

## ACT20M ACT20M-TCI-AO-S

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
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 www.weidmueller.com

### Product image, Similar to illustration



#### 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

Type	ACT20M-TCI-AO-S
Order No.	<a href="#">1375480000</a>
Version	Temperature converter, Thermocouple, Input : Temperature, Output : I / U
GTIN (EAN)	4050118259650
Qty.	1 pc(s).

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**Technical data****Dimensions and weights**

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

**Temperatures**

Humidity	40 °C / 93 % rel. humidity, no condensation	Storage temperature, max.	85 °C
Storage temperature, min.	-40 °C	Ambient temperature	-25 °C...+70 °C
Storage temperature	-40 °C...85 °C		

**Probability of failure**

MTBF	147 Years
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**Environmental Product Compliance**

REACH SVHC	Lead 7439-92-1
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**Rated data UL**

UL certificate	E337701.pdf
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**Input**

Number of inputs	1	Sensor	Thermocouple (type J, K)
Input measurement range	Thermocouple type J -100...+1200°C, Thermocouple type K -200...+1370°C	Temperature input range	Configurable, min. measurement range 50°C (TC)

**Output**

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

**General data**

Accuracy	absolute accuracy: < ±0.05 % of the measurement range, Basic accuracy: < ±0.5°	Configuration	DIP switch
Galvanic isolation	3-way isolator	Power consumption, max.	0.7 W
Power consumption, typ.	0.49 W	Rail	TS 35
Step response time	≤ 30 ms, < 300 ms, Configurable	Temperature coefficient	0,1 °C/°C, or, ≤0,01% des Messbereichs/°C
Voltage supply	24 V DC ± 30 %		

Creation date January 24, 2020 3:24:45 PM CET

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**Technical data**
**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)**

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

**Ratings IECEx/ATEX/cUL**

Certificate No. (ATEX)	KEMA10ATEX0183X	Certificate No. (IECEX)	IECEXKEM10.0090X
Certificate no. (cULus)	E337701	IECEX - gas labelling	Ex nA IIC T4 Gc, Standard: IEC 60079-0-15

**Classifications**

ETIM 6.0	EC002919	ETIM 7.0	EC002919
eClass 9.0	27-21-01-29	eClass 9.1	27-21-01-29
eClass 10.0	27-21-01-29		

**Product information**

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

**Data sheet****ACT20M**  
**ACT20M-TCI-AO-S****Weidmüller Interface GmbH & Co. KG**  
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www.weidmueller.com**Technical data****Downloads**

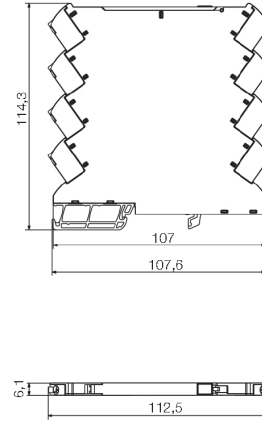
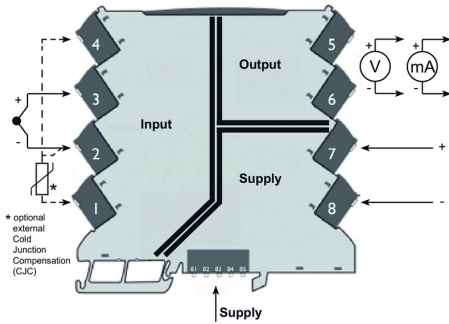
Approval/Certificate/Document of Conformity	<a href="#">DNV-GL certificate</a> <a href="#">EAC certificate</a> <a href="#">FM certificate</a> <a href="#">IECEX certificate</a> <a href="#">ATEX certificate</a> <a href="#">Declaration of Conformity</a>
Brochure/Catalogue	<a href="#">CAT 4.1 ELECTR 16/17 EN</a>
Engineering Data	<a href="#">EPLAN, WSCAD, Zuken E3.S</a>
Engineering Data	<a href="#">STEP</a>
Software	<a href="#">DIP switch configuration tool</a>
User Documentation	<a href="#">instruction sheet</a>

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**Drawings**

**Connection diagram**



DIP switch configuration

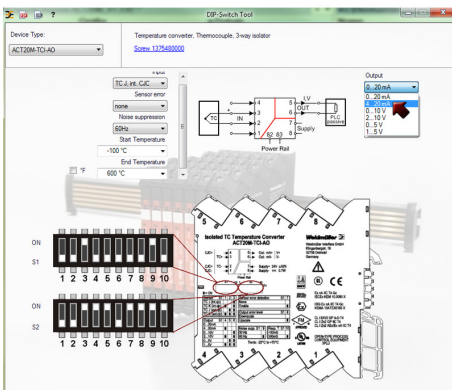
		Temperature range [°C]																		
		TC J: -100...+1200 °C # TC K: -100...+1372 °C																		
TC sensor type	S1	Min. Temp.	1	2	3	4	Min. Temp.	5	6	7	8	9	10	Min. Temp.	11	12	13	14	15	
J (internal CJC)	<input type="checkbox"/>	-200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K (external CJC)	<input type="checkbox"/>	-100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	110	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J (external CJC)	<input type="checkbox"/>	-100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	115	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K (external CJC)	<input type="checkbox"/>	-100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	120	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Output	S2	-20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	125	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0...20 mA	<input type="checkbox"/>	-20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4...20 mA	<input type="checkbox"/>	-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	140	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0...10 V	<input type="checkbox"/>	-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	150	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2...10 V	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	155	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0...5 V	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1...5 V	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	170	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensor error detection	S3	25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	180	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
none	<input type="checkbox"/>	60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
enable	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	210	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
enable	<input type="checkbox"/>	200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	220	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Output error level	S4	60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	110	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
downscale	<input type="checkbox"/>	80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	90	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	115	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
upscale	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	120	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise suppression	S5	25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50 Hz	<input type="checkbox"/>	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60 Hz	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response time	S6	25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50 ms	<input type="checkbox"/>	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
300 ms	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	130	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

■ = 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)



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(with ACT20M tool software)