG[1]]
⇧	*Signal: Alarm Residual Voltage Supervision-stage*

VG[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / V-Prot / VG[1]]
⇧	*Signal: Trip*

VG[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / V-Prot / VG[1]]
⇧	*Only available if:* • VG[1] . Superv. only = no *Signal: Trip Command*

VG[1] . **ExBlo**	[Operation / Status Display / V-Prot / VG[1]]
⇧	*Signal: External Blocking*

VG[1] . **Blo TripCmd**	[Operation / Status Display / V-Prot / VG[1]]
⇮	*Only available if:* • VG[1] . Superv. only = no *Signal: Trip Command blocked*

VG[1] . **ExBlo TripCmd**	[Operation / Status Display / V-Prot / VG[1]]
⇮	*Only available if:* • VG[1] . Superv. only = no *Signal: External Blocking of the Trip Command*

9.13.6 VG[1]: Counters

VG[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

VG[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.14 I2>[1] . . . I2>[2] – Unbalanced Load-Stage

9.14.1 I2>[1]: Device Planning Parameters

I2>[1] . **Mode**	[Device planning]	
use	“-”, use └▷ Device planning.	S.3
	Unbalanced Load-Stage, general operation mode	

9.14.2 I2>[1]: Global Parameters

I2>[1] . **ExBlo1** I2>[1] . **ExBlo2**	[Protection Para / Global Prot Para / I-Prot / I2>[1]]	
“-”	“-” . . . Sys . Internal test state └▷ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

I2>[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / I-Prot / I2>[1]]	
MStart . Blo-I2>Start	“-” . . . MStart . Blo-FrqStart └▷ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

I2>[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / I-Prot / I2>[1]]	
“-”	“-” . . . Sys . Internal test state └▷ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.14.3 I2>[1]: Setting Group Parameters

I2>[1] . **Function**	[Protection Para / Set 1…4 / I-Prot / I2>[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

I2>[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / I-Prot / I2>[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

I2>[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / I-Prot / I2>[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

I2>[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / I-Prot / I2>[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

I2>[1] . **I2>**	[Protection Para / Set 1…4 / I-Prot / I2>[1]]	
0.08In	0.01In . . . 4.00In	P.2
	The Threshold setting defines a minimum operating current magnitude of I2 for the 46 function to operate, which ensures that the relay has a solid basis for initiating a current unbalance trip. This is a supervisory function and not a trip level.	

I2>[1] . **%(I2/I1)**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
inactive	inactive, active └─▷ Mode.	P.2
	The %(I2/I1) setting is the unbalance trip pickup setting. It is defined by the ratio of negative sequence current to positive sequence current (% Unbalance=I2/I1). Phase sequence will be taken into account automatically.	

I2>[1] . **%(I2/I1)**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
20%	2% ... 40%	P.2
	The %(I2/I1) setting is the unbalance trip pickup setting. It is defined by the ratio of negative sequence current to positive sequence current (% Unbalance=I2/I1). Phase sequence will be taken into account automatically.	

I2>[1] . **Char**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
DEFT	DEFT, INV └─▷ Char.	P.2
	Characteristic	

I2>[1] . **t**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
0.00s	0.00s ... 300.00s	P.2
	Tripping delay	

I2>[1] . **K**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
10.0s	1.00s ... 200.00s	P.2
	This setting is the negative sequence capability constant. This value is normally provided by the generator manufacturer.	

I2>[1] . **τ-cool**	[Protection Para / Set 1...4 / I-Prot / I2>[1]]	
0.0s	0.0s ... 60000.0s	P.2
	If the unbalanced load current falls below the pickup value, the cooling-off time is taken into account. If the unbalanced load exceeds the pickup value again, than the saved heat within the electrical equipment will lead to an accelerated trip.	

9.14.4 I2>[1]: Input States

I2>[1] . **ExBlo1-I**	[Operation / Status Display / I-Prot / I2>[1]]
	Module input state: External blocking1

I2>[1] . **ExBlo2-I**	[Operation / Status Display / I-Prot / I2>[1]]
⇩	*Module input state: External blocking2*

I2>[1] . **ExBlo TripCmd-I**	[Operation / Status Display / I-Prot / I2>[1]]
⇩	*Module input state: External Blocking of the Trip Command*

9.14.5 I2>[1]: Signals (Output States)

I2>[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: active*

I2>[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: Alarm Negative Sequence*

I2>[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: Trip*

I2>[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: Trip Command*

I2>[1] . **ExBlo**	[Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: External Blocking*

I2>[1] . **Blo TripCmd**	[Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: Trip Command blocked*

I2>[1] . **ExBlo TripCmd**	[Operation / Status Display / I-Prot / I2>[1]]
⇧	*Signal: External Blocking of the Trip Command*

9.14.6 I2>[1]: Counters

I2>[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

I2>[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.15 V012[1] . . . V012[6] – Symmetrical Components: Supervision of the Positive Phase Sequence or Negative Phase Sequence

9.15.1 V012[1]: Device Planning Parameters

V012[1] . **Mode**	[Device planning]	
“-”	“-”, V1>, V1<, V2> Device planning.	S.3
	Unbalance Protection: Supervision of the Voltage System	

9.15.2 V012[1]: Global Parameters

V012[1] . **ExBlo1**	[Protection Para / Global Prot Para / V-Prot / V012[1]]	
“-”	“-” . . . Sys . Internal test state 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.1	

V012[1] . **ExBlo2**	[Protection Para / Global Prot Para / V-Prot / V012[1]]	
“-”	“-” . . . Sys . Internal test state 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.2	

V012[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / V-Prot / V012[1]]	
“-”	“-” . . . MStart . Blo-FrqStart 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

V012[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / V-Prot / V012[1]]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.15.3 V012[1]: Setting Group Parameters

V012[1] . **Function**	[Protection Para / Set 1…4 / V-Prot / V012[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

V012[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / V-Prot / V012[1]]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

V012[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / V-Prot / V012[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

V012[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / V-Prot / V012[1]]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

V012[1] . **V1>**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
1.00Vn	0.01Vn . . . 2.00Vn	P.2
	Positive Phase Sequence Overvoltage	

V012[1] . **V1<**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
1.00Vn	0.01Vn . . . 2.00Vn	P.2
	Positive Phase Sequence Undervoltage	

V012[1] . **V2>**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
1.00Vn	0.01Vn . . . 2.00Vn	P.2
	Negative Phase Sequence Overvoltage	

V012[1] . **%(V2/V1)**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	The %(V2/V1) setting is the unbalance trip pickup setting. It is defined by the ratio of negative sequence voltage to positive sequence voltage (% Unbalance=V2/V1). Phase sequence will be taken into account automatically.	

V012[1] . **%(V2/V1)**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
20%	2% . . . 40%	P.2
	The %(V2/V1) setting is the unbalance trip pickup setting. It is defined by the ratio of negative sequence voltage to positive sequence voltage (% Unbalance=V2/V1). Phase sequence will be taken into account automatically.	

V012[1] . **t**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
0.00s	0.00s . . . 300.00s	P.2
	Tripping delay	

V012[1] . **Meas Circuit Superv**	[Protection Para / Set 1...4 / V-Prot / V012[1]]	
Sys . inactive	Sys . inactive, LOP . active ⮡ VTS Block.	P.2
	Activates the use of the measuring circuit supervision. In this case the module will be blocked if a measuring circuit supervision module (e.g. LOP, VTS) signals a disturbed measuring circuit (e.g. caused by a fuse failure).	

9.15.4 V012[1]: Input States

V012[1] . **ExBlo1-I**	[Operation / Status Display / V-Prot / V012[1]]
	Module input state: External blocking1

V012[1] . **ExBlo2-I**	[Operation / Status Display / V-Prot / V012[1]]
	Module input state: External blocking2

V012[1] . **ExBlo TripCmd-I**	[Operation / Status Display / V-Prot / V012[1]]
	Module input state: External Blocking of the Trip Command

9.15.5 V012[1]: Signals (Output States)

V012[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / V-Prot / V012[1]]
	Signal: active

V012[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / V-Prot / V012[1]]
	Signal: Alarm voltage asymmetry

V012[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / V-Prot / V012[1]]
	Signal: Trip

V012[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / V-Prot / V012[1]]
	Signal: Trip Command

V012[1] . **ExBlo**	[Operation / Status Display / V-Prot / V012[1]]
	Signal: External Blocking

V012[1] . **Blo TripCmd**	[Operation / Status Display / V-Prot / V012[1]]
	Signal: Trip Command blocked

V012[1] . **ExBlo TripCmd**	[Operation / Status Display / V-Prot / V012[1]]
⇫	*Signal: External Blocking of the Trip Command*

9.15.6 V012[1]: Counters

V012[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

V012[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.16 f[1] . . . f[6] – Frequency Protection Module

9.16.1 f[1]: Device Planning Parameters

f[1] . **Mode**	[Device planning]	
f<	“-” . . . delta phi ↳ Device planning.	S.3
	Frequency Protection Module, general operation mode	

9.16.2 f[1]: Global Parameters

f[1] . **ExBlo1** f[1] . **ExBlo2**	[Protection Para / Global Prot Para / f-Prot / f[1]]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

f[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / f-Prot / f[1]]	
MStart . Blo-FrqStart	“-” . . . MStart . Blo-FrqStart ↳ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

f[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / f-Prot / f[1]]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.16.3 f[1]: Setting Group Parameters

f[1] . **Function**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
active	inactive, active └═▷ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

f[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
inactive	inactive, active └═▷ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

f[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
inactive	inactive, active └═▷ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

f[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
inactive	inactive, active └═▷ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

f[1] . **f>**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
51.00Hz	40.00Hz ... 69.00Hz	P.2
	Pickup value for overfrequency.	

f[1] . **f<**	[Protection Para / Set 1…4 / f-Prot / f[1]]	
49.00Hz	40.00Hz ... 69.00Hz	P.2
	Pickup value for underfrequency.	

f[1] . **Freq. drop-off**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
0.020Hz	0.010Hz . . . 0.100Hz	P.2
	Drop-off for the Frequency function. This setting modifies the shape of the hysteresis that is used for the frequency protection.	

f[1] . **t**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
1.00s	0.00s . . . 3600.00s	P.2
	Tripping delay	

f[1] . **df/dt**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
1.000Hz/s	0.100Hz/s . . . 10.000Hz/s	P.2
	Measured value (calculated): Rate-of-frequency-change.	

f[1] . **t-df/dt**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
1.00s	0.00s . . . 300.00s	P.2
	Trip delay df/dt	

f[1] . **DF**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
1.00Hz	0.0Hz . . . 10.0Hz	P.2
	Frequency difference for the maximum admissible variation of the mean of the rate of frequency-change. This function is inactive if DF=0.	

f[1] . **DT**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
1.00s	0.1s . . . 10.0s	P.2
	Time interval of the maximum admissible rate-of-frequency-change.	

f[1] . **df/dt mode**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
absolute df/dt	absolute df/dt, positive df/dt, negative df/dt ⮡ Mode.	P.2
	df/dt mode	

f[1] . **delta phi**	[Protection Para / Set 1...4 / f-Prot / f[1]]	
10°	1° . . . 30°	P.2
	Measured value (calculated): Vector surge	

9.16.4 f[1]: Input States

f[1] . **ExBlo1-I**	[Operation / Status Display / f-Prot / f[1]]
	Module input state: External blocking1

f[1] . **ExBlo2-I**	[Operation / Status Display / f-Prot / f[1]]
	Module input state: External blocking2

f[1] . **ExBlo TripCmd-I**	[Operation / Status Display / f-Prot / f[1]]
	Module input state: External Blocking of the Trip Command

9.16.5 f[1]: Signals (Output States)

f[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / f-Prot / f[1]]
	Signal: active

f[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / f-Prot / f[1]]
	Signal: Alarm Frequency Protection (collective signal)

f[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / f-Prot / f[1]]
	Signal: Trip Frequency Protection (collective signal)

f[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / f-Prot / f[1]]
	Signal: Trip Command

f[1] . **ExBlo**	[Operation / Status Display / f-Prot / f[1]]
	Signal: External Blocking

f[1] . **Blo by V<**	[Operation / Status Display / f-Prot / f[1]]
	Signal: Module is blocked by undervoltage.

f[1] . **Blo TripCmd**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Trip Command blocked*

f[1] . **ExBlo TripCmd**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: External Blocking of the Trip Command*

f[1] . **Alarm f**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Alarm Frequency Protection*

f[1] . **Alarm df/dt | DF/DT**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Alarm instantaneous or average value of the rate-of-frequency-change*

f[1] . **Alarm delta phi**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Alarm Vector Surge*

f[1] . **Trip f**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Frequency has exceeded the limit.*

f[1] . **Trip df/dt | DF/DT**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Trip df/dt or DF/DT*

f[1] . **Trip delta phi**	[Operation / Status Display / f-Prot / f[1]]
⇧	*Signal: Trip Vector Surge*

9.16.6 f[1]: Counters

f[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

f[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.17 PQS[1] . . . PQS[6] – Power Protection - Module

9.17.1 PQS[1]: Device Planning Parameters

PQS[1] . **Mode**	[Device planning]	
P>	"-" . . . S< └⇒ Mode.	S.3
🔧	*Power Protection - Module, general operation mode*	

9.17.2 PQS[1]: Global Parameters

PQS[1] . **ExBlo1** PQS[1] . **ExBlo2**	[Protection Para / Global Prot Para / P-Prot / PQS[1]]	
"-"	"-" . . . Sys . Internal test state └⇒ 1..n, Assignment List.	P.2
🔧	*External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.*	

PQS[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / P-Prot / PQS[1]]	
MStart . Blo-PowerStart	"-" . . . MStart . Blo-FrqStart └⇒ 1..n, Trip Cmds.	P.2
🔧	*External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.*	

PQS[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / P-Prot / PQS[1]]	
"-"	"-" . . . Sys . Internal test state └⇒ 1..n, Assignment List.	P.2
🔧	*External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.*	

9.17.3 PQS[1]: Setting Group Parameters

PQS[1] . **Function**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
active	inactive, active └⇒ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

PQS[1] . **ExBlo Fc**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

PQS[1] . **Blo TripCmd**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
inactive	inactive, active └⇒ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

PQS[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
inactive	inactive, active └⇒ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

PQS[1] . **MeasCircSv Volt**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
Sys . inactive	Sys . inactive, LOP . active └⇒ VTS Block.	P.2
	Measuring Circuit Supervision Voltage	

PQS[1] . **MeasCircSv Curr**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
Sys . inactive	Sys . inactive, CTS . active VTS Block.	P.2
	Measuring Circuit Supervision Curent	

PQS[1] . **P>**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
1.0Sn	0.003Sn . . . 10.000Sn	P.2
	*Over(load) Active Power Pickup Value. Can be used for monitoring the maximum allowed forward power limits of transformers or overhead lines. Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **P<**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
0.80Sn	0.003Sn . . . 10.000Sn	P.2
	*Under(load) Active Power Pickup Value (e.g. caused by idling motors). Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Pr>**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
0.020Sn	0.003Sn . . . 10.000Sn	P.2
	*Overload Reverse Active Power Pickup Value. Protection against reverse feeding into the power supply network. Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Pr<**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
0.80Sn	0.003Sn . . . 10.000Sn	P.2
	*Under Reverse Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Q>**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
1.20Sn	0.003Sn . . . 10.000Sn	P.2
	*Over(load) Reactive Power Pickup Value. Monitoring the maximum allowed reactive power of the electrical equipment like transformers or overhead lines). If the maximum value is exceeded a condensator bank could be switched off. Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Q<**	[Protection Para / Set 1…4 / P-Prot / PQS[1]]	
0.80Sn	0.003Sn . . . 10.000Sn	P.2
	*Under(load) Reactive Power Pickup Value. Monitoring the minimum value of the reactive power. If it falls below the set value a condensator bank could be switched on. Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Qr>**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
0.020Sn	0.003Sn ... 10.000Sn	P.2
	*Overload Reverse Reactive Power Pickup Value Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **Qr<**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
0.80Sn	0.003Sn ... 10.000Sn	P.2
	*Under Reverse Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **S>**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
1.20Sn	0.02Sn ... 10.00Sn	P.2
	*Over(load) Apparent Power Pickup Value Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **S<**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
0.80Sn	0.02Sn ... 10.00Sn	P.2
	*Under(load) Apparent Power Pickup Value Definition for Sn is as follows: Sn = 1.7321 * VT rating * CT rating. The voltage is the line-to-line voltage.*	

PQS[1] . **t**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
1.00s	0.00s ... 1100.00s	P.2
	Tripping delay	

PQS[1] . **PowMeasMethod**	[Protection Para / Set 1...4 / P-Prot / PQS[1]]	
Fundamental	Fundamental, True RMS ↳ PowMeasMethod.	P.2
	Determines if the active power, reactive power and apparent power are calculated on the basis of RMS or DFT.	

9.17.4 PQS[1]: Input States

PQS[1] . **ExBlo1-I** PQS[1] . **ExBlo2-I**	[Operation / Status Display / P-Prot / PQS[1]]
	Module input state: External blocking

PQS[1] . **ExBlo TripCmd-I**	[Operation / Status Display / P-Prot / PQS[1]]
⇩	*Module input state: External Blocking of the Trip Command*

9.17.5 PQS[1]: Signals (Output States)

PQS[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: active*

PQS[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: Alarm Power Protection*

PQS[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: Trip Power Protection*

PQS[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: Trip Command*

PQS[1] . **ExBlo**	[Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: External Blocking*

PQS[1] . **Blo TripCmd**	[Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: Trip Command blocked*

PQS[1] . **ExBlo TripCmd**	[Operation / Status Display / P-Prot / PQS[1]]
⇧	*Signal: External Blocking of the Trip Command*

9.17.6 PQS[1]: Counters

PQS[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

PQS[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.18 PF[1] . . . PF[2] – Power Factor - Module

9.18.1 PF[1]: Device Planning Parameters

PF[1] . **Mode**	[Device planning]	
“-”	“-”, use ⮡ Mode.	S.3
	Power Factor - Module, general operation mode	

9.18.2 PF[1]: Global Parameters

PF[1] . **ExBlo1** PF[1] . **ExBlo2**	[Protection Para / Global Prot Para / PF-Prot / PF[1]]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

PF[1] . **ExBlo dur. Mot.Strt**	[Protection Para / Global Prot Para / PF-Prot / PF[1]]	
“-”	“-” . . . MStart . Blo-FrqStart ⮡ 1..n, Trip Cmds.	P.2
	External blocking of the module, if the state of the assigned signal is true. This way it is possible to block the module during the motor start phase.	

PF[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / PF-Prot / PF[1]]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.18.3 PF[1]: Setting Group Parameters

PF[1] . **Function**	[Protection Para / Set 1…4 / PF-Prot / PF[1]]	
inactive	inactive, active ⮑ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

PF[1] . **ExBlo Fc**	[Protection Para / Set 1…4 / PF-Prot / PF[1]]	
inactive	inactive, active ⮑ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

PF[1] . **Blo TripCmd**	[Protection Para / Set 1…4 / PF-Prot / PF[1]]	
inactive	inactive, active ⮑ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

PF[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / PF-Prot / PF[1]]	
inactive	inactive, active ⮑ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

PF[1] . **Measuring method**	[Protection Para / Set 1…4 / PF-Prot / PF[1]]	
Fundamental	Fundamental, True RMS ⮑ Measuring method.	P.2
	Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)	

PF[1] . **Trig Mode**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
I lags V	I leads V, I lags V ↳ Mode.	P.2
	Trigger Mode. Should the Module be triggered if the Current Phasor is leading to the Voltage Phasor = Lead? Or should the Module be triggered if the Current Phasor is lagging to the Voltage Phasor = Lag?	

PF[1] . **Trigger-PF**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
0.8	0.5 . . . 0.99	P.2
	This is the power factor where the relay will pick-up.	

PF[1] . **Res Mode**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
I leads V	I leads V, I lags V ↳ Mode.	P.2
	Trigger Mode. Should the Module be triggered if the Current Phasor is leading to the Voltage Phasor = Lead? Or should the Module be triggered if the Current Phasor is lagging to the Voltage Phasor = Lag?	

PF[1] . **Reset-PF**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
0.99	0.5 . . . 0.99	P.2
	This setting is the power factor, at which the relay will reset the power factor trip. It is like setting a hysteresis for the Trigger setting.	

PF[1] . **t**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
0.00s	0.00s . . . 300.00s	P.2
	Tripping delay	

PF[1] . **Pre-trig Comp**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
5.00s	0.00s . . . 300.00s	P.2
	Pickup (Pre-trigger) time for the Compensation Signal. When this timer is elapsed the compensation signal will be activated.	

PF[1] . **Post-trig Comp**	[Protection Para / Set 1...4 / PF-Prot / PF[1]]	
5.00s	0.00s . . . 300.00s	P.2
	Post-trigger time of the Compensation Signal. When this timer is elapsed the compensation signal will be deactivated.	

9.18.4 PF[1]: Input States

PF[1] . **ExBlo1-I** PF[1] . **ExBlo2-I**	[Operation / Status Display / PF-Prot / PF[1]]
	Module input state: External blocking

PF[1] . **ExBlo TripCmd-I**	[Operation / Status Display / PF-Prot / PF[1]]
	Module input state: External Blocking of the Trip Command

9.18.5 PF[1]: Signals (Output States)

PF[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / PF-Prot / PF[1]]
	Signal: active

PF[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / PF-Prot / PF[1]]
	Signal: Alarm Power Factor

PF[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / PF-Prot / PF[1]]
	Signal: Trip Power Factor

PF[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / PF-Prot / PF[1]]
	Signal: Trip Command

PF[1] . **ExBlo**	[Operation / Status Display / PF-Prot / PF[1]]
	Signal: External Blocking

PF[1] . **Blo TripCmd**	[Operation / Status Display / PF-Prot / PF[1]]
	Signal: Trip Command blocked

PF[1] . **ExBlo TripCmd**	[Operation / Status Display / PF-Prot / PF[1]]
⇫	*Signal: External Blocking of the Trip Command*

PF[1] . **Compensator**	[Operation / Status Display / PF-Prot / PF[1]]
⇫	*Signal: Compensation Signal*

PF[1] . **Impossible**	[Operation / Status Display / PF-Prot / PF[1]]
⇫	*Signal: Alarm Power Factor Impossible*

9.18.6 PF[1]: Counters

PF[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
#	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

PF[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
#	*Number of trip commands since the last reset*

9.19 ExP[1] . . . ExP[4] – External Protection - Module

9.19.1 ExP[1]: Device Planning Parameters

ExP[1] . **Mode**	[Device planning]	
“-”	“-”, use └▷ Device planning.	S.3
External Protection - Module, general operation mode		

9.19.2 ExP[1]: Global Parameters

ExP[1] . **ExBlo1** ExP[1] . **ExBlo2**	[Protection Para / Global Prot Para / ExP / ExP[1]]	
“-”	“-” . . . Sys . Internal test state └▷ 1..n, Assignment List.	P.2
External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.		

ExP[1] . **ExBlo TripCmd**	[Protection Para / Global Prot Para / ExP / ExP[1]]	
“-”	“-” . . . Sys . Internal test state └▷ 1..n, Assignment List.	P.2
External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.		

ExP[1] . **Alarm**	[Protection Para / Global Prot Para / ExP / ExP[1]]	
“-”	“-” . . . Sys . Internal test state └▷ 1..n, Assignment List.	P.2
Assignment for External Alarm		

ExP[1] . **Trip**	[Protection Para / Global Prot Para / ExP / ExP[1]]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External trip of the CB if the state of the assigned signal is true.	

9.19.3 ExP[1]: Setting Group Parameters

ExP[1] . **Function**	[Protection Para / Set 1...4 / ExP / ExP[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

ExP[1] . **ExBlo Fc**	[Protection Para / Set 1...4 / ExP / ExP[1]]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

ExP[1] . **Blo TripCmd**	[Protection Para / Set 1...4 / ExP / ExP[1]]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

ExP[1] . **ExBlo TripCmd Fc**	[Protection Para / Set 1...4 / ExP / ExP[1]]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

9.19.4 ExP[1]: Input States

ExP[1] . **ExBlo1-I**	[Operation / Status Display / ExP / ExP[1]]
Module input state: External blocking1	

ExP[1] . **ExBlo2-I**	[Operation / Status Display / ExP / ExP[1]]
Module input state: External blocking2	

ExP[1] . **ExBlo TripCmd-I**	[Operation / Status Display / ExP / ExP[1]]
Module input state: External Blocking of the Trip Command	

ExP[1] . **Alarm-I**	[Operation / Status Display / ExP / ExP[1]]
Module input state: Alarm	

ExP[1] . **Trip-I**	[Operation / Status Display / ExP / ExP[1]]
Module input state: Trip	

9.19.5 ExP[1]: Signals (Output States)

ExP[1] . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / ExP / ExP[1]]
Signal: active	

ExP[1] . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / ExP / ExP[1]]
Signal: Alarm	

ExP[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / ExP / ExP[1]]
Signal: Trip	

ExP[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / ExP / ExP[1]]
Signal: Trip Command	

ExP[1] . **ExBlo**	[Operation / Status Display / ExP / ExP[1]]
⇫	*Signal: External Blocking*

ExP[1] . **Blo TripCmd**	[Operation / Status Display / ExP / ExP[1]]
⇫	*Signal: Trip Command blocked*

ExP[1] . **ExBlo TripCmd**	[Operation / Status Display / ExP / ExP[1]]
⇫	*Signal: External Blocking of the Trip Command*

9.19.6 ExP[1]: Counters

ExP[1] . **NumberOfAlarms**	[Operation / History / AlarmCr]
⊞	*Number of alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

ExP[1] . **NumberOfTripCmds**	[Operation / History / TripCmdCr]
⊞	*Number of trip commands since the last reset*

9.20 URTD – Universal Resistance Temperature Detector

9.20.1 URTD: Settings

URTD . **Temperature Unit**	[Device Para / Measurem Display / General Settings]	
Celsius	Celsius, Fahrenheit ⮡ Units.	P.2
	Temperature Unit	

URTD . **Force Mode**	[Service / Test (Prot inhibit) / URTD]	
permanent	permanent, timeout ⮡ Mode.	P.2
	By means of this function the normal Output Relay States can be overwritten (forced) in case that the Relay is not in a disarmed state. The relays can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.	

URTD . **t-Timeout Force**	[Service / Test (Prot inhibit) / URTD]	
0.03s *Only available if:* • URTD . Force Mode = timeout	0.00s . . . 300.00s	P.2
	The Output State will be set by force for the duration of this time. That means for the duration of this time the Output Relay does not show the state of the signals that are assigned on it.	

9.20.2 URTD: Direct Controls

URTD . **Function**	[Service / Test (Prot inhibit) / URTD]	
inactive	inactive, active ⮡ active/inactive.	P.1
◉	*Permanent activation or deactivation of module/stage.*	

URTD . **Force Windg1**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 . . . 392 If: URTD . Temperature Unit = Celsius • 0 . . . 200	P.1
◉	*Force Winding 1*	

URTD . **Force Windg2**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 . . . 392 If: URTD . Temperature Unit = Celsius • 0 . . . 200	P.1
◉	*Force Winding 2*	

URTD . **Force Windg3**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 . . . 392 If: URTD . Temperature Unit = Celsius • 0 . . . 200	P.1
◉	*Force Winding 3*	

URTD . **Force Windg4**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 . . . 392 If: URTD . Temperature Unit = Celsius • 0 . . . 200	P.1
◉	*Force Winding 4*	

URTD . **Force Windg5**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Winding 5*	

URTD . **Force Windg6**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Winding 6*	

URTD . **Force MotBear1**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Motor Bearing 1*	

URTD . **Force MotBear2**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Motor Bearing 2*	

URTD . **Force LoadBear1**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Load Bearing 1*	

URTD . **Force LoadBear2**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Load Bearing 2*	

URTD . **Force Aux1**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Auxiliary1*	

URTD . **Force Aux2**	[Service / Test (Prot inhibit) / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Auxiliary2*	

9.20.3 URTD: Signals (Output States)

URTD . **Windg1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **Windg2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **Windg3 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg3, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **Windg4 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg4, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **Windg5 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg5, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **Windg6 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: Windg6, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **MotBear1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: MotBear1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **MotBear2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: MotBear2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **LoadBear1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: LoadBear1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

URTD . **LoadBear2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: LoadBear2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)

URTD . **Aux1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: Aux1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)

URTD . **Aux2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: Aux2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)

URTD . **Superv**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: URTD Channel Supervision. The value “1” reports a detected channel failure of at least one channel. (The value “0” means that all RTD channels are healthy.)

URTD . **Connection active**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: There is an active connection between the Temperature Detector (URTD) and the protective relay.

URTD . **Outs forced**	[Operation / Status Display / Temp-Prot / URTD]
	Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.

9.20.4 URTD: Values

URTD . **Windg1**	[Operation / Measured Values / URTD]
	Winding 1

URTD . **Windg2**	[Operation / Measured Values / URTD]
	Winding 2

URTD . **Windg3**	[Operation / Measured Values / URTD]
	Winding 3

URTD . **Windg4**	[Operation / Measured Values / URTD]
	Winding 4

URTD . **Windg5**	[Operation / Measured Values / URTD]
✎	*Winding 5*

URTD . **Windg6**	[Operation / Measured Values / URTD]
✎	*Winding 6*

URTD . **MotBear1**	[Operation / Measured Values / URTD]
✎	*Motor Bearing 1*

URTD . **MotBear2**	[Operation / Measured Values / URTD]
✎	*Motor Bearing 2*

URTD . **LoadBear1**	[Operation / Measured Values / URTD]
✎	*Load Bearing 1*

URTD . **LoadBear2**	[Operation / Measured Values / URTD]
✎	*Load Bearing 2*

URTD . **Aux1**	[Operation / Measured Values / URTD]
✎	*Auxiliary1*

URTD . **Aux2**	[Operation / Measured Values / URTD]
✎	*Auxiliary2*

URTD . **RTD Max**	[Operation / Measured Values / URTD]
✎	*Maximum temperature of all channels.*

9.20.5 URTD: Statistical Values

URTD . **Windg1 max**	[Operation / Statistics / Max / URTD]
☑	*Winding1 Maximum Value*

URTD . **Windg2 max**	[Operation / Statistics / Max / URTD]
☑	*Winding2 Maximum Value*

URTD . **Windg3 max**	[Operation / Statistics / Max / URTD]
☑	*Winding3 Maximum Value*

URTD . **Windg4 max**	[Operation / Statistics / Max / URTD]
☑	*Winding4 Maximum Value*

URTD . **Windg5 max**	[Operation / Statistics / Max / URTD]
☑	*Winding5 Maximum Value*

URTD . **Windg6 max**	[Operation / Statistics / Max / URTD]
☑	*Winding6 Maximum Value*

URTD . **MotBear1 max**	[Operation / Statistics / Max / URTD]
☑	*Motor Bearing1 Maximum Value*

URTD . **MotBear2 max**	[Operation / Statistics / Max / URTD]
☑	*Motor Bearing2 Maximum Value*

URTD . **LoadBear1 max**	[Operation / Statistics / Max / URTD]
☑	*Load Bearing1 Maximum Value*

URTD . **LoadBear2 max**	[Operation / Statistics / Max / URTD]
☑	*Load Bearing2 Maximum Value*

URTD . **Aux1 max**	[Operation / Statistics / Max / URTD]
☑	*Auxiliary1 Maximum Value*

URTD . **Aux2 max**	[Operation / Statistics / Max / URTD]
☑	*Auxiliary2 Maximum Value*

9.21 RTD – Temperature Protection Module

9.21.1 RTD: Device Planning Parameters

RTD . **Mode**	[Device planning]	
“-”	“-”, use ⮑ Device planning.	S.3
	general operation mode	

9.21.2 RTD: Global Parameters

RTD . **ExBlo1** RTD . **ExBlo2**	[Protection Para / Global Prot Para / Temp-Prot / RTD]	
“-”	“-” . . . Sys . Internal test state ⮑ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

RTD . **ExBlo TripCmd**	[Protection Para / Global Prot Para / Temp-Prot / RTD]	
“-”	“-” . . . Sys . Internal test state ⮑ 1..n, Assignment List.	P.2
	External blocking of the Trip Command of the module/the stage, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

RTD . **TripCmd Selection**	[Protection Para / Global Prot Para / Temp-Prot / RTD]	
Trip	Trip, Voting Trip ⮑ TripCmd Selection.	P.2
	This parameter determines if the final trip of the RTD module is issued by the default way or by the voting groups.	

9.21.3 RTD: Setting Group Parameters

RTD . **Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / General Settings] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

RTD . **ExBlo Fc**	[Protection Para / Set 1…4 / Temp-Prot / RTD / General Settings]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

RTD . **Blo TripCmd**	[Protection Para / Set 1…4 / Temp-Prot / RTD / General Settings]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent blocking of the Trip Command of the module/stage.	

RTD . **ExBlo TripCmd Fc**	[Protection Para / Set 1…4 / Temp-Prot / RTD / General Settings]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo TripCmd Fc=active".	

RTD . **Windg 1 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 1]	
active	inactive, active ↳ Mode.	P.2
	Winding 1 Alarm Function	

RTD . **Windg 1 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 1]	
active	inactive, active ↳ Mode.	P.2
	Winding 1 Trip Function	

RTD . **Windg 1 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 1]	
80°C	0°C . . . 200°C	P.2
	Winding 1 Threshold for Temperature Alarm	

RTD . **Windg 1 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 1]	
1min	0min . . . 360min	P.2
	Winding 1 After this time has expired a Temperature Alarm is issued.	

RTD . **Windg 1 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 1]	
100°C	0°C . . . 200°C	P.2
	Winding 1 Threshold for Temperature Trip	

RTD . **Windg 2 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 2]	
active	inactive, active ↳ Mode.	P.2
	Winding 2 Alarm Function	

RTD . **Windg 2 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 2]	
active	inactive, active ↳ Mode.	P.2
	Winding 2 Trip Function	

RTD . **Windg 2 Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 2]	
80°C	0°C . . . 200°C	P.2
Winding 2 Threshold for Temperature Alarm		

RTD . **Windg 2 t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 2]	
1min	0min . . . 360min	P.2
Winding 2 After this time has expired a Temperature Alarm is issued.		

RTD . **Windg 2 Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 2]	
100°C	0°C . . . 200°C	P.2
Winding 2 Threshold for Temperature Trip		

RTD . **Windg 3 Alarm Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 3]	
active	inactive, active ⮡ Mode.	P.2
Winding 3 Alarm Function		

RTD . **Windg 3 Trip Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 3]	
active	inactive, active ⮡ Mode.	P.2
Winding 3 Trip Function		

RTD . **Windg 3 Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 3]	
80°C	0°C . . . 200°C	P.2
Winding 3 Threshold for Temperature Alarm		

RTD . **Windg 3 t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 3]	
1min	0min . . . 360min	P.2
Winding 3 After this time has expired a Temperature Alarm is issued.		

RTD . **Windg 3 Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 3]	
100°C	0°C . . . 200°C	P.2
Winding 3 Threshold for Temperature Trip		

RTD . **Windg 4 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 4]	
active	inactive, active ⮡ Mode.	P.2
Winding 4 Alarm Function		

RTD . **Windg 4 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 4]	
active	inactive, active ⮡ Mode.	P.2
Winding 4 Trip Function		

RTD . **Windg 4 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 4]	
80°C	0°C ... 200°C	P.2
Winding 4 Threshold for Temperature Alarm		

RTD . **Windg 4 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 4]	
1min	0min ... 360min	P.2
Winding 4 After this time has expired a Temperature Alarm is issued.		

RTD . **Windg 4 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 4]	
100°C	0°C ... 200°C	P.2
Winding 4 Threshold for Temperature Trip		

RTD . **Windg 5 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 5]	
active	inactive, active ⮡ Mode.	P.2
Winding 5 Alarm Function		

RTD . **Windg 5 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg 5]	
active	inactive, active ⮡ Mode.	P.2
Winding 5 Trip Function		

RTD . **Windg 5 Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 5]	
80°C	0°C . . . 200°C	P.2
Winding 5 Threshold for Temperature Alarm		

RTD . **Windg 5 t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 5]	
1min	0min . . . 360min	P.2
Winding 5 After this time has expired a Temperature Alarm is issued.		

RTD . **Windg 5 Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 5]	
100°C	0°C . . . 200°C	P.2
Winding 5 Threshold for Temperature Trip		

RTD . **Windg 6 Alarm Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 6]	
active	inactive, active Mode.	P.2
Winding 6 Alarm Function		

RTD . **Windg 6 Trip Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 6]	
active	inactive, active Mode.	P.2
Winding 6 Trip Function		

RTD . **Windg 6 Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 6]	
80°C	0°C . . . 200°C	P.2
Winding 6 Threshold for Temperature Alarm		

RTD . **Windg 6 t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 6]	
1min	0min . . . 360min	P.2
Winding 6 After this time has expired a Temperature Alarm is issued.		

RTD . **Windg 6 Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Windg 6]	
100°C	0°C . . . 200°C	P.2
Winding 6 Threshold for Temperature Trip		

RTD . **MotBear 1 Alarm Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 1]	
active	inactive, active ⮡ Mode.	P.2
Motor Bearing 1 Alarm Function		

RTD . **MotBear 1 Trip Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 1]	
active	inactive, active ⮡ Mode.	P.2
Motor Bearing 1 Trip Function		

RTD . **MotBear 1 Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 1]	
80°C	0°C ... 200°C	P.2
Motor Bearing 1 Threshold for Temperature Alarm		

RTD . **MotBear 1 t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 1]	
1min	0min ... 360min	P.2
Motor Bearing 1 After this time has expired a Temperature Alarm is issued.		

RTD . **MotBear 1 Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 1]	
100°C	0°C ... 200°C	P.2
Motor Bearing 1 Threshold for Temperature Trip		

RTD . **MotBear 2 Alarm Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 2]	
active	inactive, active ⮡ Mode.	P.2
Motor Bearing 2 Alarm Function		

RTD . **MotBear 2 Trip Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / MotBear 2]	
active	inactive, active ⮡ Mode.	P.2
Motor Bearing 2 Trip Function		

RTD . **MotBear 2 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear 2]	
80°C	0°C . . . 200°C	P.2
	Motor Bearing 2 Threshold for Temperature Alarm	

RTD . **MotBear 2 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear 2]	
1min	0min . . . 360min	P.2
	Motor Bearing 2 After this time has expired a Temperature Alarm is issued.	

RTD . **MotBear 2 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear 2]	
100°C	0°C . . . 200°C	P.2
	Motor Bearing 2 Threshold for Temperature Trip	

RTD . **LoadBear 1 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 1]	
active	inactive, active ⮡ Mode.	P.2
	Load Bearing 1 Alarm Function	

RTD . **LoadBear 1 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 1]	
active	inactive, active ⮡ Mode.	P.2
	Load Bearing 1 Trip Function	

RTD . **LoadBear 1 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 1]	
80°C	0°C . . . 200°C	P.2
	Load Bearing 1 Threshold for Temperature Alarm	

RTD . **LoadBear 1 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 1]	
1min	0min . . . 360min	P.2
	Load Bearing 1 After this time has expired a Temperature Alarm is issued.	

RTD . **LoadBear 1 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 1]	
80°C	0°C . . . 200°C	P.2
	Load Bearing 1 Threshold for Temperature Trip	

RTD . **LoadBear 2 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 2]	
active	inactive, active Mode.	P.2
Load Bearing 2 Alarm Function		

RTD . **LoadBear 2 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 2]	
active	inactive, active Mode.	P.2
Load Bearing 2 Trip Function		

RTD . **LoadBear 2 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 2]	
80°C	0°C . . . 200°C	P.2
Load Bearing 2 Threshold for Temperature Alarm		

RTD . **LoadBear 2 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 2]	
1min	0min . . . 360min	P.2
Load Bearing 2 After this time has expired a Temperature Alarm is issued.		

RTD . **LoadBear 2 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear 2]	
80°C	0°C . . . 200°C	P.2
Load Bearing 2 Threshold for Temperature Trip		

RTD . **Aux1 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 1]	
active	inactive, active Mode.	P.2
Auxiliary 1 Alarm Function		

RTD . **Aux1 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 1]	
active	inactive, active Mode.	P.2
Auxiliary 1 Trip Function		

RTD . **Aux1 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 1]	
80°C	0°C . . . 200°C	P.2
	Auxiliary 1 Threshold for Temperature Alarm	

RTD . **Aux1 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 1]	
1min	0min . . . 360min	P.2
	Auxiliary 1 After this time has expired a Temperature Alarm is issued.	

RTD . **Aux1 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 1]	
100°C	0°C . . . 200°C	P.2
	Auxiliary 1 Threshold for Temperature Trip	

RTD . **Aux2 Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 2]	
active	inactive, active ⮡ Mode.	P.2
	Auxiliary 2 Alarm Function	

RTD . **Aux2 Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 2]	
active	inactive, active ⮡ Mode.	P.2
	Auxiliary 2 Trip Function	

RTD . **Aux2 Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 2]	
80°C	0°C . . . 200°C	P.2
	Auxiliary 2 Threshold for Temperature Alarm	

RTD . **Aux2 t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 2]	
1min	0min . . . 360min	P.2
	Auxiliary 2 After this time has expired a Temperature Alarm is issued.	

RTD . **Aux2 Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Aux 2]	
100°C	0°C . . . 200°C	P.2
	Auxiliary 2 Threshold for Temperature Trip	

RTD . **Windg Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg Group]	
inactive	inactive, active ⮡ Mode.	P.2
	Winding Alarm Function	

RTD . **Windg Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg Group]	
inactive	inactive, active ⮡ Mode.	P.2
	Winding Trip Function	

RTD . **Windg Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg Group]	
80°C	0°C . . . 200°C	P.2
	Winding Threshold for Temperature Alarm	

RTD . **Windg t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg Group]	
1min	0min . . . 360min	P.2
	Winding After this time has expired a Temperature Alarm is issued.	

RTD . **Windg Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Windg Group]	
100°C	0°C . . . 200°C	P.2
	Winding Threshold for Temperature Trip	

RTD . **MotBear Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear Group]	
inactive	inactive, active ⮡ Mode.	P.2
	Motor Bearing Alarm Function	

RTD . **MotBear Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear Group]	
inactive	inactive, active ⮡ Mode.	P.2
	Motor Bearing Trip Function	

RTD . **MotBear Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear Group]	
80°C	0°C . . . 200°C	P.2
Motor Bearing Threshold for Temperature Alarm		

RTD . **MotBear t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear Group]	
1min	0min . . . 360min	P.2
Motor Bearing After this time has expired a Temperature Alarm is issued.		

RTD . **MotBear Trip**	[Protection Para / Set 1…4 / Temp-Prot / RTD / MotBear Group]	
100°C	0°C . . . 200°C	P.2
Motor Bearing Threshold for Temperature Trip		

RTD . **LoadBear Alarm Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear Group]	
inactive	inactive, active ⮡ Mode.	P.2
Load Bearing Alarm Function		

RTD . **LoadBear Trip Function**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear Group]	
inactive	inactive, active ⮡ Mode.	P.2
Load Bearing Trip Function		

RTD . **LoadBear Alarm**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear Group]	
80°C	0°C . . . 200°C	P.2
Load Bearing Threshold for Temperature Alarm		

RTD . **LoadBear t-Alarm-Delay**	[Protection Para / Set 1…4 / Temp-Prot / RTD / LoadBear Group]	
1min	0min . . . 360min	P.2
Load Bearing After this time has expired a Temperature Alarm is issued.		

RTD . **LoadBear Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / LoadBear Group]	
100°C	0°C ... 200°C	P.2
	Load Bearing Threshold for Temperature Trip	

RTD . **Aux Alarm Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Aux Group]	
inactive	inactive, active └▷ Mode.	P.2
	Auxiliary Alarm Function	

RTD . **Aux Trip Function**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Aux Group]	
inactive	inactive, active └▷ Mode.	P.2
	Auxiliary Trip Function	

RTD . **Aux Alarm**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Aux Group]	
80°C	0°C ... 200°C	P.2
	Auxiliary Threshold for Temperature Alarm	

RTD . **Aux t-Alarm-Delay**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Aux Group]	
1min	0min ... 360min	P.2
	Auxiliary After this time has expired a Temperature Alarm is issued.	

RTD . **Aux Trip**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Aux Group]	
100°C	0°C ... 200°C	P.2
	Auxiliary Threshold for Temperature Trip	

RTD . **Voting 1** RTD . **Voting 2**	[Protection Para / Set 1...4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1...4 / Temp-Prot / RTD / Voting2]	
1	1 ... 12	P.2
	Voting: This parameter defines how many of the selected channels must be over its threshold level for getting a voting trip	

RTD . **Windg 1**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
Winding 1		

RTD . **Windg 2**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
Winding 2		

RTD . **Windg 3**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
Winding 3		

RTD . **Windg 4**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
Winding 4		

RTD . **Windg 5**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
Winding 5		

RTD . **Windg 6**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ⮡ yes/no.	P.2
	Winding 6	

RTD . **MotBear 1**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ⮡ yes/no.	P.2
	Motor Bearing 1	

RTD . **MotBear 2**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ⮡ yes/no.	P.2
	Motor Bearing 2	

RTD . **LoadBear 1**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ⮡ yes/no.	P.2
	Load Bearing 1	

RTD . **LoadBear 2**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ⮡ yes/no.	P.2
	Load Bearing 2	

RTD . **Aux1**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
	Auxiliary1	

RTD . **Aux2**	[Protection Para / Set 1…4 / Temp-Prot / RTD / Voting1] [Protection Para / Set 1…4 / Temp-Prot / RTD / Voting2]	
no	no, yes ↳ yes/no.	P.2
	Auxiliary2	

9.21.4 RTD: Input States

RTD . **ExBlo1-I**	[Operation / Status Display / Temp-Prot / RTD / General]
	Module input state: External blocking1

RTD . **ExBlo2-I**	[Operation / Status Display / Temp-Prot / RTD / General]
	Module input state: External blocking2

RTD . **ExBlo TripCmd-I**	[Operation / Status Display / Temp-Prot / RTD / General]
	Module input state: External Blocking of the Trip Command

9.21.5 RTD: Signals (Output States)

RTD . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Temp-Prot / RTD / General]
	Signal: active

RTD . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / General]
	Alarm RTD Temperature Protection

RTD . **Windg 1 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 1]
⇫ *Winding 1 Alarm RTD Temperature Protection*	

RTD . **Windg 1 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 1]
⇫ *Winding 1 Timeout Alarm*	

RTD . **Windg 2 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 2]
⇫ *Winding 2 Alarm RTD Temperature Protection*	

RTD . **Windg 2 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 2]
⇫ *Winding 2 Timeout Alarm*	

RTD . **Windg 3 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 3]
⇫ *Winding 3 Alarm RTD Temperature Protection*	

RTD . **Windg 3 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 3]
⇫ *Winding 3 Timeout Alarm*	

RTD . **Windg 4 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 4]
⇫ *Winding 4 Alarm RTD Temperature Protection*	

RTD . **Windg 4 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 4]
⇫ *Winding 4 Timeout Alarm*	

RTD . **Windg 5 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 5]
⇧	*Winding 5 Alarm RTD Temperature Protection*

RTD . **Windg 5 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 5]
⇧	*Winding 5 Timeout Alarm*

RTD . **Windg 6 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 6]
⇧	*Winding 6 Alarm RTD Temperature Protection*

RTD . **Windg 6 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg 6]
⇧	*Winding 6 Timeout Alarm*

RTD . **MotBear 1 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear 1]
⇧	*Motor Bearing 1 Alarm RTD Temperature Protection*

RTD . **MotBear 1 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear 1]
⇧	*Motor Bearing 1 Timeout Alarm*

RTD . **MotBear 2 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear 2]
⇧	*Motor Bearing 2 Alarm RTD Temperature Protection*

RTD . **MotBear 2 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear 2]
⇧	*Motor Bearing 2 Timeout Alarm*

RTD . **LoadBear 1 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear 1]
Load Bearing 1 Alarm RTD Temperature Protection	

RTD . **LoadBear 1 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear 1]
Load Bearing 1 Timeout Alarm	

RTD . **LoadBear 2 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear 2]
Load Bearing 2 Alarm RTD Temperature Protection	

RTD . **LoadBear 2 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear 2]
Load Bearing 2 Timeout Alarm	

RTD . **Aux1 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux1]
Auxiliary 1 Alarm RTD Temperature Protection	

RTD . **Aux1 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux1]
Auxiliary 1 Timeout Alarm	

RTD . **Aux2 Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux2]
Auxiliary 2 Alarm RTD Temperature Protection	

RTD . **Aux2 Timeout Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux2]
Auxiliary 2 Timeout Alarm	

RTD . **Alarm WD Group**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg Group]
⇮	*Alarm all Windings*

RTD . **TimeoutAlmWDGrp**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Windg Group]
⇮	*Timeout Alarm all Windings*

RTD . **Alarm MB Group**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear Group]
⇮	*Alarm all Motor Bearings*

RTD . **TimeoutAlmMBGrp**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / MotBear Group]
⇮	*Timeout Alarm all Motor Bearings*

RTD . **Alarm LB Group**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear Group]
⇮	*Alarm all Load Bearings*

RTD . **TimeoutAlmLBGrp**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / LoadBear Group]
⇮	*Timeout Alarm all Load Bearings*

RTD . **Alarm Aux Group**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇮	*Alarm Auxiliary Group*

RTD . **TimeoutAlmAuxGrp**	[Operation / Status Display / Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇮	*Timeout Alarm Auxiliary Group*

RTD . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Signal: Trip*

RTD . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Signal: Trip Command*

RTD . **ExBlo**	[Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Signal: External Blocking*

RTD . **Blo TripCmd**	[Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Signal: Trip Command blocked*

RTD . **ExBlo TripCmd**	[Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Signal: External Blocking of the Trip Command*

RTD . **Timeout Alarm**	[Operation / Status Display / Temp-Prot / RTD / General]
⇮	*Alarm timeout expired*

RTD . **Windg 1 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 1]
⇮	*Winding 1 Signal: Trip*

RTD . **Windg 1 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 1]
⇮	*Winding 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Windg 2 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 2]
⇮	*Winding 2 Signal: Trip*

RTD . **Windg 2 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 2]
	Winding 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **Windg 3 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 3]
	Winding 3 Signal: Trip

RTD . **Windg 3 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 3]
	Winding 3 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **Windg 4 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 4]
	Winding 4 Signal: Trip

RTD . **Windg 4 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 4]
	Winding 4 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **Windg 5 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 5]
	Winding 5 Signal: Trip

RTD . **Windg 5 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 5]
	Winding 5 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **Windg 6 Trip**	[Operation / Status Display / Temp-Prot / RTD / Windg 6]
	Winding 6 Signal: Trip

RTD . **Windg 6 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg 6]
	Winding 6 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **MotBear 1 Trip**	[Operation / Status Display / Temp-Prot / RTD / MotBear 1]
	Motor Bearing 1 Signal: Trip

RTD . **MotBear 1 Invalid**	[Operation / Status Display / Temp-Prot / RTD / MotBear 1]
	Motor Bearing 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)

RTD . **MotBear 2 Trip**	[Operation / Status Display / Temp-Prot / RTD / MotBear 2]
⇧	*Motor Bearing 2 Signal: Trip*

RTD . **MotBear 2 Invalid**	[Operation / Status Display / Temp-Prot / RTD / MotBear 2]
⇧	*Motor Bearing 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **LoadBear 1 Trip**	[Operation / Status Display / Temp-Prot / RTD / LoadBear 1]
⇧	*Load Bearing 1 Signal: Trip*

RTD . **LoadBear 1 Invalid**	[Operation / Status Display / Temp-Prot / RTD / LoadBear 1]
⇧	*Load Bearing 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **LoadBear 2 Trip**	[Operation / Status Display / Temp-Prot / RTD / LoadBear 2]
⇧	*Load Bearing 2 Signal: Trip*

RTD . **LoadBear 2 Invalid**	[Operation / Status Display / Temp-Prot / RTD / LoadBear 2]
⇧	*Load Bearing 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Aux1 Trip**	[Operation / Status Display / Temp-Prot / RTD / Aux1]
⇧	*Auxiliary 1 Signal: Trip*

RTD . **Aux1 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Aux1]
⇧	*Auxiliary 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Aux2 Trip**	[Operation / Status Display / Temp-Prot / RTD / Aux2]
⇧	*Auxiliary 2 Signal: Trip*

RTD . **Aux2 Invalid**	[Operation / Status Display / Temp-Prot / RTD / Aux2]
⇧	*Auxiliary 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip WD Group**	[Operation / Status Display / Temp-Prot / RTD / Windg Group]
⇧	*Trip all Windings*

RTD . **Windg Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / Windg Group]
⇫	*Winding Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip MB Group**	[Operation / Status Display / Temp-Prot / RTD / MotBear Group]
⇫	*Trip all Motor Bearings*

RTD . **MotBear Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / MotBear Group]
⇫	*Motor Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip LB Group**	[Operation / Status Display / Temp-Prot / RTD / LoadBear Group]
⇫	*Trip all Load Bearings*

RTD . **LoadBear Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / LoadBear Group]
⇫	*Load Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip Aux Group**	[Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇫	*Trip Auxiliary Group*

RTD . **AuxGrpInvalid**	[Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇫	*Invalid Auxiliary Group*

RTD . **Trip Any Group**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇫	*Trip Any Group*

RTD . **Alarm Any Group**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇫	*Alarm Any Group*

RTD . **TimeoutAlmAnyGrp**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇫	*Timeout Alarm Any Group*

RTD . **Trip Group 1**	[Operation / Status Display / Temp-Prot / RTD / Voting]
⇧	*Trip Group 1*

RTD . **Trip Group 2**	[Operation / Status Display / Temp-Prot / RTD / Voting]
⇧	*Trip Group 2*

9.21.6 RTD: Values And Counters

RTD . **HottestWindingTemp**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest winding temperature.*

RTD . **Hottest MotBearTemp**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest motor bearing temperature.*

RTD . **Hottest LoadBearTemp**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest load bearing temperature.*

RTD . **Hottest Aux Temp**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest Auxiliary temperature.*

RTD . **HighestWdTemp**	[Operation / History / OperationsCr]
#	*Highest motor winding temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestMbTemp**	[Operation / History / OperationsCr]
#	*Highest motor bearing temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestLbTemp**	[Operation / History / OperationsCr]
#	*Highest load bearing temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestAuxTemp**	[Operation / History / OperationsCr]
#	*Highest Auxiliary temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **nWdAlarms**	[Operation / History / AlarmCr]
[#]	*Number of winding temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nMbAlarms**	[Operation / History / AlarmCr]
[#]	*Number of motor bearing temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nLbAlarms**	[Operation / History / AlarmCr]
[#]	*Number of load bearing temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nAuxAlarms**	[Operation / History / AlarmCr]
[#]	*Number of auxiliary temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nChannelFails**	[Operation / History / AlarmCr]
[#]	*Number of RTD channel failures. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nWdTrips**	[Operation / History / TripCmdCr]
[#]	*Number of winding temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nMbTrips**	[Operation / History / TripCmdCr]
[#]	*Number of motor bearing temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nLbTrips**	[Operation / History / TripCmdCr]
[#]	*Number of load bearing temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nAuxTrips**	[Operation / History / TripCmdCr]
[#]	*Number of auxiliary temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

9.22 Supervision

9.22.1 CBF – Circuit breaker failure protection module

9.22.1.1 CBF: Device Planning Parameters

CBF . **Mode**	[Device planning]	
“-”	“-”, use ╚▷ Device planning.	S.3
	Module Circuit Breaker Failure protection, general operation mode	

9.22.1.2 CBF: Global Parameters

CBF . **Scheme**	[Protection Para / Global Prot Para / Supervision / CBF]	
50BF	50BF, CB Pos, 50BF and CB Pos ╚▷ Scheme.	P.2
	Scheme	

CBF . **ExBlo1** CBF . **ExBlo2**	[Protection Para / Global Prot Para / Supervision / CBF]	
“-”	“-” . . . Sys . Internal test state ╚▷ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

CBF . **Trigger**	[Protection Para / Global Prot Para / Supervision / CBF]	
All Trips	- . -, All Trips, External Trips, Current Trips ╚▷ Trigger.	P.2
	Determining the trigger mode for the Breaker Failure.	

CBF . **Trigger1** CBF . **Trigger2** CBF . **Trigger3**	[Protection Para / Global Prot Para / Supervision / CBF]	
“-”	“-” . . . Logics . LE80.Out inverted ⮑ Trigger.	P.2
	Trigger that will start the CBF	

9.22.1.3 CBF: Setting Group Parameters

CBF . **Function**	[Protection Para / Set 1…4 / Supervision / CBF]	
inactive	inactive, active ⮑ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

CBF . **ExBlo Fc**	[Protection Para / Set 1…4 / Supervision / CBF]	
inactive	inactive, active ⮑ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

CBF . **I-CBF >**	[Protection Para / Set 1…4 / Supervision / CBF]	
0.02In	0.02In . . . 4.00In	P.2
	Breaker Failure Alarm will be initiated if this threshold is still exceeded after the timer has expired (50 BF).	

CBF . **t-CBF**	[Protection Para / Set 1…4 / Supervision / CBF]	
0.20s	0.00s . . . 10.00s	P.2
	If the delay time is expired, an CBF alarm is given out.	

9.22.1.4 CBF: Direct Controls

CBF . **Res Lockout**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ⮡ Mode.	P.1
◉	*Reset Lockout*	

9.22.1.5 CBF: Input States

CBF . **ExBlo1-I**	[Operation / Status Display / Supervision / CBF]
⇩	*Module input state: External blocking1*

CBF . **ExBlo2-I**	[Operation / Status Display / Supervision / CBF]
⇩	*Module input state: External blocking2*

CBF . **Trigger1-I** CBF . **Trigger2-I** CBF . **Trigger3-I**	[Operation / Status Display / Supervision / CBF]
⇩	*Module Input: Trigger that will start the CBF*

9.22.1.6 CBF: Signals (Output States)

CBF . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Supervision / CBF]
⇧	*Signal: active*

CBF . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Supervision / CBF]
⇧	*Signal: Circuit Breaker Failure*

CBF . **ExBlo**	[Operation / Status Display / Supervision / CBF]
⇧	*Signal: External Blocking*

CBF . **Waiting for Trigger**	[Operation / Status Display / Supervision / CBF]
⇫	*Waiting for Trigger*

CBF . **running**	[Operation / Status Display / Supervision / CBF]
⇫	*Signal: CBF-Module started*

CBF . **Lockout**	[Operation / Status Display / Supervision / CBF]
⇫	*Signal: Lockout*

CBF . **Res Lockout**	[Operation / Status Display / Supervision / CBF]
⇫	*Signal: Reset Lockout*

9.22.2 TCS – Trip circuit supervision

9.22.2.1 TCS: Device Planning Parameters

TCS . **Mode**	[Device planning]	
"-"	"-", use ↳ Device planning.	S.3
	Trip circuit supervision, general operation mode	

9.22.2.2 TCS: Global Parameters

TCS . **Mode**	[Protection Para / Global Prot Para / Supervision / TCS]	
Closed	Closed, Either ↳ Mode.	P.2
	Select if trip circuit is going to be monitored when the breaker is closed or when the breaker is either open or close.	

TCS . **Input 1**	[Protection Para / Global Prot Para / Supervision / TCS]	
"-"	"-" . . . DI Slot X1 . DI 8 ↳ 1..n, Dig Inputs.	P.2
	Select the input configured to monitor the trip coil when the breaker is closed.	

TCS . **Input 2**	[Protection Para / Global Prot Para / Supervision / TCS]	
"-" *Only available if:* • TCS . Mode = Either	"-" . . . DI Slot X1 . DI 8 ↳ 1..n, Dig Inputs.	P.2
	Select the input configured to monitor the trip coil when the breaker is open. Only available if Mode set to "Either".	

TCS . **ExBlo1** TCS . **ExBlo2**	[Protection Para / Global Prot Para / Supervision / TCS]	
“-”	“-” . . . Sys . Internal test state 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.22.2.3 TCS: Setting Group Parameters

TCS . **Function**	[Protection Para / Set 1...4 / Supervision / TCS]	
inactive	inactive, active Mode.	P.2
	Permanent activation or deactivation of module/stage.	

TCS . **ExBlo Fc**	[Protection Para / Set 1...4 / Supervision / TCS]	
inactive	inactive, active active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

TCS . **t-TCS**	[Protection Para / Set 1...4 / Supervision / TCS]	
0.2s	0.10s . . . 10.00s	P.2
	Delay time of the Trip Circuit Supervision	

9.22.2.4 TCS: Input States

TCS . **Aux ON-I**	[Operation / Status Display / Supervision / TCS]
	Module Input State: Position indicator/check-back signal of the CB (52a)

TCS . **Aux OFF-I**	[Operation / Status Display / Supervision / TCS]
	Module input state: Position indicator/check-back signal of the CB (52b)

TCS . **ExBlo1-I**	[Operation / Status Display / Supervision / TCS]
⇩	*Module input state: External blocking1*

TCS . **ExBlo2-I**	[Operation / Status Display / Supervision / TCS]
⇩	*Module input state: External blocking2*

9.22.2.5 TCS: Signals (Output States)

TCS . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Supervision / TCS]
⇧	*Signal: active*

TCS . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Supervision / TCS]
⇧	*Signal: Alarm Trip Circuit Supervision*

TCS . **ExBlo**	[Operation / Status Display / Supervision / TCS]
⇧	*Signal: External Blocking*

TCS . **Not Possible**	[Operation / Status Display / Supervision / TCS]
⇧	*Not possible because no state indicator assigned to the breaker.*

9.22.3 CTS – CT Supervision

9.22.3.1 CTS: Device Planning Parameters

CTS . **Mode**	[Device planning]	
“-”	“-”, use ⮡ Device planning.	S.3
	CT Supervision, general operation mode	

9.22.3.2 CTS: Global Parameters

CTS . **ExBlo1** CTS . **ExBlo2**	[Protection Para / Global Prot Para / Supervision / CTS]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

9.22.3.3 CTS: Setting Group Parameters

CTS . **Function**	[Protection Para / Set 1…4 / Supervision / CTS]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

CTS . **ExBlo Fc**	[Protection Para / Set 1…4 / Supervision / CTS]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

CTS . **ΔI**	[Protection Para / Set 1…4 / Supervision / CTS]	
0.50In	0.10In ... 1.00In	P.2
	In order to prevent faulty tripping of phase selective protection functions that use the current as tripping criterion. If the difference of the measured earth current and the calculated value I0 is higher than the pick up value ΔI, an alarm event is generated after expiring of the excitation time. In such a case, a fuse failure, a broken wire or a faulty measuring circuit can be assumed.	

CTS . **Alarm delay**	[Protection Para / Set 1…4 / Supervision / CTS]	
1.0s	0.0s ... 9999.0s	P.2
	Alarm delay	

CTS . **Kd**	[Protection Para / Set 1…4 / Supervision / CTS]	
0.00	0.00 ... 0.99	P.2
	Dynamic correction factor for the evaluation of the difference between calculated and measured earth current. This correction factor allows transformer faults, caused by higher currents, to be compensated.	

9.22.3.4 CTS: Input States

CTS . **ExBlo1-I**	[Operation / Status Display / Supervision / CTS]
	Module input state: External blocking1

CTS . **ExBlo2-I**	[Operation / Status Display / Supervision / CTS]
	Module input state: External blocking2

9.22.3.5 CTS: Signals (Output States)

CTS . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Supervision / CTS]
	Signal: active

CTS . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Supervision / CTS]
	Signal: Alarm Current Transformer Measuring Circuit Supervision

CTS . **ExBlo**	[Operation / Status Display / Supervision / CTS]
⮭	*Signal: External Blocking*

9.22.4 LOP – Loss of Potential

9.22.4.1 LOP: Device Planning Parameters

LOP . **Mode**	[Device planning]	
“-”	“-”, use ⮡ Device planning.	S.3
	general operation mode	

9.22.4.2 LOP: Global Parameters

LOP . **CB Pos Detect**	[Protection Para / Global Prot Para / Supervision / LOP]	
“-”	“-”, SG[1] . Pos ⮡ CB Manager.	P.2
	If there is a circuit breaker assigned, LOP will be inhibited if the circuit breaker is open. The position of the breaker will not be taken into account by LOP if no breaker is assigned.	

LOP . **ExBlo1** LOP . **ExBlo2**	[Protection Para / Global Prot Para / Supervision / LOP]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.	

LOP . **Blo Trigger1** **. . .** LOP . **Blo Trigger5**	[Protection Para / Global Prot Para / Supervision / LOP]	
“-”	“-” . . . IG[4] . Alarm ⮡ Blo Trigger.	P.2
	An Alarm of this protective element will block the Loss of Potential Detection.	

LOP . **Ex FF VT**	[Protection Para / Global Prot Para / Supervision / LOP]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	Alarm Fuse Failure Voltage Transformers	

LOP . **Ex FF EVT**	[Protection Para / Global Prot Para / Supervision / LOP]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	Alarm Fuse Failure Earth Voltage Transformers	

9.22.4.3 LOP: Setting Group Parameters

LOP . **Function**	[Protection Para / Set 1…4 / Supervision / LOP]	
inactive	inactive, active ⮡ Mode.	P.2
	Permanent activation or deactivation of module/stage.	

LOP . **ExBlo Fc**	[Protection Para / Set 1…4 / Supervision / LOP]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

LOP . **LOPB Enable**	[Protection Para / Set 1…4 / Supervision / LOP]	
inactive	inactive, active ⮡ active/inactive.	P.2
	Activate (allow) or inactivate (disallow) blocking by the module LOP.	

LOP . **I<**	[Protection Para / Set 1…4 / Supervision / LOP]	
2.0In	0.5In . . . 4.0In	P.2
	To prevent unintended operation during faults, this threshold should be used to distinguish between load current and overcurrent. A current above this threshold will be seen as overcurrent and LOP will be inhibited. If the current detector identifies load current as overcurrent (threshold to low), a LOP situation will not be detected and if the threshold is too high, a fault situation will be identified as LOP which results in blocking of protection functions.	

LOP . **t-Alarm**	[Protection Para / Set 1…4 / Supervision / LOP]	
0.1s	0s . . . 9999.0s	P.2
	Pickup Delay	

LOP . **Dead Bus Detection**	[Protection Para / Set 1…4 / Supervision / LOP]	
inactive	inactive, active ⮡ Mode.	P.2
	If this detection is active, LOP will be inhibited if there is no current and voltage applied.	

9.22.4.4 LOP: Input States

LOP . **ExBlo1-I**	[Operation / Status Display / Supervision / LOP]
	Module input state: External blocking1

LOP . **ExBlo2-I**	[Operation / Status Display / Supervision / LOP]
	Module input state: External blocking2

LOP . **Ex FF VT-I**	[Operation / Status Display / Supervision / LOP]
	State of the module input: Alarm Fuse Failure Voltage Transformers

LOP . **Ex FF EVT-I**	[Operation / Status Display / Supervision / LOP]
	State of the module input: Alarm Fuse Failure Earth Voltage Transformers

LOP . **Blo Trigger1-I** ... LOP . **Blo Trigger5-I**	[Operation / Status Display / Supervision / LOP]
⇩	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*

9.22.4.5 LOP: Signals (Output States)

LOP . **active**	[Operation / Status Display / All Actives] [Operation / Status Display / Supervision / LOP]
⇧	*Signal: active*

LOP . **Alarm**	[Operation / Status Display / Alarms] [Operation / Status Display / Supervision / LOP]
⇧	*Signal: Alarm Loss of Potential*

LOP . **ExBlo**	[Operation / Status Display / Supervision / LOP]
⇧	*Signal: External Blocking*

LOP . **LOP Blo**	[Operation / Status Display / Supervision / LOP]
⇧	*Signal: Loss of Potential blocks other elements.*

LOP . **Ex FF VT**	[Operation / Status Display / Supervision / LOP]
⇧	*Signal: Ex FF VT*

LOP . **Ex FF EVT**	[Operation / Status Display / Supervision / LOP]
⇧	*Signal: Alarm Fuse Failure Earth Voltage Transformers*

10 Control

Control Page	[Control / Control Page]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *Control Page*

10.1 Ctrl: Device Planning Parameters

10.2 Ctrl: Settings

Ctrl . **Res NonIL**	[Control / General Settings]	
single Operation	single Operation, timeout, permanent ↳ NonIL ResetMode.	C.2
	Resetmode Non-Interlocking	

Ctrl . **Timeout NonIL**	[Control / General Settings]	
60s	2s . . . 3600s	C.2
	Timeout Non-Interlocking	

Ctrl . **NonIL Assign**	[Control / General Settings]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	C.2
	Assignment Non-Interlocking	

10.3 Ctrl: Direct Controls

Ctrl . **Switching Authority**	[Control / General Settings]	
Local	None, Local, Remote, Local and Remote ↳ Switching Authority.	C.2
	Switching Authority	

Ctrl . **NonInterl**	[Control / General Settings]	
inactive	inactive, active └▷ Mode.	C.2
◉	*DC for Non-Interlocking*	

10.4 Ctrl: Input States

Ctrl . **NonInterl-I**	[Operation / Status Display / Control / General Control]
⇩	*Non-Interlocking*

10.5 Ctrl: Signals (Output States)

Ctrl . **Local**	[Operation / Status Display / Control / General Control]
⇧	*Switching Authority: Local*

Ctrl . **Remote**	[Operation / Status Display / Control / General Control]
⇧	*Switching Authority: Remote*

Ctrl . **NonInterl**	[Operation / Status Display / Control / General Control]
⇧	*Non-Interlocking is active*

Ctrl . **SG Indeterm**	[Operation / Status Display / Control / General Control]
⇧	*(At least one) Switchgear is moving (Position cannot be determined).*

Ctrl . **SG Disturb**	[Operation / Status Display / Control / General Control]
⇧	*(At least one) Switchgear is disturbed.*

Ctrl . **CES SAuthority**	[Operation / Status Display / Control / General Control]
⇧	*Command Execution Supervision: Number of rejected Commands because of missing switching authority.*

Ctrl . **CES DoubleOperating**	[Operation / Status Display / Control / General Control]
⇧	*Command Execution Supervision: Number of rejected Commands because a second switch command is in conflict with a pending one.*

10.6 Ctrl: Values

Ctrl . **Switching Authority**	[Operation / Security / Security States]	
Local	None, Local, Remote, Local and Remote ↳ Switching Authority.	
	Switching Authority	

10.7 SG[1] – Switchgear

10.7.1 SG[1]: Settings

SG[1] . **OFF incl TripCmd**	[Control / SG / SG[1] / General Settings]	
active	inactive, active ⮡ Mode.	C.2
	The OFF Command includes the OFF Command issued by the Protection module.	

SG[1] . **t-Move ON**	[Control / SG / SG[1] / General Settings]	
0.1s	0.01s ... 100.00s	C.2
	Time to move to the ON Position	

SG[1] . **t-Move OFF**	[Control / SG / SG[1] / General Settings]	
0.1s	0.01s ... 100.00s	C.2
	Time to move to the OFF Position	

SG[1] . **t-Dwell**	[Control / SG / SG[1] / General Settings]	
0s	0s ... 100.00s	C.2
	Dwell time	

SG[1] . **t-TripCmd**	[Control / SG / SG[1] / Trip Manager]	
0.2s	0s ... 300.00s	P.2
	Minimum hold time of the OFF-command (circuit breaker, load break switch)	

SG[1] . **Latched**	[Control / SG / SG[1] / Trip Manager]	
inactive	inactive, active ⮡ Mode.	P.2
	Defines whether the Trip Command is latched.	

SG[1] . **Ack TripCmd**	[Control / SG / SG[1] / Trip Manager]	
“-”	“-” ... Sys . Internal test state ⮡ 1..n, Assignment List.	P.2
	Ack TripCmd	

SG[1] . **Off Cmd1**	[Control / SG / SG[1] / Trip Manager]	
MStart . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd2**	[Control / SG / SG[1] / Trip Manager]	
I[1] . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd3**	[Control / SG / SG[1] / Trip Manager]	
I[2] . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd4**	[Control / SG / SG[1] / Trip Manager]	
I2>[1] . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd5**	[Control / SG / SG[1] / Trip Manager]	
ThR . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd6**	[Control / SG / SG[1] / Trip Manager]	
Jam[1] . TripCmd	“-” . . . RTD . TripCmd ⮡ 1..n, Trip Cmds.	P.2
Off Command to the Circuit Breaker if the state of the assigned signal becomes true.		

SG[1] . **Off Cmd7**	[Control / SG / SG[1] / Trip Manager]	
I<[1] . TripCmd	“-” . . . RTD . TripCmd 1..n, Trip Cmds.	P.2
	Off Command to the Circuit Breaker if the state of the assigned signal becomes true.	

SG[1] . **Off Cmd8** . . . SG[1] . **Off Cmd55**	[Control / SG / SG[1] / Trip Manager]	
“-”	“-” . . . RTD . TripCmd 1..n, Trip Cmds.	P.2
	Off Command to the Circuit Breaker if the state of the assigned signal becomes true.	

SG[1] . **Aux ON**	[Control / SG / SG[1] / Pos Indicatrs Wirng]	
DI Slot X1 . DI 1	“-” . . . Logics . LE80.Out inverted 1..n, DI-LogicList.	C.2
	The CB is in ON-position if the state of the assigned signal is true (52a).	

SG[1] . **Aux OFF**	[Control / SG / SG[1] / Pos Indicatrs Wirng]	
DI Slot X1 . DI 2	“-” . . . Logics . LE80.Out inverted 1..n, DI-LogicList.	C.2
	The CB is in OFF-position if the state of the assigned signal is true (52b).	

SG[1] . **Ready**	[Control / SG / SG[1] / Pos Indicatrs Wirng]	
“-”	“-” . . . Logics . LE80.Out inverted 1..n, DI-LogicList.	C.2
	Circuit breaker is ready for operation if the state of the assigned signal is true. This digital input can be used by some protective elements (if they are available within the device) like Auto Reclosure (AR), e.g. as a trigger signal.	

SG[1] . **Removed**	[Control / SG / SG[1] / Pos Indicatrs Wirng]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ 1..n, DI-LogicList.	C.2
	The withdrawable circuit breaker is Removed	

SG[1] . **SCmd ON**	[Control / SG / SG[1] / Ex ON/OFF Cmd]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ 1..n, DI-LogicList.	C.2
	Switching ON Command, e.g. the state of the Logics or the state of the digital input	

SG[1] . **SCmd OFF**	[Control / SG / SG[1] / Ex ON/OFF Cmd]	
"-"	"-" . . . Logics . LE80.Out inverted ⮡ 1..n, DI-LogicList.	C.2
	Switching OFF Command, e.g. the state of the Logics or the state of the digital input	

SG[1] . **Interl ON1** SG[1] . **Interl ON3**	[Control / SG / SG[1] / Interlockings]	
"-"	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	C.2
	Interlocking of the ON command	

SG[1] . **Interl ON2**	[Control / SG / SG[1] / Interlockings]	
MStart . Blo	"-" . . . Sys . Internal test state ⮡ 1..n, Assignment List.	C.2
	Interlocking of the ON command	

SG[1] . **Interl OFF1** SG[1] . **Interl OFF2** SG[1] . **Interl OFF3**	[Control / SG / SG[1] / Interlockings]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	C.2
	Interlocking of the OFF command	

10.7.2 SG[1]: Direct Controls

SG[1] . **Ack TripCmd**	[Operation / Reset/Acknowledge / Acknowledge]	
inactive	inactive, active ↳ Mode.	P.1
	Acknowledge Trip Command	

SG[1] . **Res SGwear Sl SG**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ↳ Mode.	P.1
	Resetting the slow Switchgear Alarm	

SG[1] . **Manipulate Position**	[Control / SG / SG[1] / General Settings]	
inactive	inactive, Pos OFF, Pos ON ↳ Manipulate Position.	C.2
	WARNING! Fake Position - Manual Position Manipulation	

10.7.3 SG[1]: Input States

SG[1] . **Interl ON1-I** SG[1] . **Interl ON2-I** SG[1] . **Interl ON3-I**	[Operation / Status Display / Control / SG[1]]
	State of the module input: Interlocking of the ON command

SG[1] . **Interl OFF1-I** SG[1] . **Interl OFF2-I** SG[1] . **Interl OFF3-I**	[Operation / Status Display / Control / SG[1]]
⇩	*State of the module input: Interlocking of the OFF command*

SG[1] . **SCmd ON-I**	[Operation / Status Display / Control / SG[1]]
⇩	*State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input*

SG[1] . **SCmd OFF-I**	[Operation / Status Display / Control / SG[1]]
⇩	*State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input*

SG[1] . **Aux ON-I**	[Operation / Status Display / Control / SG[1]]
⇩	*Module Input State: Position indicator/check-back signal of the CB (52a)*

SG[1] . **Aux OFF-I**	[Operation / Status Display / Control / SG[1]]
⇩	*Module input state: Position indicator/check-back signal of the CB (52b)*

SG[1] . **Ready-I**	[Operation / Status Display / Control / SG[1]]
⇩	*Module input state: CB ready*

SG[1] . **Removed-I**	[Operation / Status Display / Control / SG[1]]
⇩	*State of the module input: The withdrawable circuit breaker is Removed*

SG[1] . **Ack TripCmd-I**	[Operation / Status Display / Control / SG[1]]
⇩	*State of the module input: Acknowledgement Signal (for the Trip Command) Module input signal*

10.7.4 SG[1]: Signals (Output States)

SG[1] . **TripCmd**	[Operation / Status Display / TripCmds] [Operation / Status Display / Control / SG[1]]
⇧	*Signal: Trip Command*

SG[1] . **SI SingleContactInd**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.*

SG[1] . **Pos not ON**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Pos not ON*

SG[1] . **Pos ON**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit Breaker is in ON-Position*

SG[1] . **Pos OFF**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit Breaker is in OFF-Position*

SG[1] . **Pos Indeterm**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit Breaker is in Indeterminate Position*

SG[1] . **Pos Disturb**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.*

SG[1] . **Pos**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit Breaker Position (0 = Indeterminate, 1 = OFF, 2 = ON, 3 = Disturbed)*

SG[1] . **Ready**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Circuit breaker is ready for operation.*

SG[1] . **t-Dwell**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Dwell time*

SG[1] . **Removed**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: The withdrawable circuit breaker is Removed*

SG[1] . **Interl ON**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: One or more IL_On inputs are active.*

SG[1] . **Interl OFF**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: One or more IL_Off inputs are active.*

SG[1] . **CES succesf**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Switching command executed successfully.*

SG[1] . **CES Disturbed**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.*

SG[1] . **CES Fail TripCmd**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Command execution failed because trip command is pending.*

SG[1] . **CES SwitchDir**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision respectively Switching Direction Control: This signal becomes true, if a switch command is issued even though the switchgear is already in the requested position. Example: A switchgear that is already OFF should be switched OFF again (doubly). The same applies to CLOSE commands.*

SG[1] . **CES ON d OFF**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: On Command during a pending OFF Command.*

SG[1] . **CES SG not ready**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Switchgear not ready*

SG[1] . **CES Fiel Interl**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.*

SG[1] . **CES SG removed**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.*

SG[1] . **Ack TripCmd**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Acknowledge Trip Command*

SG[1] . **OFF incl TripCmd**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: The OFF Command includes the OFF Command issued by the Protection module.*

SG[1] . **Position Ind manipul**	[Operation / Status Display / Control / SG[1]]
⇧	*Signal: Position Indicators faked*

SG[1] . **SGwear Slow SG**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: Alarm, the circuit breaker (load-break switch) becomes slower*

SG[1] . **Res SGwear Sl SG**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: Resetting the slow Switchgear Alarm*

SG[1] . **ON Cmd**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.*

SG[1] . **OFF Cmd**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.*

SG[1] . **ON Cmd manual**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: ON Cmd manual*

SG[1] . **OFF Cmd manual**	[Operation / Status Display / Control / SG[1]]
⇮	*Signal: OFF Cmd manual*

10.7.5 Breaker Wear

10.7.5.1 SG[1]: Settings

SG[1] . **Operations Alarm**	[Control / SG / SG[1] / SG Wear]	
9999	1 ... 100000	C.2
	Maximum number of operations. If the operations counter »TripCmd Cr« exceeds this limit then the signal »Operations Alarm« is set.	

SG[1] . **Isum Intr Alarm**	[Control / SG / SG[1] / SG Wear]	
100.00kA	0.00kA ... 2000.00kA	C.2
	Alarm, the Sum (Limit) of interrupting currents has been exceeded.	

SG[1] . **Isum Intr ph Alm**	[Control / SG / SG[1] / SG Wear]	
100.00kA	0.00kA ... 2000.00kA	C.2
	Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.	

SG[1] . **SGwear Curve Fc**	[Control / SG / SG[1] / SG Wear]	
inactive	inactive, active └▷ active/inactive.	C.2
	The Circuit Breaker (load-break switch) Wear Curve defines the maximum allowed CLOSE/ OPEN cycles depending on the brake currents. If the circuit breaker maintenance curve is exceeded, an alarm will be issued. The breaker maintenance curve is to be taken from the technical data sheet of the breaker manufactor. By means of the available points this curve is to be replicated.	

SG[1] . **WearLevel Alarm**	[Control / SG / SG[1] / SG Wear]	
80.00%	0.00% ... 100.00%	C.2
	Threshold for the Alarm	

SG[1] . **WearLevel Lockout**	[Control / SG / SG[1] / SG Wear]	
95.00%	0.00% ... 100.00%	C.2
	Threshold for the Lockout Level	

SG[1] . **Current1**	[Control / SG / SG[1] / SG Wear]	
0.00kA	0.00kA ... 2000.00kA	C.2
	Interrupted Current Level #1	

SG[1] . **Count1**	[Control / SG / SG[1] / SG Wear]	
10000	1 ... 32000	C.2
	Open Counts Allowed #1	

SG[1] . **Current2**	[Control / SG / SG[1] / SG Wear]	
1.20kA	0.00kA ... 2000.00kA	C.2
	Interrupted Current Level #2	

SG[1] . **Count2**	[Control / SG / SG[1] / SG Wear]	
10000	1 ... 32000	C.2
	Open Counts Allowed #2	

SG[1] . **Current3**	[Control / SG / SG[1] / SG Wear]	
8.00kA	0.00kA ... 2000.00kA	C.2
	Interrupted Current Level #3	

SG[1] . **Count3**	[Control / SG / SG[1] / SG Wear]	
150	1 ... 32000	C.2
	Open Counts Allowed #3	

SG[1] . **Current4**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA ... 2000.00kA	C.2
	Interrupted Current Level #4	

SG[1] . **Count4**	[Control / SG / SG[1] / SG Wear]	
12	1 ... 32000	C.2
	Open Counts Allowed #4	

SG[1] . **Current5**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA ... 2000.00kA	C.2
	Interrupted Current Level #5	

SG[1] . **Count5**	[Control / SG / SG[1] / SG Wear]	
1	1 ... 32000	C.2
	Open Counts Allowed #5	

SG[1] . **Current6**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA . . . 2000.00kA	C.2
	Interrupted Current Level #6	

SG[1] . **Count6**	[Control / SG / SG[1] / SG Wear]	
1	1 . . . 32000	C.2
	Open Counts Allowed #6	

SG[1] . **Current7**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA . . . 2000.00kA	C.2
	Interrupted Current Level #7	

SG[1] . **Count7**	[Control / SG / SG[1] / SG Wear]	
1	1 . . . 32000	C.2
	Open Counts Allowed #7	

SG[1] . **Current8**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA . . . 2000.00kA	C.2
	Interrupted Current Level #8	

SG[1] . **Count8**	[Control / SG / SG[1] / SG Wear]	
1	1 . . . 32000	C.2
	Open Counts Allowed #8	

SG[1] . **Current9**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA . . . 2000.00kA	C.2
	Interrupted Current Level #9	

SG[1] . **Count9**	[Control / SG / SG[1] / SG Wear]	
1	1 . . . 32000	C.2
	Open Counts Allowed #9	

SG[1] . **Current10**	[Control / SG / SG[1] / SG Wear]	
20.00kA	0.00kA . . . 2000.00kA	C.2
	Interrupted Current Level #10	

SG[1] . **Count10**	[Control / SG / SG[1] / SG Wear]	
1	1 ... 32000	C.2
	Open Counts Allowed #10	

10.7.5.2 SG[1]: Direct Controls

SG[1] . **Res TripCmd Cr**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Resetting of the Counter: Total number of trips of the switchgear	

SG[1] . **Res Sum trip**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Reset summation of the tripping currents	

SG[1] . **Res CB OPEN capacity**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Reset the CB OPEN capacity. *(Remark: A »CB OPEN capacity« value of 100% means that the circuit breaker has to be maintained.)*	

SG[1] . **Res Isum Intr per hour**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Reset of the Sum per hour of interrupting currents.	

10.7.5.3 SG[1]: Signals (Output States)

SG[1] . **Operations Alarm**	[Operation / Status Display / Control / SG[1]]
	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)

SG[1] . **Isum Intr trip: IL1**	[Operation / Status Display / Control / SG[1]]
	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1

SG[1] . **Isum Intr trip: IL2**	[Operation / Status Display / Control / SG[1]]
	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2

SG[1] . **Isum Intr trip: IL3**	[Operation / Status Display / Control / SG[1]]
	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3

SG[1] . **Isum Intr trip**	[Operation / Status Display / Control / SG[1]]
	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.

SG[1] . **Res TripCmd Cr**	[Operation / Status Display / Control / SG[1]]
	Signal: Resetting of the Counter: Total number of trips of the switchgear

SG[1] . **Res Sum trip**	[Operation / Status Display / Control / SG[1]]
	Signal: Reset summation of the tripping currents

SG[1] . **WearLevel Alarm**	[Operation / Status Display / Control / SG[1]]
	Signal: Threshold for the Alarm

SG[1] . **WearLevel Lockout**	[Operation / Status Display / Control / SG[1]]
	Signal: Threshold for the Lockout Level

SG[1] . **Res CB OPEN capacity**	[Operation / Status Display / Control / SG[1]]
	Signal: Reset of the wear maintenance curve (i. e. of the counter for the Circuit Breaker OPEN capacity.

SG[1] . **Isum Intr ph Alm**	[Operation / Status Display / Control / SG[1]]
	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.

SG[1] . **Res Isum Intr ph Alm**	[Operation / Status Display / Control / SG[1]]
	Signal: Reset of the Alarm, "the per hour Sum (Limit) of interrupting currents has been exceeded".

10.7.5.4 SG[1]: Values

SG[1] . **Sum trip IL1** SG[1] . **Sum trip IL2** SG[1] . **Sum trip IL3**	[Operation / History / TotalCr] [Operation / Count and RevData / Control / SG[1]]
✎	*Summation of the tripping currents phase*

SG[1] . **Isum Intr per hour**	[Operation / Count and RevData / Control / SG[1]]
✎	*Sum per hour of interrupting currents.*

SG[1] . **CB OPEN capacity**	[Operation / Count and RevData / Control / SG[1]]
✎	*Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)*

10.7.5.5 SG[1]: Counters

SG[1] . **TripCmd Cr**	[Operation / History / TotalCr] [Operation / Count and RevData / Control / SG[1]]
#	*Counter: Total number of trips of the switchgear.*

11 System Alarms

11.1 SysA: Device Planning Parameters

SysA . **Mode**	[Device planning]	
"-"	"-", use Mode.	S.3
	general operation mode	

11.2 SysA: Settings

SysA . **Function**	[SysA / General Settings]	
inactive	inactive, active Mode.	P.2
	Permanent activation or deactivation of module/stage.	

SysA . **ExBlo Fc**	[SysA / General Settings]	
"-"	"-" . . . Sys . Internal test state 1..n, Assignment List.	P.2
	Activate (allow) or inactivate (disallow) blocking of the module/stage. This parameter is only effective if a signal is assigned to the corresponding global protection parameter. If the signal becomes true, those modules/stages are blocked that are parameterized "ExBlo Fc=active".	

SysA . **Alarm**	[SysA / Power / Watt] ... [SysA / THD / I THD]	
inactive	inactive, active active/inactive.	P.2
	Alarm	

SysA . **Threshold**	[SysA / Power / Watt] ... [SysA / THD / V THD]	
10000kW	1kW ... 40000000kW	P.2
	Threshold (to be entered as primary value)	

SysA . **t-Delay**	[SysA / Power / Watt] ... [SysA / THD / I THD]	
0min	0min ... 60min	P.2
	Tripping Delay	

SysA . **Threshold**	[SysA / Demand / Current Demand] [SysA / THD / I THD]	
500A	10A ... 500000A	P.2
	Threshold (to be entered as primary value)	

SysA . **Threshold**	[SysA / Demand / Power Demand / VAr Demand] [SysA / Demand / Power Demand / VA Demand]	
20000kVAr	1kVAr ... 40000000kVAr	P.2
	Threshold (to be entered as primary value)	

11.3 SysA: Input States

SysA . **ExBlo-I**	[Operation / Status Display / SysA]
	Module input state: External blocking

11.4 SysA: Signals (Output States)

SysA . **active**	[Operation / Status Display / SysA]
	Signal: active

SysA . **ExBlo**	[Operation / Status Display / SysA]
⇧	*Signal: External Blocking*

SysA . **Alarm Watt Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Permitted Active Power exceeded*

SysA . **Alarm VAr Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Permitted Reactive Power exceeded*

SysA . **Alarm VA Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Permitted Apparent Power exceeded*

SysA . **Alarm Watt avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Averaged Active Power exceeded*

SysA . **Alarm VAr avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Averaged Reactive Power exceeded*

SysA . **Alarm VA avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Averaged Apparent Power exceeded*

SysA . **Alm Current avg (Demd)**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm: Averaged demand current exceeded*

SysA . **Alarm I THD**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm Total Harmonic Distortion Current*

SysA . **Alarm V THD**	[Operation / Status Display / SysA]
⇧	*Signal: Alarm Total Harmonic Distortion Voltage*

SysA . **Trip Watt Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Trip maximum permitted Active Power exceeded*

SysA . **Trip VAr Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Trip maximum permitted Reactive Power exceeded*

SysA . **Trip VA Power max**	[Operation / Status Display / SysA]
⇧	*Signal: Trip maximum permitted Apparent Power exceeded*

SysA . **Trip Watt avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Trip: Averaged Active Power exceeded*

SysA . **Trip VAr avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Trip: Averaged Reactive Power exceeded*

SysA . **Trip VA avg (Demand)**	[Operation / Status Display / SysA]
⇧	*Signal: Trip: Averaged Apparent Power exceeded*

SysA . **Trip Current avg (Demd)**	[Operation / Status Display / SysA]
⇧	*Signal: Trip: Averaged demand current exceeded*

SysA . **Trip I THD**	[Operation / Status Display / SysA]
⇧	*Signal: Trip Total Harmonic Distortion Current*

SysA . **Trip V THD**	[Operation / Status Display / SysA]
⇧	*Signal: Trip Total Harmonic Distortion Voltage*

12 Records

12.1 Event rec – The event recorder logs all events like switching operations, change of parameters, alarms, trips, operating mode selections, blockings and state transitions of inputs and outputs.

Event rec	[Operation / Recorders / Event rec]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *The event recorder logs all events like switching operations, change of parameters, alarms, trips, operating mode selections, blockings and state transitions of inputs and outputs.*

12.1.1 Event rec: Direct Controls

Event rec . **Res all rec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active └⇨ Mode.	P.1
◉	*Reset all records*	

12.1.2 Event rec: Signals (Output States)

Event rec . **Res all records**	[Operation / Status Display / Recorders / Event rec]
⇧	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*

12.2 Disturb rec – After a trigger event has become true, the disturbance recorder writes analogue and digital tracks

Disturb rec	[Operation / Recorders / Disturb rec]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *After a trigger event has become true, the disturbance recorder writes analogue and digital tracks*

12.2.1 Disturb rec: Settings

Disturb rec . **Start: 1**	[Device Para / Recorders / Disturb rec]	
Prot . Trip	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Start recording if the assigned signal is true.	

Disturb rec . **Start: 2** . . . Disturb rec . **Start: 8**	[Device Para / Recorders / Disturb rec]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Start recording if the assigned signal is true.	

Disturb rec . **Auto overwriting**	[Device Para / Recorders / Disturb rec]	
active	inactive, active ⮡ Mode.	S.3
	If there is no more free memory capacity left, the oldest file will be overwritten.	

Disturb rec . **Pre-trigger time**	[Device Para / Recorders / Disturb rec]	
20%	0% . . . 99%	S.3
	The pre trigger time is set in percent of the »Max file size« value. It corresponds to the part of recording before the onset of the trigger event.	

Disturb rec . **Post-trigger time**	[Device Para / Recorders / Disturb rec]	
20%	0% ... 99%	S.3
	The post trigger time is set in percent of the »Max file size« value. It is the remaining time of the »Max file size«, depending on the »Pre-trigger time« setting and the duration of the trigger event, but at maximum the »Post-trigger time« set here.	

Disturb rec . **Max file size**	[Device Para / Recorders / Disturb rec]	
2s	0.1s ... 15.0s	S.3
	The maximum storage capacity per record, including pre-trigger and post-trigger time. The amount of records depends on the size of each record, on the max. file size (set here), and on the total storage capacity.	

12.2.2 Disturb rec: Direct Controls

Disturb rec . **Man Trigger**	[Operation / Recorders / Man Trigger]	
False	False, True true or not true.	P.1
	Manual Trigger	

Disturb rec . **Res all rec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Reset all records	

12.2.3 Disturb rec: Input States

Disturb rec . **Start1-I** ... Disturb rec . **Start8-I**	[Operation / Status Display / Recorders / Disturb rec]
	State of the module input:: Trigger event / start recording

12.2.4 Disturb rec: Signals (Output States)

Disturb rec . **recording**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: Recording

Disturb rec . **memory full**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: Memory full

Disturb rec . **Clear fail**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: Clear failure in memory

Disturb rec . **Res all records**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)

Disturb rec . **Res record**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: Delete record

Disturb rec . **Man Trigger**	[Operation / Status Display / Recorders / Disturb rec]
	Signal: Manual Trigger

12.2.5 Disturb rec: Values

Disturb rec . **Rec state**	[Operation / Status Display / Recorders / Disturb rec]
Ready	Ready, Recording, Writing file, Trigger Blo Rec state.
	Recording state

Disturb rec . **Error code**	[Operation / Status Display / Recorders / Disturb rec]
OK	OK, Write err, Clear fail, Calculation err, File not found, Auto overwriting off Fault.
	Error code

12.3 Fault rec – The values measured at the time of tripping are saved by the Fault Recorder.

Fault rec	[Operation / Recorders / Fault rec]
	This item represents a special dialog. (See the Technical Manual for details.) *The values measured at the time of tripping are saved by the Fault Recorder.*

12.3.1 Fault rec: Settings

Fault rec . **Record-Mode**	[Device Para / Recorders / Fault rec]	
Trips only	Alarms and Trips, Trips only Record-Mode.	S.3
	Recorder Mode (Set the behaviour of the recorder)	

Fault rec . **t-meas-delay**	[Device Para / Recorders / Fault rec]	
0ms	0ms ... 60ms	S.3
	After the Trip, the measurement will be delayed for this time.	

12.3.2 Fault rec: Direct Controls

Fault rec . **Res all rec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	P.1
	Reset all records	

12.3.3 Fault rec: Signals (Output States)

Fault rec . **Res record**	[Operation / Status Display / Recorders / Fault rec]
	Signal: Delete record

12.4 Trend rec – Trend Recorder

Trend rec	[Operation / Recorders / Trend rec]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *Trend Recorder*

12.4.1 Trend rec: Settings

Trend rec . **Resolution**	[Device Para / Recorders / Trend rec]	
15 min	60 min, 30 min, 15 min, 10 min, 5 min ⮡ Resolution.	S.3
	Resolution (recording frequency)	

Trend rec . **Trend1**	[Device Para / Recorders / Trend rec]	
CT . IL1 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
	Observed Value1	

Trend rec . **Trend2**	[Device Para / Recorders / Trend rec]	
CT . IL2 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
	Observed Value2	

Trend rec . **Trend3**	[Device Para / Recorders / Trend rec]	
CT . IL3 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
	Observed Value3	

Trend rec . **Trend4**	[Device Para / Recorders / Trend rec]	
CT . IG meas RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
	Observed Value4	

Trend rec . **Trend5**	[Device Para / Recorders / Trend rec]	
VT . VL1 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value5		

Trend rec . **Trend6**	[Device Para / Recorders / Trend rec]	
VT . VL2 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value6		

Trend rec . **Trend7**	[Device Para / Recorders / Trend rec]	
VT . VL3 RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value7		

Trend rec . **Trend8**	[Device Para / Recorders / Trend rec]	
VT . VX meas RMS	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value8		

Trend rec . **Trend9**	[Device Para / Recorders / Trend rec]	
“-”	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value9		

Trend rec . **Trend10**	[Device Para / Recorders / Trend rec]	
“-”	“-” . . . PQSCr . cos phi RMS ⮡ 1..n, TrendRecList.	S.3
Observed Value10		

12.4.2 Trend rec: Direct Controls

Trend rec . **Res all rec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active ↳ Mode.	P.1
◉	*Reset all records*	

12.4.3 Trend rec: Signals (Output States)

Trend rec . **Res all records**	[Operation / Status Display / Recorders / Trend rec]
⇧	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*

12.4.4 Trend rec: Counters

Trend rec . **Max avail Entries**	[Operation / Count and RevData / Trend rec]
#	*Maximum available entries in the current configuration*

12.5 Start rec – Startrecorder

Start rec	[Operation / Recorders / Start rec]
	This item represents a special dialog. (See the Technical Manual for details.) *Startrecorder*

Statistic rec	[Operation / Recorders / Statistic rec]
	This item represents a special dialog. (See the Technical Manual for details.) *Statistic recorder*

12.5.1 Start rec: Settings

Start rec . **Resolution**	[Device Para / Recorders / Start rec]	
50ms	50ms, 100ms, 1s Resolution.	S.3
	Resolution (recording frequency)	

12.5.2 Start rec: Direct Controls

Start rec . **ClearStartRec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	S.3
	Delete all start recorder records	

Start rec . **ClearStatisticRec**	[Operation / Reset/Acknowledge / Reset]	
inactive	inactive, active Mode.	S.3
	Delete all statistic recorder records (start trending)	

12.5.3 Start rec: Signals (Output States)

Start rec . **Storing**	[Operation / Status Display / Recorders / Start rec]
⇫	*Signal: Data are saved*

13 Logic

13.1 Logics – Logic

13.1.1 Logics: Device Planning Parameters

Logics . **No of Equations:**	[Device planning]	
20	0, 5, 10, 20, 40, 80 └═▷ No of Equations:.	S.3
	Number of required Logic Equations:	

13.1.2 Logics . . . Logics – Logic

13.1.2.1 Logics: Settings

Logics . **LE1.Gate**	[Logics / LE 1]	
AND	AND, OR, NAND, NOR ⮡ LE1.Gate.	S.3
	Logic gate	

Logics . **LE1.Input1** . . . Logics . **LE1.Input4**	[Logics / LE 1]	
“-”	“-” . . . Sys . Internal test state ⮡ 1..n, Assignment List.	S.3
	Assignment of the Input Signal	

Logics . **LE1.Inverting1** . . . Logics . **LE1.Inverting4**	[Logics / LE 1]	
inactive	inactive, active ⮡ Mode.	S.3
	Inverting the input signals.	

Logics . **LE1.t-On Delay**	[Logics / LE 1]	
0.00s	0.00s . . . 36000.00s	S.3
	Switch On Delay	

Logics . **LE1.t-Off Delay**	[Logics / LE 1]	
0.00s	0.00s . . . 36000.00s	S.3
	Switch Off Delay	

Logics . **LE1.Reset Latched**	[Logics / LE 1]	
"-"	"-" . . . Sys . Internal test state 1..n, Assignment List.	S.3
	Reset Signal for the Latching	

Logics . **LE1.Inverting Reset**	[Logics / LE 1]	
inactive	inactive, active Mode.	S.3
	Inverting Reset Signal for the Latching	

Logics . **LE1.Inverting Set**	[Logics / LE 1]	
inactive	inactive, active Mode.	S.3
	Inverting the Setting Signal for the Latching	

13.1.2.2 Logics: Input States

Logics . **LE1.Gate In1-I** . . . Logics . **LE1.Gate In4-I**	[Operation / Status Display / Logics]
	State of the module input: Assignment of the Input Signal

Logics . **LE1.Reset Latch-I**	[Operation / Status Display / Logics]
	State of the module input: Reset Signal for the Latching

13.1.2.3 Logics: Signals (Output States)

Logics . **LE1.Gate Out**	[Operation / Status Display / Logics]
	Signal: Output of the logic gate

Logics . **LE1.Timer Out**	[Operation / Status Display / Logics]
	Signal: Timer Output

Logics . **LE1.Out**	[Operation / Status Display / Logics]
⇧	*Signal: Latched Output (Q)*

Logics . **LE1.Out inverted**	[Operation / Status Display / Logics]
⇧	*Signal: Negated Latched Output (Q NOT)*

14 Self-Supervision

Messages	[Operation / Self-Supervision / Messages]
🗎	This item represents a special dialog. (See the Technical Manual for details.) *Internal messages*

14.1 SSV: Direct Controls

SSV . **Ack System LED**	[Operation / Reset/Acknowledge / Acknowledge]	
False	False, True ↳ true or not true.	P.1
◉	*Acknowledge System LED (red/green flashing LED)*	

14.2 SSV: Signals (Output States)

SSV . **System Error**	[Operation / Self-Supervision / System State]
⇫	*Signal: Device Failure*

SSV . **SelfSuperVision Contact**	[Operation / Self-Supervision / System State]
⇫	*Signal: SelfSuperVision Contact*

SSV . **New error**	[Operation / Self-Supervision / System State]
⇫	*Signal: A new error message has been issued.*

SSV . **New warning**	[Operation / Self-Supervision / System State]
⇫	*Signal: A new warning message has been issued.*

14.3 SSV: Counters

SSV . **Cr No of free sockets**	[Operation / Self-Supervision / System State]
⊞	*Counter for network diagnosis. Number of free sockets.*

15 Service

- Sys . Reboot: ⮡ Table

15.1 Sgen – Sine wave generator

15.1.1 Sgen: Device Planning Parameters

Sgen . **Mode**	[Device planning]	
use	“-”, use ↳ Mode.	S.3
	Sine wave generator, general operation mode	

15.1.2 Sgen: Settings

Sgen . **TripCmd Mode**	[Service / Test (Prot inhibit) / Sgen / Process]	
No TripCmd	No TripCmd, With TripCmd ↳ TripCmd Mode.	S.3
	Trip Command Mode: Select between two operating modes for the Fault Simulator: "cold simulation” (without tripping the circuit breaker), or "hot simulation” (i.e. the simulation is authorized to trip the circuit breaker)	

Sgen . **Ex Start Simulation**	[Service / Test (Prot inhibit) / Sgen / Process]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	External Start of Fault Simulation (Using the test parameters)	

Sgen . **ExBlo1**	[Service / Test (Prot inhibit) / Sgen / Process]	
SG[1] . Pos ON	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.1	

Sgen . **ExBlo2**	[Service / Test (Prot inhibit) / Sgen / Process]	
“-”	“-” . . . Sys . Internal test state ↳ 1..n, Assignment List.	S.3
	External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.2	

Sgen . **Ex ForcePost**	[Service / Test (Prot inhibit) / Sgen / Process]	
"-"	"-" . . . Sys . Internal test state 1..n, Assignment List.	S.3
	Force Post state. Abort simulation.	

Sgen . **PreFault**	[Service / Test (Prot inhibit) / Sgen / Configuration / Times]	
0.0s	0.00s . . . 300.00s	S.3
	Pre Fault Duration	

Sgen . **FaultSimulation**	[Service / Test (Prot inhibit) / Sgen / Configuration / Times]	
0.0s	0.00s . . . 10800.00s	S.3
	Duration of Fault Simulation	

Sgen . **PostFault**	[Service / Test (Prot inhibit) / Sgen / Configuration / Times]	
0.0s	0.00s . . . 300.00s	S.3
	Post Fault Duration	

15.1.3 Sgen: Direct Controls

Sgen . **Start Simulation**	[Service / Test (Prot inhibit) / Sgen / Process]	
inactive	inactive, active Mode.	S.3
	Start Fault Simulation (Using the test parameters)	

Sgen . **Stop Simulation**	[Service / Test (Prot inhibit) / Sgen / Process]	
inactive	inactive, active Mode.	S.3
	Stopp Fault Simulation (Using the test parameters)	

15.1.4 Sgen: Input States

Sgen . **Ex Start Simulation-I**	[Operation / Status Display / Sgen]
	State of the module input:External Start of Fault Simulation (Using the test parameters)

Sgen . **ExBlo1-I**	[Operation / Status Display / Sgen] [Service / Test (Prot inhibit) / Sgen / State]
⇩	*Module input state: External blocking1*

Sgen . **ExBlo2-I**	[Operation / Status Display / Sgen] [Service / Test (Prot inhibit) / Sgen / State]
⇩	*Module input state: External blocking2*

Sgen . **Ex ForcePost-I**	[Operation / Status Display / Sgen] [Service / Test (Prot inhibit) / Sgen / State]
⇩	*State of the module input:Force Post state. Abort simulation.*

15.1.5 Sgen: Signals (Output States)

Sgen . **Manual Start**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been started manually.*

Sgen . **Manual Stop**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been stopped manually.*

Sgen . **Running**	[Operation / Status Display / Sgen] [Service / Test (Prot inhibit) / Sgen / State]
⇧	*Signal; Measuring value simulation is running*

Sgen . **Started**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been started*

Sgen . **Stopped**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been stopped*

Sgen . **State**	[Operation / Status Display / Sgen]
⇧	*Signal: Wave generation states: 0=Off, 1=PreFault, 2=Fault, 3=PostFault, 4=InitReset*

15.1.6 Sgen: Values

Sgen . **State**	[Service / Test (Prot inhibit) / Sgen / State]	
Off	Off, PreFault, FaultSimulation, PostFault, Init Res ╚═▷ State.	
	Wave generation states: 0=Off, 1=PreFault, 2=Fault, 3=PostFault, 4=InitReset	

15.1.7 Sgen – Sine wave generator

15.1.7.1 Sgen: Settings

Sgen . **VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0.57Vn	0.00Vn . . . 2.00Vn	S.3
	Voltage Fundamental Magnitude in Pre State: phase L1	

Sgen . **VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0.57Vn	0.00Vn . . . 2.00Vn	S.3
	Voltage Fundamental Magnitude in Pre State: phase L2	

Sgen . **VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0.57Vn	0.00Vn . . . 2.00Vn	S.3
	Voltage Fundamental Magnitude in Pre State: phase L3	

Sgen . **VX**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0.0Vn	0.00Vn . . . 2.00Vn	S.3
	Voltage Fundamental Magnitude in Pre State: VX	

Sgen . **phi VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Pre-Phase:phase L1	

Sgen . **phi VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
240°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Pre-Phase:phase L2	

Sgen . **phi VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
120°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Pre-Phase:phase L3	

Sgen . **phi VX meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / VT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Pre-Phase: VX	

Sgen . **VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0.29Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude in Fault State: phase L1	

Sgen . **VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0.29Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude in Fault State: phase L2	

Sgen . **VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0.29Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude in Fault State: phase L3	

Sgen . **VX**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0.29Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude in Fault State: phase VX	

Sgen . **phi VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Fault-Phase:phase L1	

Sgen . **phi VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
240°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Fault-Phase:phase L2	

Sgen . **phi VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
120°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Fault-Phase:phase L3	

Sgen . **phi VX meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / VT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Fault-Phase: VX	

Sgen . **VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0.57Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude during Post phase: phase L1	

Sgen . **VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0.57Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude during Post phase: phase L2	

Sgen . **VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0.57Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude during Post phase: phase L3	

Sgen . **VX**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0.0Vn	0.00Vn ... 2.00Vn	S.3
	Voltage Fundamental Magnitude during Post phase: phase VX	

Sgen . **phi VL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Post phase: phase L1	

Sgen . **phi VL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
240°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Post phase: phase L2	

Sgen . **phi VL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
120°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Post phase: phase L3	

Sgen . **phi VX meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / VT]	
0°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Voltage Phasor during Post phase: phase VX	

15.1.8 Sgen – Sine wave generator

15.1.8.1 Sgen: Settings

Sgen . **IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Pre State: phase L1	

Sgen . **IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Pre State: phase L2	

Sgen . **IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Pre State: phase L3	

Sgen . **IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0.0In	If: slot 3 = Current measuring inputs2 • 0.00In ... 2.500In If: slot 3 ≠ Current measuring inputs2 • 0.00In ... 25.00In	S.3
	Current Fundamental Magnitude in Pre State: IG	

Sgen . **phi IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Pre-Phase:phase L1	

Sgen . **phi IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
240°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Pre-Phase:phase L2	

Sgen . **phi IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
120°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Pre-Phase:phase L3	

Sgen . **phi IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PreFault / CT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Pre-Phase: IG	

Sgen . **IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Fault State: phase L1	

Sgen . **IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Fault State: phase L2	

Sgen . **IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude in Fault State: phase L3	

Sgen . **IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0.0In	If: slot 3 = Current measuring inputs2 • 0.00In ... 2.500In If: slot 3 ≠ Current measuring inputs2 • 0.00In ... 25.00In	S.3
	Current Fundamental Magnitude in Fault State: IG	

Sgen . **phi IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Fault-Phase:phase L1	

Sgen . **phi IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
240°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Fault-Phase:phase L2	

Sgen . **phi IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
120°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Fault-Phase:phase L3	

Sgen . **phi IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / FaultSimulation / CT]	
0°	-360° ... 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Fault-Phase: IG	

Sgen . **IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude during Post phase: phase L1	

Sgen . **IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude during Post phase: phase L2	

Sgen . **IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
	Current Fundamental Magnitude during Post phase: phase L3	

Sgen . **IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0.0In	If: slot 3 = Current measuring inputs2 • 0.00In ... 2.500In If: slot 3 ≠ Current measuring inputs2 • 0.00In ... 25.00In	S.3
	Current Fundamental Magnitude during Post phase: IG	

Sgen . **phi IL1**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Post phase: phase L1	

Sgen . **phi IL2**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
240°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Post phase: phase L2	

Sgen . **phi IL3**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
120°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Post phase: phase L3	

Sgen . **phi IG meas**	[Service / Test (Prot inhibit) / Sgen / Configuration / PostFault / CT]	
0°	-360° . . . 360°	S.3
	Start Position respectively Start Angle of the Current Phasor during Post phase: IG	

16 Selection Lists

Rec state

Recording state

Selection list referenced by the following parameters:

- └═▷ Disturb rec . Rec state

Rec state	Description
Ready	*Ready*
Recording	*Recording*
Writing file	*Signal: Writing file*
Trigger Blo	*Trigger signal is still active - wait for fallback. A new record can only be started if and only the trigger signal that started the previous record has fallen back once. Therewith endless records are prevented.*

Fault

Selection list referenced by the following parameters:

- └═▷ Disturb rec . Error code

Fault	Description
OK	*OK*
Write err	*Signal: Writing error in memory*
Clear fail	*Signal: Clear failure in memory*
Calculation err	*Calculation error*
File not found	*File not found*
Auto overwriting off	*If there is no more memory available the record is being stopped.*

State

Selection list referenced by the following parameters:

- └═▷ IEC 61850 . GoosePublisherState
- └═▷ IEC 61850 . GooseSubscriberState
- └═▷ IEC 61850 . MmsServerState

State	Description
Off	*Off*
On	*On*
Error	*Error*

State

Selection list referenced by the following parameters:

- ⮡ Profibus . Slave State

State	Description
Baud Search	*No connection to the PROFIBUS-DP Master*
Baud Found	*The PROFIBUS DP Slave is connected to the bus. The Slave has not yet been addressed by the Master Device (and it was not yet addressed since the last break of the connection).*
PRM OK	*The slave was addressed by the master, the parameter setting message was received and is OK, a configuration message is expected from the master.*
PRM REQ	*The slave is no longer addressed by the master (modified parameters within the master without having the connection stopped, master software is tuned off but lower PROFIBUS layer is still active)*
PRM Fault	*An Error in the parameter setting message (e.g. wrong PNO identification number)*
CFG Fault	*Configuration error the number of input/output bytes parameterised in the master does not match the number parametrised in the device (slave).*
Clear Data	*Master sends a General Control command to clear the data.*
Data exchange	*Master and slave exchange data.*

Baud rate

Selection list referenced by the following parameters:

- ⮡ Profibus . Baud rate

Baud rate	Description
12 Mb/s	*12 Mb/s*

Baud rate	Description
6 Mb/s	*6 Mb/s*
3 Mb/s	*3 Mb/s*
1.5 Mb/s	*1.5 Mb/s*
0.5 Mb/s	*0.5 Mb/s*
187500 baud	*187500 baud*
93750 baud	*93750 baud*
45450 baud	*45450 baud*
19200 baud	*19200 baud*
9600 baud	*9600 baud*
-.-	*-.-*

PNO Id

PNO Identification Number. GSD Identification Number.

Selection list referenced by the following parameters:

- ⮡ Profibus . PNO Id

PNO Id	Description
0C50h	*PnodID for the Config file.*

Config status

Status of the user-defined SCADA configuration.\nPossible values:

Selection list referenced by the following parameters:

- ⮡ Profibus . Config status

Config status	Description
Changing	*New SCADA configuration is being loaded, but not active yet.*
OK	*The SCADA configuration is active.*
Config. not avail.	*The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).*
Error	*Unexpected error. Please contact our service-team.*

Server State

Server State.

Selection list referenced by the following parameters:

- ╚═▷ SNTP . Used Server

Server State	Description
Server1	*Server1 used.*
Server2	*Server2 used.*
None	*No Server used.*

State

Selection list referenced by the following parameters:

- ╚═▷ SNTP . ServerQlty
- ╚═▷ SNTP . NetConn

State	Description
GOOD	*GOOD*
SUFFICIENT	*SUFFICIENT*
BAD	*BAD*
“-”	*NO CONNECTION*

Mode

general operation mode

Selection list referenced by the following parameters:

- ╚═▷ DI Slot X1 . Inverting 1
- ╚═▷ BO Slot X2 . Latched
- ╚═▷ BO Slot X2 . Inverting
- ╚═▷ BO Slot X2 . Inverting 1

- ⮡ BO Slot X2 . Latched
- ⮡ BO Slot X2 . Inverting
- *[. . .]*

Mode	Description
inactive	*inactive*
active	*active*

true or not true

Selection list referenced by the following parameters:

- ⮡ Disturb rec . Man Trigger
- ⮡ SSV . Ack System LED

true or not true	Description
False	*False*
True	*True*

Type of passw. def.

Type of the password definition. This value is directly related to the security-level of the access to the device.

Selection list referenced by the following parameters:

- ⮡ Sys . Passw. for USB conn.
- ⮡ Sys . Passw.remote net.conn.

Type of passw. def.	Description
disabled	*The password disabled.*
default	*The password is the same as the factory default, i.e. it has not been altered by the user. (However, for devices with a disabled default password the password type is displayed as “disabled”, not as “default”.)*
def. by user	*The password has been defined by the user. This corresponds to the highest security-level of the access to the device.*

TLS Certificate

Type of certificate that the device uses for the encrypted communication. This value is directly related to the security-level of the communication.

Selection list referenced by the following parameters:

- ⮱▷ Sys . TLS Certificate

TLS Certificate	Description
Device-specific	*The device uses a device-specific certificate for the encrypted communication. This corresponds to the highest security-level of the communication.*
Basic	*The device uses a basic certificate for the encrypted communication. Compared with a device-specific certificate, this means a slightly reduced security level.*
Corrupt	*The certificate for the encrypted communication is corrupt and therefore unusable.*

Switching Authority

Selection list referenced by the following parameters:

- ⮱▷ Ctrl . Switching Authority
- ⮱▷ Ctrl . Switching Authority
- ⮱▷ Ctrl . Switching Authority

Switching Authority	Description
None	*None*
Local	*Local*
Remote	*Remote*
Local and Remote	*Local and Remote*

Config. Device Reset

If the »C« key is pressed while the device is performing a cold restart a general Reset Dialog appears on the screen. Select which options shall be available with this dialog.

Selection list referenced by the following parameters:

- ⮱▷ HMI . Config. Device Reset

- ⮡ HMI . Config. Device Reset
- ⮡ HMI . Config. Device Reset
- ⮡ HMI . Config. Device Reset

Config. Device Reset	Description
"Fact.def.", "PW rst"	*Two Reset Options shall be available:* *- "Reset to factory defaults",* *- "Reset passwords".*
Only “Fact.defaults”	*Only one Reset Option shall be available:* *- "Reset to factory defaults".* *CAUTION: If this option has been chosen and the password should ever get lost then the only chance to recover control is to reset the protection device to factory defaults.*
Reset deact.	*The Reset Options shall be deactivated.* *CAUTION: If this option has been chosen and the password should ever get lost, then the protection device has to be sent to the manufacturer as a service request.*

I>

If the pickup value is exceeded, the module/element starts to time out to trip.

Selection list referenced by the following parameters:

- ⮡ I[1] . Mode

I>	Description
“-”	*do not use*
non directional	*non directional*

Earth overcurrent

Selection list referenced by the following parameters:

- ⮡ IG[1] . Mode

Earth overcurrent	Description
“-”	*do not use*
non directional	*non directional*

yes/no

Selection list referenced by the following parameters:

- ╚═▷ Sys . Reboot
- ╚═▷ IG[1] . Superv. only
- ╚═▷ VG[1] . Superv. only
- ╚═▷ RTD . Windg 1
- ╚═▷ RTD . Windg 2
- ╚═▷ RTD . Windg 3
- *[. . .]*

yes/no	Description
no	*no*
yes	*yes*

Mode

general operation mode

Selection list referenced by the following parameters:

- ╚═▷ Jam[1] . Mode

Mode	Description
“-”	*do not use*
use	*use*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮱ I<[1] . Mode

Mode	Description
“-”	*do not use*
use	*use*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮱ MLS . Mode

Mode	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ⮱ V[1] . Mode

Device planning	Description
“-”	*do not use*
V>	*V>*
V<	*Pickup value*

Device planning

Selection list referenced by the following parameters:

- ⮱ VG[1] . Mode

Device planning	Description
“-”	*do not use*
V>	*V>*
V<	*Pickup value*

Device planning

Selection list referenced by the following parameters:

- I2>[1] . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- V012[1] . Mode

Device planning	Description
“-”	*do not use*
V1>	*Positive Phase Sequence Overvoltage*
V1<	*Positive Phase Sequence Undervoltage*
V2>	*Negative Phase Sequence Overvoltage*

Device planning

Selection list referenced by the following parameters:

- f[1] . Mode

Device planning	Description
“-”	*do not use*

Device planning	Description
f<	*Underfrequency*
f>	*Overfrequency*
f< and df/dt	*Underfrequency and (instantaneous) rate of frequency change*
f> and df/dt	*Overfrequency and (instantaneous) rate of frequency change*
f< and DF/DT	*Underfrequency and (averaged) rate of frequency change*
f> and DF/DT	*Overfrequency and (averaged) rate of frequency change*
df/dt	*Measured value (calculated): Rate-of-frequency-change.*
delta phi	*Measured value (calculated): Vector surge*

Mode

general operation mode

Selection list referenced by the following parameters:

- PQS[1] . Mode

Mode	Description
“-”	*do not use*
P>	*Over(load) Active Power Pickup Value. Can be used for monitoring the maximum allowed forward power limits of transformers or overhead lines.*
P<	*Under(load) Active Power Pickup Value (e.g. caused by idling motors).*
Pr<	*Under Reverse*
Pr>	*Overload Reverse Active Power Pickup Value. Protection against reverse feeding into the power supply network.*
Q>	*Over(load) Reactive Power Pickup Value. Monitoring the maximum allowed reactive power of the electrical equipment like transformers or overhead lines). If the maximum value is exceeded a condensator bank could be switched off.*
Q<	*Under(load) Reactive Power Pickup Value. Monitoring the minimum value of the reactive power. If it falls below the set value a condensator bank could be switched on.*
Qr<	*Under Reverse*
Qr>	*Overload Reverse Reactive Power Pickup Value*
S>	*Over(load) Apparent Power Pickup Value*
S<	*Under(load) Apparent Power Pickup Value*

Mode

general operation mode

Selection list referenced by the following parameters:

- ╚═▷ PF[1] . Mode

Mode	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ ExP[1] . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ RTD . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ CBF . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ TCS . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ CTS . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Device planning

Selection list referenced by the following parameters:

- ╚═▷ LOP . Mode

Device planning	Description
“-”	*do not use*
use	*use*

Mode

general operation mode

Selection list referenced by the following parameters:

- ↳▷ SysA . Mode

Mode	Description
“-”	*do not use*
use	*use*

Used Protocol

Used SCADA Protocol

Selection list referenced by the following parameters:

- ↳▷ Scada . Protocol

Used Protocol	Description
“-”	*do not use*
Modbus RTU	*Modbus Protocol RTU*
Modbus TCP	*Modbus Protocol TCP*
Modbus TCP/RTU	*Modbus Protocol TCP/RTU*
DNP3 RTU	*Distributed Network Protocol RTU*
DNP3 TCP	*Distributed Network Protocol TCP*
DNP3 UDP	*Distributed Network Protocol UDP*
IEC 60870-5-103	*IEC 60870-5-103 Protocol*
IEC 60870-5-104	*IEC 60870-5-104 Protocol*
IEC 61850	*IEC 61850 communication*
Profibus	*Profibus Module*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ IRIG-B . Mode

Mode	Description
“-”	*do not use*
use	*use*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ SNTP . Mode

Mode	Description
“-”	*do not use*
use	*use*

No of Equations:

Number of required Logic Equations:

Selection list referenced by the following parameters:

- ⮡ Logics . No of Equations:

No of Equations:	Description
0	*0*
5	*5*
10	*10*
20	*20*
40	*40*
80	*80*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮱▷ Sgen . Mode

Mode	Description
“-”	*do not use*
use	*use*

Scaling

Display of the measured values as primary, secondary or per unit values

Selection list referenced by the following parameters:

- ⮱▷ Sys . Scaling

Scaling	Description
Per unit values	*Per unit values*
Primary values	*Primary values*
Secondary values	*Secondary values*

Units

Units for the measurement

Selection list referenced by the following parameters:

- ⮱▷ URTD . Temperature Unit

Units	Description
Celsius	*Celsius*
Fahrenheit	*Fahrenheit*

1..n Power Scaling

Selection list referenced by the following parameters:

- ⮡ PQSCr . Power Units

1..n Power Scaling	Description
Power Auto Scaling	*Selects unit prefix (k, M, G) and decimal places for power values to best fit, depending on VT and CT primary settings.*
kW/kVAr/kVA	*Set unit prefix to k (kW, kVAr or kVA)*
MW/MVAr/MVA	*Set unit prefix to M (MW, MVAr or MVA)*
GW/GVAr/GVA	*Set unit prefix to G (GW, GVAr or GVA)*

1..n Energy Scaling

Selection list referenced by the following parameters:

- ⮡ PQSCr . Energy Units

1..n Energy Scaling	Description
Energy Auto Scaling	*Selects unit prefix (k, M, G) and decimal places for power values to best fit, depending on VT and CT primary settings.*
kWh/kVArh/kVAh	*Set unit prefix to k (kWh, kVArh or kVAh)*
MWh/MVArh/MVAh	*Set unit prefix to M (MWh, MVArh or MVAh)*
GWh/GVArh/GVAh	*Set unit prefix to G (GWh, GVArh or GVAh)*

Nom voltage

Nominal voltage of the digital inputs

Selection list referenced by the following parameters:

- ⮡ DI Slot X1 . Nom voltage

Nom voltage	Description
24 VDC	*24 VDC*
48 VDC	*48 VDC*
60 VDC	*60 VDC*
110 VDC	*110 VDC*
230 VDC	*230 VDC*
110 VAC	*110 VAC*

Nom voltage	Description
230 VAC	*230 VAC*

Debouncing time

A change of the state of a digital input will only be recognized after the debouncing time has expired (become effective). Thus, transient signals will not be misinterpreted.

Selection list referenced by the following parameters:

- ⮡ DI Slot X1 . Debouncing time 1

Debouncing time	Description
no debouncing time	*no debouncing time*
20 ms	*20 ms*
50 ms	*50 ms*
100 ms	*100 ms*

1...n Operating Modes

Selection list referenced by the following parameters:

- ⮡ BO Slot X2 . Operating Mode
- ⮡ BO Slot X2 . Operating Mode
- ⮡ BO Slot X2 . Operating Mode
- ⮡ BO Slot X2 . Operating Mode
- ⮡ BO Slot X2 . Operating Mode
- ⮡ BO Slot X2 . Operating Mode

1...n Operating Modes	Description
Normally open (NO)	*The working principle of the relay corresponds to a normally open contact.*
Normally closed (NC)	*The working principle of the relay corresponds to a normally closed contact.*

1..n, Assignment List

Assignment List

Selection list referenced by the following parameters:

- ⮡ BO Slot X2 . Acknowledgement
- ⮡ BO Slot X2 . Assignment 1
- ⮡ BO Slot X2 . Assignment 2
- ⮡ BO Slot X2 . Acknowledgement
- ⮡ BO Slot X2 . Assignment 1
- ⮡ BO Slot X2 . Assignment 2
- *[. . .]*

1..n, Assignment List	Description
"-"	*No assignment*
Prot . **available**	*Signal: Protection is available*
Prot . **active**	*Signal: active*
Prot . **ExBlo**	*Signal: External Blocking*
Prot . **Blo TripCmd**	*Signal: Trip Command blocked*
Prot . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
Prot . **Alarm L1**	*Signal: General-Alarm L1*
Prot . **Alarm L2**	*Signal: General-Alarm L2*
Prot . **Alarm L3**	*Signal: General-Alarm L3*
Prot . **Alarm G**	*Signal: General-Alarm - Earth fault*
Prot . **Alarm**	*Signal: General Alarm*
Prot . **Trip L1**	*Signal: General Trip L1*
Prot . **Trip L2**	*Signal: General Trip L2*
Prot . **Trip L3**	*Signal: General Trip L3*
Prot . **Trip G**	*Signal: General Trip Ground fault*
Prot . **Trip**	*Signal: General Trip*
Prot . **Res FaultNo a GridFaultNo**	*Signal: Resetting of fault number and grid fault number.*
Prot . **ExBlo1-I**	*Module input state: External blocking1*
Prot . **ExBlo2-I**	*Module input state: External blocking2*
Prot . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*

1..n, Assignment List	Description
VT . **Phase seq. wrong**	*Signal that the device has detected a phase sequence (L1-L2-L3 / L1-L3-L2) that is different from the one that had been set at [Field settings / General Settings] »Phase Sequence«.*
CT . **Phase seq. wrong**	*Signal that the device has detected a phase sequence (L1-L2-L3 / L1-L3-L2) that is different from the one that had been set at [Field settings / General Settings] »Phase Sequence«.*
Ctrl . **Local**	*Switching Authority: Local*
Ctrl . **Remote**	*Switching Authority: Remote*
Ctrl . **NonInterl**	*Non-Interlocking is active*
Ctrl . **SG Indeterm**	*(At least one) Switchgear is moving (Position cannot be determined).*
Ctrl . **SG Disturb**	*(At least one) Switchgear is disturbed.*
Ctrl . **NonInterl-I**	*Non-Interlocking*
SG[1] . **SI SingleContactInd**	*Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.*
SG[1] . **Pos not ON**	*Signal: Pos not ON*
SG[1] . **Pos ON**	*Signal: Circuit Breaker is in ON-Position*
SG[1] . **Pos OFF**	*Signal: Circuit Breaker is in OFF-Position*
SG[1] . **Pos Indeterm**	*Signal: Circuit Breaker is in Indeterminate Position*
SG[1] . **Pos Disturb**	*Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.*
SG[1] . **Ready**	*Signal: Circuit breaker is ready for operation.*
SG[1] . **t-Dwell**	*Signal: Dwell time*
SG[1] . **Removed**	*Signal: The withdrawable circuit breaker is Removed*
SG[1] . **Interl ON**	*Signal: One or more IL_On inputs are active.*
SG[1] . **Interl OFF**	*Signal: One or more IL_Off inputs are active.*
SG[1] . **CES succesf**	*Signal: Command Execution Supervision: Switching command executed successfully.*
SG[1] . **CES Disturbed**	*Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.*
SG[1] . **CES Fail TripCmd**	*Signal: Command Execution Supervision: Command execution failed because trip command is pending.*
SG[1] . **CES SwitchDir**	*Signal: Command Execution Supervision respectively Switching Direction Control: This signal becomes true, if a switch command is issued even though the switchgear is already in the requested position. Example: A switchgear that is already OFF should be switched OFF again (doubly). The same applies to CLOSE commands.*

1..n, Assignment List	Description
SG[1] . **CES ON d OFF**	*Signal: Command Execution Supervision: On Command during a pending OFF Command.*
SG[1] . **CES SG not ready**	*Signal: Command Execution Supervision: Switchgear not ready*
SG[1] . **CES Fiel Interl**	*Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.*
SG[1] . **CES SG removed**	*Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.*
SG[1] . **TripCmd**	*Signal: Trip Command*
SG[1] . **Ack TripCmd**	*Signal: Acknowledge Trip Command*
SG[1] . **OFF incl TripCmd**	*Signal: The OFF Command includes the OFF Command issued by the Protection module.*
SG[1] . **Position Ind manipul**	*Signal: Position Indicators faked*
SG[1] . **SGwear Slow SG**	*Signal: Alarm, the circuit breaker (load-break switch) becomes slower*
SG[1] . **Res SGwear Sl SG**	*Signal: Resetting the slow Switchgear Alarm*
SG[1] . **ON Cmd**	*Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.*
SG[1] . **OFF Cmd**	*Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.*
SG[1] . **ON Cmd manual**	*Signal: ON Cmd manual*
SG[1] . **OFF Cmd manual**	*Signal: OFF Cmd manual*
SG[1] . **Aux ON-I**	*Module Input State: Position indicator/check-back signal of the CB (52a)*
SG[1] . **Aux OFF-I**	*Module input state: Position indicator/check-back signal of the CB (52b)*
SG[1] . **Ready-I**	*Module input state: CB ready*
SG[1] . **Removed-I**	*State of the module input: The withdrawable circuit breaker is Removed*
SG[1] . **Ack TripCmd-I**	*State of the module input: Acknowledgement Signal (for the Trip Command) Module input signal*
SG[1] . **Interl ON1-I**	*State of the module input: Interlocking of the ON command*
SG[1] . **Interl ON2-I**	*State of the module input: Interlocking of the ON command*
SG[1] . **Interl ON3-I**	*State of the module input: Interlocking of the ON command*
SG[1] . **Interl OFF1-I**	*State of the module input: Interlocking of the OFF command*

1..n, Assignment List	Description
SG[1] . **Interl OFF2-I**	*State of the module input: Interlocking of the OFF command*
SG[1] . **Interl OFF3-I**	*State of the module input: Interlocking of the OFF command*
SG[1] . **SCmd ON-I**	*State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input*
SG[1] . **SCmd OFF-I**	*State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input*
SG[1] . **Operations Alarm**	*Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)*
SG[1] . **Isum Intr trip: IL1**	*Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1*
SG[1] . **Isum Intr trip: IL2**	*Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2*
SG[1] . **Isum Intr trip: IL3**	*Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3*
SG[1] . **Isum Intr trip**	*Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.*
SG[1] . **Res TripCmd Cr**	*Signal: Resetting of the Counter: Total number of trips of the switchgear*
SG[1] . **Res Sum trip**	*Signal: Reset summation of the tripping currents*
SG[1] . **WearLevel Alarm**	*Signal: Threshold for the Alarm*
SG[1] . **WearLevel Lockout**	*Signal: Threshold for the Lockout Level*
SG[1] . **Res CB OPEN capacity**	*Signal: Reset of the wear maintenance curve (i. e. of the counter for the Circuit Breaker OPEN capacity.*
SG[1] . **Isum Intr ph Alm**	*Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.*
SG[1] . **Res Isum Intr ph Alm**	*Signal: Reset of the Alarm, "the per hour Sum (Limit) of interrupting currents has been exceeded".*
MStart . **active**	*Signal: active*
MStart . **Blo TripCmd**	*Signal: Trip Command blocked*
MStart . **Trip**	*Signal: Trip*
MStart . **TripCmd**	*Signal: Trip Command*
MStart . **Start**	*Signal: Motor is in start mode*
MStart . **Run**	*Signal: Motor is in run mode*
MStart . **Stop**	*Signal: Motor is in stop mode*
MStart . **Blo**	*Signal: Motor is blocked for starting or transition to Run mode*
MStart . **NOCSBlocked**	*Signal: Motor is prohibited to start due to number of cold start limits*

1..n, Assignment List	Description
MStart . **SPHBlocked**	*Signal: Motor is prohibited to start due to starts per hour limits*
MStart . **SPHBlockAlarm**	*Signal: Motor is prohibited to start due to starts per hour limits, would come active in the next stop*
MStart . **TBSBlocked**	*Signal: Motor is prohibited to start due to time between starts limits*
MStart . **ThermalBlo**	*Signal: Thermal block*
MStart . **RemBlockStart**	*Signal: Motor is prohibited to start due to external blocking through digital input DI*
MStart . **TransitionTrip**	*Signal: Start transition fail trip*
MStart . **ZSSTrip**	*Signal: Zero speed trip (possible locked rotor)*
MStart . **InSq Stop2Start Faill**	*Signal: Fail to transit from stop to start based on reported back time*
MStart . **InSq Start2Run Fail**	*Signal: Fail to transit from start to run based on reported back time*
MStart . **LATBlock**	*Signal: Long acceleration timer enforced*
MStart . **ColdStartSeq**	*Signal: Motor cold start sequence flag*
MStart . **ForcedStart**	*Signal: Motor being forced to start*
MStart . **TripPhaseReverse**	*Signal: Relay tripped because of phase reverse detection*
MStart . **EmergOverrideDI**	*Signal: Emergency override start blocking through digital input DI*
MStart . **EmergOverrideUI**	*Signal: Emergency override start blocking through front panel*
MStart . **ABSActive**	*Signal: Anti-backspin is active. For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The anti-backspin timer prevents starting the motor while it is spinning in the reverse direction.*
MStart . **Blo-GOCStart**	*Signal: Ground Instantaneous Overcurrent Start Delay. GOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-IOCStart**	*Signal: Phase Instantaneous Overcurrent Start Delay. IOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-I<Start**	*Signal: Underload Start Delay. Underload(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-JamStart**	*Signal: JAM Start Delay. JAM(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-I2>Start**	*Signal: Motor start block current unbalance signal*
MStart . **Blo-Generic1**	*Generic Start Delay. This value can be used to block any protective element.1*

1..n, Assignment List	Description
MStart . **Blo-Generic2**	*Generic Start Delay. This value can be used to block any protective element.2*
MStart . **Blo-Generic3**	*Generic Start Delay. This value can be used to block any protective element.3*
MStart . **Blo-Generic4**	*Generic Start Delay. This value can be used to block any protective element.4*
MStart . **Blo-Generic5**	*Generic Start Delay. This value can be used to block any protective element.5*
MStart . **I_Transit**	*Signal: Current transition signal*
MStart . **T_Transit**	*Signal: Time transition signal*
MStart . **MotorStopBlo**	*Signal: Motor stop block other protection functions*
MStart . **Rotating forward**	*Signal: Rotation Direction forward*
MStart . **Rotating backward**	*Signal: Rotation Direction reverse*
MStart . **Blo-U2>**	*Signal: Motor start block voltage unbalance signal.*
MStart . **Blo-UnderV Start**	*Signal: Undervoltage Start Delay. Undervoltage elements are blocked for the time programmed under this parameter*
MStart . **Block-OverVStart**	*Signal: Overvoltage Start Delay. Overvoltage elements are blocked for the time programmed under this parameter*
MStart . **Blo-PowerStart**	*Signal: Power Start Delay. Power elements are blocked for the time programmed under this parameter*
MStart . **Blo-PFacStart**	*Signal: Power Factor Start Delay. Power Factor elements are blocked for the time programmed under this parameter*
MStart . **Blo-FrqStart**	*Signal: Frequency Start Delay. Frequency elements are blocked for the time programmed under this parameter*
MStart . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
MStart . **RemStartBlock-I**	*State of the module input: Remote Motor Start Blocking*
MStart . **EmgOvr-I**	*State of the module input: Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect*
MStart . **InSq-I**	*State of the module input: Incomplete Sequence*
MStart . **ZSS-I**	*State of the module input: Zero Speed Switch*
MStart . **STPC Blo-I**	*State of the module input: With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).*

1..n, Assignment List	Description
I[1] . **active**	*Signal: active*
I[1] . **ExBlo**	*Signal: External Blocking*
I[1] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I[1] . **Alarm L1**	*Signal: Alarm L1*
I[1] . **Alarm L2**	*Signal: Alarm L2*
I[1] . **Alarm L3**	*Signal: Alarm L3*
I[1] . **Alarm**	*Signal: Alarm*
I[1] . **Trip L1**	*Signal: General Trip Phase L1*
I[1] . **Trip L2**	*Signal: General Trip Phase L2*
I[1] . **Trip L3**	*Signal: General Trip Phase L3*
I[1] . **Trip**	*Signal: Trip*
I[1] . **TripCmd**	*Signal: Trip Command*
I[1] . **DefaultSet**	*Signal: Default Parameter Set*
I[1] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[1] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[1] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[1] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[1] . **ExBlo1-I**	*Module input state: External blocking1*
I[1] . **ExBlo2-I**	*Module input state: External blocking2*
I[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[1] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[1] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[1] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
I[1] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[1] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
I[2] . **active**	*Signal: active*
I[2] . **ExBlo**	*Signal: External Blocking*
I[2] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*

1..n, Assignment List	Description
I[2] . **Alarm L1**	*Signal: Alarm L1*
I[2] . **Alarm L2**	*Signal: Alarm L2*
I[2] . **Alarm L3**	*Signal: Alarm L3*
I[2] . **Alarm**	*Signal: Alarm*
I[2] . **Trip L1**	*Signal: General Trip Phase L1*
I[2] . **Trip L2**	*Signal: General Trip Phase L2*
I[2] . **Trip L3**	*Signal: General Trip Phase L3*
I[2] . **Trip**	*Signal: Trip*
I[2] . **TripCmd**	*Signal: Trip Command*
I[2] . **DefaultSet**	*Signal: Default Parameter Set*
I[2] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[2] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[2] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[2] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[2] . **ExBlo1-I**	*Module input state: External blocking1*
I[2] . **ExBlo2-I**	*Module input state: External blocking2*
I[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[2] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[2] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[2] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
I[2] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[2] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
I[3] . **active**	*Signal: active*
I[3] . **ExBlo**	*Signal: External Blocking*
I[3] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I[3] . **Alarm L1**	*Signal: Alarm L1*
I[3] . **Alarm L2**	*Signal: Alarm L2*
I[3] . **Alarm L3**	*Signal: Alarm L3*
I[3] . **Alarm**	*Signal: Alarm*
I[3] . **Trip L1**	*Signal: General Trip Phase L1*

1..n, Assignment List	Description
I[3] . **Trip L2**	*Signal: General Trip Phase L2*
I[3] . **Trip L3**	*Signal: General Trip Phase L3*
I[3] . **Trip**	*Signal: Trip*
I[3] . **TripCmd**	*Signal: Trip Command*
I[3] . **DefaultSet**	*Signal: Default Parameter Set*
I[3] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[3] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[3] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[3] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[3] . **ExBlo1-I**	*Module input state: External blocking1*
I[3] . **ExBlo2-I**	*Module input state: External blocking2*
I[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[3] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[3] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[3] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
I[3] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[3] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
I[4] . **active**	*Signal: active*
I[4] . **ExBlo**	*Signal: External Blocking*
I[4] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I[4] . **Alarm L1**	*Signal: Alarm L1*
I[4] . **Alarm L2**	*Signal: Alarm L2*
I[4] . **Alarm L3**	*Signal: Alarm L3*
I[4] . **Alarm**	*Signal: Alarm*
I[4] . **Trip L1**	*Signal: General Trip Phase L1*
I[4] . **Trip L2**	*Signal: General Trip Phase L2*
I[4] . **Trip L3**	*Signal: General Trip Phase L3*
I[4] . **Trip**	*Signal: Trip*
I[4] . **TripCmd**	*Signal: Trip Command*
I[4] . **DefaultSet**	*Signal: Default Parameter Set*

1..n, Assignment List	Description
I[4] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[4] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[4] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[4] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[4] . **ExBlo1-I**	*Module input state: External blocking1*
I[4] . **ExBlo2-I**	*Module input state: External blocking2*
I[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[4] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[4] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[4] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
I[4] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[4] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
I[5] . **active**	*Signal: active*
I[5] . **ExBlo**	*Signal: External Blocking*
I[5] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[5] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[5] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I[5] . **Alarm L1**	*Signal: Alarm L1*
I[5] . **Alarm L2**	*Signal: Alarm L2*
I[5] . **Alarm L3**	*Signal: Alarm L3*
I[5] . **Alarm**	*Signal: Alarm*
I[5] . **Trip L1**	*Signal: General Trip Phase L1*
I[5] . **Trip L2**	*Signal: General Trip Phase L2*
I[5] . **Trip L3**	*Signal: General Trip Phase L3*
I[5] . **Trip**	*Signal: Trip*
I[5] . **TripCmd**	*Signal: Trip Command*
I[5] . **DefaultSet**	*Signal: Default Parameter Set*
I[5] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[5] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[5] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[5] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[5] . **ExBlo1-I**	*Module input state: External blocking1*

1..n, Assignment List	Description
I[5] . **ExBlo2-I**	*Module input state: External blocking2*
I[5] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[5] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[5] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[5] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
I[5] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[5] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
I[6] . **active**	*Signal: active*
I[6] . **ExBlo**	*Signal: External Blocking*
I[6] . **Ex rev Interl**	*Signal: External reverse Interlocking*
I[6] . **Blo TripCmd**	*Signal: Trip Command blocked*
I[6] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I[6] . **Alarm L1**	*Signal: Alarm L1*
I[6] . **Alarm L2**	*Signal: Alarm L2*
I[6] . **Alarm L3**	*Signal: Alarm L3*
I[6] . **Alarm**	*Signal: Alarm*
I[6] . **Trip L1**	*Signal: General Trip Phase L1*
I[6] . **Trip L2**	*Signal: General Trip Phase L2*
I[6] . **Trip L3**	*Signal: General Trip Phase L3*
I[6] . **Trip**	*Signal: Trip*
I[6] . **TripCmd**	*Signal: Trip Command*
I[6] . **DefaultSet**	*Signal: Default Parameter Set*
I[6] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
I[6] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
I[6] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
I[6] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
I[6] . **ExBlo1-I**	*Module input state: External blocking1*
I[6] . **ExBlo2-I**	*Module input state: External blocking2*
I[6] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I[6] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
I[6] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
I[6] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*

1..n, Assignment List	Description
I[6] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
I[6] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
IG[1] . **active**	*Signal: active*
IG[1] . **ExBlo**	*Signal: External Blocking*
IG[1] . **Ex rev Interl**	*Signal: External reverse Interlocking*
IG[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
IG[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
IG[1] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[1] . **Trip**	*Signal: Trip*
IG[1] . **TripCmd**	*Signal: Trip Command*
IG[1] . **DefaultSet**	*Signal: Default Parameter Set*
IG[1] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
IG[1] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
IG[1] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
IG[1] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
IG[1] . **ExBlo1-I**	*Module input state: External blocking1*
IG[1] . **ExBlo2-I**	*Module input state: External blocking2*
IG[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
IG[1] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
IG[1] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
IG[1] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
IG[1] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
IG[1] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
IG[2] . **active**	*Signal: active*
IG[2] . **ExBlo**	*Signal: External Blocking*
IG[2] . **Ex rev Interl**	*Signal: External reverse Interlocking*
IG[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
IG[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
IG[2] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[2] . **Trip**	*Signal: Trip*
IG[2] . **TripCmd**	*Signal: Trip Command*
IG[2] . **DefaultSet**	*Signal: Default Parameter Set*

1..n, Assignment List	Description
IG[2] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
IG[2] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
IG[2] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
IG[2] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
IG[2] . **ExBlo1-I**	*Module input state: External blocking1*
IG[2] . **ExBlo2-I**	*Module input state: External blocking2*
IG[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
IG[2] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
IG[2] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
IG[2] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
IG[2] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
IG[2] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
IG[3] . **active**	*Signal: active*
IG[3] . **ExBlo**	*Signal: External Blocking*
IG[3] . **Ex rev Interl**	*Signal: External reverse Interlocking*
IG[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
IG[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
IG[3] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[3] . **Trip**	*Signal: Trip*
IG[3] . **TripCmd**	*Signal: Trip Command*
IG[3] . **DefaultSet**	*Signal: Default Parameter Set*
IG[3] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
IG[3] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
IG[3] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
IG[3] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
IG[3] . **ExBlo1-I**	*Module input state: External blocking1*
IG[3] . **ExBlo2-I**	*Module input state: External blocking2*
IG[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
IG[3] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
IG[3] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
IG[3] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
IG[3] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*

1..n, Assignment List	Description
IG[3] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
IG[4] . **active**	*Signal: active*
IG[4] . **ExBlo**	*Signal: External Blocking*
IG[4] . **Ex rev Interl**	*Signal: External reverse Interlocking*
IG[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
IG[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
IG[4] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[4] . **Trip**	*Signal: Trip*
IG[4] . **TripCmd**	*Signal: Trip Command*
IG[4] . **DefaultSet**	*Signal: Default Parameter Set*
IG[4] . **AdaptSet 1**	*Signal: Adaptive Parameter 1*
IG[4] . **AdaptSet 2**	*Signal: Adaptive Parameter 2*
IG[4] . **AdaptSet 3**	*Signal: Adaptive Parameter 3*
IG[4] . **AdaptSet 4**	*Signal: Adaptive Parameter 4*
IG[4] . **ExBlo1-I**	*Module input state: External blocking1*
IG[4] . **ExBlo2-I**	*Module input state: External blocking2*
IG[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
IG[4] . **Ex rev Interl-I**	*Module input state: External reverse interlocking*
IG[4] . **AdaptSet1-I**	*Module input state: Adaptive Parameter1*
IG[4] . **AdaptSet2-I**	*Module input state: Adaptive Parameter2*
IG[4] . **AdaptSet3-I**	*Module input state: Adaptive Parameter3*
IG[4] . **AdaptSet4-I**	*Module input state: Adaptive Parameter4*
ThR . **Alarm Pickup**	*Signal: Alarm Pickup*
ThR . **Alarm Timeout**	*Signal: Alarm Timeout*
ThR . **RTD effective**	*This state becomes true if the following conditions are all fulfilled:* *- the state “Load above SF” is true,* *- the Winding Temperature Trip has been activated in the RTD module,* *- for at least one temperature a valid value above 0°C (32°F) is being displayed.*
ThR . **Load above SF**	*“Load above Service Factor”: If the current exceeds the set value of “UTC” (“Ultimate trip threshold”) then the used thermal capacity counts up and the state “Load above SF” is becoming true. If the current is below the “UTC” value this state is false.*

1..n, Assignment List	Description
ThR . **active**	*Signal: active*
ThR . **ExBlo**	*Signal: External Blocking*
ThR . **Blo TripCmd**	*Signal: Trip Command blocked*
ThR . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
ThR . **Alarm**	*Signal: Alarm*
ThR . **Trip**	*Signal: Trip*
ThR . **TripCmd**	*Signal: Trip Command*
ThR . **ExBlo1-I**	*Module input state: External blocking*
ThR . **ExBlo2-I**	*Module input state: External blocking*
ThR . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
Jam[1] . **active**	*Signal: active*
Jam[1] . **ExBlo**	*Signal: External Blocking*
Jam[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
Jam[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
Jam[1] . **Alarm**	*Signal: Alarm*
Jam[1] . **Trip**	*Signal: Trip*
Jam[1] . **TripCmd**	*Signal: Trip Command*
Jam[1] . **ExBlo1-I**	*Module input state: External blocking1*
Jam[1] . **ExBlo2-I**	*Module input state: External blocking2*
Jam[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
Jam[2] . **active**	*Signal: active*
Jam[2] . **ExBlo**	*Signal: External Blocking*
Jam[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
Jam[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
Jam[2] . **Alarm**	*Signal: Alarm*
Jam[2] . **Trip**	*Signal: Trip*
Jam[2] . **TripCmd**	*Signal: Trip Command*
Jam[2] . **ExBlo1-I**	*Module input state: External blocking1*
Jam[2] . **ExBlo2-I**	*Module input state: External blocking2*
Jam[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I<[1] . **active**	*Signal: active*

1..n, Assignment List	Description
I<[1] . **ExBlo**	*Signal: External Blocking*
I<[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
I<[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I<[1] . **Alarm**	*Signal: Alarm*
I<[1] . **Trip**	*Signal: Trip*
I<[1] . **TripCmd**	*Signal: Trip Command*
I<[1] . **ExBlo1-I**	*Module input state: External blocking1*
I<[1] . **ExBlo2-I**	*Module input state: External blocking2*
I<[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I<[2] . **active**	*Signal: active*
I<[2] . **ExBlo**	*Signal: External Blocking*
I<[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
I<[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I<[2] . **Alarm**	*Signal: Alarm*
I<[2] . **Trip**	*Signal: Trip*
I<[2] . **TripCmd**	*Signal: Trip Command*
I<[2] . **ExBlo1-I**	*Module input state: External blocking1*
I<[2] . **ExBlo2-I**	*Module input state: External blocking2*
I<[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I<[3] . **active**	*Signal: active*
I<[3] . **ExBlo**	*Signal: External Blocking*
I<[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
I<[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I<[3] . **Alarm**	*Signal: Alarm*
I<[3] . **Trip**	*Signal: Trip*
I<[3] . **TripCmd**	*Signal: Trip Command*
I<[3] . **ExBlo1-I**	*Module input state: External blocking1*
I<[3] . **ExBlo2-I**	*Module input state: External blocking2*
I<[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
MLS . **active**	*Signal: active*
MLS . **ExBlo**	*Signal: External Blocking*
MLS . **Alarm**	*Signal: Alarm*

1..n, Assignment List	Description
MLS . **Trip**	*Signal: Trip*
MLS . **ExBlo1-I**	*Module input state: External blocking1*
MLS . **ExBlo2-I**	*Module input state: External blocking2*
V[1] . **active**	*Signal: active*
V[1] . **ExBlo**	*Signal: External Blocking*
V[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[1] . **Alarm L1**	*Signal: Alarm L1*
V[1] . **Alarm L2**	*Signal: Alarm L2*
V[1] . **Alarm L3**	*Signal: Alarm L3*
V[1] . **Alarm**	*Signal: Alarm voltage stage*
V[1] . **Trip L1**	*Signal: General Trip Phase L1*
V[1] . **Trip L2**	*Signal: General Trip Phase L2*
V[1] . **Trip L3**	*Signal: General Trip Phase L3*
V[1] . **Trip**	*Signal: Trip*
V[1] . **TripCmd**	*Signal: Trip Command*
V[1] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[1] . **ExBlo1-I**	*Module input state: External blocking1*
V[1] . **ExBlo2-I**	*Module input state: External blocking2*
V[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V[2] . **active**	*Signal: active*
V[2] . **ExBlo**	*Signal: External Blocking*
V[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[2] . **Alarm L1**	*Signal: Alarm L1*
V[2] . **Alarm L2**	*Signal: Alarm L2*
V[2] . **Alarm L3**	*Signal: Alarm L3*
V[2] . **Alarm**	*Signal: Alarm voltage stage*
V[2] . **Trip L1**	*Signal: General Trip Phase L1*
V[2] . **Trip L2**	*Signal: General Trip Phase L2*
V[2] . **Trip L3**	*Signal: General Trip Phase L3*

1..n, Assignment List	Description
V[2] . **Trip**	*Signal: Trip*
V[2] . **TripCmd**	*Signal: Trip Command*
V[2] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[2] . **ExBlo1-I**	*Module input state: External blocking1*
V[2] . **ExBlo2-I**	*Module input state: External blocking2*
V[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V[3] . **active**	*Signal: active*
V[3] . **ExBlo**	*Signal: External Blocking*
V[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[3] . **Alarm L1**	*Signal: Alarm L1*
V[3] . **Alarm L2**	*Signal: Alarm L2*
V[3] . **Alarm L3**	*Signal: Alarm L3*
V[3] . **Alarm**	*Signal: Alarm voltage stage*
V[3] . **Trip L1**	*Signal: General Trip Phase L1*
V[3] . **Trip L2**	*Signal: General Trip Phase L2*
V[3] . **Trip L3**	*Signal: General Trip Phase L3*
V[3] . **Trip**	*Signal: Trip*
V[3] . **TripCmd**	*Signal: Trip Command*
V[3] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[3] . **ExBlo1-I**	*Module input state: External blocking1*
V[3] . **ExBlo2-I**	*Module input state: External blocking2*
V[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V[4] . **active**	*Signal: active*
V[4] . **ExBlo**	*Signal: External Blocking*
V[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[4] . **Alarm L1**	*Signal: Alarm L1*
V[4] . **Alarm L2**	*Signal: Alarm L2*
V[4] . **Alarm L3**	*Signal: Alarm L3*
V[4] . **Alarm**	*Signal: Alarm voltage stage*

1..n, Assignment List	Description
V[4] . **Trip L1**	*Signal: General Trip Phase L1*
V[4] . **Trip L2**	*Signal: General Trip Phase L2*
V[4] . **Trip L3**	*Signal: General Trip Phase L3*
V[4] . **Trip**	*Signal: Trip*
V[4] . **TripCmd**	*Signal: Trip Command*
V[4] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[4] . **ExBlo1-I**	*Module input state: External blocking1*
V[4] . **ExBlo2-I**	*Module input state: External blocking2*
V[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V[5] . **active**	*Signal: active*
V[5] . **ExBlo**	*Signal: External Blocking*
V[5] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[5] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[5] . **Alarm L1**	*Signal: Alarm L1*
V[5] . **Alarm L2**	*Signal: Alarm L2*
V[5] . **Alarm L3**	*Signal: Alarm L3*
V[5] . **Alarm**	*Signal: Alarm voltage stage*
V[5] . **Trip L1**	*Signal: General Trip Phase L1*
V[5] . **Trip L2**	*Signal: General Trip Phase L2*
V[5] . **Trip L3**	*Signal: General Trip Phase L3*
V[5] . **Trip**	*Signal: Trip*
V[5] . **TripCmd**	*Signal: Trip Command*
V[5] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[5] . **ExBlo1-I**	*Module input state: External blocking1*
V[5] . **ExBlo2-I**	*Module input state: External blocking2*
V[5] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V[6] . **active**	*Signal: active*
V[6] . **ExBlo**	*Signal: External Blocking*
V[6] . **Blo TripCmd**	*Signal: Trip Command blocked*
V[6] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V[6] . **Alarm L1**	*Signal: Alarm L1*

1..n, Assignment List	Description
V[6] . **Alarm L2**	*Signal: Alarm L2*
V[6] . **Alarm L3**	*Signal: Alarm L3*
V[6] . **Alarm**	*Signal: Alarm voltage stage*
V[6] . **Trip L1**	*Signal: General Trip Phase L1*
V[6] . **Trip L2**	*Signal: General Trip Phase L2*
V[6] . **Trip L3**	*Signal: General Trip Phase L3*
V[6] . **Trip**	*Signal: Trip*
V[6] . **TripCmd**	*Signal: Trip Command*
V[6] . **Imin release active**	*Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.*
V[6] . **ExBlo1-I**	*Module input state: External blocking1*
V[6] . **ExBlo2-I**	*Module input state: External blocking2*
V[6] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
VG[1] . **active**	*Signal: active*
VG[1] . **ExBlo**	*Signal: External Blocking*
VG[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
VG[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
VG[1] . **Alarm**	*Signal: Alarm Residual Voltage Supervision-stage*
VG[1] . **Trip**	*Signal: Trip*
VG[1] . **TripCmd**	*Signal: Trip Command*
VG[1] . **ExBlo1-I**	*Module input state: External blocking1*
VG[1] . **ExBlo2-I**	*Module input state: External blocking2*
VG[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
VG[2] . **active**	*Signal: active*
VG[2] . **ExBlo**	*Signal: External Blocking*
VG[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
VG[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
VG[2] . **Alarm**	*Signal: Alarm Residual Voltage Supervision-stage*
VG[2] . **Trip**	*Signal: Trip*
VG[2] . **TripCmd**	*Signal: Trip Command*
VG[2] . **ExBlo1-I**	*Module input state: External blocking1*
VG[2] . **ExBlo2-I**	*Module input state: External blocking2*

1..n, Assignment List	Description
VG[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I2>[1] . **active**	*Signal: active*
I2>[1] . **ExBlo**	*Signal: External Blocking*
I2>[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
I2>[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I2>[1] . **Alarm**	*Signal: Alarm Negative Sequence*
I2>[1] . **Trip**	*Signal: Trip*
I2>[1] . **TripCmd**	*Signal: Trip Command*
I2>[1] . **ExBlo1-I**	*Module input state: External blocking1*
I2>[1] . **ExBlo2-I**	*Module input state: External blocking2*
I2>[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
I2>[2] . **active**	*Signal: active*
I2>[2] . **ExBlo**	*Signal: External Blocking*
I2>[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
I2>[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
I2>[2] . **Alarm**	*Signal: Alarm Negative Sequence*
I2>[2] . **Trip**	*Signal: Trip*
I2>[2] . **TripCmd**	*Signal: Trip Command*
I2>[2] . **ExBlo1-I**	*Module input state: External blocking1*
I2>[2] . **ExBlo2-I**	*Module input state: External blocking2*
I2>[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[1] . **active**	*Signal: active*
V012[1] . **ExBlo**	*Signal: External Blocking*
V012[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[1] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[1] . **Trip**	*Signal: Trip*
V012[1] . **TripCmd**	*Signal: Trip Command*
V012[1] . **ExBlo1-I**	*Module input state: External blocking1*

1..n, Assignment List	Description
V012[1] . **ExBlo2-I**	*Module input state: External blocking2*
V012[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[2] . **active**	*Signal: active*
V012[2] . **ExBlo**	*Signal: External Blocking*
V012[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[2] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[2] . **Trip**	*Signal: Trip*
V012[2] . **TripCmd**	*Signal: Trip Command*
V012[2] . **ExBlo1-I**	*Module input state: External blocking1*
V012[2] . **ExBlo2-I**	*Module input state: External blocking2*
V012[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[3] . **active**	*Signal: active*
V012[3] . **ExBlo**	*Signal: External Blocking*
V012[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[3] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[3] . **Trip**	*Signal: Trip*
V012[3] . **TripCmd**	*Signal: Trip Command*
V012[3] . **ExBlo1-I**	*Module input state: External blocking1*
V012[3] . **ExBlo2-I**	*Module input state: External blocking2*
V012[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[4] . **active**	*Signal: active*
V012[4] . **ExBlo**	*Signal: External Blocking*
V012[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[4] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[4] . **Trip**	*Signal: Trip*

1..n, Assignment List	Description
V012[4] . **TripCmd**	*Signal: Trip Command*
V012[4] . **ExBlo1-I**	*Module input state: External blocking1*
V012[4] . **ExBlo2-I**	*Module input state: External blocking2*
V012[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[5] . **active**	*Signal: active*
V012[5] . **ExBlo**	*Signal: External Blocking*
V012[5] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[5] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[5] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[5] . **Trip**	*Signal: Trip*
V012[5] . **TripCmd**	*Signal: Trip Command*
V012[5] . **ExBlo1-I**	*Module input state: External blocking1*
V012[5] . **ExBlo2-I**	*Module input state: External blocking2*
V012[5] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
V012[6] . **active**	*Signal: active*
V012[6] . **ExBlo**	*Signal: External Blocking*
V012[6] . **Blo TripCmd**	*Signal: Trip Command blocked*
V012[6] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
V012[6] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[6] . **Trip**	*Signal: Trip*
V012[6] . **TripCmd**	*Signal: Trip Command*
V012[6] . **ExBlo1-I**	*Module input state: External blocking1*
V012[6] . **ExBlo2-I**	*Module input state: External blocking2*
V012[6] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[1] . **active**	*Signal: active*
f[1] . **ExBlo**	*Signal: External Blocking*
f[1] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*

1..n, Assignment List	Description
f[1] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[1] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[1] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[1] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[1] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[1] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[1] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[1] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*
f[1] . **TripCmd**	*Signal: Trip Command*
f[1] . **ExBlo1-I**	*Module input state: External blocking1*
f[1] . **ExBlo2-I**	*Module input state: External blocking2*
f[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[2] . **active**	*Signal: active*
f[2] . **ExBlo**	*Signal: External Blocking*
f[2] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
f[2] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[2] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[2] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[2] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[2] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[2] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[2] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[2] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*
f[2] . **TripCmd**	*Signal: Trip Command*
f[2] . **ExBlo1-I**	*Module input state: External blocking1*
f[2] . **ExBlo2-I**	*Module input state: External blocking2*
f[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[3] . **active**	*Signal: active*
f[3] . **ExBlo**	*Signal: External Blocking*

1..n, Assignment List	Description
f[3] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
f[3] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[3] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[3] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[3] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[3] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[3] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[3] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[3] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*
f[3] . **TripCmd**	*Signal: Trip Command*
f[3] . **ExBlo1-I**	*Module input state: External blocking1*
f[3] . **ExBlo2-I**	*Module input state: External blocking2*
f[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[4] . **active**	*Signal: active*
f[4] . **ExBlo**	*Signal: External Blocking*
f[4] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
f[4] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[4] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[4] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[4] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[4] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[4] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[4] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[4] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*
f[4] . **TripCmd**	*Signal: Trip Command*
f[4] . **ExBlo1-I**	*Module input state: External blocking1*
f[4] . **ExBlo2-I**	*Module input state: External blocking2*

1..n, Assignment List	Description
f[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[5] . **active**	*Signal: active*
f[5] . **ExBlo**	*Signal: External Blocking*
f[5] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[5] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[5] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
f[5] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[5] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[5] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[5] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[5] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[5] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[5] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[5] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*
f[5] . **TripCmd**	*Signal: Trip Command*
f[5] . **ExBlo1-I**	*Module input state: External blocking1*
f[5] . **ExBlo2-I**	*Module input state: External blocking2*
f[5] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
f[6] . **active**	*Signal: active*
f[6] . **ExBlo**	*Signal: External Blocking*
f[6] . **Blo by V<**	*Signal: Module is blocked by undervoltage.*
f[6] . **Blo TripCmd**	*Signal: Trip Command blocked*
f[6] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
f[6] . **Alarm f**	*Signal: Alarm Frequency Protection*
f[6] . **Alarm df/dt | DF/DT**	*Alarm instantaneous or average value of the rate-of-frequency-change*
f[6] . **Alarm delta phi**	*Signal: Alarm Vector Surge*
f[6] . **Alarm**	*Signal: Alarm Frequency Protection (collective signal)*
f[6] . **Trip f**	*Signal: Frequency has exceeded the limit.*
f[6] . **Trip df/dt | DF/DT**	*Signal: Trip df/dt or DF/DT*
f[6] . **Trip delta phi**	*Signal: Trip Vector Surge*
f[6] . **Trip**	*Signal: Trip Frequency Protection (collective signal)*

1..n, Assignment List	Description
f[6] . **TripCmd**	*Signal: Trip Command*
f[6] . **ExBlo1-I**	*Module input state: External blocking1*
f[6] . **ExBlo2-I**	*Module input state: External blocking2*
f[6] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[1] . **active**	*Signal: active*
PQS[1] . **ExBlo**	*Signal: External Blocking*
PQS[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[1] . **Alarm**	*Signal: Alarm Power Protection*
PQS[1] . **Trip**	*Signal: Trip Power Protection*
PQS[1] . **TripCmd**	*Signal: Trip Command*
PQS[1] . **ExBlo1-I**	*Module input state: External blocking*
PQS[1] . **ExBlo2-I**	*Module input state: External blocking*
PQS[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[2] . **active**	*Signal: active*
PQS[2] . **ExBlo**	*Signal: External Blocking*
PQS[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[2] . **Alarm**	*Signal: Alarm Power Protection*
PQS[2] . **Trip**	*Signal: Trip Power Protection*
PQS[2] . **TripCmd**	*Signal: Trip Command*
PQS[2] . **ExBlo1-I**	*Module input state: External blocking*
PQS[2] . **ExBlo2-I**	*Module input state: External blocking*
PQS[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[3] . **active**	*Signal: active*
PQS[3] . **ExBlo**	*Signal: External Blocking*
PQS[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[3] . **Alarm**	*Signal: Alarm Power Protection*
PQS[3] . **Trip**	*Signal: Trip Power Protection*
PQS[3] . **TripCmd**	*Signal: Trip Command*

1..n, Assignment List	Description
PQS[3] . **ExBlo1-I**	*Module input state: External blocking*
PQS[3] . **ExBlo2-I**	*Module input state: External blocking*
PQS[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[4] . **active**	*Signal: active*
PQS[4] . **ExBlo**	*Signal: External Blocking*
PQS[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[4] . **Alarm**	*Signal: Alarm Power Protection*
PQS[4] . **Trip**	*Signal: Trip Power Protection*
PQS[4] . **TripCmd**	*Signal: Trip Command*
PQS[4] . **ExBlo1-I**	*Module input state: External blocking*
PQS[4] . **ExBlo2-I**	*Module input state: External blocking*
PQS[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[5] . **active**	*Signal: active*
PQS[5] . **ExBlo**	*Signal: External Blocking*
PQS[5] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[5] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[5] . **Alarm**	*Signal: Alarm Power Protection*
PQS[5] . **Trip**	*Signal: Trip Power Protection*
PQS[5] . **TripCmd**	*Signal: Trip Command*
PQS[5] . **ExBlo1-I**	*Module input state: External blocking*
PQS[5] . **ExBlo2-I**	*Module input state: External blocking*
PQS[5] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PQS[6] . **active**	*Signal: active*
PQS[6] . **ExBlo**	*Signal: External Blocking*
PQS[6] . **Blo TripCmd**	*Signal: Trip Command blocked*
PQS[6] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PQS[6] . **Alarm**	*Signal: Alarm Power Protection*
PQS[6] . **Trip**	*Signal: Trip Power Protection*
PQS[6] . **TripCmd**	*Signal: Trip Command*

1..n, Assignment List	Description
PQS[6] . **ExBlo1-I**	*Module input state: External blocking*
PQS[6] . **ExBlo2-I**	*Module input state: External blocking*
PQS[6] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PF[1] . **active**	*Signal: active*
PF[1] . **ExBlo**	*Signal: External Blocking*
PF[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
PF[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PF[1] . **Alarm**	*Signal: Alarm Power Factor*
PF[1] . **Trip**	*Signal: Trip Power Factor*
PF[1] . **TripCmd**	*Signal: Trip Command*
PF[1] . **Compensator**	*Signal: Compensation Signal*
PF[1] . **Impossible**	*Signal: Alarm Power Factor Impossible*
PF[1] . **ExBlo1-I**	*Module input state: External blocking*
PF[1] . **ExBlo2-I**	*Module input state: External blocking*
PF[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
PF[2] . **active**	*Signal: active*
PF[2] . **ExBlo**	*Signal: External Blocking*
PF[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
PF[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
PF[2] . **Alarm**	*Signal: Alarm Power Factor*
PF[2] . **Trip**	*Signal: Trip Power Factor*
PF[2] . **TripCmd**	*Signal: Trip Command*
PF[2] . **Compensator**	*Signal: Compensation Signal*
PF[2] . **Impossible**	*Signal: Alarm Power Factor Impossible*
PF[2] . **ExBlo1-I**	*Module input state: External blocking*
PF[2] . **ExBlo2-I**	*Module input state: External blocking*
PF[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
ExP[1] . **active**	*Signal: active*
ExP[1] . **ExBlo**	*Signal: External Blocking*
ExP[1] . **Blo TripCmd**	*Signal: Trip Command blocked*
ExP[1] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*

1..n, Assignment List	Description
ExP[1] . **Alarm**	*Signal: Alarm*
ExP[1] . **Trip**	*Signal: Trip*
ExP[1] . **TripCmd**	*Signal: Trip Command*
ExP[1] . **ExBlo1-I**	*Module input state: External blocking1*
ExP[1] . **ExBlo2-I**	*Module input state: External blocking2*
ExP[1] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
ExP[1] . **Alarm-I**	*Module input state: Alarm*
ExP[1] . **Trip-I**	*Module input state: Trip*
ExP[2] . **active**	*Signal: active*
ExP[2] . **ExBlo**	*Signal: External Blocking*
ExP[2] . **Blo TripCmd**	*Signal: Trip Command blocked*
ExP[2] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
ExP[2] . **Alarm**	*Signal: Alarm*
ExP[2] . **Trip**	*Signal: Trip*
ExP[2] . **TripCmd**	*Signal: Trip Command*
ExP[2] . **ExBlo1-I**	*Module input state: External blocking1*
ExP[2] . **ExBlo2-I**	*Module input state: External blocking2*
ExP[2] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
ExP[2] . **Alarm-I**	*Module input state: Alarm*
ExP[2] . **Trip-I**	*Module input state: Trip*
ExP[3] . **active**	*Signal: active*
ExP[3] . **ExBlo**	*Signal: External Blocking*
ExP[3] . **Blo TripCmd**	*Signal: Trip Command blocked*
ExP[3] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
ExP[3] . **Alarm**	*Signal: Alarm*
ExP[3] . **Trip**	*Signal: Trip*
ExP[3] . **TripCmd**	*Signal: Trip Command*
ExP[3] . **ExBlo1-I**	*Module input state: External blocking1*
ExP[3] . **ExBlo2-I**	*Module input state: External blocking2*
ExP[3] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*

1..n, Assignment List	Description
ExP[3] . **Alarm-I**	*Module input state: Alarm*
ExP[3] . **Trip-I**	*Module input state: Trip*
ExP[4] . **active**	*Signal: active*
ExP[4] . **ExBlo**	*Signal: External Blocking*
ExP[4] . **Blo TripCmd**	*Signal: Trip Command blocked*
ExP[4] . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
ExP[4] . **Alarm**	*Signal: Alarm*
ExP[4] . **Trip**	*Signal: Trip*
ExP[4] . **TripCmd**	*Signal: Trip Command*
ExP[4] . **ExBlo1-I**	*Module input state: External blocking1*
ExP[4] . **ExBlo2-I**	*Module input state: External blocking2*
ExP[4] . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
ExP[4] . **Alarm-I**	*Module input state: Alarm*
ExP[4] . **Trip-I**	*Module input state: Trip*
URTD . **Windg1 Superv**	*Signal: Windg1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Windg2 Superv**	*Signal: Windg2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Windg3 Superv**	*Signal: Windg3, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Windg4 Superv**	*Signal: Windg4, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Windg5 Superv**	*Signal: Windg5, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Windg6 Superv**	*Signal: Windg6, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **MotBear1 Superv**	*Signal: MotBear1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **MotBear2 Superv**	*Signal: MotBear2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*

1..n, Assignment List	Description
URTD . **LoadBear1 Superv**	*Signal: LoadBear1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **LoadBear2 Superv**	*Signal: LoadBear2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Aux1 Superv**	*Signal: Aux1, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Aux2 Superv**	*Signal: Aux2, Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.)*
URTD . **Superv**	*Signal: URTD Channel Supervision. The value “1” reports a detected channel failure of at least one channel. (The value “0” means that all RTD channels are healthy.)*
URTD . **Connection active**	*Signal: There is an active connection between the Temperature Detector (URTD) and the protective relay.*
URTD . **Outs forced**	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*
RTD . **active**	*Signal: active*
RTD . **ExBlo**	*Signal: External Blocking*
RTD . **Blo TripCmd**	*Signal: Trip Command blocked*
RTD . **ExBlo TripCmd**	*Signal: External Blocking of the Trip Command*
RTD . **Alarm**	*Alarm RTD Temperature Protection*
RTD . **Trip**	*Signal: Trip*
RTD . **TripCmd**	*Signal: Trip Command*
RTD . **Windg 1 Trip**	*Winding 1 Signal: Trip*
RTD . **Windg 1 Alarm**	*Winding 1 Alarm RTD Temperature Protection*
RTD . **Windg 1 Timeout Alarm**	*Winding 1 Timeout Alarm*
RTD . **Windg 1 Invalid**	*Winding 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Windg 2 Trip**	*Winding 2 Signal: Trip*
RTD . **Windg 2 Alarm**	*Winding 2 Alarm RTD Temperature Protection*
RTD . **Windg 2 Timeout Alarm**	*Winding 2 Timeout Alarm*
RTD . **Windg 2 Invalid**	*Winding 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

1..n, Assignment List	Description
RTD . **Windg 3 Trip**	*Winding 3 Signal: Trip*
RTD . **Windg 3 Alarm**	*Winding 3 Alarm RTD Temperature Protection*
RTD . **Windg 3 Timeout Alarm**	*Winding 3 Timeout Alarm*
RTD . **Windg 3 Invalid**	*Winding 3 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Windg 4 Trip**	*Winding 4 Signal: Trip*
RTD . **Windg 4 Alarm**	*Winding 4 Alarm RTD Temperature Protection*
RTD . **Windg 4 Timeout Alarm**	*Winding 4 Timeout Alarm*
RTD . **Windg 4 Invalid**	*Winding 4 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Windg 5 Trip**	*Winding 5 Signal: Trip*
RTD . **Windg 5 Alarm**	*Winding 5 Alarm RTD Temperature Protection*
RTD . **Windg 5 Timeout Alarm**	*Winding 5 Timeout Alarm*
RTD . **Windg 5 Invalid**	*Winding 5 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Windg 6 Trip**	*Winding 6 Signal: Trip*
RTD . **Windg 6 Alarm**	*Winding 6 Alarm RTD Temperature Protection*
RTD . **Windg 6 Timeout Alarm**	*Winding 6 Timeout Alarm*
RTD . **Windg 6 Invalid**	*Winding 6 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **MotBear 1 Trip**	*Motor Bearing 1 Signal: Trip*
RTD . **MotBear 1 Alarm**	*Motor Bearing 1 Alarm RTD Temperature Protection*
RTD . **MotBear 1 Timeout Alarm**	*Motor Bearing 1 Timeout Alarm*
RTD . **MotBear 1 Invalid**	*Motor Bearing 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **MotBear 2 Trip**	*Motor Bearing 2 Signal: Trip*
RTD . **MotBear 2 Alarm**	*Motor Bearing 2 Alarm RTD Temperature Protection*
RTD . **MotBear 2 Timeout Alarm**	*Motor Bearing 2 Timeout Alarm*
RTD . **MotBear 2 Invalid**	*Motor Bearing 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **LoadBear 1 Trip**	*Load Bearing 1 Signal: Trip*

1..n, Assignment List	Description
RTD . **LoadBear 1 Alarm**	*Load Bearing 1 Alarm RTD Temperature Protection*
RTD . **LoadBear 1 Timeout Alarm**	*Load Bearing 1 Timeout Alarm*
RTD . **LoadBear 1 Invalid**	*Load Bearing 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **LoadBear 2 Trip**	*Load Bearing 2 Signal: Trip*
RTD . **LoadBear 2 Alarm**	*Load Bearing 2 Alarm RTD Temperature Protection*
RTD . **LoadBear 2 Timeout Alarm**	*Load Bearing 2 Timeout Alarm*
RTD . **LoadBear 2 Invalid**	*Load Bearing 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Aux1 Trip**	*Auxiliary 1 Signal: Trip*
RTD . **Aux1 Alarm**	*Auxiliary 1 Alarm RTD Temperature Protection*
RTD . **Aux1 Timeout Alarm**	*Auxiliary 1 Timeout Alarm*
RTD . **Aux1 Invalid**	*Auxiliary 1 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Aux2 Trip**	*Auxiliary 2 Signal: Trip*
RTD . **Aux2 Alarm**	*Auxiliary 2 Alarm RTD Temperature Protection*
RTD . **Aux2 Timeout Alarm**	*Auxiliary 2 Timeout Alarm*
RTD . **Aux2 Invalid**	*Auxiliary 2 Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip WD Group**	*Trip all Windings*
RTD . **Alarm WD Group**	*Alarm all Windings*
RTD . **TimeoutAlmWDGrp**	*Timeout Alarm all Windings*
RTD . **Windg Group Invalid**	*Winding Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip MB Group**	*Trip all Motor Bearings*
RTD . **Alarm MB Group**	*Alarm all Motor Bearings*
RTD . **TimeoutAlmMBGrp**	*Timeout Alarm all Motor Bearings*
RTD . **MotBear Group Invalid**	*Motor Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip LB Group**	*Trip all Load Bearings*

1..n, Assignment List	Description
RTD . **Alarm LB Group**	*Alarm all Load Bearings*
RTD . **TimeoutAlmLBGrp**	*Timeout Alarm all Load Bearings*
RTD . **LoadBear Group Invalid**	*Load Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip Any Group**	*Trip Any Group*
RTD . **Alarm Any Group**	*Alarm Any Group*
RTD . **TimeoutAlmAnyGrp**	*Timeout Alarm Any Group*
RTD . **Trip Group 1**	*Trip Group 1*
RTD . **Trip Group 2**	*Trip Group 2*
RTD . **Timeout Alarm**	*Alarm timeout expired*
RTD . **Trip Aux Group**	*Trip Auxiliary Group*
RTD . **Alarm Aux Group**	*Alarm Auxiliary Group*
RTD . **TimeoutAlmAuxGrp**	*Timeout Alarm Auxiliary Group*
RTD . **AuxGrpInvalid**	*Invalid Auxiliary Group*
RTD . **ExBlo1-I**	*Module input state: External blocking1*
RTD . **ExBlo2-I**	*Module input state: External blocking2*
RTD . **ExBlo TripCmd-I**	*Module input state: External Blocking of the Trip Command*
CBF . **active**	*Signal: active*
CBF . **ExBlo**	*Signal: External Blocking*
CBF . **Waiting for Trigger**	*Waiting for Trigger*
CBF . **running**	*Signal: CBF-Module started*
CBF . **Alarm**	*Signal: Circuit Breaker Failure*
CBF . **Lockout**	*Signal: Lockout*
CBF . **Res Lockout**	*Signal: Reset Lockout*
CBF . **ExBlo1-I**	*Module input state: External blocking1*
CBF . **ExBlo2-I**	*Module input state: External blocking2*
CBF . **Trigger1-I**	*Module Input: Trigger that will start the CBF*
CBF . **Trigger2-I**	*Module Input: Trigger that will start the CBF*
CBF . **Trigger3-I**	*Module Input: Trigger that will start the CBF*
TCS . **active**	*Signal: active*

1..n, Assignment List	Description
TCS . **ExBlo**	*Signal: External Blocking*
TCS . **Alarm**	*Signal: Alarm Trip Circuit Supervision*
TCS . **Not Possible**	*Not possible because no state indicator assigned to the breaker.*
TCS . **Aux ON-I**	*Module Input State: Position indicator/check-back signal of the CB (52a)*
TCS . **Aux OFF-I**	*Module input state: Position indicator/check-back signal of the CB (52b)*
TCS . **ExBlo1-I**	*Module input state: External blocking1*
TCS . **ExBlo2-I**	*Module input state: External blocking2*
CTS . **active**	*Signal: active*
CTS . **ExBlo**	*Signal: External Blocking*
CTS . **Alarm**	*Signal: Alarm Current Transformer Measuring Circuit Supervision*
CTS . **ExBlo1-I**	*Module input state: External blocking1*
CTS . **ExBlo2-I**	*Module input state: External blocking2*
LOP . **active**	*Signal: active*
LOP . **ExBlo**	*Signal: External Blocking*
LOP . **Alarm**	*Signal: Alarm Loss of Potential*
LOP . **LOP Blo**	*Signal: Loss of Potential blocks other elements.*
LOP . **Ex FF VT**	*Signal: Ex FF VT*
LOP . **Ex FF EVT**	*Signal: Alarm Fuse Failure Earth Voltage Transformers*
LOP . **ExBlo1-I**	*Module input state: External blocking1*
LOP . **ExBlo2-I**	*Module input state: External blocking2*
LOP . **Ex FF VT-I**	*State of the module input: Alarm Fuse Failure Voltage Transformers*
LOP . **Ex FF EVT-I**	*State of the module input: Alarm Fuse Failure Earth Voltage Transformers*
LOP . **Blo Trigger1-I**	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*
LOP . **Blo Trigger2-I**	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*
LOP . **Blo Trigger3-I**	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*
LOP . **Blo Trigger4-I**	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*
LOP . **Blo Trigger5-I**	*State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.*

1..n, Assignment List	Description
PQSCr . **Cr Oflw Ws Net**	*Signal: Counter Overflow Ws Net*
PQSCr . **Cr Oflw Wp Net**	*Signal: Counter Overflow Wp Net*
PQSCr . **Cr Oflw Wp+**	*Signal: Counter Overflow Wp+*
PQSCr . **Cr Oflw Wp-**	*Signal: Counter Overflow Wp-*
PQSCr . **Cr Oflw Wq Net**	*Signal: Counter Overflow Wq Net*
PQSCr . **Cr Oflw Wq+**	*Signal: Counter Overflow Wq+*
PQSCr . **Cr Oflw Wq-**	*Signal: Counter Overflow Wq-*
PQSCr . **Ws Net Res Cr**	*Signal: Ws Net Reset Counter*
PQSCr . **Wp Net Res Cr**	*Signal: Wp Net Reset Counter*
PQSCr . **Wp+ Res Cr**	*Signal: Wp+ Reset Counter*
PQSCr . **Wp- Res Cr**	*Signal: Wp- Reset Counter*
PQSCr . **Wq Net Res Cr**	*Signal: Wq Net Reset Counter*
PQSCr . **Wq+ Res Cr**	*Signal: Wq+ Reset Counter*
PQSCr . **Wq- Res Cr**	*Signal: Wq- Reset Counter*
PQSCr . **Res all Energy Cr**	*Signal: Reset of all Energy Counters*
PQSCr . **Cr OflwW Ws Net**	*Signal: Counter Ws Net will overflow soon*
PQSCr . **Cr OflwW Wp Net**	*Signal: Counter Wp Net will overflow soon*
PQSCr . **Cr OflwW Wp+**	*Signal: Counter Wp+ will overflow soon*
PQSCr . **Cr OflwW Wp-**	*Signal: Counter Wp- will overflow soon*
PQSCr . **Cr OflwW Wq Net**	*Signal: Counter Wq Net will overflow soon*
PQSCr . **Cr OflwW Wq+**	*Signal: Counter Wq+ will overflow soon*
PQSCr . **Cr OflwW Wq-**	*Signal: Counter Wq- will overflow soon*
SysA . **active**	*Signal: active*
SysA . **ExBlo**	*Signal: External Blocking*
SysA . **Alarm Watt Power max**	*Signal: Alarm: Permitted Active Power exceeded*
SysA . **Alarm VAr Power max**	*Signal: Alarm: Permitted Reactive Power exceeded*
SysA . **Alarm VA Power max**	*Signal: Alarm: Permitted Apparent Power exceeded*

1..n, Assignment List	Description
SysA . **Alarm Watt avg (Demand)**	*Signal: Alarm: Averaged Active Power exceeded*
SysA . **Alarm VAr avg (Demand)**	*Signal: Alarm: Averaged Reactive Power exceeded*
SysA . **Alarm VA avg (Demand)**	*Signal: Alarm: Averaged Apparent Power exceeded*
SysA . **Alm Current avg (Demd)**	*Signal: Alarm: Averaged demand current exceeded*
SysA . **Alarm I THD**	*Signal: Alarm Total Harmonic Distortion Current*
SysA . **Alarm V THD**	*Signal: Alarm Total Harmonic Distortion Voltage*
SysA . **Trip Watt Power max**	*Signal: Trip maximum permitted Active Power exceeded*
SysA . **Trip VAr Power max**	*Signal: Trip maximum permitted Reactive Power exceeded*
SysA . **Trip VA Power max**	*Signal: Trip maximum permitted Apparent Power exceeded*
SysA . **Trip Watt avg (Demand)**	*Signal: Trip: Averaged Active Power exceeded*
SysA . **Trip VAr avg (Demand)**	*Signal: Trip: Averaged Reactive Power exceeded*
SysA . **Trip VA avg (Demand)**	*Signal: Trip: Averaged Apparent Power exceeded*
SysA . **Trip Current avg (Demd)**	*Signal: Trip: Averaged demand current exceeded*
SysA . **Trip I THD**	*Signal: Trip Total Harmonic Distortion Current*
SysA . **Trip V THD**	*Signal: Trip Total Harmonic Distortion Voltage*
SysA . **ExBlo-I**	*Module input state: External blocking*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*
BO Slot X2 . **BO 1**	*Signal: Binary Output Relay*
BO Slot X2 . **BO 2**	*Signal: Binary Output Relay*

1..n, Assignment List	Description
BO Slot X2 . **BO 3**	*Signal: Binary Output Relay*
BO Slot X2 . **BO 4**	*Signal: Binary Output Relay*
BO Slot X2 . **BO 5**	*Signal: Binary Output Relay*
BO Slot X2 . **BO 6**	*Signal: Binary Output Relay*
BO Slot X2 . **DISARMED!**	*Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Self Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance*
BO Slot X2 . **Outs forced**	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*
BO Slot X6 . **BO 1**	*Signal: Binary Output Relay*
BO Slot X6 . **BO 2**	*Signal: Binary Output Relay*
BO Slot X6 . **BO 3**	*Signal: Binary Output Relay*
BO Slot X6 . **BO 4**	*Signal: Binary Output Relay*
BO Slot X6 . **BO 5**	*Signal: Binary Output Relay*
BO Slot X6 . **BO 6**	*Signal: Binary Output Relay*
BO Slot X6 . **DISARMED!**	*Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: The Self Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance*
BO Slot X6 . **Outs forced**	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*
AnOut[1] . **Force Mode**	*For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).*
AnOut[2] . **Force Mode**	*For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).*
AnOut[3] . **Force Mode**	*For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).*
AnOut[4] . **Force Mode**	*For commissioning purposes or for maintenance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).*
Event rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Disturb rec . **recording**	*Signal: Recording*
Disturb rec . **memory full**	*Signal: Memory full*

1..n, Assignment List	Description
Disturb rec . **Clear fail**	*Signal: Clear failure in memory*
Disturb rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Disturb rec . **Res record**	*Signal: Delete record*
Disturb rec . **Man Trigger**	*Signal: Manual Trigger*
Disturb rec . **Start1-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start2-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start3-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start4-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start5-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start6-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start7-I**	*State of the module input:: Trigger event / start recording*
Disturb rec . **Start8-I**	*State of the module input:: Trigger event / start recording*
Fault rec . **Res record**	*Signal: Delete record*
Trend rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Start rec . **Storing**	*Signal: Data are saved*
SSV . **System Error**	*Signal: Device Failure*
SSV . **SelfSuperVision Contact**	*Signal: SelfSuperVision Contact*
SSV . **New error**	*Signal: A new error message has been issued.*
SSV . **New warning**	*Signal: A new warning message has been issued.*
Syslog . **active**	*Signal: active*
Sys . **Smart view via USB**	*Information whether or not the Smart view access via the USB interface is activated (allowed).*
Sys . **Smart view via Eth**	*Information whether or not the Smart view access via the Ethernet interface is activated (allowed).*
Scada . **SCADA connected**	*At least one SCADA System is connected to the device.*
Scada . **SCADA not connected**	*No SCADA System is connected to the device*
DNP3 . **busy**	*This message is set if the protocol is started. It will be reset if the protocol is shut down.*
DNP3 . **ready**	*The message will be set if the protocol is successfully started and ready for data exchange.*

1..n, Assignment List	Description
DNP3 . **active**	*The communication with the Master (SCADA) is active.* *Note that for TCP/UDP, this state is permanently “Low” unless »DataLink confirm« is set to “Always”.*
DNP3 . **BinaryOutput0**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput1**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput2**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput3**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput4**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput5**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput6**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput7**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput8**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput9**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput10**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput11**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput12**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput13**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput14**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput15**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput16**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput17**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*

1..n, Assignment List	Description
DNP3 . **BinaryOutput18**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput19**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput20**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput21**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput22**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput23**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput24**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput25**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput26**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput27**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput28**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput29**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput30**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput31**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryInput0-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput1-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput2-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput3-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput4-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput5-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP3 . **BinaryInput6-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput7-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput8-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput9-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput10-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput11-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput12-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput13-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput14-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput15-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput16-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput17-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput18-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput19-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput20-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput21-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput22-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput23-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput24-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput25-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP3 . **BinaryInput26-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput27-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput28-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput29-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput30-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput31-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput32-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput33-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput34-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput35-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput36-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput37-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput38-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput39-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput40-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput41-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput42-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput43-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput44-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput45-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP3 . **BinaryInput46-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput47-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput48-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput49-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput50-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput51-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput52-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput53-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput54-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput55-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput56-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput57-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput58-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput59-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput60-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput61-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput62-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP3 . **BinaryInput63-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
Modbus . **Transmission RTU**	*Signal: SCADA active*
Modbus . **Transmission TCP**	*Signal: SCADA active*
Modbus . **Scada Cmd 1**	*Scada Command*

1..n, Assignment List	Description
Modbus . **Scada Cmd 2**	*Scada Command*
Modbus . **Scada Cmd 3**	*Scada Command*
Modbus . **Scada Cmd 4**	*Scada Command*
Modbus . **Scada Cmd 5**	*Scada Command*
Modbus . **Scada Cmd 6**	*Scada Command*
Modbus . **Scada Cmd 7**	*Scada Command*
Modbus . **Scada Cmd 8**	*Scada Command*
Modbus . **Scada Cmd 9**	*Scada Command*
Modbus . **Scada Cmd 10**	*Scada Command*
Modbus . **Scada Cmd 11**	*Scada Command*
Modbus . **Scada Cmd 12**	*Scada Command*
Modbus . **Scada Cmd 13**	*Scada Command*
Modbus . **Scada Cmd 14**	*Scada Command*
Modbus . **Scada Cmd 15**	*Scada Command*
Modbus . **Scada Cmd 16**	*Scada Command*
Modbus . **Config Bin Inp1-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp2-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp3-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp4-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp5-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp6-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp7-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp8-I**	*State of the module input: Config Bin Inp*

1..n, Assignment List	Description
Modbus . **Config Bin Inp9-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp10-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp11-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp12-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp13-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp14-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp15-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp16-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp17-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp18-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp19-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp20-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp21-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp22-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp23-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp24-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp25-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp26-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp27-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp28-I**	*State of the module input: Config Bin Inp*

1..n, Assignment List	Description
Modbus . **Config Bin Inp29-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp30-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp31-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp32-I**	*State of the module input: Config Bin Inp*
IEC 61850 . **MMS Client connected**	*At least one MMS client is connected to the device*
IEC 61850 . **All Goose Subscriber active**	*All Goose subscriber in the device are working*
IEC 61850 . **GOSINGGIO1.Ind1.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind2.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind3.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind4.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind5.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind6.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind7.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind8.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind9.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind10.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind11.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind12.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind13.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind14.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO1.Ind15.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind16.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind17.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind18.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind19.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind20.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind21.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind22.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind23.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind24.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind25.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind26.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind27.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind28.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind29.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind30.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind31.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind32.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind1.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind2.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO2.Ind3.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind4.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind5.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind6.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind7.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind8.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind9.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind10.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind11.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind12.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind13.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind14.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind15.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind16.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind17.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind18.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind19.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind20.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind21.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind22.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO2.Ind23.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind24.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind25.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind26.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind27.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind28.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind29.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind30.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind31.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO2.Ind32.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind1.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind2.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind3.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind4.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind5.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind6.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind7.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind8.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind9.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind10.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO1.Ind11.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind12.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind13.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind14.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind15.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind16.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind17.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind18.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind19.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind20.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind21.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind22.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind23.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind24.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind25.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind26.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind27.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind28.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind29.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind30.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO1.Ind31.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO1.Ind32.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind1.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind2.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind3.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind4.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind5.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind6.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind7.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind8.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind9.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind10.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind11.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind12.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind13.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind14.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind15.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind16.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind17.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind18.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*

1..n, Assignment List	Description
IEC 61850 . **GOSINGGIO2.Ind19.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind20.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind21.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind22.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind23.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind24.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind25.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind26.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind27.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind28.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind29.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind30.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind31.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **GOSINGGIO2.Ind32.q**	*Signal: Virtual Input (IEC61850 GGIO Ind): Self-Supervision of the GGIO Input*
IEC 61850 . **SPCSO1**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO2**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO3**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO4**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO5**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO6**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*

1..n, Assignment List	Description
IEC 61850 . **SPCSO7**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO8**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO9**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO10**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO11**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO12**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO13**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO14**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO15**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO16**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO17**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO18**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO19**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO20**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO21**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO22**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO23**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO24**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO25**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO26**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*

1..n, Assignment List	Description
IEC 61850 . **SPCSO27**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO28**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO29**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO30**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO31**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO32**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC103 . **Scada Cmd 1**	*Scada Command*
IEC103 . **Scada Cmd 2**	*Scada Command*
IEC103 . **Scada Cmd 3**	*Scada Command*
IEC103 . **Scada Cmd 4**	*Scada Command*
IEC103 . **Scada Cmd 5**	*Scada Command*
IEC103 . **Scada Cmd 6**	*Scada Command*
IEC103 . **Scada Cmd 7**	*Scada Command*
IEC103 . **Scada Cmd 8**	*Scada Command*
IEC103 . **Scada Cmd 9**	*Scada Command*
IEC103 . **Scada Cmd 10**	*Scada Command*
IEC103 . **Transmission**	*Signal: SCADA active*
IEC103 . **Failure Event lost**	*Failure event lost*
IEC103 . **Test mode active**	*Signal: IEC103 communication has been switched over into Test Mode.*
IEC103 . **Block MD active**	*Signal: The blocking of IEC103 transmission in monitor direction has been activated.*
IEC103 . **Ex activate test mode-I**	*Module input state: Test Mode of the IEC103 communication.*
IEC103 . **Ex activate Block MD-I**	*Module input state: Activation of the blocking of IEC103 transmission in monitor direction.*
IEC104 . **busy**	*This message is set if the protocol is started. It will be reset if the protocol is shut down.*
IEC104 . **ready**	*The message will be set if the protocol is successfully started and ready for data exchange.*
IEC104 . **Transmission**	*Signal: SCADA active*

1..n, Assignment List	Description
IEC104 . **Failure Event lost**	*Failure event lost*
IEC104 . **Scada Cmd 1**	*Scada Command*
IEC104 . **Scada Cmd 2**	*Scada Command*
IEC104 . **Scada Cmd 3**	*Scada Command*
IEC104 . **Scada Cmd 4**	*Scada Command*
IEC104 . **Scada Cmd 5**	*Scada Command*
IEC104 . **Scada Cmd 6**	*Scada Command*
IEC104 . **Scada Cmd 7**	*Scada Command*
IEC104 . **Scada Cmd 8**	*Scada Command*
IEC104 . **Scada Cmd 9**	*Scada Command*
IEC104 . **Scada Cmd 10**	*Scada Command*
IEC104 . **Scada Cmd 11**	*Scada Command*
IEC104 . **Scada Cmd 12**	*Scada Command*
IEC104 . **Scada Cmd 13**	*Scada Command*
IEC104 . **Scada Cmd 14**	*Scada Command*
IEC104 . **Scada Cmd 15**	*Scada Command*
IEC104 . **Scada Cmd 16**	*Scada Command*
Profibus . **Data OK**	*Data within the Input field are OK (Yes=1)*
Profibus . **SubModul Err**	*Assignable Signal, Failure in Sub-Module, Communication Failure.*
Profibus . **Connection active**	*Connection active*
Profibus . **Scada Cmd 1**	*Scada Command*
Profibus . **Scada Cmd 2**	*Scada Command*
Profibus . **Scada Cmd 3**	*Scada Command*
Profibus . **Scada Cmd 4**	*Scada Command*
Profibus . **Scada Cmd 5**	*Scada Command*
Profibus . **Scada Cmd 6**	*Scada Command*
Profibus . **Scada Cmd 7**	*Scada Command*
Profibus . **Scada Cmd 8**	*Scada Command*
Profibus . **Scada Cmd 9**	*Scada Command*
Profibus . **Scada Cmd 10**	*Scada Command*

1..n, Assignment List	Description
Profibus . **Scada Cmd 11**	*Scada Command*
Profibus . **Scada Cmd 12**	*Scada Command*
Profibus . **Scada Cmd 13**	*Scada Command*
Profibus . **Scada Cmd 14**	*Scada Command*
Profibus . **Scada Cmd 15**	*Scada Command*
Profibus . **Scada Cmd 16**	*Scada Command*
IRIG-B . **IRIG-B active**	*Signal: If there is no valid IRIG-B signal for 60 sec, IRIG-B is regarded as inactive.*
IRIG-B . **High-Low Invert**	*Signal: The High and Low signals of the IRIG-B are inverted. This does NOT mean that the wiring is faulty. If the wiring is faulty no IRIG-B signal will be detected.*
IRIG-B . **Control Signal1**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal2**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal3**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal4**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal5**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal6**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal7**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal8**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal9**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*

1..n, Assignment List	Description
IRIG-B . **Control Signal10**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal11**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal12**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal13**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal14**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal15**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal16**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal17**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal18**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
SNTP . **SNTP active**	*Signal: If there is no valid SNTP signal for 120 sec, SNTP is regarded as inactive.*
TimeSync . **synchronized**	*Clock is synchronized.*
Statistics . **ResFc all**	*Signal: Resetting of all Statistic values (Current Demand, Power Demand, Min, Max)*
Statistics . **ResFc I Demand**	*Signal: Resetting of Statistics - Current Demand (avg, peak avg)*
Statistics . **ResFc P Demand**	*Signal: Resetting of Statistics - Power Demand (avg, peak avg)*
Statistics . **ResFc Max**	*Signal: Resetting of all Maximum values*
Statistics . **ResFc Min**	*Signal: Resetting of all Minimum values*
Statistics . **StartFc I Demand-I**	*State of the module input: Start of the Statistics of the Current Demand*
Statistics . **StartFc P Demand-I**	*State of the module input: Start of the Statistics of the Active Power Demand*

1..n, Assignment List	Description
Logics . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE1.Timer Out**	*Signal: Timer Output*
Logics . **LE1.Out**	*Signal: Latched Output (Q)*
Logics . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE1.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE1.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE1.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE1.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE1.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE2.Timer Out**	*Signal: Timer Output*
Logics . **LE2.Out**	*Signal: Latched Output (Q)*
Logics . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE2.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE2.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE2.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE2.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE2.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE3.Timer Out**	*Signal: Timer Output*
Logics . **LE3.Out**	*Signal: Latched Output (Q)*
Logics . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE3.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE3.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE3.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE3.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE3.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE4.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logics . **LE4.Timer Out**	*Signal: Timer Output*
Logics . **LE4.Out**	*Signal: Latched Output (Q)*
Logics . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE4.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE4.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE4.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE4.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE4.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE5.Timer Out**	*Signal: Timer Output*
Logics . **LE5.Out**	*Signal: Latched Output (Q)*
Logics . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE5.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE5.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE5.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE5.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE5.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE6.Timer Out**	*Signal: Timer Output*
Logics . **LE6.Out**	*Signal: Latched Output (Q)*
Logics . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE6.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE6.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE6.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE6.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE6.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE7.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logics . **LE7.Out**	*Signal: Latched Output (Q)*
Logics . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE7.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE7.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE7.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE7.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE7.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE8.Timer Out**	*Signal: Timer Output*
Logics . **LE8.Out**	*Signal: Latched Output (Q)*
Logics . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE8.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE8.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE8.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE8.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE8.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE9.Timer Out**	*Signal: Timer Output*
Logics . **LE9.Out**	*Signal: Latched Output (Q)*
Logics . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE9.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE9.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE9.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE9.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE9.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE10.Timer Out**	*Signal: Timer Output*
Logics . **LE10.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logics . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE10.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE10.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE10.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE10.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE10.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE11.Timer Out**	*Signal: Timer Output*
Logics . **LE11.Out**	*Signal: Latched Output (Q)*
Logics . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE11.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE11.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE11.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE11.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE11.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE12.Timer Out**	*Signal: Timer Output*
Logics . **LE12.Out**	*Signal: Latched Output (Q)*
Logics . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE12.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE12.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE12.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE12.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE12.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE13.Timer Out**	*Signal: Timer Output*
Logics . **LE13.Out**	*Signal: Latched Output (Q)*
Logics . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE13.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE13.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE13.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE13.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE13.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE14.Timer Out**	*Signal: Timer Output*
Logics . **LE14.Out**	*Signal: Latched Output (Q)*
Logics . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE14.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE14.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE14.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE14.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE14.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE15.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logics . **LE15.Out**	*Signal: Latched Output (Q)*
Logics . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE15.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE15.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE15.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE15.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE15.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE16.Timer Out**	*Signal: Timer Output*
Logics . **LE16.Out**	*Signal: Latched Output (Q)*
Logics . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE16.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE16.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE16.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE16.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE16.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE17.Timer Out**	*Signal: Timer Output*
Logics . **LE17.Out**	*Signal: Latched Output (Q)*
Logics . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE17.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE17.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE17.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE17.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE17.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE18.Timer Out**	*Signal: Timer Output*
Logics . **LE18.Out**	*Signal: Latched Output (Q)*
Logics . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE18.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE18.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE18.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE18.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE18.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE19.Timer Out**	*Signal: Timer Output*
Logics . **LE19.Out**	*Signal: Latched Output (Q)*
Logics . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE19.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE19.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE19.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE19.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE19.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE20.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logics . **LE20.Timer Out**	*Signal: Timer Output*
Logics . **LE20.Out**	*Signal: Latched Output (Q)*
Logics . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE20.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE20.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE20.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE20.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE20.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE21.Timer Out**	*Signal: Timer Output*
Logics . **LE21.Out**	*Signal: Latched Output (Q)*
Logics . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE21.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE21.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE21.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE21.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE21.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE22.Timer Out**	*Signal: Timer Output*
Logics . **LE22.Out**	*Signal: Latched Output (Q)*
Logics . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE22.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE22.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE22.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE22.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE22.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE23.Timer Out**	*Signal: Timer Output*
Logics . **LE23.Out**	*Signal: Latched Output (Q)*
Logics . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE23.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE23.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE23.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE23.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE23.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE24.Timer Out**	*Signal: Timer Output*
Logics . **LE24.Out**	*Signal: Latched Output (Q)*
Logics . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE24.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE24.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE24.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE24.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE24.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logics . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE25.Timer Out**	*Signal: Timer Output*
Logics . **LE25.Out**	*Signal: Latched Output (Q)*
Logics . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE25.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE25.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE25.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE25.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE25.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE26.Timer Out**	*Signal: Timer Output*
Logics . **LE26.Out**	*Signal: Latched Output (Q)*
Logics . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE26.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE26.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE26.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE26.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE26.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE27.Timer Out**	*Signal: Timer Output*
Logics . **LE27.Out**	*Signal: Latched Output (Q)*
Logics . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logics . **LE27.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE27.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE27.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE27.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE27.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE28.Timer Out**	*Signal: Timer Output*
Logics . **LE28.Out**	*Signal: Latched Output (Q)*
Logics . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE28.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE28.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE28.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE28.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE28.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE29.Timer Out**	*Signal: Timer Output*
Logics . **LE29.Out**	*Signal: Latched Output (Q)*
Logics . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE29.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE29.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE29.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE29.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE29.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE30.Timer Out**	*Signal: Timer Output*
Logics . **LE30.Out**	*Signal: Latched Output (Q)*
Logics . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE30.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE30.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE30.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE30.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE30.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE31.Timer Out**	*Signal: Timer Output*
Logics . **LE31.Out**	*Signal: Latched Output (Q)*
Logics . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE31.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE31.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE31.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE31.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE31.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE32.Timer Out**	*Signal: Timer Output*
Logics . **LE32.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logics . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE32.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE32.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE32.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE32.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE32.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE33.Timer Out**	*Signal: Timer Output*
Logics . **LE33.Out**	*Signal: Latched Output (Q)*
Logics . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE33.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE33.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE33.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE33.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE33.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE34.Timer Out**	*Signal: Timer Output*
Logics . **LE34.Out**	*Signal: Latched Output (Q)*
Logics . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE34.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE34.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE34.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE34.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE34.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE35.Timer Out**	*Signal: Timer Output*
Logics . **LE35.Out**	*Signal: Latched Output (Q)*
Logics . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE35.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE35.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE35.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE35.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE35.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE36.Timer Out**	*Signal: Timer Output*
Logics . **LE36.Out**	*Signal: Latched Output (Q)*
Logics . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE36.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE36.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE36.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE36.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE36.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE37.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logics . **LE37.Out**	*Signal: Latched Output (Q)*
Logics . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE37.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE37.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE37.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE37.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE37.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE38.Timer Out**	*Signal: Timer Output*
Logics . **LE38.Out**	*Signal: Latched Output (Q)*
Logics . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE38.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE38.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE38.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE38.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE38.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE39.Timer Out**	*Signal: Timer Output*
Logics . **LE39.Out**	*Signal: Latched Output (Q)*
Logics . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE39.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE39.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE39.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE39.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE39.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE40.Timer Out**	*Signal: Timer Output*
Logics . **LE40.Out**	*Signal: Latched Output (Q)*
Logics . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE40.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE40.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE40.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE40.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE40.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE41.Timer Out**	*Signal: Timer Output*
Logics . **LE41.Out**	*Signal: Latched Output (Q)*
Logics . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE41.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE41.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE41.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE41.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE41.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE42.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logics . **LE42.Timer Out**	*Signal: Timer Output*
Logics . **LE42.Out**	*Signal: Latched Output (Q)*
Logics . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE42.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE42.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE42.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE42.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE42.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE43.Timer Out**	*Signal: Timer Output*
Logics . **LE43.Out**	*Signal: Latched Output (Q)*
Logics . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE43.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE43.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE43.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE43.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE43.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE44.Timer Out**	*Signal: Timer Output*
Logics . **LE44.Out**	*Signal: Latched Output (Q)*
Logics . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE44.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE44.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE44.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE44.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE44.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE45.Timer Out**	*Signal: Timer Output*
Logics . **LE45.Out**	*Signal: Latched Output (Q)*
Logics . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE45.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE45.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE45.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE45.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE45.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE46.Timer Out**	*Signal: Timer Output*
Logics . **LE46.Out**	*Signal: Latched Output (Q)*
Logics . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE46.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE46.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE46.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE46.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE46.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logics . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE47.Timer Out**	*Signal: Timer Output*
Logics . **LE47.Out**	*Signal: Latched Output (Q)*
Logics . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE47.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE47.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE47.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE47.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE47.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE48.Timer Out**	*Signal: Timer Output*
Logics . **LE48.Out**	*Signal: Latched Output (Q)*
Logics . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE48.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE48.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE48.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE48.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE48.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE49.Timer Out**	*Signal: Timer Output*
Logics . **LE49.Out**	*Signal: Latched Output (Q)*
Logics . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logics . **LE49.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE49.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE49.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE49.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE49.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE50.Timer Out**	*Signal: Timer Output*
Logics . **LE50.Out**	*Signal: Latched Output (Q)*
Logics . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE50.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE50.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE50.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE50.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE50.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE51.Timer Out**	*Signal: Timer Output*
Logics . **LE51.Out**	*Signal: Latched Output (Q)*
Logics . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE51.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE51.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE51.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE51.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE51.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE52.Timer Out**	*Signal: Timer Output*
Logics . **LE52.Out**	*Signal: Latched Output (Q)*
Logics . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE52.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE52.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE52.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE52.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE52.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE53.Timer Out**	*Signal: Timer Output*
Logics . **LE53.Out**	*Signal: Latched Output (Q)*
Logics . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE53.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE53.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE53.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE53.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE53.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE54.Timer Out**	*Signal: Timer Output*
Logics . **LE54.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logics . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE54.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE54.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE54.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE54.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE54.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE55.Timer Out**	*Signal: Timer Output*
Logics . **LE55.Out**	*Signal: Latched Output (Q)*
Logics . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE55.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE55.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE55.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE55.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE55.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE56.Timer Out**	*Signal: Timer Output*
Logics . **LE56.Out**	*Signal: Latched Output (Q)*
Logics . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE56.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE56.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE56.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE56.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE56.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE57.Timer Out**	*Signal: Timer Output*
Logics . **LE57.Out**	*Signal: Latched Output (Q)*
Logics . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE57.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE57.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE57.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE57.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE57.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE58.Timer Out**	*Signal: Timer Output*
Logics . **LE58.Out**	*Signal: Latched Output (Q)*
Logics . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE58.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE58.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE58.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE58.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE58.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE59.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logics . **LE59.Out**	*Signal: Latched Output (Q)*
Logics . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE59.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE59.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE59.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE59.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE59.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE60.Timer Out**	*Signal: Timer Output*
Logics . **LE60.Out**	*Signal: Latched Output (Q)*
Logics . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE60.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE60.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE60.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE60.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE60.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE61.Timer Out**	*Signal: Timer Output*
Logics . **LE61.Out**	*Signal: Latched Output (Q)*
Logics . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE61.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE61.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE61.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE61.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE61.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE62.Timer Out**	*Signal: Timer Output*
Logics . **LE62.Out**	*Signal: Latched Output (Q)*
Logics . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE62.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE62.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE62.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE62.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE62.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE63.Timer Out**	*Signal: Timer Output*
Logics . **LE63.Out**	*Signal: Latched Output (Q)*
Logics . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE63.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE63.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE63.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE63.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE63.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE64.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logics . **LE64.Timer Out**	*Signal: Timer Output*
Logics . **LE64.Out**	*Signal: Latched Output (Q)*
Logics . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE64.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE64.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE64.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE64.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE64.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE65.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE65.Timer Out**	*Signal: Timer Output*
Logics . **LE65.Out**	*Signal: Latched Output (Q)*
Logics . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE65.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE65.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE65.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE65.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE65.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE66.Timer Out**	*Signal: Timer Output*
Logics . **LE66.Out**	*Signal: Latched Output (Q)*
Logics . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE66.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE66.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE66.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE66.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE66.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE67.Timer Out**	*Signal: Timer Output*
Logics . **LE67.Out**	*Signal: Latched Output (Q)*
Logics . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE67.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE67.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE67.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE67.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE67.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE68.Timer Out**	*Signal: Timer Output*
Logics . **LE68.Out**	*Signal: Latched Output (Q)*
Logics . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE68.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE68.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE68.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE68.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE68.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logics . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE69.Timer Out**	*Signal: Timer Output*
Logics . **LE69.Out**	*Signal: Latched Output (Q)*
Logics . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE69.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE69.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE69.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE69.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE69.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE70.Timer Out**	*Signal: Timer Output*
Logics . **LE70.Out**	*Signal: Latched Output (Q)*
Logics . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE70.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE70.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE70.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE70.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE70.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE71.Timer Out**	*Signal: Timer Output*
Logics . **LE71.Out**	*Signal: Latched Output (Q)*
Logics . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logics . **LE71.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE71.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE71.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE71.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE71.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE72.Timer Out**	*Signal: Timer Output*
Logics . **LE72.Out**	*Signal: Latched Output (Q)*
Logics . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE72.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE72.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE72.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE72.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE72.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE73.Timer Out**	*Signal: Timer Output*
Logics . **LE73.Out**	*Signal: Latched Output (Q)*
Logics . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE73.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE73.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE73.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE73.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE73.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE74.Timer Out**	*Signal: Timer Output*
Logics . **LE74.Out**	*Signal: Latched Output (Q)*
Logics . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE74.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE74.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE74.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE74.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE74.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE75.Timer Out**	*Signal: Timer Output*
Logics . **LE75.Out**	*Signal: Latched Output (Q)*
Logics . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE75.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE75.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE75.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE75.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE75.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE76.Timer Out**	*Signal: Timer Output*
Logics . **LE76.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logics . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE76.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE76.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE76.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE76.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE76.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE77.Timer Out**	*Signal: Timer Output*
Logics . **LE77.Out**	*Signal: Latched Output (Q)*
Logics . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE77.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE77.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE77.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE77.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE77.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE78.Timer Out**	*Signal: Timer Output*
Logics . **LE78.Out**	*Signal: Latched Output (Q)*
Logics . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE78.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE78.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE78.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logics . **LE78.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE78.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE79.Timer Out**	*Signal: Timer Output*
Logics . **LE79.Out**	*Signal: Latched Output (Q)*
Logics . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE79.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE79.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE79.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE79.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE79.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logics . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE80.Timer Out**	*Signal: Timer Output*
Logics . **LE80.Out**	*Signal: Latched Output (Q)*
Logics . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE80.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE80.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE80.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE80.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logics . **LE80.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Sgen . **Manual Start**	*Fault Simulation has been started manually.*
Sgen . **Manual Stop**	*Fault Simulation has been stopped manually.*
Sgen . **Running**	*Signal; Measuring value simulation is running*

1..n, Assignment List	Description
Sgen . **Started**	*Fault Simulation has been started*
Sgen . **Stopped**	*Fault Simulation has been stopped*
Sgen . **Ex Start Simulation-I**	*State of the module input:External Start of Fault Simulation (Using the test parameters)*
Sgen . **ExBlo1-I**	*Module input state: External blocking1*
Sgen . **ExBlo2-I**	*Module input state: External blocking2*
Sgen . **Ex ForcePost-I**	*State of the module input:Force Post state. Abort simulation.*
Sys . **PS 1**	*Signal: The currently active Parameter Set is PS 1*
Sys . **PS 2**	*Signal: The currently active Parameter Set is PS 2*
Sys . **PS 3**	*Signal: The currently active Parameter Set is PS 3*
Sys . **PS 4**	*Signal: The currently active Parameter Set is PS 4*
Sys . **PSS manual**	*Signal: Manual Switch over of a Parameter Set*
Sys . **PSS via Scada**	*Signal: Parameter Set Switch via Scada. Write into this output byte the integer of the parameter set that should become active (e.g. 4 => Switch onto parameter set 4).*
Sys . **PSS via Inp fct**	*Signal: Parameter Set Switch via input function*
Sys . **min 1 param changed**	*Signal: At least one parameter has been changed*
Sys . **Setting Lock Bypass**	*Signal: Short-period unlock of the Setting Lock*
Sys . **Ack LED**	*Signal: LEDs acknowledgement*
Sys . **Ack BO**	*Signal: Acknowledgement of the Binary Outputs*
Sys . **Ack Scada**	*Signal: Acknowledge latched SCADA signals*
Sys . **Ack TripCmd**	*Signal: Reset Trip Command*
Sys . **Ack LED-HMI**	*Signal: LEDs acknowledgement, triggered at the HMI*
Sys . **Ack BO-HMI**	*Signal: Acknowledgement of the Binary Outputs, triggered at the HMI*
Sys . **Ack Scada-HMI**	*Signal: Acknowledge latched SCADA signals, triggered at the HMI*
Sys . **Ack TripCmd-HMI**	*Signal: Reset Trip Command, triggered at the HMI*
Sys . **Ack LED-Sca**	*Signal: LEDs acknowledgement, triggered via SCADA*
Sys . **Ack BO-Sca**	*Signal: Acknowledgement of the Binary Outputs, triggered via SCADA*
Sys . **Ack Counter-Sca**	*Signal: Reset of all Counters, triggered via SCADA*
Sys . **Ack Scada-Sca**	*Signal: Acknowledge latched SCADA signals, triggered via SCADA*
Sys . **Ack TripCmd-Sca**	*Signal: Reset Trip Command, triggered via SCADA*
Sys . **Res OperationsCr**	*Signal:: Res OperationsCr*

1..n, Assignment List	Description
Sys . **Res AlarmCr**	*Signal:: Res AlarmCr*
Sys . **Res TripCmdCr**	*Signal:: Res TripCmdCr*
Sys . **Res TotalCr**	*Signal:: Res TotalCr*
Sys . **Ack LED-I**	*Module input state: LEDs acknowledgement by digital input*
Sys . **Ack BO-I**	*Module input state: Acknowledgement of the binary Output Relays*
Sys . **Ack Scada-I**	*Module input state: Acknowledge latched SCADA signals.*
Sys . **PS1-I**	*State of the module input respectively of the signal, that should activate this Parameter Setting Group.*
Sys . **PS2-I**	*State of the module input respectively of the signal, that should activate this Parameter Setting Group.*
Sys . **PS3-I**	*State of the module input respectively of the signal, that should activate this Parameter Setting Group.*
Sys . **PS4-I**	*State of the module input respectively of the signal, that should activate this Parameter Setting Group.*
Sys . **Internal test state**	*Auxiliary state for testing purposes.*

1...n Operating Modes

Selection list referenced by the following parameters:

- ⮑ BO Slot X6 . Operating Mode
- ⮑ BO Slot X6 . Operating Mode
- ⮑ BO Slot X6 . Operating Mode
- ⮑ BO Slot X6 . Operating Mode
- ⮑ BO Slot X6 . Operating Mode
- ⮑ BO Slot X6 . Operating Mode

1...n Operating Modes	Description
Normally open (NO)	*The working principle of the relay corresponds to a normally open contact.*
Normally closed (NC)	*The working principle of the relay corresponds to a normally closed contact.*

1..n, AnalogOutputList

Selection list referenced by the following parameters:

- ⮡ AnOut[1] . Assignment

1..n, AnalogOutputList	**Description**
“-”	*No assignment*
VT . **f**	*Measured value: Frequency*
VT . **VL12 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **VL23 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **VL31 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **VL1 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*
VT . **VL2 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*
VT . **VL3 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*
VT . **VX meas RMS**	*Measured value (measured): VX measured (RMS)*
VT . **VG calc RMS**	*Measured value (calculated): VG (RMS)*
VT . **V1**	*Measured value (calculated): Symmetrical components positive phase sequence voltage(fundamental)*
VT . **V2**	*Measured value (calculated): Symmetrical components negative phase sequence voltage(fundamental)*
VT . **%VL12 THD**	*Measured value (calculated): V12 Total Harmonic Distortion / Ground wave*
VT . **%VL23 THD**	*Measured value (calculated): V23 Total Harmonic Distortion / Ground wave*
VT . **%VL31 THD**	*Measured value (calculated): V31 Total Harmonic Distortion / Ground wave*
VT . **%VL1 THD**	*Measured value (calculated): VL1 Total Harmonic Distortion / Ground wave*
VT . **%VL2 THD**	*Measured value (calculated): VL2 Total Harmonic Distortion / Ground wave*
VT . **%VL3 THD**	*Measured value (calculated): VL3 Total Harmonic Distortion / Ground wave*
VT . **VL12 THD**	*Measured value (calculated): V12 Total Harmonic Distortion*
VT . **VL23 THD**	*Measured value (calculated): V23 Total Harmonic Distortion*
VT . **VL31 THD**	*Measured value (calculated): V31 Total Harmonic Distortion*
VT . **VL1 THD**	*Measured value (calculated): VL1 Total Harmonic Distortion*
VT . **VL2 THD**	*Measured value (calculated): VL2 Total Harmonic Distortion*
VT . **VL3 THD**	*Measured value (calculated): VL3 Total Harmonic Distortion*

1..n, AnalogOutputList	Description
CT . **IL1 RMS**	*Measured value: Phase current (RMS)*
CT . **IL2 RMS**	*Measured value: Phase current (RMS)*
CT . **IL3 RMS**	*Measured value: Phase current (RMS)*
CT . **IG meas RMS**	*Measured value (measured): IG (RMS)*
CT . **IG calc RMS**	*Measured value (calculated): IG (RMS)*
CT . **I1**	*Measured value (calculated): Positive phase sequence current (fundamental)*
CT . **I2**	*Measured value (calculated): Unbalanced load current (fundamental)*
CT . **%IL1 THD**	*Measured value (calculated): IL1 Total Harmonic Distortion*
CT . **%IL2 THD**	*Measured value (calculated): IL2 Total Harmonic Distortion*
CT . **%IL3 THD**	*Measured value (calculated): IL3 Total Harmonic Distortion*
CT . **IL1 THD**	*Measured value (calculated): IL1 Total Harmonic Current*
CT . **IL2 THD**	*Measured value (calculated): IL2 Total Harmonic Current*
CT . **IL3 THD**	*Measured value (calculated): IL3 Total Harmonic Current*
MStart . **IL1 Ib**	*Measured value: Phase current as multiple of Ib*
MStart . **IL2 Ib**	*Measured value: Phase current as multiple of Ib*
MStart . **IL3 Ib**	*Measured value: Phase current as multiple of Ib*
MStart . **I3 P (%Ib) avg**	*Average RMS current of all 3 phases as percentages of Ib*
MStart . **I3P Fla Demand**	*RMS current of all 3 phases calculated in a fixed demand window as percentages of Ib*
ThR . **I2T Used**	*Thermal capacity used.*
ThR . **I2T Remained**	*Thermal capacity remained.*
URTD . **Windg1**	*Winding 1*
URTD . **Windg2**	*Winding 2*
URTD . **Windg3**	*Winding 3*
URTD . **Windg4**	*Winding 4*
URTD . **Windg5**	*Winding 5*
URTD . **Windg6**	*Winding 6*
URTD . **MotBear1**	*Motor Bearing 1*
URTD . **MotBear2**	*Motor Bearing 2*
URTD . **LoadBear1**	*Load Bearing 1*
URTD . **LoadBear2**	*Load Bearing 2*

1..n, AnalogOutputList	Description
URTD . **Aux1**	*Auxiliary1*
URTD . **Aux2**	*Auxiliary2*
URTD . **RTD Max**	*Maximum temperature of all channels.*
RTD . **HottestWindingTemp**	*The actual value for the hottest winding temperature.*
RTD . **Hottest MotBearTemp**	*The actual value for the hottest motor bearing temperature.*
PQSCr . **S RMS**	*Measured Value (Calculated): Apparent power (RMS)*
PQSCr . **P RMS**	*Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (RMS)*
PQSCr . **Q**	*Measured value (calculated): Reactive power (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) (fundamental)*
PQSCr . **cos phi (±)**	*Measured value (calculated): Power factor: Sign Convention: (+)PF:I lags V (-)PF:I leads V*
PQSCr . **cos phi RMS(±)**	*Measured value (calculated): Power factor: Sign Convention: (+)PF:I lags V (-)PF:I leads V*
PQSCr . **Ws Net**	*Absolute Apparent Power Hours*
PQSCr . **Wp Net**	*Absolute Active Power Hours*
PQSCr . **Wp+**	*Positive Active Power is consumed active energy*
PQSCr . **Wp-**	*Negative Active Power (Fed Energy)*
PQSCr . **Wq Net**	*Absolute Reactive Power Hours*
PQSCr . **Wq+**	*Positive Reactive Power is consumed Reactive Energy*
PQSCr . **Wq-**	*Negative Reactive Power (Fed Energy)*

Type of Output

Type of Output: Select the output range and type

Selection list referenced by the following parameters:

- ⮡ AnOut[1] . Range

Type of Output	Description
0...20mA	*0...20mA*
4...20mA	*4...20mA*
0...10V	*0...10V*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⇨ LEDs group A . Latched
- ⇨ LEDs group A . Latched
- ⇨ LEDs group A . Latched
- ⇨ LEDs group A . Latched
- ⇨ LEDs group A . Latched
- ⇨ LEDs group A . Latched
- *[. . .]*

Mode	Description
inactive	*inactive*
active	*active*
active, ack. by alarm	*Latching of LEDs is active, but will be acknowledged (reset) automatically (by a protection function) in case of a new alarm.*

LED active color

Selection list referenced by the following parameters:

- ⇨ LEDs group A . LED active color
- ⇨ LEDs group A . LED inactive color
- ⇨ LEDs group A . LED active color
- ⇨ LEDs group A . LED inactive color
- ⇨ LEDs group A . LED active color
- ⇨ LEDs group A . LED inactive color
- *[. . .]*

LED active color	Description
green	*green*
red	*red*

LED active color	Description
red flash	*red flashing*
green flash	*green blinking*
“-”	*No assignment*

Mode

general operation mode

Selection list referenced by the following parameters:

- ╚═▷ LEDs group B . Latched
- ╚═▷ LEDs group B . Latched
- ╚═▷ LEDs group B . Latched
- ╚═▷ LEDs group B . Latched
- ╚═▷ LEDs group B . Latched
- ╚═▷ LEDs group B . Latched
- *[. . .]*

Mode	Description
inactive	*inactive*
active	*active*
active, ack. by alarm	*Latching of LEDs is active, but will be acknowledged (reset) automatically (by a protection function) in case of a new alarm.*

LED active color

Selection list referenced by the following parameters:

- ╚═▷ LEDs group B . LED active color
- ╚═▷ LEDs group B . LED inactive color
- ╚═▷ LEDs group B . LED active color
- ╚═▷ LEDs group B . LED inactive color
- ╚═▷ LEDs group B . LED active color
- ╚═▷ LEDs group B . LED inactive color

- *[. . .]*

LED active color	Description
green	*green*
red	*red*
red flash	*red flashing*
green flash	*green blinking*
“-”	*No assignment*

Ack via »C« key

Select which acknowledgeable elements can be reset via pressing the »C« key.

Selection list referenced by the following parameters:

- ⮑ Sys . Ack via »C« key

Ack via »C« key	Description
Nothing	*No elements can be simply reset via pressing the »C« key for a long time (ca. 1 second). This has the consequence that pressing the »C« key is only a shortcut to the Acknowledge menu, from which the user has to select the elements to be reset.*
Ack LEDs w/o passw.	*All LEDs are acknowledged (reset) via pressing the »C« key for ca. 1 second. No password has to be entered for this. The reset activity can be recognized from the fact that it always includes an LED test, i.e. all LEDs flash in red color for a second, then flash in green color for a second.*
Ack LEDs	*All LEDs are reset via pressing the »C« key (for ca. 1 second). The reset activity can be recognized from the fact that it always includes an LED test, i.e. all LEDs flash in red color for a second, then flash in green color for a second.*
Ack LEDs and relays	*All LEDs and all acknowledgeable binary output relays are reset via pressing the »C« key (for ca. 1 second). The reset activity can be recognized from the fact that it always includes an LED test, i.e. all LEDs flash in red color for a second, then flash in green color for a second.*
Ack Everything	*All acknowledgeable elements are reset via pressing the »C« key (for ca. 1 second):* *- All LEDs, and* *- all binary output relays, and* *- all latched SCADA signals, and* *- the Trip command.*

Ack via »C« key	Description
	The reset activity can be recognized from the fact that it always includes an LED test, i.e. all LEDs flash in red color for a second, then flash in green color for a second.

Duration

Recording time

Selection list referenced by the following parameters:

- ⮱▷ Statistics . Start I Demand via:
- ⮱▷ Statistics . Start P Demand via:

Duration	Description
Duration	*Recording time*
StartFct	*Start function*

Duration

Recording time

Selection list referenced by the following parameters:

- ⮱▷ Statistics . Duration I Demand
- ⮱▷ Statistics . Duration P Demand

Duration	Description
2 s	*s*
5 s	*s*
10 s	*s*
15 s	*seconds*
30 s	*seconds*
1 min	*minute*
5 min	*minute*
10 min	*minute*
15 min	*minute*

Duration	Description
30 min	*minute*
1 h	*Hours*
2 h	*Hours*
6 h	*Hours*
12 h	*Hours*
1 d	*days*
2 d	*days*
5 d	*days*
7 d	*days*
10 d	*days*
30 d	*days*

Window configuration

Selection list referenced by the following parameters:

- ⮱▷ Statistics . Window I Demand
- ⮱▷ Statistics . Window P Demand

Window configuration	Description
sliding	*Moving mean: Continuously the newest measuring value is added and the oldest measuring value is removed from the moving mean (average value).*
fixed	*The average value is calculated for a fixed window.*

Selection

Selection list referenced by the following parameters:

- ⮱▷ HMI . Menu language

Selection	Description
English	*English*
German	*German*

Selection	Description
Russian	*Russian*
Polish	*Polish*
French	*French*
Portuguese	*Portuguese*
Spanish	*Spanish*
Romanian	*Romanian*

Record-Mode

Recorder Mode (Set the behaviour of the recorder)

Selection list referenced by the following parameters:

- ⮡ Fault rec . Record-Mode

Record-Mode	Description
Alarms and Trips	*A recording is started in case of an alarm or a trip.*
Trips only	*A recording is started only in case of a trip.*

Resolution

Resolution (recording frequency)

Selection list referenced by the following parameters:

- ⮡ Start rec . Resolution

Resolution	Description
50ms	*The resolution is: 50ms*
100ms	*The resolution is: 100ms*
1s	*The resolution is: 1s*

Resolution

Resolution (recording frequency)

Selection list referenced by the following parameters:

- └═▷ Trend rec . Resolution

Resolution	Description
60 min	*Add next entry: 60 min*
30 min	*Add next entry: 30 min*
15 min	*Add next entry: 15 min*
10 min	*Add next entry: 10 min*
5 min	*Add next entry: 5 min*

1..n, TrendRecList

Selection list referenced by the following parameters:

- └═▷ DNP3 . Analog value 0
- └═▷ Modbus . Mapped Meas 1
- └═▷ Trend rec . Trend1
- └═▷ Trend rec . Trend2
- └═▷ Trend rec . Trend3
- └═▷ Trend rec . Trend4
- *[. . .]*

1..n, TrendRecList	Description
“-”	*No assignment*
VT . **VL1**	*Measured value: Phase-to-neutral voltage (fundamental)*
VT . **VL2**	*Measured value: Phase-to-neutral voltage (fundamental)*
VT . **VL3**	*Measured value: Phase-to-neutral voltage (fundamental)*
VT . **VX meas**	*Measured value (measured): VX measured (fundamental)*
VT . **VG calc**	*Measured value (calculated): VG (fundamental)*
VT . **VL12**	*Measured value: Phase-to-phase voltage (fundamental)*
VT . **VL23**	*Measured value: Phase-to-phase voltage (fundamental)*
VT . **VL31**	*Measured value: Phase-to-phase voltage (fundamental)*
VT . **VL1 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*
VT . **VL2 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*

1..n, TrendRecList	Description
VT . **VL3 RMS**	*Measured value: Phase-to-neutral voltage (RMS)*
VT . **VX meas RMS**	*Measured value (measured): VX measured (RMS)*
VT . **VG calc RMS**	*Measured value (calculated): VG (RMS)*
VT . **VL12 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **VL23 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **VL31 RMS**	*Measured value: Phase-to-phase voltage (RMS)*
VT . **V/f**	*Ratio Volts/Hertz in relation to nominal values.*
VT . **V0**	*Measured value (calculated): Symmetrical components Zero voltage(fundamental)*
VT . **V1**	*Measured value (calculated): Symmetrical components positive phase sequence voltage(fundamental)*
VT . **V2**	*Measured value (calculated): Symmetrical components negative phase sequence voltage(fundamental)*
VT . **%(V2/V1)**	*Measured value (calculated): V2/V1, phase sequence will be taken into account automatically.*
VT . **VL1 avg RMS**	*VL1 average value (RMS)*
VT . **VL2 avg RMS**	*VL2 average value (RMS)*
VT . **VL3 avg RMS**	*VL3 average value (RMS)*
VT . **VL12 avg RMS**	*VL12 average value (RMS)*
VT . **VL23 avg RMS**	*VL23 average value (RMS)*
VT . **VL31 avg RMS**	*VL31 average value (RMS)*
VT . **f**	*Measured value: Frequency*
VT . **VL1 THD**	*Measured value (calculated): VL1 Total Harmonic Distortion*
VT . **VL2 THD**	*Measured value (calculated): VL2 Total Harmonic Distortion*
VT . **VL3 THD**	*Measured value (calculated): VL3 Total Harmonic Distortion*
VT . **VL12 THD**	*Measured value (calculated): V12 Total Harmonic Distortion*
VT . **VL23 THD**	*Measured value (calculated): V23 Total Harmonic Distortion*
VT . **VL31 THD**	*Measured value (calculated): V31 Total Harmonic Distortion*
CT . **IL1**	*Measured value: Phase current (fundamental)*
CT . **IL2**	*Measured value: Phase current (fundamental)*
CT . **IL3**	*Measured value: Phase current (fundamental)*
CT . **IG meas**	*Measured value (measured): IG (fundamental)*
CT . **IG calc**	*Measured value (calculated): IG (fundamental)*

1..n, TrendRecList	Description
CT . **IL1 RMS**	*Measured value: Phase current (RMS)*
CT . **IL2 RMS**	*Measured value: Phase current (RMS)*
CT . **IL3 RMS**	*Measured value: Phase current (RMS)*
CT . **IG meas RMS**	*Measured value (measured): IG (RMS)*
CT . **IG calc RMS**	*Measured value (calculated): IG (RMS)*
CT . **I0**	*Measured value (calculated): Zero current (fundamental)*
CT . **I1**	*Measured value (calculated): Positive phase sequence current (fundamental)*
CT . **I2**	*Measured value (calculated): Unbalanced load current (fundamental)*
CT . **%(I2/I1)**	*Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.*
CT . **%(I2/I1) max**	*Measured value (calculated): I2/I1 maximum value, phase sequence will be taken into account automatically*
CT . **IL1 avg RMS**	*IL1 average value (RMS)*
CT . **IL2 avg RMS**	*IL2 average value (RMS)*
CT . **IL3 avg RMS**	*IL3 average value (RMS)*
CT . **IL1 THD**	*Measured value (calculated): IL1 Total Harmonic Current*
CT . **IL2 THD**	*Measured value (calculated): IL2 Total Harmonic Current*
CT . **IL3 THD**	*Measured value (calculated): IL3 Total Harmonic Current*
MStart . **IL1 Ib**	*Measured value: Phase current as multiple of Ib*
ThR . **I2T Used**	*Thermal capacity used.*
URTD . **Windg1**	*Winding 1*
URTD . **Windg1 max**	*Winding1 Maximum Value*
URTD . **Windg2**	*Winding 2*
URTD . **Windg2 max**	*Winding2 Maximum Value*
URTD . **Windg3**	*Winding 3*
URTD . **Windg3 max**	*Winding3 Maximum Value*
URTD . **Windg4**	*Winding 4*
URTD . **Windg4 max**	*Winding4 Maximum Value*
URTD . **Windg5**	*Winding 5*
URTD . **Windg5 max**	*Winding5 Maximum Value*
URTD . **Windg6**	*Winding 6*
URTD . **Windg6 max**	*Winding6 Maximum Value*

1..n, TrendRecList	Description
URTD . **MotBear1**	*Motor Bearing 1*
URTD . **MotBear1 max**	*Motor Bearing1 Maximum Value*
URTD . **MotBear2**	*Motor Bearing 2*
URTD . **MotBear2 max**	*Motor Bearing2 Maximum Value*
URTD . **LoadBear1**	*Load Bearing 1*
URTD . **LoadBear1 max**	*Load Bearing1 Maximum Value*
URTD . **LoadBear2**	*Load Bearing 2*
URTD . **LoadBear2 max**	*Load Bearing2 Maximum Value*
URTD . **Aux1**	*Auxiliary1*
URTD . **Aux1 max**	*Auxiliary1 Maximum Value*
URTD . **Aux2**	*Auxiliary2*
URTD . **Aux2 max**	*Auxiliary2 Maximum Value*
URTD . **RTD Max**	*Maximum temperature of all channels.*
RTD . **HottestWindingTemp**	*The actual value for the hottest winding temperature.*
RTD . **Hottest MotBearTemp**	*The actual value for the hottest motor bearing temperature.*
RTD . **Hottest LoadBearTemp**	*The actual value for the hottest load bearing temperature.*
RTD . **Hottest Aux Temp**	*The actual value for the hottest Auxiliary temperature.*
PQSCr . **S**	*Measured Value (Calculated): Apparent power (fundamental)*
PQSCr . **P**	*Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (fundamental)*
PQSCr . **Q**	*Measured value (calculated): Reactive power (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) (fundamental)*
PQSCr . **P 1**	*Measured value (calculated): Active power in positive sequence system (P- = Fed Active Power, P+ = Consumpted Active Power)*
PQSCr . **Q 1**	*Measured value (calculated): Reactive power in positive sequence system (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power)*
PQSCr . **S RMS**	*Measured Value (Calculated): Apparent power (RMS)*
PQSCr . **P RMS**	*Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (RMS)*
PQSCr . **cos phi**	*Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)*
PQSCr . **cos phi RMS**	*Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)*

1..n, TrendRecList	Description
PQSCr . **Ws Net**	*Absolute Apparent Power Hours*
PQSCr . **Wp Net**	*Absolute Active Power Hours*
PQSCr . **Wq Net**	*Absolute Reactive Power Hours*
PQSCr . **Wp+**	*Positive Active Power is consumed active energy*
PQSCr . **Wp-**	*Negative Active Power (Fed Energy)*
PQSCr . **Wq+**	*Positive Reactive Power is consumed Reactive Energy*
PQSCr . **Wq-**	*Negative Reactive Power (Fed Energy)*

1..n, OnOffList

Selection list referenced by the following parameters:

- ⮡ IEC 61850 . Function

1..n, OnOffList	Description
inactive	*inactive*
active	*active*

Baud rate

Selection list referenced by the following parameters:

- ⮡ DNP3 . Baud rate

Baud rate	Description
1200	*1200*
2400	*2400*
4800	*4800*
9600	*9600*
19200	*19200*
38400	*38400*
57600	*57600*
115200	*115200*

Byte Frame

Selection list referenced by the following parameters:

- └═▷ DNP3 . Frame Layout

Byte Frame	Description
8E1	*8 data bits, even parity, 1 stopbit.*
8O1	*8 data bits, odd, 1 stopbit.*
8N1	*8 data bits, no parity, 1 stopbit.*
8N2	*8 data bits, no parity, 2 stopbits.*

Optical rest position

Selection list referenced by the following parameters:

- └═▷ DNP3 . Optical rest position

Optical rest position	Description
Light off	*Light off*
Light on	*Light on*

Communication Start Variants

Selection list referenced by the following parameters:

- └═▷ DNP3 . DataLink confirm

Communication Start Variants	Description
Never	*Option Never is recommended*
Always	*If this variable is set to Always then LinkLayer needs to establish a connection before sending any Frame.*
On_Large	*If set to On_Large then a connection needs to be established before sending the first Frame of a multi Term Message*

_AL_ResponseType_k

_AL_ResponseType_h

Selection list referenced by the following parameters:

- ⮡ DNP3 . AppLink confirm

_AL_ResponseType_k	Description
Never	*Never*
Always	*Always*
Event	*Event*

1..n, Assignment List

Assignment List

Selection list referenced by the following parameters:

- ⮡ DNP3 . DoubleBitInput 0

1..n, Assignment List	Description
“-”	*No assignment*
SG[1] . **Pos**	*Signal: Circuit Breaker Position (0 = Indeterminate, 1 = OFF, 2 = ON, 3 = Disturbed)*

1..n, Assignment List

Assignment List

Selection list referenced by the following parameters:

- ⮡ DNP3 . BinaryCounter 0

1..n, Assignment List	Description
“-”	*No assignment*
Prot . **Fault No.**	*Fault number*
Prot . **No. of Grid Faults**	*Number of grid faults: This is a counter for all faults (i.e. General Alarms »Prot . Alarm«), but except faults during a running cycle of the Automatic Reclosure module (signal »AR . running«). (Remark: The »Fault No.« counts every new fault independent of AR cycles. This*

1..n, Assignment List	Description
	means that for protective devices without AR module these two counters are equivalent.)
SG[1] . **TripCmd Cr**	*Counter: Total number of trips of the switchgear.*
MStart . **StartPerHour**	*StartPerHour*
MStart . **SPH Release**	*In case that the Motor is blocked by a SPH blocking, this timer needs to be expired before the blocking is released and the next motor start is permitted. The next Motor Start will increment the SPH counter again.*
MStart . **ColdStartPermit**	*Number of cold starts remaining*
MStart . **OCNT**	*Motor Operation count since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **RunTime**	*Motor Operation time since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **nEmrgOvr**	*Number of emergency overrides since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **TRunTime**	*Motor Operation (Motor run time) time since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*
MStart . **TOCS**	*Total Motor Operation count since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*
MStart . **nTRNTrips**	*Number of transition trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nRevTrips**	*Number of reverse spinning trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nZSWTrips**	*Number of zero speed switch trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nInSqTrips**	*Number of incomplete sequence trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nSPHBlocks**	*Number of start per hour blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nTBSBlocks**	*Number of time between start blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
PQSCr . **Wp+**	*Positive Active Power is consumed active energy*
PQSCr . **Wp-**	*Negative Active Power (Fed Energy)*
PQSCr . **Wq+**	*Positive Reactive Power is consumed Reactive Energy*
PQSCr . **Wq-**	*Negative Reactive Power (Fed Energy)*
Sys . **Operating hours Cr**	*Operating hours counter of the protective device*
Sys . **Hours Counter**	*Resettable device operation hours counter. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

Scale Factor

Multiplier in order to convert float values into integer.

Selection list referenced by the following parameters:

- ⮡ DNP3 . Scale Factor 0

Scale Factor	Description
0.001	*0.001*
0.01	*0.01*
0.1	*0.1*
1	*1*
10	*10*
100	*100*
1000	*1000*
10000	*10000*
100000	*100000*
1000000	*1000000*

Optical rest position

Selection list referenced by the following parameters:

- ⮡ Modbus . Optical rest position

Optical rest position	Description
Light off	*Light off*
Light on	*Light on*

Port selection

Selection list referenced by the following parameters:

- ⮡ Modbus . TCP Port Config

Port selection	Description
Default	*Default Port*
Private	*Private Port*

Baud rate

Selection list referenced by the following parameters:

- ⮡▷ Modbus . Baud rate

Baud rate	Description
1200	*1200*
2400	*2400*
4800	*4800*
9600	*9600*
19200	*19200*
38400	*38400*

Byte Frame

Selection list referenced by the following parameters:

- ⮡▷ Modbus . Physical Settings

Byte Frame	Description
8E1	*8 data bits, even parity, 1 stopbit.*
8O1	*8 data bits, odd, 1 stopbit.*
8N1	*8 data bits, no parity, 1 stopbit.*
8N2	*8 data bits, no parity, 2 stopbits.*

Type of SCADA mapping

This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.

Selection list referenced by the following parameters:

- ⮡ Modbus . Type of SCADA mapping

Type of SCADA mapping	Description
Standard	*Default mapping of data objects*
User-defined	*User-defined mapping of data objects*

Config status

Status of the user-defined SCADA configuration.\nPossible values:

Selection list referenced by the following parameters:

- ⮡ Modbus . Config status

Config status	Description
Changing	*New SCADA configuration is being loaded, but not active yet.*
OK	*The SCADA configuration is active.*
Config. not avail.	*The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).*
Error	*Unexpected error. Please contact our service-team.*

Baud rate

Selection list referenced by the following parameters:

- ⮡ IEC103 . Baud rate

Baud rate	Description
1200	*1200*
2400	*2400*
4800	*4800*
9600	*9600*
19200	*19200*
38400	*38400*
57600	*57600*

Byte Frame

Selection list referenced by the following parameters:

- ⮡ IEC103 . Physical Settings

Byte Frame	Description
8E1	*8 data bits, even parity, 1 stopbit.*
8O1	*8 data bits, odd, 1 stopbit.*
8N1	*8 data bits, no parity, 1 stopbit.*
8N2	*8 data bits, no parity, 2 stopbits.*

Timezone

Selection whether the timestamps in IEC103 messages shall be given as UTC or local time. (“Local time” always includes the actual daylight saving settings.)

Selection list referenced by the following parameters:

- ⮡ IEC103 . Timezone

Timezone	Description
UTC	*UTC*
Local Time	*Local time according to the »Time Zones« setting (in Device Parameters) (incl. daylight saving settings).*

Type of SCADA mapping

This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.

Selection list referenced by the following parameters:

- ⮡ IEC103 . Type of SCADA mapping

Type of SCADA mapping	Description
Standard	*Default mapping of data objects*

Type of SCADA mapping	Description
User-defined	*User-defined mapping of data objects*

Config status

Status of the user-defined SCADA configuration.\nPossible values:

Selection list referenced by the following parameters:

- ⮡ IEC103 . Config status

Config status	Description
Changing	*New SCADA configuration is being loaded, but not active yet.*
OK	*The SCADA configuration is active.*
Config. not avail.	*The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).*
Error	*Unexpected error. Please contact our service-team.*

Port selection

Selection list referenced by the following parameters:

- ⮡ IEC104 . TCP Port Config

Port selection	Description
Default	*Default Port*
Private	*Private Port*

Timezone

Selection whether the timestamps in the transmitted communication telegrams shall be given as UTC or local time. (“Local time” always includes the actual daylight saving settings.)

Selection list referenced by the following parameters:

- ⮡ IEC104 . Timezone

Timezone	Description
UTC	*UTC*
Local Time	*Local time according to the »Time Zones« setting (in Device Parameters) (incl. daylight saving settings).*

Type of SCADA mapping

This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.

Selection list referenced by the following parameters:

- ⮡ IEC104 . Type of SCADA mapping

Type of SCADA mapping	Description
Standard	*Default mapping of data objects*
User-defined	*User-defined mapping of data objects*

Config status

Status of the user-defined SCADA configuration.\nPossible values:

Selection list referenced by the following parameters:

- ⮡ IEC104 . Config status

Config status	Description
Changing	*New SCADA configuration is being loaded, but not active yet.*
OK	*The SCADA configuration is active.*
Config. not avail.	*The user-defined SCADA configuration is not available (e.g. has not been loaded into the device).*
Error	*Unexpected error. Please contact our service-team.*

Type of SCADA mapping

This setting decides whether the communication protocol shall use the default mapping of data objects, or some user-defined mapping that has been loaded from a *.HptSMap file.

Selection list referenced by the following parameters:

- ⮡ Profibus . Type of SCADA mapping

Type of SCADA mapping	Description
Standard	*Default mapping of data objects*
User-defined	*User-defined mapping of data objects*

Time Zones

Selection list referenced by the following parameters:

- ⮡ TimeSync . Time Zones

Time Zones	Description
UTC+14 Kiritimati	*UTC+14 Kiritimati*
UTC+13 Rawaki	*UTC+13 Rawaki*
UTC+12.75 Chatham Island	*UTC+12.75 Chatham Island*
UTC+12 Wellington	*UTC+12 Wellington*
UTC+11.5 Kingston	*UTC+11.5 Kingston*
UTC+11 Port Vila	*UTC+11 Port Vila*
UTC+10.5 Lord Howe Island	*UTC+10.5 Lord Howe Island*
UTC+10 Sydney	*UTC+10 Sydney*
UTC+9.5 Adelaide	*UTC+9.5 Adelaide*
UTC+9 Tokyo	*UTC+9 Tokyo*
UTC+8 Hong Kong	*UTC+8 Hong Kong*
UTC+7 Bangkok	*UTC+7 Bangkok*
UTC+6.5 Rangoon	*UTC+6.5 Rangoon*
UTC+6 Colombo	*UTC+6 Colombo*
UTC+5.75 Kathmandu	*UTC+5.75 Kathmandu*
UTC+5.5 New Delhi	*UTC+5.5 New Delhi*

Time Zones	Description
UTC+5 Islamabad	*UTC+5 Islamabad*
UTC+4.5 Kabul	*UTC+4.5 Kabul*
UTC+4 Abu Dhabi	*UTC+4 Abu Dhabi*
UTC+3.5 Tehran	*UTC+3.5 Tehran*
UTC+3 Moscow	*UTC+3 Moscow*
UTC+2 Athens	*UTC+2 Athens*
UTC+1 Berlin	*UTC+1 Berlin*
UTC+0 London	*UTC+0 London*
UTC-1 Azores	*UTC-1 Azores*
UTC-2 Fern. d. Noronha	*UTC-2 Fern. d. Noronha*
UTC-3 Buenos Aires	*UTC-3 Buenos Aires*
UTC-3.5 St. John’s	*UTC-3.5 St. John’s*
UTC-4 Santiago	*UTC-4 Santiago*
UTC-5 New York	*UTC-5 New York*
UTC-6 Chicago	*UTC-6 Chicago*
UTC-7 Salt Lake City	*UTC-7 Salt Lake City*
UTC-8 Los Angeles	*UTC-8 Los Angeles*
UTC-9 Anchorage	*UTC-9 Anchorage*
UTC-9.5 Taiohae	*UTC-9.5 Taiohae*
UTC-10 Honolulu	*UTC-10 Honolulu*
UTC-11 Midway Islands	*UTC-11 Midway Islands*

Month of clock change

Selection list referenced by the following parameters:

- ⮡ TimeSync . Summertime m
- ⮡ TimeSync . Wintertime m

Month of clock change	Description
January	*January*

Month of clock change	Description
February	*February*
March	*March*
April	*April*
May	*May*
June	*June*
July	*July*
August	*August*
September	*September*
October	*October*
November	*November*
December	*December*

Date

Selection list referenced by the following parameters:

- ⮡ TimeSync . Summertime d
- ⮡ TimeSync . Wintertime d

Date	Description
Sunday	*Sunday*
Monday	*Monday*
Tuesday	*Tuesday*
Wednesday	*Wednesday*
Thursday	*Thursday*
Friday	*Friday*
Saturday	*Saturday*
General day	*General day: Examples: first day of month, last day of month*

Day of clock change

Day of Time Saving change

Selection list referenced by the following parameters:

- ⮡▷ TimeSync . Summertime w
- ⮡▷ TimeSync . Wintertime w

Day of clock change	Description
First	*First week of the month*
Second	*Second week of the month*
Third	*Third week of the month*
Fourth	*Fourth week of the month*
Last	*Last week of the month*

Used Protocol

Selection list referenced by the following parameters:

- ⮡▷ TimeSync . TimeSync

Used Protocol	Description
“-”	-
IRIG-B . **IRIG-B**	*IRIG-B-Module*
SNTP . **SNTP**	*SNTP-Module*
Modbus . **Modbus**	*Modbus Protocol*
IEC103 . **IEC 60870-5-103**	*IEC 60870-5-103 Protocol*
IEC104 . **IEC104**	*IEC 60870-5-104 communication*
DNP3 . **DNP3**	*Distributed Network Protocol*

IRIG-B00X

Determination of the Type: IRIG-B00X. IRIG-B types differ in types of included “Coded Expressions” (year, control-functions, straight-binary-seconds).

Selection list referenced by the following parameters:

- ⮡ IRIG-B . IRIG-B00X

IRIG-B00X	Description
IRIGB-000	*Please refer to: IRIG STANDARD 200-04*
IRIGB-001	*Please refer to: IRIG STANDARD 200-04*
IRIGB-002	*Please refer to: IRIG STANDARD 200-04*
IRIGB-003	*Please refer to: IRIG STANDARD 200-04*
IRIGB-004	*Please refer to: IRIG STANDARD 200-04*
IRIGB-005	*Please refer to: IRIG STANDARD 200-04*
IRIGB-006	*Please refer to: IRIG STANDARD 200-04*
IRIGB-007	*Please refer to: IRIG STANDARD 200-04*

Selection list referenced by the following parameters:

- ⮡ Sys . DM version

	Description
3.7.b	*Version*

Phase Sequence

Selection list referenced by the following parameters:

- ⮡ Field Para . Phase Sequence

Phase Sequence	Description
ABC	*rotating clockwise*
ACB	*Counter-clockwise phase sequence. Positive and negative phase sequence are exchanged and MTA is turned for 180°.*

fN

Selection list referenced by the following parameters:

- ⮡ Field Para . f

fN	Description
50	*Rated frequency*
60	*Rated frequency*

Selection list referenced by the following parameters:

- ⮡ Sys . Program Mode

	Description
Either Motor Stopped or Running	*Either Motor Stopped or Running*
Motor Stop	*Motor Stopped*

Motor Stop

Motor Stopped

Motor Stop	Description
MStart . **Stop**	*Signal: Motor is in stop mode*

VT con

This parameter has to be set in order to ensure the correct assignment of the voltage measurement channels in the device.

Selection list referenced by the following parameters:

- ⮡ VT . VT con

VT con	Description
Phase to Phase	*The phase voltage measuring inputs are feed with “Phase-to-Phase” voltages (Delta-Connection)*
Phase to Ground	*The phase voltage measuring inputs are feed with “Phase-to-Ground” voltages (Star-Connection)*

Ratio prim/sec

w_prim/w_sec

Selection list referenced by the following parameters:

- ╚═▷ CT . CT sec
- ╚═▷ CT . ECT sec

Ratio prim/sec	Description
1	*Rated value of the secondary side of the current transformers.*
5	*Rated value of the secondary side of the current transformers.*

Polarity

Selection list referenced by the following parameters:

- ╚═▷ CT . CT dir
- ╚═▷ CT . ECT dir

Polarity	Description
0	*0*
180	*180 degree polarity correction (wiring faults)*

active/inactive

Selection list referenced by the following parameters:

- ╚═▷ BO Slot X2 . DISARMED Ctrl
- ╚═▷ BO Slot X6 . DISARMED Ctrl
- ╚═▷ Prot . ExBlo Fc
- ╚═▷ Prot . ExBlo TripCmd Fc
- ╚═▷ MStart . Reversing
- ╚═▷ MStart . ExBlo TripCmd Fc
- *[. . .]*

active/inactive	Description
inactive	*inactive*

active/inactive	Description
active	*active*

delta phi - Mode

The delta phi element (vector surge) trips, if the permissable voltage angle shift (delta phi) of the three measured voltages (phase-ground or phase-phase) in: one phase, two phases or within all phases is exceeded.

Selection list referenced by the following parameters:

- ╘═▷ VT . delta phi - Mode

delta phi - Mode	Description
one phase	*one phase*
two phases	*two phases*
three phases	*three phases*

1..n, TRN List

Motor operation mode transition criteria options

Selection list referenced by the following parameters:

- ╘═▷ MStart . TRN Criterion

1..n, TRN List	Description
TRN I	*Transition on current only*
TRN TIME	*Transition on time only*
TRN T and I	*Transition on current AND time*
TRN T or I	*Transition on current OR time*

1..n, InSq

Options for the Incomplete Sequence detection

Selection list referenced by the following parameters:

- ╘═▷ MStart . InSq Fc

1..n, InSq	Description
inactive	*inactive*
InSq Start2Run	*INSQ reporting from start-to-run*
InSq Stop2Start	*INSQ reporting from stop-to-start*

1..n, Zero speed

Zero speed switch trip function

Selection list referenced by the following parameters:

- ↳ MStart . ZSS

1..n, Zero speed	Description
inactive	*inactive*
active	*active*

EmgOvr

Emergency override options

Selection list referenced by the following parameters:

- ↳ MStart . EmgOvr

EmgOvr	Description
inactive	*inactive*
DI	*Enable emergency override from digital input DI*
HMI	*Enable emergency override from HMI*
DI or HMI	*Enable emergency override from digital (DI) input or front panel (HMI)*

1..n, Dig Inputs

List of Digital Inputs that are available for the detection of the Circuit Breaker Position.

Selection list referenced by the following parameters:

- ↳ MStart . RemStartBlock

- └⇨ MStart . EmgOvr
- └⇨ MStart . InSq
- └⇨ MStart . ZSS
- └⇨ MStart . STPC Blo
- └⇨ TCS . Input 1
- *[. . .]*

1..n, Dig Inputs	Description
“-”	*No assignment*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*

1..n, Trip Cmds

List of available Trip Commands

Selection list referenced by the following parameters:

- └⇨ I[1] . ExBlo dur. Mot.Strt
- └⇨ IG[1] . ExBlo dur. Mot.Strt
- └⇨ Jam[1] . ExBlo dur. Mot.Strt
- └⇨ I<[1] . ExBlo dur. Mot.Strt
- └⇨ V[1] . ExBlo dur. Mot.Strt
- └⇨ VG[1] . ExBlo dur. Mot.Strt
- *[. . .]*

1..n, Trip Cmds	Description
“-”	*No assignment*

1..n, Trip Cmds	Description
MStart . **Blo-GOCStart**	*Signal: Ground Instantaneous Overcurrent Start Delay. GOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-IOCStart**	*Signal: Phase Instantaneous Overcurrent Start Delay. IOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-I<Start**	*Signal: Underload Start Delay. Underload(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-JamStart**	*Signal: JAM Start Delay. JAM(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **Blo-I2>Start**	*Signal: Motor start block current unbalance signal*
MStart . **Blo-Generic1**	*Generic Start Delay. This value can be used to block any protective element.1*
MStart . **Blo-Generic2**	*Generic Start Delay. This value can be used to block any protective element.2*
MStart . **Blo-Generic3**	*Generic Start Delay. This value can be used to block any protective element.3*
MStart . **Blo-Generic4**	*Generic Start Delay. This value can be used to block any protective element.4*
MStart . **Blo-Generic5**	*Generic Start Delay. This value can be used to block any protective element.5*
MStart . **Blo-U2>**	*Signal: Motor start block voltage unbalance signal.*
MStart . **Blo-UnderV Start**	*Signal: Undervoltage Start Delay. Undervoltage elements are blocked for the time programmed under this parameter*
MStart . **Block-OverVStart**	*Signal: Overvoltage Start Delay. Overvoltage elements are blocked for the time programmed under this parameter*
MStart . **Blo-PowerStart**	*Signal: Power Start Delay. Power elements are blocked for the time programmed under this parameter*
MStart . **Blo-PFacStart**	*Signal: Power Factor Start Delay. Power Factor elements are blocked for the time programmed under this parameter*
MStart . **Blo-FrqStart**	*Signal: Frequency Start Delay. Frequency elements are blocked for the time programmed under this parameter*

AdaptSet

Adaptive Parameters

Selection list referenced by the following parameters:

- ⮑ I[1] . AdaptSet 1

- └⇒▷ I[1] . AdaptSet 2
- └⇒▷ I[1] . AdaptSet 3
- └⇒▷ I[1] . AdaptSet 4
- └⇒▷ IG[1] . AdaptSet 1
- └⇒▷ IG[1] . AdaptSet 2
- *[. . .]*

AdaptSet	Description
“-”	*No assignment*
V[1] . **Alarm**	*Signal: Alarm voltage stage*
V[2] . **Alarm**	*Signal: Alarm voltage stage*
V[3] . **Alarm**	*Signal: Alarm voltage stage*
V[4] . **Alarm**	*Signal: Alarm voltage stage*
V[5] . **Alarm**	*Signal: Alarm voltage stage*
V[6] . **Alarm**	*Signal: Alarm voltage stage*
VG[1] . **Alarm**	*Signal: Alarm Residual Voltage Supervision-stage*
VG[2] . **Alarm**	*Signal: Alarm Residual Voltage Supervision-stage*
V012[1] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[2] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[3] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[4] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[5] . **Alarm**	*Signal: Alarm voltage asymmetry*
V012[6] . **Alarm**	*Signal: Alarm voltage asymmetry*
ExP[1] . **Alarm**	*Signal: Alarm*
ExP[2] . **Alarm**	*Signal: Alarm*
ExP[3] . **Alarm**	*Signal: Alarm*
ExP[4] . **Alarm**	*Signal: Alarm*
CTS . **Alarm**	*Signal: Alarm Current Transformer Measuring Circuit Supervision*
LOP . **Alarm**	*Signal: Alarm Loss of Potential*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*

AdaptSet	Description
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*
Modbus . **Scada Cmd 1**	*Scada Command*
Modbus . **Scada Cmd 2**	*Scada Command*
Modbus . **Scada Cmd 3**	*Scada Command*
Modbus . **Scada Cmd 4**	*Scada Command*
Modbus . **Scada Cmd 5**	*Scada Command*
Modbus . **Scada Cmd 6**	*Scada Command*
Modbus . **Scada Cmd 7**	*Scada Command*
Modbus . **Scada Cmd 8**	*Scada Command*
Modbus . **Scada Cmd 9**	*Scada Command*
Modbus . **Scada Cmd 10**	*Scada Command*
Modbus . **Scada Cmd 11**	*Scada Command*
Modbus . **Scada Cmd 12**	*Scada Command*
Modbus . **Scada Cmd 13**	*Scada Command*
Modbus . **Scada Cmd 14**	*Scada Command*
Modbus . **Scada Cmd 15**	*Scada Command*
Modbus . **Scada Cmd 16**	*Scada Command*
IEC 61850 . **GOSINGGIO1.Ind1.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind2.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind3.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind4.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind5.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*

AdaptSet	Description
IEC 61850 . **GOSINGGIO1.Ind6.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind7.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind8.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind9.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind10.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind11.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind12.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind13.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind14.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind15.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind16.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind17.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind18.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind19.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind20.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind21.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind22.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind23.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind24.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind25.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*

AdaptSet	Description
IEC 61850 . **GOSINGGIO1.Ind26.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind27.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind28.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind29.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind30.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind31.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **GOSINGGIO1.Ind32.stVal**	*Signal: Virtual Input (IEC61850 GGIO Ind): State*
IEC 61850 . **SPCSO1**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO2**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO3**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO4**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO5**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO6**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO7**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO8**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO9**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO10**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO11**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO12**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO13**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*

AdaptSet	Description
IEC 61850 . **SPCSO14**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO15**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO16**	*Status bit that can be set by clients like e.g. SCADA (Single Point Controllable Status Output).*
IEC103 . **Scada Cmd 1**	*Scada Command*
IEC103 . **Scada Cmd 2**	*Scada Command*
IEC103 . **Scada Cmd 3**	*Scada Command*
IEC103 . **Scada Cmd 4**	*Scada Command*
IEC103 . **Scada Cmd 5**	*Scada Command*
IEC103 . **Scada Cmd 6**	*Scada Command*
IEC103 . **Scada Cmd 7**	*Scada Command*
IEC103 . **Scada Cmd 8**	*Scada Command*
IEC103 . **Scada Cmd 9**	*Scada Command*
IEC103 . **Scada Cmd 10**	*Scada Command*
IEC104 . **Scada Cmd 1**	*Scada Command*
IEC104 . **Scada Cmd 2**	*Scada Command*
IEC104 . **Scada Cmd 3**	*Scada Command*
IEC104 . **Scada Cmd 4**	*Scada Command*
IEC104 . **Scada Cmd 5**	*Scada Command*
IEC104 . **Scada Cmd 6**	*Scada Command*
IEC104 . **Scada Cmd 7**	*Scada Command*
IEC104 . **Scada Cmd 8**	*Scada Command*
IEC104 . **Scada Cmd 9**	*Scada Command*
IEC104 . **Scada Cmd 10**	*Scada Command*
IEC104 . **Scada Cmd 11**	*Scada Command*
IEC104 . **Scada Cmd 12**	*Scada Command*
IEC104 . **Scada Cmd 13**	*Scada Command*
IEC104 . **Scada Cmd 14**	*Scada Command*
IEC104 . **Scada Cmd 15**	*Scada Command*
IEC104 . **Scada Cmd 16**	*Scada Command*
Profibus . **Scada Cmd 1**	*Scada Command*

AdaptSet	Description
Profibus . **Scada Cmd 2**	*Scada Command*
Profibus . **Scada Cmd 3**	*Scada Command*
Profibus . **Scada Cmd 4**	*Scada Command*
Profibus . **Scada Cmd 5**	*Scada Command*
Profibus . **Scada Cmd 6**	*Scada Command*
Profibus . **Scada Cmd 7**	*Scada Command*
Profibus . **Scada Cmd 8**	*Scada Command*
Profibus . **Scada Cmd 9**	*Scada Command*
Profibus . **Scada Cmd 10**	*Scada Command*
Profibus . **Scada Cmd 11**	*Scada Command*
Profibus . **Scada Cmd 12**	*Scada Command*
Profibus . **Scada Cmd 13**	*Scada Command*
Profibus . **Scada Cmd 14**	*Scada Command*
Profibus . **Scada Cmd 15**	*Scada Command*
Profibus . **Scada Cmd 16**	*Scada Command*
Logics . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE1.Timer Out**	*Signal: Timer Output*
Logics . **LE1.Out**	*Signal: Latched Output (Q)*
Logics . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE2.Timer Out**	*Signal: Timer Output*
Logics . **LE2.Out**	*Signal: Latched Output (Q)*
Logics . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE3.Timer Out**	*Signal: Timer Output*
Logics . **LE3.Out**	*Signal: Latched Output (Q)*

AdaptSet	Description
Logics . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE4.Timer Out**	*Signal: Timer Output*
Logics . **LE4.Out**	*Signal: Latched Output (Q)*
Logics . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE5.Timer Out**	*Signal: Timer Output*
Logics . **LE5.Out**	*Signal: Latched Output (Q)*
Logics . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE6.Timer Out**	*Signal: Timer Output*
Logics . **LE6.Out**	*Signal: Latched Output (Q)*
Logics . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE7.Timer Out**	*Signal: Timer Output*
Logics . **LE7.Out**	*Signal: Latched Output (Q)*
Logics . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE8.Timer Out**	*Signal: Timer Output*
Logics . **LE8.Out**	*Signal: Latched Output (Q)*
Logics . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE9.Timer Out**	*Signal: Timer Output*
Logics . **LE9.Out**	*Signal: Latched Output (Q)*
Logics . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE10.Timer Out**	*Signal: Timer Output*

AdaptSet	Description
Logics . **LE10.Out**	*Signal: Latched Output (Q)*
Logics . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE11.Timer Out**	*Signal: Timer Output*
Logics . **LE11.Out**	*Signal: Latched Output (Q)*
Logics . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE12.Timer Out**	*Signal: Timer Output*
Logics . **LE12.Out**	*Signal: Latched Output (Q)*
Logics . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE13.Timer Out**	*Signal: Timer Output*
Logics . **LE13.Out**	*Signal: Latched Output (Q)*
Logics . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE14.Timer Out**	*Signal: Timer Output*
Logics . **LE14.Out**	*Signal: Latched Output (Q)*
Logics . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE15.Timer Out**	*Signal: Timer Output*
Logics . **LE15.Out**	*Signal: Latched Output (Q)*
Logics . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE16.Timer Out**	*Signal: Timer Output*
Logics . **LE16.Out**	*Signal: Latched Output (Q)*

AdaptSet	Description
Logics . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE17.Timer Out**	*Signal: Timer Output*
Logics . **LE17.Out**	*Signal: Latched Output (Q)*
Logics . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE18.Timer Out**	*Signal: Timer Output*
Logics . **LE18.Out**	*Signal: Latched Output (Q)*
Logics . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE19.Timer Out**	*Signal: Timer Output*
Logics . **LE19.Out**	*Signal: Latched Output (Q)*
Logics . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE20.Timer Out**	*Signal: Timer Output*
Logics . **LE20.Out**	*Signal: Latched Output (Q)*
Logics . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE21.Timer Out**	*Signal: Timer Output*
Logics . **LE21.Out**	*Signal: Latched Output (Q)*
Logics . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE22.Timer Out**	*Signal: Timer Output*
Logics . **LE22.Out**	*Signal: Latched Output (Q)*
Logics . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

AdaptSet	Description
Logics . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE23.Timer Out**	*Signal: Timer Output*
Logics . **LE23.Out**	*Signal: Latched Output (Q)*
Logics . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE24.Timer Out**	*Signal: Timer Output*
Logics . **LE24.Out**	*Signal: Latched Output (Q)*
Logics . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE25.Timer Out**	*Signal: Timer Output*
Logics . **LE25.Out**	*Signal: Latched Output (Q)*
Logics . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE26.Timer Out**	*Signal: Timer Output*
Logics . **LE26.Out**	*Signal: Latched Output (Q)*
Logics . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE27.Timer Out**	*Signal: Timer Output*
Logics . **LE27.Out**	*Signal: Latched Output (Q)*
Logics . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE28.Timer Out**	*Signal: Timer Output*
Logics . **LE28.Out**	*Signal: Latched Output (Q)*
Logics . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE29.Gate Out**	*Signal: Output of the logic gate*

AdaptSet	Description
Logics . **LE29.Timer Out**	*Signal: Timer Output*
Logics . **LE29.Out**	*Signal: Latched Output (Q)*
Logics . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE30.Timer Out**	*Signal: Timer Output*
Logics . **LE30.Out**	*Signal: Latched Output (Q)*
Logics . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE31.Timer Out**	*Signal: Timer Output*
Logics . **LE31.Out**	*Signal: Latched Output (Q)*
Logics . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE32.Timer Out**	*Signal: Timer Output*
Logics . **LE32.Out**	*Signal: Latched Output (Q)*
Logics . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE33.Timer Out**	*Signal: Timer Output*
Logics . **LE33.Out**	*Signal: Latched Output (Q)*
Logics . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE34.Timer Out**	*Signal: Timer Output*
Logics . **LE34.Out**	*Signal: Latched Output (Q)*
Logics . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE35.Timer Out**	*Signal: Timer Output*

AdaptSet	Description
Logics . **LE35.Out**	*Signal: Latched Output (Q)*
Logics . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE36.Timer Out**	*Signal: Timer Output*
Logics . **LE36.Out**	*Signal: Latched Output (Q)*
Logics . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE37.Timer Out**	*Signal: Timer Output*
Logics . **LE37.Out**	*Signal: Latched Output (Q)*
Logics . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE38.Timer Out**	*Signal: Timer Output*
Logics . **LE38.Out**	*Signal: Latched Output (Q)*
Logics . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE39.Timer Out**	*Signal: Timer Output*
Logics . **LE39.Out**	*Signal: Latched Output (Q)*
Logics . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE40.Timer Out**	*Signal: Timer Output*
Logics . **LE40.Out**	*Signal: Latched Output (Q)*
Logics . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE41.Timer Out**	*Signal: Timer Output*
Logics . **LE41.Out**	*Signal: Latched Output (Q)*

AdaptSet	Description
Logics . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE42.Timer Out**	*Signal: Timer Output*
Logics . **LE42.Out**	*Signal: Latched Output (Q)*
Logics . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE43.Timer Out**	*Signal: Timer Output*
Logics . **LE43.Out**	*Signal: Latched Output (Q)*
Logics . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE44.Timer Out**	*Signal: Timer Output*
Logics . **LE44.Out**	*Signal: Latched Output (Q)*
Logics . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE45.Timer Out**	*Signal: Timer Output*
Logics . **LE45.Out**	*Signal: Latched Output (Q)*
Logics . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE46.Timer Out**	*Signal: Timer Output*
Logics . **LE46.Out**	*Signal: Latched Output (Q)*
Logics . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE47.Timer Out**	*Signal: Timer Output*
Logics . **LE47.Out**	*Signal: Latched Output (Q)*
Logics . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

AdaptSet	Description
Logics . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE48.Timer Out**	*Signal: Timer Output*
Logics . **LE48.Out**	*Signal: Latched Output (Q)*
Logics . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE49.Timer Out**	*Signal: Timer Output*
Logics . **LE49.Out**	*Signal: Latched Output (Q)*
Logics . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE50.Timer Out**	*Signal: Timer Output*
Logics . **LE50.Out**	*Signal: Latched Output (Q)*
Logics . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE51.Timer Out**	*Signal: Timer Output*
Logics . **LE51.Out**	*Signal: Latched Output (Q)*
Logics . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE52.Timer Out**	*Signal: Timer Output*
Logics . **LE52.Out**	*Signal: Latched Output (Q)*
Logics . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE53.Timer Out**	*Signal: Timer Output*
Logics . **LE53.Out**	*Signal: Latched Output (Q)*
Logics . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE54.Gate Out**	*Signal: Output of the logic gate*

AdaptSet	Description
Logics . **LE54.Timer Out**	*Signal: Timer Output*
Logics . **LE54.Out**	*Signal: Latched Output (Q)*
Logics . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE55.Timer Out**	*Signal: Timer Output*
Logics . **LE55.Out**	*Signal: Latched Output (Q)*
Logics . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE56.Timer Out**	*Signal: Timer Output*
Logics . **LE56.Out**	*Signal: Latched Output (Q)*
Logics . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE57.Timer Out**	*Signal: Timer Output*
Logics . **LE57.Out**	*Signal: Latched Output (Q)*
Logics . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE58.Timer Out**	*Signal: Timer Output*
Logics . **LE58.Out**	*Signal: Latched Output (Q)*
Logics . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE59.Timer Out**	*Signal: Timer Output*
Logics . **LE59.Out**	*Signal: Latched Output (Q)*
Logics . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE60.Timer Out**	*Signal: Timer Output*

AdaptSet	Description
Logics . **LE60.Out**	*Signal: Latched Output (Q)*
Logics . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE61.Timer Out**	*Signal: Timer Output*
Logics . **LE61.Out**	*Signal: Latched Output (Q)*
Logics . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE62.Timer Out**	*Signal: Timer Output*
Logics . **LE62.Out**	*Signal: Latched Output (Q)*
Logics . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE63.Timer Out**	*Signal: Timer Output*
Logics . **LE63.Out**	*Signal: Latched Output (Q)*
Logics . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE64.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE64.Timer Out**	*Signal: Timer Output*
Logics . **LE64.Out**	*Signal: Latched Output (Q)*
Logics . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE65.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE65.Timer Out**	*Signal: Timer Output*
Logics . **LE65.Out**	*Signal: Latched Output (Q)*
Logics . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE66.Timer Out**	*Signal: Timer Output*
Logics . **LE66.Out**	*Signal: Latched Output (Q)*

AdaptSet	Description
Logics . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE67.Timer Out**	*Signal: Timer Output*
Logics . **LE67.Out**	*Signal: Latched Output (Q)*
Logics . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE68.Timer Out**	*Signal: Timer Output*
Logics . **LE68.Out**	*Signal: Latched Output (Q)*
Logics . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE69.Timer Out**	*Signal: Timer Output*
Logics . **LE69.Out**	*Signal: Latched Output (Q)*
Logics . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE70.Timer Out**	*Signal: Timer Output*
Logics . **LE70.Out**	*Signal: Latched Output (Q)*
Logics . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE71.Timer Out**	*Signal: Timer Output*
Logics . **LE71.Out**	*Signal: Latched Output (Q)*
Logics . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE72.Timer Out**	*Signal: Timer Output*
Logics . **LE72.Out**	*Signal: Latched Output (Q)*
Logics . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

AdaptSet	Description
Logics . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE73.Timer Out**	*Signal: Timer Output*
Logics . **LE73.Out**	*Signal: Latched Output (Q)*
Logics . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE74.Timer Out**	*Signal: Timer Output*
Logics . **LE74.Out**	*Signal: Latched Output (Q)*
Logics . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE75.Timer Out**	*Signal: Timer Output*
Logics . **LE75.Out**	*Signal: Latched Output (Q)*
Logics . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE76.Timer Out**	*Signal: Timer Output*
Logics . **LE76.Out**	*Signal: Latched Output (Q)*
Logics . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE77.Timer Out**	*Signal: Timer Output*
Logics . **LE77.Out**	*Signal: Latched Output (Q)*
Logics . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE78.Timer Out**	*Signal: Timer Output*
Logics . **LE78.Out**	*Signal: Latched Output (Q)*
Logics . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE79.Gate Out**	*Signal: Output of the logic gate*

AdaptSet	Description
Logics . **LE79.Timer Out**	*Signal: Timer Output*
Logics . **LE79.Out**	*Signal: Latched Output (Q)*
Logics . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE80.Timer Out**	*Signal: Timer Output*
Logics . **LE80.Out**	*Signal: Latched Output (Q)*
Logics . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

TripCmd Selection

This parameter determines if the final trip of the RTD module is issued by the default way or by the voting groups.

Selection list referenced by the following parameters:

- ⮡ RTD . TripCmd Selection

TripCmd Selection	Description
Trip	*Default RTD Trip*
Voting Trip	*Voting Trip. Trip if one of the voting groups has a pending/active trip.*

Scheme

Via this selection menu, the BF supervision scheme is to be selected.

Selection list referenced by the following parameters:

- ⮡ CBF . Scheme

Scheme	Description
50BF	*A Breaker Failure is detected, if the measured currents do not fall below a settable threshold within a settable time interval.*
CB Pos	*A Circuit Breaker Failure is detected after a CB open command, if the Position Contacts of the Circuit Breaker do not allow the conclusion*

Scheme	Description
	that the Breaker is now in the Open Position within a settable time interval.
50BF and CB Pos	*A Circuit Breaker Failure is detected if the evaluation of the Position Indicators or the evaluation of the current measurement indicate that the CB Off-Command was not excecuted. This scheme is called "Minimal Current Scheme" according to IEEEC37.119.*

Trigger

Determining the trigger mode for the Breaker Failure. The selection will pickup the Breaker Failure as well as the assignments (Trigger 1, Trigger 2, Trigger 3). They are OR connected.

Selection list referenced by the following parameters:

- └═▷ CBF . Trigger

Trigger	Description
- . -	*no assignment*
All Trips	*All trip signals that are assigned to this breaker (within the trip manager) will start the BF module.*
External Trips	*All external trips that are assigned to this breaker (within the trip manager) will start the BF module.*
Current Trips	*All current trips that are assigned to this breaker (within the trip manager) will start the BF module.*

External Trips

All external trips that are assigned to this breaker (within the trip manager) will start the BF module.

External Trips	Description
“-”	*No assignment*
ExP[1] . **TripCmd**	*Signal: Trip Command*
ExP[2] . **TripCmd**	*Signal: Trip Command*
ExP[3] . **TripCmd**	*Signal: Trip Command*
ExP[4] . **TripCmd**	*Signal: Trip Command*

Current Trips

All current trips that are assigned to this breaker (within the trip manager) will start the BF module.

Current Trips	**Description**
“-”	*No assignment*
I[1] . **TripCmd**	*Signal: Trip Command*
I[2] . **TripCmd**	*Signal: Trip Command*
I[3] . **TripCmd**	*Signal: Trip Command*
I[4] . **TripCmd**	*Signal: Trip Command*
I[5] . **TripCmd**	*Signal: Trip Command*
I[6] . **TripCmd**	*Signal: Trip Command*
IG[1] . **TripCmd**	*Signal: Trip Command*
IG[2] . **TripCmd**	*Signal: Trip Command*
IG[3] . **TripCmd**	*Signal: Trip Command*
IG[4] . **TripCmd**	*Signal: Trip Command*
ThR . **TripCmd**	*Signal: Trip Command*
Jam[1] . **TripCmd**	*Signal: Trip Command*
Jam[2] . **TripCmd**	*Signal: Trip Command*
I<[1] . **TripCmd**	*Signal: Trip Command*
I<[2] . **TripCmd**	*Signal: Trip Command*
I<[3] . **TripCmd**	*Signal: Trip Command*
I2>[1] . **TripCmd**	*Signal: Trip Command*
I2>[2] . **TripCmd**	*Signal: Trip Command*

Trigger

Determining the trigger mode for the Breaker Failure. The selection will pickup the Breaker Failure as well as the assignments (Trigger 1, Trigger 2, Trigger 3). They are OR connected.

Selection list referenced by the following parameters:

- └⇒ CBF . Trigger1

Trigger	Description
“-”	*No assignment*
MStart . **TripCmd**	*Signal: Trip Command*
I[1] . **TripCmd**	*Signal: Trip Command*
I[2] . **TripCmd**	*Signal: Trip Command*
I[3] . **TripCmd**	*Signal: Trip Command*
I[4] . **TripCmd**	*Signal: Trip Command*
I[5] . **TripCmd**	*Signal: Trip Command*
I[6] . **TripCmd**	*Signal: Trip Command*
IG[1] . **TripCmd**	*Signal: Trip Command*
IG[2] . **TripCmd**	*Signal: Trip Command*
IG[3] . **TripCmd**	*Signal: Trip Command*
IG[4] . **TripCmd**	*Signal: Trip Command*
ThR . **TripCmd**	*Signal: Trip Command*
Jam[1] . **TripCmd**	*Signal: Trip Command*
Jam[2] . **TripCmd**	*Signal: Trip Command*
I<[1] . **TripCmd**	*Signal: Trip Command*
I<[2] . **TripCmd**	*Signal: Trip Command*
I<[3] . **TripCmd**	*Signal: Trip Command*
V[1] . **TripCmd**	*Signal: Trip Command*
V[2] . **TripCmd**	*Signal: Trip Command*
V[3] . **TripCmd**	*Signal: Trip Command*
V[4] . **TripCmd**	*Signal: Trip Command*
V[5] . **TripCmd**	*Signal: Trip Command*
V[6] . **TripCmd**	*Signal: Trip Command*
VG[1] . **TripCmd**	*Signal: Trip Command*
VG[2] . **TripCmd**	*Signal: Trip Command*
I2>[1] . **TripCmd**	*Signal: Trip Command*
I2>[2] . **TripCmd**	*Signal: Trip Command*
V012[1] . **TripCmd**	*Signal: Trip Command*
V012[2] . **TripCmd**	*Signal: Trip Command*
V012[3] . **TripCmd**	*Signal: Trip Command*
V012[4] . **TripCmd**	*Signal: Trip Command*

Trigger	Description
V012[5] . **TripCmd**	*Signal: Trip Command*
V012[6] . **TripCmd**	*Signal: Trip Command*
f[1] . **TripCmd**	*Signal: Trip Command*
f[2] . **TripCmd**	*Signal: Trip Command*
f[3] . **TripCmd**	*Signal: Trip Command*
f[4] . **TripCmd**	*Signal: Trip Command*
f[5] . **TripCmd**	*Signal: Trip Command*
f[6] . **TripCmd**	*Signal: Trip Command*
PQS[1] . **TripCmd**	*Signal: Trip Command*
PQS[2] . **TripCmd**	*Signal: Trip Command*
PQS[3] . **TripCmd**	*Signal: Trip Command*
PQS[4] . **TripCmd**	*Signal: Trip Command*
PQS[5] . **TripCmd**	*Signal: Trip Command*
PQS[6] . **TripCmd**	*Signal: Trip Command*
PF[1] . **TripCmd**	*Signal: Trip Command*
PF[2] . **TripCmd**	*Signal: Trip Command*
ExP[1] . **TripCmd**	*Signal: Trip Command*
ExP[2] . **TripCmd**	*Signal: Trip Command*
ExP[3] . **TripCmd**	*Signal: Trip Command*
ExP[4] . **TripCmd**	*Signal: Trip Command*
RTD . **TripCmd**	*Signal: Trip Command*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*
Logics . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE1.Timer Out**	*Signal: Timer Output*
Logics . **LE1.Out**	*Signal: Latched Output (Q)*

Trigger	Description
Logics . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE2.Timer Out**	*Signal: Timer Output*
Logics . **LE2.Out**	*Signal: Latched Output (Q)*
Logics . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE3.Timer Out**	*Signal: Timer Output*
Logics . **LE3.Out**	*Signal: Latched Output (Q)*
Logics . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE4.Timer Out**	*Signal: Timer Output*
Logics . **LE4.Out**	*Signal: Latched Output (Q)*
Logics . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE5.Timer Out**	*Signal: Timer Output*
Logics . **LE5.Out**	*Signal: Latched Output (Q)*
Logics . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE6.Timer Out**	*Signal: Timer Output*
Logics . **LE6.Out**	*Signal: Latched Output (Q)*
Logics . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE7.Timer Out**	*Signal: Timer Output*
Logics . **LE7.Out**	*Signal: Latched Output (Q)*
Logics . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE8.Timer Out**	*Signal: Timer Output*
Logics . **LE8.Out**	*Signal: Latched Output (Q)*

Trigger	Description
Logics . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE9.Timer Out**	*Signal: Timer Output*
Logics . **LE9.Out**	*Signal: Latched Output (Q)*
Logics . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE10.Timer Out**	*Signal: Timer Output*
Logics . **LE10.Out**	*Signal: Latched Output (Q)*
Logics . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE11.Timer Out**	*Signal: Timer Output*
Logics . **LE11.Out**	*Signal: Latched Output (Q)*
Logics . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE12.Timer Out**	*Signal: Timer Output*
Logics . **LE12.Out**	*Signal: Latched Output (Q)*
Logics . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE13.Timer Out**	*Signal: Timer Output*
Logics . **LE13.Out**	*Signal: Latched Output (Q)*
Logics . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE14.Timer Out**	*Signal: Timer Output*
Logics . **LE14.Out**	*Signal: Latched Output (Q)*
Logics . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Trigger	Description
Logics . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE15.Timer Out**	*Signal: Timer Output*
Logics . **LE15.Out**	*Signal: Latched Output (Q)*
Logics . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE16.Timer Out**	*Signal: Timer Output*
Logics . **LE16.Out**	*Signal: Latched Output (Q)*
Logics . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE17.Timer Out**	*Signal: Timer Output*
Logics . **LE17.Out**	*Signal: Latched Output (Q)*
Logics . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE18.Timer Out**	*Signal: Timer Output*
Logics . **LE18.Out**	*Signal: Latched Output (Q)*
Logics . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE19.Timer Out**	*Signal: Timer Output*
Logics . **LE19.Out**	*Signal: Latched Output (Q)*
Logics . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE20.Timer Out**	*Signal: Timer Output*
Logics . **LE20.Out**	*Signal: Latched Output (Q)*
Logics . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE21.Gate Out**	*Signal: Output of the logic gate*

Trigger	Description
Logics . **LE21.Timer Out**	*Signal: Timer Output*
Logics . **LE21.Out**	*Signal: Latched Output (Q)*
Logics . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE22.Timer Out**	*Signal: Timer Output*
Logics . **LE22.Out**	*Signal: Latched Output (Q)*
Logics . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE23.Timer Out**	*Signal: Timer Output*
Logics . **LE23.Out**	*Signal: Latched Output (Q)*
Logics . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE24.Timer Out**	*Signal: Timer Output*
Logics . **LE24.Out**	*Signal: Latched Output (Q)*
Logics . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE25.Timer Out**	*Signal: Timer Output*
Logics . **LE25.Out**	*Signal: Latched Output (Q)*
Logics . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE26.Timer Out**	*Signal: Timer Output*
Logics . **LE26.Out**	*Signal: Latched Output (Q)*
Logics . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE27.Timer Out**	*Signal: Timer Output*

Trigger	Description
Logics . **LE27.Out**	*Signal: Latched Output (Q)*
Logics . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE28.Timer Out**	*Signal: Timer Output*
Logics . **LE28.Out**	*Signal: Latched Output (Q)*
Logics . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE29.Timer Out**	*Signal: Timer Output*
Logics . **LE29.Out**	*Signal: Latched Output (Q)*
Logics . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE30.Timer Out**	*Signal: Timer Output*
Logics . **LE30.Out**	*Signal: Latched Output (Q)*
Logics . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE31.Timer Out**	*Signal: Timer Output*
Logics . **LE31.Out**	*Signal: Latched Output (Q)*
Logics . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE32.Timer Out**	*Signal: Timer Output*
Logics . **LE32.Out**	*Signal: Latched Output (Q)*
Logics . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE33.Timer Out**	*Signal: Timer Output*
Logics . **LE33.Out**	*Signal: Latched Output (Q)*

Trigger	Description
Logics . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE34.Timer Out**	*Signal: Timer Output*
Logics . **LE34.Out**	*Signal: Latched Output (Q)*
Logics . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE35.Timer Out**	*Signal: Timer Output*
Logics . **LE35.Out**	*Signal: Latched Output (Q)*
Logics . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE36.Timer Out**	*Signal: Timer Output*
Logics . **LE36.Out**	*Signal: Latched Output (Q)*
Logics . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE37.Timer Out**	*Signal: Timer Output*
Logics . **LE37.Out**	*Signal: Latched Output (Q)*
Logics . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE38.Timer Out**	*Signal: Timer Output*
Logics . **LE38.Out**	*Signal: Latched Output (Q)*
Logics . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE39.Timer Out**	*Signal: Timer Output*
Logics . **LE39.Out**	*Signal: Latched Output (Q)*
Logics . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Trigger	Description
Logics . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE40.Timer Out**	*Signal: Timer Output*
Logics . **LE40.Out**	*Signal: Latched Output (Q)*
Logics . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE41.Timer Out**	*Signal: Timer Output*
Logics . **LE41.Out**	*Signal: Latched Output (Q)*
Logics . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE42.Timer Out**	*Signal: Timer Output*
Logics . **LE42.Out**	*Signal: Latched Output (Q)*
Logics . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE43.Timer Out**	*Signal: Timer Output*
Logics . **LE43.Out**	*Signal: Latched Output (Q)*
Logics . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE44.Timer Out**	*Signal: Timer Output*
Logics . **LE44.Out**	*Signal: Latched Output (Q)*
Logics . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE45.Timer Out**	*Signal: Timer Output*
Logics . **LE45.Out**	*Signal: Latched Output (Q)*
Logics . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE46.Gate Out**	*Signal: Output of the logic gate*

Trigger	Description
Logics . **LE46.Timer Out**	*Signal: Timer Output*
Logics . **LE46.Out**	*Signal: Latched Output (Q)*
Logics . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE47.Timer Out**	*Signal: Timer Output*
Logics . **LE47.Out**	*Signal: Latched Output (Q)*
Logics . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE48.Timer Out**	*Signal: Timer Output*
Logics . **LE48.Out**	*Signal: Latched Output (Q)*
Logics . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE49.Timer Out**	*Signal: Timer Output*
Logics . **LE49.Out**	*Signal: Latched Output (Q)*
Logics . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE50.Timer Out**	*Signal: Timer Output*
Logics . **LE50.Out**	*Signal: Latched Output (Q)*
Logics . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE51.Timer Out**	*Signal: Timer Output*
Logics . **LE51.Out**	*Signal: Latched Output (Q)*
Logics . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE52.Timer Out**	*Signal: Timer Output*

Trigger	Description
Logics . **LE52.Out**	*Signal: Latched Output (Q)*
Logics . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE53.Timer Out**	*Signal: Timer Output*
Logics . **LE53.Out**	*Signal: Latched Output (Q)*
Logics . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE54.Timer Out**	*Signal: Timer Output*
Logics . **LE54.Out**	*Signal: Latched Output (Q)*
Logics . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE55.Timer Out**	*Signal: Timer Output*
Logics . **LE55.Out**	*Signal: Latched Output (Q)*
Logics . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE56.Timer Out**	*Signal: Timer Output*
Logics . **LE56.Out**	*Signal: Latched Output (Q)*
Logics . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE57.Timer Out**	*Signal: Timer Output*
Logics . **LE57.Out**	*Signal: Latched Output (Q)*
Logics . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE58.Timer Out**	*Signal: Timer Output*
Logics . **LE58.Out**	*Signal: Latched Output (Q)*

Trigger	Description
Logics . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE59.Timer Out**	*Signal: Timer Output*
Logics . **LE59.Out**	*Signal: Latched Output (Q)*
Logics . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE60.Timer Out**	*Signal: Timer Output*
Logics . **LE60.Out**	*Signal: Latched Output (Q)*
Logics . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE61.Timer Out**	*Signal: Timer Output*
Logics . **LE61.Out**	*Signal: Latched Output (Q)*
Logics . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE62.Timer Out**	*Signal: Timer Output*
Logics . **LE62.Out**	*Signal: Latched Output (Q)*
Logics . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE63.Timer Out**	*Signal: Timer Output*
Logics . **LE63.Out**	*Signal: Latched Output (Q)*
Logics . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE64.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE64.Timer Out**	*Signal: Timer Output*
Logics . **LE64.Out**	*Signal: Latched Output (Q)*
Logics . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Trigger	Description
Logics . **LE65.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE65.Timer Out**	*Signal: Timer Output*
Logics . **LE65.Out**	*Signal: Latched Output (Q)*
Logics . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE66.Timer Out**	*Signal: Timer Output*
Logics . **LE66.Out**	*Signal: Latched Output (Q)*
Logics . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE67.Timer Out**	*Signal: Timer Output*
Logics . **LE67.Out**	*Signal: Latched Output (Q)*
Logics . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE68.Timer Out**	*Signal: Timer Output*
Logics . **LE68.Out**	*Signal: Latched Output (Q)*
Logics . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE69.Timer Out**	*Signal: Timer Output*
Logics . **LE69.Out**	*Signal: Latched Output (Q)*
Logics . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE70.Timer Out**	*Signal: Timer Output*
Logics . **LE70.Out**	*Signal: Latched Output (Q)*
Logics . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE71.Gate Out**	*Signal: Output of the logic gate*

Trigger	Description
Logics . **LE71.Timer Out**	*Signal: Timer Output*
Logics . **LE71.Out**	*Signal: Latched Output (Q)*
Logics . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE72.Timer Out**	*Signal: Timer Output*
Logics . **LE72.Out**	*Signal: Latched Output (Q)*
Logics . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE73.Timer Out**	*Signal: Timer Output*
Logics . **LE73.Out**	*Signal: Latched Output (Q)*
Logics . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE74.Timer Out**	*Signal: Timer Output*
Logics . **LE74.Out**	*Signal: Latched Output (Q)*
Logics . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE75.Timer Out**	*Signal: Timer Output*
Logics . **LE75.Out**	*Signal: Latched Output (Q)*
Logics . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE76.Timer Out**	*Signal: Timer Output*
Logics . **LE76.Out**	*Signal: Latched Output (Q)*
Logics . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE77.Timer Out**	*Signal: Timer Output*

Trigger	Description
Logics . **LE77.Out**	*Signal: Latched Output (Q)*
Logics . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE78.Timer Out**	*Signal: Timer Output*
Logics . **LE78.Out**	*Signal: Latched Output (Q)*
Logics . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE79.Timer Out**	*Signal: Timer Output*
Logics . **LE79.Out**	*Signal: Latched Output (Q)*
Logics . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE80.Timer Out**	*Signal: Timer Output*
Logics . **LE80.Out**	*Signal: Latched Output (Q)*
Logics . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ TCS . Mode

Mode	Description
Closed	*Selects that the breaker is going to be monitored when the breaker is closed.*
Either	*Selects that the breaker is going to be monitored when the breaker is either closed or open.*

CB Manager

Circuit Breaker States

Selection list referenced by the following parameters:

- ⮑ LOP . CB Pos Detect

CB Manager	**Description**
“-”	*No assignment*
SG[1] . **Pos**	*Signal: Circuit Breaker Position (0 = Indeterminate, 1 = OFF, 2 = ON, 3 = Disturbed)*

Blo Trigger

Determining the blockings for Loss of Potential

Selection list referenced by the following parameters:

- ⮑ LOP . Blo Trigger1

Blo Trigger	**Description**
“-”	*No assignment*
I[1] . **Alarm**	*Signal: Alarm*
I[2] . **Alarm**	*Signal: Alarm*
I[3] . **Alarm**	*Signal: Alarm*
I[4] . **Alarm**	*Signal: Alarm*
I[5] . **Alarm**	*Signal: Alarm*
I[6] . **Alarm**	*Signal: Alarm*
IG[1] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[2] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[3] . **Alarm**	*Signal: The alarm threshold has been exceeded.*
IG[4] . **Alarm**	*Signal: The alarm threshold has been exceeded.*

PSet-Switch

Switching Parameter Set

Selection list referenced by the following parameters:

- ⮡ Sys . PSet-Switch

PSet-Switch	Description
PS1	*The currently active Parameter Set is PS1*
PS2	*The currently active Parameter Set is PS2*
PS3	*The currently active Parameter Set is PS3*
PS4	*The currently active Parameter Set is PS4*
PSS via Inp fct	*Parameter Set Switch via input function*
PSS via Scada	*Parameter Set Switch via Scada. Write into this output byte the integer of the parameter set that should become active (e.g. 4 => Switch onto parameter set 4).*

1..n, PSS

List of the available Parameter Setting Group Switching Signals

Selection list referenced by the following parameters:

- ⮡ Sys . PS1: activated by

1..n, PSS	Description
"-"	*No assignment*
CTS . **Alarm**	*Signal: Alarm Current Transformer Measuring Circuit Supervision*
LOP . **Alarm**	*Signal: Alarm Loss of Potential*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*
Logics . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE1.Timer Out**	*Signal: Timer Output*
Logics . **LE1.Out**	*Signal: Latched Output (Q)*
Logics . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, PSS	Description
Logics . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE2.Timer Out**	*Signal: Timer Output*
Logics . **LE2.Out**	*Signal: Latched Output (Q)*
Logics . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE3.Timer Out**	*Signal: Timer Output*
Logics . **LE3.Out**	*Signal: Latched Output (Q)*
Logics . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE4.Timer Out**	*Signal: Timer Output*
Logics . **LE4.Out**	*Signal: Latched Output (Q)*
Logics . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE5.Timer Out**	*Signal: Timer Output*
Logics . **LE5.Out**	*Signal: Latched Output (Q)*
Logics . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE6.Timer Out**	*Signal: Timer Output*
Logics . **LE6.Out**	*Signal: Latched Output (Q)*
Logics . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE7.Timer Out**	*Signal: Timer Output*
Logics . **LE7.Out**	*Signal: Latched Output (Q)*
Logics . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE8.Timer Out**	*Signal: Timer Output*
Logics . **LE8.Out**	*Signal: Latched Output (Q)*
Logics . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, PSS	Description
Logics . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE9.Timer Out**	*Signal: Timer Output*
Logics . **LE9.Out**	*Signal: Latched Output (Q)*
Logics . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE10.Timer Out**	*Signal: Timer Output*
Logics . **LE10.Out**	*Signal: Latched Output (Q)*
Logics . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE11.Timer Out**	*Signal: Timer Output*
Logics . **LE11.Out**	*Signal: Latched Output (Q)*
Logics . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE12.Timer Out**	*Signal: Timer Output*
Logics . **LE12.Out**	*Signal: Latched Output (Q)*
Logics . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE13.Timer Out**	*Signal: Timer Output*
Logics . **LE13.Out**	*Signal: Latched Output (Q)*
Logics . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE14.Timer Out**	*Signal: Timer Output*
Logics . **LE14.Out**	*Signal: Latched Output (Q)*
Logics . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE15.Gate Out**	*Signal: Output of the logic gate*

1..n, PSS	Description
Logics . **LE15.Timer Out**	*Signal: Timer Output*
Logics . **LE15.Out**	*Signal: Latched Output (Q)*
Logics . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE16.Timer Out**	*Signal: Timer Output*
Logics . **LE16.Out**	*Signal: Latched Output (Q)*
Logics . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE17.Timer Out**	*Signal: Timer Output*
Logics . **LE17.Out**	*Signal: Latched Output (Q)*
Logics . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE18.Timer Out**	*Signal: Timer Output*
Logics . **LE18.Out**	*Signal: Latched Output (Q)*
Logics . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE19.Timer Out**	*Signal: Timer Output*
Logics . **LE19.Out**	*Signal: Latched Output (Q)*
Logics . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE20.Timer Out**	*Signal: Timer Output*
Logics . **LE20.Out**	*Signal: Latched Output (Q)*
Logics . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE21.Timer Out**	*Signal: Timer Output*

1..n, PSS	Description
Logics . **LE21.Out**	*Signal: Latched Output (Q)*
Logics . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE22.Timer Out**	*Signal: Timer Output*
Logics . **LE22.Out**	*Signal: Latched Output (Q)*
Logics . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE23.Timer Out**	*Signal: Timer Output*
Logics . **LE23.Out**	*Signal: Latched Output (Q)*
Logics . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE24.Timer Out**	*Signal: Timer Output*
Logics . **LE24.Out**	*Signal: Latched Output (Q)*
Logics . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE25.Timer Out**	*Signal: Timer Output*
Logics . **LE25.Out**	*Signal: Latched Output (Q)*
Logics . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE26.Timer Out**	*Signal: Timer Output*
Logics . **LE26.Out**	*Signal: Latched Output (Q)*
Logics . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE27.Timer Out**	*Signal: Timer Output*
Logics . **LE27.Out**	*Signal: Latched Output (Q)*

1..n, PSS	Description
Logics . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE28.Timer Out**	*Signal: Timer Output*
Logics . **LE28.Out**	*Signal: Latched Output (Q)*
Logics . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE29.Timer Out**	*Signal: Timer Output*
Logics . **LE29.Out**	*Signal: Latched Output (Q)*
Logics . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE30.Timer Out**	*Signal: Timer Output*
Logics . **LE30.Out**	*Signal: Latched Output (Q)*
Logics . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE31.Timer Out**	*Signal: Timer Output*
Logics . **LE31.Out**	*Signal: Latched Output (Q)*
Logics . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE32.Timer Out**	*Signal: Timer Output*
Logics . **LE32.Out**	*Signal: Latched Output (Q)*
Logics . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE33.Timer Out**	*Signal: Timer Output*
Logics . **LE33.Out**	*Signal: Latched Output (Q)*
Logics . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, PSS	Description
Logics . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE34.Timer Out**	*Signal: Timer Output*
Logics . **LE34.Out**	*Signal: Latched Output (Q)*
Logics . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE35.Timer Out**	*Signal: Timer Output*
Logics . **LE35.Out**	*Signal: Latched Output (Q)*
Logics . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE36.Timer Out**	*Signal: Timer Output*
Logics . **LE36.Out**	*Signal: Latched Output (Q)*
Logics . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE37.Timer Out**	*Signal: Timer Output*
Logics . **LE37.Out**	*Signal: Latched Output (Q)*
Logics . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE38.Timer Out**	*Signal: Timer Output*
Logics . **LE38.Out**	*Signal: Latched Output (Q)*
Logics . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE39.Timer Out**	*Signal: Timer Output*
Logics . **LE39.Out**	*Signal: Latched Output (Q)*
Logics . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE40.Gate Out**	*Signal: Output of the logic gate*

1..n, PSS	Description
Logics . **LE40.Timer Out**	*Signal: Timer Output*
Logics . **LE40.Out**	*Signal: Latched Output (Q)*
Logics . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE41.Timer Out**	*Signal: Timer Output*
Logics . **LE41.Out**	*Signal: Latched Output (Q)*
Logics . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE42.Timer Out**	*Signal: Timer Output*
Logics . **LE42.Out**	*Signal: Latched Output (Q)*
Logics . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE43.Timer Out**	*Signal: Timer Output*
Logics . **LE43.Out**	*Signal: Latched Output (Q)*
Logics . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE44.Timer Out**	*Signal: Timer Output*
Logics . **LE44.Out**	*Signal: Latched Output (Q)*
Logics . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE45.Timer Out**	*Signal: Timer Output*
Logics . **LE45.Out**	*Signal: Latched Output (Q)*
Logics . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE46.Timer Out**	*Signal: Timer Output*

1..n, PSS	Description
Logics . **LE46.Out**	*Signal: Latched Output (Q)*
Logics . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE47.Timer Out**	*Signal: Timer Output*
Logics . **LE47.Out**	*Signal: Latched Output (Q)*
Logics . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE48.Timer Out**	*Signal: Timer Output*
Logics . **LE48.Out**	*Signal: Latched Output (Q)*
Logics . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE49.Timer Out**	*Signal: Timer Output*
Logics . **LE49.Out**	*Signal: Latched Output (Q)*
Logics . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE50.Timer Out**	*Signal: Timer Output*
Logics . **LE50.Out**	*Signal: Latched Output (Q)*
Logics . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE51.Timer Out**	*Signal: Timer Output*
Logics . **LE51.Out**	*Signal: Latched Output (Q)*
Logics . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE52.Timer Out**	*Signal: Timer Output*
Logics . **LE52.Out**	*Signal: Latched Output (Q)*

1..n, PSS	Description
Logics . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE53.Timer Out**	*Signal: Timer Output*
Logics . **LE53.Out**	*Signal: Latched Output (Q)*
Logics . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE54.Timer Out**	*Signal: Timer Output*
Logics . **LE54.Out**	*Signal: Latched Output (Q)*
Logics . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE55.Timer Out**	*Signal: Timer Output*
Logics . **LE55.Out**	*Signal: Latched Output (Q)*
Logics . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE56.Timer Out**	*Signal: Timer Output*
Logics . **LE56.Out**	*Signal: Latched Output (Q)*
Logics . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE57.Timer Out**	*Signal: Timer Output*
Logics . **LE57.Out**	*Signal: Latched Output (Q)*
Logics . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE58.Timer Out**	*Signal: Timer Output*
Logics . **LE58.Out**	*Signal: Latched Output (Q)*
Logics . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, PSS	Description
Logics . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE59.Timer Out**	*Signal: Timer Output*
Logics . **LE59.Out**	*Signal: Latched Output (Q)*
Logics . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE60.Timer Out**	*Signal: Timer Output*
Logics . **LE60.Out**	*Signal: Latched Output (Q)*
Logics . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE61.Timer Out**	*Signal: Timer Output*
Logics . **LE61.Out**	*Signal: Latched Output (Q)*
Logics . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE62.Timer Out**	*Signal: Timer Output*
Logics . **LE62.Out**	*Signal: Latched Output (Q)*
Logics . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE63.Timer Out**	*Signal: Timer Output*
Logics . **LE63.Out**	*Signal: Latched Output (Q)*
Logics . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE64.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE64.Timer Out**	*Signal: Timer Output*
Logics . **LE64.Out**	*Signal: Latched Output (Q)*
Logics . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE65.Gate Out**	*Signal: Output of the logic gate*

1..n, PSS	Description
Logics . **LE65.Timer Out**	*Signal: Timer Output*
Logics . **LE65.Out**	*Signal: Latched Output (Q)*
Logics . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE66.Timer Out**	*Signal: Timer Output*
Logics . **LE66.Out**	*Signal: Latched Output (Q)*
Logics . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE67.Timer Out**	*Signal: Timer Output*
Logics . **LE67.Out**	*Signal: Latched Output (Q)*
Logics . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE68.Timer Out**	*Signal: Timer Output*
Logics . **LE68.Out**	*Signal: Latched Output (Q)*
Logics . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE69.Timer Out**	*Signal: Timer Output*
Logics . **LE69.Out**	*Signal: Latched Output (Q)*
Logics . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE70.Timer Out**	*Signal: Timer Output*
Logics . **LE70.Out**	*Signal: Latched Output (Q)*
Logics . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE71.Timer Out**	*Signal: Timer Output*

1..n, PSS	Description
Logics . **LE71.Out**	*Signal: Latched Output (Q)*
Logics . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE72.Timer Out**	*Signal: Timer Output*
Logics . **LE72.Out**	*Signal: Latched Output (Q)*
Logics . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE73.Timer Out**	*Signal: Timer Output*
Logics . **LE73.Out**	*Signal: Latched Output (Q)*
Logics . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE74.Timer Out**	*Signal: Timer Output*
Logics . **LE74.Out**	*Signal: Latched Output (Q)*
Logics . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE75.Timer Out**	*Signal: Timer Output*
Logics . **LE75.Out**	*Signal: Latched Output (Q)*
Logics . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE76.Timer Out**	*Signal: Timer Output*
Logics . **LE76.Out**	*Signal: Latched Output (Q)*
Logics . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE77.Timer Out**	*Signal: Timer Output*
Logics . **LE77.Out**	*Signal: Latched Output (Q)*

1..n, PSS	Description
Logics . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE78.Timer Out**	*Signal: Timer Output*
Logics . **LE78.Out**	*Signal: Latched Output (Q)*
Logics . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE79.Timer Out**	*Signal: Timer Output*
Logics . **LE79.Out**	*Signal: Latched Output (Q)*
Logics . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE80.Timer Out**	*Signal: Timer Output*
Logics . **LE80.Out**	*Signal: Latched Output (Q)*
Logics . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Measuring method

Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)

Selection list referenced by the following parameters:

- └─▷ I[1] . Measuring method

Measuring method	Description
Fundamental	*Protection is based on Fundamental (1st. Harmonic)*
True RMS	*Protection is based on root-mean-square value (True RMS)*
I2	*Protection is based on negative phase sequence current*

Char

Characteristic

Selection list referenced by the following parameters:

- ↳▷ I[1] . Char

Char	Description
DEFT	*DEFT*
IEC NINV	*IEC Normal Inverse*
IEC VINV	*IEC Very Inverse [VINV]*
IEC EINV	*IEC Extremely Inverse - Characteristic*
IEC LINV	*IEC Long Time Inverse - Characteristic [LINV]*
RINV	*R Inverse [RINV] - Characteristic*
ANSI MINV	*ANSI Moderately Inverse [MINV] - Characteristic*
ANSI VINV	*ANSI Very Inverse [VINV]*
ANSI EINV	*ANSI Extremely Inverse - Characteristic*
Therm Flat	*Therm Flat [TF] - Characteristic*
IT	*IT - Characteristic*
I2T	*I2T - Characteristic*
I4T	*I4T - Characteristic*

Reset Mode

Selection list referenced by the following parameters:

- ↳▷ I[1] . Reset Mode

Reset Mode	Description
instantaneous	*Instantaneous reset: when the current drops below the pickup setting, the TOC time resets to zero within 2 cycles.*
definite time	*Reset after a fixed time.* *(Remark: This delay is then defined by the parameter »t-reset delay«.)*
inverse time	*Calculated reset, based on the selected characteristic.*

Measuring Mode

Selection list referenced by the following parameters:

- ⮩ I[1] . Measuring Mode

Measuring Mode	Description
Phase to Ground	*Phase-to-Ground Voltage*
Phase to Phase	*The voltage transformers are connected to phase-to-phase voltages*

VTS Block

Blocking of the module if the voltage transformer supervision detects a fault.

Selection list referenced by the following parameters:

- ⮩ I[1] . Meas Circuit Superv
- ⮩ IG[1] . Meas Circuit Superv
- ⮩ V[1] . Meas Circuit Superv
- ⮩ VG[1] . Meas Circuit Superv
- ⮩ V012[1] . Meas Circuit Superv
- ⮩ PQS[1] . MeasCircSv Volt

VTS Block	Description
Sys . **inactive**	*inactive*
LOP . **active**	*active*

Measuring Channel

Selection list referenced by the following parameters:

- ⮩ IG[1] . IG Source

Measuring Channel	Description
CT . **sensitive measurement**	*sensitive measurement*
CT . **measured**	*measured*
CT . **calculated**	*calculated*

Measuring method

Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)

Selection list referenced by the following parameters:

- ⮡ IG[1] . Measuring method

Measuring method	Description
Fundamental	*Protection is based on Fundamental (1st. Harmonic)*
True RMS	*Protection is based on root-mean-square value (True RMS)*

VX Source

Selection if VG is measured or calculated (neutral voltage or residual voltage)

Selection list referenced by the following parameters:

- ⮡ IG[1] . VX Source

VX Source	Description
measured	*measured*
calculated	*calculated*

Char

Characteristic

Selection list referenced by the following parameters:

- ⮡ IG[1] . Char

Char	Description
DEFT	*DEFT*
IEC NINV	*IEC Normal Inverse*
IEC VINV	*IEC Very Inverse [VINV]*
IEC EINV	*IEC Extremely Inverse - Characteristic*

Char	Description
IEC LINV	*IEC Long Time Inverse - Characteristic [LINV]*
RINV	*R Inverse [RINV] - Characteristic*
ANSI MINV	*ANSI Moderately Inverse [MINV] - Characteristic*
ANSI VINV	*ANSI Very Inverse [VINV]*
ANSI EINV	*ANSI Extremely Inverse - Characteristic*
Therm Flat	*Therm Flat [TF] - Characteristic*
IT	*IT - Characteristic*
I2T	*I2T - Characteristic*
I4T	*I4T - Characteristic*
RXIDG	*Special Overcurrent Curve*

Reset Mode

Selection list referenced by the following parameters:

- ╚═▷ IG[1] . Reset Mode

Reset Mode	Description
instantaneous	*Instantaneous reset: when the current drops below the pickup setting, the TOC time resets to zero within 2 cycles.*
definite time	*Reset after a fixed time.* *(Remark: This delay is then defined by the parameter »t-reset delay«.)*
inverse time	*Calculated reset, based on the selected characteristic.*

Char

Characteristic

Selection list referenced by the following parameters:

- ╚═▷ I2>[1] . Char

Char	Description
DEFT	*DEFT*

Char	Description
INV	*INV*

Measuring Mode

Measuring/Supervision Mode: Determines if the phase-to-phase or phase-to-earth voltages are to be supervised

Selection list referenced by the following parameters:

- ⮑ V[1] . Measuring Mode

Measuring Mode	Description
Phase to Ground	*The voltage transformers are connected to phase-to-ground voltages*
Phase to Phase	*The voltage transformers are connected to phase-to-phase voltages*

Measuring method

Measuring method: fundamental or rms or "sliding average supervision"

Selection list referenced by the following parameters:

- ⮑ V[1] . Measuring method

Measuring method	Description
Fundamental	*Protection is based on Fundamental (1st. Harmonic)*
True RMS	*Protection is based on root-mean-square value (True RMS)*

Alarm Mode

Alarm criterion for the voltage protection stage.

Selection list referenced by the following parameters:

- ⮑ V[1] . Alarm Mode

Alarm Mode	Description
any one	*any one: Trip Command, if the tripping criterion is fulfilled within at least one phase.*

Alarm Mode	Description
any two	*any two*
all	*all: Trip Command for 3p-faults, i.e. if the tripping criterion is fulfilled in all three phases.*

VX Source

Selection if VG is measured or calculated (neutral voltage or residual voltage)

Selection list referenced by the following parameters:

- ⮡ VG[1] . VX Source

VX Source	Description
measured	*VX/VG is measured at the 4th measuring input*
calculated	*VX/VG is calculated from the three phase-to-ground voltages.*

Measuring method

Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)

Selection list referenced by the following parameters:

- ⮡ VG[1] . Measuring method

Measuring method	Description
Fundamental	*Protection is based on Fundamental (1st. Harmonic)*
True RMS	*Protection is based on root-mean-square value (True RMS)*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ f[1] . df/dt mode

Mode	Description
absolute df/dt	*positive and negative rise of frequency frequency*
positive df/dt	*positive rise of frequency*
negative df/dt	*negative rise of frequency frequency*

VTS Block

Blocking of the module if the voltage transformer supervision detects a fault.

Selection list referenced by the following parameters:

- ╚═▷ I<[1] . MeasCircSv Curr
- ╚═▷ PQS[1] . MeasCircSv Curr

VTS Block	Description
Sys . **inactive**	*inactive*
CTS . **active**	*active*

PowMeasMethod

Determines if the active power, reactive power and apparent power are calculated on the basis of RMS or DFT.

Selection list referenced by the following parameters:

- ╚═▷ PQS[1] . PowMeasMethod

PowMeasMethod	Description
Fundamental	*The active power, reactive power and apparent power are calculated on the basis of DFT.*
True RMS	*The active power, reactive power and apparent power are calculated on the basis of RMS.*

Measuring method

Measuring method: fundamental or rms or 3rd harmonic (only generator protection relays)

Selection list referenced by the following parameters:

- ╚═▷ PF[1] . Measuring method

Measuring method	Description
Fundamental	*Protection is based on Fundamental (1st. Harmonic)*
True RMS	*Protection is based on root-mean-square value (True RMS)*

Mode

general operation mode

Selection list referenced by the following parameters:

- ╚═▷ PF[1] . Trig Mode
- ╚═▷ PF[1] . Res Mode

Mode	Description
I leads V	*At capacitive loads (capacitor bank) the current phasor is leading to the voltage phasor.*
I lags V	*At inductive loads (e.g. motors) the current phasor is lagging to the voltage phasor.*

Alarm Mode

Indicates if one, two of three or all phases are required for operation

Selection list referenced by the following parameters:

- ╚═▷ I<[1] . Alarm Mode

Alarm Mode	Description
any one	*any one: Trip Command, if the tripping criterion is fulfilled within at least one phase.*
all	*all: Trip Command for 3p-faults, i.e. if the tripping criterion is fulfilled in all three phases.*

NonIL ResetMode

Non-Interlocking ResetMode

Selection list referenced by the following parameters:

- ⮱▷ Ctrl . Res NonIL

NonIL ResetMode	Description
single Operation	*single Operation*
timeout	*timeout*
permanent	*permanent*

Manipulate Position

WARNING! Fake Position - Manual Position Manipulation

Selection list referenced by the following parameters:

- ⮱▷ SG[1] . Manipulate Position

Manipulate Position	Description
inactive	*inactive*
Pos OFF	*Signal: Circuit Breaker is in OFF-Position*
Pos ON	*Signal: Circuit Breaker is in ON-Position*

1..n, Trip Cmds

List of available Trip Commands

Selection list referenced by the following parameters:

- ⮱▷ SG[1] . Off Cmd1
- ⮱▷ SG[1] . Off Cmd2
- ⮱▷ SG[1] . Off Cmd3
- ⮱▷ SG[1] . Off Cmd4
- ⮱▷ SG[1] . Off Cmd5
- ⮱▷ SG[1] . Off Cmd6
- *[. . .]*

1..n, Trip Cmds	Description
“-”	*No assignment*
MStart . **TripCmd**	*Signal: Trip Command*
I[1] . **TripCmd**	*Signal: Trip Command*
I[2] . **TripCmd**	*Signal: Trip Command*
I[3] . **TripCmd**	*Signal: Trip Command*
I[4] . **TripCmd**	*Signal: Trip Command*
I[5] . **TripCmd**	*Signal: Trip Command*
I[6] . **TripCmd**	*Signal: Trip Command*
IG[1] . **TripCmd**	*Signal: Trip Command*
IG[2] . **TripCmd**	*Signal: Trip Command*
IG[3] . **TripCmd**	*Signal: Trip Command*
IG[4] . **TripCmd**	*Signal: Trip Command*
ThR . **TripCmd**	*Signal: Trip Command*
Jam[1] . **TripCmd**	*Signal: Trip Command*
Jam[2] . **TripCmd**	*Signal: Trip Command*
I<[1] . **TripCmd**	*Signal: Trip Command*
I<[2] . **TripCmd**	*Signal: Trip Command*
I<[3] . **TripCmd**	*Signal: Trip Command*
V[1] . **TripCmd**	*Signal: Trip Command*
V[2] . **TripCmd**	*Signal: Trip Command*
V[3] . **TripCmd**	*Signal: Trip Command*
V[4] . **TripCmd**	*Signal: Trip Command*
V[5] . **TripCmd**	*Signal: Trip Command*
V[6] . **TripCmd**	*Signal: Trip Command*
VG[1] . **TripCmd**	*Signal: Trip Command*
VG[2] . **TripCmd**	*Signal: Trip Command*
I2>[1] . **TripCmd**	*Signal: Trip Command*
I2>[2] . **TripCmd**	*Signal: Trip Command*
V012[1] . **TripCmd**	*Signal: Trip Command*
V012[2] . **TripCmd**	*Signal: Trip Command*
V012[3] . **TripCmd**	*Signal: Trip Command*
V012[4] . **TripCmd**	*Signal: Trip Command*

1..n, Trip Cmds	Description
V012[5] . **TripCmd**	*Signal: Trip Command*
V012[6] . **TripCmd**	*Signal: Trip Command*
f[1] . **TripCmd**	*Signal: Trip Command*
f[2] . **TripCmd**	*Signal: Trip Command*
f[3] . **TripCmd**	*Signal: Trip Command*
f[4] . **TripCmd**	*Signal: Trip Command*
f[5] . **TripCmd**	*Signal: Trip Command*
f[6] . **TripCmd**	*Signal: Trip Command*
PQS[1] . **TripCmd**	*Signal: Trip Command*
PQS[2] . **TripCmd**	*Signal: Trip Command*
PQS[3] . **TripCmd**	*Signal: Trip Command*
PQS[4] . **TripCmd**	*Signal: Trip Command*
PQS[5] . **TripCmd**	*Signal: Trip Command*
PQS[6] . **TripCmd**	*Signal: Trip Command*
PF[1] . **TripCmd**	*Signal: Trip Command*
PF[2] . **TripCmd**	*Signal: Trip Command*
ExP[1] . **TripCmd**	*Signal: Trip Command*
ExP[2] . **TripCmd**	*Signal: Trip Command*
ExP[3] . **TripCmd**	*Signal: Trip Command*
ExP[4] . **TripCmd**	*Signal: Trip Command*
RTD . **TripCmd**	*Signal: Trip Command*

1..n, DI-LogicList

Selection list referenced by the following parameters:

- ╚▷ SG[1] . Aux ON
- ╚▷ SG[1] . Aux OFF
- ╚▷ SG[1] . Ready
- ╚▷ SG[1] . Removed
- ╚▷ SG[1] . SCmd ON
- ╚▷ SG[1] . SCmd OFF

1..n, DI-LogicList	Description
“-”	*No assignment*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
DI Slot X1 . **DI 5**	*Signal: Digital Input*
DI Slot X1 . **DI 6**	*Signal: Digital Input*
DI Slot X1 . **DI 7**	*Signal: Digital Input*
DI Slot X1 . **DI 8**	*Signal: Digital Input*
DNP3 . **BinaryOutput0**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput1**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput2**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput3**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput4**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput5**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput6**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput7**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput8**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput9**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput10**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput11**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput12**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput13**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*

1..n, DI-LogicList	Description
DNP3 . **BinaryOutput14**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput15**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput16**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput17**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput18**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput19**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput20**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput21**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput22**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput23**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput24**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput25**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput26**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput27**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput28**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput29**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput30**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP3 . **BinaryOutput31**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
IEC104 . **Scada Cmd 1**	*Scada Command*
IEC104 . **Scada Cmd 2**	*Scada Command*
IEC104 . **Scada Cmd 3**	*Scada Command*
IEC104 . **Scada Cmd 4**	*Scada Command*

1..n, DI-LogicList	Description
IEC104 . **Scada Cmd 5**	*Scada Command*
IEC104 . **Scada Cmd 6**	*Scada Command*
IEC104 . **Scada Cmd 7**	*Scada Command*
IEC104 . **Scada Cmd 8**	*Scada Command*
IEC104 . **Scada Cmd 9**	*Scada Command*
IEC104 . **Scada Cmd 10**	*Scada Command*
IEC104 . **Scada Cmd 11**	*Scada Command*
IEC104 . **Scada Cmd 12**	*Scada Command*
IEC104 . **Scada Cmd 13**	*Scada Command*
IEC104 . **Scada Cmd 14**	*Scada Command*
IEC104 . **Scada Cmd 15**	*Scada Command*
IEC104 . **Scada Cmd 16**	*Scada Command*
Logics . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE1.Timer Out**	*Signal: Timer Output*
Logics . **LE1.Out**	*Signal: Latched Output (Q)*
Logics . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE2.Timer Out**	*Signal: Timer Output*
Logics . **LE2.Out**	*Signal: Latched Output (Q)*
Logics . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE3.Timer Out**	*Signal: Timer Output*
Logics . **LE3.Out**	*Signal: Latched Output (Q)*
Logics . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE4.Timer Out**	*Signal: Timer Output*
Logics . **LE4.Out**	*Signal: Latched Output (Q)*
Logics . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE5.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logics . **LE5.Timer Out**	*Signal: Timer Output*
Logics . **LE5.Out**	*Signal: Latched Output (Q)*
Logics . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE6.Timer Out**	*Signal: Timer Output*
Logics . **LE6.Out**	*Signal: Latched Output (Q)*
Logics . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE7.Timer Out**	*Signal: Timer Output*
Logics . **LE7.Out**	*Signal: Latched Output (Q)*
Logics . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE8.Timer Out**	*Signal: Timer Output*
Logics . **LE8.Out**	*Signal: Latched Output (Q)*
Logics . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE9.Timer Out**	*Signal: Timer Output*
Logics . **LE9.Out**	*Signal: Latched Output (Q)*
Logics . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE10.Timer Out**	*Signal: Timer Output*
Logics . **LE10.Out**	*Signal: Latched Output (Q)*
Logics . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE11.Timer Out**	*Signal: Timer Output*
Logics . **LE11.Out**	*Signal: Latched Output (Q)*
Logics . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, DI-LogicList	Description
Logics . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE12.Timer Out**	*Signal: Timer Output*
Logics . **LE12.Out**	*Signal: Latched Output (Q)*
Logics . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE13.Timer Out**	*Signal: Timer Output*
Logics . **LE13.Out**	*Signal: Latched Output (Q)*
Logics . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE14.Timer Out**	*Signal: Timer Output*
Logics . **LE14.Out**	*Signal: Latched Output (Q)*
Logics . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE15.Timer Out**	*Signal: Timer Output*
Logics . **LE15.Out**	*Signal: Latched Output (Q)*
Logics . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE16.Timer Out**	*Signal: Timer Output*
Logics . **LE16.Out**	*Signal: Latched Output (Q)*
Logics . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE17.Timer Out**	*Signal: Timer Output*
Logics . **LE17.Out**	*Signal: Latched Output (Q)*
Logics . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE18.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logics . **LE18.Timer Out**	*Signal: Timer Output*
Logics . **LE18.Out**	*Signal: Latched Output (Q)*
Logics . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE19.Timer Out**	*Signal: Timer Output*
Logics . **LE19.Out**	*Signal: Latched Output (Q)*
Logics . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE20.Timer Out**	*Signal: Timer Output*
Logics . **LE20.Out**	*Signal: Latched Output (Q)*
Logics . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE21.Timer Out**	*Signal: Timer Output*
Logics . **LE21.Out**	*Signal: Latched Output (Q)*
Logics . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE22.Timer Out**	*Signal: Timer Output*
Logics . **LE22.Out**	*Signal: Latched Output (Q)*
Logics . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE23.Timer Out**	*Signal: Timer Output*
Logics . **LE23.Out**	*Signal: Latched Output (Q)*
Logics . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE24.Timer Out**	*Signal: Timer Output*

1..n, DI-LogicList	Description
Logics . **LE24.Out**	*Signal: Latched Output (Q)*
Logics . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE25.Timer Out**	*Signal: Timer Output*
Logics . **LE25.Out**	*Signal: Latched Output (Q)*
Logics . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE26.Timer Out**	*Signal: Timer Output*
Logics . **LE26.Out**	*Signal: Latched Output (Q)*
Logics . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE27.Timer Out**	*Signal: Timer Output*
Logics . **LE27.Out**	*Signal: Latched Output (Q)*
Logics . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE28.Timer Out**	*Signal: Timer Output*
Logics . **LE28.Out**	*Signal: Latched Output (Q)*
Logics . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE29.Timer Out**	*Signal: Timer Output*
Logics . **LE29.Out**	*Signal: Latched Output (Q)*
Logics . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE30.Timer Out**	*Signal: Timer Output*
Logics . **LE30.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logics . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE31.Timer Out**	*Signal: Timer Output*
Logics . **LE31.Out**	*Signal: Latched Output (Q)*
Logics . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE32.Timer Out**	*Signal: Timer Output*
Logics . **LE32.Out**	*Signal: Latched Output (Q)*
Logics . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE33.Timer Out**	*Signal: Timer Output*
Logics . **LE33.Out**	*Signal: Latched Output (Q)*
Logics . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE34.Timer Out**	*Signal: Timer Output*
Logics . **LE34.Out**	*Signal: Latched Output (Q)*
Logics . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE35.Timer Out**	*Signal: Timer Output*
Logics . **LE35.Out**	*Signal: Latched Output (Q)*
Logics . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE36.Timer Out**	*Signal: Timer Output*
Logics . **LE36.Out**	*Signal: Latched Output (Q)*
Logics . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, DI-LogicList	Description
Logics . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE37.Timer Out**	*Signal: Timer Output*
Logics . **LE37.Out**	*Signal: Latched Output (Q)*
Logics . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE38.Timer Out**	*Signal: Timer Output*
Logics . **LE38.Out**	*Signal: Latched Output (Q)*
Logics . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE39.Timer Out**	*Signal: Timer Output*
Logics . **LE39.Out**	*Signal: Latched Output (Q)*
Logics . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE40.Timer Out**	*Signal: Timer Output*
Logics . **LE40.Out**	*Signal: Latched Output (Q)*
Logics . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE41.Timer Out**	*Signal: Timer Output*
Logics . **LE41.Out**	*Signal: Latched Output (Q)*
Logics . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE42.Timer Out**	*Signal: Timer Output*
Logics . **LE42.Out**	*Signal: Latched Output (Q)*
Logics . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE43.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logics . **LE43.Timer Out**	*Signal: Timer Output*
Logics . **LE43.Out**	*Signal: Latched Output (Q)*
Logics . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE44.Timer Out**	*Signal: Timer Output*
Logics . **LE44.Out**	*Signal: Latched Output (Q)*
Logics . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE45.Timer Out**	*Signal: Timer Output*
Logics . **LE45.Out**	*Signal: Latched Output (Q)*
Logics . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE46.Timer Out**	*Signal: Timer Output*
Logics . **LE46.Out**	*Signal: Latched Output (Q)*
Logics . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE47.Timer Out**	*Signal: Timer Output*
Logics . **LE47.Out**	*Signal: Latched Output (Q)*
Logics . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE48.Timer Out**	*Signal: Timer Output*
Logics . **LE48.Out**	*Signal: Latched Output (Q)*
Logics . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE49.Timer Out**	*Signal: Timer Output*

1..n, DI-LogicList	Description
Logics . **LE49.Out**	*Signal: Latched Output (Q)*
Logics . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE50.Timer Out**	*Signal: Timer Output*
Logics . **LE50.Out**	*Signal: Latched Output (Q)*
Logics . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE51.Timer Out**	*Signal: Timer Output*
Logics . **LE51.Out**	*Signal: Latched Output (Q)*
Logics . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE52.Timer Out**	*Signal: Timer Output*
Logics . **LE52.Out**	*Signal: Latched Output (Q)*
Logics . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE53.Timer Out**	*Signal: Timer Output*
Logics . **LE53.Out**	*Signal: Latched Output (Q)*
Logics . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE54.Timer Out**	*Signal: Timer Output*
Logics . **LE54.Out**	*Signal: Latched Output (Q)*
Logics . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE55.Timer Out**	*Signal: Timer Output*
Logics . **LE55.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logics . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE56.Timer Out**	*Signal: Timer Output*
Logics . **LE56.Out**	*Signal: Latched Output (Q)*
Logics . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE57.Timer Out**	*Signal: Timer Output*
Logics . **LE57.Out**	*Signal: Latched Output (Q)*
Logics . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE58.Timer Out**	*Signal: Timer Output*
Logics . **LE58.Out**	*Signal: Latched Output (Q)*
Logics . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE59.Timer Out**	*Signal: Timer Output*
Logics . **LE59.Out**	*Signal: Latched Output (Q)*
Logics . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE60.Timer Out**	*Signal: Timer Output*
Logics . **LE60.Out**	*Signal: Latched Output (Q)*
Logics . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE61.Timer Out**	*Signal: Timer Output*
Logics . **LE61.Out**	*Signal: Latched Output (Q)*
Logics . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, DI-LogicList	Description
Logics . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE62.Timer Out**	*Signal: Timer Output*
Logics . **LE62.Out**	*Signal: Latched Output (Q)*
Logics . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE63.Timer Out**	*Signal: Timer Output*
Logics . **LE63.Out**	*Signal: Latched Output (Q)*
Logics . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE64.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE64.Timer Out**	*Signal: Timer Output*
Logics . **LE64.Out**	*Signal: Latched Output (Q)*
Logics . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE65.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE65.Timer Out**	*Signal: Timer Output*
Logics . **LE65.Out**	*Signal: Latched Output (Q)*
Logics . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE66.Timer Out**	*Signal: Timer Output*
Logics . **LE66.Out**	*Signal: Latched Output (Q)*
Logics . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE67.Timer Out**	*Signal: Timer Output*
Logics . **LE67.Out**	*Signal: Latched Output (Q)*
Logics . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE68.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logics . **LE68.Timer Out**	*Signal: Timer Output*
Logics . **LE68.Out**	*Signal: Latched Output (Q)*
Logics . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE69.Timer Out**	*Signal: Timer Output*
Logics . **LE69.Out**	*Signal: Latched Output (Q)*
Logics . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE70.Timer Out**	*Signal: Timer Output*
Logics . **LE70.Out**	*Signal: Latched Output (Q)*
Logics . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE71.Timer Out**	*Signal: Timer Output*
Logics . **LE71.Out**	*Signal: Latched Output (Q)*
Logics . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE72.Timer Out**	*Signal: Timer Output*
Logics . **LE72.Out**	*Signal: Latched Output (Q)*
Logics . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE73.Timer Out**	*Signal: Timer Output*
Logics . **LE73.Out**	*Signal: Latched Output (Q)*
Logics . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE74.Timer Out**	*Signal: Timer Output*

1..n, DI-LogicList	Description
Logics . **LE74.Out**	*Signal: Latched Output (Q)*
Logics . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE75.Timer Out**	*Signal: Timer Output*
Logics . **LE75.Out**	*Signal: Latched Output (Q)*
Logics . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE76.Timer Out**	*Signal: Timer Output*
Logics . **LE76.Out**	*Signal: Latched Output (Q)*
Logics . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE77.Timer Out**	*Signal: Timer Output*
Logics . **LE77.Out**	*Signal: Latched Output (Q)*
Logics . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE78.Timer Out**	*Signal: Timer Output*
Logics . **LE78.Out**	*Signal: Latched Output (Q)*
Logics . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE79.Timer Out**	*Signal: Timer Output*
Logics . **LE79.Out**	*Signal: Latched Output (Q)*
Logics . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logics . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logics . **LE80.Timer Out**	*Signal: Timer Output*
Logics . **LE80.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logics . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

LE1.Gate

Logic gate

Selection list referenced by the following parameters:

- ⮡ Logics . LE1.Gate

LE1.Gate	Description
AND	*AND Gate*
OR	*OR Gate*
NAND	*NAND Gate*
NOR	*NOR Gate*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ BO Slot X2 . Disarm Mode
- ⮡ BO Slot X2 . Force Mode

Mode	Description
permanent	*permanent*
timeout	*timeout*

active/inactive

Selection list referenced by the following parameters:

- ⮡ BO Slot X2 . DISARMED

active/inactive	Description
inactive	*inactive*
active	*active*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⭆ BO Slot X6 . Disarm Mode
- ⭆ BO Slot X6 . Force Mode

Mode	Description
permanent	*permanent*
timeout	*timeout*

active/inactive

Selection list referenced by the following parameters:

- ⭆ BO Slot X6 . DISARMED

active/inactive	Description
inactive	*inactive*
active	*active*

Relay operating modes

Selection list referenced by the following parameters:

- ⭆ BO Slot X2 . Force all Outs
- ⭆ BO Slot X2 . Force OR1

Relay operating modes	Description
Normal	*Normal*

Relay operating modes	Description
De-Energized	*De-Energized*
Energized	*Energized*

Relay operating modes

Selection list referenced by the following parameters:

- ⮡ BO Slot X6 . Force all Outs
- ⮡ BO Slot X6 . Force OR1

Relay operating modes	Description
Normal	*Normal*
De-Energized	*De-Energized*
Energized	*Energized*

Mode

general operation mode

Selection list referenced by the following parameters:

- ⮡ URTD . Force Mode

Mode	Description
permanent	*permanent*
timeout	*timeout*

active/inactive

Selection list referenced by the following parameters:

- ⮡ URTD . Function

active/inactive	Description
inactive	*inactive*
active	*active*

Disarm

Selection list referenced by the following parameters:

- ⮡ AnOut[1] . Force Mode

Disarm	Description
permanent	*permanent*
timeout	*timeout*

active

Selection list referenced by the following parameters:

- ⮡ AnOut[1] . Function

active	Description
inactive	*inactive*
active	*active*

State

Selection list referenced by the following parameters:

- ⮡ Sgen . State

State	Description
Off	*Off*
PreFault	*Pre Fault Duration*
FaultSimulation	*Duration of Fault Simulation*
PostFault	*Post Fault Duration*

State	Description
Init Res	*Init Reset*

TripCmd Mode

Trip Command Mode: Select between two operating modes for the Fault Simulator: "cold simulation” (without tripping the circuit breaker), or "hot simulation” (i.e. the simulation is authorized to trip the circuit breaker)

Selection list referenced by the following parameters:

- ⮡ Sgen . TripCmd Mode

TripCmd Mode	Description
No TripCmd	*No Trip Command: The TripCmd of all protection functions is blocked. The protection function will possibly trip but not generate a TripCmd.*
With TripCmd	*With Trip Command: The trip of a protection function generates a TripCmd, that can open the circuit breaker.*

Index

F

H

I

J

L

M

N

O

P

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