

HART Programmable Transmitter TRH

- ◆ 2000 VAC input / output isolation
- ◆ Universal programmable input
- ◆ User-selectable 8 RTD types and 8 thermocouples
- ◆ Accepts various linear voltage and resistive signals
- ◆ Programmable input and output features
- ◆ Built-in digital filter
- ◆ Manual output control
- ◆ Programming via HART protocol
- ◆ Free configuration software



The intelligent isolated transmitter TRH is a programmable 2-wire HART device with 2000 V input/output isolation level. It is available in case prepared for mounting in 33 mm sensor heads, plastic protection box, and different Ex housings. The transmitter allows the user to program various input and output features including input signal type and range, output offset and calibration, reaction at sensor failure, fixed output current, digital filter, etc. TRH can be ordered with intrinsically safe option for Ex applications. The transmitter is easy to program via HART modem over the current loop using free configuration software "HartTemp". Thanks to its large capabilities and low price, TRH can be very useful in various industrial field applications requiring signal isolation and HART communication.

Technical specifications

Input		(programmable)	Accuracy	
Pt100; 3(4)-wire		min. -200...max. 850 °C	Measurement error	
Pt500 (Pt1000); 3(4)-wire⁽⁵⁾		min. -200...max. 250 °C	- Pt500, Ni500	0.2 % from span
Cu50 (Cu100); 3(4)-wire		min. -50...max. 150 °C	- Pt1000, Ni1000, Cu100, 0...2 kΩ	0.12 % from span
Ni100; 3(4)-wire		min. -60...max. 180 °C	- other input types	0.08 % from span
Ni500 (Ni1000); 3(4)-wire⁽⁵⁾		min. -60...max. 180 (150) °C	Non-linearity	within measurement error
RTD minimum range width		10 °C	Temperature drift	negligible
Thermocouple "T"		min. -270...max. 400 °C	Load and power supply influence	negligible
Thermocouple "E"		min. -270...max. 1000 °C	Long-term stability	≤ 0.05% from span per 1 year
Thermocouple "J"		min. -210...max. 1200 °C	Cold junction compensation	internal, automatic
Thermocouple "K"		min. -270...max. 1372 °C	Power supply	
Thermocouple "N"		min. -270...max. 1300 °C	Supply voltage	7.5...45 VDC
Thermocouple "S"/("R")		min. -50...max. 1768 °C	Maximum line load	750 Ω at 24V/20mA
Thermocouple "B"		min. 0...max. 1820 °C	Interface	
T/C minimum range width		50 °C (500 °C for noble T/C)	Communication	HART protocol over current loop
Linear voltage [mV]		-10...75 mV, -100...100 mV ⁽⁵⁾	Configuration software	"HartTemp", free
Linear voltage [V]		-0.5...0.5 V ⁽⁵⁾ , -1...2 V ⁽⁵⁾	Operating conditions	
Minimum range [mV]		5 mV (20 mV for 2 V range)	Ambient temperature	-40...85 °C
Linear resistive		min. 0...max. 400(2000) Ω	Ambient humidity	0...90 %RH
Minimum range [Ω]		10 Ω (20 Ω for 2 k range)	Shocks and vibrations	4g, 2...150 Hz, according to EN 60068
Input / output isolation		2000 VAC for 1 min	Design and materials	
Output		(programmable)	Case material	PC plastic with epoxy potting
Output range		4...20 mA, 2-wire	Wiring	screw terminals
Linearly proportional to		measured value	Mounting	in head ^(1,2,3) in box ⁽²⁾
Resolution		0.3 μA	Dimensions	ø44x24 mm 80x80x60 mm
Response time		1 s	Weight	approx. 34 g approx. 170 g
Switch-on delay		≤ 5 s	Protection class	IP00 IP65
Digital filter		programmable	Intrinsic safety	Ex ia IIC T4 Ex ia IIC T4
Output calibration		configuration software		
Output manual control		0...100% via configuration software		
Sensor failure reaction		≤ 3.8 mA, ≥ 20.5 mA		

(1) Head type "B" or any other with 33 mm distance between centers of the female threaded openings
 (2) May be mounted on rail by a special snap-on accessory, which is ordered separately (see 'Accessories').
 (3) May be mounted in different, separately ordered Ex housings for field applications (see 'Accessories').

Ordering code TRH - G12 - #1

Code	Feature or option	Code values
G12	Mounting	B - in head ^(1,2) , D - in box IP65 (box included) ⁽²⁾ , E - in Ex housing (includes mounting kit only) ⁽⁴⁾
#1	Customized input and/or range	X - none, Z - custom input signal/range (specify!) ⁽⁵⁾

(4) Does not include housing!
 (5) Contact COMECO