

RTD Input Non-Isolated DIN Rail Loop-Powered Signal Conditioner

DRSL-RTD-LP



- ✓ 2, 3 or 4-Wire Pt100 RTD Input
- ✓ Powered By the Host (Output) Current Signal Loop
- ✓ High Accuracy Better Than 0.2°C or 0.1% of Selected Range
- ✓ Slimline 6 mm (0.24") Housing
- ✓ Excellent EMC Performance and 50/60 Hz Noise Suppression
- ✓ Fast Response Time < 30 ms/300 ms (Selectable)
- ✓ Pre-Calibrated Temperature Ranges Selectable via DIP-Switches

The DRSL-RTD-LP RTD input non-isolated DIN rail loop-powered signal conditioner measures a standard 2-, 3- or 4-wire Pt100 temperature sensor and provides a passive analog current output signal. The DRSL-RTD-LP provides a competitive choice in terms of both price and technology for interfacing RTD signals to SCADA systems or PLC equipment. This unit is powered by the host (output) current signal loop. Low power consumption facilitates DIN rail mounting without the need for any air gap. Easy configuration of more than 1000 factory calibrated measurement ranges is done via DIP-switches. The unit operates over a wide temperature range from -25 to 70°C (-13 to 158°F).

SPECIFICATIONS

INPUT

Input Type: 2, 3, or 4-wire Pt100 RTD

Temperature Range: -200 to 850°C (-328 to 1562°F)

Sensor Current, RTD: <150 µA

Sensor Cable Specifications: 50Ω per wire or 50 nF

Effect of Sensor Cable Resistance (3 or 4-Wire RTD): <0.002Ω/Ω

Broken Sensor Detection: >800Ω

Shorted Sensor Detection: <18Ω



DRSL-RTD-LP DIN rail signal conditioner and RAIL-35-1 DIN rail (sold separately) shown actual size.

OUTPUT

Current Output

Programmable Signal Ranges: 0 to 20 mA and 4 to 20 mA

Range Limits (NAMUR NE43 Out of Range): Below 3.8 mA or above 20.5 mA

Sensor Error Detection (Dip Switch Selectable for Enable or None): Below 3.5 mA or above 23 mA

Incorrect DIP-Switch Setting Identification: Below 3.5 mA or above 23 mA

Output Error Level: DIP switch selectable for upscale or downscale

Load Resistance (Ω): $\leq (V_{\text{supply}} - 3.3) / 0.023$

Load Stability: $\leq 0.01\%$ of span/100Ω

GENERAL

Supply Voltage: 3.3 to 35 Vdc

Voltage Drop: 3.3 Vdc

Power Consumption: 1 W max

Internal Consumption: 0.65 W max

Signal/Noise Ratio: >60 dB

Response Time (0 to 90%, 100 to 10%): <30 ms/300 ms (selectable, provides either fast response or signal damping as needed).

Accuracy: Better than 0.2°C or $\pm 0.1\%$ of selected range

Temperature Coefficient: $\leq \pm 0.02^\circ\text{C}/^\circ\text{C}$

EMC Immunity Influence: $< \pm 0.5\%$ of span

Extended EMC Immunity

NAMUR NE 21, A Criterion, Burst: $< \pm 1\%$ of span (span = selected input range)

ENVIRONMENTAL

Operating Temperature: -25 to 70°C (-13 to 158°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Calibration Temperature: 20 to 28°C (68 to 82°F)

Relative Humidity: 0 to 95% RH non-condensing

Protection Degree: IP20

Installation Area: Pollution degree 2 and measurement/overvoltage category II

MECHANICAL

Dimensions: 113 H x 6.1 W x 115 mm D (4.4 x 0.24 x 4.5")

Weight: 70 g (0.15 lb) approx

DIN Rail Type: DIN EN 60715 - 35 mm

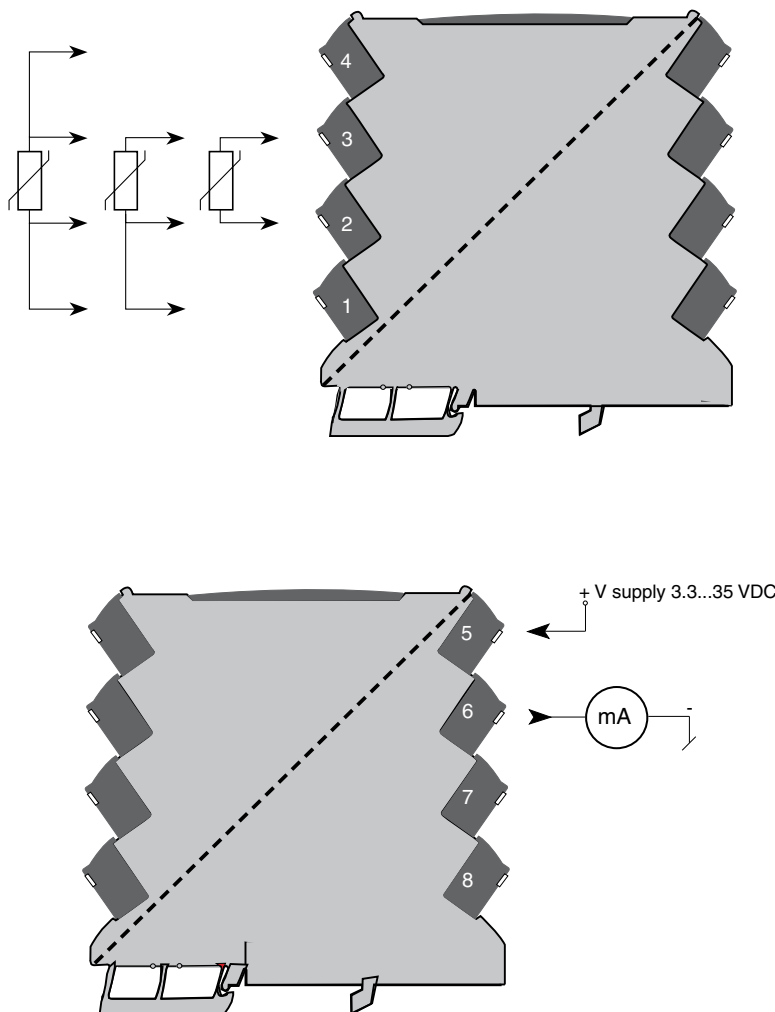
Wire Size: 0.13 x 2.5 mm²/AWG 26 to 12 stranded wire

Screw Terminal Torque: 0.5 Nm



DRSL-RTD-LP and RAIL-35-1 shown smaller than actual size.

CONNECTIONS



To Order

Model No.	Description
DRSL-RTD-LP	RTD input non-isolated DIN rail loop-powered signal conditioner

Accessories

Model No.	Description
RAIL-35-1	35 mm (1.4") DIN rail, 1 m (3.3') length
DRSL-MOD-STOP	Module stop (screwed onto DIN rail to support and hold mounted devices)

Ordering Example: DRSL-RTD-LP, RTD input non-isolated DIN rail loop-powered signal conditioner, RAIL-35-1 DIN rail and DRSL-MOD-STOP module stop.