NEW

Isolated Universal Input DIN Rail Signal Conditioner

DRSL-U

1 YEAR WARRANTY

Listed

- **Universal Input–Accepts Thermocouple, RTD, Linear Resistance, Potentiometer, Voltage or Current Input**
- **Easily Configured Using DRSL-DISPLAY Programming Interface**
- **Slimline Housing– Only 6 mm (0.24") Wide**
- **High Accuracy**
- **Fast Response Time**
- **Excellent EMC Performance and 50/60 Hz Noise Suppression**

DRSL-U and DRSL-PWR-RAIL shown actual size.

When the input is configured for 2-wire transmitter mode, the DRSL-U provides the current loop supply voltage. The unit operates over a wide temperature range from -25 to 70°C (-13 to 158°F).

The DRSL-U isolated universal input DIN rail signal conditioner provides a competitive choice in terms of both price and technology for galvanic isolation of process signals to SCADA systems or PLC equipment. The DRSL-U accepts thermocouple, RTD, linear resistance, potentiometer, voltage or current input and converts these signals to linear voltage or current output. The unit offers isolation between input, output and supply, provides surge suppression and protects control systems from transients and noise. The DRSL-U also eliminates ground loops and can be used for measuring floating signals. Low power consumption facilitates DIN rail mounting without the need for any air gap. The DRSL-U is easily configured by using the DRSL-DISPLAY programming interface in conjunction with the DRSL-ADAPTOR configuration adaptor. The DRSL-DISPLAY has a 4 line LCD display with scrolling help text in 7 languages (English, French, German, Italian, Spanish, Danish and Swedish) which guides the user through all the configuration steps. The DRSL-U is designed with electronic hardware switches, consequently it is not necessary to open the device to set any internal DIP-switches.

SPECIFICATIONS

INPUT

RTD Input

Input Type: Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000, Ni50, Ni100, Ni120, Ni1000, linear resistance, potentiometer

Cable Resistance Per Wire: 50 Ω max

Sensor Current: 0.2 mA nominal

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

Sensor Error Detection: Yes

Short Circuit Detection: <15 Ω

RTD Input Types and Ranges

Type	Range	
Pt100	-200 to 850°C	-328 to 1562°F
Ni100	-60 to 250°C	-76 to 482°F

Linear Resistance Input Range: 0 to 10,000 Ω

Potentiometer Input Range: 10 to 100 kΩ

Thermocouple Input

Input Types: J, K, T, E, R, S, B, N, L, U, W3, W5, LR

Cold Junction Compensation (CJC) Via Internally Mounted Sensor: ±(2.0°C + 0.4°C * Δt) (Δt = internal temperature-ambient temperature)

Sensor Error Detection: Yes

Sensor Error Current: 2 µA nominal (when detecting)

Thermocouple Input Types and Ranges

Type	Range	
J	-100 to 1200°C	-148 to 2192°F
K	-180 to 1372°C	-292 to 2502°F
T	-200 to 400°C	-328 to 752°F
E	-100 to 1000°C	-148 to 1832°F
R	-50 to 1760°C	-58 to 3200°F
S	-50 to 1760°C	-58 to 3200°F
B	0 to 1820°C	32 to 3308°F
N	-180 to 1300°C	-292 to 2372°F
L	-200 to 900°C	-328 to 1652°F
U	-200 to 600°C	-328 to 1112°F
W3	0 to 2300°C	32 to 4172 °F
W5	0 to 2300°C	32 to 4172°F
LR	-200 to 800°C	-328 to 1472°F

Current Input

Measurement Range: 0 to 20 mA

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

Input Resistance: 20 Ω + PTC 50 Ω nominal

2-Wire Transmitter Supply: >15 V/20 mA

Voltage Input
Measurement Range: 0 to 12V
Programmable Measurement Ranges: 0 to 1V, 0.2 to 1V, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V
Input Resistance: 10 MΩ nominal

Basic Accuracy Values

Input Type	Accuracy	Temperature Coefficient
mA	≤±16 µA	≤±1.6 µA/°C
0 to 1V, 0.2 to 1V	≤±0.8 mV	≤±0.08 mV/°C
0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V	≤±8 mV	≤±0.8 mV/°C
Pt100, Pt200, Pt1000	≤±0.2°C	≤±0.02°C/°C
Pt500, Ni100, Ni120, Ni1000	≤±0.3°C	≤±0.03°C/°C
Pt50, Pt400, Ni50	≤±0.4°C	≤±0.04°C/°C
Pt250, Pt300	≤±0.6°C	≤±0.06°C/°C
Pt20	≤±0.8°C	≤±0.08°C/°C
Pt10	≤±1.4°C	≤±0.14°C/°C
Thermocouple Types E, J, K, L, N, T, U	≤±1.0°C	≤±0.1°C/°C
Thermocouple Types R, S, W3, W5, LR	≤±2.0°C	≤±0.2°C/°C
Thermocouple Type B, 160 to 400°C	≤±4.5°C	≤±0.45°C/°C
Thermocouple Type B, 400 to 1820°C	≤±2.0°C	≤±0.2°C/°C

OUTPUT
Current Output
Signal Range: 0 to 20 mA (span)
Programmable Signal Ranges: 0 to 20 mA, 4 to 20 mA, 20 to 0 mA and 20 to 4 mA
Load: 20 mA/600 Ω/15 Vdc max
Load Stability: ≤0.01% of span/100 Ω (span=currently selected measurement range)
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: 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
Current Limit: ≤28 mA

Voltage Output
Signal Range: 0 to10 Vdc
Programmable Signal Ranges: 0 to 1V, 0.2 to 1V, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V, 1 to 0.2V, 1 to 0V, 5 to 1V, 5 to 0V, 10 to 2V and 10 to 0V
Load (Min): >10 kΩ

GENERAL
Supply Voltage: 16.8 to 31.2 Vdc via power rail or connectors
Power Consumption: 1.2 W max
Internal Consumption: 0.4 W typical, 0.65 W max
Isolation: Input/output/power
Isolation Voltage (Test): 2.5 kVac
Isolation Voltage (Working): 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
- **Hardware Failure:** LED off

Signal/Noise Ratio: >60 dB
Response Time (0 to 90%, 100 to 10%) for Temperature Input: ≤1 s
Response Time (0 to 90%, 100 to 10%) for mA/V input: ≤400 ms
Accuracy: Absolute accuracy or accuracy from table above (whichever is greater)
Absolute Accuracy:
- **All Input Types:** ≤±0.1% of span (selected input range)

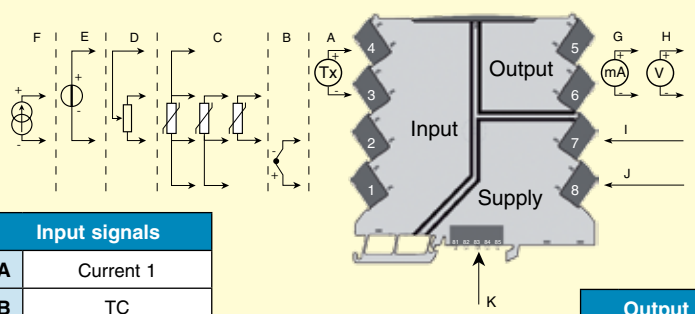
Temperature Coefficient:
- **All Input Types:** ≤± 0.01% of span/°C

EMC Immunity Influence: <±0.5% of span
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

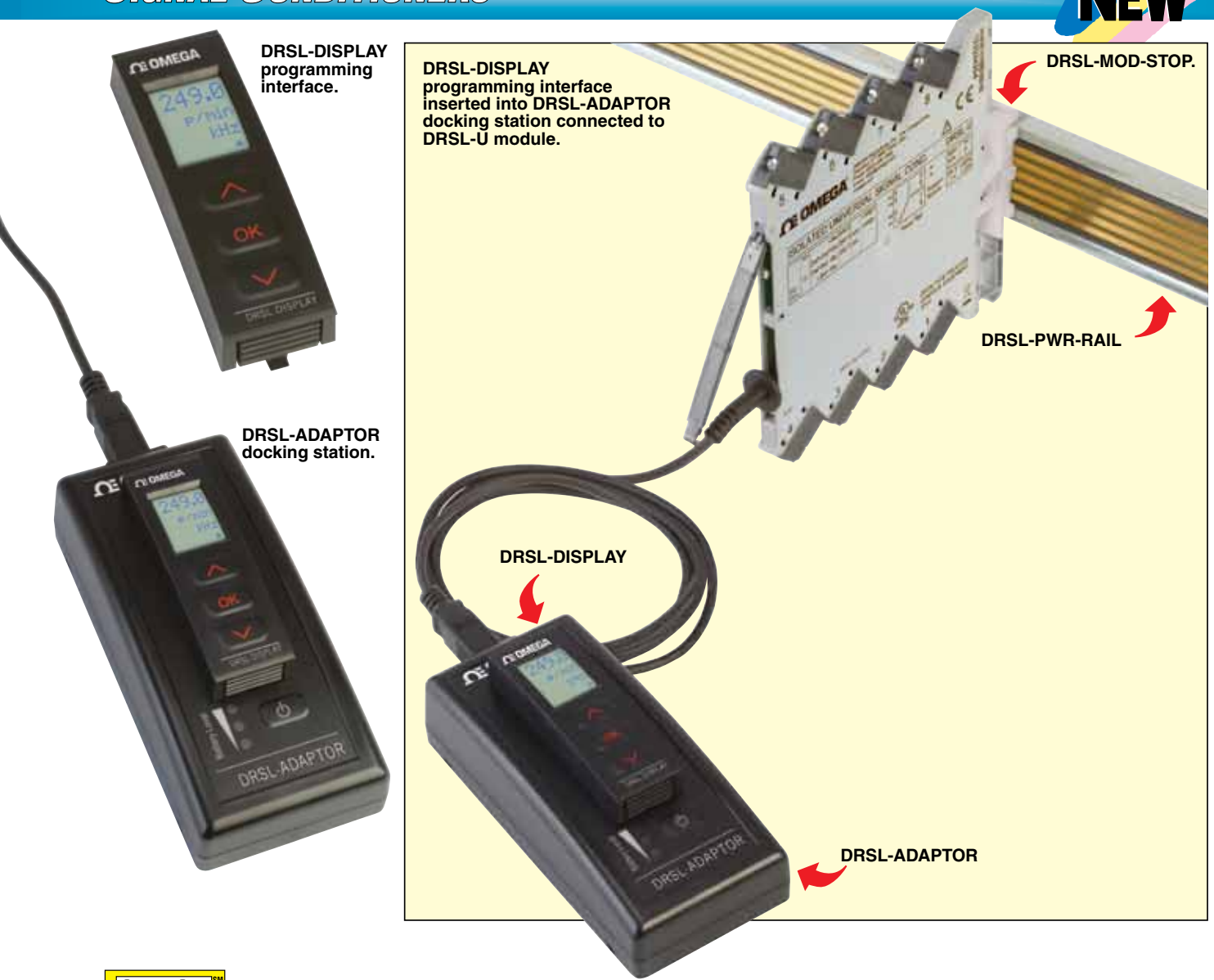


Input signals	
A	Current 1
B	TC
C	RTD
D	Potentiometer
E	Voltage
F	Current 2

Supply	
I	Supply +
J	Supply -
K	Power rail connections

Output signals	
G	Current
H	Voltage

NEW



OMEGACARE℠ Extended Warranty Program

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

To Order

Model No.	Description
DRSL-U	Isolated universal input signal conditioner
DRSL-DISPLAY	Display/programming front communication interface for DRSL-U (plugs into DRSL-ADAPTOR)
DRSL-ADAPTOR	Configuration adaptor/docking station for use with DRSL-DISPLAY programming interface

Ordering Example: DRSL-U *isolated universal input DIN rail signal conditioner,* ***DRSL-DISPLAY*** *display/front communication interface,* ***DRSL-ADAPTOR*** *configuration adaptor/docking station,* ***DRSL-PWR-RAIL*** *power rail,* ***DRSL-PCU*** *power connector unit,* ***DRSL-MOD-STOP*** *module stop and* ***OCW-1,*** *OMEGACARE ℠ extends standard 1-year warranty to a total of 2 years.*

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
DRSL-PCU	Power connector unit, 24 Vdc/2.5 A output to power rail
DRSL-MOD-STOP	Module stop (screwed onto power rail to support and hold mounted devices)