Profibus – Data Point List

HighPROTEC | PROTECTION TECHNOLOGY MADE SIMPLE

MRM4 |

Version: 3.7

Original document

English

Original reference manual

SEG Electronics GmbH

Krefelder Weg 47 • D–47906 Kempen (Germany)

Postfach 10 07 55 (P.O.Box) • D–47884 Kempen (Germany)

Telephone: +49 (0) 21 52 145 1

Internet: www.SEGelectronics.de

Sales

Telephone: +49 (0) 21 52 145 331

Fax: +49 (0) 21 52 145 354

E-mail: SalesPGD_EMEA@SEGelectronics.de

Service

Telephone: +49 (0) 21 52 145 614

Fax: +49 (0) 21 52 145 354

E-mail: industrial.support@SEGelectronics.de

Table of Contents

1 Profibus

The Slave is a so-called “Modular Slave”. Within the GSD-File the optional available Configuration Modules are described only. The precise configuration for a device can be inquired by means of the Profibus-Command “GetConfig”. The configuration consists of so-called “Modules”. The description of the modules can be taken from the Profibus specification. Please contact the Technical Support in case of questions regarding the configuration.

The meaning of the Input and Output fields can be taken from the following tables. The Input fields are sent from the Slave to the Master. The Output fields are sent from the Master to the Slave. The Output fields contain the Commands and the Input fields contain the States of the device.

1.1 Configuration

The configuration telegram follows right after the parameter telegram and declares the number of input and output bytes. The Master sends to all Slaves how many bytes for each input and output message cycle are required. The following table defines the required size of a single input and output frame.

Direction	Length	Configuration
Input	50	0x1F 0x1F 0x1F 0x11
Output	8	0x27

2 Data Point Lists

2.1 Signals

These Data can be taken from the Input Field of the Profibus. The Input Field is sent from the Slave to the Master.

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
SG[1]	Pos	0/0		Signal: Circuit Breaker Position (0 = Indeterminate, 1 = OFF, 2 = ON, 3 = Disturbed)
Sys	PS 1	2/0		Signal: The currently active Parameter Set is PS 1
Sys	PS 2	2/1		Signal: The currently active Parameter Set is PS 2
Sys	PS 3	2/2		Signal: The currently active Parameter Set is PS 3
Sys	PS 4	2/3		Signal: The currently active Parameter Set is PS 4
Profibus	Data OK	2/4		Data within the Input field are OK (Yes=1)
Prot	active	2/5		Signal: active
Prot	Alarm L1	2/6		Signal: General-Alarm L1
Prot	Alarm L2	2/7		Signal: General-Alarm L2
Prot	Alarm L3	3/0		Signal: General-Alarm L3
Prot	Alarm G	3/1		Signal: General-Alarm - Earth fault
Prot	Alarm	3/2		Signal: General Alarm
Prot	Trip L1	3/3	*	Signal: General Trip L1
Prot	Trip L2	3/4	*	Signal: General Trip L2
Prot	Trip L3	3/5	*	Signal: General Trip L3
Prot	Trip G	3/6	*	Signal: General Trip Ground fault
Prot	Trip	3/7	*	Signal: General Trip
Profibus	Assignment 1-I	5/0		Module input state: Scada Assignment

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
Profibus	Assignment 2-I	5/1		Module input state: Scada Assignment
Profibus	Assignment 3-I	5/2		Module input state: Scada Assignment
Profibus	Assignment 4-I	5/3		Module input state: Scada Assignment
Profibus	Assignment 5-I	5/4		Module input state: Scada Assignment
Profibus	Assignment 6-I	5/5		Module input state: Scada Assignment
Profibus	Assignment 7-I	5/6		Module input state: Scada Assignment
Profibus	Assignment 8-I	5/7		Module input state: Scada Assignment
Profibus	Assignment 9-I	6/0		Module input state: Scada Assignment
Profibus	Assignment 10-I	6/1		Module input state: Scada Assignment
Profibus	Assignment 11-I	6/2		Module input state: Scada Assignment
Profibus	Assignment 12-I	6/3		Module input state: Scada Assignment
Profibus	Assignment 13-I	6/4		Module input state: Scada Assignment
Profibus	Assignment 14-I	6/5		Module input state: Scada Assignment
Profibus	Assignment 15-I	6/6		Module input state: Scada Assignment
Profibus	Assignment 16-I	6/7		Module input state: Scada Assignment
Profibus	Assignment 17-I	7/0		Module input state: Scada Assignment
Profibus	Assignment 18-I	7/1		Module input state: Scada Assignment
Profibus	Assignment 19-I	7/2		Module input state: Scada Assignment
Profibus	Assignment 20-I	7/3		Module input state: Scada Assignment
Profibus	Assignment 21-I	7/4		Module input state: Scada Assignment
Profibus	Assignment 22-I	7/5		Module input state: Scada Assignment
Profibus	Assignment 23-I	7/6		Module input state: Scada Assignment
Profibus	Assignment 24-I	7/7		Module input state: Scada Assignment

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
Profibus	Assignment 25-I	8/0		Module input state: Scada Assignment
Profibus	Assignment 26-I	8/1		Module input state: Scada Assignment
Profibus	Assignment 27-I	8/2		Module input state: Scada Assignment
Profibus	Assignment 28-I	8/3		Module input state: Scada Assignment
Profibus	Assignment 29-I	8/4		Module input state: Scada Assignment
Profibus	Assignment 30-I	8/5		Module input state: Scada Assignment
Profibus	Assignment 31-I	8/6		Module input state: Scada Assignment
Profibus	Assignment 32-I	8/7		Module input state: Scada Assignment
SG[1]	TripCmd	9/0	*	Signal: Trip Command
I[1] – 50, 51	Alarm	10/0		Signal: Alarm
I[1] – 50, 51	TripCmd	10/1	*	Signal: Trip Command
I[2] – 50, 51	Alarm	10/2		Signal: Alarm
I[2] – 50, 51	TripCmd	10/3	*	Signal: Trip Command
I[3] – 50, 51	Alarm	10/4		Signal: Alarm
I[3] – 50, 51	TripCmd	10/5	*	Signal: Trip Command
I[4] – 50, 51	Alarm	10/6		Signal: Alarm
I[4] – 50, 51	TripCmd	10/7	*	Signal: Trip Command
IG[1] – 50N, 51N	Alarm	11/0		Signal: The alarm threshold has been exceeded.
IG[1] – 50N, 51N	TripCmd	11/1	*	Signal: Trip Command
IG[2] – 50N, 51N	Alarm	11/2		Signal: The alarm threshold has been exceeded.
IG[2] – 50N, 51N	TripCmd	11/3	*	Signal: Trip Command
I2>[1] – 46	Alarm	11/4		Signal: Alarm Negative Sequence
I2>[1] – 46	TripCmd	11/5	*	Signal: Trip Command

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
I2>[2] – 46	Alarm	11/6		Signal: Alarm Negative Sequence
I2>[2] – 46	TripCmd	11/7	*	Signal: Trip Command
ExP[1]	Alarm	12/0		Signal: Alarm
ExP[1]	TripCmd	12/1	*	Signal: Trip Command
ExP[2]	Alarm	12/2		Signal: Alarm
ExP[2]	TripCmd	12/3	*	Signal: Trip Command
ExP[3]	Alarm	12/4		Signal: Alarm
ExP[3]	TripCmd	12/5	*	Signal: Trip Command
ExP[4]	Alarm	12/6		Signal: Alarm
ExP[4]	TripCmd	12/7	*	Signal: Trip Command
CBF – 50BF, 62BF	Alarm	13/0		Signal: Circuit Breaker Failure
TCS – 74TC	Alarm	13/1		Signal: Alarm Trip Circuit Supervision
CTS – 60L	Alarm	13/2		Signal: Alarm Current Transformer Measuring Circuit Supervision
SG[1]	Isum Intr trip	13/3	*	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
DI Slot X1	DI 1	13/4		Signal: Digital Input
DI Slot X1	DI 2	13/5		Signal: Digital Input
DI Slot X1	DI 3	13/6		Signal: Digital Input
DI Slot X1	DI 4	13/7		Signal: Digital Input
DI Slot X1	DI 5	14/0		Signal: Digital Input
DI Slot X1	DI 6	14/1		Signal: Digital Input
DI Slot X1	DI 7	14/2		Signal: Digital Input
DI Slot X1	DI 8	14/3		Signal: Digital Input
DI Slot X1	DI 1	14/4		Signal: Digital Input

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
DI Slot X1	DI 2	14/5		Signal: Digital Input
DI Slot X1	DI 3	14/6		Signal: Digital Input
DI Slot X1	DI 4	14/7		Signal: Digital Input
BO Slot X2	BO 1	15/0		Signal: Binary Output Relay
BO Slot X2	BO 2	15/1		Signal: Binary Output Relay
BO Slot X2	BO 3	15/2		Signal: Binary Output Relay
BO Slot X2	BO 4	15/3		Signal: Binary Output Relay
BO Slot X2	BO 5	15/4		Signal: Binary Output Relay
BO Slot X2	BO 1	15/5		Signal: Binary Output Relay
BO Slot X2	BO 2	15/6		Signal: Binary Output Relay
BO Slot X2	BO 3	15/7		Signal: Binary Output Relay
MStart	Stop	16/0		Signal: Motor is in stop mode
MStart	Start	16/1		Signal: Motor is in start mode
MStart	Run	16/2		Signal: Motor is in run mode
MStart	I_Transit	16/3		Signal: Current transition signal
MStart	T_Transit	16/4		Signal: Time transition signal
MStart	Blo	16/5		Signal: Motor is blocked for starting or transition to Run mode
MStart	ColdStartSeq	16/6		Signal: Motor cold start sequence flag
MStart	NOCSBlocked	16/7		Signal: Motor is prohibited to start due to number of cold start limits
MStart	SPHBlocked	17/0		Signal: Motor is prohibited to start due to starts per hour limits
MStart	SPHBlockAlarm	17/1		Signal: Motor is prohibited to start due to starts per hour limits, would come active in the next stop
MStart	TBSBlocked	17/2		Signal: Motor is prohibited to start due to time between starts limits

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
MStart	MotorStopBlo	17/3		Signal: Motor stop block other protection functions
MStart	ThermalBlo	17/4		Signal: Thermal block
MStart	RemBlockStart	17/5		Signal: Motor is prohibited to start due to external blocking through digital input DI
MStart	LATBlock	17/6		Signal: Long acceleration timer enforced
MStart	ABSActive	17/7		Signal: Anti-backspin is active. For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The anti-backspin timer prevents starting the motor while it is spinning in the reverse direction.
MStart	ForcedStart	18/0		Signal: Motor being forced to start
MStart	Trip	18/1	*	Signal: Trip
MStart	TripCmd	18/2	*	Signal: Trip Command
MStart	TransitionTrip	18/3	*	Signal: Start transition fail trip
MStart	ZSSTrip	18/4	*	Signal: Zero speed trip (possible locked rotor)
MStart	InSq Stop2Start Faill	18/5	*	Signal: Fail to transit from stop to start based on reported back time
MStart	InSq Start2Run Fail	18/6	*	Signal: Fail to transit from start to run based on reported back time
MStart	TripPhaseReverse	18/7	*	Signal: Relay tripped because of phase reverse detection
MStart	InSq-I	19/0		State of the module input: Incomplete Sequence
MStart	ZSS-I	19/1		State of the module input: Zero Speed Switch
MStart	RemStartBlock-I	19/2		State of the module input: Remote Motor Start Blocking
ThR	active	19/3		Signal: active
ThR	Load above SF	19/4		“Load above Service Factor”: If the current exceeds the set value of “UTC” (“Ultimate trip threshold”) then the used thermal capacity counts up and the state “Load above SF” is becoming true. If the current is below the “UTC” value this state is false.
ThR	RTD effective	19/5		This state becomes true if the following conditions are all fulfilled:

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
				- the state “Load above SF” is true, - the Winding Temperature Trip has been activated in the RTD module, - for at least one temperature a valid value above 0°C (32°F) is being displayed.
ThR	Alarm	19/6		Signal: Alarm
ThR	Alarm Pickup	19/7		Signal: Alarm Pickup
ThR	Alarm Timeout	20/0		Signal: Alarm Timeout
ThR	TripCmd	20/1	*	Signal: Trip Command
Jam[1] – 51LR	Alarm	20/2		Signal: Alarm
Jam[1] – 51LR	TripCmd	20/3	*	Signal: Trip Command
Jam[2] – 51LR	Alarm	20/4		Signal: Alarm
Jam[2] – 51LR	TripCmd	20/5	*	Signal: Trip Command
I<[1] – 37	Alarm	20/6		Signal: Alarm
I<[1] – 37	TripCmd	20/7	*	Signal: Trip Command
I<[2] – 37	Alarm	21/0		Signal: Alarm
I<[2] – 37	TripCmd	21/1	*	Signal: Trip Command
I<[3] – 37	Alarm	21/2		Signal: Alarm
I<[3] – 37	TripCmd	21/3	*	Signal: Trip Command
MLS	Alarm	21/4		Signal: Alarm
RTD	active	21/5		Signal: active
RTD	TripCmd	21/6	*	Signal: Trip Command
RTD	Alarm	21/7		Alarm RTD Temperature Protection

2.2 Measuring Values

These Data can be taken from the Input Field of the Profibus. The Input Field is sent from the Slave to the Master.

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Format	Description
CT	IL1	22/0	Float IEEE754	Measured value: Phase current (fundamental)
CT	IL2	26/0	Float IEEE754	Measured value: Phase current (fundamental)
CT	IL3	30/0	Float IEEE754	Measured value: Phase current (fundamental)
CT	IG meas	34/0	Float IEEE754	Measured value (measured): IG (fundamental)
CT	%(I2/I1)	38/0	Float IEEE754	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.
MStart	I3 P (%Ib) avg	42/0	Float IEEE754	Average RMS current of all 3 phases as percentages of Ib
Values	Operating hours Cr	46/0	Float IEEE754	Operating hours counter of the protective device

2.3 Commands

The commands are set within the Output Field. These data fields are sent from the master to the slave. The slave responds to data modifications only, for example if a 2 Bit state changes from Off (01) to On (2).

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Description
SG[1]	Control/Position of circuit breaker	0/0	Control respectively Position of circuit breaker (1 = OFF, 2 = On).
Sys	Ack LED	2/0	All acknowledgeable LEDs will be acknowledged.
Sys	Ack BO	2/2	All acknowledgeable binary output relays are acknowledged.
Sys	Ack Scada	2/4	Latched SCADA signals are acknowledged.
PSS via Scada	PSS via Scada	3/0	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).
Commands	Scada Cmd 1	4/0	Scada Command
Commands	Scada Cmd 2	4/2	Scada Command
Commands	Scada Cmd 3	4/4	Scada Command
Commands	Scada Cmd 4	4/6	Scada Command
Commands	Scada Cmd 5	5/0	Scada Command
Commands	Scada Cmd 6	5/2	Scada Command
Commands	Scada Cmd 7	5/4	Scada Command
Commands	Scada Cmd 8	5/6	Scada Command
Commands	Scada Cmd 9	6/0	Scada Command
Commands	Scada Cmd 10	6/2	Scada Command
Commands	Scada Cmd 11	6/4	Scada Command
Commands	Scada Cmd 12	6/6	Scada Command
Commands	Scada Cmd 13	7/0	Scada Command
Commands	Scada Cmd 14	7/2	Scada Command

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Description
Commands	Scada Cmd 15	7/4	Scada Command
Commands	Scada Cmd 16	7/6	Scada Command

HighPROTEC

SEG Electronics GmbH
Krefelder Weg 47 • D–47906 Kempen (Germany)
Postfach 10 07 55 (P.O.Box) • D–47884 Kempen (Germany)
Telephone: +49 (0) 21 52 145 1

Internet: www.SEGelectronics.de

Sales
Telephone: +49 (0) 21 52 145 331
Fax: +49 (0) 21 52 145 354

Service
Telephone: +49 (0) 21 52 145 614
Fax: +49 (0) 21 52 145 354

docs.SEGelectronics.de/HighPROTEC

SEG Electronics has company-owned plants, subsidiaries, and branches, as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address / phone / fax / email information for all locations is available on our website.

Profibus – DATA POINT LIST | MRM4