



# AC Powered DC Input DIN Rail Signal Conditioner

DRI-DC



- ✓ Field Configurable Input/Output Ranges
- ✓ 1800 Vdc Isolation
- ✓ Touch Calibration Technology
- ✓ High Density DIN Rail Mounting
- ✓ Universal AC Power 85 to 265 Vac

The model DRI-DC is an AC powered, DIN rail mount, DC input signal conditioner, with 1800 Vdc isolation between input, output and power. It provides a fully isolated DC output signal in proportion to a DC input. The field configurable input and output feature offers flexible, wide ranging capability for DC current and voltage signals.

Using a pushbutton instead of potentiometers, improvements in calibration resolution and reliability are realized due to the elimination of the potentiometers' mechanical variability. The thermal drift and mechanical variability of the potentiometers has been removed and replaced with a digitally stable circuit. Additionally, the inherent zero and span interactivity of analog amplifier circuitry is removed, providing 100% non-interactive adjustment.

The DRI-DC can be field configured for virtually any DC input to DC output within the limits specified. Calibration utilizes touch calibration technology where the user simply configures the input for the current or voltage range via switches, then follows the calibration procedure. The output is set by adjusting the input until the desired output is present and then pressing the CAL button to store the output level.

The DRI-DC has three diagnostic LEDs. The green (RUN) LED is used for diagnostics to indicate that power is on. It will flash quickly if the input signal is above the calibrated range or slowly if the input signal is below range. It is on continuously when the unit is functioning within the calibrated range.

The DRI-DC can be configured for input ranges from 10 mV to 100 V or 1 mA to 100 mA, with >90% input offset or will adjust down to <10% of full scale input span (except on 20 mV/2 mA range where maximum offset or gain adjustment is 50%). The factory default configuration for the DRI-DC is:

**Input Range:** 20 mA (current on)  
**Input Configuration:** Unipolar  
**Calibrated Input:** 4 to 20 mA  
**Operation:** Direct (reverse off)  
**Calibrated Output:** 4 to 20 mA



DRI-DC shown smaller than actual size.

## Specifications

### INPUT

#### Voltage Input:

**Range:** 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, 1V, 2V, 5V, 10V, 25V, 50V, 100V (dip-switch selectable)

**Impedance:**  $\geq 100 \text{ k}\Omega$

**Overvoltage:** 200V continuous

#### Current Input:

**Range:** 2 mA, 5 mA, 10 mA, 20 mA, 50 mA, 100 mA (dip-switch selectable)

**Impedance:** 20  $\Omega$  typical

**Overcurrent:** 170 mA, protected by self-resetting fuse

**Overvoltage:** 60V

#### Pushbutton Adjustment (Inputs >10 mV):

**Effective Zero Offset:**  $\geq 90\%$

**Effective Span Turn Down:**  $\geq 90\%$  except 20 mV/2 mA range in which 50% is max zero offset and span turndown

### OUTPUT

#### Voltage Output:

**Range:** 0 to 5V, 0 to 10V (dip-switch selectable)

**Source Impedance:** <10  $\Omega$

**Drive:** 10 mA max

#### Current Output:

**Range:** 4 to 20 mA, 0 to 1 mA, 0 to 20 mA (dip-switch selectable)

**Source Impedance:** >100  $\text{k}\Omega$

#### Compliance:

**0 to 1 mA:** 7.5V max (7.5  $\text{k}\Omega$ )

**4 to 20 mA:** 12V max (600  $\Omega$ )

**0 to 20 mA:** 12 V max (600  $\Omega$ )



**Output Ripple:**

<50% Offset or Span Adjust: <0.1% of full scale span or 25 mV RMS, whichever is greater

>50% Offset or Span Adjust: <0.2% of full scale span or 50 mV RMS, whichever is greater.

**Output Accuracy:**

>2 mA / >20 mV Input Spans: ±0.1% of full-scale input typical, ±0.2% maximum

<2 mA / <20 mV Input Spans: ±0.35% of full scale input typical, ± 0.5% maximum including linearity, repeatability and hysteresis @ 23°C

**Response Time:** 200 msec, typical

**Stability:** ±0.025% of full scale/°C, maximum for full scale and zero

**Common Mode Rejection:** 120 dB at DC, >90 dB at 60 Hz

**Isolation:** ≥1800 Vdc or peak AC between input, output, power and channel-to-channel

**ESD Susceptibility:** Capable of meeting IEC 801-2 level 3 (8 kV)

**Humidity (Non-Condensing):**

**Operating:** 15 to 95% RH @ 45°C (113°F)

**Soak:** 90% RH for 24 hours @ 60°C (140°F)

**Temperature:**

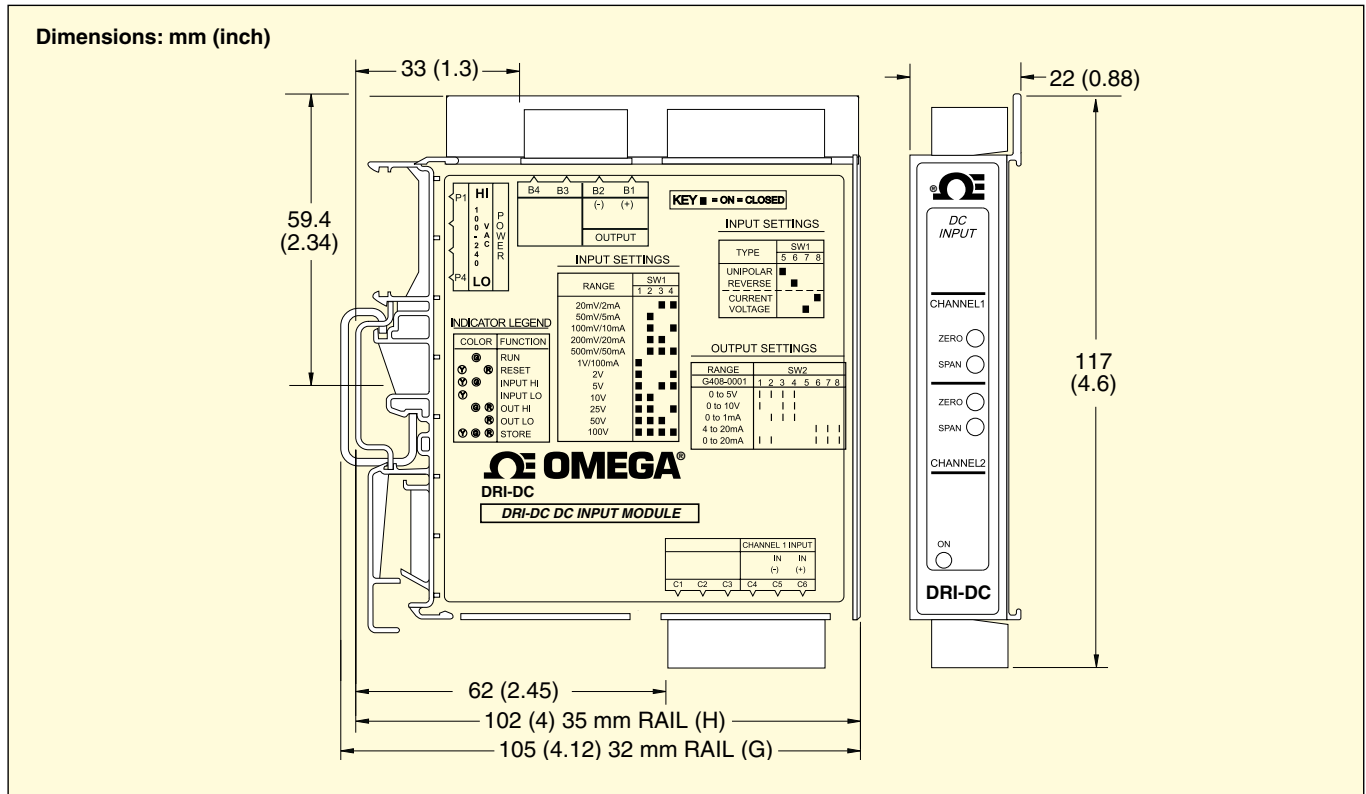
**Operating:** 0 to 55°C (32 to 131°F)

**Storage:** -25 to 70°C (-13 to 158°F)

**Power:** 100 to 240 Vac, ±10%, 50 to 400 Hz; 2.5 W max

**Wire Terminals:** Socketed screw terminals for 12 to 22 AWG

**Weight:** 227 g (0.5 lb)



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

To Order	
Model No.	Description
DRI-DC	AC powered DC input DIN rail signal conditioner
RAIL-35-1	35 mm DIN rail, 1 m (3.3') length
RAIL-35-2	35 mm DIN rail, 2 m (6.6') length
ACPB-2	AC power distribution bus for 2 modules
ACPB-4	AC power distribution bus for 4 modules
ACPB-8	AC power distribution bus for 8 modules

**Ordering Example:** DRI-DC AC powered DC input DIN rail signal conditioner, RAIL-35-1 35 mm DIN rail, 1 m (3.3') length, ACPB-2 AC power distribution bus for 2 signal conditioner modules and OCW-1 OMEGACARE extends standard 1-year warranty to a total of 2 years.