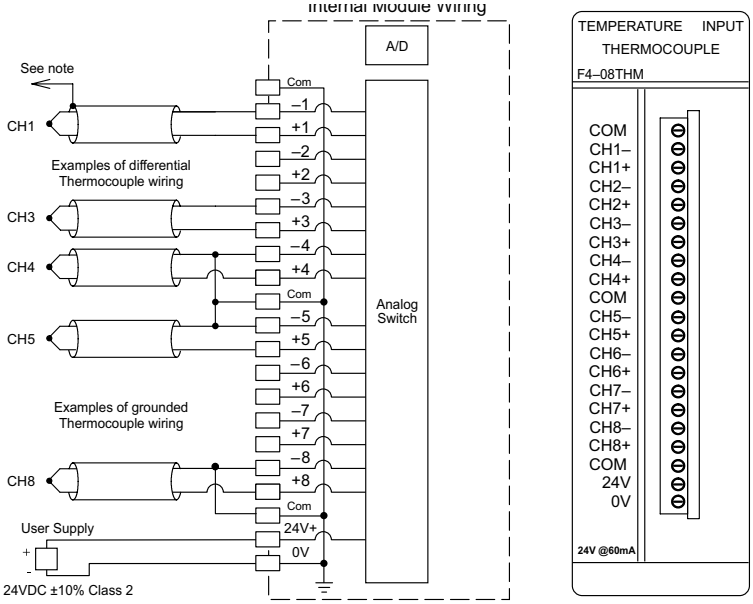
Temperature Input Modules

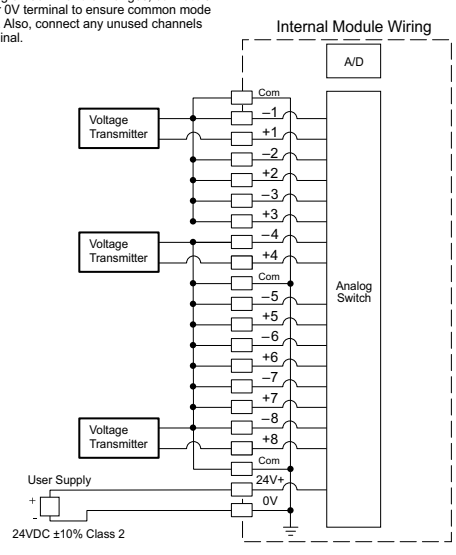
F4-08THM 8-Channel Thermocouple Input $1,096.00				
General Specifications		**Thermocouple Specifications**		
Number of Channels	8, differential	Input Ranges*	Type J -190 to 760°C -310 to 1400°F Type E -210 to 1000°C -346 to 1832°F Type K -150 to 1372°C -238 to 2502°F Type R 65 to 1768°C 149 to 3214°F Type S 65 to 1768°C 149 to 3214°F Type T -230 to 400°C -382 to 752°F Type B 529 to 1820°C 984 to 3308°F Type N -70 to 1300°C -94 to 2372°F Type C 65 to 2320°C 149 to 4208°F	
Common Mode Range	± 5VDC			
Common Mode Rejection	90dB min. @ DC, 150dB min. @ 50/60Hz.			
Input Impedance	1MΩ			
Absolute Maximum Ratings	Fault-protected inputs to ± 50VDC	Display Resolution	± 0.1°C or ± 0.1°F	
Accuracy vs. Temperature	± 5ppm/°C maximum full scale calibration (including maximum offset change)	Cold Junction Compensation	Automatic	
PLC Update Rate	8 channels per scan max	Conversion Time	100ms per channel	
Digital Inputs	16 binary data bits, 2 channel ID bits, 4 diagnostic bits	Warm-Up Time	30 minutes typically ± 1°C repeatability	
Input Points Required	32 points (X) input module	Linearity Error (End to End)	± .05°C maximum, ± .01°C typical	
Terminal Type (included)	Removable			
External Power Supply	60mA maximum, 18 to 26.4VDC	Maximum Inaccuracy	± 3°C (excluding thermocouple error)	
Power Budget Requirements	110mA max., 5VDC (supplied to base)	**Voltage Input Specifications**		
Operating Temperature	0° to 60°C (32° to 140°F)	Voltage Ranges	0–5 V, ± 5V, 0–156.25 mV, ± 156.25 mVDC	
Storage Temperature	-20° to 70°C (-4° to 158°F)	Resolution	16 bit (1 in 65535)	
Relative Humidity	5 to 95% (non-condensing)	Full Scale Calibration Error (Offset error Included)	± 13 counts typical, ± 33 maximum	
Environmental Air	No corrosive gases permitted	Offset Calibration Error	± 1 count maximum, @ 0V input	
Vibration	MIL STD 810C 514.2	Linearity Error (End to End)	± 1 count maximum	
Shock	MIL STD 810C 516.2	Maximum Inaccuracy	± 02% @ 25°C (77°F)	
Noise Immunity	NEMA ICS3-304	**NOTE 1: Terminate shields at the respective signal source** **NOTE 2: Leave unused channels open (no connection)** ***Thermocouple type is selected by setting internal jumpers** **NOTE 3: This module is not compatible with the *ZIP*Link wiring system.**		

Thermocouple Input Wiring Diagram



Voltage Input Wiring Diagram

Note 3: When using 0-156mV and 5V ranges, connect CH- terminal to Com or 0V terminal to ensure common mode range acceptance. Also, connect any unused channels to Com or 0V terminal.



Temperature Input Modules

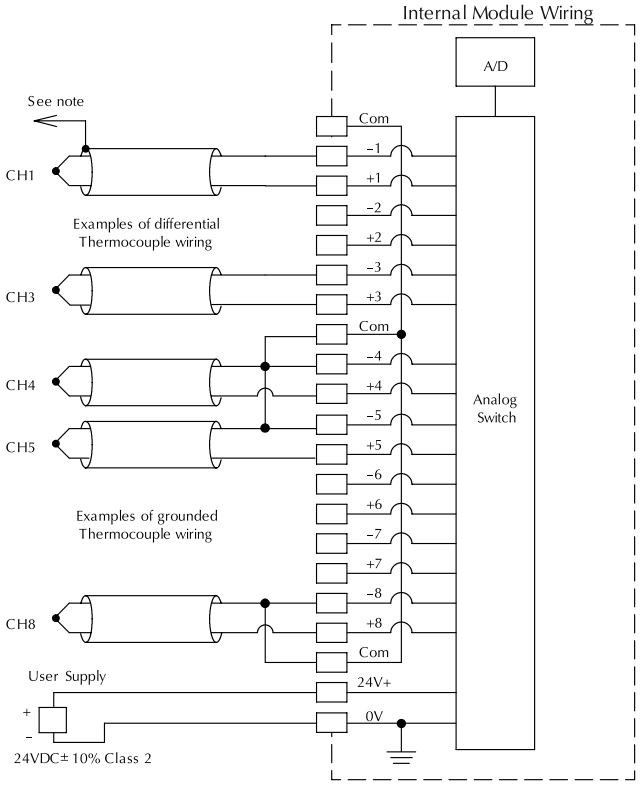
F4-08THM-J-n 8-Channel Thermocouple Input $1,144.00

When you order the module, replace the "n" with the type of Thermocouple needed. For example, to order a Type J thermocouple module, order part number F4-08THM-J.

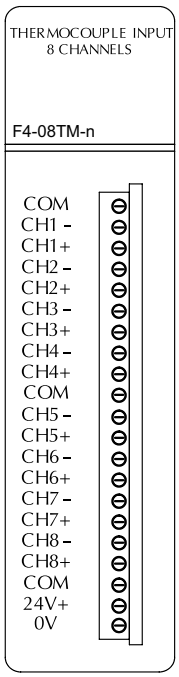
Number of channels	8, differential inputs
Input Ranges	Type J -210/760°C, -350/1390°F
Resolution	12 bit (1 in 4,096)
Input Impedance	27kΩ
Absolute Maximum Ratings	Fault protected input, 130 Vrms or 100VDC
Cold Junction Compensation	Automatic
Conversion Time	15ms per channel, minimum 1 channel per CPU scan
Converter Type	Successive Approximation, 574

Linearity Error	± 1 count (0.03% of full scale) maximum
Full Scale Calibration Error	± 0.35% of full scale
Maximum Inaccuracy*	± 1°C for type J
PLC Update Rate	1 ch. per scan min., 8 per scan max.
Digital Input Points Required	16 (X) input points (12 binary data bits, 3 channel ID bits, 1 sign bit)
Base Power Required 5V	120mA
Terminal Type (included)	Non-removable
External Power Supply	24VDC ±10%, 50mA current
Operating Temperature	32 to 140°F (0 to 60°C)
Storage Temperature	-4 to 158°F (-20 to 70°C)
Accuracy vs Temperature*	57 ppm/°C maximum full scale
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

Note 1: Terminate shields at the respective signal source
Note 2: Leave unused channels open (no connection)
Note 3: This module is not compatible with the *ZIP*Link wiring system.



***Max. Inaccuracy is not guaranteed for temperatures lower than: -200°C for type J**



Temperature Input Modules

F4-08RTD 8-Channel RTD Input $867.00	
Number of Channels	8
Input Ranges	Type Pt100: -200/850°C, -328/1562°F Type Pt1000: -200/595°C, -328/1103°F Type jPT100: -38/450°C, -36/842°F Type CU-10/25W: -200/260°C, -328/500°F
Resolution	16 bit (1 in 65535)
Input Impedance	27kΩ
Display Resolution	± 0.1°C, ±0.1°F (±3276.7)
RTD Excitation Current	200µA
Input Type	Differential
Notch Filter	>100db notches at 50/60Hz -3db=13.1 Hz
Maximum Settling Time	100 msec (full-scale step input)
Common Mode Range	0–5 VDC

Absolute Maximum Ratings	Fault protected inputs to ±50 VDC
Converter Type	Charge Balancing
Linearity Error	± 1°C maximum, ±.01°C typical
Full Scale Calibration Error	± 1°C
PLC Update Rate	1 ch. per scan min., 8 per scan max.
Digital Input Points Required	32 (X) input points (15 binary data bits, 3 channel ID bits, 1 sign bit, 8 fault bits)
Base Power Required 5V	80mA @ 5VDC
Terminal Type (included)	Removable
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

Notes:
1. **the three wires connecting the RTD to the module must be the same type and length. Do not use the shield or drain wire for the third connection.**
2. **If an RTD sensor has 4 wires, the plus sense wire should be left unconnected as shown.**
3. **This module is not compatible with the *ZIP*Link wiring system.**