

**ACT20X-SDI-HDO-L-P****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image, Similar to illustration**

The ACT20X-SDI-HDO/2SDI-2HDO valve control modules are controlled from the safe zone on the input side by the switching signals (NPN, PNP) and provide digital outputs to switch actuators (solenoids, alarms) in Ex zone 0. Depending on the module, the output current is limited for the ignition protection groups IIC/IIB to 35 mA or 60 mA (only one channel). 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**

|            |                                                                                                                  |
|------------|------------------------------------------------------------------------------------------------------------------|
| Version    | EX signal isolating converter, Safe-input: relay, Ex-output: Opto module, 1-channel, Output current : max. 35 mA |
| Order No.  | <a href="#">2456110000</a>                                                                                       |
| Type       | ACT20X-SDI-HDO-L-P                                                                                               |
| GTIN (EAN) | 4050118471502                                                                                                    |
| Qty.       | 1 pc(s).                                                                                                         |

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## Technical data

## Dimensions and weights

|                |            |                 |            |
|----------------|------------|-----------------|------------|
| Depth          | 113.6 mm   | Depth (inches)  | 4.472 inch |
| Height         | 127.1 mm   | Height (inches) | 5.004 inch |
| Net weight     | 170 g      | Width           | 22.5 mm    |
| Width (inches) | 0.886 inch |                 |            |

## Temperatures

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

## Probability of failure

|           |                 |                                  |   |
|-----------|-----------------|----------------------------------|---|
| SIL PAPER | SIL certificate | SIL in compliance with IEC 61508 | 2 |
| MTBF      | 175 Years       |                                  |   |

## Environmental Product Compliance

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

## Input

|                           |        |               |                                                                                                                           |
|---------------------------|--------|---------------|---------------------------------------------------------------------------------------------------------------------------|
| Input resistance, voltage | 3.5 kΩ | Input voltage | ≤ 28 V DC, Trigger level low: ≤ 2.0 V DC (NPN), ≤ 8.0 V DC (PNP), Trigger level high: ≥ 4.0 V DC (NPN), ≥ 10.0 V DC (PNP) |
| Number of inputs          | 1      | Type          | NPN, PNP transistor, switching signal [input safe-side valve component]                                                   |

## Output

|                                |                        |               |                                                                                       |
|--------------------------------|------------------------|---------------|---------------------------------------------------------------------------------------|
| Output current                 | max. 35 mA             | Output values | depending on terminal assignment                                                      |
| Residual ripple (current loop) | < 40 mV <sub>eff</sub> | Type          | intrinsically safe circuit, digital, output = input, direct or inverse (configurable) |

## Alarm output

|                           |                                                                   |                    |                                                                 |
|---------------------------|-------------------------------------------------------------------|--------------------|-----------------------------------------------------------------|
| Alarm function            | No supply voltage, Device error                                   | Continuous current | ≤ 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)<br>≤ 32 V AC / 32 V DC (zone 2) | Power rating       | ≤ 62.5 VA / 32 W (safe area)<br>≤ 16 VA / 32 W (Zone 2)         |
| Type                      | Status relay, 1 NC (voltage-free)                                 |                    |                                                                 |

## General specifications

|                    |                       |                    |                            |
|--------------------|-----------------------|--------------------|----------------------------|
| Configuration      | With FDT/DTM software | Humidity           | 0...95 % (no condensation) |
| Power consumption  | ≤ 1.9 W               | Protection degree  | IP20                       |
| Step response time | 10 ms                 | Type of connection | PUSH IN                    |
| Voltage supply     | 19.2...31.2 V DC      |                    |                            |

Creation date April 15, 2021 9:35:08 PM CEST

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**Technical data****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 $I_0$ | $\leq 110$ 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 $P_0$           | $\leq 0.77$ W                         |
| Voltage $U_0$ | 28 V DC                                                                        |                       |                                       |

**Safety-related basic specifications**

|                                                                       |                                     |                                                                         |                             |
|-----------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------|-----------------------------|
| Demand mode                                                           | High                                | Demand rate                                                             | 1,000 s                     |
| Demand response time                                                  | < 10 ms (relay output)              | Description of the "safe state"                                         | de-energized (relay output) |
| Device type                                                           | B                                   | Diagnostic test interval                                                | 10 s                        |
| Hardware fault tolerance (HFT)                                        | 0                                   | Mean Time To Repair (MTTR)                                              | 24 h                        |
| Probability of outage PFH                                             | $4.3 \times 10^{-8} \text{ h}^{-1}$ | Safe Failure Fraction (SFF)                                             | 91 %                        |
| Safety category                                                       | SIL 2                               | $T_{\text{proof}}$                                                      | 5 Years                     |
| Total failure rate for dangerous detected failures ( $\lambda_{DD}$ ) | 61 FIT                              | Total failure rate for dangerous undetected failures ( $\lambda_{DU}$ ) | 43 FIT                      |
| Total failure rate for safe detected failures ( $\lambda_{SD}$ )      | 0 FIT                               | Total failure rate for safe undetected failures ( $\lambda_{SU}$ )      | 477 FIT                     |

**Safety-related specifications Low demand mode**

|                                                                 |                                                                                                                                                                    |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Average Probability of Failure on Demand ( $PFD_{\text{avg}}$ ) | $2.73 \times 10^{-4}$ ( $T_{\text{proof}} = 1$ year), $4.52 \times 10^{-4}$ ( $T_{\text{proof}} = 2$ years), $9.89 \times 10^{-4}$ ( $T_{\text{proof}} = 5$ years) |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Connection data**

|                                                                                         |                     |                                                                                         |                     |
|-----------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------|---------------------|
| Type of connection                                                                      | PUSH IN             | Wire connection cross section AWG, min.                                                 | AWG 26              |
| Wire connection cross section AWG, max.                                                 | AWG 14              | Wire cross-section, solid, min.                                                         | 0.2 mm <sup>2</sup> |
| Wire cross-section, solid, max.                                                         | 2.5 mm <sup>2</sup> | Wire connection cross section, finely stranded, min.                                    | 0.2 mm <sup>2</sup> |
| Wire connection cross section, finely stranded, max.                                    | 2.5 mm <sup>2</sup> | Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min. | 0.2 mm <sup>2</sup> |
| Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max. | 2.5 mm <sup>2</sup> |                                                                                         |                     |

**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 | ECLASS 11.0 | 27-21-01-20 |

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**Technical data****Approvals**

Approvals



|                       |         |
|-----------------------|---------|
| ROHS                  | Conform |
| UL File Number Search | E337701 |

**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="#">Certification UL</a><br><a href="#">Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">STEP</a>                                                                                                                                                                                                                    |
| Software                                    | <a href="#">WI-Manager, DTM-Library for online installation V.1.2.2</a>                                                                                                                                                                 |
| User Documentation                          | <a href="#">Safety Manual for SIL application</a><br><a href="#">Instruction sheet</a><br><a href="#">Handbuch ACT20X- Serie, deutsch</a><br><a href="#">Manual ACT20X- series, english</a>                                             |
| Brochure/Catalogue                          | <a href="#">Catalogues in PDF-format</a>                                                                                                                                                                                                |

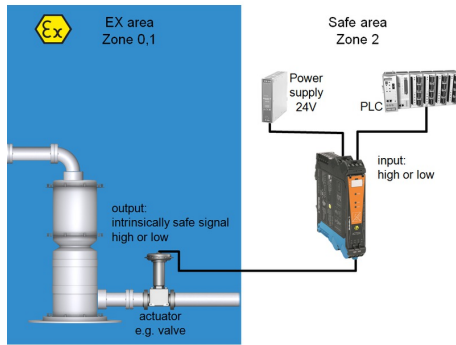
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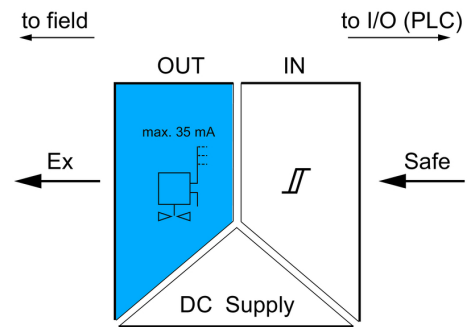
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## Drawings

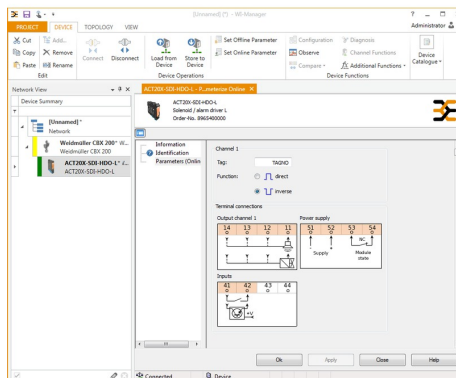
### Application



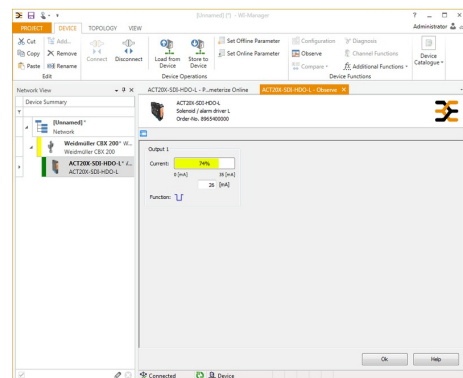
### Block diagram



### Dimensioned drawing



screenshot of setup configuration  
with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

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## Drawings

### Connection diagram

