

## ACT20M-UI-AO-S

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

### Product image



#### 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 converter/insulator, Temperature converter, universal, DC U/I signals, Temperature RTD/TC, Input : universal U, I, R,θ, Output : I / U
Order No.	<a href="#">1176030000</a>
Type	ACT20M-UI-AO-S
GTIN (EAN)	4032248970070
Qty.	1 pc(s).

Creation date September 16, 2022 1:34:03 AM CEST

Catalogue status 09.09.2022 / 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
Humidity	40 °C / 93 % rel. humidity, no condensation		

### Probability of failure

MTBF	176 Years
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### Environmental Product Compliance

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

Input current	configurable, 0...20 mA, 4...20mA	Input resistance, voltage	> 10 MΩ
Input voltage	configurable, 0(2)...10 V, 0(1)...5 V, 0...1 V DC, 0,2... 1 V DC	Number of inputs	1
Potentiometer	10...100 kΩ	Resistance	0...10 kΩ
Sensor	Thermocouples: B / C / E / J / K / L / N / R / S / T / W3 / W5 - 200...+ 2300 °C depending on thermocouple, RTD: PT10, PT20, PT50, PT100, PT250, PT300, PT400, PT500, PT1000, Ni50, Ni100, Ni120, Ni1000, 2-/3-/4-wire	Sensor supply	> 15 V DC at 20 mA
Temperature input range	Configurable, min. measurement range 10°C (RTD), min. measurement range 50°C (TC), PT100: -200°C...850 °C, NI100: -60°C...+250 °C, TC type: B (0...+1820 °C), E: (-100... +1000 °C), J: (-100... +1200 °C), K: (-180... +1372 °C), L: (-200...+900 °C), N: (-180...+1300 °C), R: (-50...+1760 °C), S: (-50...+1760 °C), T: (-200...+400 °C), U: (-200... +600 °C), W3: (0...+2300 °C), W5: (0...+2300 °C), LR: (-200...+800 °C), Details under Downloads "Measuring range Table ACT20M-UI-AO"	Voltage drop, current input	< 3 V

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### Output

Cut-off frequency (-3 dB)	100 Hz	Load impedance current	≤ 600 Ω, @ max 28mA
Number of outputs	1	Output current	configurable, 0...20 mA, 4...20 mA, 20...0 mA, 20...4 mA, downscale (3,5 mA), upscale (23 mA), in case of sensor error
Output voltage, note	configurable, 0(2)...10 V, 0(1)...5 V, 0(0,2)...1 V, 1...(0,2)0 V, 5...(1)0 V, 10...(2)0 V, downscale (0 V), upscale (11 V), in case of sensor error	Type	active, connected control must be passive
Wire break detection	Yes, if using RTD / POT / TC	cold junction compensation	internal
load impedance voltage	≥ 10 kΩ		

### General data

Accuracy	< 0.1 % of measuring range	Configuration	With FDT/DTM software
Galvanic isolation	3-way isolator	Power consumption, max.	1.2 W
Power consumption, typ.	0.84 W	Rail	TS 35
Step response time	400 ms (10...90%) @ U/I, 1 s @ temp	Temperature coefficient	≤ 0.01 % / °C
Type of connection	Screw connection	Voltage supply	24 V DC ±30 % at terminal or via CH20M rail bus

### 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
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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	IEC 61326-1, NE 21	Standards	IEC 61010-1
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### 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

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## Technical data

## Tender specification sheets

Long specification

Short specification

**Universal measurement isolating transformer**

universal measurement isolating transformer in 6.1 mm width with external power and sensor power supply to transmit and isolate analogue DC currents 0/4 to 20 mA / voltages 0/2 to 10 V, 2-/3-/4- wire RTD, resistances, potentiometers and thermocouples according to IEC584.

The module can be programmed via **software** using standard **FDT/DTM** tools.

Add-on housing for TS35

DIN rail installation

Dimensions: L/W/H

114.3/ 6.1/ 112.5 mm

Screw connection /

nominal cross-section 2.5 mm<sup>2</sup>

Protection degree: IP20

Input 0/4...20 mA 0/2...10

V PT100, PT1000, Ni100,

Ni1000

Resistance/ potentiometer

10 Ohm...10 kOhm

Thermocouples type B,

E, J, K, L, LR, N, R, S, T, U,

W3, W5

Sensor supply > 15 VDC at 20 mA

Output 0/4...20 mA

0/2...10 V Load resistance

10 kOhm/

voltage Transmission error

< 600 Ohm/ Strom/>Step

response time

10...90 % Auxiliary

power 24 VDC +/- 30

% Power loss approx. 1.2

W Ambient < 0,1 % v. E.

(DC, RTD)

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

**Universal measurement isolating transformer universal measurement isolating transformer in 6.1 mm width with external power and sensor power supply for transmitting and isolating analogue DC currents 0/4 to 20 mA / voltages 0/2 to 10 V, 2-/3-/4- wire RTD, resistances, potentiometers and thermocouples according to IEC584. The component can be programmed via software using standard FDT/DTM tools.**

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**Technical data****Important note**

## Product information

The software configurable Universal Transmitter ACT20M-UI-AO-S separates and converts standard analogue signals. An analogue input signal (voltage, current, resistance, potentiometer, RTD, TC) is converted linear and galvanic isolated into an analogue output signal. The input may also operate as an active current loop (the loop current provided by the device). The power supply is galvanically isolated from input and output and happens via a direct wiring or the Weidmüller DIN Rail Bus (3-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="#">EPLAN, WSCAD, Zuken E3.S</a>
Software	<a href="#">Library and function block – WI-Manager, DTM-Library for online installation V.1.2.3</a> <a href="#">Release notes for Weidmueller FDT-DTM Software version 1.2.3.</a>
User Documentation	<a href="#">Instruction sheet</a> <a href="#">measuring range table</a> <a href="#">20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

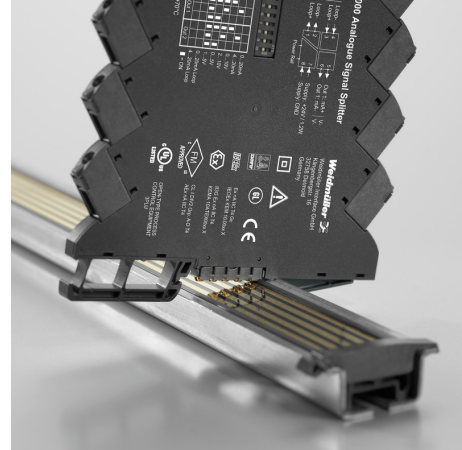
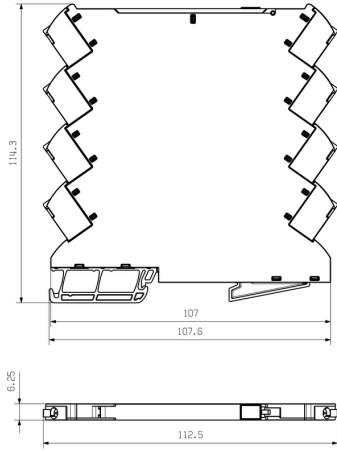
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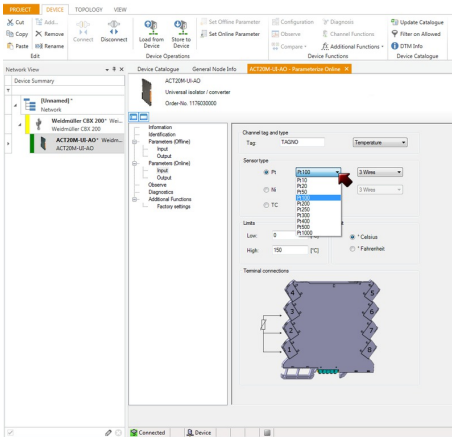
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Drawings

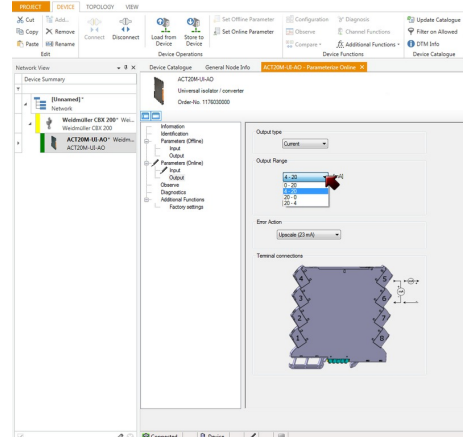
Dimensional drawing



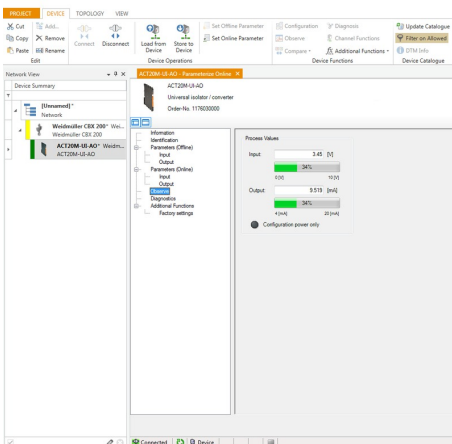
Power supply via the rail bus (housing example)



screenshot, setup temperature input with FDT2 / DTM software



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screenshot, setup output with FDT2 / DTM software

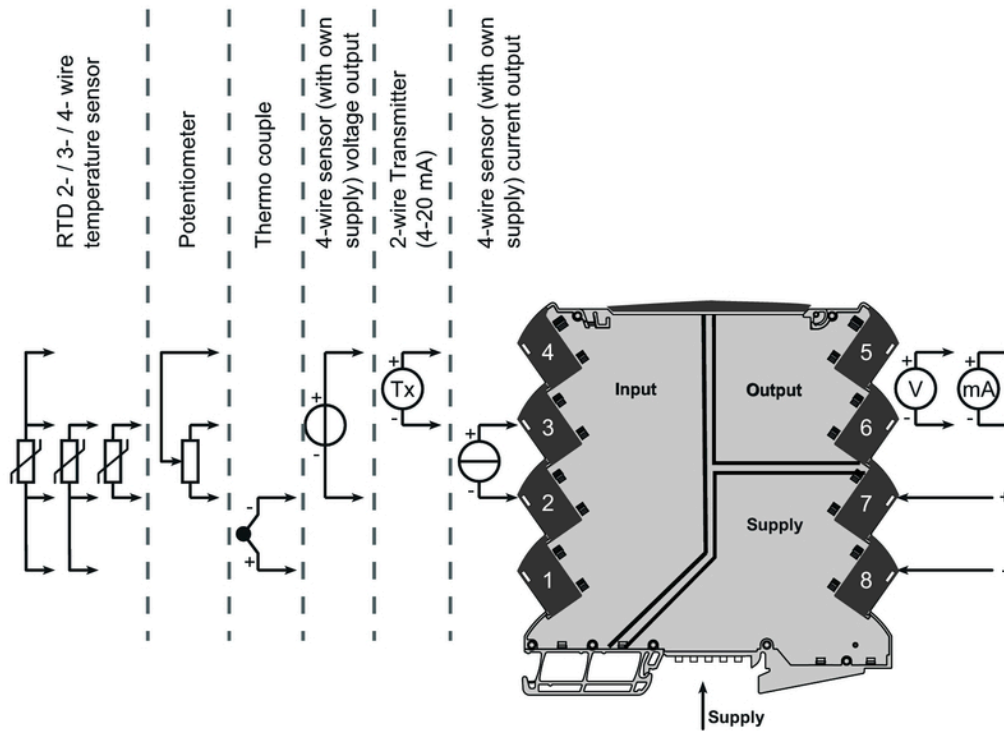
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**Drawings**

**Connection diagram**



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