



FC-R1, RTD Input Loop Powered Signal Conditioner



Overview

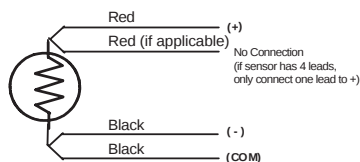
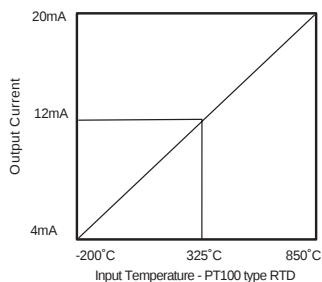
Description. The FC-R1 is a DIN rail or side mount, Resistive Temperature Detector, signal conditioner.

The FC-R1 is a non-isolated, 3-wire RTD which converts to a linearized 4-20mA current loop.

The FC-R1 has a user selectable, CU10 (10 Ohm copper), PT100 (100 Ohm platinum) PT1000 (1000 Ohm platinum) RTD input, but also has OFFSET (zero) and SPAN (full scale) adjustments of the output signal. The OFFSET has an adjustment range of 0 to 25% of full scale output and the SPAN has an adjustment of 80% to 102%.

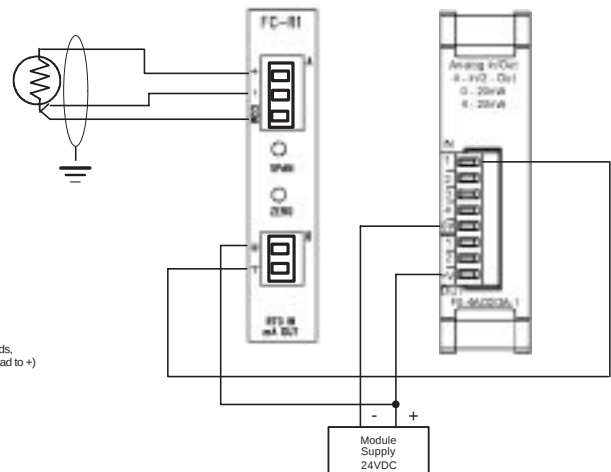
Application

The FC-R1 field configurable input signal conditioner is useful for interfacing RTD sensors to our PLC analog current input modules. It is recommended that shielded RTD's be used whenever possible to minimize noise on the input signal.



Specifications			
Input Ranges	CU10	-200°C to 260°C	-328°F to 500°F
	PT100	-200°C to 850°C	-328°F to 1562°F
	PT1000	-200°C to 595°C	-328°F to 1103°F
RTD Excitation Current	CU10, PT100 500µA ±50µA PT1000 80µA ±20µA		
Common Mode Range	0 - 3.5VDC		
Maximum Inaccuracy	0.35% FSO / CU10 0.2% FSO @ 25°C / PT100 & PT1000 0.26% FSO @ 60°C / PT100 & PT1000		
Maximum Loop Supply	30VDC		
Load Impedance	0Ω minimum		
Maximum Load/Power Supply	203Ω / 12V, 745Ω / 24V		
Linearity Error	0.35% FSO / CU10 0.2% FSO @ 25°C / PT10 & PT1000		
Output Slew Rate	1% @ 20mS		
Filter Characteristics	105dB @ DC, 60dB @ 10Hz, 40dB @ 60Hz		
Stability	0.05% FSO maximum		
Operating Temperature	0 to 60°C (32 to 140°F)		
Storage Temperature	-20 to 70°C (-4 to 158°F)		
Relative Humidity	5 to 90% (non-condensing)		
Environmental Air	No corrosive gases permitted		
Vibration	ML STD 810C 514.2		
Shock	ML STD 810C 516.2		
Noise Immunity	NEMA ICS3-304		

Typical User Wiring



RTD Signal Conditioner to 4-20mA DL05/06 analog module
Only use three wire and four wire RTDs.

SIGNAL CONDITIONER DIMENSIONS

These dimensions are typical for all of the signal conditioners.
All dimensions are in inches (millimeters).

