

ACT20X-HDI-SDO-RNC-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image, Similar to illustration

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

Switching relays, optionally available with NO or NC contacts, transfer output signals to 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

| | |
|------------|---|
| Version | EX signal isolating converter, Ex-input: NAMUR sensor/switch, Safe-output: relay, NC contact, 1-channel |
| Order No. | 2456060000 |
| Type | ACT20X-HDI-SDO-RNC-P |
| GTIN (EAN) | 4050118471250 |
| Qty. | 1 pc(s). |

ACT20X-HDI-SDO-RNC-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Technical data**Dimensions and weights**

| | | | |
|------------|----------|-----------------|------------|
| Depth | 113.6 mm | Depth (inches) | 4.472 inch |
| Height | 127.1 mm | Height (inches) | 5.004 inch |
| Width | 22.5 mm | Width (inches) | 0.886 inch |
| Net weight | 0.186 g | | |

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 | 207 a | | |

Assembling

| | | | |
|-------------------|----------------------------|------|-------|
| Mounting position | horizontal or vertical | Rail | TS 35 |
| Type of mounting | Snap mounting support rail | | |

Input EX

| | | | |
|-------------------------------------|---|--------------------|---|
| Input frequency | <20 Hz | 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 | RP = 750 Ω / RS = 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 |

Digital output

| | | | |
|--------------------------|--|---------------------------|--|
| Continuous current | ≤ 2 A AC/DC (safe area, Zone 2 area) | Function | Output = input, direct or inverse (configurable) |
| Max. switching frequency | 20 Hz | Nominal switching voltage | ≤ 250 V AC / 30 V DC (safe area) ≤ 32 V AC / 32 V DC (zone 2) |
| Switching capacity | 500 VA / 60 W (safe area), 16 VA / 60 W (zone 2) | Type | Relay, 1 NC contact, Switching frequency 20 Hz |

Alarm output

| | | | |
|---------------------------|---|--------------------|---|
| Alarm function | Line interruption at the input, Short circuit at input, 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) ≤ 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) | | |

ACT20X-HDI-SDO-RNC-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Technical data**General specifications**

| | | | |
|-------------------|--|--------------------|----------------------------|
| Configuration | With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB | Humidity | 0...95 % (no condensation) |
| NAMUR supply | 8 V DC / 8 mA | Power consumption | ≤ 1.3 W |
| Protection degree | IP20 | Type of connection | PUSH IN |
| Voltage supply | 19.2...31.2 V DC | | |

Insulation coordination

| | | | |
|---------------|------------|--------------------|-------------------------|
| EMC standards | EN 61326-1 | Insulation voltage | 2.6 kV (input / output) |
| Rated voltage | 300 V | Standards | EN 61010-1 |

Data for Ex applications (ATEX)

| | | | |
|---------------|---|-----------------------|--|
| Current I_0 | 12 mA DC | 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 | 32 mW |
| Voltage U_0 | 10.6 V DC | | |

Safety-related basic specifications

| | | | |
|---|-----------------------------|---|--------------------------------------|
| Description of the "safe state" | de-energized (relay output) | Device type | B |
| Diagnostic test interval | 10 s | T_{proof} | 4 a |
| Total failure rate for safe detected failures (λ_{SD}) | 0 FIT | Hardware fault tolerance (HFT) | 0 |
| Safety category | SIL 2 | Relay lifetime | 100000 times |
| Safe Failure Fraction (SFF) | 90 % | Mean Time To Repair (MTTR) | 8 h |
| Total failure rate for safe undetected failures (λ_{SU}) | 289 FIT | Total failure rate for dangerous detected failures (λ_{DD}) | 130 FIT |
| Total failure rate for dangerous undetected failures (λ_{DU}) | 46 FIT | Probability of outage PFH | $4.66 \times 10^{-8} \text{ h}^{-1}$ |
| Demand mode | High | Demand rate | 1,000 s |
| Demand response time | <10 ms (relay output) | | |

Safety-related specifications Low demand mode

| | | |
|-----------------------------|--|--|
| Safe Failure Fraction (SFF) | Average Probability of Failure on Demand (PFD_{avg}) | 2.04×10^{-4} ($T_{proof} = 1$ year), 4.08×10^{-4} ($T_{proof} =$ 2 years), 1.02×10^{-4} (T_{proof} = 5 years) |
| 90 % | | |

ACT20X-HDI-SDO-RNC-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Technical data**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 ² |
| Wire cross-section, solid, max. | 2.5 mm ² | Wire connection cross section, finely stranded, min. | 0.2 mm ² |
| Wire connection cross section, finely stranded, max. | 2.5 mm ² | Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min. | 0.2 mm ² |
| Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max. | 2.5 mm ² | | |

Guarantee

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

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002653 | ETIM 7.0 | EC002653 |
| ETIM 8.0 | EC002653 | ETIM 9.0 | 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 |
| ECLASS 12.0 | 27-21-01-20 | ECLASS 13.0 | 27-21-01-20 |

Environmental Product Compliance

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

Approvals

Approvals



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

ACT20X-HDI-SDO-RNC-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com**Technical data****Downloads**

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

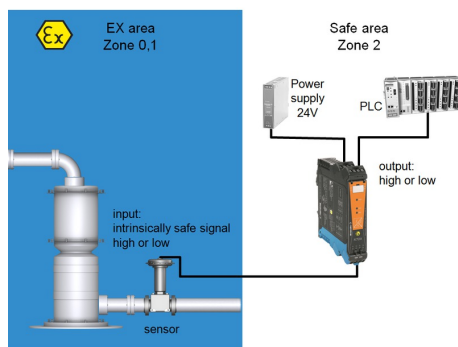
ACT20X-HDI-SDO-RNC-P

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

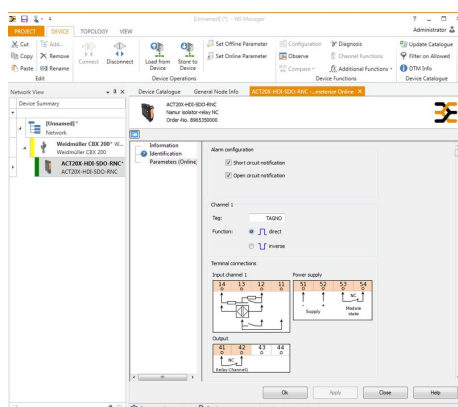
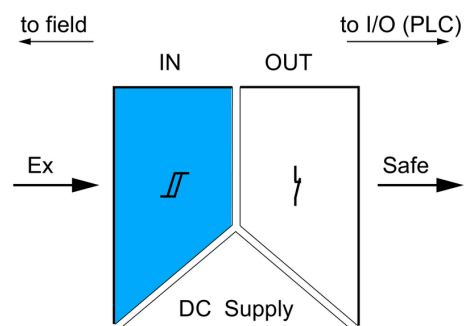
www.weidmueller.com

Drawings

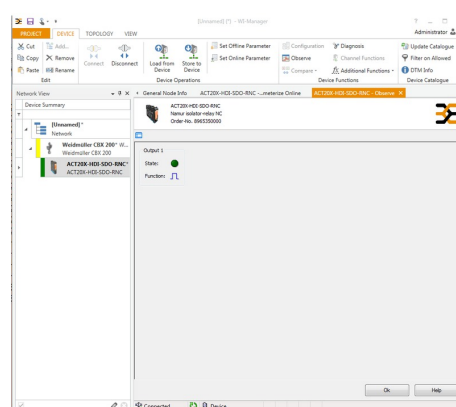
Application



Block diagram



screenshot of configuration with FDT2 / DTM software



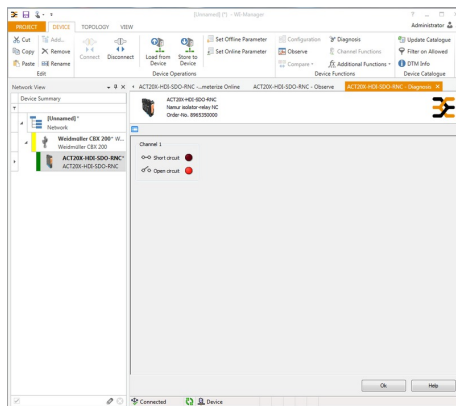
screenshot of "observe" with FDT2 / DTM software

ACT20X-HDI-SDO-RNC-P

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com

Drawings



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

