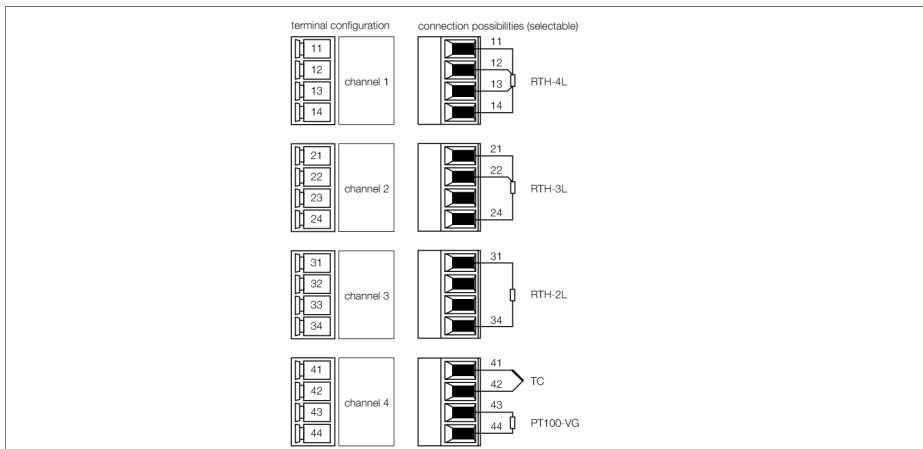




The input module TI40Ex is used for the connection of 2, 3 and 4-wire temperature probes of the types PT100, PT200, PT500, PT1000, Ni100 and CU100, as well as for the connection of thermocouples of the types B, E, D, J, K, L, N, R, S, T and U. The module can also be used for the measurement of low voltages (-75...+75 mV, -1.2...+1.2 V) and resistances (0...30 Ω, 0...300 Ω, 0...3 kΩ).

The module features protection class Ex ib IIC and can be mounted in zone 1 in combination with the excom® system. The inputs feature protection class Ex ia IIC.

Line compensation of 2-wire temperature resistors is performed during parametrization by means of preset resistant values. The values have to be determined first through measurements.

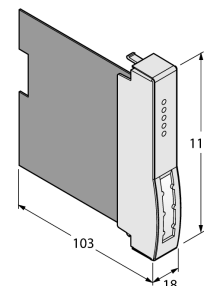
When using thermoelements, external cold junction compensation can be accomplished separately for each channel by connecting resistors such as Pt100 to the two unused terminals. Internal compensation instead is parameterized for all channels via integrated Pt100 resistor.

The internal resolution is 16 bit, the analog value is represented as a number between 0 and 32767 on the PROFIBUS-DP. The temperature is indicated in Kelvin. For conversion to °C, please observe an offset of 273.2.

Parameters such as line monitoring, substitute values etc. can be adjusted for each channel separately and are initialized by the master only.

- Input module for the connection of temperature probes
- Complete galvanic separation

Dimensions



Type code	TI40Ex																				
Ident no.	6884000																				
Supply voltage	via module rack, central power supply																				
Power consumption	≤ 1 W																				
Galvanic separation	all-round galvanic separation acc. to EN 60079-11																				
Number of channels	4-channel																				
Input circuits	intrinsically safe acc. to EN 60079-11 PT100 PT200 PT500 PT1000 Ni 100 Cu100 thermocouple																				
Resolution	16 Bit																				
max. Messabweichung	≤ max. Messabweichung %	max. Messabweichung																			
	0.1	bei geschirmtem Signalkabel																			
	1	bei ungeschirmtem Signalkabel																			
Linearitätsabweichung	≤ 0.05% of full scale der Messspanne																				
Temperature drift	≤ 0.005 % / K																				
Rise time/fall time	≤ 1.3 s (10 ... 90 %)																				
Ex approval acc. to conformity certificate	PTB 00 ATEX 2181																				
Device designation	Ⓔ II 2 (1) G Ex ib [ia] IIC T4 Ⓔ II (1) D [Ex ia IIIC]																				
Max. values:	passive transducer connection																				
Max.output voltage U _o	≤ 5.5 V																				
Max. output current I _o	≤ 25 mA																				
Max. output power P _o	≤ 35 mW																				
Characteristic	linear																				
Internal inductance/capacitance L _i /C _i	L _i	negligibly small																			
	C _i	≤ 60.0 nF																			
External inductance/capacitance L _e /C _e	<table><tr><td></td><td>IIC</td><td>IIB</td></tr><tr><td>L_e [mH]</td><td>C_e [μF]</td><td>C_e [μF]</td></tr><tr><td>2.0</td><td>2.6</td><td>15</td></tr><tr><td>1.0</td><td>2.9</td><td>17</td></tr><tr><td>0.5</td><td>3.6</td><td>21</td></tr><tr><td>0.2</td><td>4.5</td><td>27</td></tr></table>				IIC	IIB	L _e [mH]	C _e [μF]	C _e [μF]	2.0	2.6	15	1.0	2.9	17	0.5	3.6	21	0.2	4.5	27
	IIC	IIB																			
L _e [mH]	C _e [μF]	C _e [μF]																			
2.0	2.6	15																			
1.0	2.9	17																			
0.5	3.6	21																			
0.2	4.5	27																			
Max. values:	active transducer connection																				
Max.output voltage U _o	≤ 1.2 V																				
Max. output current I _o	≤ 50 mA																				
Max. output power P _o	≤ 60 mW																				
Characteristic	rectangular																				
Internal inductance/capacitance L _i /C _i	L _i	negligibly small																			
	C _i	negligibly small																			
External inductance/capacitance L _e /C _e	<table><tr><td></td><td>IIC</td><td>IIB</td></tr><tr><td>L_e [mH]</td><td>C_e [μF]</td><td>C_e [μF]</td></tr><tr><td>2.0</td><td>1.6</td><td>9.8</td></tr><tr><td>1.0</td><td>1.9</td><td>12</td></tr><tr><td>0.5</td><td>2.3</td><td>14</td></tr><tr><td>0.2</td><td>3.0</td><td>19</td></tr></table>				IIC	IIB	L _e [mH]	C _e [μF]	C _e [μF]	2.0	1.6	9.8	1.0	1.9	12	0.5	2.3	14	0.2	3.0	19
	IIC	IIB																			
L _e [mH]	C _e [μF]	C _e [μF]																			
2.0	1.6	9.8																			
1.0	1.9	12																			
0.5	2.3	14																			
0.2	3.0	19																			
Indication																					
Operational readiness	1 x green / red																				
State/ Fault	4 x red																				
Housing material	Plastic																				
Connection mode	module, plugged on rack																				



Remote I/O system **excom®**
input module, temperature, 4-channel
TI40Ex

TURCK

Industrial
Automation

Protection class	IP20
Ambient temperature	-20...+60 °C
Relative humidity	≤ 95% at 55 °C acc. to EN 60068-2
Vibration test	acc. to IEC 60068-2-6
Shock test	acc. to IEC 60068-2-27
EMC	acc. to EN 61326-1 (2006) acc. to Namur NE21 (2007)
MTTF	62 years acc. to SN 29500 (Ed. 99) 40 °C
Dimensions	18x 118x 103 mm
Weight	75 g