

ACT20M-UI-AO-S**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image

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).

General ordering data

Version	Signal converter/insulator, Temperature converter, Input : universal U, I, R, θ , Output : I / U
Order No.	1176030000
Type	ACT20M-UI-AO-S
GTIN (EAN)	4032248970070
Qty.	1 pc(s).

ACT20M-UI-AO-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	176 a
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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	load impedance voltage	≥ 10 kΩ

General data

Accuracy	<0.1 % of measuring range	Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB
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	400 ms (10...90%) @ U/I, 1 s @ temp
Temperature coefficient	≤ 0.01 % / °C	Voltage supply	24 V DC ±30 % at terminal or via CH20M rail bus

Insulation coordination

EMC standards	IEC 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
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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 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	IEC 61326-1	Standards	IEC 61010-1
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Technical data

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
ECLASS 14.0	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 mm² 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

Type **ACT20M-UI-AO-S**

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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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

Approvals

Approvals



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

Downloads

Approval/Certificate/Document of Conformity	DNV-GL certificate FM certificate IECEX certificate ATEX certificate UL certification for canada Declaration of Conformity
Engineering Data	CAD data – STEP
Software	WI-Manager, DTM-Library for online installation Release notes for Weidmueller FDT-DTM Software version
User Documentation	Instruction sheet measuring range table 20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability
Catalogues	Catalogues in PDF-format
Brochures	

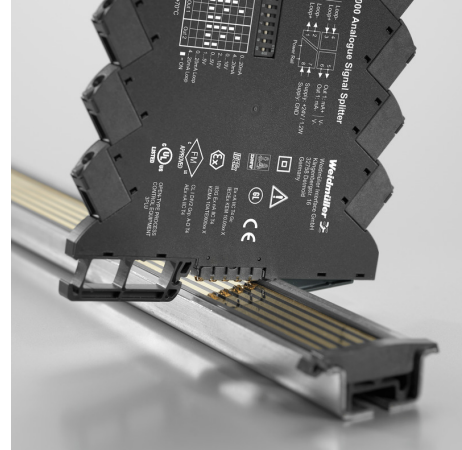
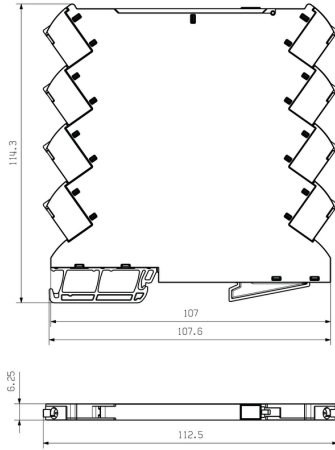
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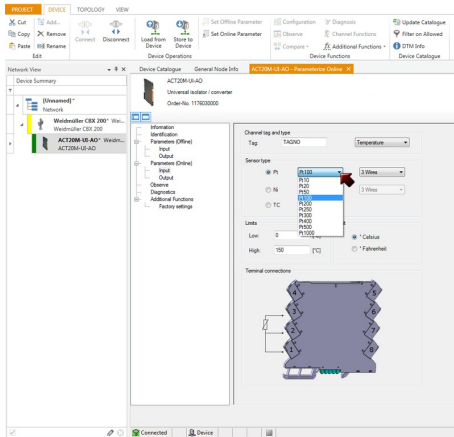
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Drawings

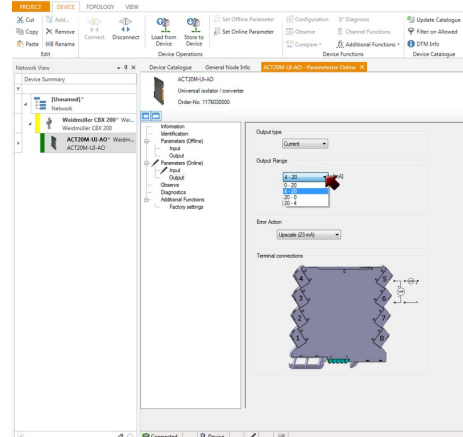
Dimensional drawing



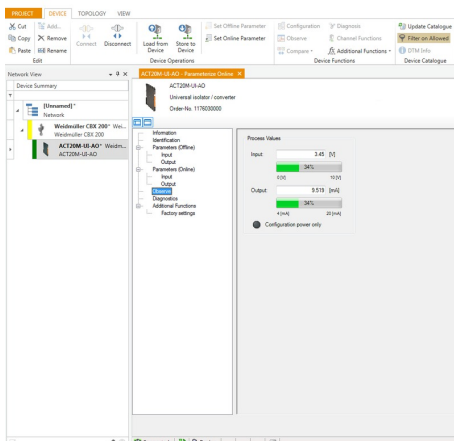
Additional power supply option via bus



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

