



Features

- ✓ Measuring range ± 80 mV
- ✓ Supported thermocouples: E, J, K, N, R, S, T, B, C, L
- ✓ Measurement resolution: 15 bits + sign
- ✓ External or internal temperature compensation
- ✓ Wire break detection
- ✓ Diagnostic messages
- ✓ Limit value alarms for each channel
- ✓ A bi-color LED (blue/red) indicates the module operating status and any malfunctions
- ✓ Red/green bi-color LEDs (one for each channel) indicate the channel status
- ✓ 4 inputs, electrically isolated from the backplane bus
- ✓ 4 process input words
- ✓ 4 process output words (for temperature compensation)

Analog-input-module, TC, Iso., 16 Bit

Analog input modules for the modular fieldbus IO system TB20.

Note: Individual modules cannot be combined with IO systems from other manufacturers.

The scope of delivery already includes the appropriate front connector for the cabling and a base module. The module has 4 analog inputs for connecting thermocouples.

Parameters for the module

Diagnostic alarm: On | Off

Overflow/underflow diagnosis: On | Off

Representation values: SIMATIC* S7 | SIMATIC* S5 (for ± 80 mV only)

Temperature unit: Celsius x 10 | Fahrenheit x 10 | Kelvin x 10

Parameters for each channel

Wire break detection: On | Off

Interference frequency suppression: None | 10 Hz | 50 Hz | 60 Hz | 400 Hz

Measuring ranges: ± 80 mV

Thermocouples: E | J | K | N | R | S | T | B | C | L

Temperature compensation: Internal | External | Process data-based

Limit value alarms enabled: On | Off

Upper/lower limit: 16 bit analog value (± 27648)

* SIMATIC is a registered trademark of Siemens AG.

General information

Order number	600-254-4AD02
Article name	AI 4x TC, Iso., 16 bit
Scope of delivery	AI 4x TC, Iso., 16 bit
Dimensions (DxWxH)	110 x 14 x 73 mm
Weight	Approx. 70 g
Number of inputs	4
Internal	Max. 95 mA
Power dissipation	Max. 0.7 W
Parameter configuration length	26 bytes
General error indicator	Red LED
Hot-swap capable	Yes
Hot-swap capable	Yes

Electrical isolation

from the backplane bus	Yes
Between the channels	Yes

Measuring

Measuring ranges	± 80 mV
Thermocouples	E (-270 °C ... 990 °C)
	J (-210 °C ... 1200 °C)
	K (-270 °C ... 1380 °C)
	N (-270 °C ... 1320 °C)
	R (-50 °C ... 1775 °C)
	S (-50 °C ... 1775 °C)
	T (-270 °C ... 405 °C)
	B (0 °C ... 1800 °C)
	C (0 °C ... 2320 °C)
	L (0 °C ... 900 °C)
Measuring method	Integration
Measurement resolution	15 bits + sign
Interference frequency suppression	None 10 Hz 50 Hz 60 Hz 400 Hz
Refresh rate / conversion rate	Depends on the interference frequency suppression setting being used:

	None: 2.5 ms
	400 Hz: 8 ms
	60 Hz: 51 ms
	50 Hz: 60 ms
	10 Hz: 160 ms
Diagnoses	Upper measuring range limit exceeded (overflow), lower measuring range limit fallen below (underflow), parameter assignment error
Process alarms	Upper and lower limit per channel

Error limits

Operational error limit in the entire temperature range

±0.5 % relative to the nominal range

Basic error limit at 25 °C

±0.3 % relative to the nominal range

Temperature error

±0.005 %/K relative to the nominal range

Linearity error

±0.05 %/K relative to the nominal range

Repeating accuracy in steady state at 25 °C

±0.05 %/K relative to the nominal range

Ambient conditions

Ambient temperature

0 °C ... +60 °C

Transport and storage temperature

-20 °C ... +80 °C

Relative air humidity

95 % r H without condensation

Protection rating

IP 20

Certifications

CE, UL

UL

Surrounding Air Temperature

0 °C ... +60°C

Pollution degree

2

CE

Noise immunity

DIN EN 61000-6-2 "EMC Immunity"

Interference emission

DIN EN 61000-6-4 "EMC Emission"

Vibration and shock resistance

DIN EN 60068-2-6:2008 „Vibration“, DIN EN 60068-2-27:2010 „Shock“