



**MRM4 – Profibus DP
HighPROTEC**

Data point list

Manual DOK-TD-MRM4PDE

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This manual applies to devices (version):

Version 2.0.h

Build: 19747

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 field contain the Commands and the Input field contain the States of the device.

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.

<i>Direction</i>	<i>Length</i>	<i>Configuration</i>
Input	52	0x1F 0x1F 0x1F 0x13
Output	8	0x27

Data Point Lists

Signals

These Data can be taken from the Input Field of the Profibus. The Input Field is sent from the Slave to the Master and it contains device states.

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
SG	Pos	0/0		Signal: Circuit Breaker Position (0 = Indeterminate, 1 = OFF, 2 = ON, 3 = Disturbed)
Sys	PS 1	2/0		Signal: Parameter Set 1
Sys	PS 2	2/1		Signal: Parameter Set 2
Sys	PS 3	2/2		Signal: Parameter Set 3
Sys	PS 4	2/3		Signal: Parameter Set 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-l	5/0		Module input state: Scada Assignment
Profibus	Assignment 2-l	5/1		Module input state: Scada Assignment

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
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
Profibus	Assignment 25-I	8/0		Module input state: Scada Assignment
Profibus	Assignment 26-I	8/1		Module input state: Scada Assignment

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
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	TripCmd	9/0	*	Signal: Trip Command
I[1]	Alarm	10/0		Signal: Alarm
I[1]	TripCmd	10/1	*	Signal: Trip Command
I[2]	Alarm	10/2		Signal: Alarm
I[2]	TripCmd	10/3	*	Signal: Trip Command
I[3]	Alarm	10/4		Signal: Alarm
I[3]	TripCmd	10/5	*	Signal: Trip Command
I[4]	Alarm	10/6		Signal: Alarm
I[4]	TripCmd	10/7	*	Signal: Trip Command
I[5]	Alarm	11/0		Signal: Alarm
I[5]	TripCmd	11/1	*	Signal: Trip Command
I[6]	Alarm	11/2		Signal: Alarm
I[6]	TripCmd	11/3	*	Signal: Trip Command
IG[1]	Alarm	11/4		Signal: Alarm IG
IG[1]	TripCmd	11/5	*	Signal: Trip Command
IG[2]	Alarm	11/6		Signal: Alarm IG
IG[2]	TripCmd	11/7	*	Signal: Trip Command
I2>[1]	Alarm	12/0		Signal: Alarm Negative Sequence

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
I2>[1]	TripCmd	12/1	*	Signal: Trip Command
I2>[2]	Alarm	12/2		Signal: Alarm Negative Sequence
I2>[2]	TripCmd	12/3	*	Signal: Trip Command
ExP[1]	Alarm	12/4		Signal: Alarm
ExP[1]	TripCmd	12/5	*	Signal: Trip Command
ExP[2]	Alarm	12/6		Signal: Alarm
ExP[2]	TripCmd	12/7	*	Signal: Trip Command
ExP[3]	Alarm	13/0		Signal: Alarm
ExP[3]	TripCmd	13/1	*	Signal: Trip Command
ExP[4]	Alarm	13/2		Signal: Alarm
ExP[4]	TripCmd	13/3	*	Signal: Trip Command
CBF	Alarm	13/4	*	Signal: Circuit Breaker Failure
TCS	Alarm	13/5		Signal: Alarm Trip Circuit Supervision
CTS	Alarm	13/6		Signal: Alarm Current Transformer Measuring Circuit Supervision
SG	Isum Intr trip	13/7	*	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
DI Slot X1	DI 1	14/0		Signal: Digital Input
DI Slot X1	DI 2	14/1		Signal: Digital Input
DI Slot X1	DI 3	14/2		Signal: Digital Input
DI Slot X1	DI 4	14/3		Signal: Digital Input
DI Slot X1	DI 5	14/4		Signal: Digital Input
DI Slot X1	DI 6	14/5		Signal: Digital Input
DI Slot X1	DI 7	14/6		Signal: Digital Input
DI Slot X1	DI 8	14/7		Signal: Digital Input

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

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
MStart	MotorStopBlo	17/7		Signal: Motor stop block other protection functions
MStart	ThermalBlo	18/0		Signal: Thermal block
MStart	RemBlockStart	18/1		Signal: Motor is prohibited to start due to external blocking through digital input DI
MStart	LATBlock	18/2		Signal: Long acceleration timer enforced
MStart	ABSActive	18/3		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	18/4		Signal: Motor being forced to start
MStart	Trip	18/5		Signal: Trip
MStart	TripCmd	18/6	*	Signal: Trip Command
MStart	TransitionTrip	18/7		Signal: Start transition fail trip
MStart	ZSSTrip	19/0		Signal: Zero speed trip (possible locked rotor)
MStart	INSQSP2STFaill	19/1		Signal: Fail to transit from stop to start based on reported back time
MStart	INSQSt2RunFail	19/2		Signal: Fail to transit from start to run based on reported back time
MStart	TripPhaseReverse	19/3		Signal: Relay tripped because of phase reverse detection
MStart	INSQ-I	19/4		State of the module input: INcomplete SeQuence
MStart	ZSS-I	19/5		State of the module input: Zero Speed Switch
MStart	RemStartBlock-I	19/6		State of the module input: Remote Motor Start Blocking
ThR	active	19/7		Signal: active
ThR	Load above SF	20/0		Load above Service Factor
ThR	RTD effective	20/1		RTD effective
ThR	Alarm	20/2		Signal: Alarm
ThR	Alarm Pickup	20/3		Signal: Alarm Pickup

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
ThR	Alarm Timeout	20/4		Signal: Alarm Timeout
ThR	TripCmd	20/5	*	Signal: Trip Command
Jam[1]	active	20/6		Signal: active
Jam[1]	Alarm	20/7		Signal: Alarm
Jam[1]	TripCmd	21/0	*	Signal: Trip Command
Jam[2]	active	21/1		Signal: active
Jam[2]	Alarm	21/2		Signal: Alarm
Jam[2]	TripCmd	21/3	*	Signal: Trip Command
I<[1]	active	21/4		Signal: active
I<[1]	Alarm	21/5		Signal: Alarm
I<[1]	TripCmd	21/6	*	Signal: Trip Command
I<[2]	active	21/7		Signal: active
I<[2]	Alarm	22/0		Signal: Alarm
I<[2]	TripCmd	22/1	*	Signal: Trip Command
I<[3]	active	22/2		Signal: active
I<[3]	Alarm	22/3		Signal: Alarm
I<[3]	TripCmd	22/4	*	Signal: Trip Command
MLS	active	22/5		Signal: active
MLS	Alarm	22/6		Signal: Alarm
RTD	active	22/7		Signal: active
RTD	TripCmd	23/0	*	Signal: Trip Command
RTD	Alarm	23/1		Alarm RTD Temperature Protection
SOTF	active	23/2		Signal: active
SOTF	I<	23/3		Signal: No Load Current.

Data Point Lists

Modul	Names Function	Offset (BytePosition /BitPosition)	Self Latching	Description
SOTF	enabled	23/4		Signal: Switch Onto Fault enabled. This Signal can be used to modify Overcurrent Protection Settings.

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 and contains device states.

Modul	Names Functions	Offset (BytePosition)	Format	Description
Current	IL1	24/0	Float IEEE754	Measured value: Phase current (fundamental)
Current	IL2	28/0	Float IEEE754	Measured value: Phase current (fundamental)
Current	IL3	32/0	Float IEEE754	Measured value: Phase current (fundamental)
Current	IG meas	36/0	Float IEEE754	Measured value (measured): IG (fundamental)
Current	%(I2/I1)	40/0	Float IEEE754	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.
MStart	I3 P (%Ib) avg	44/0	Float IEEE754	Average RMS current of all 3 phases as percentages of Ib
Values	Operating hours Cr	48/0	Float IEEE754	Operating hours counter of the protective device

Commands

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

Modul	Names Function	Offset (BytePosition/BitPosition) in Output field	Description
SG	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 will be acknowledged.
Sys	Ack Scada	2/4	SCADA will be acknowledged.
PSS via Scada	PSS via Scada	3/0	Signal: Parameter Set Switch via Scada
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

Data Point Lists

Modul	Names Function	Offset (BytePosition/BitPosition) in Output field	Description
Commands	Scada Cmd 15	7/4	Scada Command
Commands	Scada Cmd 16	7/6	Scada Command

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