

## ACT20M ACT20M-RTCI-CO-OLP-S

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 16  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
 Fax: +49 5231 14-292083  
 www.weidmueller.com



### 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-RTCI-CO-OLP-S
Order No.	<a href="#">1435590000</a>
Version	Temperature converter, 2-/3-/4- wire RTD, Thermocouple, Input : Temperature, Output : 4-20 mA, (loop powered)
GTIN (EAN)	4050118240641
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	80 g		

### Temperatures

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

### Probability of failure

MTBF	207 Years
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### Input

Number of inputs	1	Sensor	PT100 / 2-/3-/4-wire, Thermocouple acc. to IEC 584, type: J, Thermocouple acc. to IEC 584, type: K
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)	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
Wire break detection		cold junction compensation	configurable internal or external cold-junction compensation (thermocouple)
Supply voltage	3.5 mA / 23 mA / none 16,8 V...31,2 V		

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**Technical data**
**General data**

Accuracy	absolute accuracy: $< \pm 0.05$ % of the measurement range, RTD (PT100) Basic accuracy: $< \pm 0.1$ °C of the measurement range, TC (J,K) Basic accuracy: $< \pm 0.5$ °C of the measurement range	Cold-junction compensation error	$\pm(2.0 \text{ °C} + 0.4 \text{ °C} \times \Delta t)$ $\Delta t$ = inside temperature – ambient temperature
Configuration	DIP switch	Galvanic isolation	2-way isolator
Mounting rail	TS 35	Power consumption, max.	0.8 W
Power consumption, typ.	0.48 W	Step response time	$\leq 30$ ms, $< 300$ ms
Supply voltage	Output loop powered, 6... 35 V	Temperature coefficient	RTD (PT100) $\leq 0.01$ % of the measurement range/°C or 0.02 °C/°C, TC (J,K) 0.1 °C/°C

**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

**Rated data UL**

UL certificate	E337701.pdf
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**Ratings IECEx/ATEX/cUL**

Certificate No. (ATEX)	KEMA10ATEX0183X	Certificate No. (IECEX)	IECEXKEM10.0090X
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**Classifications**

ETIM 5.0	EC002653	ETIM 6.0	EC002919
eClass 6.2	27-21-01-20	eClass 7.1	27-21-01-20
eClass 8.1	27-21-01-20	eClass 9.0	27-21-01-20
eClass 9.1	27-21-01-29		

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# Technical data

### Product information

Product information	<p>ACT20M-RTCI-CO-(E)OLP-S                  Configurable passive signal converter for temperature measurement of PT100, 2-, 3-, 4-wires and thermocouples type J and K.                  The 6.1 mm wide ACT20M-RTCI-CO-(E)OLP-S signal converter is output-current loop-powered and suitable for converting and isolating RTD and TC signals. Input and output parameters as well as a fast conversion time of 30 ms or 300 ms can be configured via DIP switch. The ACT20M temperature converter detects sensor errors (short-circuit, cable break) and issues corresponding NAMUR signal limits at the output (configurable upscale/downscale).                  On the ACT20M-RTCI-CO-OLP-S the input/output channel is completely galvanically isolated with 2.5 kV. The ACT20M-RTCI-CO-EOLP-S does not have any galvanic isolation.                  The ACT20M product family features high accuracy of &lt; 0.05% of the measurement range, a large temperature range of -25°C (0°C)...+70°C, outstanding EMC characteristics and international approvals (cULus, ATEX Zone2, FM Div2, GL, DNV). This permits use around the globe in a wide range of applications.                  Power is supplied directly on the module via the output-current loop.</p>
Instructions for accessories	DIN mounting rail, see accessories

### Approvals

Approvals



ROHS	Conform
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### Downloads

Approval/Certificate/Document of Conformity	<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>

