

**ACT20M-UI-AO-S****Weidmüller Interface GmbH & Co. KG**Klingenbergstraße 26  
D-32758 Detmold  
Germany

www.weidmueller.com



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	Temperature converter, Analogue isolating amplifier, Input : universal U, I, R, $\Omega$ , Output : I / U
Order No.	<a href="#">1176030000</a>
Type	ACT20M-UI-AO-S
GTIN (EAN)	4032248970070
Qty.	1 items

## ACT20M-UI-AO-S

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## Technical data

## Approvals

Approvals



ROHS	Conform
UL File Number Search	<a href="#">UL Website</a>
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	176 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	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	Number inputs	1
Potentiometer	10...100 kΩ	Sensor supply	> 15 V DC at 20 mA
Input voltage	configurable, 0(2)...10 V, 0(1)...5 V, 0...1 V DC, 0,2...1 V DC	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...

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+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"

Resistance	0...10 kΩ	Input current	configurable, 0...20 mA, 4...20mA
Input resistance, voltage	> 10 MΩ	Voltage drop, current input	<3 V

## Output

Number of outputs	1	load impedance voltage	≥ 10 kΩ
Load impedance current	≤ 600 Ω, @ max 28mA	Wire break detection	Yes, if using RTD / POT / TC
Type	active, connected control must be passive	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
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	Cut-off frequency (-3 dB)	100 Hz

## General data

Accuracy	<0.1 % of measuring range	Protection degree	IP20
Supply voltage	24 V DC ±30 % at terminal or via CH20M rail bus	Step response time	400 ms (10...90%) @ U/I, 1 s @ temp
Mounting rail	TS 35	Temperature coefficient	≤ 0.01 % / °C
Nominal power consumption	1.2 VA	Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB
Operating altitude	≤ 2000 m	Power consumption, max.	1.2 W
Power consumption, typ.	0.84 W		

## Insulation coordination

EMC standards	IEC 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		

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## Technical data

## 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	Standards	IEC 61010-1
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## Part description

Product description	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).		
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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		

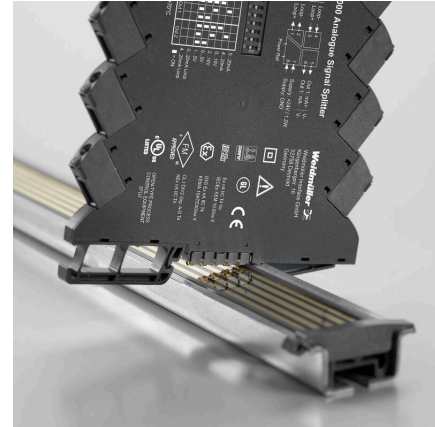
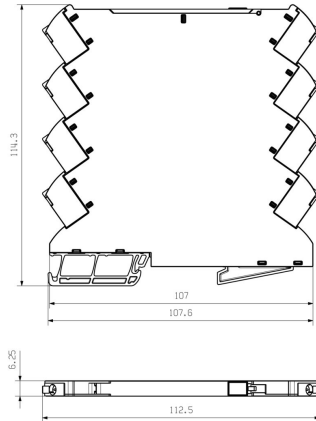
## Tender specification sheets

Long specification	<p>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 IEC 584. 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,</p>	Short specification	<p>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 IEC 584. The component can be programmed via software using standard FDT/DTM tools.</p>
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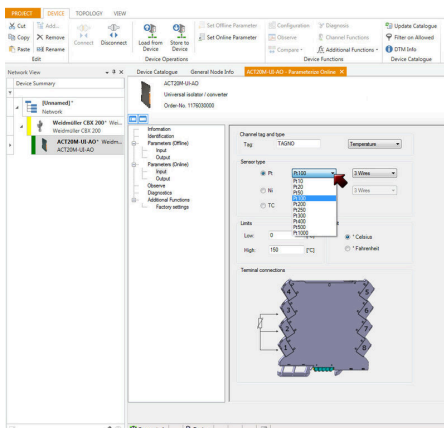
## Technical data

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

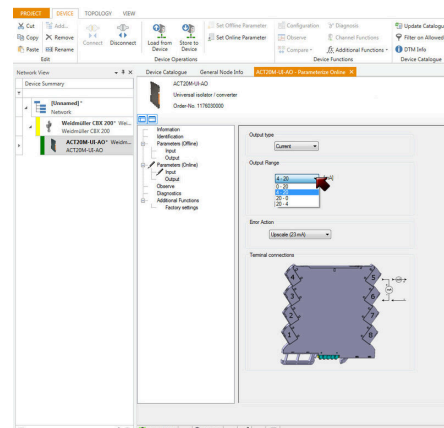
## Dimensional drawing



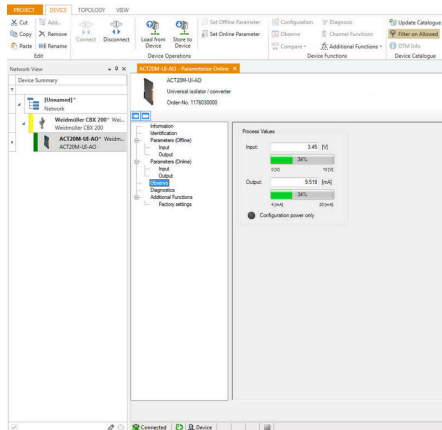
Additional power supply option via bus



screenshot, setup temperature input with FDT2 / DTM software

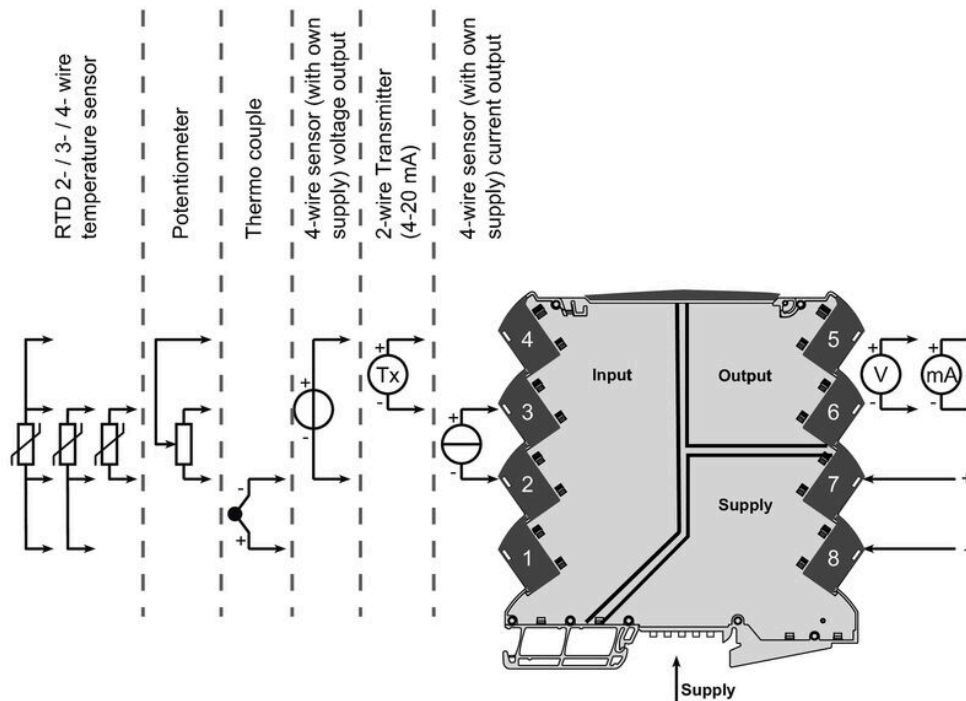


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screenshot, setup output with FDT2 / DTM software

## Connection diagram



# ACT20M-UI-AO-S

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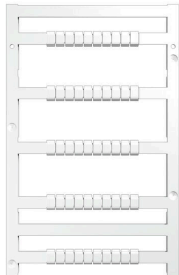
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## Accessories

### 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.	<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 ST		

### Configuration interfaces



### General ordering data

Type	CBX200 USB	Version	
Order No.	<a href="#">8978580000</a>		
GTIN (EAN)	4032248813759		
Qty.	1 ST		



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## 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-BASIC-S	Version
Order No.	<a href="#">1282490000</a>	Supply module, Distributes supply voltage to rail bus
GTIN (EAN)	4050118072730	
Qty.	1 ST	

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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	SAMPLE CH20M BUS 250MM	Version
	...	
Order No.	<a href="#">1335150000</a>	Mounting rail bus system, Sample set, OMNIMATE Housing - series
GTIN (EAN)	4050118138382	CH20M, Width: 25.1 mm
Qty.	1 ST	

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The ACT20M-Feed-In PRO can also be used in Ex zone2 / Division2 applications.

### General ordering data

Type	SAMPLE CH20M BUS 250MM	Version
	...	
Order No.	<a href="#">1335140000</a>	Mounting rail bus system, Sample set, OMNIMATE Housing - series
GTIN (EAN)	4050118138375	CH20M, Width: 25.1 mm
Qty.	1 ST	