GT 45000

Temperature Transmitter

for Pt, Ni, KTY and TC Standard Sensors, mV, R and Potentiometer measuring, programmable via DIP/USB

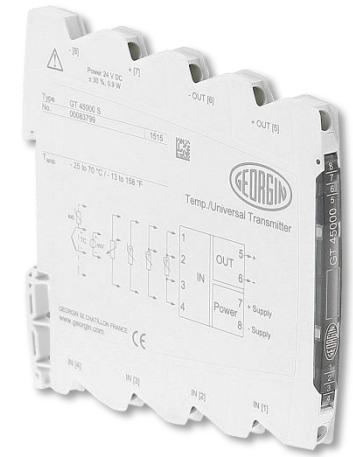
The programmable Temperature Transmitter GT 45000 is used for measure industrial process signals. It converts Pt, Ni, KTY or TC sensor signals as well as poti, resistor or mV signals on input to standard signals.

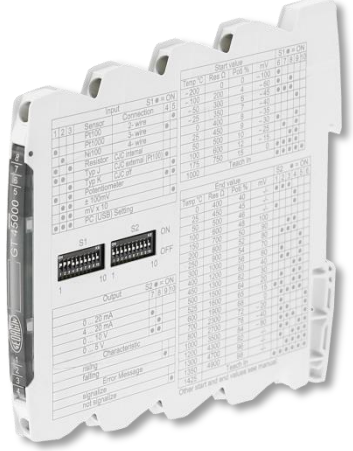
Due to the easy configuration via USB interface and the calibrated range selection per DIP switch the Transmitter is suitable for flexible use.

The Simulation Function, switchable on front side, simulates an output reference signal for testing and adjusting of the complete signal path. With der Teach-In Function the measuring range limits can be set during operation.

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

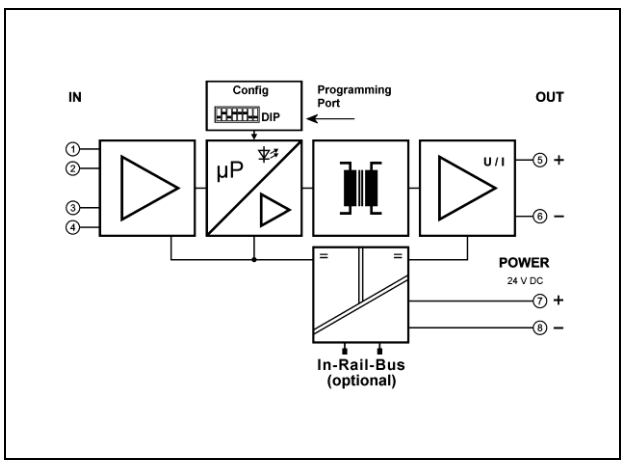
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.





- **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
  - without supply power
- **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

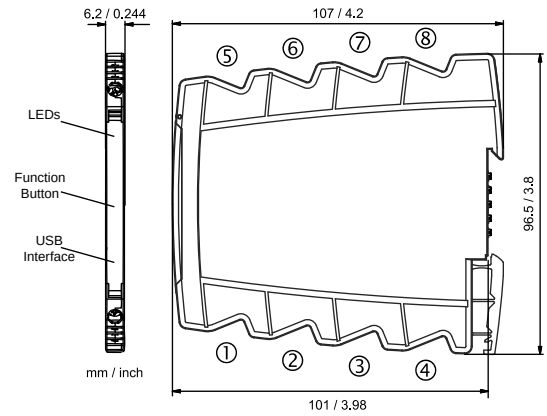


Technical Data

Input				
Sensor		Span min.	Measuring error max. of (meas.val.)	Temperature influence[1]
Pt Ni	Pt100, Pt200, Pt500, Pt1000 Ni100, Ni200, Ni500, Ni1000 50 K	50 K	< 0.1 K / 0.05 %	< 50 ppm/K
KTY	KTY, 29 different types	50 K	< 0.1 K / 0.05 %	< 50 ppm/K
Resistor	0 to 5000 Ω	100 Ω	< 0.1 Ω / 0.02 %	< 50 ppm/K
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 / 0.1 %	< 50 ppm/K
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 %	< 50 ppm/K
Potentiometer	100 Ω to 50 kΩ	10 %	< 0.05 %	< 50 ppm/K
Output	**Current**	**Voltage**		
Output signal	0/2 to 10 mA 0/4 to 20 mA	0/1 to 5 V 0/2 to 10 V		
Load	≤ 12 V (600 Ω @ 20 mA)	≤ 5 mA (2 kΩ @ 10 V)		
Residual ripple	< 10 mV_{rms}			
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 + input error	Temperature coefficient[1] < 100 ppm/K		
Measurement rate	4 / s			
Test voltage	3 kV AC, 50 Hz, 1 min. Input against output against power supply			
Working voltage[2] (basic insulation)	Up to 600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1 between all circuits.			
Protection against electric shocke[2]	Protective Separation by reinforced insulation acc. to EN 61010 part 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: 16.8 V to 31.2 V DC, approx. 0.8 W			
EMC[3]	EN 61326–1			
Construction	6.2 mm housing, protection class IP 20, mounting on 35 mm DIN rail acc. to EN 60715			
Weight	Approx. 70 g			

1) Average TC in specified operating temperature range
2) As far as practicable the standards and rules mentioned above are considered by development and production of our devices. In addition the assembly rules for our devices are to be considered by installation in other equipment. For applications with high working voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent situated devices.
3) Minor deviations possible during interference

Dimensions



Terminal assignments

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

Connection

Captive plus-minus clamp screws
Wire cross-section max. 2.5 mm^2 / AWG 14
Stripped length 6 … 8 mm / 0.28 in
Screw terminal torque 0.8 Nm / 7 lbf in
Optional power connection via In-Rail-Bus (see accessories)

Subject to change!

Product line

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