

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, 7cI
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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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	<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>		
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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		

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Technical data

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>

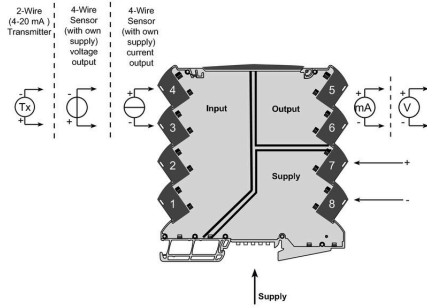
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Drawings

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Connection diagram



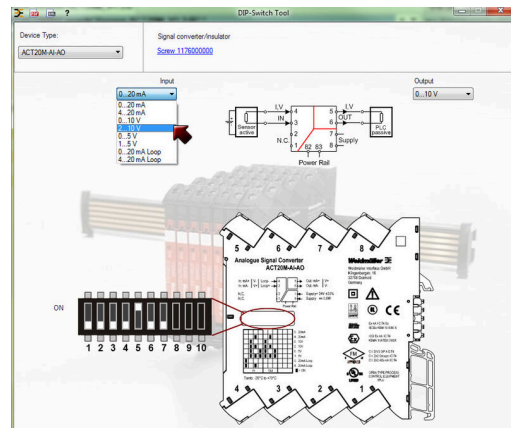
Dimensional drawing



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