Profibus – Data Point List

High PRO TEC | PROTECTION TECHNOLOGY
MADE SIMPLE

MRDT4 |

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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	64	0x1F 0x1F 0x1F 0x1F
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)
SG[2]	Pos	0/2		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

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
Prot	Trip	3/7	*	Signal: General Trip
Profibus	Assignment 1-I	5/0		Module input state: Scada Assignment
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

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2.1 Signals

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
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
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
SG[2]	TripCmd	9/1	*	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.

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
IG[2] – 50N, 51N	TripCmd	11/3	*	Signal: Trip Command
ThR – 49	Alarm	11/4		Signal: Alarm Thermal Overload
ThR – 49	TripCmd	11/5	*	Signal: Trip Command
I2>[1] – 46	Alarm	11/6		Signal: Alarm Negative Sequence
I2>[1] – 46	TripCmd	11/7	*	Signal: Trip Command
I2>[2] – 46	Alarm	12/0		Signal: Alarm Negative Sequence
I2>[2] – 46	TripCmd	12/1	*	Signal: Trip Command
IH2[1]	Blo L1	12/2		Signal: Blocked L1
IH2[1]	Blo L2	12/3		Signal: Blocked L2
IH2[1]	Blo L3	12/4		Signal: Blocked L3
IH2[1]	Blo IG meas	12/5		Signal: Blocking of the ground (earth) protection module (measured ground current)
IH2[1]	3-ph Blo	12/6		Signal: Inrush was detected in at least one phase - trip command blocked.
ExP[1]	Alarm	12/7		Signal: Alarm
ExP[1]	TripCmd	13/0	*	Signal: Trip Command
ExP[2]	Alarm	13/1		Signal: Alarm
ExP[2]	TripCmd	13/2	*	Signal: Trip Command
ExP[3]	Alarm	13/3		Signal: Alarm
ExP[3]	TripCmd	13/4	*	Signal: Trip Command
ExP[4]	Alarm	13/5		Signal: Alarm
ExP[4]	TripCmd	13/6	*	Signal: Trip Command
CBF[1] – 50BF, 62BF	Alarm	13/7		Signal: Circuit Breaker Failure
CBF[2] – 50BF, 62BF	Alarm	14/0		Signal: Circuit Breaker Failure

2 Data Point Lists

2.1 Signals

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
TCS[1] – 74TC	Alarm	14/1		Signal: Alarm Trip Circuit Supervision
TCS[2] – 74TC	Alarm	14/2		Signal: Alarm Trip Circuit Supervision
CTS[1] – 60L	Alarm	14/3		Signal: Alarm Current Transformer Measuring Circuit Supervision
CTS[2] – 60L	Alarm	14/4		Signal: Alarm Current Transformer Measuring Circuit Supervision
SG[1]	Isum Intr trip	14/5	*	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
SG[2]	Isum Intr trip	14/6	*	Signal: Maximum permissible Summation of the interrupting (tripping) currents exceeded in at least one phase.
Ext Oil Temp	Alarm	14/7		Signal: Alarm
Ext Oil Temp	TripCmd	15/0	*	Signal: Trip Command
Ext Sudd Press	Alarm	15/1		Signal: Alarm
Ext Sudd Press	TripCmd	15/2	*	Signal: Trip Command
Ext Temp Superv[1]	Alarm	15/3		Signal: Alarm
Ext Temp Superv[1]	TripCmd	15/4	*	Signal: Trip Command
Ext Temp Superv[2]	Alarm	15/5		Signal: Alarm
Ext Temp Superv[2]	TripCmd	15/6	*	Signal: Trip Command
Ext Temp Superv[3]	Alarm	15/7		Signal: Alarm
Ext Temp Superv[3]	TripCmd	16/0	*	Signal: Trip Command
Id – 87	TripCmd	16/1	*	Signal: Trip Command
IdG[1] – 87N	Alarm	16/2		Signal: Alarm
IdG[1] – 87N	TripCmd	16/3	*	Signal: Trip Command
IdG[2] – 87N	Alarm	16/4		Signal: Alarm
IdG[2] – 87N	TripCmd	16/5	*	Signal: Trip Command
IdGH[1] – 87N	Alarm	16/6		Signal: Alarm

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
IdGH[1] – 87N	TripCmd	16/7	*	Signal: Trip Command
IdGH[2] – 87N	Alarm	17/0		Signal: Alarm
IdGH[2] – 87N	TripCmd	17/1	*	Signal: Trip Command
IdH – 87	Alarm	17/2		Signal: Alarm
IdH – 87	TripCmd	17/3	*	Signal: Trip Command
IH2[2]	Blo L1	17/4		Signal: Blocked L1
IH2[2]	Blo L2	17/5		Signal: Blocked L2
IH2[2]	Blo L3	17/6		Signal: Blocked L3
IH2[2]	Blo IG meas	17/7		Signal: Blocking of the ground (earth) protection module (measured ground current)
IH2[2]	3-ph Blo	18/0		Signal: Inrush was detected in at least one phase - trip command blocked.
DI Slot X1	DI 1	18/1		Signal: Digital Input
DI Slot X1	DI 2	18/2		Signal: Digital Input
DI Slot X1	DI 3	18/3		Signal: Digital Input
DI Slot X1	DI 4	18/4		Signal: Digital Input
DI Slot X1	DI 5	18/5		Signal: Digital Input
DI Slot X1	DI 6	18/6		Signal: Digital Input
DI Slot X1	DI 7	18/7		Signal: Digital Input
DI Slot X1	DI 8	19/0		Signal: Digital Input
DI Slot X6	DI 1	19/1		Signal: Digital Input
DI Slot X6	DI 2	19/2		Signal: Digital Input
DI Slot X6	DI 3	19/3		Signal: Digital Input
DI Slot X6	DI 4	19/4		Signal: Digital Input

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2.1 Signals

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
DI Slot X6	DI 5	19/5		Signal: Digital Input
DI Slot X6	DI 6	19/6		Signal: Digital Input
DI Slot X6	DI 7	19/7		Signal: Digital Input
DI Slot X6	DI 8	20/0		Signal: Digital Input
BO Slot X2	BO 1	20/1		Signal: Binary Output Relay
BO Slot X2	BO 2	20/2		Signal: Binary Output Relay
BO Slot X2	BO 3	20/3		Signal: Binary Output Relay
BO Slot X2	BO 4	20/4		Signal: Binary Output Relay
BO Slot X2	BO 5	20/5		Signal: Binary Output Relay
BO Slot X2	BO 6	20/6		Signal: Binary Output Relay
BO Slot X5	BO 1	20/7		Signal: Binary Output Relay
BO Slot X5	BO 2	21/0		Signal: Binary Output Relay
BO Slot X5	BO 3	21/1		Signal: Binary Output Relay
BO Slot X5	BO 4	21/2		Signal: Binary Output Relay
BO Slot X5	BO 5	21/3		Signal: Binary Output Relay
BO Slot X5	BO 6	21/4		Signal: Binary Output Relay
RTD	active	21/5		Signal: active
RTD	TripCmd	21/6	*	Signal: Trip Command
RTD	Alarm	21/7		Alarm RTD Temperature Protection
CLPU	detected	22/0		Signal: Cold Load detected
SOTF	active	22/1		Signal: active
SOTF	I<	22/2		Signal: No Load Current.

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Latched	Description
SOTF	enabled	22/3		Signal: Switch Onto Fault enabled. This Signal can be used to modify Overcurrent Protection Settings.

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 W1	IL1	24/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W1	IL2	28/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W1	IL3	32/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W1	IG meas	36/0	Float IEEE754	Measured value (measured): IG (fundamental)
CT W2	IL1	40/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W2	IL2	44/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W2	IL3	48/0	Float IEEE754	Measured value: Phase current (fundamental)
CT W2	IG meas	52/0	Float IEEE754	Measured value (measured): IG (fundamental)
CT W1	%(I2/I1)	56/0	Float IEEE754	Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.
Values	Operating hours Cr	60/0	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).
SG[2]	Control/Position of circuit breaker	0/2	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

Module (ANSI / IEEE)	Name Function	Offset (Byte pos. / Bit position)	Description
Commands	Scada Cmd 14	7/2	Scada Command
Commands	Scada Cmd 15	7/4	Scada Command
Commands	Scada Cmd 16	7/6	Scada Command

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