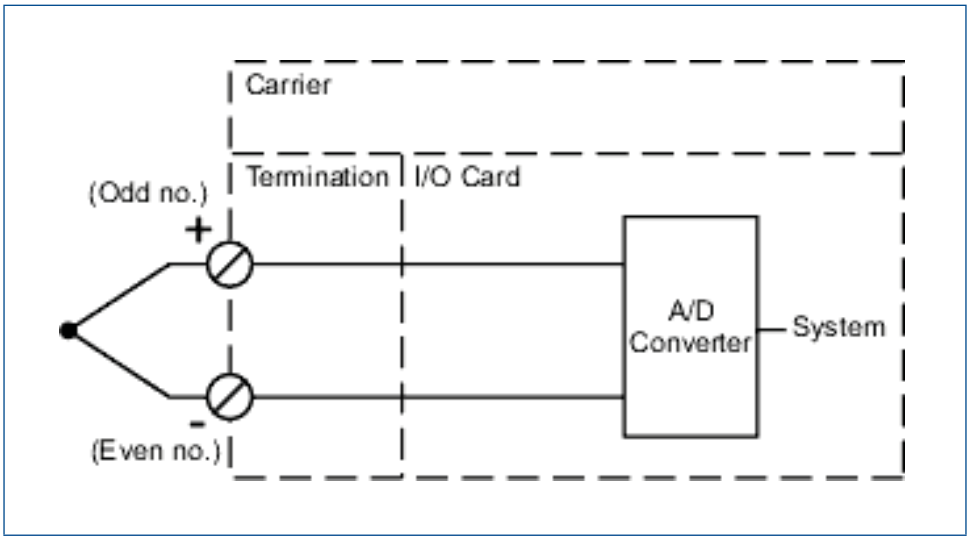
Specifications for Thermocouple/mV Input Card, 8-channel	
Channels per Card	Eight
Sensor Types Thermocouple mV	B, E, J, K, N, R, S, T, uncharacterized Low level voltage source
Sensor Ranges	See table next page
Repeatability	0.05% of span
A/D Resolution	16-bit
Calibration	None required
Units	°C, °F
Cold Junction Compensation (Not available on mV channels)	Local: Integrally mounted in terminal block External: Configure one channel as external cold junction compensation for remaining inputs
Isolation	Each channel is optically isolated from the system and factory tested to 1500V DC ■ Channels 1, 2, 3, and 4 are isolated from channels 5, 6, 7, and 8 (verified by 1500V DC factory test) ■ Thermocouples attached to channels 1, 2, 3, and 4 are not electrically isolated and should be within + 0.7V DC of each other ■ Thermocouples attached to channels 5, 6, 7, and 8 are not electrically isolated and should be within + 0.7V DC of each other
Common Mode Rejection	120 dB at DC/50/60 Hz
Common Mode Impedance	> 10 mega ohms
Normal Mode Rejection	60 dB at 60 Hz
LocalBus Current (12V DC nominal)	210 mA
Open Sensor Detection	Yes (< 70 nA)
Open Sensor Detection Time	10 seconds

Thermocouple Sensor Type Specifications					
Sensor Type	**Full Scale**	**Operating Range**	**25°C Reference Accuracy**	**Temperature Drift**	**Resolution**
Uncharacterized (no linearization, no cold junction compensation.)	-100 to 100 mV	-100 to 100 mV	0.1 mV	± 0.002 mV/°C	~0.003mV
B	250 to 1810°C	500 to 1810°C	± 2.4°C	± 0.056°C/°C	~0.18°C
E	-200 to 1000°C	-200 to 1000°C	± 0.6°C	± 0.008°C/°C	~0.07°C
J	-210 to 1200°C	-190 to 1200°C	± 0.8°C	± 0.011°C/°C	~0.05°C
K	-270 to 1372°C	-200 to 1372°C	± 0.5°C	± 0.016°C/°C	~0.18°C
N	-270 to 1300°C	-190 to 1300°C	± 1.0°C	± 0.007°C/°C	~0.10°C
R	-50 to 1768°C	-50 to 1768°C	± 2.1°C	± 0.013°C/°C	~0.14°C
S	-50 to 1768°C	-40 to 1768°C	± 2.2°C	± 0.067°C/°C	~0.24°C
T	-270 to 400°C	-200 to 400°C	± 0.7°C	± 0.001°C/°C	~0.04°C

RTD, ohms Sensor Type Specifications					
Sensor Type	**Full Scale**	**Operating Range**	**25°C Reference Accuracy**	**Temperature Drift**	**Resolution**
Low-level Voltage Source	-100 to 100 mV	-100 to 100 mV	0.1 mV	0.002 mV/°C	~0.003 mV°



Simplified Circuit Diagram of Thermocouple/mV card, 8 Channels.

Ordering Information

Analog Input Cards and Termination Blocks	
Description	**Model Number**
8 Channels 4-20 mA, HART	
Standard I/O Termination Block	VE4003S2B1**
Redundant Standard I/O Termination Block	VE4033S2B1**
Fused I/O Termination Block	VE4003S2B2**
4-wire I/O Termination Block	VE4003S2B3**
16-Pin Mass Termination Block	VE4003S2B4**
24-Pin Mass Termination Block	VE4003S2B5**
16 Channels 4-20 ma, HART, Plus Card	
16-Channel 2-Wire AI Terminal Block for Series 2 Plus	VE4003S2B9
16-Channel 4-Wire AI Terminal Block for Series 2 Plus	VE4003S2B10
Redundant 16-Channel 2- & 4-Wire AI Terminal Block for Series 2 Plus	VE4033S2B10
48-pin AI Mass Termination Block for Series 2 Plus (to be used with DeltaV™ Signal Conditioning Cards for PLC-5 AI, or P+F HiC IS barriers and terminal boards for DeltaV DCS)	VE4003S2B11
48-pin AI Mass Termination Block for Series 2 Plus including 16-channel Analog Mass Connection Boards*	VE4053S2B11
Redundant 48-pin AI Mass Termination Block for Series 2 Plus (to be used with DeltaV Signal Conditioning Cards for PLC-5 AI, or P+F HiC IS barriers and terminal boards for DeltaV DCS)	VE4033S2B11
Redundant 48-pin AI Mass Termination Block for Series 2 Plus including 16-channel Analog Mass Connection Boards*	VE4083S2B11
8 Channels Thermocouple, mV	
Standard I/O Termination Block	VE4003S4B1
Cold Junction Compensated (CJC) Termination Block	VE4003S5B1
Analog Input Card: 8 Channels RTD	
Resistant Temperature Device (RTD) Termination Block	VE4003S6B1

*For more details on the Mass Connection Boards and connection cables, please refer to the **M-series Mass Connection Solutions** PDS.

**Supported on DeltaV v10.3.1 and later. If card will be used on earlier DeltaV versions, please request KJ3222X1-BA2.