

## ACT20M-RTCI-CO-OLP-S

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://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

Version	Temperature converter, 2-/3-/4- wire RTD, Thermocouple, Input : Temperature, PT100, thermocouple, Output : 4-20 mA, (loop powered)
Order No.	<a href="#">1435590000</a>
Type	ACT20M-RTCI-CO-OLP-S
GTIN (EAN)	4050118240641
Qty.	1 pc(s).

Creation date March 23, 2021 10:47:00 PM CET

Catalogue status 12.03.2021 / 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
Net weight	80 g	Width	6.1 mm
Width (inches)	0.24 inch		

### Temperatures

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

MTBF	207 Years
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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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### Input

Influence of the sensor cable resistance	< 0.002 Ω/Ω	Input measurement range	PT100 -200...+850 °C, Thermocouple type J -100...+1200°C, Thermocouple type K -200...+1370°C
Line resistance in measuring circuit	50 Ω@ RTD (Pt100), 10 kΩ @ TC (J, K)	Number of inputs	1
Sensor	PT100 / 2-/3-/4-wire, Thermocouple acc. to IEC 584, type: J, Thermocouple acc. to IEC 584, type: K	Temperature input range	Configurable, min. measurement range 10°C (RTD), min. measurement range 50°C (TC)

### Output

Number of outputs	1	Output current	configurable, 4...20 mA, 20...4 mA
Supply voltage (output)	16,8 V...31,2 V	Wire break detection	3.5 mA / 23 mA / none
cold junction compensation	configurable internal or external cold-junction compensation (thermocouple)		

### General data

Accuracy	absolute accuracy: < ±0.05 % of the measurement range, RTD (PT100) Basic accuracy: < ±0.1 °C of the measurement range, TC (J,K) Basic accuracy: < ±0.5 °C of the measurement range
Cold-junction compensation error	±(2.0 °C + 0.4 °C x Δt) Δt = inside temperature - ambient temperature
Configuration	DIP switch

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## Technical data

Delivery state	Setting parameters	Output
	Configuration	4...20 mA (loop)
	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 (loop) // 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	2-way isolator	
Power consumption, max.	0.8 W	
Power consumption, typ.	0.5 W	
Rail	TS 35	
Step response time	≤ 30 ms, < 300 ms	
Temperature coefficient	RTD (PT100) ±0.01 % of the measurement range/°C or 0.02 °C/°C, TC (J,K) 0.1 °C/°C	
Type of connection	Screw connection	
Voltage supply	Output loop powered, 6...35 V	

### Insulation coordination

EMC standards	IEC 61326-1, NE 21	Galvanic isolation	2-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

### 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	ECLASS 11.0	27-21-01-29

### Important note

Product information	The ACT20M-RTCI-CO-OLP-S passive configurable temperature transducer isolates and converts analogue signals. An analogue RTD (Type Pt100) or TC (Type J, K) input signal is linearly converted into an analogue output signal and galvanically isolated. Power is supplied through the output measurement circuit (output-loop powered).
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# Technical data

### Approvals

Approvals



ROHS	Conform
UL File Number Search	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="#">STEP</a>
Engineering Data	<a href="#">EPLAN, WSCAD, Zuken E3.S</a>
Software	<a href="#">DIP switch configuration tool</a>
User Documentation	<a href="#">instruction sheet</a>

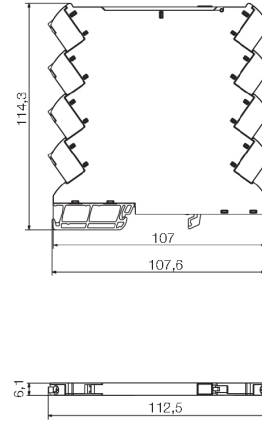
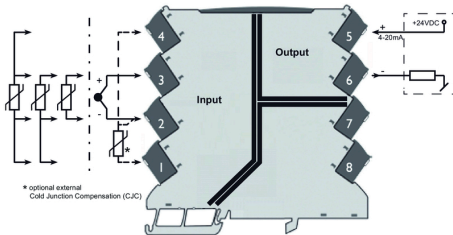
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Drawings

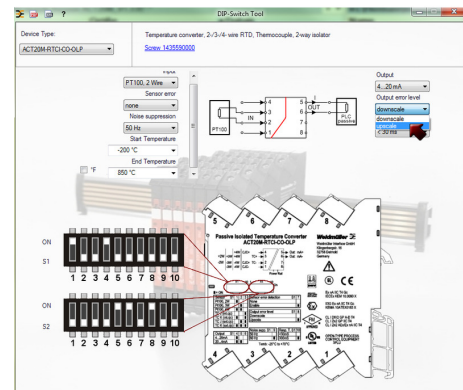
Connection diagram



DIP switch setting

	Temperature range [°C]												
	Pt100, -200...+850 °C				TC, -150...+200 °C				TC, K, -800...+1372 °C				
	Min.	S2	Max.	S2	Min.	S1	S2	S1	S2	Min.	S1	S2	S1
RTD & TC sensor type	1	1	1	1	1	1	1	1	1	1	1	1	1
Pt100, 2 wire	1	1	1	1	1	1	1	1	1	1	1	1	1
Pt100, 3 wire	1	1	1	1	1	1	1	1	1	1	1	1	1
Pt100, 4 wire	1	1	1	1	1	1	1	1	1	1	1	1	1
I (internal CJC)	1	1	1	1	1	1	1	1	1	1	1	1	1
I (external CJC)	1	1	1	1	1	1	1	1	1	1	1	1	1
K (external CJC)	1	1	1	1	1	1	1	1	1	1	1	1	1
K (external CJC)	1	1	1	1	1	1	1	1	1	1	1	1	1
Output	1	1	1	1	1	1	1	1	1	1	1	1	1
4...16 mA	1	1	1	1	1	1	1	1	1	1	1	1	1
20...4 mA	1	1	1	1	1	1	1	1	1	1	1	1	1
Sensor error detection	1	1	1	1	1	1	1	1	1	1	1	1	1
enable	1	1	1	1	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	1	1	1	1	1
200	1	1	1	1	1	1	1	1	1	1	1	1	1
Output error level	1	1	1	1	1	1	1	1	1	1	1	1	1
open	1	1	1	1	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	1	1	1	1	1
200	1	1	1	1	1	1	1	1	1	1	1	1	1
Noise suppression	1	1	1	1	1	1	1	1	1	1	1	1	1
50 Hz	1	1	1	1	1	1	1	1	1	1	1	1	1
Response time	1	1	1	1	1	1	1	1	1	1	1	1	1
60 ms	1	1	1	1	1	1	1	1	1	1	1	1	1
300 ms	1	1	1	1	1	1	1	1	1	1	1	1	1

example for DIP switch setting (with ACT20M tool software)



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