

FC-P3 Potentiometer Input, Analog Output Signal Conditioner



CE cUL us UL file E157382

Overview

The FC-P3 is a resistive input to isolated analog output signal conditioner. The input resistive range (high end resistivity, low end resistivity) is set through the use of a pushbutton programming routine.

The FC-P3 is field configurable for 3-wire potentiometer/slide-wire inputs with end-to-end resistance ranges from 0-100 ohms to 0-100 kilohms. The input adjustment range can be scaled down to a minimum of 10% of the potentiometer being used. Switch selectable, analog output options include 0-20 mA, 4-20 mA, 0-5V, and 0-10 V. The PGM LED provides an indication of operating status and is used during the field programming process.

The MAX and MIN LED's indicate OVER and UNDER range status. The module can be 35 mm DIN rail or side mounted and is UL listed. Power for the unit is provided by a customer supplied 24 VAC or 24 VDC Class 2 power supply.

Specifications	
Input Specifications	
Input Ranges	0 - 100 ohms up to 0-100 kilohms, 3-wire potentiometer/slide-wire
Programmable Range Minimum	Pushbutton Adjustable to 10% of full range of applied potentiometer
Excitation	>100 uA @ 2.5VDC
External Power Required	24 VDC ±10% @ 120 mA or 24 VAC ±10% @ 120 mA, Class 2
Output Specifications	
Output Ranges	0-5 V, 0-10 V, 0-20 mA, 4-20 mA (DIP Switch Selectable/Invertable)
Maximum Output Current	21 mA (for mA OUT ONLY)
Response Time	35 ms for mA Out, 100 ms for V Out
Load Impedance	2 kilohm minimum, voltage output 550 ohms maximum current output
Output Drive	Voltage: 10 mA maximum Current: 21 mA maximum
Maximum Inaccuracy	±0.75% @ 0-60°C, FSO maximum
Output Stability and Repeatability	0.05% FSO maximum

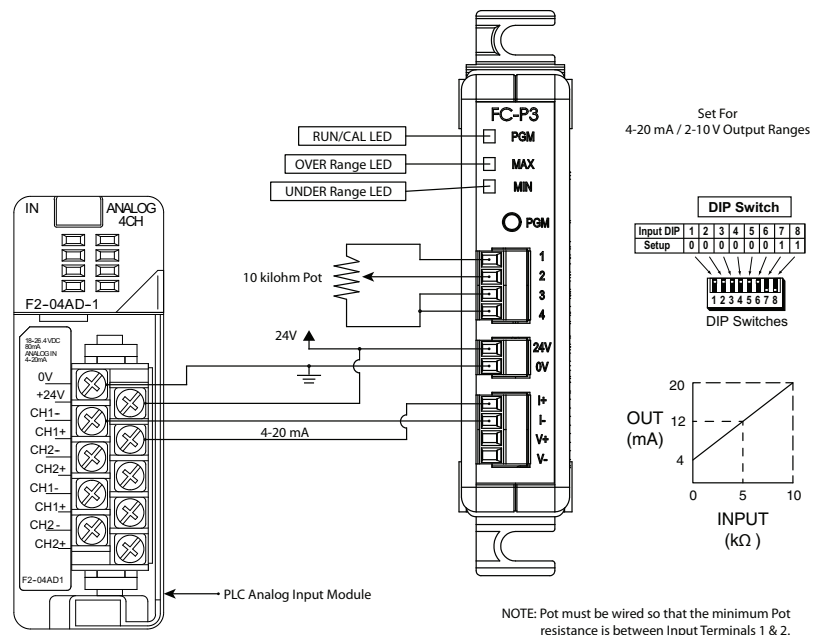
Specifications (continued)	
Output Specifications (continued)	
Output Ripple	0.05% of full scale
Output Protection	Outputs short circuit protected
Inverted Outputs	Invert Outputs using DIP Switch 6
Terminal Block Specifications	
Field Wiring	Removable Screw Terminal Blocks (included)
Number of Positions	2 (Dinkle EC350V-02P), 4 (Dinkle EC350V-04P), 4 (Dinkle EC350V-04P)
Wire Range	28-14 AWG solid or stranded conductor; wire strip length 1/4" (6-7mm)
Screw Torque	1.7 inch-pounds (0.19 NM)
General Specifications	
Accuracy vs. Temperature	±50 PPM of full scale/°C Maximum
Response Time	35 ms, 100 ms for 0-10V range
Power Dissipation within Module	3W Maximum
Thermal Dissipation	9.42 BTU/hr
Surrounding Air Temperature	0 to 60°C (32 to 140°F) IEC 60068-2-14 (Test Nb, Thermal Shock)
Storage Temperature	-20 to 70°C (-4 to 158°F) IEC 60068-2-1 (Test Ab, Cold) IEC 60068-2-2 (Test Bb, Dry Heat) IEC 60068-2-14 (Test Na, Thermal Shock)
Enclosure Rating	IP20
Humidity	5 to 95% (non-condensing) IEC 60068-2-30 (Test Db, Damp Heat)
Environmental Air	No corrosive gases permitted (EN61131-2 pollution degree 1)
Vibration	MIL STD 810C 514.2
Shock	MIL STD 810C 516.2
Isolation	1500 VDC Input to Output 1000 VDC Power to Input 1000 VDC Power to Output applied for 1 second (100% tested)
Insulation Resistance	>10 M ohm @ 500 VDC
Noise Immunity	NEMA ICS3-304 IEC 61000-4-2 (ESD) Impulse 1000 V @ 1µs pulse IEC 6100-4-4 (FTB) RFI, (145 MHz, 440 MHz 5W @ 15 cm) IEC 61000-4-3 (RFI)
Weight	0.25 lbs
Agency Approvals	UL508*, File Number: E157382, CE

* In order to comply with UL508, the supplied power must be less than 26 VDC and fused at a maximum of 3 amps.

FC-P3 Application and Dimensions

Application

Use the FC-P3 to eliminate the challenge of getting a variable set by a machine operator into the PLC. Using the FC-P3 to convert the resistive signal from a 10 kilohm potentiometer to a 4-20 mA signal that can be used by a PLC is simple.



Wiring Connections

Input Terminal Block	
Faceplate Label	Description
1	Pot End Terminal
2	Pot Wiper
3	Pot End Terminal
4	Shield Connection

NOTE: Pot must be wired so that the minimum Pot resistance is between Input Terminals 1 & 2.

External Power Terminal Block	
Faceplate Label	Description
24V	24 VDC or 24 VAC ±10%, Class 2
0V	0V

Output Terminal Block	
Faceplate Label	Description
I+	Current
I-	Current
V+	Voltage
V-	Voltage

Dimensions

inches [mm]

