

**ACT20M-AI-AO-E-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    | Signal converter/insulator, Configurable, without sensor supply, Input : I / U, Output : I / U |
| Order No.  | <a href="#">1176010000</a>                                                                     |
| Type       | ACT20M-AI-AO-E-S                                                                               |
| GTIN (EAN) | 4032248970094                                                                                  |
| 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 | 83.5 g   |                 |            |

### Temperatures

|                     |                                                |                       |              |
|---------------------|------------------------------------------------|-----------------------|--------------|
| Storage temperature | -40 °C...85 °C                                 | Operating temperature | 0 °C...70 °C |
| Humidity            | 40 °C / 93 % rel. humidity,<br>no condensation |                       |              |

### Probability of failure

|                                  |      |      |           |
|----------------------------------|------|------|-----------|
| SIL in compliance with IEC 61508 | None | MTBF | 249 Years |
|----------------------------------|------|------|-----------|

### Environmental Product Compliance

|            |                |      |                                      |
|------------|----------------|------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1 | SCIP | 2f6dd957-421a-46db-a0c2-cf1609156924 |
|------------|----------------|------|--------------------------------------|

### Input

|                             |                                          |                           |         |
|-----------------------------|------------------------------------------|---------------------------|---------|
| Input current               | configurable, 0...20 mA,<br>4...20mA     | Input frequency           | 100 Hz  |
| Input resistance, current   | 70 Ω                                     | Input resistance, voltage | >500 kΩ |
| Input voltage               | configurable, 0(2)...10 V,<br>0(1)...5 V | Number of inputs          | 1       |
| Sensor                      | Voltage source, Current<br>source        | Voltage drop              | <1,5 V  |
| Voltage drop, current input | <1,5 V                                   |                           |         |

### Output

|                           |                                          |                        |                                              |
|---------------------------|------------------------------------------|------------------------|----------------------------------------------|
| Cut-off frequency (-3 dB) | 100 Hz                                   | Load impedance current | ≤ 600 Ω, @ max 23mA                          |
| Number of outputs         | 1                                        | Output current         | configurable, 0...20 mA,<br>4...20 mA        |
| Output voltage, note      | configurable, 0(2)...10 V,<br>0(1)...5 V | Type                   | active, connected control<br>must be passive |
| load impedance voltage    | ≥ 10 kΩ                                  |                        |                                              |

### General data

|                         |                                       |           |
|-------------------------|---------------------------------------|-----------|
| Accuracy                | < 0.2 % of measuring range            |           |
| Configuration           | DIP switch                            |           |
| Delivery state          | Input: 0...20 mA // Output: 0...20 mA |           |
| Delivery state          | Setting parameters                    | Input     |
|                         | Configuration                         | 0...20 mA |
|                         | Setting parameters                    | Output    |
|                         | Configuration                         | 0...20 mA |
| Galvanic isolation      | 3-way isolator                        |           |
| Power consumption, max. | 0.8 W                                 |           |
| Power consumption, typ. | 0.56 W                                |           |
| Rail                    | TS 35                                 |           |
| Step response time      | ≤ 7 ms                                |           |
| Temperature coefficient | ≤ 0.015 % / °C                        |           |
| Type of connection      | Screw connection                      |           |

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**Technical data**Voltage supply 24 V DC  $\pm$  30 %**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)**

|                       |                                       |         |                        |
|-----------------------|---------------------------------------|---------|------------------------|
| 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 <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    | EC002653    | ETIM 7.0    | EC002653    |
| ETIM 8.0    | EC002653    | ECLASS 9.0  | 27-21-01-20 |
| ECLASS 9.1  | 27-21-01-20 | ECLASS 10.0 | 27-21-01-20 |
| ECLASS 11.0 | 27-21-01-20 | ECLASS 12.0 | 27-21-01-20 |

**Tender specification sheets**

Long specification

Short specification

**Universal standard signal isolating amplifier**  
**1-channel signal isolating amplifier in 6.1 mm width with external power supply, for transmitting and isolating analogue DC current signals 0/4...20 mA and voltage signals 0/2...10V // 0/1...5 V. I/O signals are configured with DIP switches.**

**Type**  
**ACT20M-AI-AO-E-S**

**Important note**

|                     |                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product information | The configurable DC isolating amplifier ACT20M-AI-AO-E-S isolates and converts analogue signals. An analogue input signal is linearly converted into an analogue output signal and galvanically isolated. The power supply is galvanically isolated from the input and output (3-way isolation) by means of direct wiring or the Weidmüller rail bus. |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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Catalogue status 23.09.2022 / We reserve the right to make technical changes.

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Approvals**

Approvals



|                         |            |
|-------------------------|------------|
| ROHS                    | Conform    |
| UL File Number Search   | UL Website |
| Certificate no. (cULus) | E337701    |

**Downloads**

|                                             |                                                                                 |
|---------------------------------------------|---------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">DNV-GL certificate</a><br><a href="#">Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>                                                 |
| Engineering Data                            | <a href="#">EPLAN, WSCAD, Zuken E3.S</a>                                        |
| Software                                    | <a href="#">Runtime Software – DIP switch configuration tool</a>                |
| User Documentation                          | <a href="#">Instruction sheet</a>                                               |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>                                        |
| Brochures                                   |                                                                                 |

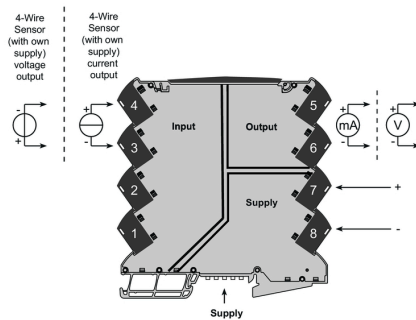
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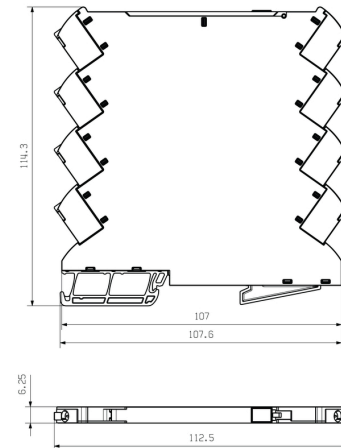
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## Drawings

### Connection diagram



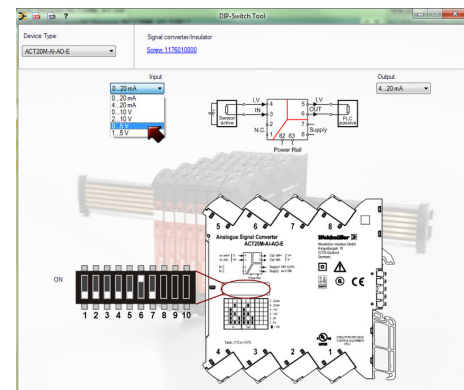
### Dimensional drawing



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   |             |   |   |   |              |   |   |

■ = ON



Example of DIP switch setting with software tool



Power supply via the rail bus