

Temperature Input Modules

F2-04THM 4-Channel Thermocouple In \$310.00

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. D2-250(-1)/D2-260 CPU, H2-EBC(-F)
Digital Input Points Required	32 (X) input points (16 binary data bits, 2 channel ID bits, 4 diagnostic bits)
External Power Supply	60mA maximum, 18 to 26.4 VDC
Base Power Required 5VDC	110mA
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

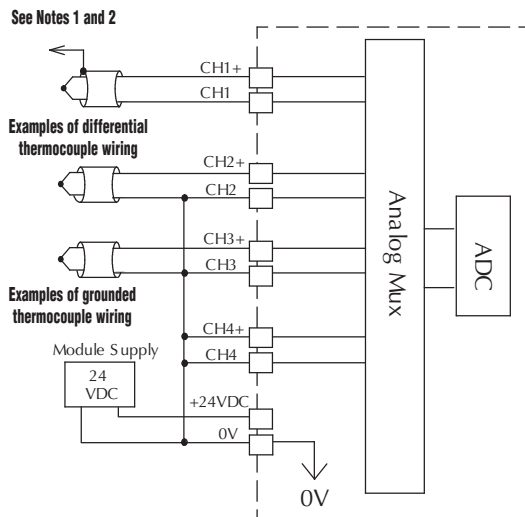
Thermocouple Specifications		
Input Ranges	Type J -190 to 760°C	-310 to 1400°F
	Type E -210 to 1000°C	-346 to 1832°F
	Type K -150 to 1372°C	-238 to 2502°F
	Type R 65 to 1768°C	149 to 3214°F
	Type S 65 to 1768°C	149 to 3214°F
	Type T -230 to 400°C	-382 to 752°F
	Type B 529 to 1820°C	984 to 3308°F
Type 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)	±.05°C maximum, ±.01°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	±.02% @ 25°C (77°F)	

CPU Firmware Required	
CPU	Firmware Required
D2-250	V1.06
D2-250-1, D2-260	All firmware versions work

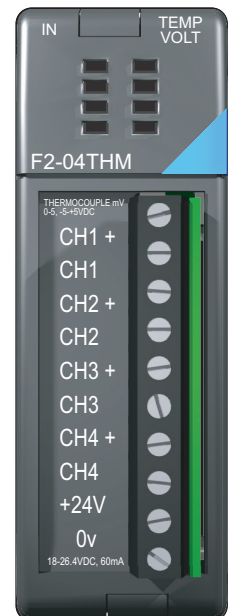
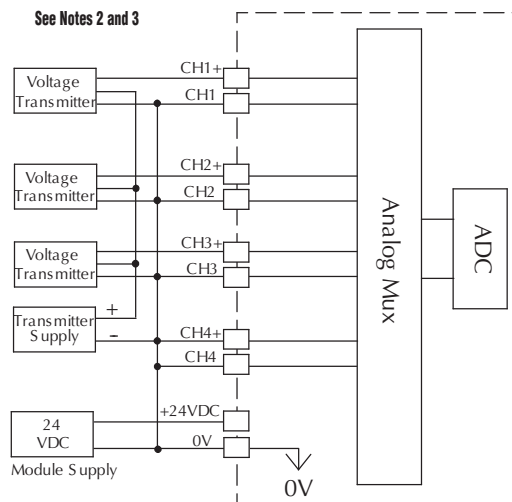
Notes:

1. Terminate shields at the respective signal source.
2. Connect unused channels to a common terminal (0V, CH4+, CH4).
3. When using 0-156 mV and 5V ranges, connect (-) or (0) volts terminal to 0V to ensure common mode range acceptance.
4. This module is not compatible with the ZIPLink wiring system.

Thermocouple input wiring diagram



Voltage input wiring diagram





Power Requirements

These charts help determine your power requirements

This section shows the amount of power supplied by each of the base power supplies and the amount of power consumed by each DL205 device. The Power Consumed charts list how much INTERNAL power from each power source is required for the DL205 devices. Use this information when calculating the power budget for your system.

In addition to the internal power sources, the DL205 bases offer a 24 VDC auxiliary power supply with external power connections. This auxiliary power supply can power external devices.

Use ZIPLinks to reduce power requirements

If your application requires a lot of relay outputs, consider using the ZIPLink AC or DC relay output modules. These modules can switch high current (10A) loads without putting a load on your base power budget. Refer to the Terminal Blocks and Wiring Solutions section in this catalog for more information.

This logo is placed next to the I/O modules that are supported by the ZIPLink connection systems. See the I/O module specifications at the end of this section.



Power Consumed		
Device	5V(mA)	24V Auxiliary
Operator Interface		
DV-1000	150	0
C-more Micro-Graphic	210	0

Power Supplied							
Device	Price	5V(mA)	24V Auxiliary	Device	Price	5V(mA)	24V Auxiliary
Bases				Bases			
D2-03B-1	\$132.00	2600	300	D2-06BDC1-1	\$194.00	2600	None
D2-03BDC1-1	\$150.00	2600	None	D2-06BDC2-1	\$184.00	2600	300
D2-04B-1	\$143.00	2600	300	D2-09B-1	\$220.00	2600	300
D2-04BDC1-1	\$171.00	2600	None	D2-09BDC1-1	\$238.00	2600	None
D2-06B-1	\$176.00	2600	300	D2-09BDC2-1	\$238.00	2600	300

Power Consumed		
Device	5V(mA)	24V Auxiliary
CPUs		
D2-250-1	330	0
D2-260	330	0
H2-WPLC*~**	680	0
DC Input Modules		
D2-08ND3	50	0
D2-16ND3-2	100	0
D2-32ND3	25	0
D2-32ND3-2	25	0
AC Input Modules		
D2-08NA-1	50	0
D2-08NA-2	100	0
D2-16NA	100	0
Input Simulator Module		
F2-08SIM	50	0
DC Output Modules		
D2-04TD1	60	20
D2-08TD1	100	0
D2-08TD2	100	0
D2-16TD1-2	200	80
D2-16TD2-2	200	0
F2-16TD1P	70	50
F2-16TD2P	70	50
D2-32TD1	350	0
D2-32TD2	350	0
AC Output Modules		
D2-08TA	250	0
F2-08TA	250	0
D2-12TA	350	0
Relay Output Modules		
D2-04TRS	250	0
D2-08TR	250	0
F2-08TR(S)	670	0
D2-12TR	450	0
Combination In/Out Module		
D2-08CDR	200	0

Power Consumed		
Device	5V(mA)	24V Auxiliary
Analog Modules		
F2-04AD-1	100	5
F2-04AD-2	110	5
F2-08AD-1	100	5
F2-08AD-2	100	5
F2-02DA-1	40	60 (note 1)
F2-02DA-1L	40	70 @ 12V (note 1)
F2-02DA-2	40	60
F2-02DA-2L	40	70 @ 12V
F2-02DAS-1	100	50 / channel
F2-02DAS-2	100	60 / channel
F2-08DA-1	30	50 (note 1)
F2-08DA-2	60	140
F2-4AD2DA	60	80 (note 1)
F2-8AD4DA-1	35	100 (note 1)
F2-8AD4DA-2	35	80 (note 1)
F2-04RTD	90	0
F2-04THM	110	60
Specialty Modules		
D2-CTRINT	50*	0
D2-CM / D2-EM	100/130	0
H2-CTRIO2	275	0
D2-DCM	300	0
F2-DEVNETS	160	0
F2-SDS-1	160	0
H2-EBC100	300	0
H2-EBC-F	640	0
H2-ECOM100	300	0
H2-ECOM-F	640	0
F2-CP128	235	0
Remote I/O		
H2-ERM100, (-F)	300, (-F: 450)	0
Programming Devices		
D2-HPP	200	0

*requires external 5VDC for outputs
Note 1: Add an additional 20 mA per output loop.