

**ACT20X-2HDI-2SDO-RNC-S****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://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, 2-channel
Order No.	<a href="#">8965380000</a>
Type	ACT20X-2HDI-2SDO-RNC-S
GTIN (EAN)	4032248784899
Qty.	1 pc(s).

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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
Width	22.5 mm	Width (inches)	0.886 inch
Net weight	192 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)		

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## 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	≤1.9 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	Standards	EN 61326

### 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 ( $\lambda_{SD}$ )	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 fail- ures ( $\lambda_{SU}$ )	289 FIT	Total failure rate for dangerous detected failures ( $\lambda_{DD}$ )	130 FIT
Total failure rate for dangerous undetect- ed failures ( $\lambda_{DU}$ )	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 De- mand ( $PFD_{avg}$ )	$2.04 \times 10^{-4}$ ( $T_{proof} = 1$ year), $4.08 \times 10^{-4}$ ( $T_{proof} =$ 2 years), $1.02 \times 10^{-4}$ ( $T_{proof}$ = 5 years)
90 %		

### 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

### Guarantee

Time interval	3 years
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Creation date April 28, 2024 7:38:04 AM CEST

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****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

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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 opening 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**  
**VDC / 8 mA sensor power supply**  
**0.5 kHz input frequency**  
**wire-break detection** Output Ex/ channel Relay 1 NC contact  
250 VAC / 30 VDC @ 2A safe zone  
32 VAC @ 5 kHz 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 °C to +60 °C

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**Secure isolation EN 61010, 4-way isolation up to 30 V AC/DC of all circuits against each other**  
**Working voltage 300 V AC/DC at overvoltage**

**Ex isolating switch amplifiers for Namur sensors, 2 channels**  
**2-channel isolating switch amplifiers in 22.5 mm width with an**

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**Technical data****Environmental Product Compliance**

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

**Approvals**

Approvals



Approvals	DNVGL;
ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

**Downloads**

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

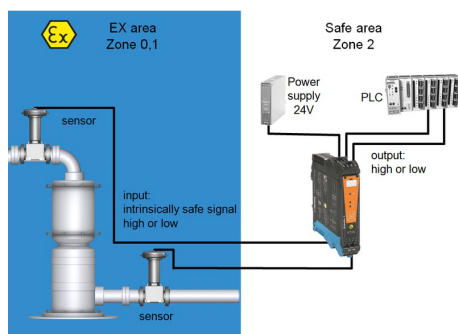
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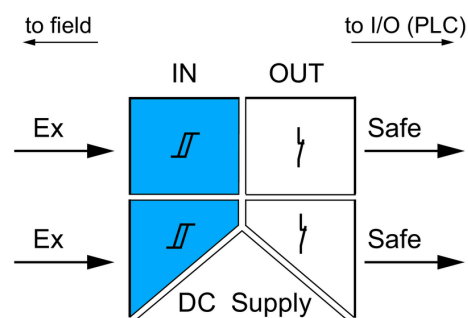
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## Drawings

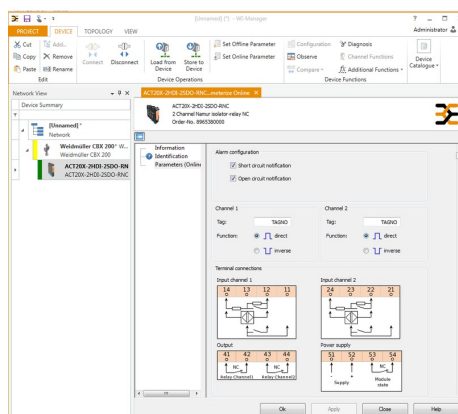
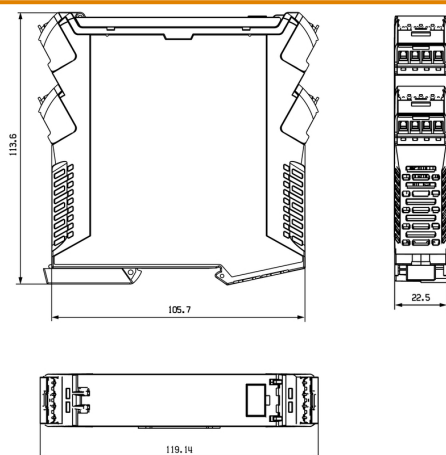
### Application



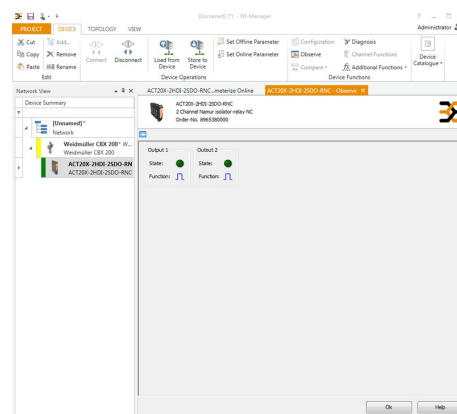
### Block diagram



### Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Blank**

ESG is the tried-and-tested marker in MultiCard format for use on many well-known electrical devices. The result is high-quality device marking with a high-contrast appearance.

Various types are available for devices from manufacturers like Siemens, ABB, Beckhoff etc.

Advantages at a glance:

- Tags for universal usage, self-adhesive or clip-on tags, depending on type
- For aligned equipment, e.g. circuit breakers, we supply ESG markers for clipping onto tag rails
- Individual laser-quality printing according to specifications

**For custom printing:** Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

**General ordering data**

Type	ESG 6.6/20 BHZ 5.00/04	Version
Order No.	<a href="#">1082540000</a>	ESG, Device markers x 20 mm, PA 66, Colour: white
GTIN (EAN)	4032248845439	
Qty.	200 pc(s).	



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**General ordering data**

Type	ESG 8/13.5/43.3 SAI AU	Version
Order No.	<a href="#">1912130000</a>	ESG, Device markers x 13.5 mm, PA 66, Colour: Transparent
GTIN (EAN)	4032248541164	
Qty.	5 pc(s).	

**Configuration interfaces****General ordering data**

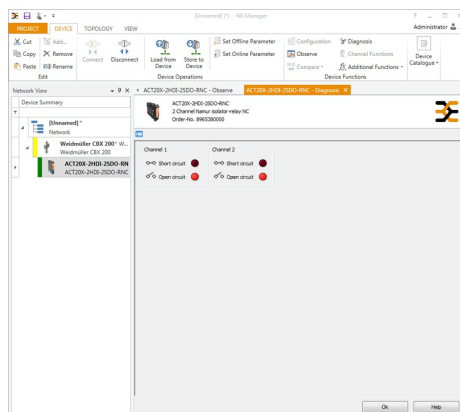
Type	CBX200 USB
Order No.	<a href="#">8978580000</a>
GTIN (EAN)	4032248813759
Qty.	1 pc(s).

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**Drawings**


screenshot of "diagnosis" with FDT2 / DTM software

**Connection diagram**
