

ACT20X-HTI-SAO-S

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

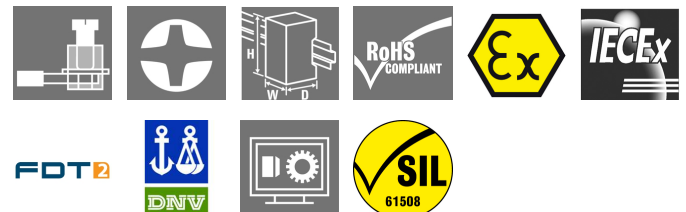
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Product image, Similar to illustration



The ACT20X-HTI-SAO / 2HTI-2SAO temperature transducers record temperatures from PT100 sensors and thermocouples from Ex zone 0. Current loops from 0(4) to 20 mA can also be connected on the input side.

On the output side, there are active and passive current loops available for the safe zone.

Integrated alarm contacts issue an alert in the event of a malfunction; this makes troubleshooting easier and increases system availability.

The rail-mounted current output isolators are optionally available in one- or two-channel versions.

With 11 mm width per channel, the devices need little space in the electrical cabinet.

General ordering data

| | |
|------------|--|
| Version | EX signal isolating converter, Ex-input: I,9, Safe-output: 4-20mA, 1-channel |
| Order No. | 8965470000 |
| Type | ACT20X-HTI-SAO-S |
| GTIN (EAN) | 4032248785087 |
| Qty. | 1 pc(s). |

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Technical data

Dimensions and weights

| | | | |
|------------|----------|-----------------|------------|
| Depth | 113.6 mm | Depth (inches) | 4.472 inch |
| Height | 119.2 mm | Height (inches) | 4.693 inch |
| Width | 22.5 mm | Width (inches) | 0.886 inch |
| Net weight | 178 g | | |

Temperatures

| | | | |
|-----------------------------|----------------------------|-----------------------------|----------------|
| Storage temperature | -20 °C...85 °C | Operating temperature | -20 °C...60 °C |
| Operating temperature, min. | -20 °C | Operating temperature, max. | 60 °C |
| Humidity | 0...95 % (no condensation) | | |

Probability of failure

| | | | |
|-----------|-----------------|----------------------------------|---|
| SIL PAPER | SIL certificate | SIL in compliance with IEC 61508 | 2 |
| MTBF | 111 Years | | |

Input EX

| | | | |
|--------------------------------------|--|---------------------------|---|
| Input current | 0...20 mA, 4...20mA | Input resistance, current | 20 Ω + PTC 50 Ω |
| Line resistance in measuring circuit | | Sensor | 2-/3-/4-wire, RTD: PT10, PT20, PT50, PT100, PT250, PT300, PT400, PT500, PT1000, Ni50, Ni100, Ni120, Ni1000, Thermocouples: B, E, J, K, N, R, S, T ; in compliance with IEC 60584-1 and L, U in compliance with DIN43710 |
| Temperature input range | ≤ 50 Ω Configurable, PT100: -200...+850 °C, PT200: -200...+850 °C, PT1000: -200...+850 °C, NI100: -200...+850 °C, NI100: -60 °C...+250 °C, Ni120: -80 °C...+320 °C, NI1000: -60 °C...+250 °C, B: +100...+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) | Type | intrinsically safe circuit, RTD, TC, DC (mA) |

Output

| | | | |
|------------------------------|---|------------------------|--|
| Influence of load resistance | ≤ 0.01% of span / 100 Ω | Load impedance current | ≤ 600 Ω |
| Output current | 0...23 mA, configurable: 0...20 / 4...20 / 20...4 mA, configurable downscale (3.5 mA) / upscale (23 mA) @ error | Output signal limit | 3.8...20.5 mA / 0...20.5 mA (dependent on range) |
| Type | active (as current source) or passive (as current sink) | | |

Creation date March 2, 2023 4:09:52 PM CET

Catalogue status 18.02.2023 / We reserve the right to make technical changes.

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Technical data**Alarm output**

| | | | |
|---------------------------|---|--------------------|--|
| Alarm function | Line interruption at the input, Short circuit at input, No supply voltage, Device error | Continuous current | www.weidmueller.com ≤ 0.5 A AC / 0.3 A DC (safe zone), ≤ 0.5 A AC / 1 A DC (zone 2) |
| Nominal switching voltage | ≤ 125 V AC / 110 V DC (safe area) ≤ 32 V AC / 32 V DC (zone 2) | Power rating | ≤ 62.5 VA / 32 W (safe area) ≤ 16 VA / 32 W (Zone 2) |
| Type | Status relay, 1 NC (voltage-free) | | |

General specifications

| | | | |
|--------------------|---|--------------------|----------------------------|
| Configuration | With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB | Humidity | 0...95 % (no condensation) |
| Power consumption | ≤ 0.8 W | Protection degree | IP20 |
| Step response time | ≤ 400 ms (with current), ≤ 1 s (with temperature) | Type of connection | Screw connection |
| Voltage supply | 19.2...31.2 V DC | | |

Insulation coordination

| | | | |
|---------------|---------------------|--------------------|-------------------------|
| EMC standards | DIN EN 61326, NE 21 | Insulation voltage | 2.6 kV (input / output) |
| Rated voltage | 300 V | | |

Data for Ex applications (ATEX)

| | | | |
|------------------------|--|-----------------------|---------------------------------------|
| Current I ₀ | 18.4 mA | Installation location | Device installed in safe area, zone 2 |
| Marking | II (1) G [Ex ia Ga] IIC/IIB/IIA, II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I | Power P ₀ | 40 mW |
| Voltage U ₀ | 8.7 V DC | | |

Safety-related basic specifications

| | | | |
|---|--|---|---|
| Description of the "safe state" | analogue Output ≤ 3.6 mA or output ≥ 21 mA | Device type | B |
| Diagnostic test interval | 30 s | T _{proof} | 3 Years |
| Total failure rate for safe detected failures (λ _{Sd}) | 0 FIT | Hardware fault tolerance (HFT) | 0 |
| Safety category | SIL 2 | Safe Failure Fraction (SFF) | 90 % |
| Mean Time To Repair (MTTR) | 24 h | Total failure rate for safe undetected failures (λ _{SU}) | 234 FIT |
| Total failure rate for dangerous detected failures (λ _{DD}) | 367 FIT | Total failure rate for dangerous undetected failures (λ _{DU}) | 61 FIT |
| Probability of outage PFH | 6.1 x 10 ⁻⁸ h ⁻¹ | Demand mode | High |
| Demand rate | 3,000 s | Demand response time | Signal input: < 0.5 s (opto output), Temperature input: < 1.1 s (opto output) |

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Technical data

Safety-related specifications Low demand mode

| | |
|--|--|
| Average Probability of Failure on Demand (PFD _{avg}) | 3.96 x 10 ⁻⁴ (T _{proof} = 1 year), 6.5 x 10 ⁻⁴ (T _{proof} = 2 years), 1.41 x 10 ⁻⁴ (T _{proof} = 5 years) |
|--|--|

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. | 0.25 mm ² | Clamping range, max. | 2.5 mm ² |
| Wire connection cross section AWG, min. | AWG 26 | Wire connection cross section AWG, max. | AWG 12 |

Guarantee

| | |
|---------------|---------|
| Time interval | 3 years |
|---------------|---------|

Classifications

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

Tender specification sheets

| | | |
|--------------------|---------------------|--|
| Long specification | Short specification | <p>Ex- temperature transducer for RTD-/ TC temperature signals and DC current signals 1-channel temperature transducer in 22.5 mm width with external power supply, for capturing and isolating RTD- / TC-sensor and DC current signals (0(4)...20 mA) from Ex zones 0,1,2. The output can be operated in the safe zone either as an active signal (0(4)...20 mA) or as a passive 4...20 mA current loop. Status and error messages are available via a relay contact (NO). The component can be configured using standard FDT/DTM software.</p> |
|--------------------|---------------------|--|

Environmental Product Compliance

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

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Technical data

Approvals

Approvals



| | |
|-------------------------|------------|
| Approvals | DNVGL; |
| ROHS | Conform |
| UL File Number Search | UL Website |
| Certificate no. (cULus) | E337701 |

Downloads

| | |
|---|--|
| Approval/Certificate/Document of Conformity | Certification SIL Certification DNV GL Certification ATEX Certification IECEX Certification UL Declaration of Conformity |
| Engineering Data | CAD data – STEP |
| Engineering Data | WSCAD |
| Software | Library and function block – WI-Manager, DTM-Library for online installation Release notes for Weidmueller FDT-DTM Software version |
| User Documentation | Instruction sheet Safety Manual for SIL application Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english 20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability |
| Catalogues | Catalogues in PDF-format |
| Brochures | |

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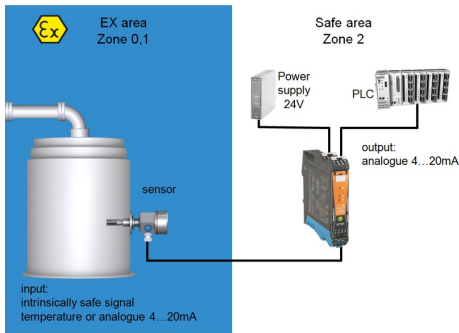
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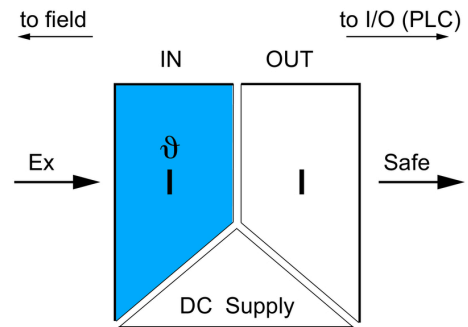
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Drawings

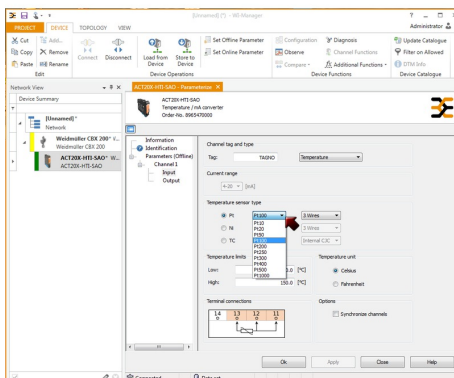
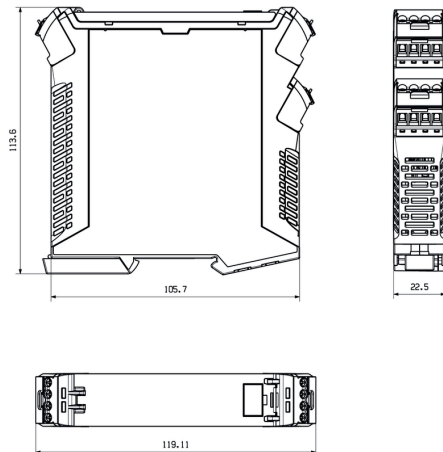
Application



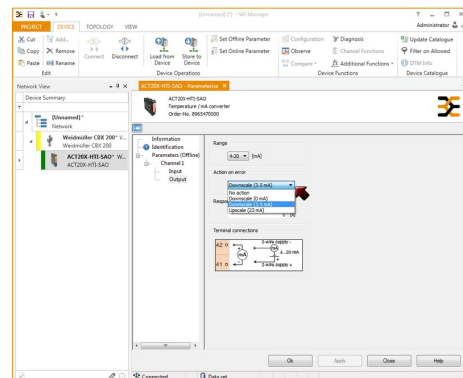
Block diagram



Dimensioned drawing



screenshot of input configuration with FDT2 / DTM software



screenshot of output configuration with FDT2 / DTM software

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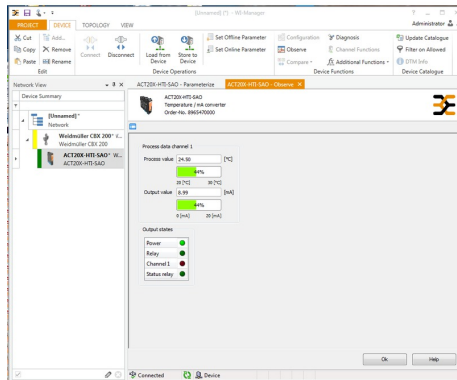
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Drawings



screenshot of "observe" with FDT2 / DTM software

Connection diagram

