

**ACT20X**  
**ACT20X-HDI-SDO-S**

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
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**Product image, Similar to illustration**

The ACT20X HDI SDO S / 2HDI-2SDO-S isolating switch amplifiers are specially designed for recording NAMUR sensor signals and digital switching signals which originate from Ex zone 0.

Negative-switching (NPN) transistor outputs are used to transmit the signals to applications in 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 disconnect-switch amplifiers 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-HDI-SDO-S                                                                                  |
| Order No.  | <a href="#">8965360000</a>                                                                        |
| Version    | EX signal isolating converter, Ex-input: NAMUR sensor/switch, Safe-output: Optocoupler, 1-channel |
| GTIN (EAN) | 4032248784875                                                                                     |
| Qty.       | 1 pc(s).                                                                                          |

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### Technical data

#### Dimensions and weights

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Width      | 22.5 mm  | Width (inches)  | 0.886 inch |
| Height     | 119.2 mm | Height (inches) | 4.693 inch |
| Depth      | 113.6 mm | Depth (inches)  | 4.472 inch |
| Net weight | 170 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 | 215 Years |
|------|-----------|

#### Environmental Product Compliance

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

#### Rated data UL

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

#### Input EX

|                                     |                                                 |                    |                                                                       |
|-------------------------------------|-------------------------------------------------|--------------------|-----------------------------------------------------------------------|
| Input frequency                     | 0...5 kHz                                       | Input resistance   | 1 kΩ                                                                  |
| Output signal in case of wire break | < 0.1 mA, > 6.5 mA (in case of wire break)      | Pulse duration     | > 0.1 ms                                                              |
| Resistance                          | Series resistor 750Ω,<br>Parallel resistor 15kΩ | Sensor             | NAMUR sensor, according to EN60947-5-6, switch with or without RS, RP |
| Sensor supply                       | 8 V DC / 8 mA                                   | Trigger level high | > 2.1 mA                                                              |
| Trigger level low                   | < 1.2 mA                                        | Type               | intrinsically safe circuit                                            |

#### Alarm output

|                           |                                                                                         |                    |                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------|
| Alarm function            | Line interruption at the input, Short circuit at input, No supply voltage, Device error | Type               | Relay, 1 NC (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 / 0.3 A DC (safe zone), ≤ 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)                                 |                    |                                                                 |

#### General specifications

|                    |                            |                   |                  |
|--------------------|----------------------------|-------------------|------------------|
| Configuration      | With FDT/DTM software      | Voltage supply    | 19.2...31.2 V DC |
| Type of connection | Screw connection           | NAMUR supply      | 8 V DC / 8 mA    |
| Power consumption  | ≤ 1.1 W                    | Protection degree | IP20             |
| Humidity           | 0...95 % (no condensation) |                   |                  |

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#### Insulation coordination

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

#### Digital output

|                    |                |                           |                                                  |
|--------------------|----------------|---------------------------|--------------------------------------------------|
| Type               | NPN-Transistor | Nominal switching voltage | 30 V DC                                          |
| Continuous current | 80 mA          | Function                  | Output = input, direct or inverse (configurable) |

#### Data for Ex applications (ATEX)

|                       |                                       |               |                                                                                       |
|-----------------------|---------------------------------------|---------------|---------------------------------------------------------------------------------------|
| Voltage $U_0$         | 10.6 V DC                             | Current $I_0$ | 12 mA DC                                                                              |
| Power $P_0$           | 32 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 |
| Installation location | Device installed in safe area, zone 2 |               |                                                                                       |

#### Safety-related basic specifications

|                                                                         |                                      |                                                                       |         |
|-------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------|---------|
| Demand mode                                                             | High                                 | Demand rate                                                           | 1,000 s |
| Description of the "safe state"                                         | High impedance                       | Device type                                                           | B       |
| Diagnostic test interval                                                | 10 s                                 | Hardware fault tolerance (HFT)                                        | 0       |
| Mean Time To Repair (MTTR)                                              | 8 h                                  | Safe Failure Fraction (SFF)                                           | 92 %    |
| $T_{proof}$                                                             | 5 Years                              | Total failure rate for dangerous detected failures ( $\lambda_{DD}$ ) | 135 FIT |
| Total failure rate for dangerous undetected failures ( $\lambda_{DU}$ ) | 36 FIT                               | Total failure rate for safe detected failures ( $\lambda_{SD}$ )      | 0 FIT   |
| Total failure rate for safe undetected failures ( $\lambda_{SU}$ )      | 275 FIT                              | Safety category                                                       | SIL 2   |
| Probability of outage PFH                                               | $3.62 \times 10^{-8} \text{ h}^{-1}$ |                                                                       |         |

#### Safety-related specifications Low demand mode

|                                                                |                                                                                                                                               |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Average Probability of Failure on Demand (PFD <sub>avg</sub> ) | $1.58 \times 10^{-4}$ ( $T_{proof} = 1$ year), $3.17 \times 10^{-4}$ ( $T_{proof} = 2$ years), $7.92 \times 10^{-4}$ ( $T_{proof} = 5$ 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 <sup>2</sup> |
| Clamping range, min.                    | 0.25 mm <sup>2</sup> | Clamping range, max.                    | 2.5 mm <sup>2</sup> |
| Wire connection cross section AWG, min. | AWG 26               | Wire connection cross section AWG, max. | AWG 12              |

#### Classifications

|             |             |            |             |
|-------------|-------------|------------|-------------|
| ETIM 6.0    | EC002653    | ETIM 7.0   | EC002653    |
| eClass 9.0  | 27-21-01-20 | eClass 9.1 | 27-21-01-20 |
| eClass 10.0 | 27-21-01-20 | UNSPSC     | 30-21-18-01 |

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### Product information

Product information Weidmüller provides an extended guarantee period of 36 months for this device.

### Approvals

Approvals



Approvals DNVGL;  
ROHS Conform

### Downloads

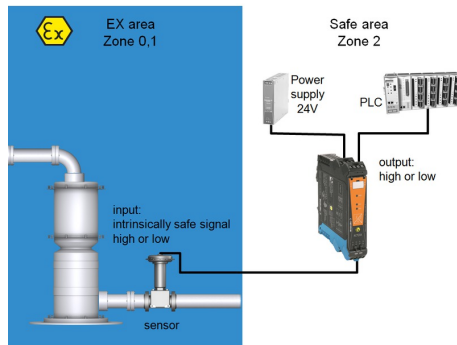
|                                             |                                                                                                                                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Certification SIL</a><br><a href="#">Certification DNV GL</a><br><a href="#">Certification ATEX</a><br><a href="#">Certification IECEx</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 V.1.2.0</a>                                                                                                                             |
| User Documentation                          | <a href="#">Instruction sheet</a><br><a href="#">MAN SAFETY ACT20X-(2)HDI(2)SDO-S</a><br><a href="#">Handbuch ACT20X- Serie, deutsch</a><br><a href="#">Manual ACT20X- series, english</a>          |

## ACT20X ACT20X-HDI-SDO-S

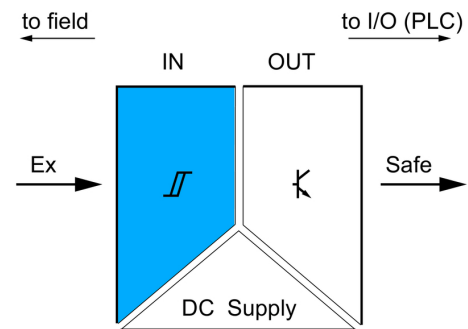
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## Drawings

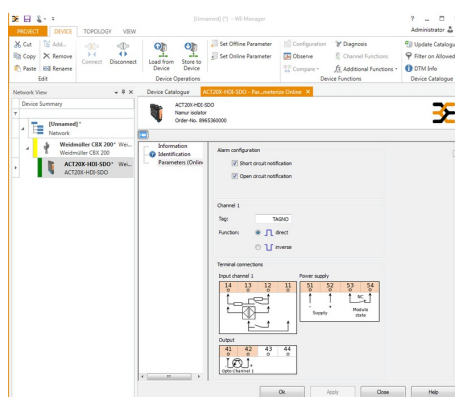
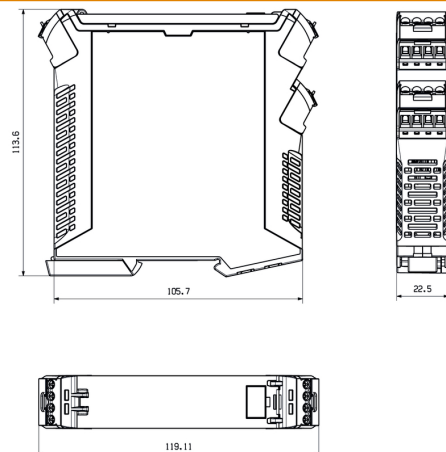
### Application



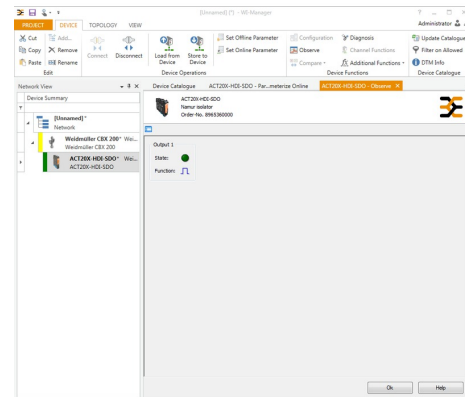
### Block diagram



### Dimensioned drawing



screenshot of configuration with FDT2 / DTM software

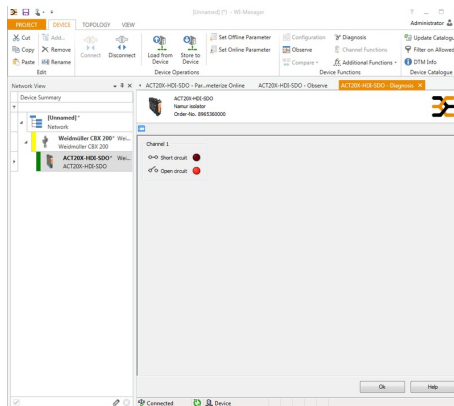


screenshot of "observe" with FDT2 / DTM software

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## Drawings



screenshot of "diagnosis" with FDT2 / DTM software

## Connection diagram

