

**ACT20M-TCI-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	Temperature converter, Thermocouple, With galvanic isolation, Input : Temperature, thermocouple, Output : I / U
Order No.	<a href="#">1375480000</a>
Type	ACT20M-TCI-AO-S
GTIN (EAN)	4050118259650
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	84 g		

**Temperatures**

Storage temperature	-40 °C...85 °C	Humidity	40 °C / 93 % rel. humidity, no condensation
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**Probability of failure**

MTBF	147 a
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**Input**

Number of inputs	1	Sensor	Thermocouples: J, K
Temperature input range	Configurable, J: (-100...+1200 °C), K: (-180...+1372 °C), min. measurement range 50°C (TC)		

**Output**

Load impedance current	≤ 600 Ω	Number of outputs	1
Output current	configurable, 0...20 mA, 4...20 mA	Output voltage, note	configurable, 0(2)...10 V, 0(1)...5 V
Type	active, connected control must be passive	Wire break detection	Yes, Configurable, 3.5 mA / 23 mA / none
load impedance voltage	≥ 10 kΩ		

**General data**

Accuracy	absolute accuracy: <±0.05 % of the measurement range, Basic accuracy: <±0.5°	
Configuration	DIP switch	
Delivery state	Input: 0 °C // Bandwidth: 50 Hz // Output 1: 0...20 mA // Output 2: 0...20 mA // Sensor error detection: enabled // Step response time: < 30 ms // Noise suppression: enabled	
Delivery state	Setting parameters	Input
	Configuration	0 °C
	Setting parameters	Bandwidth
	Configuration	50 Hz
	Setting parameters	Output 1
	Configuration	0...20 mA
	Setting parameters	Output 2
	Configuration	0...20 mA
	Setting parameters	Sensor error detection
	Configuration	enabled
	Setting parameters	Step response time
	Configuration	< 30 ms
	Setting parameters	Noise suppression
	Configuration	enabled
Galvanic isolation	3-way isolator	
Power consumption, max.	0.7 W	
Power consumption, typ.	0.49 W	
Protection degree	IP20	
Rail	TS 35	

Creation date July 5, 2024 2:34:13 AM CEST

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**Technical data**

Step response time	Configurable, $\leq 30$ ms, $<300$ ms
Temperature coefficient	0,1 °C/°C, or, $\leq 0,01\%$ des Messbereichs/°C
Voltage supply	24 V DC $\pm 30\%$ 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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**Classifications**

ETIM 6.0	EC002919	ETIM 7.0	EC002919
ETIM 8.0	EC002919	ETIM 9.0	EC002919
ECLASS 9.0	27-21-01-29	ECLASS 9.1	27-21-01-29
ECLASS 10.0	27-21-01-29	ECLASS 11.0	27-21-01-29
ECLASS 12.0	27-21-01-29	ECLASS 13.0	27-21-01-29

**Environmental Product Compliance**

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

**Important note**

Product information	The ACT20M-TCI-AO-S configurable temperature transducer isolates and converts analogue signals. An analogue thermocouple input signal (Type J, K) is linearly converted into an analogue output signal and is galvanically isolated. The power supply is galvanically isolated from the input and output (3-way isolation) and this is done with direct wiring or over the Weidmüller rail bus.
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## Technical data

## 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="#">IECEXx 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="#">DIP switch configuration tool</a>
User Documentation	<a href="#">instruction sheet</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

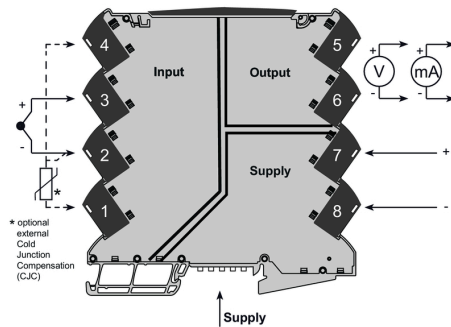
# ACT20M-TCI-AO-S

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## Drawings

### Connection diagram



### Dimensional drawing

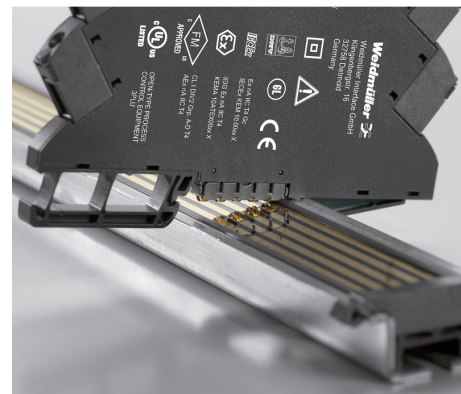


DIP switch configuration

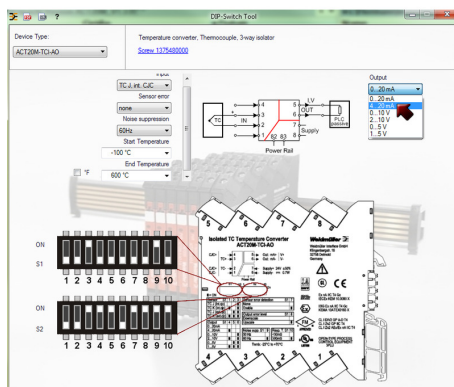
TC sensor type		Temp. range [°C]		Temp. range [°C]		Temp. range [°C]		Temp. range [°C]		Temp. range [°C]	
1	2	3	4	5	6	7	8	9	10	11	12
J (internal CJC)	0	-200	0	100	0	100	0	100	0	100	0
J (external CJC)	1	-100	0	100	0	100	0	100	0	100	0
J (external CJC)	2	-100	0	100	0	100	0	100	0	100	0
K (external CJC)	3	-100	0	100	0	100	0	100	0	100	0
Output	4	0 - 20 mA	0	20	0	20	0	20	0	20	0
4 - 20 mA	5	0	0	20	0	20	0	20	0	20	0
0 - 10 V	6	0	0	20	0	20	0	20	0	20	0
2 - 10 V	7	0	0	20	0	20	0	20	0	20	0
0 - 5 V	8	0	0	20	0	20	0	20	0	20	0
1 - 5 V	9	0	0	20	0	20	0	20	0	20	0
Sensor error detection	10	0	0	20	0	20	0	20	0	20	0
done	11	0	0	20	0	20	0	20	0	20	0
enabled	12	0	0	20	0	20	0	20	0	20	0
Output error level	13	0	0	20	0	20	0	20	0	20	0
downscale	14	0	0	20	0	20	0	20	0	20	0
scale	15	0	0	20	0	20	0	20	0	20	0
Noise suppression	16	0	0	20	0	20	0	20	0	20	0
50 Hz	17	0	0	20	0	20	0	20	0	20	0
60 Hz	18	0	0	20	0	20	0	20	0	20	0
Response time	19	0	0	20	0	20	0	20	0	20	0
< 20 ms	20	0	0	20	0	20	0	20	0	20	0
300 ms	21	0	0	20	0	20	0	20	0	20	0

■ = ON  
 1) optional / optional / optional / optional / optional

example for DIP switch setting  
 (with ACT20M tool software)



Additional power supply option via bus



example for DIP switch setting  
 (with ACT20M tool software)

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

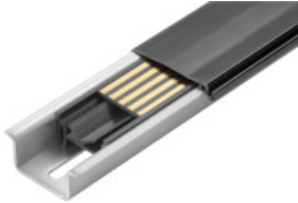
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## Accessories

## 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="#">1335150000</a>	OMNIMATE Housing - series CH20M, Length: 250 mm, Width: 25.1
GTIN (EAN)	4050118138382	mm
Qty.	1 pc(s).	
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).	