Data sheet

# ACT20M-TCI-AO-E-S

**Weidmüller Interface GmbH & Co. KG**
Klingenbergstraße 26
D-32758 Detmold
Germany

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, Without galvanic isolation, Input : Temperature, thermocouple, Output : I / U |
| Order No. | 1375500000 |
| Type | ACT20M-TCI-AO-E-S |
| GTIN (EAN) | 4050118259674 |
| Qty. | 1 items |

# Data sheet

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# Technical data

### Approvals

| | |
|---|---|
| Approvals | |
| ROHS | Conform |
| UL File Number Search | UL Website |
| 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 | 70 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

| | |
|---|---|
| MTBF | 189 a |

### Environmental Product Compliance

| | |
|---|---|
| RoHS Compliance Status | Compliant with exemption |
| RoHS Exemption (if applicable/known) | 7a, 7cI |
| 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: <±0.1 % of the measurement range, Basic accuracy: <±1 °C |
| Protection degree | IP20 |
| Supply voltage | 24 V DC ± 30 % |

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## Technical data

| | | |
|---|---|---|
| Step response time | Configurable, ≤ 30 ms, <300 ms | |
| Mounting rail | TS 35 | |
| Temperature coefficient | 0,1 °C / °C, or, ≤0,01% des Messbereichs/°C | |
| Delivery state | Setting parameters | Input |
| | Configuration | 0 °C |
| | Setting parameters | Output 1 |
| | Configuration | 0...20 mA |
| | Setting parameters | Output 2 |
| | Configuration | 0...20 mA |
| | Setting parameters | Noise suppression |
| | Configuration | 100 Hz |
| | Setting parameters | Sensor error detection |
| | Configuration | enabled |
| | Setting parameters | Output error level |
| | Configuration | downscale |
| | Setting parameters | Step response time |
| | Configuration | < 30 ms |
| Nominal power consumption | 0.5 VA | |
| Configuration | DIP switch | |
| Power consumption, max. | 0.5 W | |
| Power consumption, typ. | 0.37 W | |
| Delivery state | Input: 0 °C // Output 1: 0...20 mA // Output 2: 0...20 mA // Noise suppression: 100 Hz // Sensor error detection: enabled // Output error level: downscale // Step response time: < 30 ms | |

### Insulation coordination

| | | | |
|---|---|---|---|
| EMC standards | IEC 61326-1 | Pollution severity | 2 |
| Galvanic isolation | Without isolation | | |

### Data for Ex applications (ATEX)

| | | | |
|---|---|---|---|
| Marking | II 3 G Ex nA IIC T4 Gc | 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 mm² |
| Clamping range, min. | 0.5 mm² | Clamping range, max. | 2.5 mm² |
| 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 |

### 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. The ACT20M-TCI-AO-E-S configurable temperature transducer offers the same functionality but does not have galvanic isolation. |

### Classifications

| | | | |
|---|---|---|---|
| ETIM 6.0 | EC002919 | ETIM 7.0 | EC002919 |
| ETIM 8.0 | EC002919 | ETIM 9.0 | EC002919 |

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## Technical data

| | | | |
|---|---|---|---|
| ETIM 10.0 | 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 | ECLASS 14.0 | 27-21-01-29 |
| ECLASS 15.0 | 27-21-01-29 | | |

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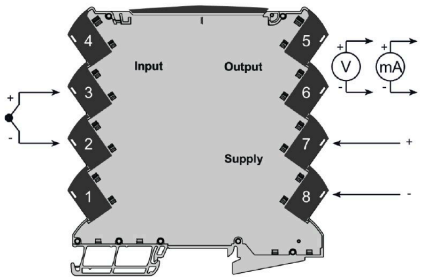
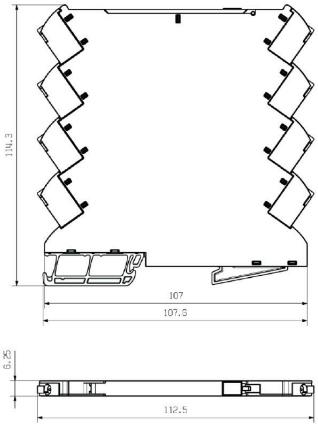
## Drawings

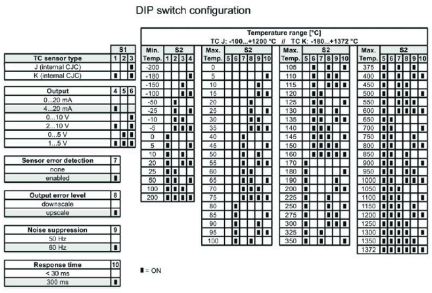
### Connection diagram



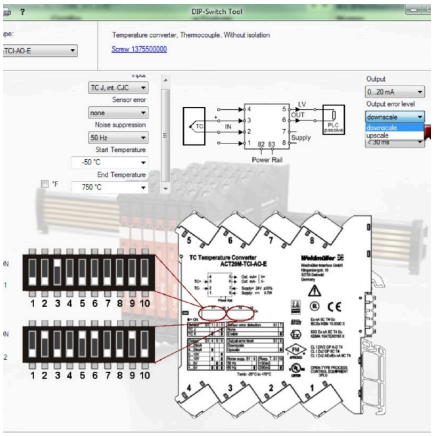

### Dimensional drawing




DIP switch configuration




example for DIP switch setting
(with ACT20M tool software)




example for DIP switch setting
(with ACT20M tool software)

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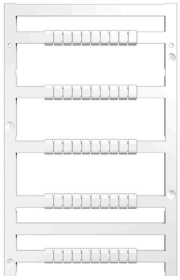
## Accessories

### 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. | 1877680000 | 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 & 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. | 8965500000 | Supply module, Distributes supply voltage to rail bus, Optional |
| GTIN (EAN) | 4032248785117 | connection of backup supply |
| 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 | SET CH20M BUS 250MM TS ... | Version |
| Order No. | 1335150000 | Mounting rail bus system, Sample set, OMNIMATE Housing - series |
| GTIN (EAN) | 4050118138382 | CH20M, Width: 25.1 mm |
| Qty. | 1 ST | |

## Network-compatible current measuring transducers ACT20C

The ACT20C series was especially developed for applications with continuous processes. It enables the continuous monitoring of diagnostic, device and process information (“condition monitoring”).
Several ACT20C components form a station which consists of an ACT20C Ethernet gateway, communicative ACT20C signal converters and an ACT20C bus termination terminal.

### General ordering data

| | | |
|---|---|---|
| Type | SET CH20M BUS 250MM TS ... | Version |
| Order No. | 1335140000 | Mounting rail bus system, Sample set, OMNIMATE Housing - series |
| GTIN (EAN) | 4050118138375 | CH20M, Width: 25.1 mm |
| Qty. | 1 ST | |