

**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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**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	181 a
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**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...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, @ max 23mA
Number of outputs	2	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 (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	
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	

Creation date July 5, 2024 2:45:13 AM CEST

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**Technical data**

Voltage supply 24 V DC  $\pm 30\%$  at terminal or via CH20M rail bus

**Insulation coordination**

EMC standards	EN 61326-1	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
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**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	EN 61326-1	Standards	IEC 61010-1
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**Classifications**

ETIM 6.0	EC002653	ETIM 7.0	EC002653
ETIM 8.0	EC002653	ETIM 9.0	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

**Tender specification sheets**

Long specification	Short specification	<b>Universal standard signal splitter</b> <b>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.</b>
<b>Type</b> <b>ACT20M-AI-2AO-S</b>		

**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> <a href="#">FM certificate</a> <a href="#">IECEX certificate</a> <a href="#">ATEX certificate</a> <a href="#">Declaration of Conformity</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">Zuken E3.S</a>
Software	<a href="#">DIP switch configuration tool</a>
User Documentation	<a href="#">Instruction sheet</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

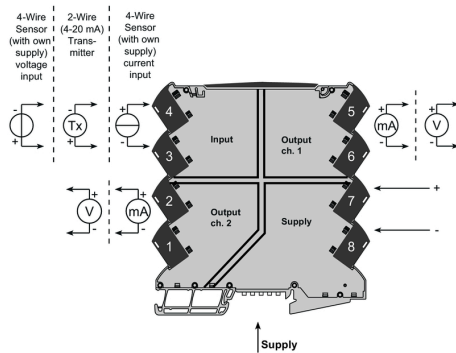
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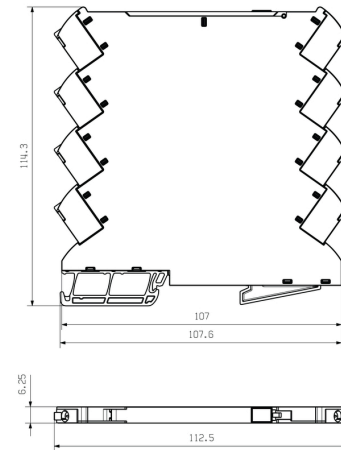
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## Drawings

### Connection diagram



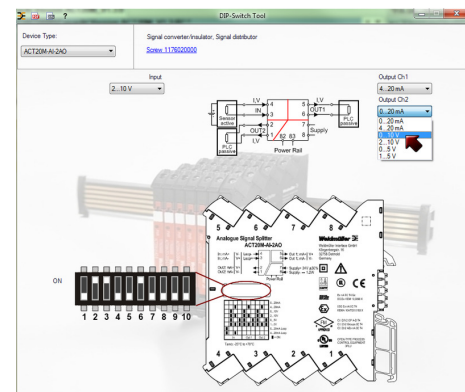
### Dimensional drawing



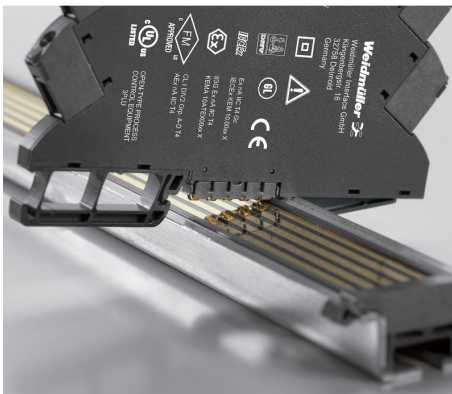
DIP switch setting

Range	Input Setup				Output setup					
	1	2	3	4	5	6	7	8	9	10
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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[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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[www.weidmueller.com](http://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-PRO-S	Version
Order No.	<a href="#">8965500000</a>	Supply module, Distributes supply voltage to rail bus, Optional
GTIN (EAN)	4032248785117	connection of backup supply
Qty.	1 pc(s).	

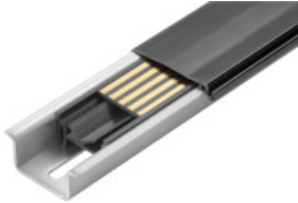
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## Accessories

## 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.	<a href="#">1335150000</a>	OMNIMATE Housing - series CH20M, Length: 250 mm, Width: 25.1
GTIN (EAN)	4050118138382	mm
Qty.	1 pc(s).	
Type	SET CH20M BUS 250MM TS ...	Version
Order No.	<a href="#">1335140000</a>	OMNIMATE Housing - series CH20M, Length: 250 mm, Width: 25.1
GTIN (EAN)	4050118138375	mm
Qty.	1 pc(s).	