

## ACT20X ACT20X-SAI-HAO-S

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 16  
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The ACT20X-SAI-HAO/2SAI-2HAO current output isolators are suitable for controlling field devices in Ex areas, up to Zone 0.

The input/output-side HART protocol transparent signal connection is implemented using 4 to 20 mA current loops.

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

|            |  |
|------------|--|
| Type       | ACT20X-SAI-HAO-S   |
| Order No.  | <a href="#">8965450000</a>   |
| Version    | EX signal isolating converter, Safe-input: 4-20mA, Ex output: 4 - 20 mA, 1-channel |
| GTIN (EAN) | 4032248785063  |
| Qty.       | 1 pc(s).   |

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**Technical data****Dimensions and weights**

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Width      | 22.5 mm  | Width (inches)  | 0.886 inch |
| Height     | 117.2 mm | Height (inches) | 4.614 inch |
| Depth      | 113.6 mm | Depth (inches)  | 4.472 inch |
| Net weight | 189 g    |                 |            |

**Temperatures**

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

**Probability of failure**

|      |           |
|------|-----------|
| MTBF | 135 Years |
|------|-----------|

**Input EX**

|                                     |          |                      |   |
|-------------------------------------|----------|----------------------|---|
| Input current                       | 4...20mA | Input frequency      | 0,5...2,5 kHz @ 3,5...23 mA bi-directional HART® signal |
| Output signal in case of wire break | < 1 mA   | Voltage drop         | < 2 V   |
| Voltage drop not powered            | < 6 V    | Voltage drop powered | < 2 V   |

**Input**

|               |          |                 |   |
|---------------|----------|-----------------|---|
| Input current | 4...20mA | Input frequency | 0,5...2,5 kHz @ 3,5...23 mA bi-directional HART® signal |
| Voltage drop  | < 2 V    |                 |   |

**Output**

|                                |   |                              |                         |
|--------------------------------|---|------------------------------|-------------------------|
| Type                           | intrinsically safe circuit                              | Influence of load resistance | ≤ 0.01% of span / 100 Ω |
| 2-wire supply                  | > 14.5 V @ 20 mA  | Output signal limit          | < 28 mA                 |
| Residual ripple (current loop) | < 7.5 mV <sub>eff</sub>                                 | Output current               | 4...20 mA (max. 23 mA)  |
| Cut-off frequency (-3 dB)      | 0.5...2.5 kHz @ 3.5...23 mA bi-directional HART® signal | load impedance current       | ≤ 725 Ω                 |

**Alarm output**

|                           |  |                    |                              |
|---------------------------|--|--------------------|------------------------------|
| Alarm function            | Signal limit exceeded, Line interruption at the input, No supply voltage, Device error | Type               | Relay, 1 NO (voltage-free)   |
| Nominal switching voltage | ≤ 125 V AC / 110 V DC (safe area)<br>≤ 32 V AC / 32 V DC (Zone 2)                      | Continuous current | ≤ 0.5 A AC / 1 A DC (Zone 2) |
| Power rating              | ≤ 62.5 VA / 32 W (safe area)<br>≤ 16 VA / 32 W (Zone 2)                                | Hysteresis         | 0.1 mA (switching threshold) |
| Switching thresholds      | 0 - 29.9 mA (programmable)   |                    |                              |

Creation date September 4, 2018 8:19:02 AM CEST

Catalogue status 31.08.2018 / We reserve the right to make technical changes.

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**Technical data****General specifications**

|                    |   |                         |                         |
|--------------------|---|-------------------------|-------------------------|
| Configuration      | With FDT/DTM software                         | Supply voltage          | 19.2 – 31.2 V DC        |
| Type of connection | Screw connection,<br>Removable terminal block | Power consumption       | ≤ 1.0 W                 |
| Accuracy           | < 0.1% span                                   | Temperature coefficient | < 0.01% of span/°C (TU) |
| Step response time | ≤ 5 ms  | Protection degree       | IP20                    |
| Humidity           | 0...95 % (no condensation)                    |                         |                         |

**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)**

|               |          |               |   |
|---------------|----------|---------------|---|
| Voltage $U_0$ | 28 V DC  | Current $I_0$ | 93 mA   |
| Power $P_0$   | < 650 mW | Marking       | II (1) G [Ex ia Ga] IIC/IIB/<br>IIA, II (1) D [Ex ia Da] IIIC, I<br>(M1) [Ex ia Ma] I |

**Safety-related basic specifications**

|                           |                                     |                                |       |
|---------------------------|-------------------------------------|--------------------------------|-------|
| Device type               | A                                   | Hardware fault tolerance (HFT) | 0     |
| $T_{proof}$               | 5 Years                             | Safety category                | SIL 2 |
| Probability of outage PFH | $4.8 \times 10^{-8} \text{ h}^{-1}$ |                                |       |

**Safety-related specifications Low demand mode**

|  |  |
|--|--|
| Average Probability of Failure on Demand (PFD <sub>avg</sub> ) | $2.29 \times 10^{-4}$ ( $T_{proof} = 1$ year), $4.37 \times 10^{-4}$ ( $T_{proof} = 2$ years), $1.06 \times 10^{-4}$ ( $T_{proof} = 5$ year) |
|--|--|

**Connection data**

|   |   |   |                     |
|---|---|---|---------------------|
| Type of connection                      | Screw connection,<br>Removable terminal block | 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              |

**Rated data UL**

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

**Ratings IECEx/ATEX/cUL**

|                  |                 |                    |                     |
|------------------|-----------------|--------------------|---------------------|
| ATEX certificate | 11ATEX0164X.pdf | IEC Ex certificate | IECEx certification |
|------------------|-----------------|--------------------|---------------------|

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**Technical data**
**Classifications**

|            |             |            |             |
|------------|-------------|------------|-------------|
| ETIM 3.0   | EC002479    | ETIM 4.0   | EC002479    |
| ETIM 5.0   | EC002479    | ETIM 6.0   | EC002475    |
| UNSPSC     | 30-21-18-01 | eClass 5.1 | 27-21-01-07 |
| eClass 6.2 | 27-21-01-07 | eClass 7.1 | 27-21-01-07 |
| eClass 8.1 | 27-21-01-07 | eClass 9.0 | 27-21-01-07 |
| eClass 9.1 | 27-21-01-23 |            |             |

**Product information**

|                                |  |
|--------------------------------|--|
| Product information            | Weidmüller provides an extended guarantee period of 36 months for this device. |
| Descriptive text ordering data | CBX200 USB configuration adapter - 8978580000                                  |

**Approvals**

Approvals



|           |         |
|-----------|---------|
| Approvals | DNVGL;  |
| ROHS      | Conform |

**Downloads**

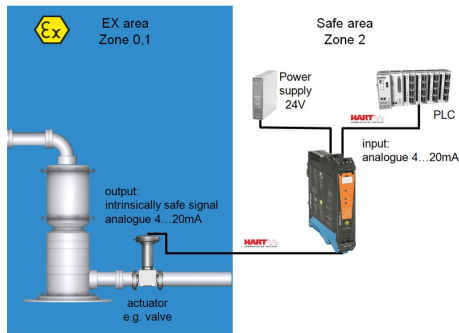
|   |  |
|---|--|
| Approval/Certificate/Document of Conformity | <a href="#">SIL certificate</a><br><a href="#">Certification DNV GL</a><br><a href="#">Declaration of Conformity</a> |
| Brochure/Catalogue                          | <a href="#">CAT 4.1 ELECTR 16/17 EN</a>  |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>   |
| Engineering Data                            | <a href="#">STEP</a>   |
| Software                                    | <a href="#">WI-Manager, DTM-Library for online installation</a>  |
| User Documentation                          | <a href="#">Instruction sheet</a><br><a href="#">Manual</a><br><a href="#">MAN SAFETY ACT20X-(2)SAI-(2)HAO</a>       |

**Data sheet**

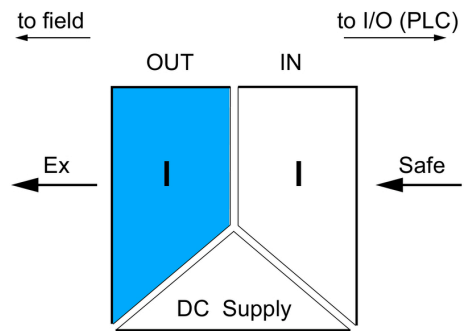
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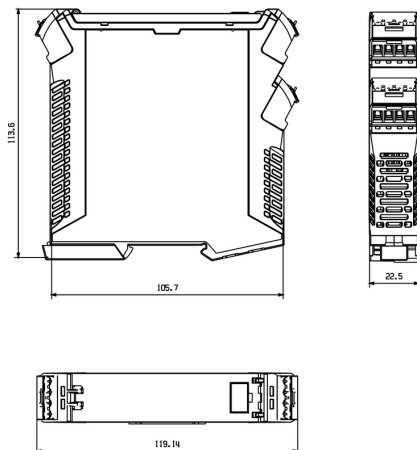
**Drawings**



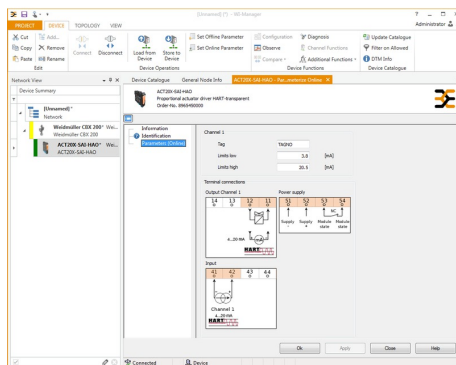
application schematic



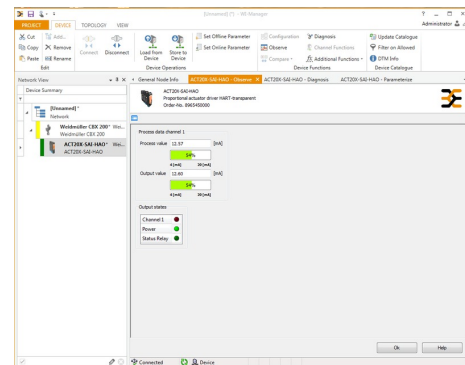
**Dimensioned drawing**



Screenshot configuration with FDT /DTM



screenshot of configuration with FDT2 / DTM software

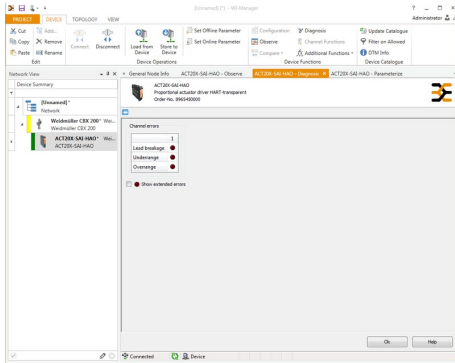


screenshot of "observe" with FDT2 / DTM software

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**Drawings**



screenshot of "diagnosis" with FDT2 / DTM software

