DC and AC Current Input Signal Conditioners

DRF-IDC, DRF-IAC

1 YEAR WARRANTY

- **AC/DC Current Input Ranges from 0 to 100 mA to 0 to 5 A**
- **Accuracy 0.3%**
- **Response Time for DC Signals, 70 ms**
- **Response Time for AC Signals, 250 ms**
- **Ranges for x5 and x1 Current Transformers**
- **Low Impedance Current Inputs**
- **Galvanic Isolation between Input, Output and Power**

DRF-IAC-115VAC-5A-0/10, shown smaller than actual size.

The DRF-IDC and the DRF-IAC current signal conditioners accept dc and ac currents respectively and provide an isolated 0 to 10 Vdc or 4 to 20 mA output. Models are available with three different power options, 24 Vdc, 120 Vac and 240 Vac.

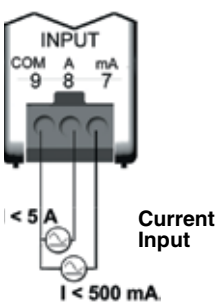
The DRF-IDC and DRF-IAC are ideally suited for industrial applications. All models mount on a standard 35 mm DIN rail and provide galvanic isolation between input, output and power up to 3500 Veff (model specific).

Specifications

Accuracy: <0.3% full scale
Linearity: <0.2% full scale
Thermal Drift: 250 ppm/°C typical (max <200ppm/°C)
Response Time (DC Signal Input Models):
< 70mS (90% of signal)
at 20Hz -3dB
Response Time (AC Signal Input Models):
<250mS (90% of signal)
Maximum AC Frequency: 1 KHz
Input Impedance: 1Ω for ranges <1 A, 0.02Ω for ranges <5 A
Over Range Protection: 7.5 A for ranges greater than 500 mA and less than or equal to 5 A, 750 mA for ranges less than and equal to 500 mA

Input Range Table

Range Code	DRF IDC Range	DRF IAC Range
100MA	0 to 100 mAdc	0 to 100 mAac
200MA	0 to 200 mAdc	0 to 200 mAac
300MA	0 to 300 mAdc	0 to 300 mAac
1A	0 to 1 Adc	0 to 1 Aac
2A	0 to 2 Adc	0 to 2 Aac
3A	0 to 3 Adc	0 to 3 Aac
5A	0 to 5 Adc	0 to 5 Aac



To Order *Visit omega.com/drf_series for Pricing and Details*

Model No.	Description
DRF-IDC-(*)-(**)-(***)	Signal conditioner for DC current input
DRF-IAC-(*)-(**)-(***)	Signal conditioner for AC current onput

** Specify power, **"24Vdc"** for 24 Vdc power, **"115Vac"** for 115 Vac power or **"230Vac"** for 230 Vac power*

*** Specify range code from the Input Range Table*

**** Specify output, **"4/20"** for 4 to 20 mA output or **"0/10"** for 0 to 10 Vdc output*

***Ordering Example: DRF-IAC-115VAC-5A-0/10,** signal conditioner for ac current input with a 0 to 5 A ac input range, 0 to 10 Vdc output and 115 Vac power.*

DIN Rail Mount Configurable Signal Conditioners

DRF Series

- **Voltage, Current, Frequency, Resistance, Potentiometer, Thermocouple, RTD and Load Cell Input Modules**
- **Field Configurable Signal Ranges**
- **Provides up to 3500 Veff Isolation Between Input and Output and Power (Isolation is Model Specific)**
- **Compatible with Standard 35 mm DIN Rail**

The DRF series DIN rail signal conditioners are designed to accept a broad range of input signals, such as ac and dc voltage and current, frequency, temperature (thermocouple and RTD), and process transducers, and provide standard process outputs of either 4 to 20 mA, or 0 to 10 Vdc. The DRF series feature a modern housing design, that is easily mounted on standard 35 mm DIN rails. Connections are safely and securely made through pluggable screw terminal connectors, with input and output connections on the opposite sides of the module.

Functionality

The DRF series are designed to maximize functionality. The front door of the housing provides easy access to span and offset potentiometers which may be used to field adjust the input and output signal range.

Isolation

The input, output and power circuits are isolated by 3500 volts of galvanic isolation. The isolation protects against potentially damaging voltages from passing through the signal conditioners into connected systems. The isolation also provides improved measurement accuracy by minimizing the effects of ground loops and electrical noise.

Outputs

Each DRF series signal conditioner is available with current and voltage output (only one may be used at a time). Available output types include 4 to 20 mA or 0 to 10 Vdc. Although pre-configured before shipping from the factory, the output may be changed through an internal jumper change.

Standard outputs are linear and proportional to the signal input. Thermocouple input modules feature special circuitry to linearize the output to the actual temperature rather than the non-linear signal produced by thermocouple sensors.

SPECIFICATIONS
(Common to all Models)

Power: 24 Vdc ±10%, 230 Vac ±10% 50/60 Hz, 115 Vac ±10% 50/60 Hz
Power Consumption: <3.8 VA
Output: 4 to 20 mA and 0 to 10 Vdc
- **Maximum Voltage Output:** 11 Vdc approx.
- **Minimum Voltage Output:** -1 Vdc approx.
- **Minimum Load Resistance (Voltage):** ≥1 KΩ
- **Maximum Current Output:** 22 mA approx.
- **Maximum Current Output:** -1.5 mA approx.
- **Maximum Load Resistance (current):** ≤400Ω

Accuracy: <0.2% or <0.3% depending on model
Linearity: <0.1% or <0.2% depending on model
Thermal Drift: <150 ppm/°C or 250 ppm/°C typical depending on model
Response Time: 70 mS (Process and DC input models); 250 mS (Temperature and AC input models)

Isolation*:
- **Input to Output:** 3500 Veff
- **Power to Input:** 3500 Veff
- **Power to Output:** 3500 Veff (for AC powered models), 1K Veff (for dc powered models)

Electrical Connections: Plug-in screw terminals
Protection: IP-30

MECHANICAL DIMENSIONS
Weight:
- **(DC Powered):** 120 g (4.2 oz)
- **(AC Powered):** 200 g (7 oz)

Dimensions:
- **(DC Powered Models)**: 110 H x 22.5 W x 93 mm D (4.3 x 0.9 x 3.7")
- **(AC Powered Models):**
  110 H x 37 W x 93 mm D (4.3 x 1.46 x 3.7")

Operating Temperature: 0 to 60°C (32 to 140°F)
Storage Temperature: -20 to 70°C (-4 to 158°F)

**Tested True RMS, 60 sec. leak <1 mA*