

## DATA SHEET

Form 439-040728

### Description

The thermocouple analog modules provide a single channel of optically isolated temperature-to-digital conversion. The modules offer wide nominal input and special over/under range capabilities. The 'T' module also includes 4000 Vrms transient channel-to-channel isolation which eliminates any ground loop problems. Modules plug into a Classic standard analog I/O rack and are secured by a captive screw.

Part Number	Description
AD5	J Thermocouple Input
AD5T	J Thermocouple Input, Isolated
AD8	K Thermocouple Input
AD8T	K Thermocouple Input, Isolated
AD17T	R or S Thermocouple Input, Isolated
AD18T	T Thermocouple Input , Isolated
AD19T	E Thermocouple Input, Isolated



### Features

- Rugged Packaging
- 4000 Vrms Transient Isolation
- 12-bit Resolution
- Factory Calibrated, No User Adjustments
- Operating Temperature: 0° to 70° C
- "T" Models Offer Channel-to-Channel Isolation

\* For 'T' models only.

\*\* Accuracy figure requires use of gain and offset commands.

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### Specifications

#### Module Specifications

	AD5	AD5T	AD8	AD8T
Thermocouple Type	J	J	K	K
Nominal Temperature Range ° C	0° to 700°	0° to 700°	-100° to 924°	-100° to 924°
Nominal Temperature Range ° F	32° to 1292°	32° to 1292°	-148° to 1695°	-148° to 1695°
Over/Under Range Capability ° C	-20° to 1200°	-20° to 1200°	-125° to 1250°	-125° to 1250°
Over/Under Range Capability ° F	- 4° to 2192°	- 4° to 2192°	-193° to 2282°	-193° to 2282°
Average Resolution	0.18° C (0 to 700° C) 0.36° C (700 to 1200° C)	0.18° C (0 to 700° C) 0.36° C (700 to 1200° C)	± 0.25° C (-100 to 924° C) ± 0.5° C (924 to 1250° C)	± 0.25° C (-100 to 924° C) ± 0.5° C (924 to 1250° C)
Accuracy*	± 3° C (0 to 700° C)	± 3° C (0 to 700° C)	± 3° C (-100 to 924° C)	± 3° C (-100 to 924° C)
Repeatability	± 1° C	± 1° C	± 1° C	± 1° C
Power Requirements	17 mA at +15 VDC 12 mA at -15 VDC	35 mA at +15 VDC 35 mA at -15 VDC	17 mA at +15 VDC 12 mA at -15 VDC	35 mA at +15 VDC 35 mA at -15 VDC

\*Accuracy may be improved by the use of "Set Offset" and "Set Gain" commands in the OPTOMUX command set.

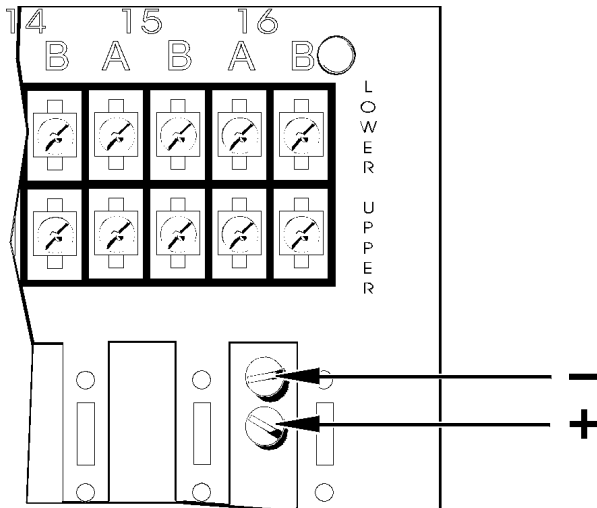
	AD17T	AD17T	AD18T	AD19T
Thermocouple Type	R	S	T	E
Nominal Temperature Range ° C	0° to 960°	0° to 1034°	-200° to 224°	-100° to 435°
Nominal Temperature Range ° F	32° to 1760°	32° to 1893°	-328° to 435°	-148° to 815°
Over/Under Range Capability ° C	-50° to 1768°	-50° to 1768°	-200° to 400°	-100° to 900°
Over/Under Range Capability ° F	-58° to 3214°	-58° to 3214°	-328° to 752°	-148° to 1652°
Average Resolution	0.23° C (200 to 960° C) 0.35° C (960 to 1768° C)	0.25° C (200 to 1034° C) 0.48° C (1034 to 1768° C)	0.1° C (-200 to 244° C) 0.14° C (244 to 400° C)	0.13° C (-100 to 435° C) 0.23° C (435 to 900° C)
Accuracy*	± 5° C (200 to 960° C) ± 3.5° C (960 to 1768° C)	± 5.2° C (200 to 1034° C) ± 4.2° C (1034 to 1768° C)	± 3° C (-100 to 224° C) ± 2° C (224 to 400° C)	± 3° C
Repeatability	± 2.5° C (200 to 960° C) ± 1.8° C (960 to 1768° C)	± 2.6° C (200 to 1034° C) ± 2.1° C (1034 to 1768° C)	± 1.0° C (-100 to 0° C) ± 0.6° C (0 to 224° C) ± 0.4° C (224 to 400° C)	± 0.8° C (-100 to 0° C) ± 0.6° C (0 to 435° C) ± 0.5° C (435 to 900° C)
Power Requirements	30 mA at +15 VDC 30 mA at -15 VDC	30 mA at +15 VDC 30 mA at -15 VDC	30 mA at +15 VDC 30 mA at -15 VDC	30 mA at +15 VDC 30 mA at -15 VDC

\*Accuracy may be improved by the use of "Set Offset" and "Set Gain" commands in the OPTOMUX command set.

### General Specifications

Isolation: Input-to-Output Input-to-Analog Supply*	4000 Vrms (Transient) 4000 Vrms
Cold Junction Compensated:	Yes
Open Thermocouple Detection:	Yes
Input Response Time:	5% of scale change in 8.5 ms 63% of scale change in 165 ms
Ambient Temperature:	0° to 70°C - 25° to 85°C
Resolution:	12 bits

### Connection Diagram



Model	T/C Type	Polarity/Color	
		+	-
AD5/AD5T	J	WHITE	RED
AD8/AD8T	K	YELLOW	RED
AD17T	R	BLACK	RED
AD18T	T	BLUE	RED
AD19T	E	PURPLE	RED
AD17T	S	BLACK	RED