

## ACT20M ACT20M-AI-AO-S

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 16  
 D-32758 Detmold  
 Germany  
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### 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

|            |   |
|------------|---|
| Type       | ACT20M-AI-AO-S  |
| Order No.  | <a href="#">1176000000</a>  |
| Version    | Signal converter/insulator, Configurable, with sensor supply, Input : I / U, Output : I / U |
| GTIN (EAN) | 4032248970063   |
| 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,<br>no condensation | Operating temperature, max. | 70 °C          |
| Operating temperature, min. | -25 °C   | Storage temperature, max.   | 85 °C          |
| Storage temperature, min.   | -40 °C   | Operating temperature       | -25 °C...70 °C |
| Ambient temperature         | -25 °C...+70 °C                                | Storage temperature         | -40 °C...85 °C |

**Probability of failure**

|      |           |
|------|-----------|
| MTBF | 231 Years |
|------|-----------|

**Environmental Product Compliance**

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

**Rated data UL**

|                |             |
|----------------|-------------|
| UL certificate | E337701.pdf |
|----------------|-------------|

**Input**

|                             |                    |                           |   |
|-----------------------------|--------------------|---------------------------|---|
| Number of inputs            | 1                  | Sensor                    | Voltage source, Current source, 2-wire transmitter (without own power supply) |
| Sensor supply               | > 17 V DC at 20 mA | Input voltage             | configurable, 0(2)...10 V, 0(1)...5 V   |
| Input resistance, voltage   | >500 kΩ            | Input current             | configurable, 0...20 mA, 4...20mA   |
| Voltage drop, current input | <1,5 V             | Input resistance, current | 70 Ω  |
| Voltage drop                | <1,5 V             |                           |   |

**Output**

|                        |                                    |                           |                                       |
|------------------------|------------------------------------|---------------------------|---------------------------------------|
| Number of outputs      | 1                                  | Output voltage, note      | configurable, 0(2)...10 V, 0(1)...5 V |
| Output current         | configurable, 0...20 mA, 4...20 mA | Cut-off frequency (-3 dB) | 100 Hz                                |
| load impedance voltage | ≥ 10 kΩ                            | load impedance current    | ≤ 600 Ω, @ max 23mA                   |

**General data**

|                         |                             |                         |               |
|-------------------------|-----------------------------|-------------------------|---------------|
| Accuracy                | < 0.05 % of measuring range | Configuration           | DIP switch    |
| Galvanic isolation      | 3-way isolator              | Power consumption, max. | 1.2 W         |
| Power consumption, typ. | 0.84 W                      | Rail                    | TS 35         |
| Step response time      | ≤ 7 ms                      | Temperature coefficient | ≤ 0.01 % / °C |
| Voltage supply          | 24 V DC ± 30 %              |                         |               |

# Data sheet

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# Technical data

### Insulation coordination

|                    |                                |                        |                |
|--------------------|--------------------------------|------------------------|----------------|
| EMC standards      | IEC 61326-1, NE 21             | Galvanic isolation     | 3-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              |

### Ratings IECEx/ATEX/cUL

|                        |                 |                         |                  |
|------------------------|-----------------|-------------------------|------------------|
| Certificate No. (ATEX) | KEMA10ATEX0183X | Certificate No. (IECEX) | IECEXKEM10.0090X |
|------------------------|-----------------|-------------------------|------------------|

### Classifications

|            |             |            |             |
|------------|-------------|------------|-------------|
| ETIM 3.0   | EC002479    | ETIM 4.0   | EC002653    |
| ETIM 5.0   | EC002653    | ETIM 6.0   | EC002653    |
| 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 | 27-21-01-20 |            |             |

### Product information

Product information

The configurable DC isolating amplifier ACT20M-AI-AO-S isolates and converts analogue standard signals. An analogue input signal is linearly converted into an analogue output signal and galvanically isolated. The input can also be operated as an active current loop (the loop current is supplied by the device). The power supply is galvanically isolated from the input and output (3-way isolation) by means of direct wiring or the Weidmüller rail bus.

The configurable DC isolation amplifier ACT20M-AI-2AO-S offers the same functionality, but has 2 galvanically isolated outputs (4-way isolation).

### Approvals

Approvals



|      |         |
|------|---------|
| ROHS | Conform |
|------|---------|

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**Technical data****Downloads**

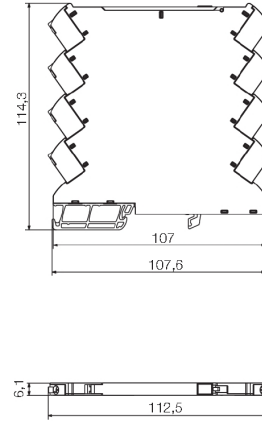
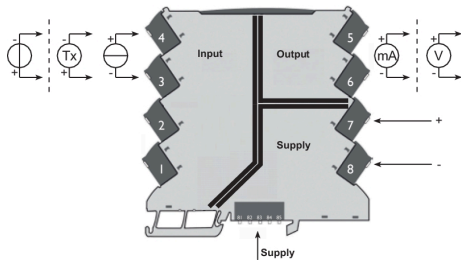
|   |   |
|---|---|
| Approval/Certificate/Document of Conformity | <a href="#">DNV-GL certificate</a><br><a href="#">Declaration of Conformity</a> |
| Brochure/Catalogue                          | <a href="#">CAT 4.1 ELECTR 16/17 EN</a>   |
| Engineering Data                            | <a href="#">EPLAN, 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>   |

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**Drawings**

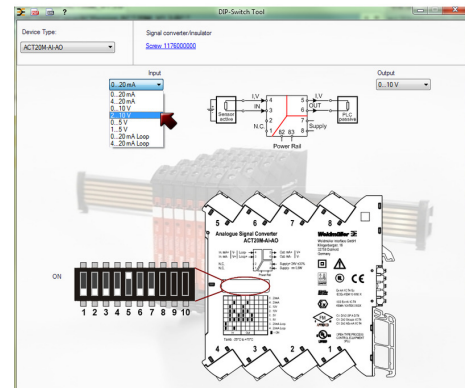
**Connection diagram**



**DIP switch setting**

| Range            | Input Setup |   |   |   | Output setup |   |   |
|------------------|-------------|---|---|---|--------------|---|---|
|                  | 1           | 2 | 3 | 4 | 5            | 6 | 7 |
| 0...20 mA        |             |   |   |   |              |   |   |
| 4...20 mA        |             |   | ■ |   |              | ■ |   |
| 0...10 V         |             |   |   |   |              |   |   |
| 2...10 V         |             | ■ | ■ |   |              | ■ |   |
| 0...5 V          |             | ■ |   |   |              |   | ■ |
| 1...5 V          |             |   | ■ | ■ |              |   |   |
| 0...20 mA (Loop) | ■           |   |   |   |              |   |   |
| 4...20 mA (Loop) | ■           |   | ■ |   |              |   |   |

■ = ON



Example of DIP switch setting with software tool



Power supply via the rail bus