Helmholz®
COMPATIBLE WITH YOU

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
4x

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"