

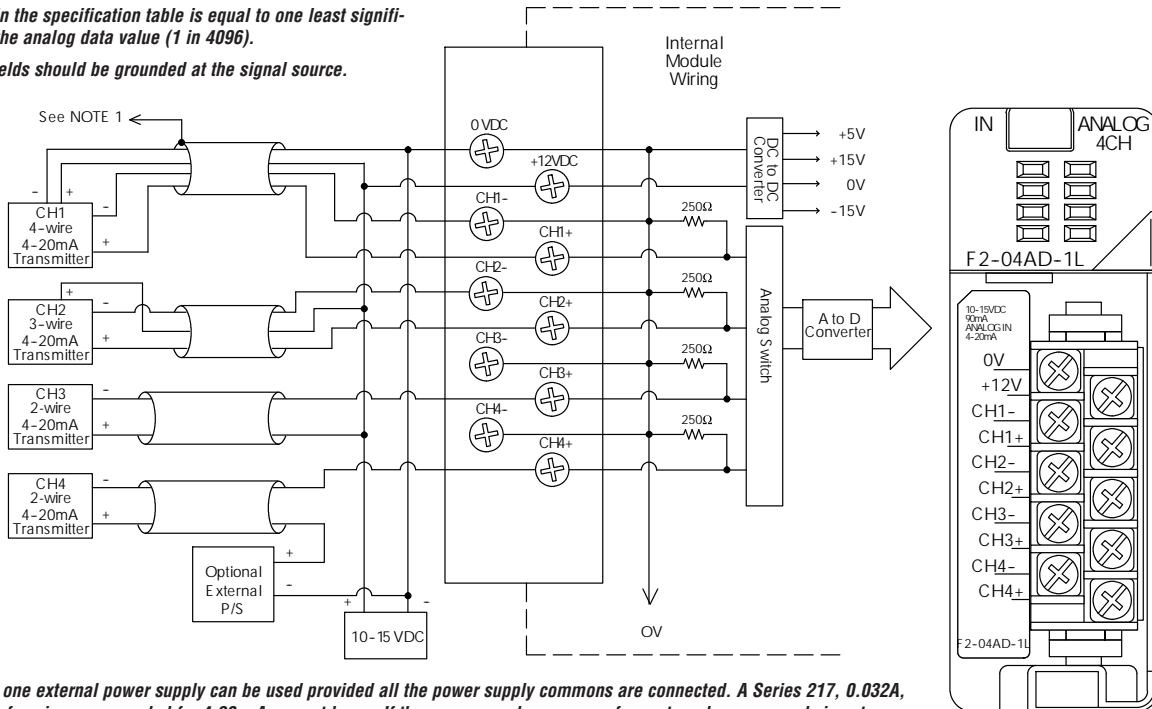
# Analog Current Input Modules

F2-04AD-1L 4-Ch. 4-20mA Analog In <--->	
This module requires a 12 VDC user power supply for operation. See the F2-04AD-1 on the previous page if you want to use a 24 VDC supply. All other specifications are the same.	
<b>Number of Channels</b>	4, single ended (1 common)
<b>Input Ranges</b>	4 to 20 mA current
<b>Resolution</b>	12 bit (1 in 4096)
<b>Active Low-pass Filtering</b>	-3 dB at 80 Hz, 2 poles (-12 dB per octave)
<b>Input Impedance</b>	250 Ω ±0.1%, 1/2 W current input
<b>Absolute Maximum Ratings</b>	-40 mA to +40 mA, current input
<b>Converter Type</b>	Successive approximation
<b>Conversion Time (PLC Update Rate)</b>	1 channel per scan maximum (D2-230 CPU) 4 channels per scan maximum (D2-240, D2-250(-1) and D2-260 CPUs)
<b>Linearity Error (End to End)</b>	±1 count (0.025% of full scale) maximum
<b>Input Stability</b>	±1 count
<b>Full Scale Calibration Error (offset error not included)</b>	±12 counts max., @ 20 mA current output
<b>Offset Calibration Error</b>	±7 counts max., @ 4 mA current input
<b>Step Response</b>	4 ms to 95% of F.S. change

<b>Maximum Inaccuracy</b>	±.5% @ 77°F (25°C) ±.65% 32° to 140°F (0° to 60°C)
<b>Accuracy vs. Temperature</b>	±50 ppm/°C maximum full scale (including max. offset change)
<b>Recommended Fuse</b>	0.032A, Series 217 fast acting current inputs
<b>Digital Input Points Required</b>	16 (X) input points (12 binary data bits, 2 channel ID bits, 2 diagnostic bits)
<b>Base Power Required 5VDC</b>	50 mA
<b>External Power Supply</b>	90 mA maximum, +10 to +15 VDC
<b>Operating Temperature</b>	32° to 140°F (0° to 60°C)
<b>Storage Temperature</b>	-4° to 158°F (-20° to 70°C)
<b>Relative Humidity</b>	5 to 95% (non-condensing)
<b>Environmental Air</b>	No corrosive gases permitted
<b>Vibration</b>	MIL STD 810C 514.2
<b>Shock</b>	MIL STD 810C 516.2
<b>Noise Immunity</b>	NEMA ICS3-304
<b>Terminal Type (included)</b>	Removable; D2-810CON

One count in the specification table is equal to one least significant bit of the analog data value (1 in 4096).

Note 1: Shields should be grounded at the signal source.



More than one external power supply can be used provided all the power supply commons are connected. A Series 217, 0.032A, fast-acting fuse is recommended for 4-20 mA current loops. If the power supply common of an external power supply is not connected to 0 VDC on the module, then the output of the external transmitter must be isolated. To avoid "ground loop" errors, recommended 4-20 mA transmitter types are:

- 2 or 3 wire: Isolation between input signal and power supply.
- 4 wire: Isolation between input signal, power supply, and 4-20 mA output