

## ACT20X-2HDI-2SDO-RNO-S

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

www.weidmueller.com

### Product image



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, NO contact, 2-channel
Order No.	<a href="#">8965370000</a>
Type	ACT20X-2HDI-2SDO-RNO-S
GTIN (EAN)	4032248784882
Qty.	1 pc(s).

Creation date March 30, 2021 12:03:34 AM CEST

Catalogue status 12.03.2021 / We reserve the right to make technical changes.

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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
Net weight	190 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	207 Years		

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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### 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 NO, 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)		

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## Technical data

### General specifications

Configuration	With FDT/DTM software	Humidity	0...95 % (no condensation)
NAMUR supply	8 V DC / 8 mA	Power consumption	≤1.9 W
Protection degree	IP20	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 $I_0$	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

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)	8 h
Probability of outage PFH	$4.66 \times 10^{-8} \text{ h}^{-1}$	Relay lifetime	100000 times
Safe Failure Fraction (SFF)	90 %	Safety category	SIL 2
$T_{\text{proof}}$	4 Years	Total failure rate for dangerous detected failures ( $\lambda_{\text{DD}}$ )	130 FIT
Total failure rate for dangerous undetected failures ( $\lambda_{\text{DU}}$ )	46 FIT	Total failure rate for safe detected failures ( $\lambda_{\text{SD}}$ )	0 FIT
Total failure rate for safe undetected failures ( $\lambda_{\text{SU}}$ )	289 FIT		

### Safety-related specifications Low demand mode

Average Probability of Failure on Demand ( $\text{PFD}_{\text{avg}}$ )	$2.04 \times 10^{-4}$ ( $T_{\text{proof}} = 1$ year), $4.08 \times 10^{-4}$ ( $T_{\text{proof}} = 2$ years), $1.02 \times 10^{-4}$ ( $T_{\text{proof}} = 5$ years)	Safe Failure Fraction (SFF)	90 %
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### 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	ECLASS 11.0	27-21-01-20

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## Technical data

### Tender specification sheets

Long specification

Short specification

**Ex isolating switch amplifiers for Namur sensors, 2 channels**  
**2-channel isolating switch amplifiers in 22.5 mm width with an external power supply, to transmit and isolate Namur sensor signals from Ex zones 0, 1, 2 into the safe zone.**

**On the output side there is a potential-free relay contact per channel with closing function and a common alarm contact ("a" contact) for status/error messages.**

The component can be configured using standard FDT/DTM software.

**Add-on housing for TS35 DIN rail installation**

**Dimensions: L/W/H**  
**119.2/ 22.5/ 113.6**  
**screw connection/ nominal cross-section**  
**2.5 mm<sup>2</sup>**

**Protection degree:**  
**IP20**

**Input /channel NAMUR sensor according to EN 60947**

**8**

**VDC / 8 mA sensor power supply**

**0...5**

**kHz input frequency**  
**wire-**

**break detection**  
**Output Ex/ channel**  
**Relay 1 NO contact**

**250**

**VAC / 30 VDC @ 2A safe zone**

**32**

**VAC @ 0.5 A/ 32 VDC @ 1 A zone 2**

Alarm output relay 1 NO contact

**250**

VAC / 30 VDC @ 2A safe zone

**32**

VAC @ 0.5 A/ 32 VDC @ 1 A zone 2

**Auxiliary power**

**19...31.2 VDC**

**Power loss approx. 3 W**

**Ambient**

**temperature range -20**

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**See also**  
**isolation EN**  
**61010 4-way isolation**

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### Important note

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

### Approvals

Approvals



Approvals	DNVGL;
ROHS	Conform
UL File Number Search	E337701

### Downloads

Approval/Certificate/Document of Conformity	<a href="#">Certification SIL</a> <a href="#">Certification DNV GL</a> <a href="#">Certification ATEX</a> <a href="#">Certification IECEX</a> <a href="#">Declaration of Conformity</a>
Engineering Data	<a href="#">STEP</a>
Engineering Data	<a href="#">EPLAN, WSCAD</a>
Software	<a href="#">WI-Manager, DTM-Library for online installation V.1.2.2</a>
User Documentation	<a href="#">Instruction sheet</a> <a href="#">Safety Manual for SIL application</a> <a href="#">Handbuch ACT20X- Serie, deutsch</a> <a href="#">Manual ACT20X- series, english</a>

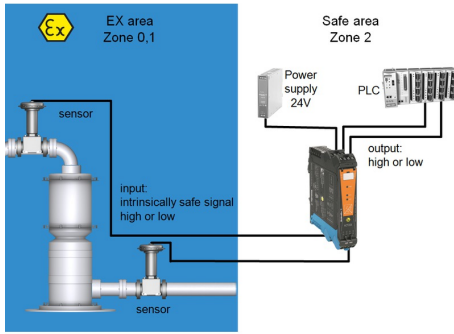
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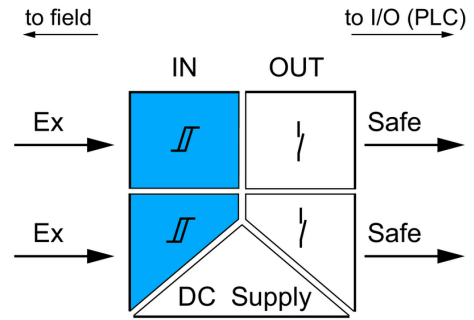
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**Drawings**

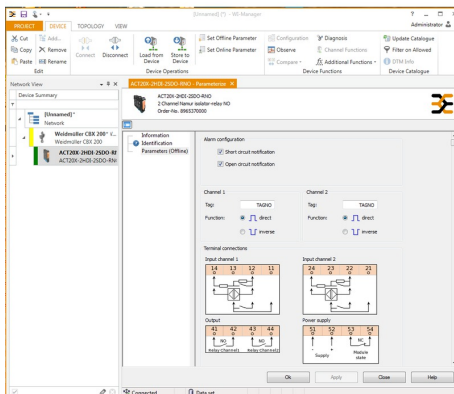
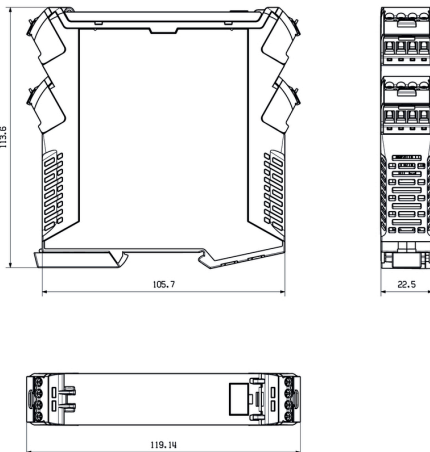
**Application**



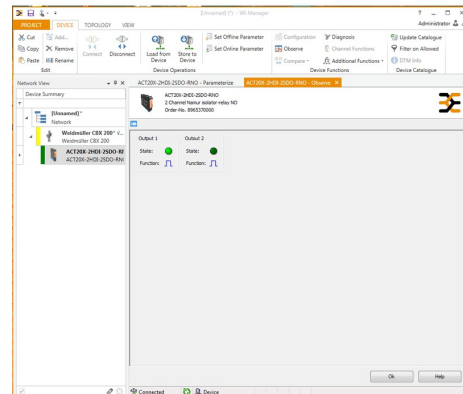
**Block diagram**



**Dimensioned drawing**



screenshot of configuration with FDT2 / DTM software



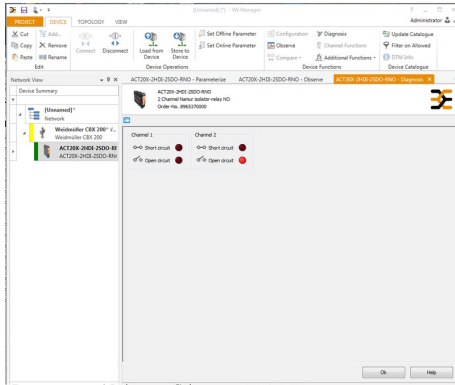
screenshot of "observe" with FDT2 / DTM software

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**Drawings**



screenshot of "diagnosis" with FDT2 / DTM software

**Connection diagram**

