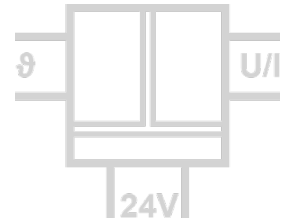


# Temperature Transmitter IDT 45000

for Pt, Ni, KTY, TC, R, Potentiometer and mV Sensors,  
programmable via USB and DIP switch



The programmable Temperature Transmitter IDT 45000 is used for measure industrial process signals. It converts Pt, Ni, KTY or TC sensor signals as well as poti, resistor and mV signals to isolated standard signals.

Due to the easy configuration via USB interface and the calibrated range selection per DIP switch the Transmitter is suitable for flexible use.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path. With der Teach-In Function the measuring range limits can be set during operation.

With the USB Programming-Kit set the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

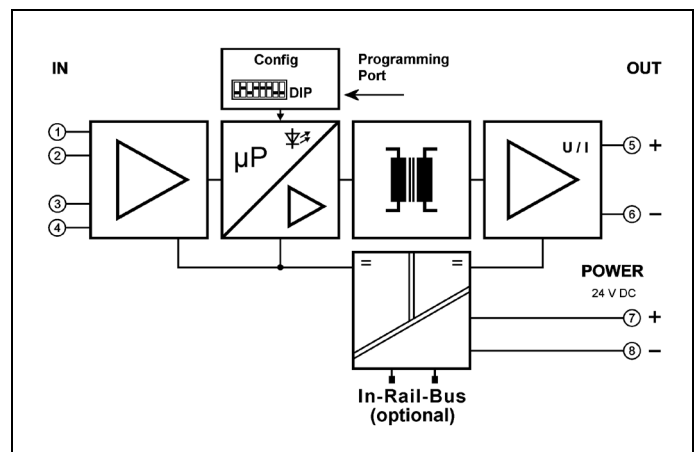
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- **Universal Measuring Input**  
for all common industrial sensor signals
- **Easy configurable via USB or DIP switches**  
complete programmable via USB interface or selectable per DIP switch
- **Switchable Service Functions**  
Simulation and Teach-In Function for an easy commissioning
- **3-port isolation**  
Protection against erroneous measurements due to parasitic voltages or ground loops
- **Extremely slim design**  
6.2 mm slim housing for a simple and space saving DIN rail mounting
- **Optional In-Rail-Bus mounting rail connector**  
allows for fast and economical installation
- **Protective Separation acc. to EN 61140**  
Protects service personnel and downstream devices against impermissibly high voltage
- **5 Years Warranty**  
Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant (carriage and insurance paid by sender)



Block Diagram



# 6mm

## Technical Data

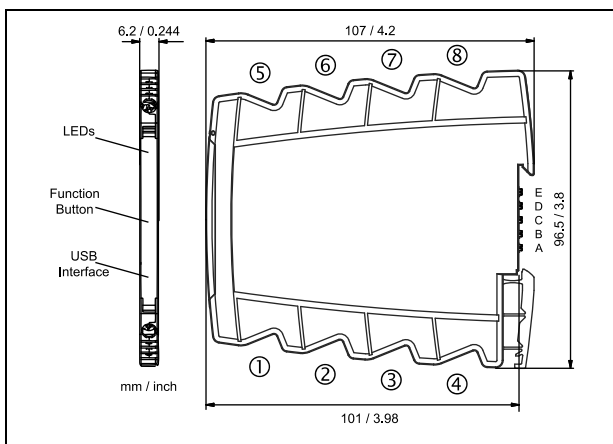
Input				
<b>Sensor</b>	<b>Type</b>	<b>Span min.</b>	<b>Measuring error</b>	
Pt	Pt100, Pt200, Pt500, Pt1000	10 K	< 0.1 K + 0.05 % meas. val.	
Ni	Ni100, Ni200, Ni500, Ni1000	10 K	< 0.2 K + 0.05 % meas. val.	
KTY	KTY, 29 types	25 K	< 0.3 K + 0.05 % meas. val.	
Resistor	0 to 5000 Ω	100 Ω	< 0.1 Ω + 0.02 % meas. val.	
	Sensor current / connection	0.2 mA / 4-wire, 3-wire, 2-wire		
	Cable resistance	< 100 Ω per wire, manual compensation for 2-wire connection programmable		
Thermocouples	E, J, K, L, N, R, S, T, U / B, C, D	50 K / 100 K	< 0.3 K + 0.08 % meas. val.	
	Cold junction compensation	Internal, external, uncompensated, manual setting	Error of Cold junction internal < 1.5 K	
mV Input	±100 mV    ±1000 mV	5 mV / 50 mV	< 50 μV + 0.02 % meas. val.	
Potentiometer	100 Ω to 50 kΩ	10 %	< 0.05 %	
Output		Current		
Output signal	0/2 ... 10 mA    0/4 ... 20 mA	<b>Voltage</b>		
Load	≤ 12 V (600 Ω at 20 mA)	0/1 ... 5 V    0/2 ... 10 V		
Residual ripple	< 10 mV <sub>rms</sub>			
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)		Transfer characteristic rising / falling	
Error signal	Sensor/wire break, error signal programmable			
General data				
Transmission error	< 0.1 % full scale		Temperature coefficient <sup>1)</sup> < 100 ppm/K	
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms			
Test voltage	3 kV AC, 50 Hz, 1 min.    Input against output    against power supply			
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1			
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply			
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)		Transport and storage -40 °C to +85 °C (-40 to +185 °F)	
Power supply	24 V DC    voltage range 9.6 V to 31.2 V DC,    approx. 0.8 W			
EMC <sup>3)</sup>	EN 61326-1			
Approvals	ATEX	DEMKO 16 ATEX 1685X	Ex II 3 G Ex nA IIC T4 Gc	
	IECEx	IECEx UL 16.0055X	Ex nA IIC T4 Gc	
	UL	E478692 USA/Canada	Class I, Division 2 Groups A, B, C, D T4	
Construction	6.2 mm (0.244") housing, protection class IP 20, mounting on 35 mm DIN rail acc. to EN 60715			
Weight	Approx. 70 g			

1) Average TC related to full scale value in specified operating temperature range, reference temperature 23 °C

2) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.

3) Minor deviations possible during interference

### Dimensions



Subject to change!

### Product line

### Terminal assignments

1	Input
2	Input
3	Input
4	Input
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

### Connection

Captive plus-minus clamp screws  
 Wire cross-section 0.5 ... 2.5 mm<sup>2</sup> / AWG 20-14  
 Stripped length 8 mm / 0.3 in  
 Screw terminal torque 0.6 Nm / 5 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

Device	Order No.
Temperature Transmitter, programmable via USB and DIP switch	IDT 45000 S
Temperature Transmitter, programmable via USB and DIP switch, In-Rail-Bus for power supply	IDT 45000 B