

## ACT20M-AI-2AO-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 splitter, Configurable, with sensor supply, Input : I / U, Output : 2 x I/U |
| Order No.  | <a href="#">1176020000</a>   |
| Type       | ACT20M-AI-2AO-S  |
| GTIN (EAN) | 4032248970087  |
| Qty.       | 1 pc(s).   |

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Catalogue status 18.02.2023 / 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 |
| Width      | 6.1 mm   | Width (inches)  | 0.24 inch  |
| Net weight | 80 g     |                 |            |

### Temperatures

|                             |  |                             |                |
|-----------------------------|--|-----------------------------|----------------|
| Storage temperature         | -40 °C...85 °C                                 | Operating temperature       | -25 °C...70 °C |
| Operating temperature, min. | -25 °C   | Operating temperature, max. | 70 °C          |
| Humidity                    | 40 °C / 93 % rel. humidity,<br>no condensation |                             |                |

### Probability of failure

|                                  |      |      |           |
|----------------------------------|------|------|-----------|
| SIL in compliance with IEC 61508 | None | MTBF | 181 Years |
|----------------------------------|------|------|-----------|

### Input

|                             |                                      |                           |  |
|-----------------------------|--------------------------------------|---------------------------|--|
| Input current               | configurable, 0...20 mA,<br>4...20mA | 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, 2-wire transmitter<br>(without own power<br>supply) |
| Sensor supply               | 17...28 V DC (@ 20 mA)               | Voltage drop              | <1,5 V   |
| Voltage drop, current input | < 1.5 V                              |                           |  |

### Output

|                           |  |                        |  |
|---------------------------|--|------------------------|--|
| Cut-off frequency (-3 dB) | 100 Hz                                   | Load impedance current | < 300 Ω, per channel, @<br>max 23mA          |
| Number of outputs         | 2  | 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                | < 0.05 % of measuring range   |                  |
| Configuration           | DIP switch  |                  |
| Delivery state          | Input: 0...20 mA (loop) // Output 1: 0...20 mA // Output 2: 0...20 mA |                  |
| Delivery state          | Setting parameters  | Input            |
|                         | Configuration   | 0...20 mA (loop) |
|                         | Setting parameters  | Output 1         |
|                         | Configuration   | 0...20 mA        |
|                         | Setting parameters  | Output 2         |
|                         | Configuration   | 0...20 mA        |
| Galvanic isolation      | 3-way isolator  |                  |
| Long-term drift         | 0   |                  |
| Power consumption, max. | 1.2 W   |                  |
| Power consumption, typ. | 0.84 W  |                  |
| Rail                    | TS 35   |                  |
| Step response time      | ≤ 7 ms  |                  |

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**Technical data**

|                         |                  |
|-------------------------|------------------|
| Temperature coefficient | ≤ 0.01 % / °C    |
| Type of connection      | Screw connection |
| Voltage supply          | 24 V DC ± 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 splitter**  
**1-channel signal splitter in 6.1 mm width with external power supply, to transmit, isolate and split 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-2AO-S**

**Environmental Product Compliance**

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

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**Technical data**

**Important note**

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    |
| 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="#">FM certificate</a><br><a href="#">IECEX certificate</a><br><a href="#">ATEX certificate</a><br><a href="#">Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>  |
| Engineering Data                            | <a href="#">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                                   |  |

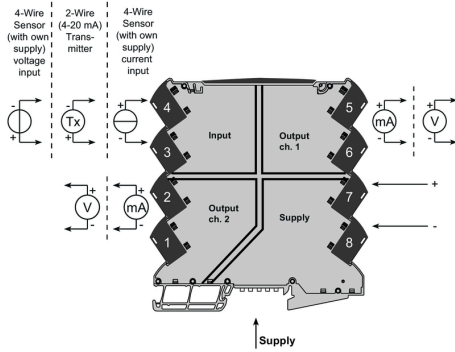
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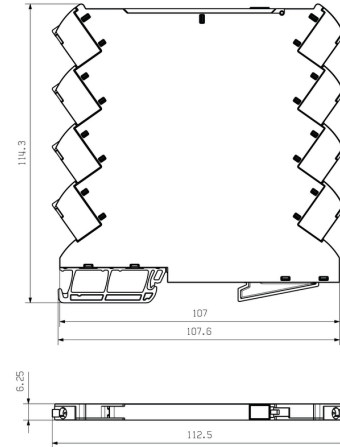
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**Drawings**

**Connection diagram**



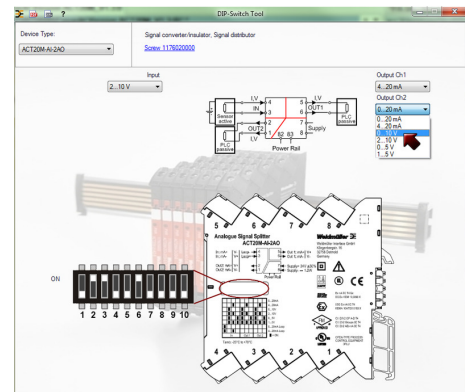
**Dimensional drawing**



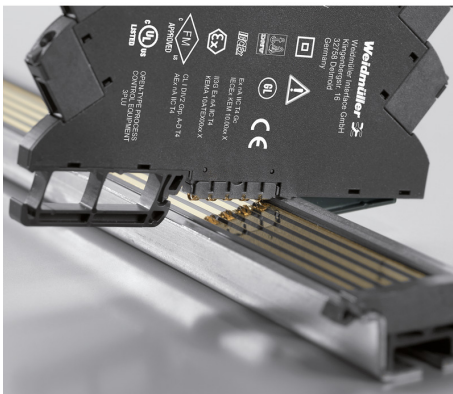
DIP switch setting

| Range            | Input Setup |   |   |   | Output setup |  |  |           |  |  |  |  |
|------------------|-------------|---|---|---|--------------|--|--|-----------|--|--|--|--|
|                  | 1           | 2 | 3 | 4 | Channel 1    |  |  | Channel 2 |  |  |  |  |
| 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