

## ACT20M-TCI-AO-S

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://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.	<a href="#">1375480000</a>
Type	ACT20M-TCI-AO-S
GTIN (EAN)	4050118259650
Qty.	1 pc(s).

Creation date November 1, 2023 12:39:47 PM CET

Catalogue status 28.10.2023 / We reserve the right to make technical changes.

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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 a
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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	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		
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

Galvanic isolation	3-way isolator
Power consumption, max.	0.7 W
Power consumption, typ.	0.49 W
Rail	TS 35
Step response time	Configurable, $\leq 30$ ms, $< 300$ ms
Temperature coefficient	0,1 °C/°C, or, $\leq 0,01\%$ des Messbereichs°C
Voltage supply	24 V DC $\pm 30\%$ 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 <sub>eff</sub> / 1 min.	Pollution severity	2
Rated voltage	300 V <sub>eff</sub>	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 <sup>2</sup>
Clamping range, min.	0.5 mm <sup>2</sup>	Clamping range, max.	2.5 mm <sup>2</sup>
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	ETIM 9.0	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	ECLASS 13.0	27210129

### Environmental Product Compliance

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

### 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.
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**Data sheet**

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**Technical data**

**Approvals**

Approvals



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

**Downloads**

Approval/Certificate/Document of Conformity	<a href="#">DNV-GL certificate</a> <a href="#">FM certificate</a> <a href="#">IECEX certificate</a> <a href="#">ATEX certificate</a> <a href="#">Declaration of Conformity</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">Zuken E3.S</a>
Software	<a href="#">DIP switch configuration tool</a>
User Documentation	<a href="#">Device description – instruction sheet</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

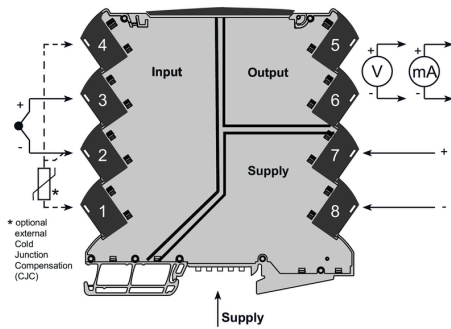
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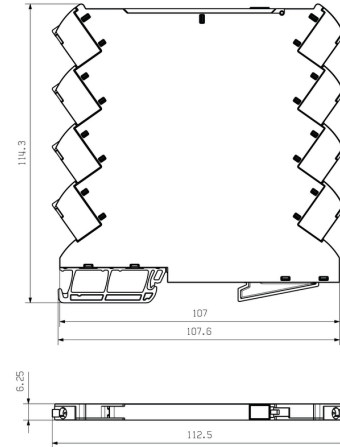
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**Drawings**

**Connection diagram**



**Dimensional drawing**

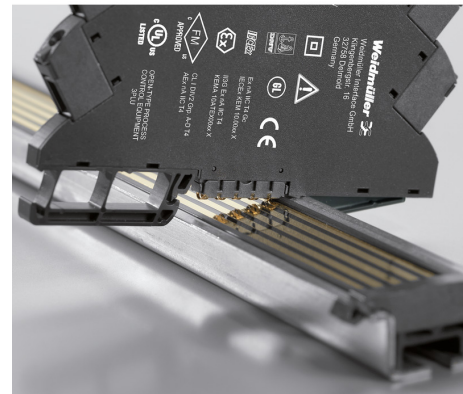


DIP switch configuration

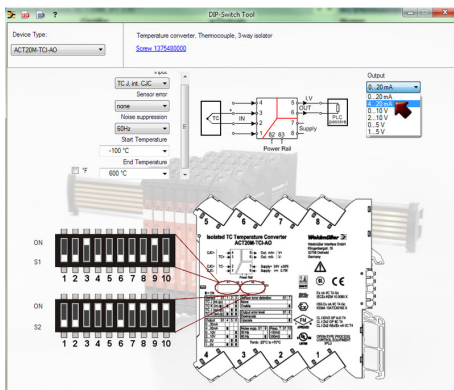
		Temperature range [°C]									
		TC J: -100...+1200 °C # TC K: -100...+1372 °C									
TC sensor type	S1	Min.	S2	Max.	S2	Min.	S2	Max.	S2	Min.	S2
J (internal CJC)	1	-200	0	100	100	100	100	100	100	100	100
K (external CJC)	1	-100	0	100	100	100	100	100	100	100	100
J (external CJC)	1	-100	0	100	100	100	100	100	100	100	100
K (external CJC)	1	-100	0	100	100	100	100	100	100	100	100
Output	2	0...20 mA	0	20	100	100	100	100	100	100	100
4...20 mA	1	0	20	100	100	100	100	100	100	100	100
0...10 V	1	0	45	100	100	100	100	100	100	100	100
2...10 V	1	0	45	100	100	100	100	100	100	100	100
0...5 V	1	0	10	100	100	100	100	100	100	100	100
1...5 V	1	0	20	100	100	100	100	100	100	100	100
Sensor error detection	7	60	60	60	60	100	100	100	100	100	100
none	1	100	100	100	100	200	200	200	200	1000	1000
warning	1	200	200	200	200	200	200	200	200	1100	1100
Output error level	8	80	80	80	80	200	200	200	200	1150	1150
downscale	1	80	80	80	80	200	200	200	200	1100	1100
upscale	1	100	100	100	100	300	300	300	300	1250	1250
upscale	1	100	100	100	100	300	300	300	300	1300	1300
upscale	1	100	100	100	100	300	300	300	300	1300	1300
upscale	1	100	100	100	100	300	300	300	300	1312	1312

■ = ON  
 1) optional / optional / optionnel / optionale / 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)