MCDLV4 – Modbus
HighPROTEC

Data point list

Manual MCDLV4 R3.6 (Build 41595)

Table of Contents

This Manual is valid for version (applies for Modbus RTU and Modbus TCP):

Version 3.6.b

Build: 41591

Modbus Parameters

For the Modbus Protocol several parameters have to be set which are relevant for the communication between the control system (SCADA) and the device. The parameters and their setting possibilities or value ranges are shown in the table below.

ATTENTION!
The Parameters are described within the appendix of the device manual (chapter Modbus).

Notes for the SCADA-System

When using Modbus RTU the following times have to be considered by the control system and are fixed within the device :
The dwell times (t_D) before start of a telegram must at least be set to 3.5 characters.

Examples:

3.5 characters 9600 Baud = 4 ms
3.5 characters 19200 Baud = 2 ms
3.6 3.5 characters 38400 Baud = 1 ms

Start of a new telegram is expected when the dwell time (t_D) is > 3.5 characters.

The fact that the probability of disruptions during transmission of a telegram increases with its length has to be taken into duly consideration and thus a query to the Slave should be possibly such that the response telegram is not much longer than 32 Byte.

Specific Modbus Function Codes

For reading out data from the device or to carry out commands, the services listed in the table, also called »Function Codes«, are supported.

Function-code	Designation	Description
3	Read Holding Registers	There are single or several data words read as from a specific data word address. Only status addresses and parameter addresses can be read.
4	Read Input Registers	There are single or several data words read as from a specific data word address. Only measuring values can be read.
5	Write single Output (Bit)	All other values are illegal and will not affect the output. Via this function code acknowledgments can be executed as well as counters reseted or blockings set.
8	Loopback Test	Test function for the communication system
16	Load Multiple Registers	There are single or several data words written as from a specific data word address.

Table 3.1: function codes

On the following pages the Modbus functions are described in detail:

Function-Code 3/4:

Query

Slave address	3/4	Register address HI	Register address LO	Register number HI	Register number LO	Check-sum HI	Check-sum LO

Response

Slave address	3/4	Byte number	Register 0 HI	Register 0 LO	...	Check-sum HI	Check-sum LO

Register address (HI*256 + LO)
The data word address from where reading should start.

Register number (HI*256 + LO)
Number of data words to be read. Valid range: 1..125

Byte number
Number of subsequent Bytes containing data words.

Register
Data words read out of the device (Highbyte and Lowbyte).

Float Values IEEE 754

	Sign	Exponent	Mantissa
Value:	+1	2^{13}	1.34199857711792
Encoded as:	0	140	2868892
Binary:	☐	☑ ☐ ☐ ☐ ☑ ☑ ☐ ☐	☐ ☑ ☐ ☑ ☐ ☑ ☑ ☑ ☑ ☐ ☐ ☐ ☑ ☑ ☐ ☑ ☐ ☐ ☑ ☑ ☑ ☐ ☐

Decimal Representation	10993.652
Binary Representation	01000110001010111100011010011100
Hexadecimal Representation	0x462bc69c

For displaying a float value, it is important to save received bytes in a correct order. A float value in Modbus will be transmitted in “Big Endian“ format (Motorola Format), that means most significant byte is transmitted first.
For saving received bytes in Modbus master it must be considered which architecture is used. Is Modbus Master is a “Little Endian” architecture, received frame needs to be swapped to corresponding memory addresses. If it is not saved in correct order it is possible that displayed value is useless.

Modbus transmit value			
0x46	0x2b	0xc6	0x9c

→

	Big Endian		Little Endian	
Address	Hex		Hex	
1000	0x46	10993,65	0x9c	10993,65
1001	0x2b		0xc6	
1002	0xc6		0x2b	
1003	0x9c		0x46	

Function Code 5:

Query

Slave address	5	Register address HI	Register address LO	Register data HI	Register data LO	Check-sum HI	Check-sum LO

Response

Slave address	5	Register address HI	Register address LO	Register data HI	Register data LO	Check-sum HI	Check-sum LO

Register address (HI*256 + LO)
Data word address to be written

Register data
Value of the data word to be written (Highbyte and Lowbyte).

Permitted value range :

FF00 hex request for a single bit to be on: This often means to reset a counter, execute acknowledgments or set blockings signals.
0000 hex request for a single bit to be off: This often means to deactivate blocking signals or to reset single bits.

Function Code 8:

Query

Slave address	8	Data Diag Code HI 0x00	Data Diag Code LO 0x00	Test data	Test data	Check-sum HI	Check-sum LO

Response

Slave address	8	Data Diag Code HI	Data Diag Code LO	Test data	Test data	Check-sum HI	Check-sum LO

Data Diag Code HI (high), Data Diag Code LO (Low)
Diagnostic Code (subfunction code of function code 8) for testing the communication system. The Diagnostic Code „Return Query Data“ (0x00, 0x00) is being supported.

Test Data
By using the Diagnostic Code 0x00 0x00, the transmitted data is sent back to the Master unchanged.

Function Code 16:

Query

Slave address	16	Register address HI	Register address LO	Register number HI	Register number LO	Byte number	Register 0 HI	Register 0 LO	...	Check-sum HI	Check-sum LO

Response

Slave address	16	Register address HI	Register address LO	Register number HI	Register number LO	Check-sum HI	Check-sum LO

Register address (HI*256 + LO)
Data word address as from where writing should start.

Register number (HI*256 + LO)
Query: Number of data words to be written. Valid range: 1..123
Response: Number of data words written.

Byte number
Number of subsequent Bytes to contain data words.

Register
Data words read out of the device (Highbyte und Lowbyte).

Setting Date and Time

Date and time can be set by means of function code 16 and read with function code 3. If the device address 0 (broadcast address) is selected, the times of all devices connected to this bus are simultaneously reset. The devices do not respond to a broadcast command.

Supported MODBUS- Error Messages

Exception Response Telegrams are described within the general “Modbus Application Protocol Specification". An exception response table with examples is shown there. The table below contains just the actually used codes. In case the device has recognized an error it will react in the following way:

Exception Code	Designation	Description
1	Illegal Function	The message received includes a function code which is not supported by the Slave.
2	Illegal Data Address	Access was sought on a data word address not included in the data module.
3	Illegal Data Value	The received message contains an invalid data structure (e.g. wrong number of data bytes).
4	Slave Device Failure	An unrecoverable error occurred while the server (or slave) was attempting to perform the requested action.

The response given by the *device* in a failure case has the following format:

Slave Address	0x80 + Function Code	Exception Code	Check-sum HI	Check-sum LO

In the second Byte of the response the Function Code is sent with the highest Bit set to 1. This is equivalent to an addition by 0x80. The third Byte holds the Exception Code of the error message.

Appendix - Data Point Lists

Signals

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
AR - 79		46	1	3	Struct			
	active	46	1	3	Bit	0x1 (1)	-	Signal: active
	ExBlo	46	1	3	Bit	0x2 (2)	-	Signal: External Blocking
	running	46	1	3	Bit	0x8 (4)	-	Signal: Auto Reclosing running
	t-dead	46	1	3	Bit	0x10 (5)	-	Signal: Dead time between trip and reclosure attempt
	successful (*)	46	1	3	Bit	0x100 (9)	-	Signal: Auto Reclosing successful
	failed (*)	46	1	3	Bit	0x200 (10)	-	Signal: Auto Reclosing failure
	t-AR Supervision	46	1	3	Bit	0x1000 (13)	-	Signal: AR Supervision
AR - 79		47	1	3	Struct			
	ExBlo1-I	47	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	47	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	CB ON Cmd	47	1	3	Bit	0x10 (5)	-	Signal: CB switch ON Command
	Pre Shot (*)	47	1	3	Bit	0x20 (6)	-	Pre Shot Control
	Shot 1 (*)	47	1	3	Bit	0x40 (7)	-	Shot Control
	Shot 2 (*)	47	1	3	Bit	0x80 (8)	-	Shot Control
	Shot 3 (*)	47	1	3	Bit	0x100 (9)	-	Shot Control
	Shot 4 (*)	47	1	3	Bit	0x200 (10)	-	Shot Control
	Shot 5 (*)	47	1	3	Bit	0x400 (11)	-	Shot Control
	Shot 6 (*)	47	1	3	Bit	0x800 (12)	-	Shot Control
AR - 79		156	1	3	Struct			
	Ex Lock-I	156	1	3	Bit	0x1 (1)	-	Module input state: External AR lockout.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex Shot Inc-I	156	1	3	Bit	0x2 (2)	-	Module input state: The AR Shot counter will be incremented by this external Signal. This can be used for Zone Coordination (of upstream Auto Reclosure devices). Note: This parameter enables the functionality only. The assignment has to be set within the global parameters.
	Blo	156	1	3	Bit	0x4 (3)	-	Signal: Auto Reclosure is blocked
	t-Blo after CB man ON	156	1	3	Bit	0x8 (4)	-	Signal: AR blocked after circuit breaker was switched on manually. This timer will be started if the circuit breaker was switched on manually. While this timer is running, AR cannot be started.
	Lock	156	1	3	Bit	0x10 (5)	-	Signal: Auto Reclosure is locked out
	t-Reset Lockout	156	1	3	Bit	0x20 (6)	-	Signal: Delay Timer for resetting the AR lockout. The reset of the AR lockout state will be delayed for this time, after the reset signal (e.g digital input or Scada) has been detected .
	Ready	156	1	3	Bit	0x40 (7)	-	Signal: Ready to shoot

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Run2Ready	156	1	3	Bit	0x80 (8)	-	Signal: Examination Time: If the Circuit Breaker remains after a reclosure attempt for the duration of this timer in the Closed position, the AR has been successful and the AR module returns into the ready state.
	Standby	156	1	3	Bit	0x100 (9)	-	Signal: Standby
	Service Alarm 1	156	1	3	Bit	0x200 (10)	-	Signal: AR - Service Alarm 1, too many switching operations
	Service Alarm 2	156	1	3	Bit	0x400 (11)	-	Signal: AR - Service Alarm 2 - too many switching operations
	Max Shots / h exceeded	156	1	3	Bit	0x800 (12)	-	Signal: The maximum allowed number of shots per hour has been exceeded.
BO Slot X2		1003	1	3	Struct			
	BO 1	1003	1	3	Bit	0x1 (1)	-	Signal: Binary Output Relay
	BO 2	1003	1	3	Bit	0x2 (2)	-	Signal: Binary Output Relay
	BO 3	1003	1	3	Bit	0x4 (3)	-	Signal: Binary Output Relay
	BO 4	1003	1	3	Bit	0x8 (4)	-	Signal: Binary Output Relay

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	BO 5	1003	1	3	Bit	0x10 (5)	-	Signal: Binary Output Relay
	BO 6	1003	1	3	Bit	0x20 (6)	-	Signal: Binary Output Relay
	DISARMED!	1003	1	3	Bit	0x40 (7)	-	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
	Outs forced	1003	1	3	Bit	0x80 (8)	-	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 X4		1015	1	3	Struct			
	BO 1	1015	1	3	Bit	0x1 (1)	-	Signal: Binary Output Relay
	BO 2	1015	1	3	Bit	0x2 (2)	-	Signal: Binary Output Relay
	BO 3	1015	1	3	Bit	0x4 (3)	-	Signal: Binary Output Relay
	BO 4	1015	1	3	Bit	0x8 (4)	-	Signal: Binary Output Relay

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	BO 5	1015	1	3	Bit	0x10 (5)	-	Signal: Binary Output Relay
	DISARMED!	1015	1	3	Bit	0x40 (7)	-	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
	Outs forced	1015	1	3	Bit	0x80 (8)	-	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 X5		1004	1	3	Struct			
	BO 1	1004	1	3	Bit	0x1 (1)	-	Signal: Binary Output Relay
	BO 2	1004	1	3	Bit	0x2 (2)	-	Signal: Binary Output Relay
	BO 3	1004	1	3	Bit	0x4 (3)	-	Signal: Binary Output Relay
	BO 4	1004	1	3	Bit	0x8 (4)	-	Signal: Binary Output Relay
	BO 5	1004	1	3	Bit	0x10 (5)	-	Signal: Binary Output Relay

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	BO 6	1004	1	3	Bit	0x20 (6)	-	Signal: Binary Output Relay
	DISARMED!	1004	1	3	Bit	0x40 (7)	-	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
	Outs forced	1004	1	3	Bit	0x80 (8)	-	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 X5		1013	1	3	Struct			
	BO 1	1013	1	3	Bit	0x1 (1)	-	Signal: Binary Output Relay
	BO 2	1013	1	3	Bit	0x2 (2)	-	Signal: Binary Output Relay
	BO 3	1013	1	3	Bit	0x4 (3)	-	Signal: Binary Output Relay
	BO 4	1013	1	3	Bit	0x8 (4)	-	Signal: Binary Output Relay

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	DISARMED!	1013	1	3	Bit	0x40 (7)	-	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
	Outs forced	1013	1	3	Bit	0x80 (8)	-	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		1016	1	3	Struct			
	BO 1	1016	1	3	Bit	0x1 (1)	-	Signal: Binary Output Relay
	BO 2	1016	1	3	Bit	0x2 (2)	-	Signal: Binary Output Relay
	BO 3	1016	1	3	Bit	0x4 (3)	-	Signal: Binary Output Relay
	BO 4	1016	1	3	Bit	0x8 (4)	-	Signal: Binary Output Relay

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	DISARMED!	1016	1	3	Bit	0x40 (7)	-	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
	Outs forced	1016	1	3	Bit	0x80 (8)	-	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.
CBF - 50BF, 62BF		53	1	3	Struct			
	ExBlo1-I	53	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	53	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	53	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	53	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Trigger1-I	53	1	3	Bit	0x10 (5)	-	Module Input: Trigger that will start the CBF
	Trigger2-I	53	1	3	Bit	0x20 (6)	-	Module Input: Trigger that will start the CBF

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trigger3-I	53	1	3	Bit	0x40 (7)	-	Module Input: Trigger that will start the CBF
	running	53	1	3	Bit	0x80 (8)	-	Signal: CBF-Module started
	Alarm (*)	53	1	3	Bit	0x100 (9)	-	Signal: Circuit Breaker Failure
	Lockout (*)	53	1	3	Bit	0x200 (10)	-	Signal: Lockout
	Waiting for Trigger (*)	53	1	3	Bit	0x400 (11)	-	Waiting for Trigger
CLPU		66	1	3	Struct			
	ExBlo1-I	66	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	66	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	Ex rev Interl-I	66	1	3	Bit	0x4 (3)	-	Module input state: External reverse interlocking
	active	66	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	66	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Ex rev Interl	66	1	3	Bit	0x20 (6)	-	Signal: External reverse Interlocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	enabled	66	1	3	Bit	0x200 (10)	-	Signal: Cold Load enabled
	detected (*)	66	1	3	Bit	0x400 (11)	-	Signal: Cold Load detected
	I<	66	1	3	Bit	0x800 (12)	-	Signal: No Load Current.
	AR Blo	66	1	3	Bit	0x1000 (13)	-	Signal: Blocked by AR
	Load Inrush	66	1	3	Bit	0x2000 (14)	-	Signal: Load Inrush
	Settle Time	66	1	3	Bit	0x4000 (15)	-	Signal: Settle Time
CT Local		301	1	3	Struct			
	Phase seq. wrong	301	1	3	Bit	0x1 (1)	-	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«.
CTS - 60L		137	1	3	Struct			
	ExBlo1-I	137	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	137	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	137	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	137	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Alarm	137	1	3	Bit	0x10 (5)	-	Signal: Alarm Current Transformer Measuring Circuit Supervision
Ctrl		176	1	3	Struct			
	Local	176	1	3	Bit	0x1 (1)	-	Switching Authority: Local
	Remote	176	1	3	Bit	0x2 (2)	-	Switching Authority: Remote
	NonInterl	176	1	3	Bit	0x4 (3)	-	Non-Interlocking is active
	SG Disturb	176	1	3	Bit	0x8 (4)	-	(At least one) Switchgear is disturbed.
	SG Indeterm	176	1	3	Bit	0x10 (5)	-	(At least one) Switchgear is moving (Position cannot be determined).
DI Slot X1		1000	1	3	Struct			
	DI 1	1000	1	3	Bit	0x1 (1)	-	Signal: Digital Input
	DI 2	1000	1	3	Bit	0x2 (2)	-	Signal: Digital Input

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	DI 3	1000	1	3	Bit	0x4 (3)	-	Signal: Digital Input
	DI 4	1000	1	3	Bit	0x8 (4)	-	Signal: Digital Input
	DI 5	1000	1	3	Bit	0x10 (5)	-	Signal: Digital Input
	DI 6	1000	1	3	Bit	0x20 (6)	-	Signal: Digital Input
	DI 7	1000	1	3	Bit	0x40 (7)	-	Signal: Digital Input
	DI 8	1000	1	3	Bit	0x80 (8)	-	Signal: Digital Input
DI Slot X5		1001	1	3	Struct			
	DI 1	1001	1	3	Bit	0x1 (1)	-	Signal: Digital Input
	DI 2	1001	1	3	Bit	0x2 (2)	-	Signal: Digital Input
	DI 3	1001	1	3	Bit	0x4 (3)	-	Signal: Digital Input
	DI 4	1001	1	3	Bit	0x8 (4)	-	Signal: Digital Input
	DI 5	1001	1	3	Bit	0x10 (5)	-	Signal: Digital Input

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	DI 6	1001	1	3	Bit	0x20 (6)	-	Signal: Digital Input
	DI 7	1001	1	3	Bit	0x40 (7)	-	Signal: Digital Input
	DI 8	1001	1	3	Bit	0x80 (8)	-	Signal: Digital Input
DI Slot X6		1014	1	3	Struct			
	DI 1	1014	1	3	Bit	0x1 (1)	-	Signal: Digital Input
	DI 2	1014	1	3	Bit	0x2 (2)	-	Signal: Digital Input
	DI 3	1014	1	3	Bit	0x4 (3)	-	Signal: Digital Input
	DI 4	1014	1	3	Bit	0x8 (4)	-	Signal: Digital Input
	DI 5	1014	1	3	Bit	0x10 (5)	-	Signal: Digital Input
	DI 6	1014	1	3	Bit	0x20 (6)	-	Signal: Digital Input
	DI 7	1014	1	3	Bit	0x40 (7)	-	Signal: Digital Input
	DI 8	1014	1	3	Bit	0x80 (8)	-	Signal: Digital Input

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
ExP[1]		49	1	3	Struct			
	ExBlo1-I	49	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	49	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	49	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm-I	49	1	3	Bit	0x8 (4)	-	Module input state: Alarm
	Trip-I	49	1	3	Bit	0x10 (5)	-	Module input state: Trip
	active	49	1	3	Bit	0x20 (6)	-	Signal: active
	ExBlo	49	1	3	Bit	0x40 (7)	-	Signal: External Blocking
	Blo TripCmd	49	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	49	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	Alarm	49	1	3	Bit	0x200 (10)	-	Signal: Alarm
	Trip (*)	49	1	3	Bit	0x400 (11)	-	Signal: Trip

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	49	1	3	Bit	0x800 (12)	-	Signal: Trip Command
ExP[2]		50	1	3	Struct			
	ExBlo1-I	50	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	50	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	50	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm-I	50	1	3	Bit	0x8 (4)	-	Module input state: Alarm
	Trip-I	50	1	3	Bit	0x10 (5)	-	Module input state: Trip
	active	50	1	3	Bit	0x20 (6)	-	Signal: active
	ExBlo	50	1	3	Bit	0x40 (7)	-	Signal: External Blocking
	Blo TripCmd	50	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	50	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	Alarm	50	1	3	Bit	0x200 (10)	-	Signal: Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	50	1	3	Bit	0x400 (11)	-	Signal: Trip
	TripCmd (*)	50	1	3	Bit	0x800 (12)	-	Signal: Trip Command
ExP[3]		51	1	3	Struct			
	ExBlo1-I	51	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	51	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	51	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm-I	51	1	3	Bit	0x8 (4)	-	Module input state: Alarm
	Trip-I	51	1	3	Bit	0x10 (5)	-	Module input state: Trip
	active	51	1	3	Bit	0x20 (6)	-	Signal: active
	ExBlo	51	1	3	Bit	0x40 (7)	-	Signal: External Blocking
	Blo TripCmd	51	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	51	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	51	1	3	Bit	0x200 (10)	-	Signal: Alarm
	Trip (*)	51	1	3	Bit	0x400 (11)	-	Signal: Trip
	TripCmd (*)	51	1	3	Bit	0x800 (12)	-	Signal: Trip Command
ExP[4]		52	1	3	Struct			
	ExBlo1-I	52	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	52	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	52	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm-I	52	1	3	Bit	0x8 (4)	-	Module input state: Alarm
	Trip-I	52	1	3	Bit	0x10 (5)	-	Module input state: Trip
	active	52	1	3	Bit	0x20 (6)	-	Signal: active
	ExBlo	52	1	3	Bit	0x40 (7)	-	Signal: External Blocking
	Blo TripCmd	52	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd	52	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	Alarm	52	1	3	Bit	0x200 (10)	-	Signal: Alarm
	Trip (*)	52	1	3	Bit	0x400 (11)	-	Signal: Trip
	TripCmd (*)	52	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Ext Oil Temp		125	1	3	Struct			
	ExBlo1-I	125	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	125	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	125	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	125	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	125	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	125	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	125	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	125	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm-I	125	1	3	Bit	0x100 (9)	-	Module input state: Alarm
	Trip (*)	125	1	3	Bit	0x200 (10)	-	Signal: Trip
	Trip-I (*)	125	1	3	Bit	0x400 (11)	-	Module input state: Trip
	TripCmd (*)	125	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Ext Sudd Press		126	1	3	Struct			
	ExBlo1-I	126	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	126	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	126	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	126	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	126	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	126	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd	126	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	126	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm-I	126	1	3	Bit	0x100 (9)	-	Module input state: Alarm
	Trip (*)	126	1	3	Bit	0x200 (10)	-	Signal: Trip
	Trip-I (*)	126	1	3	Bit	0x400 (11)	-	Module input state: Trip
	TripCmd (*)	126	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Ext Temp Superv[1]		127	1	3	Struct			
	ExBlo1-I	127	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	127	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	127	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	127	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	127	1	3	Bit	0x10 (5)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo TripCmd	127	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	127	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	127	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm-I	127	1	3	Bit	0x100 (9)	-	Module input state: Alarm
	Trip (*)	127	1	3	Bit	0x200 (10)	-	Signal: Trip
	Trip-I (*)	127	1	3	Bit	0x400 (11)	-	Module input state: Trip
	TripCmd (*)	127	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Ext Temp Superv[2]		128	1	3	Struct			
	ExBlo1-I	128	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	128	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	128	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	128	1	3	Bit	0x8 (4)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	128	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	128	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	128	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	128	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm-I	128	1	3	Bit	0x100 (9)	-	Module input state: Alarm
	Trip (*)	128	1	3	Bit	0x200 (10)	-	Signal: Trip
	Trip-I (*)	128	1	3	Bit	0x400 (11)	-	Module input state: Trip
	TripCmd (*)	128	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Ext Temp Superv[3]		129	1	3	Struct			
	ExBlo1-I	129	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	129	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	129	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	129	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	129	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	129	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	129	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	129	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm-I	129	1	3	Bit	0x100 (9)	-	Module input state: Alarm
	Trip (*)	129	1	3	Bit	0x200 (10)	-	Signal: Trip
	Trip-I (*)	129	1	3	Bit	0x400 (11)	-	Module input state: Trip
	TripCmd (*)	129	1	3	Bit	0x800 (12)	-	Signal: Trip Command
Fast Status Register		5000	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Device Type	5000	1	3	Bit	0xffff (1)	-	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
Fast Status Register		5001	1	3	Struct			
	Comm Version	5001	1	3	Bit	0xffff (1)	-	Modbus Communication version. This version number changes if something becomes incompatible between different Modbus releases.
Fast Status Register		5002	1	3	Struct			
	Config Bin Inp1-I	5002	1	3	Bit	0x1 (1)	-	State of the module input: Config Bin Inp

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Config Bin Inp2-I	5002	1	3	Bit	0x2 (2)	-	State of the module input: Config Bin Inp
	Config Bin Inp3-I	5002	1	3	Bit	0x4 (3)	-	State of the module input: Config Bin Inp
	Config Bin Inp4-I	5002	1	3	Bit	0x8 (4)	-	State of the module input: Config Bin Inp
	Config Bin Inp5-I	5002	1	3	Bit	0x10 (5)	-	State of the module input: Config Bin Inp
	Config Bin Inp6-I	5002	1	3	Bit	0x20 (6)	-	State of the module input: Config Bin Inp
	Config Bin Inp7-I	5002	1	3	Bit	0x40 (7)	-	State of the module input: Config Bin Inp
	Config Bin Inp8-I	5002	1	3	Bit	0x80 (8)	-	State of the module input: Config Bin Inp
	Config Bin Inp9-I	5002	1	3	Bit	0x100 (9)	-	State of the module input: Config Bin Inp
	Config Bin Inp10-I	5002	1	3	Bit	0x200 (10)	-	State of the module input: Config Bin Inp
	Config Bin Inp11-I	5002	1	3	Bit	0x400 (11)	-	State of the module input: Config Bin Inp
	Config Bin Inp12-I	5002	1	3	Bit	0x800 (12)	-	State of the module input: Config Bin Inp

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Config Bin Inp13-I	5002	1	3	Bit	0x1000 (13)	-	State of the module input: Config Bin Inp
	Config Bin Inp14-I	5002	1	3	Bit	0x2000 (14)	-	State of the module input: Config Bin Inp
	Config Bin Inp15-I	5002	1	3	Bit	0x4000 (15)	-	State of the module input: Config Bin Inp
	Config Bin Inp16-I	5002	1	3	Bit	0x8000 (16)	-	State of the module input: Config Bin Inp
Fast Status Register		5003	1	3	Struct			
	Config Bin Inp17-I	5003	1	3	Bit	0x1 (1)	-	State of the module input: Config Bin Inp
	Config Bin Inp18-I	5003	1	3	Bit	0x2 (2)	-	State of the module input: Config Bin Inp
	Config Bin Inp19-I	5003	1	3	Bit	0x4 (3)	-	State of the module input: Config Bin Inp
	Config Bin Inp20-I	5003	1	3	Bit	0x8 (4)	-	State of the module input: Config Bin Inp
	Config Bin Inp21-I	5003	1	3	Bit	0x10 (5)	-	State of the module input: Config Bin Inp
	Config Bin Inp22-I	5003	1	3	Bit	0x20 (6)	-	State of the module input: Config Bin Inp
	Config Bin Inp23-I	5003	1	3	Bit	0x40 (7)	-	State of the module input: Config Bin Inp

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Config Bin Inp24-I	5003	1	3	Bit	0x80 (8)	-	State of the module input: Config Bin Inp
	Config Bin Inp25-I	5003	1	3	Bit	0x100 (9)	-	State of the module input: Config Bin Inp
	Config Bin Inp26-I	5003	1	3	Bit	0x200 (10)	-	State of the module input: Config Bin Inp
	Config Bin Inp27-I	5003	1	3	Bit	0x400 (11)	-	State of the module input: Config Bin Inp
	Config Bin Inp28-I	5003	1	3	Bit	0x800 (12)	-	State of the module input: Config Bin Inp
	Config Bin Inp29-I	5003	1	3	Bit	0x1000 (13)	-	State of the module input: Config Bin Inp
	Config Bin Inp30-I	5003	1	3	Bit	0x2000 (14)	-	State of the module input: Config Bin Inp
	Config Bin Inp31-I	5003	1	3	Bit	0x4000 (15)	-	State of the module input: Config Bin Inp
	Config Bin Inp32-I	5003	1	3	Bit	0x8000 (16)	-	State of the module input: Config Bin Inp
Fast Status Register		5004	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip Cause (*)	5004	1	3	Bit	0xffff (1)	-	Initial reason of trip. It is presented as an integer value and corresponds to the “Trip” entry in the fault record, which refers to the name of the protective module that tripped first. Look up the definition of these integer values (i. e. the mapping trip code number-->module name) in the “Cause of Trip” table within the SCADA documentation.
I2>[1] - 46		82	1	3	Struct			
	ExBlo1-I	82	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	82	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	82	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	82	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	82	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	82	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	82	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	82	1	3	Bit	0x80 (8)	-	Signal: Alarm Negative Sequence
	Trip (*)	82	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	82	1	3	Bit	0x200 (10)	-	Signal: Trip Command
I2>[2] - 46		83	1	3	Struct			
	ExBlo1-I	83	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	83	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	83	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	83	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	83	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	83	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	83	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	83	1	3	Bit	0x80 (8)	-	Signal: Alarm Negative Sequence

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	83	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	83	1	3	Bit	0x200 (10)	-	Signal: Trip Command
IG[1] - 50N, 51N		15	1	3	Struct			
	ExBlo1-I	15	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	15	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	15	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	15	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	15	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	15	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	15	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	15	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	15	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	IGH2 Blo	15	1	3	Bit	0x200 (10)	-	Signal: blocked by an inrush
	Alarm	15	1	3	Bit	0x400 (11)	-	Signal: Alarm IG
	Trip (*)	15	1	3	Bit	0x800 (12)	-	Signal: Trip
	TripCmd (*)	15	1	3	Bit	0x1000 (13)	-	Signal: Trip Command
IG[2] - 50N, 51N		16	1	3	Struct			
	ExBlo1-I	16	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	16	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	16	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	16	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	16	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	16	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	16	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo TripCmd	16	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	16	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IGH2 Blo	16	1	3	Bit	0x200 (10)	-	Signal: blocked by an inrush
	Alarm	16	1	3	Bit	0x400 (11)	-	Signal: Alarm IG
	Trip (*)	16	1	3	Bit	0x800 (12)	-	Signal: Trip
	TripCmd (*)	16	1	3	Bit	0x1000 (13)	-	Signal: Trip Command
IG[3] - 50N, 51N		17	1	3	Struct			
	ExBlo1-I	17	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	17	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	17	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	17	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	17	1	3	Bit	0x10 (5)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	17	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	17	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	17	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	17	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IGH2 Blo	17	1	3	Bit	0x200 (10)	-	Signal: blocked by an inrush
	Alarm	17	1	3	Bit	0x400 (11)	-	Signal: Alarm IG
	Trip (*)	17	1	3	Bit	0x800 (12)	-	Signal: Trip
	TripCmd (*)	17	1	3	Bit	0x1000 (13)	-	Signal: Trip Command
IG[4] - 50N, 51N		18	1	3	Struct			
	ExBlo1-I	18	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	18	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	18	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex rev Interl-I	18	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	18	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	18	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	18	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	18	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	18	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IGH2 Blo	18	1	3	Bit	0x200 (10)	-	Signal: blocked by an inrush
	Alarm	18	1	3	Bit	0x400 (11)	-	Signal: Alarm IG
	Trip (*)	18	1	3	Bit	0x800 (12)	-	Signal: Trip
	TripCmd (*)	18	1	3	Bit	0x1000 (13)	-	Signal: Trip Command
IH2		22	1	3	Struct			
	ExBlo1-I	22	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	22	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	22	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	22	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Blo L1	22	1	3	Bit	0x10 (5)	-	Signal: Blocked L1
	Blo L2	22	1	3	Bit	0x20 (6)	-	Signal: Blocked L2
	Blo L3	22	1	3	Bit	0x40 (7)	-	Signal: Blocked L3
	Blo IG meas	22	1	3	Bit	0x80 (8)	-	Signal: Blocking of the ground (earth) protection module (measured ground current)
	3-ph Blo	22	1	3	Bit	0x100 (9)	-	Signal: Inrush was detected in at least one phase - trip command blocked.
	Blo IG calc	22	1	3	Bit	0x200 (10)	-	Signal: Blocking of the ground (earth) protection module (calculated ground current)
IRIG-B		148	1	3	Struct			
	IRIG-B active	148	1	3	Bit	0x1 (1)	-	Signal: If there is no valid IRIG-B signal for 60 sec, IRIG-B is regarded as inactive.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	High-Low Invert	148	1	3	Bit	0x2 (2)	-	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.
I[1] - 50, 51		3	1	3	Struct			
	ExBlo1-I	3	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	3	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	3	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	3	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	3	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	3	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	3	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	3	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	3	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	IH2 Blo	3	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[1] - 50, 51		4	1	3	Struct			
	Alarm L1	4	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	4	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	4	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	4	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	4	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	4	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	4	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	4	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	4	1	3	Bit	0x100 (9)	-	Signal: Trip Command
I[2] - 50, 51		5	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	5	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	5	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	5	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	5	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	5	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	5	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	5	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	5	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	5	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IH2 Blo	5	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[2] - 50, 51		6	1	3	Struct			
	Alarm L1	6	1	3	Bit	0x1 (1)	-	Signal: Alarm L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L2	6	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	6	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	6	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	6	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	6	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	6	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	6	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	6	1	3	Bit	0x100 (9)	-	Signal: Trip Command
I[3] - 50, 51		7	1	3	Struct			
	ExBlo1-I	7	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	7	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	7	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex rev Interl-I	7	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	7	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	7	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	7	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	7	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	7	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IH2 Blo	7	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[3] - 50, 51		8	1	3	Struct			
	Alarm L1	8	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	8	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	8	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	8	1	3	Bit	0x8 (4)	-	Signal: Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip L1 (*)	8	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	8	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	8	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	8	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	8	1	3	Bit	0x100 (9)	-	Signal: Trip Command
I[4] - 50, 51		9	1	3	Struct			
	ExBlo1-I	9	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	9	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	9	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	9	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	9	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	9	1	3	Bit	0x20 (6)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex rev Interl	9	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	9	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	9	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IH2 Blo	9	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[4] - 50, 51		10	1	3	Struct			
	Alarm L1	10	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	10	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	10	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	10	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	10	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	10	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	10	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	10	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	10	1	3	Bit	0x100 (9)	-	Signal: Trip Command
I[5] - 50, 51		11	1	3	Struct			
	ExBlo1-I	11	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	11	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	11	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	11	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	11	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	11	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	11	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	11	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	11	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	IH2 Blo	11	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[5] - 50, 51		12	1	3	Struct			
	Alarm L1	12	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	12	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	12	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	12	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	12	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	12	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	12	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	12	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	12	1	3	Bit	0x100 (9)	-	Signal: Trip Command
I[6] - 50, 51		13	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	13	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	13	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	13	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Ex rev Interl-I	13	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	13	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	13	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	13	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	Blo TripCmd	13	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	13	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	IH2 Blo	13	1	3	Bit	0x200 (10)	-	Signal: Blocking the trip command by an inrush
I[6] - 50, 51		14	1	3	Struct			
	Alarm L1	14	1	3	Bit	0x1 (1)	-	Signal: Alarm L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L2	14	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	14	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	14	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	14	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	14	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	14	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	14	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	14	1	3	Bit	0x100 (9)	-	Signal: Trip Command
Id - 87		130	1	3	Struct			
	ExBlo1-I	130	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	130	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	130	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	130	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	130	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	130	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	130	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Blo H2	130	1	3	Bit	0x80 (8)	-	Signal: Blocked by Harmonic:2
	Blo H4	130	1	3	Bit	0x100 (9)	-	Signal: Blocked by Harmonic:4
	Blo H5	130	1	3	Bit	0x200 (10)	-	Signal: Blocked by Harmonic:5
	H2,H4,H5 Blo	130	1	3	Bit	0x400 (11)	-	Signal: Blocked by Harmonics (Inhibit)
	Restraining	130	1	3	Bit	0x1000 (13)	-	Signal: Restraining of the differential protection by means of rising the tripping curve.
	Transient	130	1	3	Bit	0x2000 (14)	-	Signal: Temporary stabilization of the differential protection afterwards the transformer is being engergized.
Id - 87		131	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L1	131	1	3	Bit	0x1 (1)	-	Signal: Alarm System Phase L1
	Alarm L2	131	1	3	Bit	0x2 (2)	-	Signal: Alarm System Phase L2
	Alarm L3	131	1	3	Bit	0x4 (3)	-	Signal: Alarm System L3
	Alarm	131	1	3	Bit	0x8 (4)	-	Signal: Alarm
	Trip L1 (*)	131	1	3	Bit	0x10 (5)	-	Signal: Trip System Phase L1
	Trip L2 (*)	131	1	3	Bit	0x20 (6)	-	Signal: Trip System Phase L2
	Trip L3 (*)	131	1	3	Bit	0x40 (7)	-	Signal: Trip System Phase L3
	Trip (*)	131	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	131	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	Restraining: L1	131	1	3	Bit	0x1000 (13)	-	Restraining: L1
	Restraining: L2	131	1	3	Bit	0x2000 (14)	-	Restraining: L2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Restraining: L3	131	1	3	Bit	0x4000 (15)	-	Restraining: L3
Id - 87		262	1	3	Struct			
	IH2 Blo L1	262	1	3	Bit	0x1 (1)	-	Signal:Phase L1: Blocking of the Phase Differential Protection because of second Harmonic.
	IH2 Blo L2	262	1	3	Bit	0x2 (2)	-	Signal:Phase L2: Blocking of the Phase Differential Protection because of second Harmonic.
	IH2 Blo L3	262	1	3	Bit	0x4 (3)	-	Signal:Phase L3: Blocking of the Phase Differential Protection because of second Harmonic.
	IH4 Blo L1	262	1	3	Bit	0x8 (4)	-	Signal:Phase L1: Blocking of the Phase Differential Protection because of fourth Harmonic.
	IH4 Blo L2 (*)	262	1	3	Bit	0x10 (5)	-	Signal:Phase L2: Blocking of the Phase Differential Protection because of fourth Harmonic.
	IH4 Blo L3 (*)	262	1	3	Bit	0x20 (6)	-	Signal:Phase L3: Blocking of the Phase Differential Protection because of fourth Harmonic.
	IH5 Blo L1 (*)	262	1	3	Bit	0x40 (7)	-	Signal:Phase L1: Blocking of the Phase Differential Protection because of fifth Harmonic.
	IH5 Blo L2 (*)	262	1	3	Bit	0x80 (8)	-	Signal:Phase L2: Blocking of the Phase Differential Protection because of fifth Harmonic.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	IH5 Blo L3 (*)	262	1	3	Bit	0x100 (9)	-	Signal:Phase L3: Blocking of the Phase Differential Protection because of fifth Harmonic.
	CT Satur.Stab. triggered (*)	262	1	3	Bit	0x200 (10)	-	Signal: Temporary restraining of the Phase Differential Protection, triggered by the detection of an external fault in case of CT saturation.
	CT Satur.Stab. L1 trig. (*)	262	1	3	Bit	0x400 (11)	-	Signal: Temporary restraining of the Phase Differential Protection in phase L1, triggered by the detection of an external phase L1 fault in case of CT saturation.
	CT Satur.Stab. L2 trig. (*)	262	1	3	Bit	0x800 (12)	-	Signal: Temporary restraining of the Phase Differential Protection in phase L2, triggered by the detection of an external phase L2 fault in case of CT saturation.
	CT Satur.Stab. L3 trig. (*)	262	1	3	Bit	0x1000 (13)	-	Signal: Temporary restraining of the Phase Differential Protection in phase L3, triggered by the detection of an external phase L3 fault in case of CT saturation.
IdG - 87N		132	1	3	Struct			
	ExBlo1-I	132	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	132	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd-I	132	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	132	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	132	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	132	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	132	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	132	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Trip (*)	132	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	132	1	3	Bit	0x200 (10)	-	Signal: Trip Command
IdGH - 87N		134	1	3	Struct			
	ExBlo1-I	134	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	134	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	134	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	134	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	134	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	134	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	134	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	134	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Trip (*)	134	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	134	1	3	Bit	0x200 (10)	-	Signal: Trip Command
IdH - 87		136	1	3	Struct			
	ExBlo1-I	136	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	136	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	136	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	136	1	3	Bit	0x8 (4)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	136	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	136	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	136	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	136	1	3	Bit	0x80 (8)	-	Signal: Alarm
	Alarm L1	136	1	3	Bit	0x100 (9)	-	Signal: Alarm System Phase L1
	Alarm L2	136	1	3	Bit	0x200 (10)	-	Signal: Alarm System Phase L2
	Alarm L3	136	1	3	Bit	0x400 (11)	-	Signal: Alarm System L3
	Trip (*)	136	1	3	Bit	0x800 (12)	-	Signal: Trip
	Trip L1 (*)	136	1	3	Bit	0x1000 (13)	-	Signal: Trip System Phase L1
	Trip L2 (*)	136	1	3	Bit	0x2000 (14)	-	Signal: Trip System Phase L2
	Trip L3 (*)	136	1	3	Bit	0x4000 (15)	-	Signal: Trip System Phase L3

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	136	1	3	Bit	0x8000 (16)	-	Signal: Trip Command
Intertripping		253	1	3	Struct			
	ExBlo1-I	253	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	253	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	253	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm-I	253	1	3	Bit	0x8 (4)	-	Module input state: Alarm
	Trip-I	253	1	3	Bit	0x10 (5)	-	Module input state: Trip
	active	253	1	3	Bit	0x20 (6)	-	Signal: active
	ExBlo	253	1	3	Bit	0x40 (7)	-	Signal: External Blocking
	Blo TripCmd	253	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	253	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	Alarm	253	1	3	Bit	0x200 (10)	-	Signal: Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	253	1	3	Bit	0x400 (11)	-	Signal: Trip
	TripCmd (*)	253	1	3	Bit	0x800 (12)	-	Signal: Trip Command
LOP		81	1	3	Struct			
	ExBlo1-I	81	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	81	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	81	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	81	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	LOP Blo	81	1	3	Bit	0x10 (5)	-	Signal: Loss of Potential blocks other elements.
	Alarm	81	1	3	Bit	0x20 (6)	-	Signal: Alarm Loss of Potential
	Ex FF EVT	81	1	3	Bit	0x1000 (13)	-	Signal: Alarm Fuse Failure Earth Voltage Transformers
	Ex FF VT	81	1	3	Bit	0x2000 (14)	-	Signal: Ex FF VT
LOP		202	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex FF EVT-I	202	1	3	Bit	0x1 (1)	-	State of the module input: Alarm Fuse Failure Earth Voltage Transformers
	Ex FF VT-I	202	1	3	Bit	0x2 (2)	-	State of the module input: Alarm Fuse Failure Voltage Transformers
	Blo Trigger1-I	202	1	3	Bit	0x4 (3)	-	State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.
	Blo Trigger2-I	202	1	3	Bit	0x8 (4)	-	State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.
	Blo Trigger3-I	202	1	3	Bit	0x10 (5)	-	State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.
	Blo Trigger4-I	202	1	3	Bit	0x20 (6)	-	State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.
	Blo Trigger5-I	202	1	3	Bit	0x40 (7)	-	State of the module input: An Alarm of this protective element will block the Loss of Potential Detection.
LVRT[1] - 27		254	1	3	Struct			
	ExBlo1-I	254	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	254	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	254	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	254	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	254	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	254	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	254	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
LVRT[1] - 27		255	1	3	Struct			
	Alarm L1	255	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	255	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	255	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	255	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage
	Trip L1 (*)	255	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	255	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	255	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	255	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	255	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	t-LVRT is running (*)	255	1	3	Bit	0x200 (10)	-	Signal: t-LVRT is running
LVRT[2] - 27		270	1	3	Struct			
	ExBlo1-I	270	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	270	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	270	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	270	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	270	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	270	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	270	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
LVRT[2] - 27		271	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L1	271	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	271	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	271	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	271	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage
	Trip L1 (*)	271	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	271	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	271	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	271	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	271	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	t-LVRT is running (*)	271	1	3	Bit	0x200 (10)	-	Signal: t-LVRT is running
Logics		1100	1	3	Struct			
	LE1.Gate Out	1100	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE1.Timer Out	1100	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE1.Out	1100	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE1.Out inverted	1100	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE1.Gate In1-I	1100	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE1.Gate In2-I	1100	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE1.Gate In3-I	1100	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE1.Gate In4-I	1100	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE1.Reset Latch-I	1100	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1101	1	3	Struct			
	LE2.Gate Out	1101	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE2.Timer Out	1101	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE2.Out	1101	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE2.Out inverted	1101	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE2.Gate In1-I	1101	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE2.Gate In2-I	1101	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE2.Gate In3-I	1101	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE2.Gate In4-I	1101	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE2.Reset Latch-I	1101	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1102	1	3	Struct			
	LE3.Gate Out	1102	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE3.Timer Out	1102	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE3.Out	1102	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE3.Out inverted	1102	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE3.Gate In1-I	1102	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE3.Gate In2-I	1102	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE3.Gate In3-I	1102	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE3.Gate In4-I	1102	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE3.Reset Latch-I	1102	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1103	1	3	Struct			
	LE4.Gate Out	1103	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE4.Timer Out	1103	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE4.Out	1103	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE4.Out inverted	1103	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE4.Gate In1-I	1103	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE4.Gate In2-I	1103	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE4.Gate In3-I	1103	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE4.Gate In4-I	1103	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE4.Reset Latch-I	1103	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1104	1	3	Struct			
	LE5.Gate Out	1104	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE5.Timer Out	1104	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE5.Out	1104	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE5.Out inverted	1104	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE5.Gate In1-I	1104	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE5.Gate In2-I	1104	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE5.Gate In3-I	1104	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE5.Gate In4-I	1104	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE5.Reset Latch-I	1104	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Logics		1105	1	3	Struct			
	LE6.Gate Out	1105	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE6.Timer Out	1105	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE6.Out	1105	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE6.Out inverted	1105	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE6.Gate In1-I	1105	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE6.Gate In2-I	1105	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE6.Gate In3-I	1105	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE6.Gate In4-I	1105	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE6.Reset Latch-I	1105	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1106	1	3	Struct			
	LE7.Gate Out	1106	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE7.Timer Out	1106	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE7.Out	1106	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE7.Out inverted	1106	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE7.Gate In1-I	1106	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE7.Gate In2-I	1106	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE7.Gate In3-I	1106	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE7.Gate In4-I	1106	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE7.Reset Latch-I	1106	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1107	1	3	Struct			
	LE8.Gate Out	1107	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE8.Timer Out	1107	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE8.Out	1107	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE8.Out inverted	1107	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE8.Gate In1-I	1107	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE8.Gate In2-I	1107	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE8.Gate In3-I	1107	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE8.Gate In4-I	1107	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE8.Reset Latch-I	1107	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1108	1	3	Struct			
	LE9.Gate Out	1108	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE9.Timer Out	1108	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE9.Out	1108	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE9.Out inverted	1108	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE9.Gate In1-I	1108	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE9.Gate In2-I	1108	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE9.Gate In3-I	1108	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE9.Gate In4-I	1108	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE9.Reset Latch-I	1108	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1109	1	3	Struct			
	LE10.Gate Out	1109	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE10.Timer Out	1109	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE10.Out	1109	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE10.Out inverted	1109	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE10.Gate In1-I	1109	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE10.Gate In2-I	1109	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE10.Gate In3-I	1109	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE10.Gate In4-I	1109	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE10.Reset Latch-I	1109	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1110	1	3	Struct			
	LE11.Gate Out	1110	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE11.Timer Out	1110	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE11.Out	1110	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE11.Out inverted	1110	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE11.Gate In1-I	1110	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE11.Gate In2-I	1110	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE11.Gate In3-I	1110	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE11.Gate In4-I	1110	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE11.Reset Latch-I	1110	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Logics		1111	1	3	Struct			
	LE12.Gate Out	1111	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE12.Timer Out	1111	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE12.Out	1111	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE12.Out inverted	1111	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE12.Gate In1-I	1111	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE12.Gate In2-I	1111	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE12.Gate In3-I	1111	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE12.Gate In4-I	1111	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE12.Reset Latch-I	1111	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1112	1	3	Struct			
	LE13.Gate Out	1112	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE13.Timer Out	1112	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE13.Out	1112	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE13.Out inverted	1112	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE13.Gate In1-I	1112	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE13.Gate In2-I	1112	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE13.Gate In3-I	1112	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE13.Gate In4-I	1112	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE13.Reset Latch-I	1112	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1113	1	3	Struct			
	LE14.Gate Out	1113	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE14.Timer Out	1113	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE14.Out	1113	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE14.Out inverted	1113	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE14.Gate In1-I	1113	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE14.Gate In2-I	1113	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE14.Gate In3-I	1113	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE14.Gate In4-I	1113	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE14.Reset Latch-I	1113	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1114	1	3	Struct			
	LE15.Gate Out	1114	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE15.Timer Out	1114	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE15.Out	1114	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE15.Out inverted	1114	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE15.Gate In1-I	1114	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE15.Gate In2-I	1114	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE15.Gate In3-I	1114	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE15.Gate In4-I	1114	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE15.Reset Latch-I	1114	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1115	1	3	Struct			
	LE16.Gate Out	1115	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE16.Timer Out	1115	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE16.Out	1115	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE16.Out inverted	1115	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE16.Gate In1-I	1115	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE16.Gate In2-I	1115	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE16.Gate In3-I	1115	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE16.Gate In4-I	1115	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE16.Reset Latch-I	1115	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1116	1	3	Struct			
	LE17.Gate Out	1116	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE17.Timer Out	1116	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE17.Out	1116	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE17.Out inverted	1116	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE17.Gate In1-I	1116	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE17.Gate In2-I	1116	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE17.Gate In3-I	1116	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE17.Gate In4-I	1116	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE17.Reset Latch-I	1116	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Logics		1117	1	3	Struct			
	LE18.Gate Out	1117	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE18.Timer Out	1117	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE18.Out	1117	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE18.Out inverted	1117	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE18.Gate In1-I	1117	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE18.Gate In2-I	1117	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE18.Gate In3-I	1117	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE18.Gate In4-I	1117	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE18.Reset Latch-I	1117	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1118	1	3	Struct			
	LE19.Gate Out	1118	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE19.Timer Out	1118	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE19.Out	1118	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)
	LE19.Out inverted	1118	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE19.Gate In1-I	1118	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE19.Gate In2-I	1118	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE19.Gate In3-I	1118	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE19.Gate In4-I	1118	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE19.Reset Latch-I	1118	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Logics		1119	1	3	Struct			
	LE20.Gate Out	1119	1	3	Bit	0x1 (1)	-	Signal: Output of the logic gate
	LE20.Timer Out	1119	1	3	Bit	0x2 (2)	-	Signal: Timer Output
	LE20.Out	1119	1	3	Bit	0x4 (3)	-	Signal: Latched Output (Q)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	LE20.Out inverted	1119	1	3	Bit	0x8 (4)	-	Signal: Negated Latched Output (Q NOT)
	LE20.Gate In1-I	1119	1	3	Bit	0x10 (5)	-	State of the module input: Assignment of the Input Signal
	LE20.Gate In2-I	1119	1	3	Bit	0x20 (6)	-	State of the module input: Assignment of the Input Signal
	LE20.Gate In3-I	1119	1	3	Bit	0x40 (7)	-	State of the module input: Assignment of the Input Signal
	LE20.Gate In4-I	1119	1	3	Bit	0x80 (8)	-	State of the module input: Assignment of the Input Signal
	LE20.Reset Latch-I	1119	1	3	Bit	0x100 (9)	-	State of the module input: Reset Signal for the Latching
Modbus		1005	1	3	Struct			
	Scada Cmd 1	1005	1	3	Bit	0x1 (1)	-	Scada Command
	Scada Cmd 2	1005	1	3	Bit	0x2 (2)	-	Scada Command
	Scada Cmd 3	1005	1	3	Bit	0x4 (3)	-	Scada Command
	Scada Cmd 4	1005	1	3	Bit	0x8 (4)	-	Scada Command
	Scada Cmd 5	1005	1	3	Bit	0x10 (5)	-	Scada Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Scada Cmd 6	1005	1	3	Bit	0x20 (6)	-	Scada Command
	Scada Cmd 7	1005	1	3	Bit	0x40 (7)	-	Scada Command
	Scada Cmd 8	1005	1	3	Bit	0x80 (8)	-	Scada Command
	Scada Cmd 9	1005	1	3	Bit	0x100 (9)	-	Scada Command
	Scada Cmd 10	1005	1	3	Bit	0x200 (10)	-	Scada Command
	Scada Cmd 11	1005	1	3	Bit	0x400 (11)	-	Scada Command
	Scada Cmd 12	1005	1	3	Bit	0x800 (12)	-	Scada Command
	Scada Cmd 13	1005	1	3	Bit	0x1000 (13)	-	Scada Command
	Scada Cmd 14	1005	1	3	Bit	0x2000 (14)	-	Scada Command
	Scada Cmd 15	1005	1	3	Bit	0x4000 (15)	-	Scada Command
	Scada Cmd 16	1005	1	3	Bit	0x8000 (16)	-	Scada Command
P - 32R		251	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	251	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	251	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	251	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	251	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	251	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	251	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	251	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	251	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	251	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	251	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PF[1] - 55		73	1	3	Struct			
	ExBlo1-I	73	1	3	Bit	0x1 (1)	-	Module input state: External blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	73	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	73	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	73	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	73	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	73	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	73	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	73	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Factor
	Trip (*)	73	1	3	Bit	0x100 (9)	-	Signal: Trip Power Factor
	TripCmd (*)	73	1	3	Bit	0x200 (10)	-	Signal: Trip Command
	Compensator	73	1	3	Bit	0x400 (11)	-	Signal: Compensation Signal
	Impossible	73	1	3	Bit	0x800 (12)	-	Signal: Alarm Power Factor Impossible
PF[2] - 55		74	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	74	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	74	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	74	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	74	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	74	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	74	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	74	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	74	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Factor
	Trip (*)	74	1	3	Bit	0x100 (9)	-	Signal: Trip Power Factor
	TripCmd (*)	74	1	3	Bit	0x200 (10)	-	Signal: Trip Command
	Compensator	74	1	3	Bit	0x400 (11)	-	Signal: Compensation Signal

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Impossible	74	1	3	Bit	0x800 (12)	-	Signal: Alarm Power Factor Impossible
PQSCr		60	1	3	Struct			
	Cr Oflw Wp+	60	1	3	Bit	0x1 (1)	-	Signal: Counter Overflow Wp+
	Cr Oflw Wp-	60	1	3	Bit	0x2 (2)	-	Signal: Counter Overflow Wp-
	Cr Oflw Wq+	60	1	3	Bit	0x4 (3)	-	Signal: Counter Overflow Wq+
	Cr Oflw Wq-	60	1	3	Bit	0x8 (4)	-	Signal: Counter Overflow Wq-
	Cr Oflw Wp Net	60	1	3	Bit	0x10 (5)	-	Signal: Counter Overflow Wp Net
	Cr Oflw Wq Net	60	1	3	Bit	0x20 (6)	-	Signal: Counter Overflow Wq Net
	Cr Oflw Ws Net	60	1	3	Bit	0x40 (7)	-	Signal: Counter Overflow Ws Net
	Cr OflwW Wp+	60	1	3	Bit	0x80 (8)	-	Signal: Counter Wp+ will overflow soon
	Cr OflwW Wp-	60	1	3	Bit	0x100 (9)	-	Signal: Counter Wp- will overflow soon
	Cr OflwW Wq+	60	1	3	Bit	0x200 (10)	-	Signal: Counter Wq+ will overflow soon

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Cr OflwW Wq-	60	1	3	Bit	0x400 (11)	-	Signal: Counter Wq- will overflow soon
	Cr OflwW Wp Net	60	1	3	Bit	0x800 (12)	-	Signal: Counter Wp Net will overflow soon
	Cr OflwW Wq Net	60	1	3	Bit	0x1000 (13)	-	Signal: Counter Wq Net will overflow soon
	Cr OflwW Ws Net	60	1	3	Bit	0x2000 (14)	-	Signal: Counter Ws Net will overflow soon
PQS[1] - 32, 37		67	1	3	Struct			
	ExBlo1-I	67	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	67	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	67	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	67	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	67	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	67	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	67	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	67	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	67	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	67	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PQS[2] - 32, 37		68	1	3	Struct			
	ExBlo1-I	68	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	68	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	68	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	68	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	68	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	68	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	68	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	68	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	68	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	68	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PQS[3] - 32, 37		69	1	3	Struct			
	ExBlo1-I	69	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	69	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	69	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	69	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	69	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	69	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	69	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	69	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	69	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	69	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PQS[4] - 32, 37		70	1	3	Struct			
	ExBlo1-I	70	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	70	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	70	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	70	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	70	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	70	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	70	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	70	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	70	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	70	1	3	Bit	0x200 (10)	-	Signal: Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
PQS[5] - 32, 37		71	1	3	Struct			
	ExBlo1-I	71	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	71	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	71	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	71	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	71	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	71	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	71	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	71	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	71	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	71	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PQS[6] - 32, 37		72	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	72	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	72	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	72	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	72	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	72	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	72	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	72	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	72	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	72	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	72	1	3	Bit	0x200 (10)	-	Signal: Trip Command
PSet-Switch		59	1	3	Struct			
	PS 1	59	1	3	Bit	0x1 (1)	-	Signal: The currently active Parameter Set is PS 1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	PS 2	59	1	3	Bit	0x2 (2)	-	Signal: The currently active Parameter Set is PS 2
	PS 3	59	1	3	Bit	0x4 (3)	-	Signal: The currently active Parameter Set is PS 3
	PS 4	59	1	3	Bit	0x8 (4)	-	Signal: The currently active Parameter Set is PS 4
	PSS manual	59	1	3	Bit	0x10 (5)	-	Signal: Manual Switch over of a Parameter Set
	PSS via Scada	59	1	3	Bit	0x20 (6)	-	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).
	PSS via Inp fct	59	1	3	Bit	0x40 (7)	-	Signal: Parameter Set Switch via input function
	PS1-I	59	1	3	Bit	0x80 (8)	-	State of the module input respectively of the signal, that should activate this Parameter Setting Group.
	PS2-I	59	1	3	Bit	0x100 (9)	-	State of the module input respectively of the signal, that should activate this Parameter Setting Group.
	PS3-I	59	1	3	Bit	0x200 (10)	-	State of the module input respectively of the signal, that should activate this Parameter Setting Group.
	PS4-I	59	1	3	Bit	0x400 (11)	-	State of the module input respectively of the signal, that should activate this Parameter Setting Group.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	min 1 param changed (*)	59	1	3	Bit	0x800 (12)	-	Signal: At least one parameter has been changed
Prot		1	1	3	Struct			
	ExBlo1-I	1	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	1	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	1	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	1	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Alarm L1	1	1	3	Bit	0x10 (5)	-	Signal: General-Alarm L1
	Alarm L2	1	1	3	Bit	0x20 (6)	-	Signal: General-Alarm L2
	Alarm L3	1	1	3	Bit	0x40 (7)	-	Signal: General-Alarm L3
	Alarm G	1	1	3	Bit	0x80 (8)	-	Signal: General-Alarm - Earth fault
	Alarm	1	1	3	Bit	0x100 (9)	-	Signal: General Alarm
	Trip L1 (*)	1	1	3	Bit	0x200 (10)	-	Signal: General Trip L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip L2 (*)	1	1	3	Bit	0x400 (11)	-	Signal: General Trip L2
	Trip L3 (*)	1	1	3	Bit	0x800 (12)	-	Signal: General Trip L3
	Trip G (*)	1	1	3	Bit	0x1000 (13)	-	Signal: General Trip Ground fault
	Trip (*)	1	1	3	Bit	0x2000 (14)	-	Signal: General Trip
Prot		2	1	3	Struct			
	Blo TripCmd	2	1	3	Bit	0x1 (1)	-	Signal: Trip Command blocked
	ExBlo TripCmd-I	2	1	3	Bit	0x2 (2)	-	Module input state: External Blocking of the Trip Command
	ExBlo TripCmd	2	1	3	Bit	0x4 (3)	-	Signal: External Blocking of the Trip Command
	I dir fwd	2	1	3	Bit	0x80 (8)	-	Signal: Phase current failure forward direction
	I dir rev	2	1	3	Bit	0x100 (9)	-	Signal: Phase current failure reverse direction
	I dir n poss	2	1	3	Bit	0x200 (10)	-	Signal: Phase fault - missing reference voltage
Prot		57	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	FaultNo	57	1	3	Bit	0xffff (1)	-	Fault number
Prot		58	1	3	Struct			
	No. of Grid Fault	58	1	3	Bit	0xffff (1)	-	Number of grid fault: A grid fault, e.g. a short circuit, might cause several faults with trip and autoreclosing; in this case, the fault number counts each fault, but the grid fault number remains the same.
Prot		200	1	3	Struct			
	IG calc dir rev	200	1	3	Bit	0x1 (1)	-	Signal: Ground fault (calculated) reverse direction
	IG calc dir fwd	200	1	3	Bit	0x2 (2)	-	Signal: Ground fault (calculated) forward
	IG calc dir n poss	200	1	3	Bit	0x4 (3)	-	Signal: Ground fault (calculated) direction detection not possible
	IG meas dir rev	200	1	3	Bit	0x8 (4)	-	Signal: Ground fault (measured) reverse direction
	IG meas dir fwd	200	1	3	Bit	0x10 (5)	-	Signal: Ground fault (measured) forward
	IG meas dir n poss	200	1	3	Bit	0x20 (6)	-	Signal: Ground fault (measured) direction detection not possible
ProtCom		279	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	279	1	3	Bit	0x4 (3)	-	Signal: active
	inactive	279	1	3	Bit	0x8 (4)	-	Signal: inactive
	ExBlo	279	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo forced	279	1	3	Bit	0x20 (6)	-	Protection-communication is temporarily forced to be deactivated (blocked).
	Qual.Warn.	279	1	3	Bit	0x40 (7)	-	Error Rate is above warning level.
	Comm.Ok	279	1	3	Bit	0x80 (8)	-	Protection-communication Ok. Measuring systems is synchron with remote device.
	FrameSync	279	1	3	Bit	0x100 (9)	-	Frames are synchronized.
	TimeSync	279	1	3	Bit	0x200 (10)	-	Internal time bases are synchronized.
	Loopback	279	1	3	Bit	0x400 (11)	-	Device is in Loopback-mode.
Q - 32		252	1	3	Struct			
	ExBlo1-I	252	1	3	Bit	0x1 (1)	-	Module input state: External blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	252	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	252	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	252	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	252	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	252	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	252	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	252	1	3	Bit	0x80 (8)	-	Signal: Alarm Power Protection
	Trip (*)	252	1	3	Bit	0x100 (9)	-	Signal: Trip Power Protection
	TripCmd (*)	252	1	3	Bit	0x200 (10)	-	Signal: Trip Command
Q->&V<		157	1	3	Struct			
	ExBlo1-I	157	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	157	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	157	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	157	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Fuse Fail VT Blo	157	1	3	Bit	0x10 (5)	-	Signal: Blocked by Fuse Failure (VT)
	Alarm	157	1	3	Bit	0x20 (6)	-	Signal: Alarm Reactive Power Undervoltage Protection
	Decoupling PCC	157	1	3	Bit	0x200 (10)	-	Signal: Decoupling at the Point of Common Coupling
	Decoupling Distr. Generator	157	1	3	Bit	0x400 (11)	-	Signal: Decoupling of the (local) Energy Generator/Resource
ReCon[1]		158	1	3	Struct			
	ExBlo1-I	158	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	158	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	158	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	158	1	3	Bit	0x8 (4)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo by Meas Ciruit Superv	158	1	3	Bit	0x10 (5)	-	Signal: Module blocked by measuring cirucuit supervision
	reconnected-I	158	1	3	Bit	0x20 (6)	-	This signal indicates the state "reconnected" (mains parallel).
	V Ext Release PCC-I	158	1	3	Bit	0x40 (7)	-	Module input state: Release signal is being generated by the PCC (External Release)
	PCC Fuse Fail VT-I	158	1	3	Bit	0x80 (8)	-	State of the module input: Blocking if the fuse of a voltage transformer has tripped at the PCC.
	Release Energy Resource	158	1	3	Bit	0x100 (9)	-	Signal: Release Energy Resource.
	Decoupling1-I	158	1	3	Bit	0x200 (10)	-	Decoupling function, that blocks the reconnection.
	Decoupling2-I	158	1	3	Bit	0x400 (11)	-	Decoupling function, that blocks the reconnection.
	Decoupling3-I	158	1	3	Bit	0x800 (12)	-	Decoupling function, that blocks the reconnection.
	Decoupling4-I	158	1	3	Bit	0x1000 (13)	-	Decoupling function, that blocks the reconnection.
	Decoupling5-I	158	1	3	Bit	0x2000 (14)	-	Decoupling function, that blocks the reconnection.
	Decoupling6-I	158	1	3	Bit	0x4000 (15)	-	Decoupling function, that blocks the reconnection.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
ReCon[2]		159	1	3	Struct			
	ExBlo1-I	159	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	159	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	159	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	159	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Blo by Meas Ciruit Superv	159	1	3	Bit	0x10 (5)	-	Signal: Module blocked by measuring cirucuit supervision
	reconnected-I	159	1	3	Bit	0x20 (6)	-	This signal indicates the state "reconnected" (mains parallel).
	V Ext Release PCC-I	159	1	3	Bit	0x40 (7)	-	Module input state: Release signal is being generated by the PCC (External Release)
	PCC Fuse Fail VT-I	159	1	3	Bit	0x80 (8)	-	State of the module input: Blocking if the fuse of a voltage transformer has tripped at the PCC.
	Release Energy Resource	159	1	3	Bit	0x100 (9)	-	Signal: Release Energy Resource.
	Decoupling1-I	159	1	3	Bit	0x200 (10)	-	Decoupling function, that blocks the reconnection.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Decoupling2-I	159	1	3	Bit	0x400 (11)	-	Decoupling function, that blocks the reconnection.
	Decoupling3-I	159	1	3	Bit	0x800 (12)	-	Decoupling function, that blocks the reconnection.
	Decoupling4-I	159	1	3	Bit	0x1000 (13)	-	Decoupling function, that blocks the reconnection.
	Decoupling5-I	159	1	3	Bit	0x2000 (14)	-	Decoupling function, that blocks the reconnection.
	Decoupling6-I	159	1	3	Bit	0x4000 (15)	-	Decoupling function, that blocks the reconnection.
SG[1]		177	1	3	Struct			
	Aux OFF-I	177	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	177	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	177	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	177	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.
	Interl OFF1-I	177	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF2-I	177	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	177	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	177	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	177	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	177	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	177	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	177	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	177	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	177	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.
	OFF Cmd manual	177	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[1]		178	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ON Cmd	178	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	178	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	178	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	178	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	178	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	178	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	178	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	178	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES SwitchDir	178	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	178	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	178	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	178	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	178	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[1]		179	1	3	Struct			
	Pos Disturb	179	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	179	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	179	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	179	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	179	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	179	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	179	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	179	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	179	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	179	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	179	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	179	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	179	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	179	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[1]		195	1	3	Struct			
	Isum Intr trip	195	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	195	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	195	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	195	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	195	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	195	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	195	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	195	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[1]		256	1	3	Struct			
	Removed-I	256	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	256	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	256	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SG[2]		180	1	3	Struct			
	Aux OFF-I	180	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	180	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	180	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	180	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF1-I	180	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command
	Interl OFF2-I	180	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	180	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	180	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	180	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	180	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	180	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	180	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	180	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	180	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	OFF Cmd manual	180	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[2]		181	1	3	Struct			
	ON Cmd	181	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	181	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	181	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	181	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	181	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	181	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	181	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	181	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES SwitchDir	181	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	181	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	181	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	181	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	181	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[2]		182	1	3	Struct			
	Pos Disturb	182	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	182	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	182	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	182	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	182	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	182	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	182	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	182	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	182	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	182	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	182	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	182	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	182	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	182	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[2]		196	1	3	Struct			
	Isum Intr trip	196	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	196	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	196	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	196	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	196	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	196	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	196	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	196	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[2]		257	1	3	Struct			
	Removed-I	257	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	257	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	257	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SG[3]		183	1	3	Struct			
	Aux OFF-I	183	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	183	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	183	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	183	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF1-I	183	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command
	Interl OFF2-I	183	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	183	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	183	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	183	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	183	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	183	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	183	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	183	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	183	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	OFF Cmd manual	183	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[3]		184	1	3	Struct			
	ON Cmd	184	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	184	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	184	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	184	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	184	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	184	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	184	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	184	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
	CES SwitchDir	184	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	184	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	184	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	184	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	184	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[3]		185	1	3	Struct			
	Pos Disturb	185	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	185	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	185	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	185	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	185	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	185	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	185	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	185	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	185	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	185	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	185	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	185	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	185	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	185	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[3]		197	1	3	Struct			
	Isum Intr trip	197	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	197	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	197	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	197	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	197	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	197	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	197	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	197	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[3]		258	1	3	Struct			
	Removed-I	258	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	258	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	258	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SG[4]		186	1	3	Struct			
	Aux OFF-I	186	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	186	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	186	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	186	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF1-I	186	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command
	Interl OFF2-I	186	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	186	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	186	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	186	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	186	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	186	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	186	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	186	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	186	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	OFF Cmd manual	186	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[4]		187	1	3	Struct			
	ON Cmd	187	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	187	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	187	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	187	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	187	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	187	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	187	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	187	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES SwitchDir	187	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	187	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	187	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	187	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	187	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[4]		188	1	3	Struct			
	Pos Disturb	188	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	188	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	188	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	188	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	188	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	188	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	188	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	188	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	188	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	188	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	188	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	188	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	188	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	188	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[4]		198	1	3	Struct			
	Isum Intr trip	198	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	198	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	198	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	198	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	198	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	198	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	198	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	198	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[4]		259	1	3	Struct			
	Removed-I	259	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	259	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	259	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SG[5]		189	1	3	Struct			
	Aux OFF-I	189	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	189	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	189	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	189	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF1-I	189	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command
	Interl OFF2-I	189	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	189	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	189	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	189	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	189	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	189	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	189	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	189	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	189	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	OFF Cmd manual	189	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[5]		190	1	3	Struct			
	ON Cmd	190	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	190	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	190	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	190	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	190	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	190	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	190	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	190	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES SwitchDir	190	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	190	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	190	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	190	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	190	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[5]		191	1	3	Struct			
	Pos Disturb	191	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	191	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	191	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	191	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	191	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	191	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	191	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	191	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	191	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	191	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	191	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	191	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	191	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	191	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[5]		199	1	3	Struct			
	Isum Intr trip	199	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	199	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	199	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	199	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	199	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	199	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	199	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	199	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[5]		260	1	3	Struct			
	Removed-I	260	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	260	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	260	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SG[6]		192	1	3	Struct			
	Aux OFF-I	192	1	3	Bit	0x1 (1)	-	Module input state: Position indicator/check-back signal of the CB (52b)
	Aux ON-I	192	1	3	Bit	0x2 (2)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Ready-I	192	1	3	Bit	0x4 (3)	-	Module input state: CB ready
	Sys-in-Sync-I	192	1	3	Bit	0x8 (4)	-	State of the module input: This signals has to become true within the synchronization time. If not, switching is unsuccessful.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Interl OFF1-I	192	1	3	Bit	0x10 (5)	-	State of the module input: Interlocking of the OFF command
	Interl OFF2-I	192	1	3	Bit	0x20 (6)	-	State of the module input: Interlocking of the OFF command
	Interl OFF3-I	192	1	3	Bit	0x40 (7)	-	State of the module input: Interlocking of the OFF command
	Interl ON1-I	192	1	3	Bit	0x80 (8)	-	State of the module input: Interlocking of the ON command
	Interl ON2-I	192	1	3	Bit	0x100 (9)	-	State of the module input: Interlocking of the ON command
	Interl ON3-I	192	1	3	Bit	0x200 (10)	-	State of the module input: Interlocking of the ON command
	SCmd OFF-I	192	1	3	Bit	0x800 (12)	-	State of the module input: Switching OFF Command, e.g. the state of the Logics or the state of the digital input
	SCmd ON-I	192	1	3	Bit	0x1000 (13)	-	State of the module input: Switching ON Command, e.g. the state of the Logics or the state of the digital input
	TripCmd (*)	192	1	3	Bit	0x2000 (14)	-	Signal: Trip Command
	OFF Cmd	192	1	3	Bit	0x4000 (15)	-	Signal: OFF Command issued to the switchgear. Depending on the setting the signal may include the OFF command of the Prot module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	OFF Cmd manual	192	1	3	Bit	0x8000 (16)	-	Signal: OFF Cmd manual
SG[6]		193	1	3	Struct			
	ON Cmd	193	1	3	Bit	0x1 (1)	-	Signal: ON Command issued to the switchgear. Depending on the setting the signal may include the ON command of the Prot module.
	ON Cmd manual	193	1	3	Bit	0x2 (2)	-	Signal: ON Cmd manual
	Sync ON request	193	1	3	Bit	0x4 (3)	-	Signal: Synchronous ON request
	SGwear Slow SG	193	1	3	Bit	0x8 (4)	-	Signal: Alarm, the circuit breaker (load-break switch) becomes slower
	Res SGwear Sl SG	193	1	3	Bit	0x10 (5)	-	Signal: Resetting the slow Switchgear Alarm
	CES Disturbed	193	1	3	Bit	0x40 (7)	-	Signal: Command Execution Supervision: Switching Command unsuccessful. Switchgear in disturbed position.
	CES Fiel Interl	193	1	3	Bit	0x80 (8)	-	Signal: Command Execution Supervision: Switching Command not executed because of field interlocking.
	CES ON d OFF	193	1	3	Bit	0x400 (11)	-	Signal: Command Execution Supervision: On Command during a pending OFF Command.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES SwitchDir	193	1	3	Bit	0x800 (12)	-	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.
	CES SG not ready	193	1	3	Bit	0x1000 (13)	-	Signal: Command Execution Supervision: Switchgear not ready
	CES SyncTimeout	193	1	3	Bit	0x2000 (14)	-	Signal: Command Execution Supervision: Switching Command not executed. No Synchronization signal while t-sync was running.
	CES succesf	193	1	3	Bit	0x4000 (15)	-	Signal: Command Execution Supervision: Switching command executed successfully.
	Prot ON	193	1	3	Bit	0x8000 (16)	-	Signal: ON Command issued by the Prot module
SG[6]		194	1	3	Struct			
	Pos Disturb	194	1	3	Bit	0x1 (1)	-	Signal: Circuit Breaker Disturbed - Undefined Breaker Position. The Position Indicators contradict themselves. After expiring of a supervision timer this signal becomes true.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	t-Dwell	194	1	3	Bit	0x2 (2)	-	Signal: Dwell time
	Pos Indeterm	194	1	3	Bit	0x4 (3)	-	Signal: Circuit Breaker is in Indeterminate Position
	Pos OFF	194	1	3	Bit	0x8 (4)	-	Signal: Circuit Breaker is in OFF-Position
	Pos ON	194	1	3	Bit	0x10 (5)	-	Signal: Circuit Breaker is in ON-Position
	Ready	194	1	3	Bit	0x20 (6)	-	Signal: Circuit breaker is ready for operation.
	Pos not ON	194	1	3	Bit	0x40 (7)	-	Signal: Pos not ON
	SI SingleContactInd	194	1	3	Bit	0x80 (8)	-	Signal: The Position of the Switchgear is detected by one auxiliary contact (pole) only. Thus indeterminate and disturbed Positions cannot be detected.
	Position Ind manipul	194	1	3	Bit	0x100 (9)	-	Signal: Position Indicators faked
	OFF incl TripCmd	194	1	3	Bit	0x200 (10)	-	Signal: The OFF Command includes the OFF Command issued by the Protection module.
	ON incl Prot ON	194	1	3	Bit	0x400 (11)	-	Signal: The ON Command includes the ON Command issued by the Protection module.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	CES Fail TripCmd	194	1	3	Bit	0x800 (12)	-	Signal: Command Execution Supervision: Command execution failed because trip command is pending.
	Interl OFF	194	1	3	Bit	0x1000 (13)	-	Signal: One or more IL_Off inputs are active.
	Interl ON	194	1	3	Bit	0x2000 (14)	-	Signal: One or more IL_On inputs are active.
SG[6]		201	1	3	Struct			
	Isum Intr trip	201	1	3	Bit	0x10 (5)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
	Isum Intr trip: IL1	201	1	3	Bit	0x20 (6)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL1
	Isum Intr trip: IL2	201	1	3	Bit	0x40 (7)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL2
	Isum Intr trip: IL3	201	1	3	Bit	0x80 (8)	-	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded: IL3
	Operations Alarm	201	1	3	Bit	0x100 (9)	-	Signal: Too many Operations. (The operations counter »TripCmd Cr« has exceeded the limit set at »Operations Alarm«.)
	WearLevel Alarm	201	1	3	Bit	0x200 (10)	-	Signal: Threshold for the Alarm

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	WearLevel Lockout	201	1	3	Bit	0x400 (11)	-	Signal: Threshold for the Lockout Level
	Isum Intr ph Alm	201	1	3	Bit	0x800 (12)	-	Signal: Alarm, the per hour Sum (Limit) of interrupting currents has been exceeded.
SG[6]		261	1	3	Struct			
	Removed-I	261	1	3	Bit	0x1 (1)	-	State of the module input: The withdrawable circuit breaker is Removed
	CES SG removed	261	1	3	Bit	0x2 (2)	-	Signal: Command Execution Supervision: Switching Command unsuccessful, Switchgear removed.
	Removed	261	1	3	Bit	0x4 (3)	-	Signal: The withdrawable circuit breaker is Removed
SOTF		65	1	3	Struct			
	ExBlo1-I	65	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	65	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	Ext SOTF-I	65	1	3	Bit	0x4 (3)	-	Module input state: External Switch Onto Fault Alarm
	Ex rev Interl-I	65	1	3	Bit	0x8 (4)	-	Module input state: External reverse interlocking
	active	65	1	3	Bit	0x10 (5)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	65	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Ex rev Interl	65	1	3	Bit	0x40 (7)	-	Signal: External reverse Interlocking
	AR Blo	65	1	3	Bit	0x400 (11)	-	Signal: Blocked by AR
	enabled	65	1	3	Bit	0x800 (12)	-	Signal: Switch Onto Fault enabled. This Signal can be used to modify Overcurrent Protection Settings.
	I<	65	1	3	Bit	0x2000 (14)	-	Signal: No Load Current.
SSV		273	1	3	Struct			
	System Error	273	1	3	Bit	0x1 (1)	-	Signal: Device Failure
	New error (*)	273	1	3	Bit	0x8 (4)	-	Signal: A new error message has been issued.
	New warning (*)	273	1	3	Bit	0x10 (5)	-	Signal: A new warning message has been issued.
	active	273	1	3	Bit	0x20 (6)	-	Signal: active
Sgen		1012	1	3	Struct			
	ExBlo1-I	1012	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Ex ForcePost-I	1012	1	3	Bit	0x2 (2)	-	State of the module input:Force Post state. Abort simulation.
	Running	1012	1	3	Bit	0x10 (5)	-	Signal; Measuring value simulation is running
	State	1012	1	3	Bit	0xe0 (6)	-	Signal: Wave generation states: 0=Off, 1=PreFault, 2=Fault, 3=PostFault, 4=InitReset
	Ex Start Simulation-I	1012	1	3	Bit	0x100 (9)	-	State of the module input:External Start of Fault Simulation (Using the test parameters)
	ExBlo2-I	1012	1	3	Bit	0x200 (10)	-	Module input state: External blocking2
	Manual Start	1012	1	3	Bit	0x400 (11)	-	Fault Simulation has been started manually.
	Manual Stop	1012	1	3	Bit	0x800 (12)	-	Fault Simulation has been stopped manually.
	Started	1012	1	3	Bit	0x1000 (13)	-	Fault Simulation has been started
	Stopped	1012	1	3	Bit	0x2000 (14)	-	Fault Simulation has been stopped
Sig-Trans - 85		274	1	3	Struct			
	ExBlo1-I	274	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	274	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	274	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	274	1	3	Bit	0x10 (5)	-	Signal: External Blocking
Sig-Trans - 85		275	1	3	Struct			
	Rx.Signal1	275	1	3	Bit	0x1 (1)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal2	275	1	3	Bit	0x2 (2)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal3	275	1	3	Bit	0x4 (3)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal4	275	1	3	Bit	0x8 (4)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal5	275	1	3	Bit	0x10 (5)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal6	275	1	3	Bit	0x20 (6)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal7	275	1	3	Bit	0x40 (7)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal8	275	1	3	Bit	0x80 (8)	-	Rx (Receive): Status of received Signal from remote device.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Rx.Signal9	275	1	3	Bit	0x100 (9)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal10	275	1	3	Bit	0x200 (10)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal11	275	1	3	Bit	0x400 (11)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal12	275	1	3	Bit	0x800 (12)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal13	275	1	3	Bit	0x1000 (13)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal14	275	1	3	Bit	0x2000 (14)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal15	275	1	3	Bit	0x4000 (15)	-	Rx (Receive): Status of received Signal from remote device.
	Rx.Signal16	275	1	3	Bit	0x8000 (16)	-	Rx (Receive): Status of received Signal from remote device.
Sig-Trans - 85		276	1	3	Struct			
	Tx.Signal1	276	1	3	Bit	0x1 (1)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal2	276	1	3	Bit	0x2 (2)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal3	276	1	3	Bit	0x4 (3)	-	Tx (Transmit): Status of sent Signal to remote device.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Tx.Signal4	276	1	3	Bit	0x8 (4)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal5	276	1	3	Bit	0x10 (5)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal6	276	1	3	Bit	0x20 (6)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal7	276	1	3	Bit	0x40 (7)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal8	276	1	3	Bit	0x80 (8)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal9	276	1	3	Bit	0x100 (9)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal10	276	1	3	Bit	0x200 (10)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal11	276	1	3	Bit	0x400 (11)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal12	276	1	3	Bit	0x800 (12)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal13	276	1	3	Bit	0x1000 (13)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal14	276	1	3	Bit	0x2000 (14)	-	Tx (Transmit): Status of sent Signal to remote device.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Tx.Signal15	276	1	3	Bit	0x4000 (15)	-	Tx (Transmit): Status of sent Signal to remote device.
	Tx.Signal16	276	1	3	Bit	0x8000 (16)	-	Tx (Transmit): Status of sent Signal to remote device.
Sync - 25		175	1	3	Struct			
	active	175	1	3	Bit	0x1 (1)	-	Signal: active
	ExBlo1-I	175	1	3	Bit	0x2 (2)	-	Module input state: External blocking1
	ExBlo2-I	175	1	3	Bit	0x4 (3)	-	Module input state: External blocking2
	ExBlo	175	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Bypass-I	175	1	3	Bit	0x10 (5)	-	State of the module input: The Synchrocheck will be bypassed if the state of the assigned signal (logic input) becomes true.
	CBCloseInitiate-I	175	1	3	Bit	0x20 (6)	-	State of the module input: Breaker Close Initiate with synchronism check from any control sources (e.g. HMI / SCADA). If the state of the assigned signal becomes true, a Breaker Close will be initiated (Trigger Source).
	AngleDiffTooHigh	175	1	3	Bit	0x40 (7)	-	Signal: Phase Angle difference between bus and line voltages too high.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
	Sys-in-Sync	175	1	3	Bit	0x80 (8)	-	Signal: Bus and line voltages are in synchronism according to the system synchronism criteria.
	LiveBus	175	1	3	Bit	0x100 (9)	-	Signal: Live-Bus flag: 1=Live-Bus, 0=Voltage is below the LiveBus threshold
	LiveLine	175	1	3	Bit	0x200 (10)	-	Signal: Live Line flag: 1=Live-Line, 0=Voltage is below the LiveLine threshold
	SlipTooHigh	175	1	3	Bit	0x400 (11)	-	Signal: Frequency difference (slip frequency) between bus and line voltages too high.
	SyncOverridden	175	1	3	Bit	0x800 (12)	-	Signal:Synchronism Check is overridden because one of the Synchronism overriding conditions (DB/DL or ExtBypass) is met.
	Ready to Close	175	1	3	Bit	0x1000 (13)	-	Signal: Ready to Close
	SynchronFailed	175	1	3	Bit	0x2000 (14)	-	Signal: This signal indicates a failed synchronization. It is set for 5s when the circuit breaker is still open after the Synchron-Run-timer has timed out.
	SynchronRunTiming	175	1	3	Bit	0x4000 (15)	-	Signal: Synchron-Run-timer is timing (This timer starts when Close-Initiate is coming and stops if breaker is closed. Timeout means synchronizing failed.)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	VDiffTooHigh	175	1	3	Bit	0x8000 (16)	-	Signal: Voltage difference between bus and line too high.
Sys		154	1	3	Struct			
	Setting Lock-I	154	1	3	Bit	0x40 (7)	-	State of the module input: No parameters can be changed as long as this input is true. The parameter settings are locked.
	SNTP active	154	1	3	Bit	0x80 (8)	-	Signal: If there is no valid SNTP signal for 120 sec, SNTP is regarded as inactive.
	Setting Lock Bypass	154	1	3	Bit	0x100 (9)	-	Signal: Short-period unlock of the Setting Lock
SysA		173	1	3	Struct			
	ExBlo-I	173	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo	173	1	3	Bit	0x2 (2)	-	Signal: External Blocking
	Alm Current Demd	173	1	3	Bit	0x4 (3)	-	Signal: Alarm averaged demand current
	active	173	1	3	Bit	0x8 (4)	-	Signal: active
	Alarm I THD	173	1	3	Bit	0x10 (5)	-	Signal: Alarm Total Harmonic Distortion Current

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm VA Power	173	1	3	Bit	0x20 (6)	-	Signal: Alarm permitted Apparent Power exceeded
	Alarm VA Demand	173	1	3	Bit	0x40 (7)	-	Signal: Alarm averaged Apparent Power exceeded
	Alarm VAr Power	173	1	3	Bit	0x80 (8)	-	Signal: Alarm permitted Reactive Power exceeded
	Alarm VAr Demand	173	1	3	Bit	0x100 (9)	-	Signal: Alarm averaged Reactive Power exceeded
	Alarm V THD	173	1	3	Bit	0x200 (10)	-	Signal: Alarm Total Harmonic Distortion Voltage
	Alarm Watt Power	173	1	3	Bit	0x400 (11)	-	Signal: Alarm permitted Active Power exceeded
	Alarm Watt Demand	173	1	3	Bit	0x800 (12)	-	Signal: Alarm averaged Active Power exceeded
	Trip Current Demand (*)	173	1	3	Bit	0x1000 (13)	-	Signal: Trip averaged demand current
	Trip I THD (*)	173	1	3	Bit	0x2000 (14)	-	Signal: Trip Total Harmonic Distortion Current
	Trip VA Demand (*)	173	1	3	Bit	0x4000 (15)	-	Signal: Trip averaged Apparent Power exceeded
	Trip VA Power (*)	173	1	3	Bit	0x8000 (16)	-	Signal: Trip permitted Apparent Power exceeded
SysA		174	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip VAr Demand (*)	174	1	3	Bit	0x1 (1)	-	Signal: Trip averaged Reactive Power exceeded
	Trip VAr Power (*)	174	1	3	Bit	0x2 (2)	-	Signal: Trip permitted Reactive Power exceeded
	Trip V THD (*)	174	1	3	Bit	0x4 (3)	-	Signal: Trip Total Harmonic Distortion Voltage
	Trip Watt Demand (*)	174	1	3	Bit	0x8 (4)	-	Signal: Trip averaged Active Power exceeded
	Trip Watt Power (*)	174	1	3	Bit	0x10 (5)	-	Signal: Trip permitted Active Power exceeded
TCS - 74TC		150	1	3	Struct			
	ExBlo1-I	150	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	150	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	active	150	1	3	Bit	0x4 (3)	-	Signal: active
	ExBlo	150	1	3	Bit	0x8 (4)	-	Signal: External Blocking
	Alarm	150	1	3	Bit	0x10 (5)	-	Signal: Alarm Trip Circuit Supervision
	Not Possible	150	1	3	Bit	0x20 (6)	-	Not possible because no state indicator assigned to the breaker.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Aux ON-I	150	1	3	Bit	0x100 (9)	-	Module Input State: Position indicator/check-back signal of the CB (52a)
	Aux OFF-I	150	1	3	Bit	0x200 (10)	-	Module input state: Position indicator/check-back signal of the CB (52b)
ThR - 49		19	1	3	Struct			
	ExBlo1-I	19	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	19	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	19	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	19	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	19	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	19	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	19	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	19	1	3	Bit	0x80 (8)	-	Signal: Alarm Thermal Overload

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	19	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	19	1	3	Bit	0x200 (10)	-	Signal: Trip Command
TimeSync		54	1	3	Struct			
	synchronized	54	1	3	Bit	0x1 (1)	-	Clock is synchronized.
Trip-Trans - 85		277	1	3	Struct			
	ExBlo1-I	277	1	3	Bit	0x1 (1)	-	Module input state: External blocking
	ExBlo2-I	277	1	3	Bit	0x2 (2)	-	Module input state: External blocking
	ExBlo TripCmd-I	277	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	277	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	277	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	277	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	277	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	277	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	277	1	3	Bit	0x100 (9)	-	Signal: Trip Command
Trip-Trans - 85		278	1	3	Struct			
	Rx.Trip1.Permissive	278	1	3	Bit	0x1 (1)	-	Status of local signal for releasing received Trip-signal of the remote device.
	Rx.Trip2.Permissive	278	1	3	Bit	0x2 (2)	-	Status of local signal for releasing received Trip-signal of the remote device.
	Rx.Trip3.Permissive	278	1	3	Bit	0x4 (3)	-	Status of local signal for releasing received Trip-signal of the remote device.
	Rx.Trip4.Permissive	278	1	3	Bit	0x8 (4)	-	Status of local signal for releasing received Trip-signal of the remote device.
	Tx.Trip1 (*)	278	1	3	Bit	0x10 (5)	-	Tx (Transmit): Status of sent Trip-signal to remote device.
	Tx.Trip2 (*)	278	1	3	Bit	0x20 (6)	-	Tx (Transmit): Status of sent Trip-signal to remote device.
	Tx.Trip3 (*)	278	1	3	Bit	0x40 (7)	-	Tx (Transmit): Status of sent Trip-signal to remote device.
	Tx.Trip4 (*)	278	1	3	Bit	0x80 (8)	-	Tx (Transmit): Status of sent Trip-signal to remote device.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Rx.Trip1 (*)	278	1	3	Bit	0x100 (9)	-	Rx (Receive): Status of received Signal from remote device. Permissive signal is considered.
	Rx.Trip2 (*)	278	1	3	Bit	0x200 (10)	-	Rx (Receive): Status of received Signal from remote device. Permissive signal is considered.
	Rx.Trip3 (*)	278	1	3	Bit	0x400 (11)	-	Rx (Receive): Status of received Signal from remote device. Permissive signal is considered.
	Rx.Trip4 (*)	278	1	3	Bit	0x800 (12)	-	Rx (Receive): Status of received Signal from remote device. Permissive signal is considered.
	Rx.Trip1.Input	278	1	3	Bit	0x1000 (13)	-	Rx (Receive): Status of received Signal from remote device, without considering permissive signal.
	Rx.Trip2.Input	278	1	3	Bit	0x2000 (14)	-	Rx (Receive): Status of received Signal from remote device, without considering permissive signal.
	Rx.Trip3.Input	278	1	3	Bit	0x4000 (15)	-	Rx (Receive): Status of received Signal from remote device, without considering permissive signal.
	Rx.Trip4.Input	278	1	3	Bit	0x8000 (16)	-	Rx (Receive): Status of received Signal from remote device, without considering permissive signal.
UFLS		272	1	3	Struct			
	ExBlo1-I	272	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	272	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	Ex Pdir-I	272	1	3	Bit	0x4 (3)	-	Ignore (block) the evaluation of the power flow direction. This results in classical frequency based load shedding functionallity. When this feature is set and active, the functionallity of the module turns into conventional, only frequency based load shedding.
	active	272	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	272	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Fuse Fail VT Blo	272	1	3	Bit	0x20 (6)	-	Signal: Blocked by Fuse Failure (VT)
	Trip	272	1	3	Bit	0x40 (7)	-	Signal: Signal: Trip
	Alarm	272	1	3	Bit	0x80 (8)	-	Signal: Alarm P->&f<
V/f>[1] - 24		210	1	3	Struct			
	ExBlo1-I	210	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	210	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd-I	210	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	Alarm	210	1	3	Bit	0x8 (4)	-	Signal: Alarm Overexcitation
	active	210	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	210	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Trip (*)	210	1	3	Bit	0x40 (7)	-	Signal: Trip
	Blo TripCmd	210	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	210	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	TripCmd (*)	210	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V/f>[2] - 24		211	1	3	Struct			
	ExBlo1-I	211	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	211	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	211	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	211	1	3	Bit	0x8 (4)	-	Signal: Alarm Overexcitation
	active	211	1	3	Bit	0x10 (5)	-	Signal: active
	ExBlo	211	1	3	Bit	0x20 (6)	-	Signal: External Blocking
	Trip (*)	211	1	3	Bit	0x40 (7)	-	Signal: Trip
	Blo TripCmd	211	1	3	Bit	0x80 (8)	-	Signal: Trip Command blocked
	ExBlo TripCmd	211	1	3	Bit	0x100 (9)	-	Signal: External Blocking of the Trip Command
	TripCmd (*)	211	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[1] - 47		100	1	3	Struct			
	ExBlo1-I	100	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	100	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	100	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	100	1	3	Bit	0x8 (4)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	100	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	100	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	100	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	100	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry
	Trip (*)	100	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	100	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[2] - 47		101	1	3	Struct			
	ExBlo1-I	101	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	101	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	101	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	101	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	101	1	3	Bit	0x10 (5)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo TripCmd	101	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	101	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	101	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry
	Trip (*)	101	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	101	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[3] - 47		102	1	3	Struct			
	ExBlo1-I	102	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	102	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	102	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	102	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	102	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	102	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd	102	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	102	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry
	Trip (*)	102	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	102	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[4] - 47		103	1	3	Struct			
	ExBlo1-I	103	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	103	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	103	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	103	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	103	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	103	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	103	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm	103	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry
	Trip (*)	103	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	103	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[5] - 47		104	1	3	Struct			
	ExBlo1-I	104	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	104	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	104	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	104	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	104	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	104	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	104	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	104	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	104	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	104	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V012[6] - 47		105	1	3	Struct			
	ExBlo1-I	105	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	105	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	105	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	105	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	105	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	105	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	105	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	105	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage asymmetry
	Trip (*)	105	1	3	Bit	0x100 (9)	-	Signal: Trip

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	105	1	3	Bit	0x200 (10)	-	Signal: Trip Command
VG[1] - 27A, 59N,A		32	1	3	Struct			
	ExBlo1-I	32	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	32	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	32	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	32	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	32	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	32	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	32	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	32	1	3	Bit	0x80 (8)	-	Signal: Alarm Residual Voltage Supervision-stage
	Trip (*)	32	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	32	1	3	Bit	0x200 (10)	-	Signal: Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VG[2] - 27A, 59N,A		33	1	3	Struct			
	ExBlo1-I	33	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	33	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	33	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	33	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	33	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	33	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	33	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	33	1	3	Bit	0x80 (8)	-	Signal: Alarm Residual Voltage Supervision-stage
	Trip (*)	33	1	3	Bit	0x100 (9)	-	Signal: Trip
	TripCmd (*)	33	1	3	Bit	0x200 (10)	-	Signal: Trip Command
V[1] - 27, 59		24	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	24	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	24	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	24	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	24	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	24	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	24	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	24	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
V[1] - 27, 59		25	1	3	Struct			
	Alarm L1	25	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	25	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	25	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	25	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip L1 (*)	25	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	25	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	25	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	25	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	25	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	Imin release active	25	1	3	Bit	0x200 (10)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
V[2] - 27, 59		26	1	3	Struct			
	ExBlo1-I	26	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	26	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	26	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	26	1	3	Bit	0x8 (4)	-	Signal: active

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo	26	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	26	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	26	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
V[2] - 27, 59		27	1	3	Struct			
	Alarm L1	27	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	27	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	27	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	27	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage
	Trip L1 (*)	27	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	27	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	27	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	27	1	3	Bit	0x80 (8)	-	Signal: Trip

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	27	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	Imin release active	27	1	3	Bit	0x200 (10)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
V[3] - 27, 59		28	1	3	Struct			
	ExBlo1-I	28	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	28	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	28	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	28	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	28	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	28	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	28	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
V[3] - 27, 59		29	1	3	Struct			
	Alarm L1	29	1	3	Bit	0x1 (1)	-	Signal: Alarm L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L2	29	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	29	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	29	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage
	Trip L1 (*)	29	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1
	Trip L2 (*)	29	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	29	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	29	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	29	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	Imin release active	29	1	3	Bit	0x200 (10)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
V[4] - 27, 59		30	1	3	Struct			
	ExBlo1-I	30	1	3	Bit	0x1 (1)	-	Module input state: External blocking1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo2-I	30	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	30	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	30	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	30	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	30	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	30	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
V[4] - 27, 59		31	1	3	Struct			
	Alarm L1	31	1	3	Bit	0x1 (1)	-	Signal: Alarm L1
	Alarm L2	31	1	3	Bit	0x2 (2)	-	Signal: Alarm L2
	Alarm L3	31	1	3	Bit	0x4 (3)	-	Signal: Alarm L3
	Alarm	31	1	3	Bit	0x8 (4)	-	Signal: Alarm voltage stage
	Trip L1 (*)	31	1	3	Bit	0x10 (5)	-	Signal: General Trip Phase L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip L2 (*)	31	1	3	Bit	0x20 (6)	-	Signal: General Trip Phase L2
	Trip L3 (*)	31	1	3	Bit	0x40 (7)	-	Signal: General Trip Phase L3
	Trip (*)	31	1	3	Bit	0x80 (8)	-	Signal: Trip
	TripCmd (*)	31	1	3	Bit	0x100 (9)	-	Signal: Trip Command
	Imin release active	31	1	3	Bit	0x200 (10)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
V[5] - 27, 59		92	1	3	Struct			
	ExBlo1-I	92	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	92	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	92	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	92	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	92	1	3	Bit	0x10 (5)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo TripCmd	92	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	92	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	92	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage stage
	Alarm L1	92	1	3	Bit	0x100 (9)	-	Signal: Alarm L1
	Alarm L2	92	1	3	Bit	0x200 (10)	-	Signal: Alarm L2
	Alarm L3	92	1	3	Bit	0x400 (11)	-	Signal: Alarm L3
	Trip (*)	92	1	3	Bit	0x800 (12)	-	Signal: Trip
	Trip L1 (*)	92	1	3	Bit	0x1000 (13)	-	Signal: General Trip Phase L1
	Trip L2 (*)	92	1	3	Bit	0x2000 (14)	-	Signal: General Trip Phase L2
	Trip L3 (*)	92	1	3	Bit	0x4000 (15)	-	Signal: General Trip Phase L3
	TripCmd (*)	92	1	3	Bit	0x8000 (16)	-	Signal: Trip Command
V[5] - 27, 59		94	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Imin release active	94	1	3	Bit	0x1 (1)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
V[6] - 27, 59		93	1	3	Struct			
	ExBlo1-I	93	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	93	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	93	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	93	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	93	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	93	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	93	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	93	1	3	Bit	0x80 (8)	-	Signal: Alarm voltage stage
	Alarm L1	93	1	3	Bit	0x100 (9)	-	Signal: Alarm L1

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm L2	93	1	3	Bit	0x200 (10)	-	Signal: Alarm L2
	Alarm L3	93	1	3	Bit	0x400 (11)	-	Signal: Alarm L3
	Trip (*)	93	1	3	Bit	0x800 (12)	-	Signal: Trip
	Trip L1 (*)	93	1	3	Bit	0x1000 (13)	-	Signal: General Trip Phase L1
	Trip L2 (*)	93	1	3	Bit	0x2000 (14)	-	Signal: General Trip Phase L2
	Trip L3 (*)	93	1	3	Bit	0x4000 (15)	-	Signal: General Trip Phase L3
	TripCmd (*)	93	1	3	Bit	0x8000 (16)	-	Signal: Trip Command
V[6] - 27, 59		95	1	3	Struct			
	Imin release active	95	1	3	Bit	0x1 (1)	-	Signal that the Imin release (minimum current) check is enabled and does not block the undervoltage detection at the moment.
delta phi - 78V		249	1	3	Struct			
	ExBlo1-I	249	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	249	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd-I	249	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	249	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	249	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	249	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	249	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	249	1	3	Bit	0x80 (8)	-	Signal: Alarm Frequency Protection (collective signal)
	Trip (*)	249	1	3	Bit	0x100 (9)	-	Signal: Trip Frequency Protection (collective signal)
	TripCmd (*)	249	1	3	Bit	0x200 (10)	-	Signal: Trip Command
	Blo by V<	249	1	3	Bit	0x400 (11)	-	Signal: Module is blocked by undervoltage.
df/dt - 81R		250	1	3	Struct			
	ExBlo1-I	250	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	250	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd-I	250	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	250	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	250	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo TripCmd	250	1	3	Bit	0x20 (6)	-	Signal: Trip Command blocked
	ExBlo TripCmd	250	1	3	Bit	0x40 (7)	-	Signal: External Blocking of the Trip Command
	Alarm	250	1	3	Bit	0x80 (8)	-	Signal: Alarm Frequency Protection (collective signal)
	Trip (*)	250	1	3	Bit	0x100 (9)	-	Signal: Trip Frequency Protection (collective signal)
	TripCmd (*)	250	1	3	Bit	0x200 (10)	-	Signal: Trip Command
	Blo by V<	250	1	3	Bit	0x400 (11)	-	Signal: Module is blocked by undervoltage.
f[1] - 81		34	1	3	Struct			
	ExBlo1-I	34	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	34	1	3	Bit	0x2 (2)	-	Module input state: External blocking2

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd-I	34	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	34	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	34	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo by V<	34	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	34	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked
	ExBlo TripCmd	34	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[1] - 81		35	1	3	Struct			
	Alarm f	35	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection
	Alarm df/dt | DF/DT	35	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	35	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.
	Trip df/dt | DF/DT (*)	35	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	35	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm delta phi	35	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge
	Trip (*)	35	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	35	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge
	TripCmd (*)	35	1	3	Bit	0x100 (9)	-	Signal: Trip Command
f[2] - 81		36	1	3	Struct			
	ExBlo1-I	36	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	36	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	36	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	36	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	36	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo by V<	36	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	36	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo TripCmd	36	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[2] - 81		37	1	3	Struct			
	Alarm f	37	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection
	Alarm df/dt | DF/DT	37	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	37	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.
	Trip df/dt | DF/DT (*)	37	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	37	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)
	Alarm delta phi	37	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge
	Trip (*)	37	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	37	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge
	TripCmd (*)	37	1	3	Bit	0x100 (9)	-	Signal: Trip Command
f[3] - 81		38	1	3	Struct			

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	ExBlo1-I	38	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	38	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	38	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	38	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	38	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo by V<	38	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	38	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked
	ExBlo TripCmd	38	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[3] - 81		39	1	3	Struct			
	Alarm f	39	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection
	Alarm df/dt | DF/DT	39	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	39	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip df/dt | DF/DT (*)	39	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	39	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)
	Alarm delta phi	39	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge
	Trip (*)	39	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	39	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge
	TripCmd (*)	39	1	3	Bit	0x100 (9)	-	Signal: Trip Command
f[4] - 81		40	1	3	Struct			
	ExBlo1-I	40	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	40	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	40	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	40	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	40	1	3	Bit	0x10 (5)	-	Signal: External Blocking

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Blo by V<	40	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	40	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked
	ExBlo TripCmd	40	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[4] - 81		41	1	3	Struct			
	Alarm f	41	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection
	Alarm df/dt | DF/DT	41	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	41	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.
	Trip df/dt | DF/DT (*)	41	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	41	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)
	Alarm delta phi	41	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge
	Trip (*)	41	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	41	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	TripCmd (*)	41	1	3	Bit	0x100 (9)	-	Signal: Trip Command
f[5] - 81		42	1	3	Struct			
	ExBlo1-I	42	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	42	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	42	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command
	active	42	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	42	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo by V<	42	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	42	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked
	ExBlo TripCmd	42	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[5] - 81		43	1	3	Struct			
	Alarm f	43	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Alarm df/dt | DF/DT	43	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	43	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.
	Trip df/dt | DF/DT (*)	43	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	43	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)
	Alarm delta phi	43	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge
	Trip (*)	43	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	43	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge
	TripCmd (*)	43	1	3	Bit	0x100 (9)	-	Signal: Trip Command
f[6] - 81		44	1	3	Struct			
	ExBlo1-I	44	1	3	Bit	0x1 (1)	-	Module input state: External blocking1
	ExBlo2-I	44	1	3	Bit	0x2 (2)	-	Module input state: External blocking2
	ExBlo TripCmd-I	44	1	3	Bit	0x4 (3)	-	Module input state: External Blocking of the Trip Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	active	44	1	3	Bit	0x8 (4)	-	Signal: active
	ExBlo	44	1	3	Bit	0x10 (5)	-	Signal: External Blocking
	Blo by V<	44	1	3	Bit	0x20 (6)	-	Signal: Module is blocked by undervoltage.
	Blo TripCmd	44	1	3	Bit	0x40 (7)	-	Signal: Trip Command blocked
	ExBlo TripCmd	44	1	3	Bit	0x80 (8)	-	Signal: External Blocking of the Trip Command
f[6] - 81		45	1	3	Struct			
	Alarm f	45	1	3	Bit	0x1 (1)	-	Signal: Alarm Frequency Protection
	Alarm df/dt | DF/DT	45	1	3	Bit	0x2 (2)	-	Alarm instantaneous or average value of the rate-of-frequency-change
	Trip f (*)	45	1	3	Bit	0x4 (3)	-	Signal: Frequency has exceeded the limit.
	Trip df/dt | DF/DT (*)	45	1	3	Bit	0x8 (4)	-	Signal: Trip df/dt or DF/DT
	Alarm	45	1	3	Bit	0x10 (5)	-	Signal: Alarm Frequency Protection (collective signal)
	Alarm delta phi	45	1	3	Bit	0x20 (6)	-	Signal: Alarm Vector Surge

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip (*)	45	1	3	Bit	0x40 (7)	-	Signal: Trip Frequency Protection (collective signal)
	Trip delta phi (*)	45	1	3	Bit	0x80 (8)	-	Signal: Trip Vector Surge
	TripCmd (*)	45	1	3	Bit	0x100 (9)	-	Signal: Trip Command

Legend * = These Signals have to be acknowledged by the Scada System.

Measuring values

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
AR - 79	Total number Cr	20164	2	4	Float IEE754		-	Total number of all executed Automatic Reclosures Attempts
AR - 79	Cr failed	20166	2	4	Float IEE754		-	Total number of unsuccessfully executed automatic reclosure attempts
AR - 79	Cr successfl	20168	2	4	Float IEE754		-	Total number of successfully executed Automatic Reclosures
AR - 79	Cr Service Alarm1	20170	2	4	Float IEE754		-	Remaining numbers of ARs until Service Alarm 1
AR - 79	Cr Service Alarm2	20172	2	4	Float IEE754		-	Remaining numbers of ARs until Service Alarm 2
AR - 79	AR Shot No.	20188	2	4	Float IEE754		-	Counter - Auto Reclosure Attempts
AR - 79	Max Shots / h Cr	20374	2	4	Float IEE754		-	Counter for the maximum allowed shots per hour.
CT Local	IL1	20100	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Local	IL2	20102	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Local	IL3	20104	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Local	IG meas	20106	2	4	Float IEE754		A	Measured value (measured): IG (fundamental)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Local	I0	20114	2	4	Float IEE754		A	Measured value (calculated): Zero current (fundamental)
CT Local	I1	20116	2	4	Float IEE754		A	Measured value (calculated): Positive phase sequence current (fundamental)
CT Local	I2	20118	2	4	Float IEE754		A	Measured value (calculated): Unbalanced load current (fundamental)
CT Local	IL1 H2	20120	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL1
CT Local	IL2 H2	20122	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL2
CT Local	IL3 H2	20124	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL3
CT Local	IG H2 meas	20126	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IG (measured)
CT Local	IG calc	20160	2	4	Float IEE754		A	Measured value (calculated): IG (fundamental)
CT Local	phi IG calc	20200	2	4	Float IEE754		°	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.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local	phi IG meas	20202	2	4	Float IEE754		°	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 Local	phi IL1	20204	2	4	Float IEE754		°	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 Local	phi IL2	20206	2	4	Float IEE754		°	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 Local	phi IL3	20208	2	4	Float IEE754		°	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 Local	IL1 THD	20210	2	4	Float IEE754		A	Measured value (calculated): IL1 Total Harmonic Current
CT Local	IL2 THD	20212	2	4	Float IEE754		A	Measured value (calculated): IL2 Total Harmonic Current

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Local	IL3 THD	20214	2	4	Float IEE754		A	Measured value (calculated): IL3 Total Harmonic Current
CT Local	%IL1 THD	20216	2	4	Float IEE754		%	Measured value (calculated): IL1 Total Harmonic Distortion
CT Local	%IL2 THD	20218	2	4	Float IEE754		%	Measured value (calculated): IL2 Total Harmonic Distortion
CT Local	%IL3 THD	20220	2	4	Float IEE754		%	Measured value (calculated): IL3 Total Harmonic Distortion
CT Local	IL1 RMS	20316	2	4	Float IEE754		A	Measured value: Phase current (RMS)
CT Local	IL2 RMS	20318	2	4	Float IEE754		A	Measured value: Phase current (RMS)
CT Local	IL3 RMS	20320	2	4	Float IEE754		A	Measured value: Phase current (RMS)
CT Local	IG meas RMS	20322	2	4	Float IEE754		A	Measured value (measured): IG (RMS)
CT Local	IG calc RMS	20324	2	4	Float IEE754		A	Measured value (calculated): IG (RMS)
CT Local	%(I2/I1)	20376	2	4	Float IEE754		%	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local	phi I0	20378	2	4	Float IEE754		°	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 Local	phi I1	20380	2	4	Float IEE754		°	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 Local	phi I2	20382	2	4	Float IEE754		°	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 Local	IG H2 calc	20500	2	4	Float IEE754		%	Measured value (calculated): 2nd harmonic/1st harmonic of IG (calculated)
CT Local	I1 max	21074	2	4	Float IEE754		A	Maximum value positive phase sequence current (fundamental)
CT Local	I1 min	21076	2	4	Float IEE754		A	Minimum value positive phase sequence current (fundamental)
CT Local	I2 max	21080	2	4	Float IEE754		A	Maximum value negative sequence current (fundamental)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Local	I2 min	21082	2	4	Float IEE754		A	Minimum value unbalanced load current (fundamental)
CT Local	IL1 avg RMS	21130	2	4	Float IEE754		A	IL1 average value (RMS)
CT Local	IL2 avg RMS	21132	2	4	Float IEE754		A	IL2 average value (RMS)
CT Local	IL3 avg RMS	21134	2	4	Float IEE754		A	IL3 average value (RMS)
CT Local	IL1 max RMS	21136	2	4	Float IEE754		A	IL1 maximum value (RMS)
CT Local	IL2 max RMS	21138	2	4	Float IEE754		A	IL2 maximum value (RMS)
CT Local	IL3 max RMS	21140	2	4	Float IEE754		A	IL3 maximum value (RMS)
CT Local	IL1 min RMS	21142	2	4	Float IEE754		A	IL1 minimum value (RMS)
CT Local	IL2 min RMS	21144	2	4	Float IEE754		A	IL2 minimum value (RMS)
CT Local	IL3 min RMS	21146	2	4	Float IEE754		A	IL3 minimum value (RMS)
CT Local	IG H2 meas max	21222	2	4	Float IEE754		%	Measured value: Maximum ratio of 2nd harmonic over fundamental of IG (measured)

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local	IG H2 meas min	21224	2	4	Float IEE754		%	Measured value: Minimum ratio of 2nd harmonic over fundamental of IG (measured)
CT Local	IL1 H2 max	21228	2	4	Float IEE754		%	Maximum ratio of 2nd harmonic over fundamental of IL1
CT Local	IL1 H2 min	21230	2	4	Float IEE754		%	Minimum ratio of 2nd harmonic over fundamental of IL1
CT Local	IL2 H2 max	21234	2	4	Float IEE754		%	Maximum ratio of 2nd harmonic over fundamental of IL2
CT Local	IL2 H2 min	21236	2	4	Float IEE754		%	Minimum ratio of 2nd harmonic over fundamental of IL2
CT Local	IL3 H2 max	21240	2	4	Float IEE754		%	Maximum ratio of 2nd harmonic over fundamental of IL3
CT Local	IL3 H2 min	21242	2	4	Float IEE754		%	Minimum ratio of 2nd harmonic/1st harmonic minimum value of IL3
CT Local	IG calc max RMS	21456	2	4	Float IEE754		A	Measured value (calculated):IG maximum value (RMS)
CT Local	IG calc min RMS	21458	2	4	Float IEE754		A	Measured value (calculated):IG minimum value (RMS)
CT Local	IG meas max RMS	21462	2	4	Float IEE754		A	Measured value: IG maximum value (RMS)
CT Local	IG meas min RMS	21464	2	4	Float IEE754		A	Measured value: IG minimum value (RMS)

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local	%(I2/I1) max	21468	2	4	Float IEE754		%	Measured value (calculated): I2/I1 maximum value, phase sequence will be taken into account automatically
CT Local	%(I2/I1) min	21470	2	4	Float IEE754		%	Measured value (calculated): I2/I1 minimum value, phase sequence will be taken into account automatically
CT Local	IG H2 calc max	21774	2	4	Float IEE754		%	Measured value (calculated): Maximum ratio of 2nd harmonic over fundamental of IG (calculated)
CT Local	IG H2 calc min	21776	2	4	Float IEE754		%	IG H2 calc min
CT Local	IL1 Peak demand	21784	2	4	Float IEE754		A	IL1 Peak value, RMS value
CT Local	IL2 Peak demand	21786	2	4	Float IEE754		A	IL2 Peak value, RMS value
CT Local	IL3 Peak demand	21788	2	4	Float IEE754		A	IL3 Peak value, RMS value
CT Local - fault value	IL1	50100	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder
CT Local - fault value	IL2	50102	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder
CT Local - fault value	IL3	50104	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local - fault value	IG meas	50106	2	4	Float IEE754		A	Measured value (measured): IG (fundamental) , as stored in the Fault Recorder
CT Local - fault value	I0	50114	2	4	Float IEE754		A	Measured value (calculated): Zero current (fundamental) , as stored in the Fault Recorder
CT Local - fault value	I1	50116	2	4	Float IEE754		A	Measured value (calculated): Positive phase sequence current (fundamental) , as stored in the Fault Recorder
CT Local - fault value	I2	50118	2	4	Float IEE754		A	Measured value (calculated): Unbalanced load current (fundamental) , as stored in the Fault Recorder
CT Local - fault value	IL1 H2	50120	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL1 , as stored in the Fault Recorder
CT Local - fault value	IL2 H2	50122	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL2 , as stored in the Fault Recorder
CT Local - fault value	IL3 H2	50124	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IL3 , as stored in the Fault Recorder
CT Local - fault value	IG H2 meas	50126	2	4	Float IEE754		%	Measured value: 2nd harmonic/1st harmonic of IG (measured) , as stored in the Fault Recorder
CT Local - fault value	IG calc	50160	2	4	Float IEE754		A	Measured value (calculated): IG (fundamental) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Local - fault value	phi IG calc	50200	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
CT Local - fault value	phi IG meas	50202	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
CT Local - fault value	phi IL1	50204	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
CT Local - fault value	phi IL2	50206	2	4	Float IEE754		°	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. , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Local - fault value	phi IL3	50208	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
CT Local - fault value	IL1 RMS	50316	2	4	Float IEE754		A	Measured value: Phase current (RMS) , as stored in the Fault Recorder
CT Local - fault value	IL2 RMS	50318	2	4	Float IEE754		A	Measured value: Phase current (RMS) , as stored in the Fault Recorder
CT Local - fault value	IL3 RMS	50320	2	4	Float IEE754		A	Measured value: Phase current (RMS) , as stored in the Fault Recorder
CT Local - fault value	IG meas RMS	50322	2	4	Float IEE754		A	Measured value (measured): IG (RMS) , as stored in the Fault Recorder
CT Local - fault value	IG calc RMS	50324	2	4	Float IEE754		A	Measured value (calculated): IG (RMS) , as stored in the Fault Recorder
CT Local - fault value	%(I2/I1)	50376	2	4	Float IEE754		%	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically. , as stored in the Fault Recorder
CT Local - fault value	IG H2 calc	50500	2	4	Float IEE754		%	Measured value (calculated): 2nd harmonic/1st harmonic of IG (calculated) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Remote	I0	20648	2	4	Float IEE754		A	Measured value (calculated): Zero current (fundamental)
CT Remote	I1	20650	2	4	Float IEE754		A	Measured value (calculated): Positive phase sequence current (fundamental)
CT Remote	I2	20652	2	4	Float IEE754		A	Measured value (calculated): Unbalanced load current (fundamental)
CT Remote	IL1	20658	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Remote	IL2	20660	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Remote	IL3	20662	2	4	Float IEE754		A	Measured value: Phase current (fundamental)
CT Remote	phi IL1	20680	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL1 Phasor at remote location (Reference phasor required).
CT Remote	phi IL2	20682	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL2 Phasor at remote location (Reference phasor required).
CT Remote	phi IL3	20684	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL3 Phasor at remote location (Reference phasor required).

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
CT Remote	phi I0	20686	2	4	Float IEE754		°	Measured value (calculated): Angle Zero Sequence System Phasor at remote location (Reference phasor required).
CT Remote	phi I1	20688	2	4	Float IEE754		°	Measured value (calculated): Angle of Positive Sequence System Phasor at remote location (Reference phasor required).
CT Remote	phi I2	20690	2	4	Float IEE754		°	Measured Value (calculated): Angle of Negative Sequence System Phasor at remote location (Reference phasor required).
CT Remote - fault value	I0	50648	2	4	Float IEE754		A	Measured value (calculated): Zero current (fundamental) , as stored in the Fault Recorder
CT Remote - fault value	I1	50650	2	4	Float IEE754		A	Measured value (calculated): Positive phase sequence current (fundamental) , as stored in the Fault Recorder
CT Remote - fault value	I2	50652	2	4	Float IEE754		A	Measured value (calculated): Unbalanced load current (fundamental) , as stored in the Fault Recorder
CT Remote - fault value	IL1	50658	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder
CT Remote - fault value	IL2	50660	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
CT Remote - fault value	IL3	50662	2	4	Float IEE754		A	Measured value: Phase current (fundamental) , as stored in the Fault Recorder
CT Remote - fault value	phi IL1	50680	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL1 Phasor at remote location (Reference phasor required). , as stored in the Fault Recorder
CT Remote - fault value	phi IL2	50682	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL2 Phasor at remote location (Reference phasor required). , as stored in the Fault Recorder
CT Remote - fault value	phi IL3	50684	2	4	Float IEE754		°	Measured value (calculated): Angle of Phasor IL3 Phasor at remote location (Reference phasor required). , as stored in the Fault Recorder
Date and Time		20000	6	4	Struct			
	y	20000	6	4	Short	Word 0 (1)	-	year
	m	20000	6	4	Short	Word 1 (17)	-	month
	d	20000	6	4	Short	Word 2 (33)	-	days

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	h	20000	6	4	Short	Word 3 (49)	-	hours
	min	20000	6	4	Short	Word 4 (65)	-	minute
	ms	20000	6	4	Short	Word 5 (81)	-	milliseconds
IRIG-B	Edges	20298	2	4	Float IEE754		-	Edges: Total number of rising and falling edges. This signal indicates if a signal is available at the IRIG-B input.
IRIG-B	NoOfFrameErrors	20300	2	4	Float IEE754		-	Total Number of Frame Errors. Physically corrupted Frame.
IRIG-B	NoOfFramesOK	20302	2	4	Float IEE754		-	Total Number valid Frames.
Id - 87	Id L1 H2	20280	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:2
Id - 87	Id L2 H2	20282	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:2
Id - 87	Id L3 H2	20284	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:2
Id - 87	Id L1 H4	20286	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:4

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Id - 87	Id L2 H4	20288	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:4
Id - 87	Id L3 H4	20290	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:4
Id - 87	Id L1 H5	20292	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:5
Id - 87	Id L2 H5	20294	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:5
Id - 87	Id L3 H5	20296	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:5
Id - 87	Id L1	20352	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L1
Id - 87	Id L2	20354	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L2
Id - 87	Id L3	20356	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L3
Id - 87	Is L1	20358	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L1
Id - 87	Is L2	20360	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L2
Id - 87	Is L3	20362	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L3

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
Id - 87	Id L1H2max	21342	2	4	Float IEE754		%	Maximum Value Id L1H2
Id - 87	Id L2H2max	21348	2	4	Float IEE754		%	Maximum Value Id L2H2
Id - 87	Id L3H2max	21354	2	4	Float IEE754		%	Maximum Value Id L3H2
Id - 87	Id L1H4max	21360	2	4	Float IEE754		%	Maximum Value Id L1H4
Id - 87	Id L2H4max	21366	2	4	Float IEE754		%	Maximum Value Id L2H4
Id - 87	Id L3H4max	21372	2	4	Float IEE754		%	Maximum Value Id L3H4
Id - 87	Id L1H5max	21378	2	4	Float IEE754		%	Maximum Value Id L1H5
Id - 87	Id L2H5max	21384	2	4	Float IEE754		%	Maximum Value Id L2H5
Id - 87	Id L3H5max	21390	2	4	Float IEE754		%	Maximum Value Id L3H5
Id - fault value - 87	Id L1 H2	50280	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:2 , as stored in the Fault Recorder
Id - fault value - 87	Id L2 H2	50282	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:2 , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
Id - fault value - 87	Id L3 H2	50284	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:2 , as stored in the Fault Recorder
Id - fault value - 87	Id L1 H4	50286	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:4 , as stored in the Fault Recorder
Id - fault value - 87	Id L2 H4	50288	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:4 , as stored in the Fault Recorder
Id - fault value - 87	Id L3 H4	50290	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:4 , as stored in the Fault Recorder
Id - fault value - 87	Id L1 H5	50292	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L1 Harmonic:5 , as stored in the Fault Recorder
Id - fault value - 87	Id L2 H5	50294	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L2 Harmonic:5 , as stored in the Fault Recorder
Id - fault value - 87	Id L3 H5	50296	2	4	Float IEE754		%	Measured value (calculated): Differential Current Phase L3 Harmonic:5 , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
Id - fault value - 87	Id L1	50352	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L1 , as stored in the Fault Recorder
Id - fault value - 87	Id L2	50354	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L2 , as stored in the Fault Recorder
Id - fault value - 87	Id L3	50356	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L3 , as stored in the Fault Recorder
Id - fault value - 87	Is L1	50358	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L1 , as stored in the Fault Recorder
Id - fault value - 87	Is L2	50360	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L2 , as stored in the Fault Recorder
Id - fault value - 87	Is L3	50362	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L3 , as stored in the Fault Recorder
IdG - 87N	IdG	20364	2	4	Float IEE754		A	Measured value (calculated): Ground Differential Current IdG
IdG - 87N	IsG	20366	2	4	Float IEE754		A	Measured value (calculated): Ground Stabilizing Current
IdG - fault value - 87N	IdG	50364	2	4	Float IEE754		A	Measured value (calculated): Ground Differential Current IdG , as stored in the Fault Recorder
IdG - fault value - 87N	IsG	50366	2	4	Float IEE754		A	Measured value (calculated): Ground Stabilizing Current , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
LVRT[1] - 27	Cr Tot Numb of Vdips	24092	2	4	Float IEE754		-	Counter Total number of voltage dips.
LVRT[1] - 27	NumOf Vdips in t-LVRT	24094	2	4	Float IEE754		-	Number of Voltage dips during t-LVRT
LVRT[1] - 27	Cr Tot Numb of Vdips to Trip	24096	2	4	Float IEE754		-	Counter Total number of voltage dips that caused a Trip.
LVRT[2] - 27	Cr Tot Numb of Vdips	24138	2	4	Float IEE754		-	Counter Total number of voltage dips.
LVRT[2] - 27	NumOf Vdips in t-LVRT	24140	2	4	Float IEE754		-	Number of Voltage dips during t-LVRT
LVRT[2] - 27	Cr Tot Numb of Vdips to Trip	24142	2	4	Float IEE754		-	Counter Total number of voltage dips that caused a Trip.
Modbus	Mapped Meas 1	23000	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 2	23002	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 3	23004	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 4	23006	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 5	23008	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Modbus	Mapped Meas 6	23010	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 7	23012	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 8	23014	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 9	23016	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 10	23018	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 11	23020	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 12	23022	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 13	23024	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 14	23026	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
Modbus	Mapped Meas 15	23028	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
Modbus	Mapped Meas 16	23030	2	4	Float IEE754		-	Mapped Measured Values. They can be used to provide measured values to the Modbus Master.
PQSCr	cos phi	20152	2	4	Float IEE754		-	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)
PQSCr	P	20154	2	4	Float IEE754		W	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (fundamental)
PQSCr	Q	20156	2	4	Float IEE754		VAr	Measured value (calculated): Reactive power (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) (fundamental)
PQSCr	S	20158	2	4	Float IEE754		VA	Measured Value (Calculated): Apparent power (fundamental)
PQSCr	Wp+	20174	2	4	Float IEE754		kWh	Positive Active Power is consumed active energy
PQSCr	Wp-	20176	2	4	Float IEE754		kWh	Negative Active Power (Fed Energy)
PQSCr	Wq+	20178	2	4	Float IEE754		kVArh	Positive Reactive Power is consumed Reactive Energy
PQSCr	Wq-	20180	2	4	Float IEE754		kVArh	Negative Reactive Power (Fed Energy)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
PQSCr	P RMS	20452	2	4	Float IEE754		W	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (RMS)
PQSCr	S RMS	20454	2	4	Float IEE754		VA	Measured Value (Calculated): Apparent power (RMS)
PQSCr	cos phi RMS	20456	2	4	Float IEE754		-	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P)
PQSCr	Wp Net	20460	2	4	Float IEE754		kWh	Absolute Active Power Hours
PQSCr	Wq Net	20462	2	4	Float IEE754		kVArh	Absolute Reactive Power Hours
PQSCr	Ws Net	20464	2	4	Float IEE754		kVAh	Absolute Apparent Power Hours
PQSCr	P 1	20496	2	4	Float IEE754		W	Measured value (calculated): Active power in positive sequence system (P- = Fed Active Power, P+ = Consumpted Active Power)
PQSCr	Q 1	20498	2	4	Float IEE754		VAr	Measured value (calculated): Reactive power in positive sequence system (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power)
PQSCr	cos phi max	21092	2	4	Float IEE754		-	Maximum value of the power factor: Sign Convention: sign(PF) = sign(P)
PQSCr	cos phi min	21094	2	4	Float IEE754		-	Minimum value of the power factor: Sign Convention: sign(PF) = sign(P)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
PQSCr	P avg	21556	2	4	Float IEE754		W	Average of the active power
PQSCr	P max	21558	2	4	Float IEE754		W	Maximum value of the active power
PQSCr	P min	21560	2	4	Float IEE754		W	Minimum value of the active power
PQSCr	S avg	21562	2	4	Float IEE754		VA	Average of the apparent power
PQSCr	S max	21564	2	4	Float IEE754		VA	Maximum value of the apparent power
PQSCr	S min	21566	2	4	Float IEE754		VA	Minimum value of the apparent power
PQSCr	cos phi max RMS	21570	2	4	Float IEE754		-	Maximum value of the power factor: Sign Convention: sign(PF) = sign(P)
PQSCr	cos phi min RMS	21572	2	4	Float IEE754		-	Minimum value of the power factor: Sign Convention: sign(PF) = sign(P)
PQSCr	Q avg	21574	2	4	Float IEE754		VAr	Average of the reactive power
PQSCr	Q max	21576	2	4	Float IEE754		VAr	Maximum value of the reactive power
PQSCr	Q min	21578	2	4	Float IEE754		VAr	Minimum value of the reactive power

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
PQSCr	Watt Peak demand	21790	2	4	Float IEE754		W	WATTS Peak value, RMS value
PQSCr	VAr Peak demand	21792	2	4	Float IEE754		VAr	VARs Peak value, RMS value
PQSCr	VA Peak demand	21794	2	4	Float IEE754		VA	VA Peak value, RMS value
PQSCr - fault value	cos phi	50152	2	4	Float IEE754		-	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P) , as stored in the Fault Recorder
PQSCr - fault value	P	50154	2	4	Float IEE754		W	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (fundamental) , as stored in the Fault Recorder
PQSCr - fault value	Q	50156	2	4	Float IEE754		VAr	Measured value (calculated): Reactive power (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) (fundamental) , as stored in the Fault Recorder
PQSCr - fault value	S	50158	2	4	Float IEE754		VA	Measured Value (Calculated): Apparent power (fundamental) , as stored in the Fault Recorder
PQSCr - fault value	P RMS	50452	2	4	Float IEE754		W	Measured value (calculated): Active power (P- = Fed Active Power, P+ = Consumpted Active Power) (RMS) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
PQSCr - fault value	S RMS	50454	2	4	Float IEE754		VA	Measured Value (Calculated): Apparent power (RMS) , as stored in the Fault Recorder
PQSCr - fault value	cos phi RMS	50456	2	4	Float IEE754		-	Measured value (calculated): Power factor: Sign Convention: sign(PF) = sign(P) , as stored in the Fault Recorder
PQSCr - fault value	P 1	50496	2	4	Float IEE754		W	Measured value (calculated): Active power in positive sequence system (P- = Fed Active Power, P+ = Consumpted Active Power) , as stored in the Fault Recorder
PQSCr - fault value	Q 1	50498	2	4	Float IEE754		VAr	Measured value (calculated): Reactive power in positive sequence system (Q- = Fed Reactive Power, Q+ = Consumpted Reactive Power) , as stored in the Fault Recorder
SG[1]	Sum trip IL1	20800	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[1]	Sum trip IL2	20802	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[1]	Sum trip IL3	20804	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[1]	Isum Intr per hour	20806	2	4	Float IEE754		kA	Sum per hour of interrupting currents.
SG[1]	CB OPEN capacity	20808	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
SG[1]	TripCmd Cr	20810	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
SG[2]	Sum trip IL1	20812	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[2]	Sum trip IL2	20814	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[2]	Sum trip IL3	20816	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[2]	Isum Intr per hour	20818	2	4	Float IEE754		kA	Sum per hour of interrupting currents.
SG[2]	CB OPEN capacity	20820	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)
SG[2]	TripCmd Cr	20822	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
SG[3]	Sum trip IL1	20824	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[3]	Sum trip IL2	20826	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[3]	Sum trip IL3	20828	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[3]	Isum Intr per hour	20830	2	4	Float IEE754		kA	Sum per hour of interrupting currents.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
SG[3]	CB OPEN capacity	20832	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)
SG[3]	TripCmd Cr	20834	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
SG[4]	Sum trip IL1	20836	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[4]	Sum trip IL2	20838	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[4]	Sum trip IL3	20840	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[4]	Isum Intr per hour	20842	2	4	Float IEE754		kA	Sum per hour of interrupting currents.
SG[4]	CB OPEN capacity	20844	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)
SG[4]	TripCmd Cr	20846	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
SG[5]	Sum trip IL1	20848	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[5]	Sum trip IL2	20850	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[5]	Sum trip IL3	20852	2	4	Float IEE754		A	Summation of the tripping currents phase

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
SG[5]	Isum Intr per hour	20854	2	4	Float IEE754		kA	Sum per hour of interrupting currents.
SG[5]	CB OPEN capacity	20856	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)
SG[5]	TripCmd Cr	20858	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
SG[6]	Sum trip IL1	20860	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[6]	Sum trip IL2	20862	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[6]	Sum trip IL3	20864	2	4	Float IEE754		A	Summation of the tripping currents phase
SG[6]	Isum Intr per hour	20866	2	4	Float IEE754		kA	Sum per hour of interrupting currents.
SG[6]	CB OPEN capacity	20868	2	4	Float IEE754		%	Used capacity of the circuit breaker. (100% means that the circuit breaker has to be maintained.)
SG[6]	TripCmd Cr	20870	2	4	Float IEE754		-	Counter: Total number of trips of the switchgear.
Statistics	IdG max	21938	2	4	Float IEE754		A	Measured value (calculated): Ground Differential Current IdG Maximum Value
Statistics	IsG max	21944	2	4	Float IEE754		A	Measured value (calculated): Ground Stabilizing Current Maximum Value

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Statistics	Id L1 max	21962	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L1 Maximum Value
Statistics	Id L2 max	21968	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L2 Maximum Value
Statistics	Id L3 max	21974	2	4	Float IEE754		Ib	Measured value (calculated): Differential Current Phase L3 Maximum Value
Statistics	Is L1 max	21980	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L1 Maximum Value
Statistics	Is L2 max	21986	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L2 Maximum Value
Statistics	Is L3 max	21992	2	4	Float IEE754		Ib	Measured value (calculated): Restraint Current Phase L3 Maximum Value
Sync - 25	f Bus	20520	2	4	Float IEE754		Hz	Bus frequency
Sync - 25	V Bus	20522	2	4	Float IEE754		V	Bus Voltage
Sync - 25	Angle Bus	20524	2	4	Float IEE754		°	Bus Angle (Reference)
Sync - 25	Angle Diff	20526	2	4	Float IEE754		°	Angle difference between bus and line voltages.
Sync - 25	Volt Diff	20528	2	4	Float IEE754		V	Voltage difference between bus and line.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
Sync - 25	f Line	20530	2	4	Float IEE754		Hz	Line frequency
Sync - 25	V Line	20532	2	4	Float IEE754		V	Line Voltage
Sync - 25	Angle Line	20534	2	4	Float IEE754		°	Line Angle
Sync - 25	Slip Freq	20536	2	4	Float IEE754		Hz	Slip frequency
ThR - 49	Thermal Cap Used	20110	2	4	Float IEE754		%	Measured value: Thermal Capacity Used
ThR - 49	Time To Trip	20112	2	4	Float IEE754		s	Measured value (calculated/measured): Remaining time until the thermal overload module will trip
ThR - 49	Thermal Cap max	21086	2	4	Float IEE754		%	Thermal Capacity maximum value
ThR - fault value - 49	Thermal Cap Used	50110	2	4	Float IEE754		%	Measured value: Thermal Capacity Used , as stored in the Fault Recorder
ThR - fault value - 49	Time To Trip	50112	2	4	Float IEE754		s	Measured value (calculated/measured): Remaining time until the thermal overload module will trip , as stored in the Fault Recorder
VT	f	20128	2	4	Float IEE754		Hz	Measured value: Frequency
VT	VL12	20130	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental)

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
VT	VL23	20132	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental)
VT	VL31	20134	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental)
VT	VL1	20136	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental)
VT	VL2	20138	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental)
VT	VL3	20140	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental)
VT	VX meas	20142	2	4	Float IEE754		V	Measured value (measured): VX measured (fundamental)
VT	V0	20146	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components Zero voltage(fundamental)
VT	V1	20148	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components positive phase sequence voltage(fundamental)
VT	V2	20150	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components negative phase sequence voltage(fundamental)
VT	VG calc	20162	2	4	Float IEE754		V	Measured value (calculated): VG (fundamental)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	phi VG calc	20386	2	4	Float IEE754		°	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 VX meas	20388	2	4	Float IEE754		°	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 VL12	20390	2	4	Float IEE754		°	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 VL1	20392	2	4	Float IEE754		°	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.

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	phi VL23	20394	2	4	Float IEE754		°	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 VL2	20396	2	4	Float IEE754		°	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 VL31	20398	2	4	Float IEE754		°	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 VL3	20400	2	4	Float IEE754		°	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.

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
VT	phi V0	20402	2	4	Float IEE754		°	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	20404	2	4	Float IEE754		°	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	20406	2	4	Float IEE754		°	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	VL1 THD	20408	2	4	Float IEE754		V	Measured value (calculated): VL1 Total Harmonic Distortion
VT	VL12 THD	20410	2	4	Float IEE754		V	Measured value (calculated): V12 Total Harmonic Distortion
VT	VL2 THD	20412	2	4	Float IEE754		V	Measured value (calculated): VL2 Total Harmonic Distortion
VT	VL23 THD	20414	2	4	Float IEE754		V	Measured value (calculated): V23 Total Harmonic Distortion

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	VL3 THD	20416	2	4	Float IEE754		V	Measured value (calculated): VL3 Total Harmonic Distortion
VT	VL31 THD	20418	2	4	Float IEE754		V	Measured value (calculated): V31 Total Harmonic Distortion
VT	%VL1 THD	20420	2	4	Float IEE754		%	Measured value (calculated): VL1 Total Harmonic Distortion / Ground wave
VT	%VL12 THD	20422	2	4	Float IEE754		%	Measured value (calculated): V12 Total Harmonic Distortion / Ground wave
VT	%VL2 THD	20424	2	4	Float IEE754		%	Measured value (calculated): VL2 Total Harmonic Distortion / Ground wave
VT	%VL23 THD	20426	2	4	Float IEE754		%	Measured value (calculated): V23 Total Harmonic Distortion / Ground wave
VT	%VL3 THD	20428	2	4	Float IEE754		%	Measured value (calculated): VL3 Total Harmonic Distortion / Ground wave
VT	%VL31 THD	20430	2	4	Float IEE754		%	Measured value (calculated): V31 Total Harmonic Distortion / Ground wave
VT	VG calc RMS	20432	2	4	Float IEE754		V	Measured value (calculated): VG (RMS)
VT	VX meas RMS	20434	2	4	Float IEE754		V	Measured value (measured): VX measured (RMS)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	VL1 RMS	20436	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS)
VT	VL12 RMS	20438	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS)
VT	VL2 RMS	20440	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS)
VT	VL23 RMS	20442	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS)
VT	VL3 RMS	20444	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS)
VT	VL31 RMS	20446	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS)
VT	%(V2/V1)	20450	2	4	Float IEE754		%	Measured value (calculated): V2/V1, phase sequence will be taken into account automatically.
VT	V/f	20646	2	4	Float IEE754		%	Ratio Volts/Hertz in relation to nominal values.
VT	f max	21002	2	4	Float IEE754		Hz	Max. frequency value
VT	f min	21004	2	4	Float IEE754		Hz	Min. frequency value
VT	V1 max	21044	2	4	Float IEE754		V	Maximum value: Symmetrical components positive phase sequence voltage(fundamental)

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
VT	V1 min	21046	2	4	Float IEE754		V	Minimum value: Symmetrical components positive phase sequence voltage(fundamental)
VT	V2 max	21050	2	4	Float IEE754		V	Maximum value: Symmetrical components negative phase sequence voltage(fundamental)
VT	V2 min	21052	2	4	Float IEE754		V	Minimum value: Symmetrical components negative phase sequence voltage(fundamental)
VT	delta phi	21126	2	4	Float IEE754		°	Measured value (calculated): Vector surge
VT	df/dt	21128	2	4	Float IEE754		Hz/s	Measured value (calculated): Rate-of-frequency-change.
VT	VG calc max RMS	21498	2	4	Float IEE754		V	Measured value (calculated):VX maximum value (RMS)
VT	VG calc min RMS	21500	2	4	Float IEE754		V	Measured value (calculated):VX minimum value (RMS)
VT	VX meas max RMS	21504	2	4	Float IEE754		V	Measured value: VX maximum value (RMS)
VT	VX meas min RMS	21506	2	4	Float IEE754		V	Measured value: VX minimum value (RMS)
VT	VL12 avg RMS	21508	2	4	Float IEE754		V	VL12 average value (RMS)
VT	VL12 max RMS	21510	2	4	Float IEE754		V	VL12 maximum value (RMS)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	VL12 min RMS	21512	2	4	Float IEE754		V	VL12 minimum value (RMS)
VT	VL1 avg RMS	21514	2	4	Float IEE754		V	VL1 average value (RMS)
VT	VL1 max RMS	21516	2	4	Float IEE754		V	VL1 maximum value (RMS)
VT	VL1 min RMS	21518	2	4	Float IEE754		V	VL1 minimum value (RMS)
VT	VL23 avg RMS	21520	2	4	Float IEE754		V	VL23 average value (RMS)
VT	VL23 max RMS	21522	2	4	Float IEE754		V	VL23 maximum value (RMS)
VT	VL23 min RMS	21524	2	4	Float IEE754		V	VL23 minimum value (RMS)
VT	VL2 avg RMS	21526	2	4	Float IEE754		V	VL2 average value (RMS)
VT	VL2 max RMS	21528	2	4	Float IEE754		V	VL2 maximum value (RMS)
VT	VL2 min RMS	21530	2	4	Float IEE754		V	VL2 minimum value (RMS)
VT	VL31 avg RMS	21532	2	4	Float IEE754		V	VL31 average value (RMS)

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT	VL31 max RMS	21534	2	4	Float IEE754		V	VL31 maximum value (RMS)
VT	VL31 min RMS	21536	2	4	Float IEE754		V	VL31 minimum value (RMS)
VT	VL3 avg RMS	21538	2	4	Float IEE754		V	VL3 average value (RMS)
VT	VL3 max RMS	21540	2	4	Float IEE754		V	VL3 maximum value (RMS)
VT	VL3 min RMS	21542	2	4	Float IEE754		V	VL3 minimum value (RMS)
VT	%(V2/V1) max	21552	2	4	Float IEE754		%	Measured value (calculated):V2/V1 maximum value, phase sequence will be taken into account automatically
VT	%(V2/V1) min	21554	2	4	Float IEE754		%	Measured value (calculated):V2/V1 minimum value , phase sequence will be taken into account automatically
VT	V/f max	21894	2	4	Float IEE754		%	Maximum value: Ratio Volts/Hertz in relation to nominal values.
VT	V/f min	21896	2	4	Float IEE754		%	Minimum value: Ratio Volts/Hertz in relation to nominal values.
VT - fault value	f	50128	2	4	Float IEE754		Hz	Measured value: Frequency , as stored in the Fault Recorder
VT - fault value	VL12	50130	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
VT - fault value	VL23	50132	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental) , as stored in the Fault Recorder
VT - fault value	VL31	50134	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (fundamental) , as stored in the Fault Recorder
VT - fault value	VL1	50136	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental) , as stored in the Fault Recorder
VT - fault value	VL2	50138	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental) , as stored in the Fault Recorder
VT - fault value	VL3	50140	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (fundamental) , as stored in the Fault Recorder
VT - fault value	VX meas	50142	2	4	Float IEE754		V	Measured value (measured): VX measured (fundamental) , as stored in the Fault Recorder
VT - fault value	V0	50146	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components Zero voltage(fundamental) , as stored in the Fault Recorder
VT - fault value	V1	50148	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components positive phase sequence voltage(fundamental) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT - fault value	V2	50150	2	4	Float IEE754		V	Measured value (calculated): Symmetrical components negative phase sequence voltage(fundamental) , as stored in the Fault Recorder
VT - fault value	VG calc	50162	2	4	Float IEE754		V	Measured value (calculated): VG (fundamental) , as stored in the Fault Recorder
VT - fault value	phi VG calc	50386	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	phi VX meas	50388	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	phi VL12	50390	2	4	Float IEE754		°	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. , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT - fault value	phi VL1	50392	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	phi VL23	50394	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	phi VL2	50396	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	phi VL31	50398	2	4	Float IEE754		°	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. , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	Subgroup Names Functions	Start Register Address	No. of Modbus Registers	Function Code	Format	Bit Mask / (Bit Position)	Unit	Description
VT - fault value	phi VL3	50400	2	4	Float IEE754		°	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. , as stored in the Fault Recorder
VT - fault value	VG calc RMS	50432	2	4	Float IEE754		V	Measured value (calculated): VG (RMS) , as stored in the Fault Recorder
VT - fault value	VX meas RMS	50434	2	4	Float IEE754		V	Measured value (measured): VX measured (RMS) , as stored in the Fault Recorder
VT - fault value	VL1 RMS	50436	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS) , as stored in the Fault Recorder
VT - fault value	VL12 RMS	50438	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS) , as stored in the Fault Recorder
VT - fault value	VL2 RMS	50440	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS) , as stored in the Fault Recorder
VT - fault value	VL23 RMS	50442	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS) , as stored in the Fault Recorder
VT - fault value	VL3 RMS	50444	2	4	Float IEE754		V	Measured value: Phase-to-neutral voltage (RMS) , as stored in the Fault Recorder

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
VT - fault value	VL31 RMS	50446	2	4	Float IEE754		V	Measured value: Phase-to-phase voltage (RMS) , as stored in the Fault Recorder
VT - fault value	delta phi	51126	2	4	Float IEE754		°	Measured value (calculated): Vector surge , as stored in the Fault Recorder
VT - fault value	df/dt	51128	2	4	Float IEE754		Hz/s	Measured value (calculated): Rate-of-frequency-change. , as stored in the Fault Recorder
Values	Build	20008	2	4	Float IEE754		-	Build Number
Values	Operating hours Cr	20010	2	4	Float IEE754		h	Operating hours counter of the protective device

Commands

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Acknowledge	LEDs	22000	1	5	0xFF00		-	LEDs
Acknowledge	Binary Outputs	22001	1	5	0xFF00		-	Binary Outputs
Acknowledge	Scada	22002	1	5	0xFF00		-	Scada
Acknowledge	Device	22003	1	5	0xFF00		-	Device
Acknowledge	Ack TripCmd	22005	1	5	0xFF00		-	Signal: Acknowledge Trip Command
Reset	Modbus diagnosis counter	22006	1	5	0xFF00		-	Modbus diagnosis counter
Reset	Res all Energy Cr	22011	1	5	0xFF00		-	Reset of all Energy Counters
Scada Cmd	Assbl Scada Cmd 1	22020	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 2	22021	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Scada Cmd	Assbl Scada Cmd 3	22022	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 4	22023	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 5	22024	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 6	22025	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 7	22026	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 8	22027	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Scada Cmd	Assbl Scada Cmd 9	22028	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 10	22029	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 11	22030	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 12	22031	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 13	22032	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 14	22033	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Scada Cmd	Assbl Scada Cmd 15	22034	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Scada Cmd	Assbl Scada Cmd 16	22035	1	5	0xFF00= On 0x0000=Off		-	Assignable Scada Command
Fault rec	Res all rec	22040	1	5	0xFF00		-	Reset all records
PSet-Switch	Scada PS1	22050	1	5	0xFF00		-	Scada Setting Group1
PSet-Switch	Scada PS2	22051	1	5	0xFF00		-	Scada Setting Group2
PSet-Switch	Scada PS3	22052	1	5	0xFF00		-	Scada Setting Group3
PSet-Switch	Scada PS4	22053	1	5	0xFF00		-	Scada Setting Group4
AFRMS Mode	AFRMS SCADA	22054	1	5	0xFF00= On 0x0000=Off		-	Signal: Arcflash Reduction Maintenance SCADA Mode

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
SG	SG ControlCmd1	22100	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear
SG	SG ControlCmd2	22101	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear
SG	SG ControlCmd3	22102	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear
SG	SG ControlCmd4	22103	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear
SG	SG ControlCmd5	22104	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear
SG	SG ControlCmd6	22105	1	5	0xFF00= On 0x0000=Off		-	Control Command Switchgear

Settings

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
Date and Time		32500	6	3 16	Struct			
	y	32500	6	3 16	Short	Word 0 (1)	-	year
	m	32500	6	3 16	Short	Word 1 (17)	-	month
	d	32500	6	3 16	Short	Word 2 (33)	-	days
	h	32500	6	3 16	Short	Word 3 (49)	-	hours
	min	32500	6	3 16	Short	Word 4 (65)	-	minute
	ms	32500	6	3 16	Short	Word 5 (81)	-	milliseconds
Fault rec		50000	9	3 16	Struct			
	RecordNo	50000	9	3 16	Short	Word 0 (1)	-	Record Number

Module (- ANSI / IEEE Device Number)	*Subgroup Names Functions*	*Start Register Address*	*No. of Modbus Registers*	*Function Code*	*Format*	*Bit Mask / (Bit Position)*	*Unit*	*Description*
	Trip Cause	50000	9	3 16	Short	Word 1 (17)	-	Code for the trip cause. In case of several simultaneous trip causes the primary cause is selected. If there is another trip later then the new trip cause overwrites the previous one. The codes for the trip cause are documented in the SCADA documentation.
	Pickup Cause	50000	9	3 16	Short	Word 2 (33)	-	Code for last PickUp cause corresponds to fault record: See scada doc for correlation between pickup reason and code
	FaultNo	50000	9	3 16	Short	Word 3 (49)	-	Fault number
	No. of Grid Fault	50000	9	3 16	Short	Word 4 (65)	-	Number of grid fault: A grid fault, e.g. a short circuit, might cause several faults with trip and autoreclosing; in this case, the fault number counts each fault, but the grid fault number remains the same.
	Time stamp:	50000	9	3 16	long long	Word 5- Word 9 (81)	-	Timestamp in milliseconds since 1970

Cause of trip

Cause of trip reason is provided on two different Modbus addresses:

- At address 5004 the “last primary trip cause” is available. This means, in case of several simultaneous trip causes the primary cause is selected. If there is another trip later then the new trip cause overwrites the previous one.
  The trip cause can be read as long as a trip reason is present. In addition, the content of this register can be latched. The trip cause is latched in the same way as other trip signals, that means if the corresponding latching setting in Modbus is active, the content of the register is fixed until it is acknowledged by command.
- At address 50000 and up the last trip and alarm reason is available with related record, fault, net number and time stamp.
  It is possible to read an arbitrary saved records by requesting corresponding record number. For requesting of a certain saved record user has to send the record number on corresponding register. Be aware that the content of these registers can only be read entirely and that the content changes every time a new fault occurs in the fault recorder.

Fault values can be read on addresses greater than 50000. Addresses of fault values corresponds to addresses of instantaneous values plus offset of 30000, for example Current instantaneous value IE1 is 20100, corresponding fault value address is 50100. This address area need not be read entirely, each address can be read separately. If not a specific fault is selected, last fault value is presented on these addresses.

The following table is showing the “trip cause code” and its relation to the “trip cause reason”.

Cause of trip code	***Description***	***Module***
1	NORM	
1201		IG[1]
1202		IG[2]
1203		IG[3]
1204		IG[4]
1301		Ext Oil Temp
1302		Ext Sudd Press
1303		Ext Temp Superv[1]
1304		Ext Temp Superv[2]
1305		Ext Temp Superv[3]
1306		ExP[1]
1307		ExP[2]

Cause of trip code	*Description*	*Module*
1308		ExP[3]
1309		ExP[4]
1310		Intertripping
1401		f[1]
1402		f[2]
1403		f[3]
1404		f[4]
1405		f[5]
1406		f[6]
1407		df/dt
1408		delta phi
1601		Id
1701		IdG
1801		IdGH
1901		IdH
2501		LVRT[1]
2502		LVRT[2]
2901		I2>[1]
2902		I2>[2]
3001		V012[1]
3002		V012[2]
3003		V012[3]
3004		V012[4]
3005		V012[5]
3006		V012[6]

Cause of trip code	*Description*	*Module*
3101		V/f>[1]
3102		V/f>[2]
3201		I[1]
3202		I[2]
3203		I[3]
3204		I[4]
3205		I[5]
3206		I[6]
3401		PQS[1]
3402		PQS[2]
3403		PQS[3]
3404		PQS[4]
3405		PQS[5]
3406		PQS[6]
3407		P
3408		Q
3501		PF[1]
3502		PF[2]
3601		Q->&V<
3801		ThR
4001		VG[1]
4002		VG[2]
4101		V[1]
4102		V[2]
4103		V[3]

Cause of trip code	*Description*	*Module*
4104		V[4]
4105		V[5]
4106		V[6]
4401		Trip-Trans

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