

ACT20M-TCI-AO-S**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com**Product image****ACT20M: The slim solution**

- Safe and space-saving (6 mm) isolation and conversion
- Quick installation of the power supply unit using the CH20M mounting rail bus
- Easy configuration via DIP switch or FDT/DTM software
- Extensive approvals such as ATEX, IECEx, GL, DNV
- High interference resistance

General ordering data

Version	Temperature converter, Thermocouple, With galvanic isolation, Input : Temperature, thermocouple, Output : I / U
Order No.	1375480000
Type	ACT20M-TCI-AO-S
GTIN (EAN)	4050118259650
Qty.	1 pc(s).

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Technical data**Dimensions and weights**

Depth	114.3 mm	Depth (inches)	4.5 inch
Height	112.5 mm	Height (inches)	4.429 inch
Width	6.1 mm	Width (inches)	0.24 inch
Net weight	84 g		

Temperatures

Storage temperature	-40 °C...85 °C	Humidity	40 °C / 93 % rel. humidity, no condensation
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Probability of failure

MTBF	147 Years
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1	SCIP	2f6dd957-421a-46db-a0c2-cf1609156924
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Input

Number of inputs	1	Sensor	Thermocouples: J, K
Temperature input range	Configurable, J: (-100...+1200 °C), K: (-180...+1372 °C), min. measurement range 50°C (TC)		

Output

Load impedance current	≤ 600 Ω	Number of outputs	1
Output current	configurable, 0...20 mA, 4...20 mA	Output voltage, note	configurable, 0(2)...10 V, 0(1)...5 V
Type	active, connected control must be passive	Wire break detection	Yes, Configurable, 3.5 mA / 23 mA / none
cold junction compensation	configurable internal or external cold-junction compensation (thermocouple)	load impedance voltage	≥ 10 kΩ

General data

Accuracy	absolute accuracy: < ±0.05 % of the measurement range, Basic accuracy: < ±0.5°
Configuration	DIP switch
Delivery state	Output: 4...20 mA // Sensor error detection: enabled // Output error level: downscale // Noise suppression: 50 Hz // Step response time: < 30 ms // Start temperature: -200 °C // End temperature: 0 °C

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Technical data

Delivery state	Setting parameters	Output
	Configuration	4...20 mA
	Setting parameters	Sensor error detection
	Configuration	enabled
	Setting parameters	Output error level
	Configuration	downscale
	Setting parameters	Noise suppression
	Configuration	50 Hz
	Setting parameters	Step response time
	Configuration	< 30 ms
	Setting parameters	Start temperature
	Configuration	-200 °C
	Setting parameters	End temperature
	Configuration	0 °C
Galvanic isolation	3-way isolator	
Power consumption, max.	0.7 W	
Power consumption, typ.	0.49 W	
Rail	TS 35	
Step response time	Configurable, ≤ 30 ms, < 300 ms	
Temperature coefficient	0,1 °C/°C, or, ≤0,01% des Messbereichs/°C	
Type of connection	Screw connection	
Voltage supply	24 V DC ±30 % at terminal or via CH20M rail bus	

Insulation coordination

EMC standards	IEC 61326-1, NE 21	Galvanic isolation	3-way isolator
Insulation voltage	2.5 kV _{eff} / 1 min.	Pollution severity	2
Rated voltage	300 V _{eff}	Surge voltage category	II

Data for Ex applications (ATEX)

Installation location	Device installed in safe area, zone 2	Marking	II 3 G Ex nA IIC T4 Gc
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Connection data

Type of connection	Screw connection	Tightening torque, min.	0.4 Nm
Tightening torque, max.	0.6 Nm	Clamping range, rated connection	2.5 mm ²
Clamping range, min.	0.5 mm ²	Clamping range, max.	2.5 mm ²
Wire connection cross section AWG, min.	AWG 30	Wire connection cross section AWG, max.	AWG 14

EMC conformity and approvals

EMC standards	IEC 61326-1, NE 21	Standards	IEC 61010-1
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Classifications

ETIM 6.0	EC002919	ETIM 7.0	EC002919
ETIM 8.0	EC002919	ECLASS 9.0	27-21-01-29
ECLASS 9.1	27-21-01-29	ECLASS 10.0	27-21-01-29
ECLASS 11.0	27-21-01-29	ECLASS 12.0	27-21-01-29

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Technical data**Important note**

Product information

The ACT20M-TCI-AO-S configurable temperature transducer isolates and converts analogue signals. An analogue thermocouple input signal (Type J, K) is linearly converted into an analogue output signal and is galvanically isolated. The power supply is galvanically isolated from the input and output (3-way isolation) and this is done with direct wiring or over the Weidmüller rail bus.

Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

Downloads

Approval/Certificate/Document of Conformity	DNV-GL certificate FM certificate IECEX certificate ATEX certificate Declaration of Conformity
Engineering Data	CAD data – STEP
Engineering Data	EPLAN, WSCAD, Zuken E3.S
Software	Runtime Software – DIP switch configuration tool
User Documentation	instruction sheet
Catalogues	Catalogues in PDF-format
Brochures	

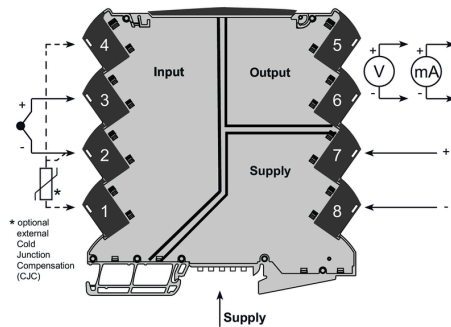
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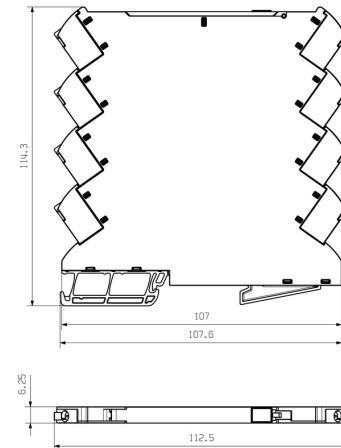
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Drawings

Connection diagram



Dimensional drawing



DIP switch configuration

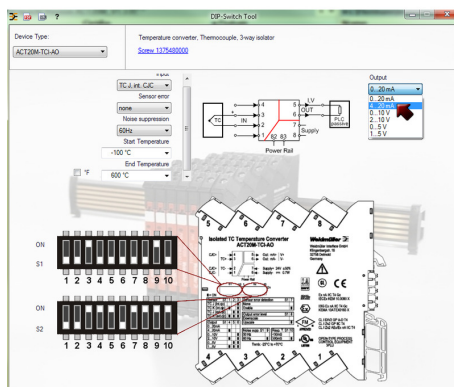
		Temperature range [°C]									
		TC J ₁ -100...+1200 °C					TC K ₁ -189...+1372 °C				
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
TC sensor type	1	1	2	3	4	5	6	7	8	9	10
J (internal CJC)	1	1	2	3	4	5	6	7	8	9	10
K (external CJC)	1	1	2	3	4	5	6	7	8	9	10
K (external CJC)	1	1	2	3	4	5	6	7	8	9	10
Output	2	1	2	3	4	5	6	7	8	9	10
0...20 mA	1	1	2	3	4	5	6	7	8	9	10
4...20 mA	1	1	2	3	4	5	6	7	8	9	10
0...10 V	1	1	2	3	4	5	6	7	8	9	10
2...10 V	1	1	2	3	4	5	6	7	8	9	10
0...5 V	1	1	2	3	4	5	6	7	8	9	10
1...5 V	1	1	2	3	4	5	6	7	8	9	10
Sensor error detection	3	1	2	3	4	5	6	7	8	9	10
none	1	1	2	3	4	5	6	7	8	9	10
enable	1	1	2	3	4	5	6	7	8	9	10
Output error level	4	1	2	3	4	5	6	7	8	9	10
downscale	1	1	2	3	4	5	6	7	8	9	10
scale	1	1	2	3	4	5	6	7	8	9	10
Noise suppression	5	1	2	3	4	5	6	7	8	9	10
50 Hz	1	1	2	3	4	5	6	7	8	9	10
60 Hz	1	1	2	3	4	5	6	7	8	9	10
Response time	10	1	2	3	4	5	6	7	8	9	10
< 20 ms	1	1	2	3	4	5	6	7	8	9	10
300 ms	1	1	2	3	4	5	6	7	8	9	10

■ = ON
□ = OFF
1) optional / optional / optional / optional / optional

example for DIP switch setting
(with ACT20M tool software)



example for DIP switch setting
(with ACT20M tool software)



example for DIP switch setting
(with ACT20M tool software)