

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

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Product image****FDT** 

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, $\theta$ , Output : I / U
Order No.	<a href="#">1176030000</a>
Type	ACT20M-UI-AO-S
GTIN (EAN)	4032248970070
Qty.	1 pc(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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## Technical data

### Output

Cut-off frequency (-3 dB)	100 Hz	Load impedance current	≤ 600 Ω, @ max 28mA
Number of outputs		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	1 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 <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	Standards	IEC 61010-1
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[www.weidmueller.com](http://www.weidmueller.com)**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

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## Technical data

## Tender specification sheets

## Long 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

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

## Short specification

**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

## Environmental Product Compliance

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	<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="#">Zuken E3.S</a>
Software	<a href="#">WI-Manager, DTM-Library for online installation</a> <a href="#">Release notes for Weidmueller FDT-DTM Software version</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	

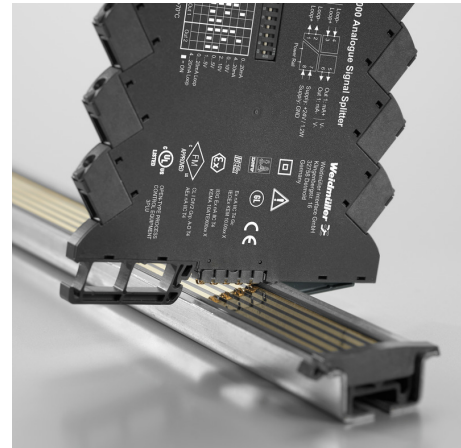
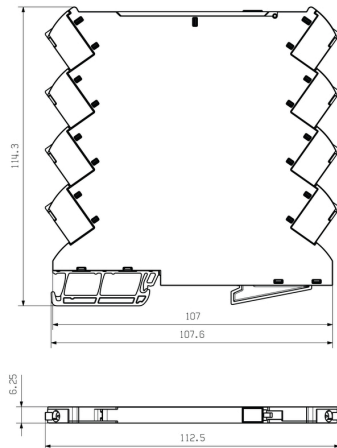
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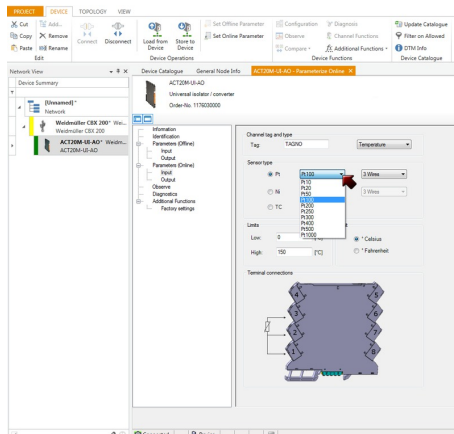
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## Drawings

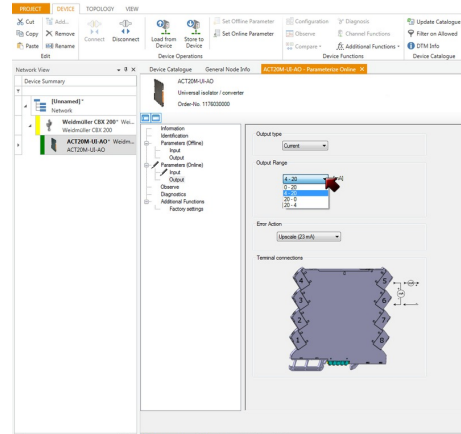
### Dimensional drawing



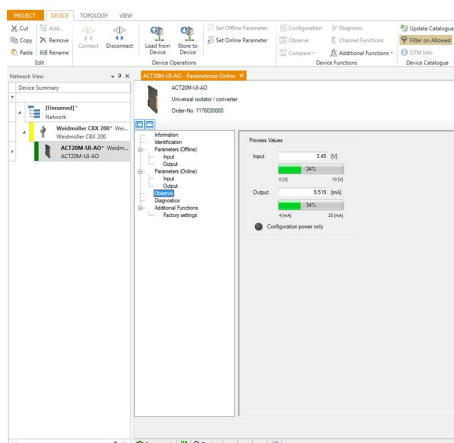
Power supply via the rail bus (housing example)



screenshot, setup temperature input with FDT2 / DTM software



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screenshot, setup output with FDT2 / DTM software

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Configuration interfaces****General ordering data**

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

**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 pc(s).	



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[www.weidmueller.com](http://www.weidmueller.com)**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-PRO-S	Version
Order No.	<a href="#">8965500000</a>	Supply module, Distributes supply voltage to rail bus, Optional
GTIN (EAN)	4032248785117	connection of backup supply
Qty.	1 pc(s).	

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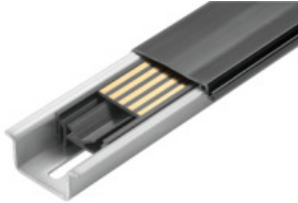
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## Accessories

## 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	SET CH20M BUS 250MM TS ...	Version
Order No.	<a href="#">1335140000</a>	OMNIMATE Housing - series CH20M, Length: 250 mm, Width: 25.1
GTIN (EAN)	4050118138375	mm
Qty.	1 pc(s).	
Type	SET CH20M BUS 250MM TS ...	Version
Order No.	<a href="#">1335150000</a>	OMNIMATE Housing - series CH20M, Length: 250 mm, Width: 25.1
GTIN (EAN)	4050118138382	mm
Qty.	1 pc(s).	

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## Drawings

### Connection diagram

