

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 items

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Technical data

Approvals

Approvals



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

Dimensions and weights

Depth	114.3 mm	Depth (inches)	4.5 inch
Height	112.5 mm	Height (inches)	4.4291 inch
Width	6.1 mm	Width (inches)	0.2402 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	78572 a
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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

Input

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

Output

Number of outputs	1	load impedance voltage	≥ 10 kΩ
Load impedance current	≤ 600 Ω, @ max 23mA	Type	active, connected control must be passive
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		

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Technical data

General data

Accuracy	<0.05 % of measuring range		
Protection degree	IP20		
Supply voltage	24 V DC \pm 30 % at terminal or via CH20M rail bus		
Step response time	\leq 7 ms		
Mounting rail	TS 35		
Temperature coefficient	\leq 0.01 % / °C		
Delivery state	Setting parameters	Input	
	Configuration	0...20 mA	
	Setting parameters	Output	
	Configuration	0...20 mA	
Nominal power consumption	1.2 VA		
Configuration	DIP switch		
Operating altitude	\leq 2000 m		
Power consumption, max.	1.2 W		
Power consumption, typ.	0.84 W		
Delivery state	Input: 0...20 mA // Output: 0...20 mA		

Insulation coordination

EMC standards	EN 61326-1	Surge voltage category	II
Pollution severity	2	Galvanic isolation	3-way isolator
Insulation voltage	2.5 kVeff / 1 min.	Rated voltage	300 Veff

Data for Ex applications (ATEX)

Marking	II 3 G Ex nA IIC T4 Gc	IECEx - gas labelling	Ex nA IIC T4 Gc, Standard: IEC 60079-0-15
Installation location	Device installed in safe area, zone 2		

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
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Part description

Product description

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).

Classifications

ETIM 8.0	EC002653	ETIM 9.0	EC002653
ETIM 10.0	EC002653	ECLASS 14.0	27-21-01-20
ECLASS 15.0	27-21-01-20		

Tender specification sheets

Long specification	Short specification
<p>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 to 20 mA and voltage signals 0/2 to 10 V // 0/1 to 5 V. Add-on housing for TS35 rail mounting Dimensions: L/W/H 114.3/ 6.1/ 112.5 mm Screw connection / Nominal cross-section 2.5 mm² Protection degree: IP 20 Input 0/4...20 mA</p> <p>0/2...10 V or 0/1...10 V Output 0/4...20 mA</p> <p>0/2...10 V or 0/1...5 V Load resistance < 600 Ohm/ Strom/> 10 kOhm/ voltage Transmission error < 0,05 % v. E. Limit frequency 100 Hz Auxiliary power 24 VDC +/- 30 % Power loss approx. 0.8 W Ambient temperature range -25 °C...+70 °C Isolation EN 61010-1, 3-way isolation up to 2.5 kV AC/DC of all circuits against each other Test voltage 2.5 kV input against output against auxiliary power Rated voltage 300 V AC/DC at overvoltage category II and pollution degree 2 Approvals cULus, FM Div2, ATEX Zone2, DNV, GL Type ACT20M-AI-AO-S</p>	<p>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.</p>

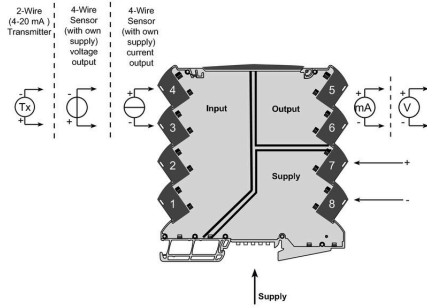
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Drawings

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Connection diagram



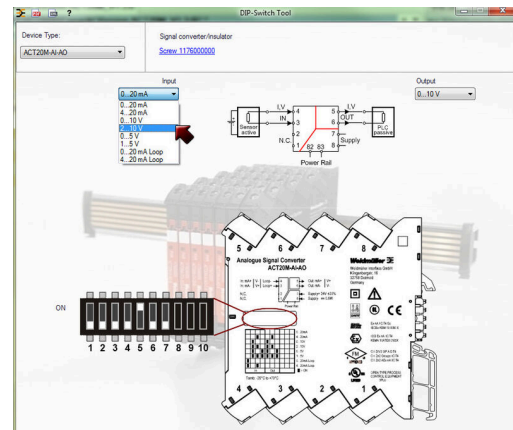
Dimensional drawing



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

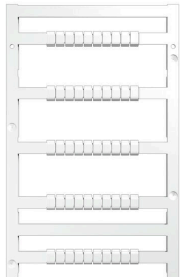
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Accessories

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 ST		

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 zone 2 / Division 2 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 ST		

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Accessories

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