

**ACT20M-TCI-AO-S****Weidmüller Interface GmbH & Co. KG**Klingenbergsstraße 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 items

## ACT20M-TCI-AO-S

Weidmüller Interface GmbH & Co. KG  
Klingenbergsstraße 26  
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Germany

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

## Technical data

## Approvals

## Approvals



ROHS

Conform

UL File Number Search

[UL Website](#)

Certificate no. (cULus)

E337701

## Dimensions and weights

Depth	114.3 mm
Height	112.5 mm
Width	6.1 mm
Net weight	84 g

Depth (inches)	4.5 inch
Height (inches)	4.4291 inch
Width (inches)	0.2402 inch

## 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

MTBF	147 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: J, K	Number inputs	1
Temperature input range	Configurable, J: (-100...+1200 °C), K: (-180...+1372 °C), min. measurement range 50°C (TC)		

## Output

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

## General data

Accuracy	absolute accuracy: <±0.05 % of the measurement range, Basic accuracy: <±0.5°
Protection degree	IP20
Supply voltage	24 V DC ±30 % at terminal or via CH20M rail bus

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## Technical data

Step response time	Configurable, $\leq 30$ ms, $<300$ ms		
Mounting rail	TS 35		
Temperature coefficient	$0,1\text{ }^{\circ}\text{C}/\text{ }^{\circ}\text{C}$ , or, $\leq 0,01\%$ des Messbereichs/ $^{\circ}\text{C}$		
Delivery state	Setting parameters	Input	
	Configuration	$0\text{ }^{\circ}\text{C}$	
	Setting parameters	Bandwidth	
	Configuration	50 Hz	
	Setting parameters	Output 1	
	Configuration	$0\text{..}20$ mA	
	Setting parameters	Output 2	
	Configuration	$0\text{..}20$ mA	
	Setting parameters	Sensor error detection	
	Configuration	enabled	
	Setting parameters	Step response time	
	Configuration	$< 30$ ms	
	Setting parameters	Noise suppression	
	Configuration	enabled	
Nominal power consumption	0.5 VA		
Configuration	DIP switch		
Operating altitude	$\leq 2000$ m		
Power consumption, max.	0.7 W		
Power consumption, typ.	0.49 W		
Delivery state	Input: $0\text{ }^{\circ}\text{C}$ // Bandwidth: 50 Hz // Output 1: $0\text{..}20$ mA // Output 2: $0\text{..}20$ mA // Sensor error detection: enabled // Step response time: $< 30$ ms // Noise suppression: enabled		

## 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		

## 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 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****Classifications**

ETIM 8.0	EC002919	ETIM 9.0	EC002919
ETIM 10.0	EC002919	ECLASS 14.0	27-21-01-29
ECLASS 15.0	27-21-01-29		

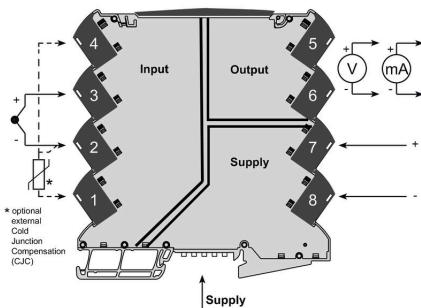
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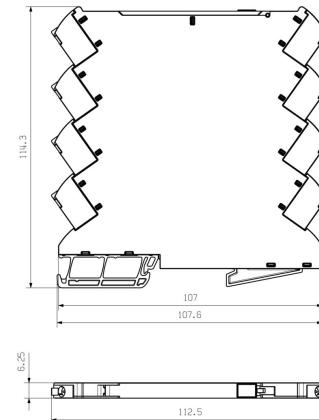
[www.weidmueller.com](http://www.weidmueller.com)

## Drawings

## Connection diagram



## Dimensional drawing



DIP switch configuration

Temperature range [°C]									
	Min.	52	Max.	52	Min.	52	Max.	52	Min.
TC sensor type	1 (internal CJC)	2 (internal CJC)	3 (internal CJC)	4 (internal CJC)	5 (internal CJC)	6 (internal CJC)	7 (internal CJC)	8 (internal CJC)	9 (internal CJC)
J (internal CJC) <sup>1)</sup>	-200	0	105	375	105	375	375	670	670
J (external CJC) <sup>1)</sup>	-150	15	115	460	115	460	460	750	750
K (internal CJC) <sup>1)</sup>	-100	18	120	500	120	500	500	750	750
K (external CJC) <sup>1)</sup>	-100	18	120	500	120	500	500	750	750
Output	-25	28	130	600	130	600	600	850	850
0...20 mA	-10	30	135	650	135	650	650	850	850
4...20 mA	0	40	145	750	145	750	750	950	950
0...10 V	0	50	150	800	150	800	800	950	950
0...5 V	10	50	160	850	160	850	850	950	950
1...5 V	20	50	170	900	170	900	900	950	950
Sensor error detection	7	65	180	1000	180	1000	1000	1150	1150
none	100	65	200	1050	200	1050	1050	1150	1150
enabled	200	65	250	1150	250	1150	1150	1250	1250
Output error level	0	70	190	1000	190	1000	1000	1150	1150
downscale	0	90	200	1050	200	1050	1050	1150	1150
upscale	0	90	300	1250	300	1250	1250	1350	1350
Noise suppression	0	95	325	1372	325	1372	1372	1450	1450
40 Hz	0	95	350	1372	350	1372	1372	1450	1450
80 Hz	0	95	375	1372	375	1372	1372	1450	1450
Response time	10	10	10	10	10	10	10	10	10
< 30 ms	10	10	10	10	10	10	10	10	10
300 ms	10	10	10	10	10	10	10	10	10

■ = ON

1) optional / optional / optional / optional / optional

example for DIP switch setting  
(with ACT20M tool software)



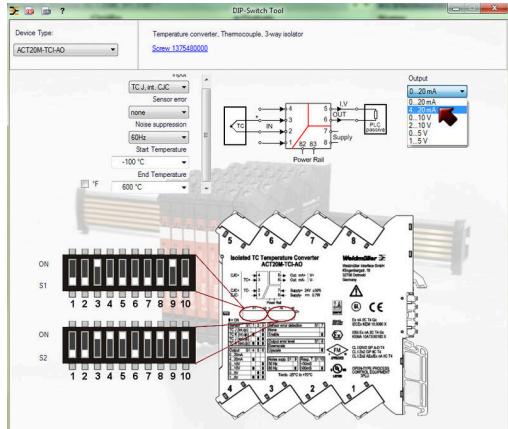
Additional power supply option via bus

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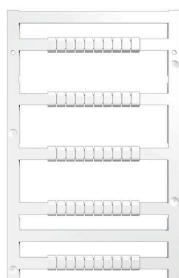
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## Accessories

## 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	

## ACT20 (incl. DIN rail bus &amp; 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 connection of backup supply
GTIN (EAN)	4032248785117	
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	