

ACT20M ACT20M-TCI-AO-S

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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

| | |
|------------|--|
| Type | ACT20M-TCI-AO-S |
| Order No. | 1375480000 |
| Version | Temperature converter, Thermocouple, Input : Temperature, Output : I / U |
| GTIN (EAN) | 4050118259650 |
| Qty. | 1 pc(s). |

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Technical data
Dimensions and weights

| | | | |
|------------|----------|-----------------|------------|
| Width | 6.1 mm | Width (inches) | 0.24 inch |
| Height | 112.5 mm | Height (inches) | 4.429 inch |
| Depth | 114.3 mm | Depth (inches) | 4.5 inch |
| Net weight | 84 g | | |

Temperatures

| | | | |
|---------------------------|--|---------------------------|----------------|
| Humidity | 40 °C / 93 % rel. humidity, no condensation | Storage temperature, max. | 85 °C |
| Storage temperature, min. | -40 °C | Operating temperature | |
| Ambient temperature | -25 °C...+70 °C | Storage temperature | -40 °C...85 °C |

Probability of failure

| | | | |
|------|-----------|--|--|
| MTBF | 147 Years | | |
|------|-----------|--|--|

Input

| | | | |
|-------------------------|---|-------------------------|--|
| Number of inputs | 1 | Sensor | Thermocouple (type J, K) |
| Input measurement range | Thermocouple type J -100...+1200°C, Thermocouple type K -200...+1370°C | Temperature input range | Configurable, min. measurement range 50°C (TC) |

Output

| | | | |
|----------------------------|---|------------------------|--|
| Number of outputs | 1 | Output voltage, note | configurable, 0(2)...10 V, 0(1)...5 V |
| Output current | configurable, 0...20 mA, 4...20 mA | Wire break detection | Configurable, 3.5 mA / 23 mA / none |
| cold junction compensation | configurable internal or external cold- junction compensation (thermocouple) | load impedance voltage | ≥ 10 kΩ |
| load impedance current | ≤ 600 Ω | | |

General data

| | | | |
|-------------------------|---|-------------------------|----------------|
| Accuracy | absolute accuracy: < ±0.05 % of the measurement range, Basic accuracy: < ±0.5° | Configuration | DIP switch |
| Galvanic isolation | 3-way isolator | Mounting rail | TS 35 |
| Power consumption, max. | 0.7 W | Power consumption, typ. | 0.49 W |
| Step response time | ≤ 30 ms, < 300 ms, Configurable | Supply voltage | 24 V DC ± 30 % |
| Temperature coefficient | 0,1 °C/°C, or, ≤0,01% des Messbereichs°C | | |

Insulation coordination

| | | | |
|--------------------|--------------------------------|------------------------|----------------|
| EMC standards | IEC 61326-1, NE 21 | Galvanic isolation | 3-way isolator |
| Insulation voltage | 2.5 kV _{eff} / 1 min. | Pollution severity | 2 |
| Rated voltage | 300 V _{eff} | Surge voltage category | II |

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Technical data**Data for Ex applications (ATEX)**

| | |
|---------|------------------------|
| Marking | II 3 G Ex nA IIC T4 Gc |
|---------|------------------------|

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 ² |
| Clamping range, min. | 0.5 mm ² | Clamping range, max. | 2.5 mm ² |
| Wire connection cross section AWG, min. | AWG 30 | Wire connection cross section AWG, max. | AWG 14 |

Rated data UL

| | |
|----------------|-------------|
| UL certificate | E337701.pdf |
|----------------|-------------|

Ratings IECEx/ATEX/cUL

| | | | |
|------------------------|-----------------|-------------------------|------------------|
| Certificate No. (ATEX) | KEMA10ATEX0183X | Certificate No. (IECEX) | IECEXKEM10.0090X |
|------------------------|-----------------|-------------------------|------------------|

Classifications

| | | | |
|------------|-------------|------------|-------------|
| ETIM 5.0 | EC002653 | ETIM 6.0 | EC002919 |
| eClass 6.2 | 27-21-01-20 | eClass 7.1 | 27-21-01-20 |
| eClass 8.1 | 27-21-01-20 | eClass 9.0 | 27-21-01-20 |
| eClass 9.1 | 27-21-01-29 | | |

Product information

| | |
|------------------------------|------------------------------------|
| Descriptive text accessories | DIN mounting rail, see accessories |
|------------------------------|------------------------------------|

Approvals

Approvals



| | |
|------|---------|
| ROHS | Conform |
|------|---------|

Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of Conformity |
| Brochure/Catalogue | CAT 4.1 ELECTR 16/17 EN |
| Engineering Data | EPLAN, WSCAD, Zuken E3.S |
| Software | DIP switch configuration tool |
| User Documentation | instruction sheet |

Creation date July 2, 2018 9:49:49 AM CEST

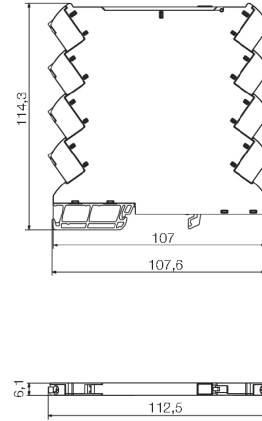
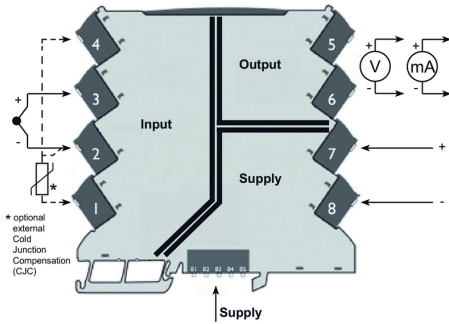
Catalogue status 29.06.2018 / We reserve the right to make technical changes.

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Drawings

Connection diagram

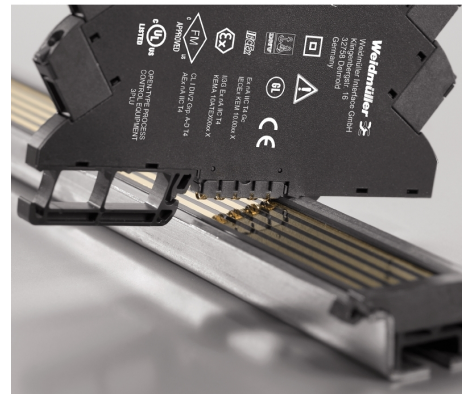


DIP switch configuration

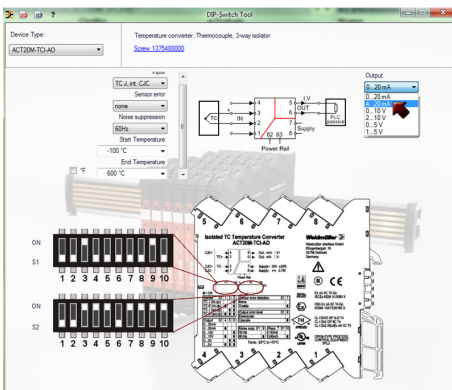
| | | Temperature range [°C] | | | | | | | | | | | |
|------------------------|----|---|-------|------|-----|------|-------|------|-----|------|-------|------|------|
| | | TC J: -100...+1200 °C # TC K: -100...+1372 °C | | | | | | | | | | | |
| TC sensor type | S1 | Min. | Temp. | Max. | S2 | Min. | Temp. | Max. | S2 | Min. | Temp. | Max. | S2 |
| J (internal CJC) | 1 | -200 | 0 | 100 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| K (external CJC) | 2 | -100 | 0 | 5 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| J (external CJC) | 3 | -100 | 0 | 10 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| K (external CJC) | 4 | -100 | 0 | 10 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| Output | 5 | -50 | 20 | 20 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 0...20 mA | 1 | -20 | 20 | 20 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 4...20 mA | 2 | -10 | 30 | 30 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 0...10 V | 3 | -10 | 40 | 40 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 2...10 V | 4 | -10 | 40 | 40 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 0...5 V | 5 | -10 | 40 | 40 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 1...5 V | 6 | -10 | 40 | 40 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| Sensor error detection | 7 | 60 | 60 | 60 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| none | 1 | 100 | 70 | 70 | 200 | 0 | 200 | 200 | 200 | 0 | 1000 | 1000 | 1000 |
| enable | 2 | 200 | 70 | 70 | 200 | 0 | 200 | 200 | 200 | 0 | 1100 | 1100 | 1100 |
| Output error level | 8 | 80 | 80 | 80 | 200 | 0 | 200 | 200 | 200 | 0 | 1150 | 1150 | 1150 |
| downscale | 1 | 80 | 80 | 80 | 200 | 0 | 200 | 200 | 200 | 0 | 1150 | 1150 | 1150 |
| upscale | 2 | 80 | 80 | 80 | 200 | 0 | 200 | 200 | 200 | 0 | 1150 | 1150 | 1150 |
| Noise suppression | 9 | 100 | 100 | 100 | 300 | 0 | 300 | 300 | 300 | 0 | 1300 | 1300 | 1300 |
| 20 Hz | 1 | 100 | 100 | 100 | 300 | 0 | 300 | 300 | 300 | 0 | 1300 | 1300 | 1300 |
| 60 Hz | 2 | 100 | 100 | 100 | 300 | 0 | 300 | 300 | 300 | 0 | 1312 | 1312 | 1312 |
| Response time | 10 | 20 | 20 | 20 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 20 ms | 1 | 20 | 20 | 20 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| 300 ms | 2 | 20 | 20 | 20 | 100 | 0 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |

■ = ON
 1) optional / optional / optionnel / optionale / optional

example for DIP switch setting
(with ACT20M tool software)



example for DIP switch setting
(with ACT20M tool software)



example for DIP switch setting
(with ACT20M tool software)