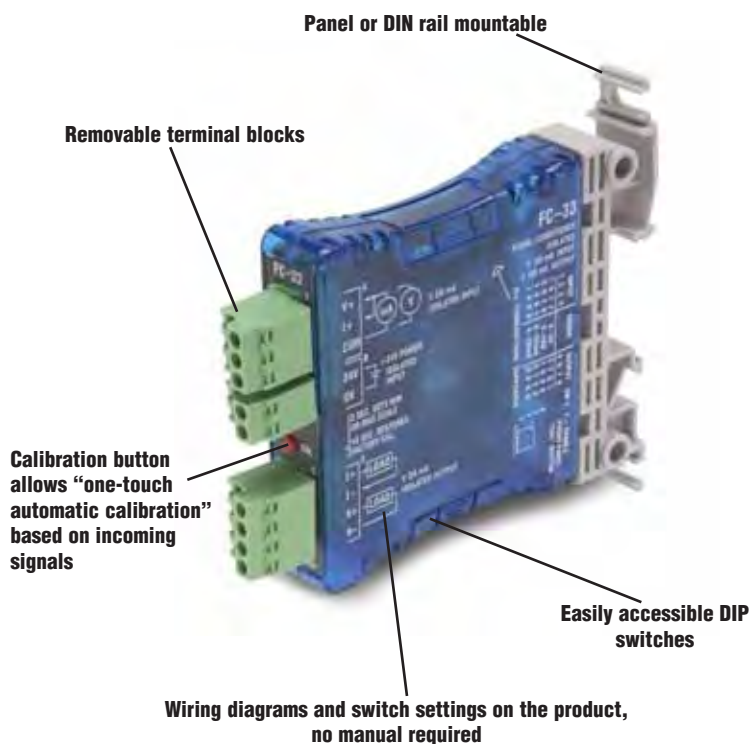


FC Series Signal Conditioners



Convert, isolate and transmit your process signals

Not all electrical signals are created equal. That's why the FC series signal conditioners are the perfect solution for converting process, temperature and other electrical signals into voltage or current signals for transmission or input to a PLC.

The FC series signal conditioners offer 1500V isolation between the input and output to help eliminate electrical noise. Features include easily accessible potentiometer adjustment of the output span and offset, (with the exception of FC-33), slim DIN-rail or side-mount cases and removable terminal blocks.

The FC series signal conditioners are ideal for use with PLCs, loop controllers, digital displays and any other applications requiring an isolated or analog signal.

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

TB's & Wiring

Power

Circuit Protection

Enclosures

Appendix

Part Index



FC-33

DC Selectable Signal Conditioner with 3-way isolation

Field configurable input and output ranges of 0-5V, 0-10V, 0-20 mA and 4-20 mA with 1500 VDC isolation between input and output, and 1500 VDC isolation from 24 volt power and input/output. LED indicates normal operation and is used in conjunction with the calibration pushbutton for the internal calibration process.

- 3-way 1500V isolation
- Push button calibration



FC-T1

Thermocouple/mV Isolated Signal Conditioner

Field configurable input for several different types of thermocouple or mV inputs with 1500 VDC isolation between input and output. Cold junction compensation and burnout detection. Alarm/run LED.

- 1500V isolation
- Cold junction compensation (CJC)
- Internal diagnostics (burnout detection or calibration errors)



FC-11

4-20 mA Isolated Signal Conditioner

Loop powered 4-20 mA input/output signal with 1500 VDC isolation between input and output.

- 1500V isolation
- Loop powered



FC-R1

RTD Input Signal Conditioner

Loop powered, non-isolated, 3-wire unit converts an RTD input to a linear 4-20 mA signal. User selectable CU10, PT100 or PT1000 input.



FC-11 4-20mA Isolated Signal Conditioner



Overview

The FC-11 is a DIN-rail or side-mount, 4-20 mA Input/Output loop powered signal conditioner with 1500 VDC isolation between input and output.

The FC-11 has a user-selectable factory calibration. The output can also be calibrated with OFFSET (zero) and SPAN (full scale) adjustments. The OFFSET has an adjustment range of 0 to 25% of full scale input and the SPAN has an adjustment of 80% to 102%.

Application

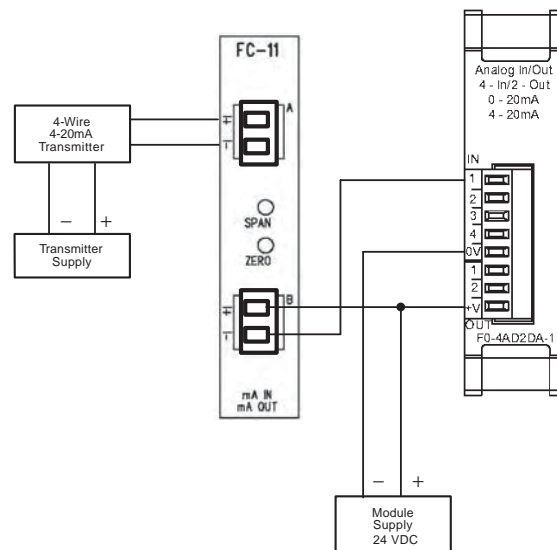
The FC-11 isolated input/output signal conditioner is useful in eliminating ground loops and sinking/sourcing issues when interfacing to PLC analog input modules. The FC-11 design feature solves many types of configuration problems. For example, the signal conditioner can solve the problem of connecting a sinking input transmitter to a sinking analog input module.

Specifications	
Input Ranges	4-20 mA
Extended Input range¹	3.5 mA to 20.6 mA, ±1%
Input Burden Voltage²	6.8 VDC
Maximum Input Current	34 mA @ 9.7 VDC
Output Burden Voltage³	8.5 VDC minimum
Output Range	4-20 mA
Extended Output Range¹	3.5 mA to 20.6 mA, ±1%
Maximum Load Impedance	650 Ω @ 24 VDC, 1000 Ω @ 29 VDC
Maximum Output Current	23 mA @ 29 VDC
Sample Duration Time	18 mS maximum
Filter Characteristic	-3 dB @ 200 Hz -6 dB / octave
Linearity Error	0.1% FSO maximum
Stability	0.1% FSO maximum
Accuracy vs. Temperature	±0.0065% / °C (65ppm / °C)
Maximum Inaccuracy of Output	0.05% @ 25°C, FSO maximum 0.3% @ 0-60°C, FSO maximum
Isolation	1500 VDC Input - Output
Operating Temperature	0-60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Relative Humidity	5 to 90% (non-condensing)
Vibration	ML STD 810C 514.2
Shock	ML STD 810C 516.2
Noise Immunity	NEMA ICS3-304

NOTES:

1. When adjusting SPAN and OFFSET potentiometer
2. Voltage required to power internal circuitry
3. Formula, [(output load) x 20 mA] + 8.5 V, i.e. 13.5 VDC @ 250 Ω
4. Internal analog converter resolution is 12-bit

Typical User Wiring



4-20 mA Input Isolated to 4-20 mA Output (example)

See page 23-23 for signal conditioner dimensions.

