

T110 Module —Low Level Analogue Input

SPECIFICATION

Inputs: thermocouple or millivolt
A-to-D Converter: integrating type
A-to-D Resolution: >15 bit
(with integration period = 20ms)
Internal Ranges: 4 mV input ranges
12 thermocouple types
Converter Scan Rate: 8 per second
Integration Period: selectable for
50 or 60 Hz rejection
Calibration Values: in T110 E² PROM
Break Detection: up or down scale
(software selectable)
Break Protection Current: ±200nA
Max. Break Protection Time: 4.8mV/sec
Common Mode Rejection: 120dB
(50Hz to 5kHz)
Series Mode Rejection: 60dB @ 50Hz
Temperature Stability:
Gain Stability: 0.01% per °C max.
Offset Error: 0.9µV per °C max.

Thermocouple Input:

See Table 4 below for ranges available.

Temperature Stability:

CJC Rejection: 30.1 typically

Gain Stability: 0.01% of input
per °C max.

Offset Error: 0.9µV/°C max.

DESCRIPTION

The T110 Low Level (Thermocouple) Input Conditioner accepts either direct thermocouple or millivolt signals. The thermocouple type or the input range are software selectable.

Table 4 shows the thermocouple ranges available and the input accuracy for each. The mV ranges are shown in Table 3; the correct hardware range is automatically selected with corresponding resolution.

Figure 8 shows the inside of the T110 module and Figure 9 illustrates the connections for the thermocouple or millivolt source.

Order Code. T110/TAG-----
(if the TAG is not specified it will be supplied blank).

mV Input

Input Range (mV)	Range specifications (50Hz ¹) Resolution (µV)	Accuracy ² (±µV)	Temperature stability Gain (ppm/°C)	Offset (µV/°C)
-100 to 100	4.6	100	45	0.9
-65 to 65	3	65	50	0.9
-30 to 30	1.4	30	68	0.9
-15 to 15	0.7	15	100	0.9

Table 3 mV Input Ranges

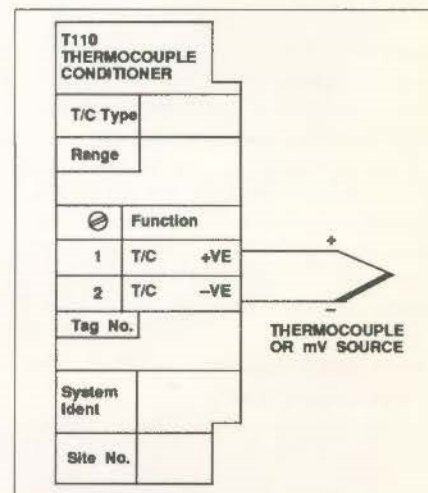


Figure 9 T110 Input Connections

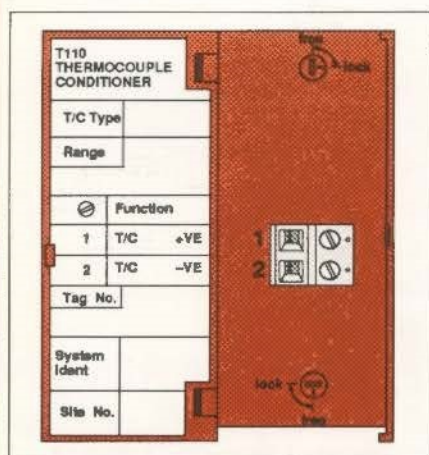


Figure 8 T110 Low Level Analogue Input Module

T/couple type		Range specs. (50Hz ¹)		Temp. stability	
T/C	Range	Resolution	Accuracy ²	Gain	Offset
(°C)	(°C)	(±°C)	(ppm/°C)	(°C/°C)	
J	-210 to 1200	0.05	0.4	45	0.017
K	-270 to 1372	0.05	0.4	50	0.03
T	-270 to 400	0.035	0.3	68	0.03
S	-50 to 1767	0.078	0.7	68	0.09
R	-50 to 1767	0.07	0.6	68	0.08
E	-270 to 1000	0.04	0.4	45	0.013
B	0 to 1820	0.055	0.5	100	0.12
N	0 to 1300	0.05	0.4	50	0.03
W	1000 to 2300	0.11	1.0	50	0.06
W ³	0 to 2490	0.11	1.0	50	0.06
W ⁵	0 to 2320	0.11	1.0	50	0.06
MoRe	0 to 1990	0.075	0.6	68	0.085

Table 4 Thermocouple Ranges and Input Accuracy

Note 1. For operation at 60Hz, multiply figures for Resolution and Accuracy by a factor of 1.2.

Note 2. These figures represent the worst case resolution averaged over full range.