

SINEAX V 610

Temperature Transmitter

**Two-wire,
for Pt 100 inputs,
for rail mounting in housing K7**



Application

SINEAX V 610 is a two-wire transmitter. It is designed for **measuring temperature in combination with resistance thermometers Pt 100**. Thermocouple non-linearities are automatically compensated. The output signal is a current in the range 4...20 mA.

The sensor circuit is monitored for open and short-circuits and the output responds in a defined manner if one is detected.

The power supply (12...30 V DC) is connected together with the signal by the two leads connected to the measurement output (loop powered).

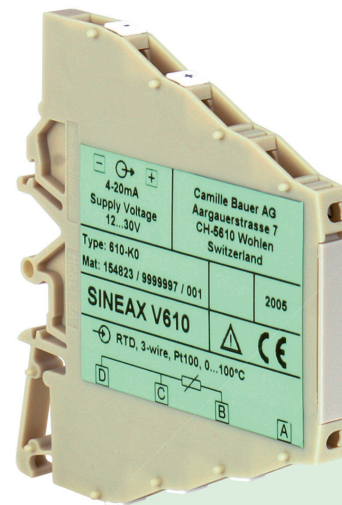


Fig. 1. Measuring transmitter SINEAX V 610 in housing K7.

Features / Benefits

- Two-wire transmitter for installation in the process environment
- Open and short-circuit sensor circuit supervision / Defined output response should the supervision pick up
- Compact design (housing only 7 mm wide) / Makes maximum use of available space

Versions

Measured variables	Measuring range	Order No.
Temperatures with resistance thermometers for three-wire connection Pt 100, IEC 60 751	0 ... 100 °C	154 823
	0 ... 150 °C	154 831
	0 ... 200 °C	154 849
	- 30 ... + 70 °C	154 857
	- 50 ... + 150 °C	154 865

Technical data

Measuring input \rightarrow

Temperature with resistance thermometers

Resistance types: Type Pt 100 (IEC 60 751)

Measuring current: ≤ 0.20 mA

Standard circuit:

Input resistance:

Lead resistance:

Mains ripple suppression:

Three-wire connection

$R_i > 10$ M Ω

≤ 30 Ω per lead

For 50 Hz

Measuring output \rightarrow

(output/powering circuit)

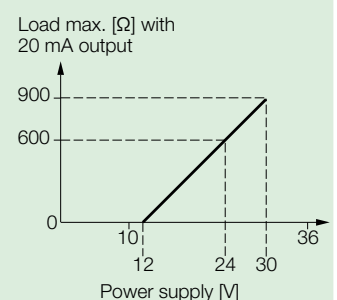
Output signal I_A :

Impressed DC current, **linear with temperature**

Standard range:

4...20 mA, 2-wire technique

External resistance (burden): $R_{ext} \max. = \frac{\text{Power supply [V]} - 12 \text{ V}}{\text{Max. output current [mA]}}$



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Residual ripple in output current: < 1% p.p.
 Response time: Approx. 2 s

Accuracy data (acc. to EN/IEC 60 770-1)

Reference value: Measuring span
 Basic accuracy: Error limits $\leq \pm 0.2\%$ at reference conditions

Reference conditions

Ambient temperature 23 °C
 Power supply 18 V DC
 Output burden 250 Ω
 Settings Pt100, 3-wire, 0...600 °C

Additional errors (additive)

Low measuring ranges
 Resistance thermometer ± 0.3 K at measuring spans < 400 °C
 High initial value (Additional error = Factor · initial value)
 Resistance thermometer ± 0.00075 K / °C
 Influence of lead resistance at resistance thermometer $\pm 0.01\%$ per Ω
 Linearisation $\pm 0.3\%$

Influencing factors

Temperature $\leq \pm (0.15\% + 0.15$ K) per 10 K with temperature measurement
 Power supply influence (power supply on terminals) $\leq \pm 0.005\%$ per V
 Long-time drift $\leq \pm 0.1\%$
 Common and transverse mode influence $\leq \pm 0.2\%$

Open and short-circuit sensor circuit supervision

Signalling modes: Output signal with open or short-circuit rising to 21.6 mA

Power supply

DC voltage: Supply 12...30 V DC
 max. residual ripple 1% p.p.
 (supply must not fail below 12 V)
 Protected against wrong polarity

Installation data

Housing: Housing K7 for rail mounting
 Dimensions see section "Dimensional drawings"

Material of housing: Polyamide
 Flammability Class V2 acc. to UL 94, self-extinguishing, non-dripping, free of halogen

Mounting: For snapping
 – onto rail G acc. to EN 50 035 – G32
 or
 – onto top-hat rail acc. to EN 50 022 (35 x 15 mm or 35x7.5 mm)

Standards

Electromagnetic compatibility: The standards EN 50 081-2 and EN 50 082-2 are observed

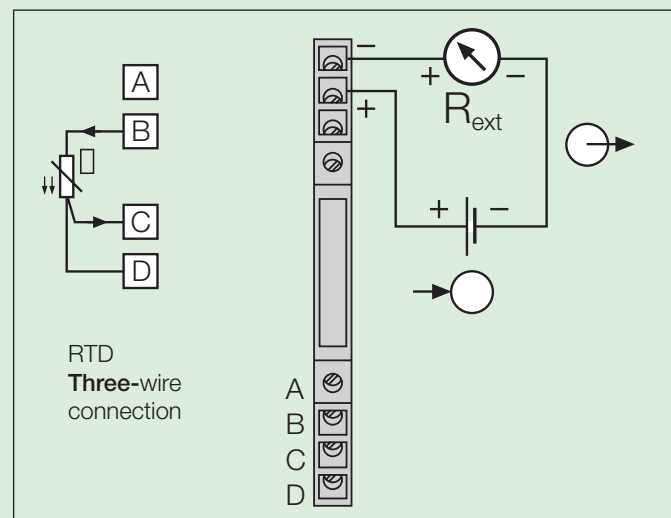
Protection (acc. to IEC 529 resp. EN 60 529): Housing IP 40
 Terminals IP 20

Electrical standards: Acc. to IEC 1010 resp. EN 61 010

Ambient conditions

Climatic rating: IEC 60 068-2-1/2/3
 Ambient temperature range: –25 to +55 °C
 Storage temperature range: –40 to +80 °C
 Annual mean relative humidity: $\leq 75\%$, no moisture condensation
 Altitude: 2000 m max.
 Indoor use statement!

Electrical connections



⊕ = Measuring input
 ⊕ = Two-wire measuring output (measuring circuit) (4...20 mA signal)
 ⊕ ⊖ = Power supply 12...30 V DC

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Accessories and spare parts

Description	Order No.
Operating Instructions V 610 Bd in German	151 944
Operating Instructions V 610 Bf in French	151 960
Operating Instructions V 610 Be in English	151 952

Standard accessories

1 Operating Instructions, each in German, French and English

Dimensional drawings

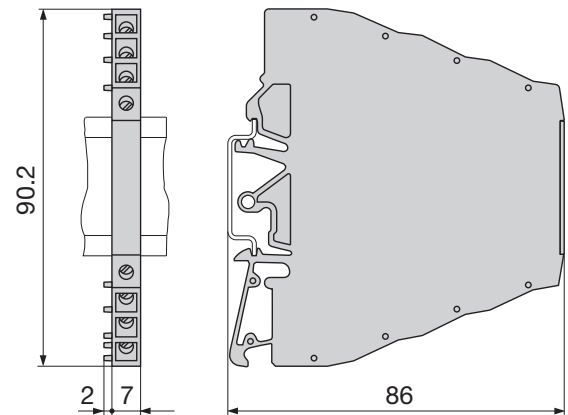


Fig. 2. SINEAX V 610 in housing **K7**
clipped onto a top-hat rail EN 50 022 – 35 x 7.5.

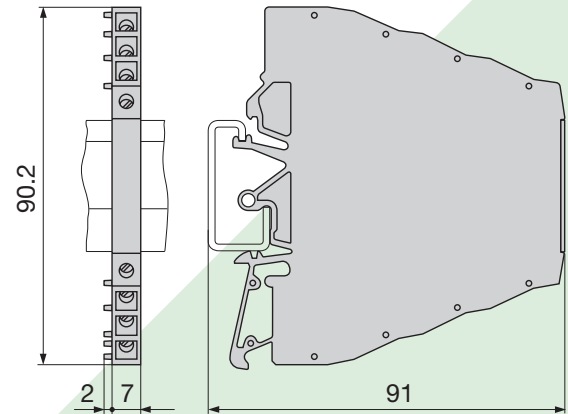


Fig. 3. SINEAX V 610 in housing **K7**
clipped onto a rail "G" EN 50 035 – G32.

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