

RTD Input DIN Rail Signal Conditioners

DRSL-RTD



- ✓ **DRSL-RTD Non-Isolated and DRSL-RTD-ISO Isolated Models**
- ✓ **2, 3 or 4-Wire Pt100 RTD Input**
- ✓ **Pre-Calibrated Temperature Ranges Selectable via Dip-Switches**
- ✓ **Slimline Housing—Only 6 mm (0.24") Wide**
- ✓ **High Accuracy**
- ✓ **Fast Response Time <30 ms/300 ms (Selectable)**
- ✓ **Excellent EMC Performance and 50/60 Hz Noise Suppression**

The DRSL-RTD Series RTD input DIN rail signal conditioners provide a competitive choice in terms of both price and technology for interfacing RTD inputs to SCADA systems or PLC equipment. The DRSL-RTD and DRSL-RTD-ISO can be used for signal conversion of 2, 3 or 4-wire Pt100 RTD inputs into unipolar analog signals. The DRSL-RTD-ISO isolated model offers 3-way isolation between input, output and supply and provides surge suppression and protects control systems from transients and noise. 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: 50 Ω per wire or 50 nF
Effect of Sensor Cable Resistance (3 or 4-wire RTD): <0.002 Ω/Ω
Broken Sensor Detection: >800 Ω
Shorted Sensor Detection: <18 Ω

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 for 4 to 20 mA output; 0 mA or above 20.5 mA for 0 to 20 mA output
Sensor Error Detection (Dip Switch Selectable for Enable or None): Below 3.5 mA or above 23 mA for 4 to 20 mA output; 0 mA or above 23 mA for 0 to 20 mA output
Incorrect DIP-Switch Setting Identification: Below 3.5 mA or above 23 mA for 4 to 20 mA output; 0 mA or above 23 mA for 0 to 20 mA output
Output Error Level: DIP switch selectable for upscale or downscale
Load: 21 mA/600Ω /12.6V max
Load Stability: ≤0.01% of span/100Ω
Voltage Output
Programmable Signal Ranges: 0 to 10 V, 2 to 10 V, 0 to 5 V and 1 to 5 V
Range Limits (Out of Range): Range ±2.5%
Sensor Error Detection (Dip Switch Selectable for Enable or None): 0V or selected range + 10%
Incorrect DIP-Switch Setting Identification: 0V
Output Error Level: DIP switch selectable for upscale or downscale
Load: >10 kΩ min

GENERAL

Supply Voltage
DRSL-RTD: 16.8 to 31.2 Vdc via connectors
DRSL-RTD-ISO: 16.8 to 31.2 Vdc via power rail or connectors
Power Consumption: 0.7 W max
Internal Consumption: 0.65 W max
Isolation (DRSL-RTD-ISO Only): Input/output/supply
Isolation Voltage, Test (DRSL-RTD-ISO Only): 2.5 kVac (reinforced)
Isolation Voltage, Working (DRSL-RTD-ISO Only): 300 Vac
Status LED: Green LED indicates operational status of the unit and input sensor
Normal Operation: Flashes for 15 ms at 13 Hz rate
Sensor Error: Flashes for 15 ms at 1 Hz rate
Incorrect DIP Switch Setting: flashes for 500 ms at 1 Hz rate
Hardware Failure: LED off
Signal/Noise Ratio: >60 dB
Response Time (0 to 90%, 100 to 10%): <30 ms/300 ms (selectable, provides either fast response or signal dampening as needed)
Accuracy
DRSL-RTD: Better than 0.2°C or ±0.1% of selected input range
DRSL-RTD-ISO: Better than 0.1°C or ±0.05% of selected input range
Temperature Coefficient: ≤±0.02°C/°C
EMC Immunity Influence: <±0.5% of span



DRSL-RTD-ISO DIN rail signal conditioner and DRSL-PWR-RAIL power rail (sold separately) shown actual size.



Extended EMC Immunity

NAMUR NE 21, A Criterion, Burst:
<±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")

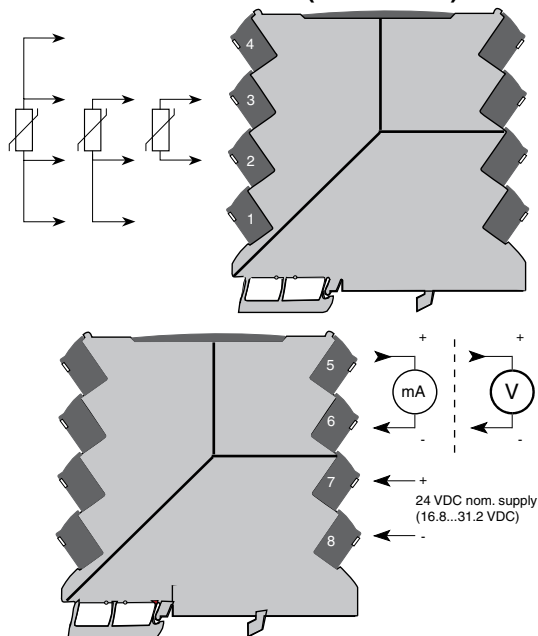
Weight: 70 g (0.15 lb) approx

DIN Rail Type: DIN EN 60715 - 35 mm

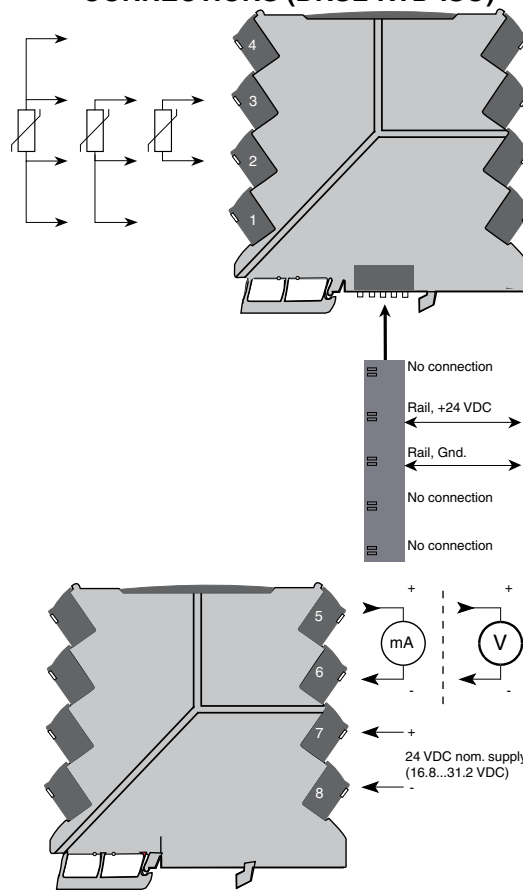
Wire Size: 0.13 x 2.5 mm²/
AWG 26 to 12 stranded wire

Screw Terminal Torque: 0.5 Nm

CONNECTIONS (DRSL-RTD)



CONNECTIONS (DRSL-RTD-ISO)



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

To Order

Model No.	Description
DRSL-RTD	Non-isolated RTD input DIN rail signal conditioner
DRSL-RTD-ISO	Isolated RTD input DIN rail signal conditioner

Accessories

Model No.	Description
DRSL-PWR-RAIL	Power rail (with cover and two end covers, one right hand and one left hand), 1 m (3.3') length for use with DRSL-RTD-ISO only
DRSL-PCU	Power connector unit, 24 Vdc/2.5 A output to power rail for use with DRSL-RTD-ISO only
DRSL-MOD-STOP	Module stop (screwed onto power rail to support and hold mounted devices)

Ordering Example: DRSL-RTD-ISO isolated RTD input DIN rail signal conditioner, DRSL-PWR-RAIL power rail, DRSL-PCU power connector unit, DRSL-MOD-STOP module stop and OCW-1, OMEGACARESM extends standard 1-year warranty to a total of 2 years.