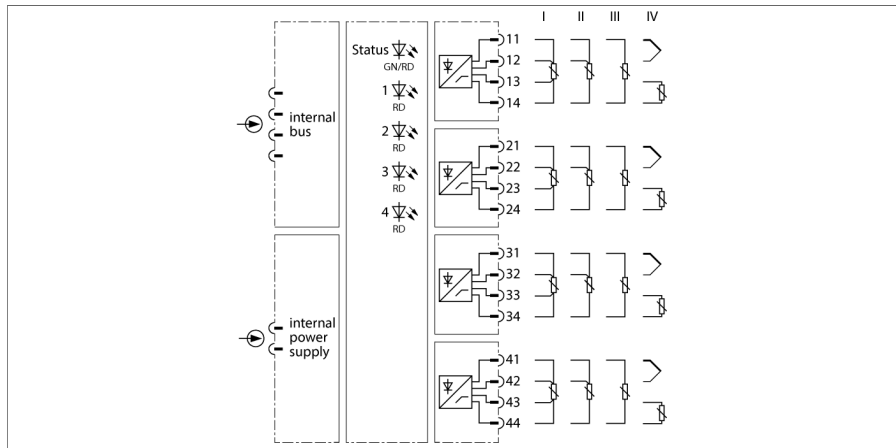


excom I/O System

Input Module, Temperature, 4-channel

TI40EX



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 resistance measurements (0...30 Ω , 0...300 Ω , 0...3 k Ω)

The module features protection class Ex ib IIC and can be mounted in zone 1 in combination with excom. The ignition protection type of the inputs is Ex ia IIC.

Line compensation of 2-wire temperature resistors is done by means of parametrized resistance values. These values have to be determined first through measurements.

When using thermocouples, external cold junction compensation can be carried out separately for each channel by connecting resistors such as the Pt100 to the two unused terminals. Internal compensation instead is parametrized for all channels via an 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 $^{\circ}\text{C}$, 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 solely by the master.

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



Dimensions

Type	TI40EX
ID	6884000
Supply voltage	Via module rack, central power supply module
Power consumption	≤ 1 W
Galvanic isolation	Complete galvanic isolation acc. to EN 60079-11
Number of channels	4

Input circuits	Intrinsically safe acc. to EN 60079-11
	Cu100
	Ni100
	Pt100
	Pt200
	Pt500
	Pt1000
	Thermocouple

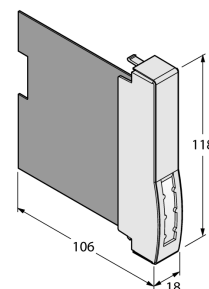
Reference temperature	25 °C
Resolution	16 Bit
Temperature drift	≤ 0.002 % of full scale/K
Rise time/fall time	≤ 1.3 s (10...90 %)
Max. measurement tolerance under EMC influence	≤ 0.1 % with shielded signal cable ≤ 1 % with unshielded signal cable

Ex approval acc. to conformity certificate	IECEX PTB 11.0095
Ex approval acc. to conformity certificate	PTB 00 ATEX 2181
Device designation	Ex II 2 (1) G Ex ib [ia Ga] IIC T4
Device marking	Ex II (1) D [Ex ia] IIIC

Displays/Operating elements	
Operational readiness	1 × green/red
State/ Fault	4 × red

Housing material	Plastic
Connection mode	module, plugged on rack
Protection class	IP20
Ambient temperature	-20...+60 °C
Relative humidity	≤ 93 % at 40 °C acc. to IEC 60068-2-78
Vibration test	Acc. to IEC 60068-2-6
Shock test	Acc. to IEC 60068-2-27
EMC	Acc. to EN 61326-1 Acc. to Namur NE21
MTTF	62 years acc. to SN 29500 (Ed. 99) 40 °C
Dimensions	18 x 118 x 106 mm

Approvals	ATEX
	cFMus
	cFM
	IECEX
	CCC
	INMETRO
	KOSHA
	EAC Ex
	DNV GL
	BV
	LR
	KR
	CMI
	KCC
	CE



Accessories

Type code	Ident no.		Dimension drawing
TI-CJC-2 (10PCS)	6884209	Cold junction compensation element (Pt100) for thermocouples measuring with the TI40...	