

Temperature Input Modules

| F2-04THM 4-Channel Thermocouple In <---> | |
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| General Specifications | |
| Number of Channels | 4, differential |
| Common Mode Range | ±5 VDC |
| Common Mode Rejection | 90 dB min. @ DC, 150 dB min. @ 50/60 Hz. |
| Input Impedance | 1 MΩ |
| Absolute Maximum Ratings | Fault-protected inputs to ±50 VDC |
| Accuracy vs. Temperature | ±5 ppm/°C maximum full scale calibration (including maximum offset change) |
| PLC Update Rate | 4 channels per scan max. D2-240/250(-1)/D2-260 CPU, H2-EBC(-F); 1 chan. per scan max. D2-230 CPU |
| Digital Input Points Required | 32 (X) input points (16 binary data bits, 2 channel ID bits, 4 diagnostic bits) |
| External Power Supply | 60 mA maximum, 18 to 26.4 VDC |
| Base Power Required 5VDC | 110 mA |
| 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) | Non-removable |

| Thermocouple Specifications | | |
|---|--|------------------|
| 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 |
| | Display Resolution | ±0.1°C or ±0.1°F |
| Cold Junction Compensation | Automatic | |
| Conversion Time | 100 ms per channel | |
| Warm-Up Time | 30 minutes typically ± 1°C repeatability | |
| Linearity Error (End to End) | ±0.5°C maximum, ±0.1°C typical | |
| Maximum Inaccuracy | ±3°C (excluding thermocouple error) | |
| Voltage Input Specifications | | |
| Voltage Ranges | 0-5V, ±5V, 0-156.25 mV, ±156.25 mVDC | |
| Resolution | 16 bit (1 in 65535) | |
| Full Scale Calibration Error (Offset Error Included) | ±13 counts typical ±33 maximum | |
| Offset Calibration Error | ±1 count maximum, @ 0V input | |
| Linearity Error (End to End) | ±1 count maximum | |
| Maximum Inaccuracy | ±0.2% @ 25°C (77°F) | |

Note 1: Terminate shields at the respective signal source.

Note 2: Connect unused channels to a common terminal (0V, CH4+, CH4).

Note 3: When using 0-156 mV and 5V ranges, connect (-) or (0) volts terminal to 0V to ensure common mode range acceptance.

