

ACT20M-TCI-AO-E-S

Weidmüller Interfaces GmbH & Co. KG

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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, Without galvanic isolation, Input : Temperature, thermocouple, Output : I / U
Order No.	1375500000
Type	ACT20M-TCI-AO-E-S
GTIN (EAN)	4050118259674
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	86 g		

Temperatures

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

SIL in compliance with IEC 61508	None	MTBF	189 Years
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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: < ±0.1 % of the measurement range, Basic accuracy: < ±1 °C	
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	
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	

Creation date February 21, 2023 2:26:19 PM CET

Catalogue status 18.02.2023 / We reserve the right to make technical changes.

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Technical data

Galvanic isolation	Without isolation
Long-term drift	0
Power consumption, max.	0.52 W
Power consumption, typ.	0.37 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 %

Insulation coordination

EMC standards	IEC 61326-1, NE 21	Galvanic isolation	Without isolation
Pollution severity	2		

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

Environmental Product Compliance

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

Important note

Product information	<p>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.</p> <p>The ACT20M-TCI-AO-E-S configurable temperature transducer offers the same functionality but does not have galvanic isolation.</p>
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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	DNV-GL certificate FM certificate IECEx certificate ATEX certificate Declaration of Conformity
Engineering Data	CAD data – STEP
Engineering Data	WSCAD
Software	Runtime Software – DIP switch configuration tool
User Documentation	instruction sheet
Catalogues	Catalogues in PDF-format
Brochures	

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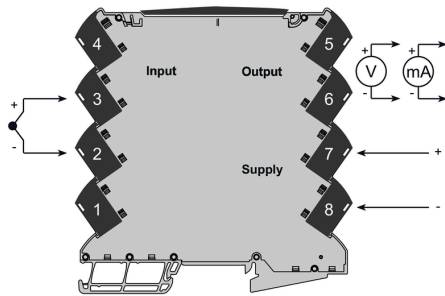
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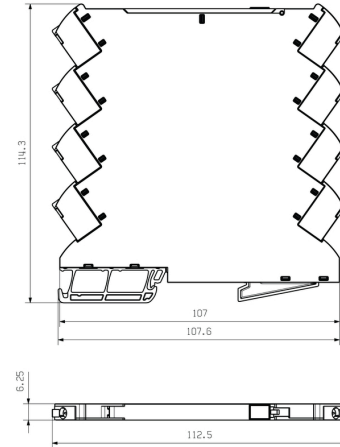
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Drawings

Connection diagram



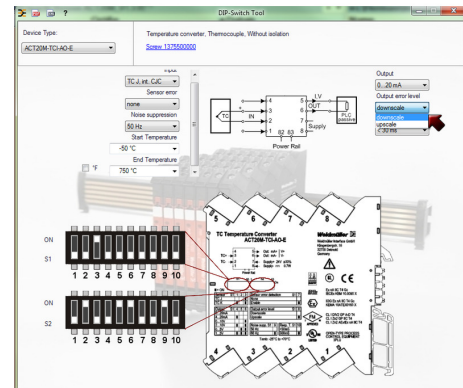
Dimensional drawing info@weidmueller.com



DIP switch configuration

	S1	Temperature range (°C)																						
		TC J-100				TC K-120				TC W-100				TC W-3372										
TC sensor type	1	2	3	4	Temp. S1	2	3	4	5	6	7	8	9	10	Temp. S2	3	4	5	6	7	8	9	10	
J (internal C/C)	<input checked="" type="checkbox"/>				-200																			
K (internal C/C)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			-100																			
Output	4	5	6	7	0 - 20 mA	<input checked="" type="checkbox"/>				-50														
					4 - 20 mA	<input type="checkbox"/>	<input checked="" type="checkbox"/>			-25														
					0 - 10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-10														
					2 - 10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	-5														
					0 - 5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0														
					-1 - 5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5														
Sensor error detection	7				10	<input checked="" type="checkbox"/>				50	<input checked="" type="checkbox"/>													
loop	<input checked="" type="checkbox"/>				25	<input checked="" type="checkbox"/>				50	<input checked="" type="checkbox"/>													
enabled	<input type="checkbox"/>				50	<input checked="" type="checkbox"/>				100	<input checked="" type="checkbox"/>													
200	<input checked="" type="checkbox"/>				100	<input checked="" type="checkbox"/>				200	<input checked="" type="checkbox"/>													
Output error level	8				75	<input checked="" type="checkbox"/>				150	<input checked="" type="checkbox"/>													
downscale	<input checked="" type="checkbox"/>				85	<input checked="" type="checkbox"/>				175	<input checked="" type="checkbox"/>													
upscale	<input type="checkbox"/>				100	<input checked="" type="checkbox"/>				200	<input checked="" type="checkbox"/>													
Noise suppression	9				50	<input checked="" type="checkbox"/>				100	<input checked="" type="checkbox"/>													
50 Hz	<input checked="" type="checkbox"/>				75	<input checked="" type="checkbox"/>				150	<input checked="" type="checkbox"/>													
100 Hz	<input type="checkbox"/>				100	<input checked="" type="checkbox"/>				200	<input checked="" type="checkbox"/>													
Response time	10				50	<input checked="" type="checkbox"/>				100	<input checked="" type="checkbox"/>													
< 30 ms	<input checked="" type="checkbox"/>				100	<input checked="" type="checkbox"/>				200	<input checked="" type="checkbox"/>													
300 ms	<input type="checkbox"/>																							

example for DIP switch setting (with ACT20M tool software)



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