

**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.	<a href="#">1375480000</a>
Type	ACT20M-TCI-AO-S
GTIN (EAN)	4050118259650
Qty.	1 pc(s).

Creation date September 16, 2022 4:17:04 AM CEST

Catalogue status 09.09.2022 / 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 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

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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
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	
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 <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	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	<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="#">EPLAN, WSCAD, Zuken E3.S</a>
Software	<a href="#">Runtime Software – DIP switch configuration tool</a>
User Documentation	<a href="#">instruction sheet</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

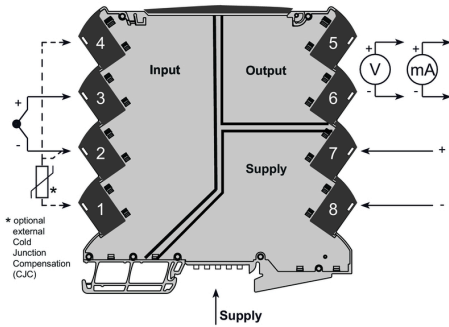
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**Drawings**

**Connection diagram**



**Dimensional drawing**



DIP switch configuration

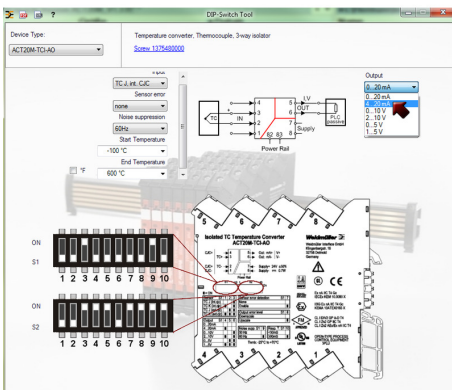
		Temperature range [°C]									
		TC J: -100...+1200 °C # TC K: -100...+1372 °C									
TC sensor type	S1	Min. Temp.	Max. Temp.	Min. Temp.	Max. Temp.	Min. Temp.	Max. Temp.	Min. Temp.	Max. Temp.	Min. Temp.	Max. Temp.
J (internal CJC)	1	-200	0	105	1100	105	1100	105	1100	105	1100
K (external CJC)	2	-100	10	115	1300	115	1300	115	1300	115	1300
J (external CJC)	3	-100	10	115	1300	115	1300	115	1300	115	1300
K (external CJC)	4	-100	10	115	1300	115	1300	115	1300	115	1300
Output	5	0	20	135	135	135	135	135	135	135	135
0...20 mA	1	-20	30	135	135	135	135	135	135	135	135
4...20 mA	2	-10	30	140	140	140	140	140	140	140	140
0...10 V	3	-5	45	150	150	150	150	150	150	150	150
2...10 V	4	-5	45	150	150	150	150	150	150	150	150
0...5 V	5	-10	50	150	150	150	150	150	150	150	150
1...5 V	6	-10	50	150	150	150	150	150	150	150	150
Sensor error detection	7	60	60	100	100	100	100	100	100	100	100
none	1	100	70	200	200	200	200	200	200	200	200
warning	2	200	70	220	220	220	220	220	220	220	220
Output error level	8	80	80	200	200	200	200	200	200	200	200
downscale	1	80	80	220	220	220	220	220	220	220	220
upscale	2	90	90	300	300	300	300	300	300	300	300
upscale	3	100	100	300	300	300	300	300	300	300	300
Noise suppression	9	20	20	100	100	100	100	100	100	100	100
20 Hz	1	60 Hz	60 Hz	1000	1000	1000	1000	1000	1000	1000	1000
60 Hz	2	60 Hz	60 Hz	1100	1100	1100	1100	1100	1100	1100	1100
Response time	10	20 ms	20 ms	1300	1300	1300	1300	1300	1300	1300	1300
300 ms	2	300 ms	300 ms	1312	1312	1312	1312	1312	1312	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)

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