

ACT20M-AI-AO-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 | Analogue isolating amplifier, Configurable, with sensor supply, Input : I / U, Output : I / U |
| Order No. | 1176000000 |
| Type | ACT20M-AI-AO-S |
| GTIN (EAN) | 4032248970063 |
| 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 | Operating temperature | -25 °C...70 °C |
| Humidity at operating temperature | 0...95 % (no condensation) | Humidity | 40 °C / 93 % rel. humidity, no condensation |

Probability of failure

| | | | |
|----------------------------------|------|------|----------|
| SIL in compliance with IEC 61508 | None | MTBF | 78,572 a |
|----------------------------------|------|------|----------|

Input

| | | | |
|---------------------------|-----------------------------------|-----------------------------|---|
| Input current | configurable, 0...20 mA, 4...20mA | Input resistance, current | 70 Ω |
| Input resistance, voltage | >500 kΩ | Input voltage | configurable, 0(2)...10 V, 0(1)...5 V |
| Number of inputs | 1 | Sensor | Voltage source, Current source, 2-wire transmitter (without own power supply) |
| Sensor supply | > 17 V DC at 20 mA | 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, 4...20 mA |
| Output voltage, note | configurable, 0(2)...10 V, 0(1)...5 V | Type | active, connected control 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 // Output: 0...20 mA | |
| Delivery state | Setting parameters | Input |
| | Configuration | 0...20 mA |
| | Setting parameters | Output |
| | Configuration | 0...20 mA |
| Nominal power consumption | 1.2 VA | |
| Operating altitude | ≤ 2000 m | |
| Power consumption, max. | 1.2 W | |
| Power consumption, typ. | 0.84 W | |
| Protection degree | IP20 | |
| Rail | TS 35 | |
| Step response time | ≤ 7 ms | |
| Temperature coefficient | ≤ 0.01 % / °C | |
| Voltage supply | 24 V DC ±30 % at terminal or via CH20M rail bus | |

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Technical data**Insulation coordination**

| | | | |
|--------------------|--------------------------------|------------------------|----------------|
| EMC standards | EN 61326-1 | Galvanic isolation | 3-way isolator |
| Insulation voltage | 2.5 kV _{eff} / 1 min. | Pollution severity | 2 |
| Rated voltage | 300 V _{eff} | 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 ² |
| Clamping range, min. | 0.5 mm ² | Clamping range, max. | 2.5 mm ² |
| Wire connection cross section AWG, min. | AWG 30 | Wire connection cross section AWG, max. | AWG 14 |

EMC conformity and approvals

| | | | |
|---------------|------------|-----------|-------------|
| EMC standards | EN 61326-1 | Standards | IEC 61010-1 |
|---------------|------------|-----------|-------------|

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002653 | ETIM 7.0 | EC002653 |
| ETIM 8.0 | EC002653 | ETIM 9.0 | EC002653 |
| ETIM 10.0 | 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 |
| ECLASS 13.0 | 27-21-01-20 | ECLASS 14.0 | 27-21-01-20 |
| ECLASS 15.0 | 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-S | | |

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Technical data

Approvals

Approvals



| | |
|-------------------------|---|
| Approvals MAMID | https://mdcop.weidmueller.com/mediadelivery/rendition/900_319217/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319222/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319228/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319234/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319237/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319240/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319243/-T1z1mm-S800/ https://mdcop.weidmueller.com/mediadelivery/rendition/900_319260/-T1z1mm-S800/ |
| ROHS | Conform |
| UL File Number Search | UL Website |
| Certificate no. (cULus) | E337701 |

Environmental Product Compliance

| | |
|--------------------------------------|--------------------------------------|
| RoHS Compliance Status | Compliant with exemption |
| RoHS Exemption (if applicable/known) | 7a, 7cl |
| REACH SVHC | Lead 7439-92-1 |
| SCIP | 2f6dd957-421a-46db-a0c2-cf1609156924 |

Important note

| | |
|---------------------|---|
| Product information | <p>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.</p> <p>The configurable DC isolation amplifier ACT20M-AI-2AO-S offers the same functionality, but has 2 galvanically isolated outputs (4-way isolation).</p> |
|---------------------|---|

Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | DNV-GL certificate FM certificate IECEx certificate ATEX certificate Certification UL for Canada Declaration of Conformity |
| Engineering Data | CAD data – STEP |
| Software | DIP switch configuration tool |
| User Documentation | Instruction sheet |
| Catalogues | Catalogues in PDF-format |
| Brochures | |

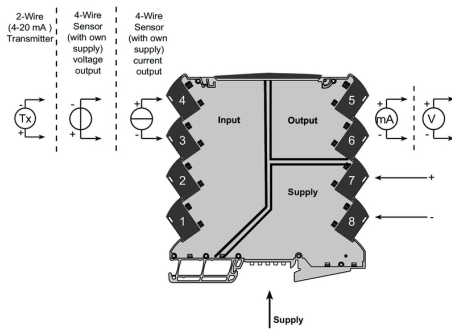
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Drawings

Connection diagram



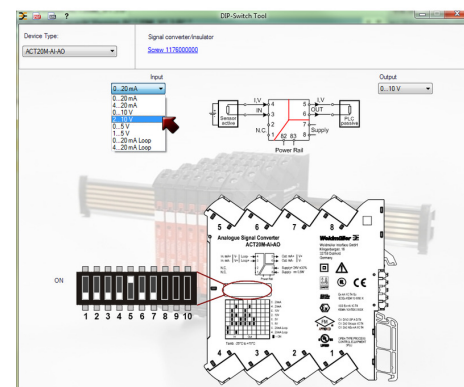
Dimensional drawing



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 | | | | | | | |
| 0...20 mA (Loop) | | | | | | | |
| 4...20 mA (Loop) | | | | | | | |

■ = ON



Example of DIP switch setting with software tool



Additional power supply option via bus

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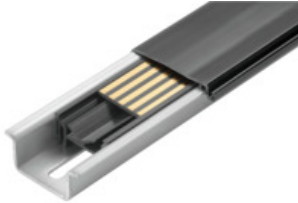
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Accessories

CH20M BUS SET - Kit

**The integrated rail bus for the modular electronics housing system**

When supplying, connecting or distributing within modular applications, the rail bus can replace the tedious individual wiring process with a flexible and uninterrupted system-wide solution.

The system bus is securely integrated within the 35-mm standard mounting rail. The SMD-bus contact block can be reflow-soldered so that it can be completely automatically processed during the component assembly. The resistant, gold-plated contact surfaces ensure a permanent and reliable contact for all housing widths.

- **Unlimited scalability** The integrated connection solution covers all system widths: from the 6-mm slice to the 67-mm large-area housing.
- **Easy to service during installation** It's easy to replace a module, even in existing modules groups – without any influence on the neighbouring modules.
- **Universal integration** The uninterrupted system bus is securely integrated within the 35-mm standard mounting rail.
- **Maximum availability** Five fully-galvanized and partially gold-plated twin-arched contacts are used to establish a permanent contact to the rail bus. THR solder flanges ensure that the connection to the circuit board is stable.

General ordering data

| Type | SET CH20M BUS 250MM TS ... | Version |
|------------|----------------------------|---|
| Order No. | 1335150000 | Mounting rail bus system, Sample set, OMNIMATE Housing - series |
| GTIN (EAN) | 4050118138382 | CH20M, Width: 25.1 mm |
| Qty. | 1 pc(s). | |
| Type | SET CH20M BUS 250MM TS ... | Version |
| Order No. | 1335140000 | Mounting rail bus system, Sample set, OMNIMATE Housing - series |
| GTIN (EAN) | 4050118138375 | CH20M, Width: 25.1 mm |
| Qty. | 1 pc(s). | |

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www.weidmueller.com**Accessories****ACT20 (incl. DIN rail bus & powersupplies)**

Power supply adapter modules for separate supply and distribution of the supply voltage; for the ACT20 series/ MICROSERIES signal converters.

The 22.5/6.1 mm wide power-feed modules are mounted directly adjacent to the analogue signal converters. Then the 24 VDC supply voltage is optionally bridged via the CH20M (ACT20-series) rail bus or simply bridged over using the pluggable ZQV 4N (MICROSERIES) cross-connectors.

The ACT20-Feed-In-PRO-S can also detect faults coming from any of the devices mounted on the CH20 bus mounting profile.

In the event of an error or fault, the integrated status relay sends a common alarm to the external controller. In addition, two power supply units (as primary and backup supply) can be connected to the ACT20 Feed-In PRO-S.

Two feed-in modules mounted to the CH20 bus mounting profile guarantee a 100% redundant power supply.

Three LEDs are used to show the status of the power supply and error messages.

The ACT20M-Feed-In PRO can also be used in Ex zone2 / Division2 applications.

General ordering data

| | | |
|------------|----------------------------|---|
| Type | ACT20-FEED-IN-BASIC-S | Version |
| Order No. | 1282490000 | Supply module, Distributes supply voltage to rail bus |
| GTIN (EAN) | 4050118072730 | |
| Qty. | 1 pc(s). | |

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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. | 1877680000 | 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). | |