

SIL2 Universal Transmitter MTP 200i-TE

Powerful Features:

- ◆ SIL2-Transmitter in DuoTec-Failsafe Technology with self-monitoring
- ◆ Inputs: Resistor and Pt100 with 2-, 3- and 4-wire switch, all types of thermocouple, current, voltage
- ◆ Analogue output for mA and V
- ◆ 3 individually adjustable limit values
- ◆ 1 service alarm
- ◆ Gradient alarm function
- ◆ Square root of the output signal
- ◆ Safe galvanic separation

Simple Operation:

- ◆ Configuration / visualization software WINSMART
- ◆ Diagnostic manager with fault memory
- ◆ BUS-Integration (RS 232 and RS 485)
- ◆ Power supply via DIN rail or terminal
- ◆ Simple assembling

Certificated:

- ◆ IEC 61508 / 61511 SIL2
- ◆ TÜV certificated according to DIN 19250 AK4
- ◆ ATEX II (1) G [Ex ia Ga] IIC and ATEX II (2) G [Ex ib Gb] IIC

Function

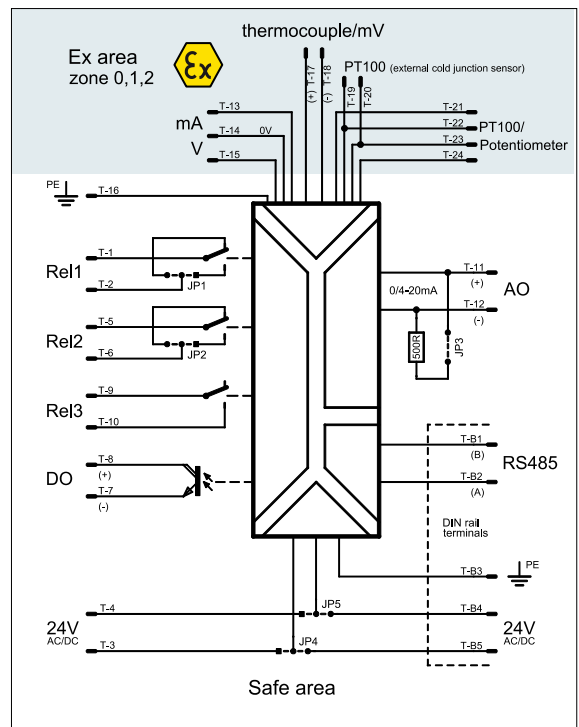
The universal transmitter MTP200i-TE converts various different input signals (mA, V, PT100, potentiometer, thermocouples, Thermocouple-resistance).

The configuration can be done simply via our software. An electrically isolated mA / V output is available.

Alarm monitoring takes place by two relay contacts and one transistor output.

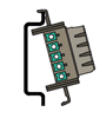
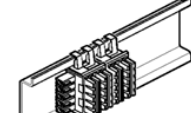
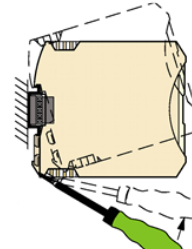
Additional another relay contact output is available for signaling the safety functions.

All output circuits can be used in safety circuits and are galvanic isolated from each other and from the power supply.



Technical Data

Analogue Inputs (AI1 ... AI4) of MTP200i-TE		
A filter of first order (0.1 – 99.9) is configurable for the measuring inputs!		
mA-input AI1		
Measuring range:	-22...22 mA, free configurable	
Input resistance:	115 Ω	
V-input AI2		
Measuring range:	-11...+11 V, free configurable	
Input resistance:	100 kΩ	
Pt100 sensor input (DIN IEC 751) AI3		
Connection:	2-, 3- und 4-wire circuit	
Measuring range:	-200...+800 °C	
Scale range:	5...1000 °C	
Measuring current::	1 mA	
Measuring dissolving:	0.01 K	
Max. loop resistance:	max. 100 Ω	
Remote potentiometer/resistance input (DIN 43822) AI3		
Connection:	2-, 3-, und 4-wire circuit	
Measuring range:	0...600 Ω resp. 0...5000 Ω	
Scale range:	3...600 Ω resp. 3...5000 Ω	
Measuring current::	1/0.2 mA	
Measuring dissolving:	0.01/0.1 Ω	
Max. loop resistance:	max. 100 Ω	
mV-/ Thermocouple measuring input AI4		
Measuring range:	-70...+70 mV, free configurable	
Input resistance:	>10 MΩ	
Max. loop resistance:	2000 Ω	
Thermocouple types	B; E; J; K; L; R; S; T; U	
Analogue Output (AO)		
A filter of first order (0.1 – 99.9) is configurable for the measuring output!		
Galvanic separation between input, output and auxiliary power!		
	constant current	voltage
Max. range:	0...22 mA	0...11 V
Standard range:	0/4-20 mA	0/2-10 V
Load:	≤ 500 Ω at 20 mA	min. 50 kΩ
Accuracy:	0.02 % of final value	0.02 % of final value
Load influence:	<0.005 %	0.5 % at R _L =100 kΩ
Rise time:	<150 ms	<150 ms
Contact Outputs (REL1, REL2) Transistor Output (DO)		
Alarm conditions are indicated with yellow front-side LED's!		
Alarm number:	3 independently adjustable limit values	
Setting:	physical values in the WINSMART® Program	
Accuracy	as measured value accuracy	
Alarm type:	free configurable	
Alarm output:	2x relay contact and 1x transistor output	
Alarm delay:	free configurable from 0 ... 9.9 s	
Switch hysteresis	free configurable from 0 ... 99.9 %	
Operating mode:	normally opened or normally closed principle	
Alarm function:	input signal monitoring + maintenance report	
Contact outputs REL1/REL2		
Contact:	opener or closing contact (via jumper setting)	
Switching power:	max. 62.5 VA resp. max. 30 W	
Switching voltage:	max. 125 V AC or 110 V DC	
Switching current:	max. 1 A	
Min. contact voltage:	10 mV DC	
Min. contact current:	10 µA	
Contact material:	AG Pd + 10 µAu	
Relay type:	according to IEC 947-5-1 resp. EN60947	
Transistor output DO		
Switching power:	<1.4 W	
Switching voltage:	<28 V DC	
Switching current:	<50 mA	
Contact Output REL3 for maintenance requirement report		
Alarm conditions are indicated with red front-side LED's!		
Contact position:	Closed in good condition	
Contact data:	see REL1/REL2	
Operating mode:	Normally closed principle	
Alarm function:	Maintenance requirement report	
Supply voltage		
Supply indication:	Green LED for good status	
Supply voltage range:	19 ... 30 VDC or 18 ... 28 VAC	
Power consumption:	1.2 W (for 24 VDC and 4 mA im AA)	
	1.5 W (for 24VDC and 20mA im AA)	
Interfaces (COM, RS485)		
Galvanic separation of the COM and RS485-interface to the auxiliary energy and all other circuits!		
COM/RS232:	Via front socket connection for PC	

RS485:	Half duplex, without termination
Baud rate:	9600 bps
Device address:	1-248
General Data	
Accuracy	
Maximum:	<0.04 % of final value
Typical:	<0.02 % of final value
Temperature coefficient	
Maximum:	<0.01 %/K
Typical:	<0.005 %/K
Galvanic separation	
Input/output/supply:	300 Veff (rated insulation voltage, overvoltage category II, Contamination level 2, safe separation as per EN 61010, EN 50178); 2.5 kV AC testing voltage (50 Hz, 1 min.); 375 V (peak value as per EN 60079-11); 375 V (peak value as per EN 60079-11)
Input/output:	
Input/supply:	
Ambient conditions	
Perm. temperature:	-20 °C ... +60 °C
Storage/transport:	-30 °C ... +80 °C
Perm. humidity (operation):	10 % ... 95 % r.H. without condensation
Electric connection	
T-1 to T-12:	Screw-plug-connection/grey with 2.5 mm ²
T-17 to T-24:	Screw-plug-connection/blue with 2.5 mm ²
T-B1 to T-B5:	TBUS- connection with 2.5 mm ²
Housing	
Material:	PBT
Protection class:	IP20
Combustibility class:	V0 according to UL
Dimensions:	22.5 mm x 114.5 mm x 99 mm without clamps
Weight:	250 g
Form of construction:	Clamp housing for DIN-rail mounting
Mounting/Position:	Free
Proceeding of self-monitoring	
mV/TC- measuring input:	1 monitoring cycle
Resistance input:	1 monitoring cycle
Analog output:	1 monitoring cycle
Power supplies:	2 monitoring cycles
Sensor-/wire-break:	1 monitoring cycle
Relay (REL1 ... REL3):	indirect contact monitoring
Maintenance requirement:	constant light of red front-LED and REL3- contact opened
Conformity	
ATEX-directive:	EN60079-0, EN60079-11, EN60079-26
EMV-directive 2004/108/EG:	EN61000-6-2, EN61000-6-4, EN61326-1
Optional: ATEX [Ex ia] IIC	
The permissible max. values according to ATEX can be viewed in the relevant certification or in the manual!	
Assembling	
The device must be operated outside a potentially explosive area only! ME-MAX-Housing is combinable with a TBUS Connector/ Support Rail Connector. Because of the TBUS-Connector, which is snapped in the DIN rail, the RS485 interface and the supply voltage can be wired convenient. The TBUS Connection occurs automatically in the grid of the participating devices. So there is no need for an elaborated preliminary or for subsequent work of the TBUS Connection anymore.	
Open TBUS-connector → turn housing → device installed!	
 <p>When using TBUS connector, place it into the DIN rail!</p>  <p>Use it to bridge the power supply and the RS485 interface!</p>  <p>Mounting and removal</p> <p>Observe the direction of the module and the TBUS connector when snapping into position!</p>	