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DIN Rail Conditioning Module

General purpose din rail mounted oscillator / demodulator modules for inductive transducers

Datasheet
502687
Issue 2.1

Features

- Range selectable to ±10 VDC
- Range selectable to ±20 mA (example: 0-20 mA, 4-20 mA)
- DC powered (10 to 30 VDC)
- LVDT and Half Bridge variants
- Good Linearity

Description

The DIN Rail Conditioning Module (DRC) is a DC powered conditioning module that can accept a wide range of analogue inductive transducer types due to its wide input gain. The signal polarity, span and offset are adjustable providing ±10 VDC voltage output or ±20 mA current output. The module housing is a standard DIN rail enclosure which can clip directly to a 35 mm top hat rail (TS35 EN50022) as shown in the mechanical outline below.

The transducers are connected using screw terminals to the front of the DRC. Set-up and adjustments are made using a combination of internal links and front panel mounted fine adjustment potentiometers.

By linking two DRC modules, users can also perform some analogue arithmetic on two signals such as A+B, A-B, (A+B)/2 and (A-B)/2.

Mechanical Outline

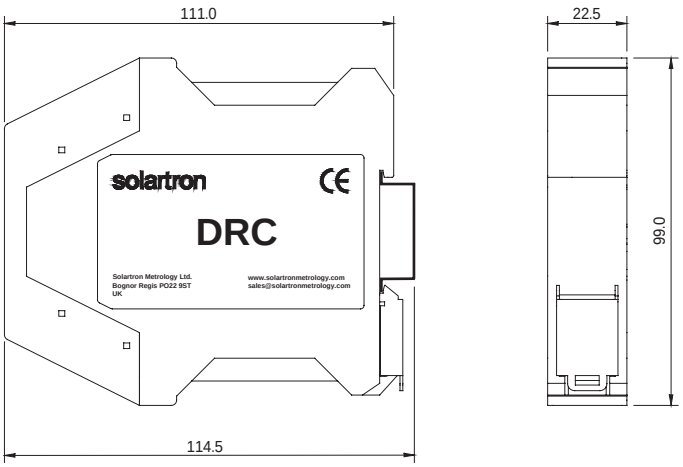


Diagram showing general dimensions of DRC (dimensions in mm)

Technical Specification

Power Requirement	
Voltage Range	10 to 30 VDC
Current Range	160 mA at 10 V to 70 mA at 30 V
Transducer Excitation	
Primary Voltage	3 V rms nominal
Primary Frequency	5 kHz, 10 kHz or 13 kHz link selectable
Signal Input (Transducer Sensitivity Range)	
Input Range	55 mV to 5000 mV LVDT full range
Input Load Resistance	100 kΩ, 2 kΩ
Options	See note[1]
Signal Output	
Voltage Output	Up to ±10 VDC
Currrent Output	Up to ±20 mA into 150 Ω load
Output Ripple	<1 mV rms
Output Offset	Up to 100% (course & fine adjustment[2])
Temp. Co. Gain	<0.01% FRO/ºC
Temp. Co. Offset	<0.01% FRO/ºC
Warm-up	15 minutes recommended
Linearity	<0.1% FRO
Bandwidth (-3 dB)	500 Hz, 1 kHz link selectable
Environmental	
Operational Temperature Range	0 to 60ºC (32 to 140ºF)
Storage Temperature Range	-20 to 85ºC (-4 to 185ºF)
M**echanical and Connections**	
Transducer	Screw terminals
Power Supply	Screw terminals
Output Signal	Screw terminals
Enclosure (size)	114.5 x 99 x 22.5 mm
Weight	120 g
Material	Green polyamide

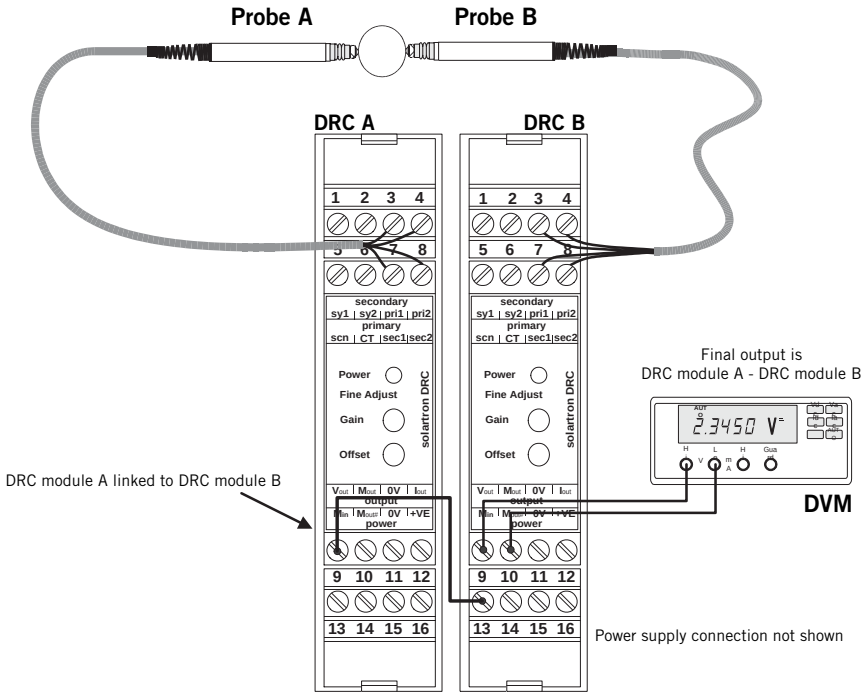
Notes

[1] No input options are offered. As connection of transducer is by screw terminal, additional internal configuration methods are not required. By changing connections and use of external components, the user can perform:

- Change input polarity
- Half Bridge connection
- Grounding one side of the input
- Phase correction
- Quad resistors.

[2] Fine adjustment via the front panel.

Applications



Example of a paired arrangement of DRCs in an A-B gauging application

Ordering Guide

Product	Part Number
Din Rail Conditioning Module (DRC)	911337
Din Rail Conditioning Module (DRC) set up	911344

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