

**ACT20M-RTCI-CO-OLP-S****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

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, With galvanic isolation,<br>Input : Temperature, PT100, thermocouple,<br>Output : 4-20 mA |
| Order No.  | <a href="#">1435590000</a>                                                                                       |
| Type       | ACT20M-RTCI-CO-OLP-S                                                                                             |
| GTIN (EAN) | 4050118240641                                                                                                    |
| 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 | 80 g     |                 |            |

**Temperatures**

|                     |                |          |                                                |
|---------------------|----------------|----------|------------------------------------------------|
| Storage temperature | -40 °C...85 °C | Humidity | 40 °C / 93 % rel. humidity,<br>no condensation |
|---------------------|----------------|----------|------------------------------------------------|

**Probability of failure**

|      |           |
|------|-----------|
| MTBF | 207 Years |
|------|-----------|

**Environmental Product Compliance**

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

**Input**

|                                          |                                                                                                                                                        |                         |                                                                                                |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------|
| Influence of the sensor cable resistance |                                                                                                                                                        | Input measurement range | PT100 -200...+850 °C, Thermocouple type J -100...+1200 °C, Thermocouple type K -180...+1372 °C |
|                                          | < 0.002 Ω/Ω                                                                                                                                            |                         |                                                                                                |
| Line resistance in measuring circuit     | 50 Ω @ RTD (Pt100), 10 kΩ @ TC (J, K)                                                                                                                  | Number of inputs        | 1                                                                                              |
| Temperature input range                  | Configurable, PT100: -200...+850 °C, min. measurement range 10 °C (RTD), J: (-100...+1200 °C), K: (-180...+1372 °C), 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                          | Type                       | passive, connected control must be active                                   |
| Wire break detection    | Yes, Configurable, 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                                                                                                                                                                                                     |
| 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 |

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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                   |
| Galvanic isolation      | 2-way isolator                                                                     |                        |
| Power consumption, max. | 0.8 W                                                                              |                        |
| Power consumption, typ. | 0.5 W                                                                              |                        |
| Rail                    | TS 35                                                                              |                        |
| Step response time      | Configurable, ≤ 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 |
|---------|------------------------|

**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              |

**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 |             |             |

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**Technical data****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).

**Approvals**

## Approvals



## ROHS

Conform

## UL File Number Search

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

[EPLAN, WSCAD, Zuken E3.S](#)

## Software

[Software unit – DIP switch configuration tool](#)

## User Documentation

[instruction sheet](#)

## Catalogues

[Catalogues in PDF-format](#)

## Brochures

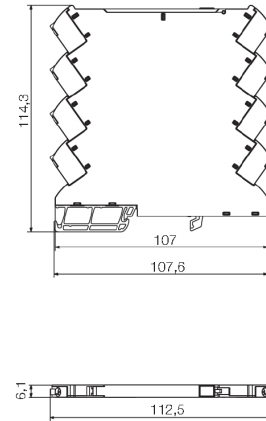
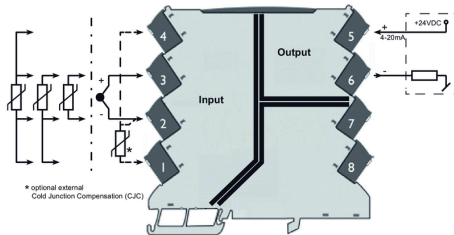
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## Drawings

### Connection diagram

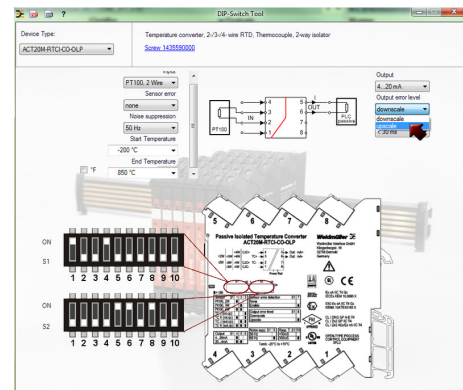


**DIP switch setting**

| Parameter              | Temperature range [°C]                     |       |                       |      |
|------------------------|--------------------------------------------|-------|-----------------------|------|
|                        | PT100: -200...+850 °C @ TC-1/100...+200 °C |       | TC-K: -100...+1372 °C |      |
|                        | Min                                        | Max   | Min                   | Max  |
| RTD & TC sensor type   | PT100                                      | PT100 | TC-K                  | TC-K |
| PT100 2 wire           | 1                                          | 2     | 1                     | 2    |
| PT100 3 wire           | 3                                          | 4     | 3                     | 4    |
| PT100 4 wire           | 5                                          | 6     | 5                     | 6    |
| External CJC           | 7                                          | 8     | 7                     | 8    |
| External CJC II        | 9                                          | 10    | 9                     | 10   |
| External CJC III       | 11                                         | 12    | 11                    | 12   |
| External CJC IV        | 13                                         | 14    | 13                    | 14   |
| External CJC V         | 15                                         | 16    | 15                    | 16   |
| Output                 | 17                                         | 18    | 17                    | 18   |
| 4...20 mA              | 19                                         | 20    | 19                    | 20   |
| 20...4 mA              | 21                                         | 22    | 21                    | 22   |
| Sensor error detection | 23                                         | 24    | 23                    | 24   |
| enable                 | 25                                         | 26    | 25                    | 26   |
| disable                | 27                                         | 28    | 27                    | 28   |
| Output error level     | 29                                         | 30    | 29                    | 30   |
| disable                | 31                                         | 32    | 31                    | 32   |
| enable                 | 33                                         | 34    | 33                    | 34   |
| Noise suppression      | 35                                         | 36    | 35                    | 36   |
| 50 Hz                  | 37                                         | 38    | 37                    | 38   |
| 60 Hz                  | 39                                         | 40    | 39                    | 40   |
| Response time          | 41                                         | 42    | 41                    | 42   |
| 50 ms                  | 43                                         | 44    | 43                    | 44   |
| 500 ms                 | 45                                         | 46    | 45                    | 46   |

■ = ON

example for DIP switch setting  
(with ACT20M tool software)



example for DIP switch setting  
(with ACT20M tool software)

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Blank**

MultiFit is the Weidmüller marker system used for other makes of terminals. Similar to the Weidmüller Dekafix, the markers of the MultiFit family are available ready-for-use with standard printing.

We recommend to carry out a test with sample markers on the terminals used when using MultiFit for the first time.

- One marker, suitable for different makes of terminals.
- Ready-to-use markers with standard printing
- Blank markers for printing with the PrintJet CONNECT or Plotter
- Delivery of individually printed markers according to customer CAE data or specifications
- One marking system for all applications

**For custom printing:** Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

**General ordering data**

|            |                            |                                                                    |
|------------|----------------------------|--------------------------------------------------------------------|
| Type       | MF 5/7.5 MC NE WS          | Version                                                            |
| Order No.  | <a href="#">1877680000</a> | MultiFit, Terminal marker, 5 x 7.5 mm, Pitch in mm (P): 7.50 Adels |
| GTIN (EAN) | 4032248468270              | RKW, Phoenix, white                                                |
| Qty.       | 320 pc(s).                 |                                                                    |

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