Analog In/Out Combination Module

F2-4AD2DA 4-Channel Analog Input / 2-Channel Analog Output	
Number of Input Channels	4, single-ended (1 common)
Number of Output Channels	2, single-ended (1 common)
Ranges	4 to 20 mA current (current sinking)
Resolution	12 bit (1 in 4096)
Peak Withstanding Voltage	75 VDC, current outputs
Maximum Continuous Overload	-40 to +40 mA, each current output
Input Impedance	250 Ω, ±0.1%, 1/2 W, 25 ppm/°C current input resistance
External Load Resistance	0Ω minimum, current outputs
Maximum Loop Supply	30 VDC
Recommended Fuse	0.032 A, series 217 fast-acting, current inputs
Maximum Load/Power Supply	910 Ω/24 V, current outputs 620 Ω/18 V, 1200 Ω/30 V
Active Low-pass Filter	-3 dB @ 20 Hz, 2 poles (-12 dB per octave)
Linearity Error (best fit)	±1 count (±0.025% of full scale) maximum
Output Settling Time	100 µs maximum (full scale change)

Accuracy vs. Temperature	±50 ppm/°C full scale calibration change (including maximum offset change)
Maximum Inaccuracy	±0.1% @ 77°F (25°C) ±0.3% @ 32 to 140°F (0 to 60°C)
Digital Input and Output Points Required	16 (X) input points (12 binary data bits, 2 channel ID bits, 2 diagnostic bits) 16 (Y) output points (12 binary data bits, 2 channel enable bits)
PLC Update Rate	4 channels per scan maximum: (D2-240, D2-250(-1) and D2-260 CPUs) 2 output channels per scan maximum: (D2-240, D2-250(-1) and D2-260 CPUs) 1 input and 1 output channel per scan maximum: (D2-230 CPU)
Base Power Required 5VDC	90 mA
External Power Supply Requirement	18-26.4 VDC @ 80 mA 20 mA per loop
Operating Temperature	32° to 140°F (0° to 60°C)
Storage Temperature	-4° to 158°F (-20° to 70°C)
Relative Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	MIL STD 810C 514.2
Shock	MIL STD 810C 516.2
Noise Immunity	NEMA ICS3-304
Terminal Type (included)	Removable; D2-8IOCON

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 connected at their respective signal source.

Note 2: Unused channel should remain open for minimum power consumption.

Note 3: More than one external power supply can be used provided the power supply commons are connected.

Note 4: A Series 217, 0.032A fast-acting fuse is recommended for 4-20 mA current input loops.

Note 5: 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.

Note 6: If an analog channel is connected backwards, then erroneous data values will be returned for that channel.

Note 7: To avoid small errors due to terminal block losses, connect 0 VDC, IN-, and OUT- on the terminal block as shown. The module's internal connection alone of these nodes is not sufficient to permit module performance up to the accuracy specifications.

Note 8: Choose an output transducer resistance according to the maximum load/power listed in the Output Specifications.