

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 Stück

Erstellungs-Datum May 25, 2023 10:54:37 AM CEST

ACT20M-TCI-AO-S

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

www.weidmueller.com

Technische Daten

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
---------------------	----------------	----------	--

Probability of failure

MTBF	147 Years
------	-----------

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	
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	

ACT20M-TCI-AO-S

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

www.weidmueller.com

Technische Daten

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
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
-----------------------	---------------------------------------	---------	------------------------

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
---------------	--------------------	-----------	-------------

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: 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.

ACT20M-TCI-AO-S

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

www.weidmueller.com

Technische Daten

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, Zuken E3.S, EPLAN
Software	Runtime Software – DIP switch configuration tool
User Documentation	instruction sheet
Catalogues	Catalogues in PDF-format
Brochures	

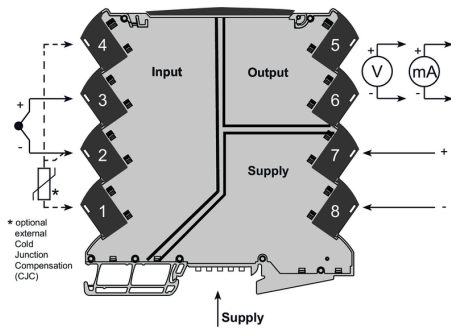
ACT20M-TCI-AO-S

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

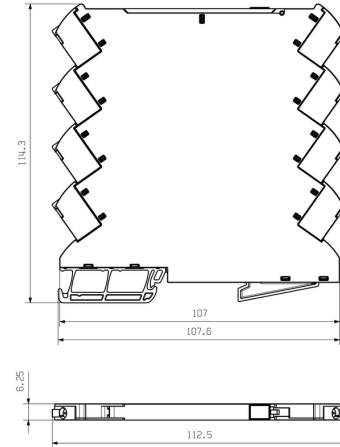
www.weidmueller.com

Zeichnungen

Connection diagram



Dimensional drawing



DIP switch configuration

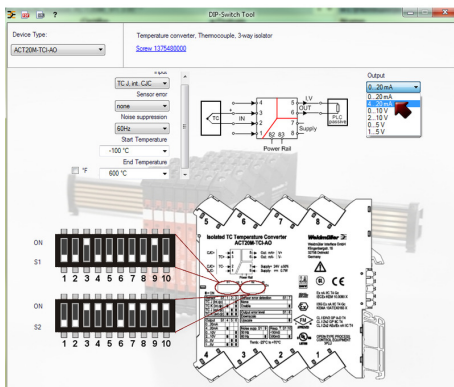
		Temperature range [°C]												
		TC J: -100...+1200 °C # TC K: -100...+1372 °C												
TC sensor type	S1	Min. Temp.	1	2	3	4	Min. Temp.	5	6	7	8	Min. Temp.	9	10
J (internal CJC)	<input type="checkbox"/>	-200	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<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"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<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"/>	100	<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"/>	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	<input type="checkbox"/>	<input type="checkbox"/>
Output	S2	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>
4...20 mA	<input type="checkbox"/>	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>
0...10 V	<input type="checkbox"/>	0...10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...10 V	<input type="checkbox"/>	<input type="checkbox"/>
2...10 V	<input type="checkbox"/>	2...10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2...10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2...10 V	<input type="checkbox"/>	<input type="checkbox"/>
0...5 V	<input type="checkbox"/>	0...5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0...5 V	<input type="checkbox"/>	<input type="checkbox"/>
1...5 V	<input type="checkbox"/>	1...5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1...5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1...5 V	<input type="checkbox"/>	<input type="checkbox"/>
Sensor error detection	S3	none	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	none	<input type="checkbox"/>	<input type="checkbox"/>
enable	<input type="checkbox"/>	enable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	enable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	enable	<input type="checkbox"/>	<input type="checkbox"/>
Output error level	S4	downscale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	downscale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	downscale	<input type="checkbox"/>	<input type="checkbox"/>
upscale	<input type="checkbox"/>	upscale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	upscale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	upscale	<input type="checkbox"/>	<input type="checkbox"/>
Noise suppression	S5	20 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 Hz	<input type="checkbox"/>	<input type="checkbox"/>
60 Hz	<input type="checkbox"/>	60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60 Hz	<input type="checkbox"/>	<input type="checkbox"/>
Response time	S6	20 ms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 ms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 ms	<input type="checkbox"/>	<input type="checkbox"/>
300 ms	<input type="checkbox"/>	300 ms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	300 ms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	300 ms	<input type="checkbox"/>	<input type="checkbox"/>

■ = ON
 1) optional / optional / optional / 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)