

## Fixed-Input Temperature Transmitter TRN

- ◆ Low cost
- ◆ 2- or 3-wire output line connection
- ◆ High resistance to electromagnetic disturbances
- ◆ ZERO and SPAN adjustment
- ◆ In-head and DIN-rail versions
- ◆ IP65 box and Ex housing available

COMECO's current loop transmitter TRN converts the signal from a temperature sensor into standard current or voltage signal that can be safely sent over long distances to remote indicators, data loggers, or controllers. In addition to the most common thermoresistance and thermocouple sensors, TRN may convert linear analog input signals (current or voltage). The transmitter is based on high-tech integral circuits and has fixed input range. Two-wire- and three-wire-output variants are offered. Both are available in case for mounting inside sensor protection head, in watertight box with high protection class, in case for mounting on a DIN rail, and in case prepared for mounting in Ex housings. TRN can withstand considerable electromagnetic disturbances and is a perfect low-cost solution for general-purpose applications.



### Technical specifications

#### Input

<b>Pt50...1000; 2- or 3-wire</b>	min. -50...max. 500 °C <sup>(1)</sup>
<b>Cu100; 2- or 3-wire</b>	min. -50...max. 250 °C <sup>(1)</sup>
<b>Cu50; 2- or 3-wire</b>	min. -50...max. 250 °C <sup>(1)</sup>
<b>Other thermoresistive</b>	min. -50...max. 500 °C <sup>(1)</sup>
<b>Thermocouple "E"</b>	min. 0...max. 1000 °C <sup>(1)</sup>
<b>Thermocouple "J"</b>	min. 0...max. 1000 °C <sup>(1)</sup>
<b>Thermocouple "K"</b>	min. 0...max. 1300 °C <sup>(1)</sup>
<b>Thermocouple "L"</b>	min. 0...max. 800 °C <sup>(1)</sup>
<b>Thermocouple "L - GOST"</b>	min. 0...max. 800 °C <sup>(1)</sup>
<b>Thermocouple "T"</b>	min. 0...max. 400 °C <sup>(1)</sup>
<b>Thermocouple "U"</b>	min. 0...max. 600 °C <sup>(1)</sup>
<b>Linear current</b>	min. 0...max. 20 mA <sup>(1)</sup>
<b>Linear voltage</b>	min. 0...max. 10 V <sup>(1)</sup>
<b>Minimum input range width</b>	RTD: 50 °C, T/C: 250 °C
<b>ZERO and SPAN adjustment</b>	± 10%

#### Output

<b>2-wire current</b>	4...20 mA
<b>3-wire current</b>	0...5 mA, 0(4)...20 mA
<b>3-wire voltage</b>	0...1 / 2 / 5 / 10 V, 1...5 V, 2...10 V
<b>RTD linearly proportional to</b>	temperature
<b>T/C linearly proportional to</b>	input voltage
<b>Current limits</b>	Low: < 3.5 mA, High: > 23 mA
<b>Reaction at RTD failure</b>	Low or High, depends on terminal
<b>Reaction at T/C failure</b>	High

#### Accuracy

<b>Measurement error</b>	0.3% from span
<b>Non-linearity for RTD input</b>	0.3% from span
<b>Self-heating error</b>	0.02%/mA at 24 V
<b>Temperature drift</b>	0.02% from span for 1 °C
<b>Cold junction compensation</b>	automatic hardware, ± 1 °C

#### Power supply

<b>Supply voltage:</b>	8...32 VDC (for RTD / linear input) or 12...36 VDC (for T/C input)
<b>- for 2-wire output</b>	8...36 VDC
<b>- for 3-wire current output</b>	(U <sub>max</sub> +3)...36 VDC
<b>- for 3-wire voltage output</b>	up to 2 mA (3-wire output)
<b>Consumption</b>	1 Vp-p at 50 Hz
<b>Admissible variations</b>	620 Ω (750 Ω for T/C) at 24V/20mA
<b>Maximum line load</b>	

#### Operating conditions

<b>Operating temperature</b>	-30...80 °C
<b>Operating humidity</b>	0...95 %RH, non-condensing

#### Design and materials

<b>Case material</b>	plastic		
<b>Wiring</b>	screw terminals		
<b>Mounting</b>	in head <sup>(2,3,4)</sup>	on rail	in box <sup>(3)</sup>
<b>Dimensions [mm]</b>	ø44x19	18x90x58	80x80x60
<b>Weight</b>	30 g	90 g	170 g
<b>Protection class</b>	IP20	IP20	IP65

<sup>(1)</sup> Specify lower and upper span ranges when ordering.

<sup>(2)</sup> Head type "B" or any other with 33 mm distance between centers of the female threaded openings

<sup>(3)</sup> May be mounted on rail by a special snap-on accessory, which is ordered separately (see 'Accessories').

<sup>(4)</sup> May be mounted in different, separately ordered Ex housings for field applications (see 'Accessories').

### Ordering code TRN\* - G6'6".G11.G12

Code	Feature or option	Code values
*	Variant	<b>2</b> - with 2-wire output line, <b>3</b> - with 3-wire output line
G6'	Input signal	<b>B</b> - thermoresistance, <b>C</b> - thermocouple, <b>D</b> - linear
	RTD	<b>B</b> - Pt50, <b>D</b> - Pt100, <b>F</b> - Pt500, <b>G</b> - Pt1000, <b>H</b> - Cu50, <b>K</b> - Cu100, <b>Z</b> - other
G6"	Sensor	<b>J</b> - "J", <b>K</b> - "K", <b>E</b> - "E", <b>L</b> - "L", <b>T</b> - "T", <b>U</b> - "U"
	linear	<b>A</b> - 0...5 mA, <b>B</b> - 0...20 mA, <b>C</b> - 4...20 mA, <b>H</b> - 0...1 V, <b>I</b> - 0...2 V, <b>J</b> - 0...5 V, <b>K</b> - 0...10 V, <b>Z</b> - other
G11	Output signal <sup>(5)</sup>	<b>B</b> - 0...5 mA, <b>C</b> - 1...5 mA, <b>D</b> - 2...10 mA, <b>E</b> - 0...20 mA, <b>F</b> - 4...20 mA, <b>G</b> - 0...1 V, <b>H</b> - 0...2 V, <b>I</b> - 0...5 V, <b>J</b> - 1...5 V, <b>K</b> - 0...10 V, <b>L</b> - 2...10 V, <b>Z</b> - other
G12	Mounting	<b>B</b> - in head <sup>(2,3)</sup> , <b>C</b> - on DIN rail, <b>D</b> - in box IP65 (box included) <sup>(3)</sup> , <b>E</b> - in Ex housing (includes mounting kit only)

<sup>(5)</sup> For 2-wire output line, output signal can only be 4...20 mA (G11="F")!!!