

Thermocouple Transmitter for 2-wire Current Loop MTP300i-SIL

Powerful Properties:

- ◆ 2-wire temperature transmitter for DIN rails
- ◆ 2 galvanic isolated TC-inputs with
- ◆ cold-junction compensation
- ◆ Signal pass-through time:
- ◆ without Butterworth filter ≤ 3 ms
- ◆ with Butterworth filter ≤ 38 ms
- ◆ Installation in zone 1 or 2 permissible
- ◆ Intrinsic safety according to IEC/EN 60079-11
- ◆ Error indication according to NAMUR NE 43
- ◆ Green LED for Signal indication

Easy operation:

- ◆ Power supply via rail or terminal
- ◆ Simple assembling

Certified:

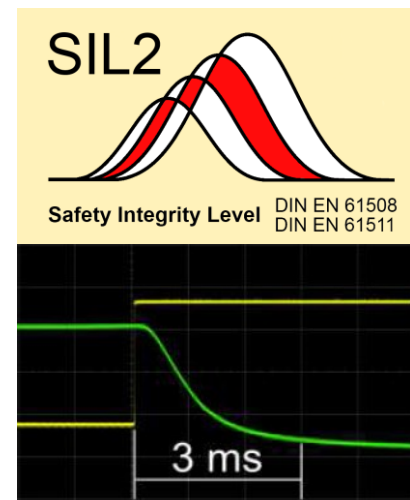
- ◆ SIL2 according to IEC/EN 61508:2010
- ◆ IECEx - Ex ib [ia Ga] IIC T4 Gb
- ◆ ATEX II 2 (1) G Ex ib[ia] IIC T4

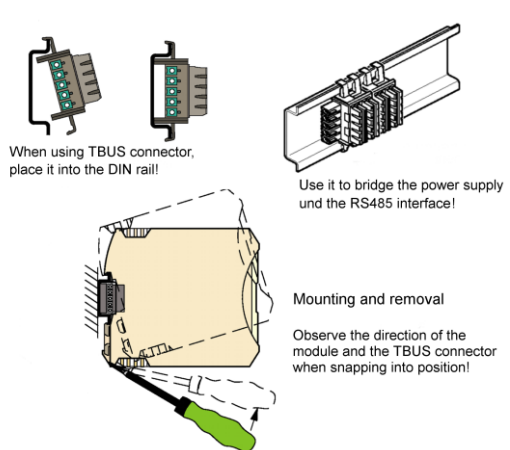


Function

The 2-wire temperature transmitter MTP300i-SIL-K has been designed for the operation of intrinsically safe thermocouple circuits installed in the Ex area. Each TC-input terminal is equipped with a Pt100 sensor for the cold-junction compensation. The TC transmitter must be intrinsically safe supplied by a repeater power supply or ZENER barrier. Both thermocouple signals are galvanic isolated.

The devices can be installed in zone 1 or 2 with the "n" (IEC/EN 60079-15) protection type.



Certificates	General data																																																				
ATEX certificate BVS 08 ATEX E 082 X + 4. Supplement II 2 (1) G Ex ib[ia] IIC T4 IECEX certificate BVS 14.0073X Ex ib [ia Ga] IIC T4 Gb Functional Safety (SIL) SIL 2 according to EN 61508 Safety data according to ATEX for intrinsically safe circuits	Signal pass-through time Without 50/60 Hz Butterworth filter: 3 ms With 50/60 Hz Butterworth filter: 38 ms Transmission error Typical: <0.1 % (of final value) Maximum: <0.2 % (of final value) Temperature coefficient Typical: <0.05 % /10 K Maximum: <0.1 % /10 K Cold-junction compensation error Temperature range 0°C to +50°C: <0.5 °C Temperature range -10°C to +70°C: <1.0 °C Linearization error Typical: <0.1 °C Maximum: <0.2 °C Electric Isolation Tested according norms & rules EN 60079-11: Electromagnetic compatibility Tested according norms & rules EN 61326-3-2 Current loop supply Voltage range: 12.5 ... 28 V Current range: >3.5 ... <24 mA Power dissipation Minimum (12.5 V x 4 mA): 50 mW Maximum (28 V x 20 mA): 560 mW Ambient temperature Operation: -10 to +70 °C Storage/transport: -20 to +80 °C Humidity Permissible operation humidity (no condensation): -10 ... 95 %																																																				
Power supply - Ex ib IIC (terminals 1 and 4) <table border="0"> <tr><td>U_i</td><td>Voltage:</td><td>28</td><td>V DC</td></tr> <tr><td>I_i</td><td>Current:</td><td>95</td><td>mA</td></tr> <tr><td>P_i</td><td>Power:</td><td>655</td><td>mW</td></tr> <tr><td>C_i</td><td>Effective inner capacity:</td><td>26</td><td>nF</td></tr> <tr><td>L_i</td><td>Effective inner inductivity:</td><td></td><td>negligible</td></tr> </table> Thermocouple inputs - Ex ia IIC and Ex ib IIC (terminals 5 and 8, 9 and 12) <table border="0"> <tr><td>U_o</td><td>Voltage</td><td>1</td><td>V DC</td></tr> <tr><td>I_o</td><td>Current</td><td>1.8</td><td>mA</td></tr> <tr><td>P_o</td><td>Power</td><td>0.5</td><td>mW</td></tr> <tr><td>C_o</td><td>Permissible outer capacity</td><td>10</td><td>pF</td></tr> <tr><td>L_o</td><td>Permissible outer inductivity</td><td>100</td><td>mH</td></tr> </table> Input signal (terminals 5 and 8, 9 and 12) Thermocouple: NiCr-Ni 0 ... 400°C Cold-junction compensation: -10 to +70°C	U _i	Voltage:	28	V DC	I _i	Current:	95	mA	P _i	Power:	655	mW	C _i	Effective inner capacity:	26	nF	L _i	Effective inner inductivity:		negligible	U _o	Voltage	1	V DC	I _o	Current	1.8	mA	P _o	Power	0.5	mW	C _o	Permissible outer capacity	10	pF	L _o	Permissible outer inductivity	100	mH	Output signal (terminals 1 and 4) <table border="0"> <tr><td>I_o</td><td>Current:</td><td>4 ... 20</td><td>mA</td></tr> <tr><td>I_o</td><td>Maximum current:</td><td>< 24</td><td>mA</td></tr> <tr><td>I_o</td><td>Behavior by defect (NE 43):</td><td>3.6</td><td>mA</td></tr> </table> Status indicator: Green LED: luminosity corresponds to 4 ... 20 mA Behavior by defect: dark	I _o	Current:	4 ... 20	mA	I _o	Maximum current:	< 24	mA	I _o	Behavior by defect (NE 43):	3.6	mA
U _i	Voltage:	28	V DC																																																		
I _i	Current:	95	mA																																																		
P _i	Power:	655	mW																																																		
C _i	Effective inner capacity:	26	nF																																																		
L _i	Effective inner inductivity:		negligible																																																		
U _o	Voltage	1	V DC																																																		
I _o	Current	1.8	mA																																																		
P _o	Power	0.5	mW																																																		
C _o	Permissible outer capacity	10	pF																																																		
L _o	Permissible outer inductivity	100	mH																																																		
I _o	Current:	4 ... 20	mA																																																		
I _o	Maximum current:	< 24	mA																																																		
I _o	Behavior by defect (NE 43):	3.6	mA																																																		
Snap in 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 und the RS485 interface!</p> <p>Mounting and removal Observe the direction of the module and the TBUS connector when snapping into position!</p>	Housing Material: Polyamide Color: light grey Degree of protection: IP20 Width x length x height (with connection terminal blocks): 22.5 x 115 x 108 mm Inflammability class according to UL 94: VO Housing type for mounting: 35 mm DIN rails Weight with terminal blocks: approx. 200 g Connection data Solid: 0.2 / 2.5 mm ² (minimum/maximum) Stranded: 0.2 / 2.5 mm ² (minimum/maximum) AWG: 24/14 kcmil (minimum/maximum) Stripping length: 7 mm Connection method: Plugable screw connection Tightening torque: 0.5 ... 0.6 Nm Installation Safe area: Install the device in a clean and dry Environment. Ex area (zone 1 or 2): Install the device in a suitable housing with a minimum of IP54 degree of protection.																																																				