

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

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**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**

Version	EX signal isolating converter, Ex-input: NAMUR sensor/switch, Safe-output: Optocoupler, 1-channel
Order No.	<a href="#">8965360000</a>
Type	ACT20X-HDI-SDO-S
GTIN (EAN)	4032248784875
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	170 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	215 a		

**Assembling**

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

**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, 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

**Digital output**

Continuous current	80 mA	Function	Output = input, direct or inverse (configurable)
Max. switching frequency	20 Hz	Nominal switching voltage	30 V DC
Type	NPN-Transistor		

**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	≤ 1.1 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"	High impedance	Device type	B
Diagnostic test interval	10 s	$T_{proof}$	5 a
Total failure rate for safe detected failures ( $\lambda_{SD}$ )	0 FIT	Hardware fault tolerance (HFT)	0
Safety category	SIL 2	Safe Failure Fraction (SFF)	92 %
Mean Time To Repair (MTTR)	8 h	Total failure rate for safe undetected fail- ures ( $\lambda_{SU}$ )	275 FIT
Total failure rate for dangerous detected failures ( $\lambda_{DD}$ )	135 FIT	Total failure rate for dangerous undetect- ed failures ( $\lambda_{DU}$ )	36 FIT
Probability of outage PFH	$3.62 \times 10^{-8} \text{ h}^{-1}$	Demand mode	High
Demand rate	1,000 s		

### Safety-related specifications Low demand mode

Average Probability of Failure on De- mand ( $PFD_{avg}$ )	$1.58 \times 10^{-4}$ ( $T_{proof} = 1$ year), $3.17 \times 10^{-4}$ ( $T_{proof} =$ 2 years), $7.92 \times 10^{-4}$ ( $T_{proof}$ = 5 years)
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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

### Guarantee

Time interval	3 years
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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,**  
**1-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 an NPN switching transistor and a common alarm contact (relay/"a" contact) for status or 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 NA-MUR sensor according to EN 60947**  
**8**  
**VDC / 8 mA sensor power supply**  
**0 to**  
**5 kHz input frequency**  
**wire-break detection**  
**Output NPN transistor**  
**30**  
**VDC @ 80 mA**  
**5**  
**kHz switching frequency**  
**< 2,**  
**5 VDC Spannungsfall**  
**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. 1.8 W**  
**Ambient**  
**Operating temperature range -20 °C to +60 °C**

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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="#">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	

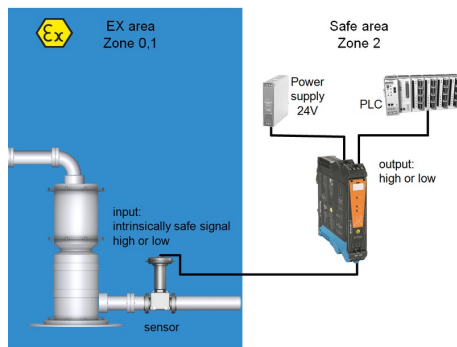
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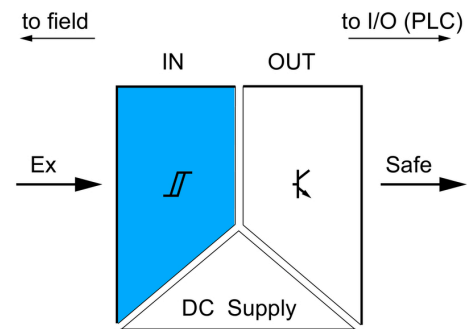
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## Drawings

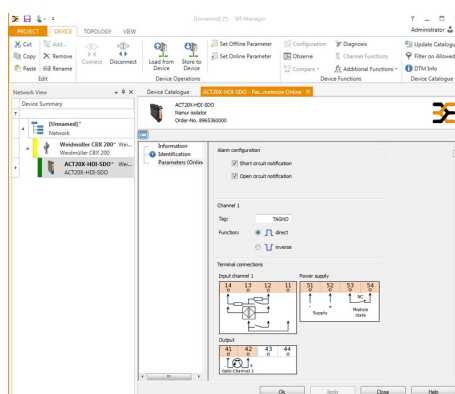
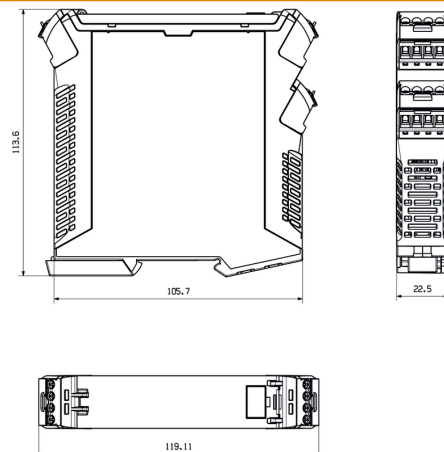
### Application



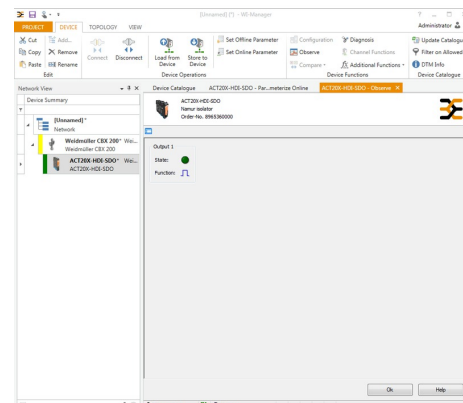
### Block diagram



### Dimensioned drawing



screenshot of configuration with FDT2 / DTM software

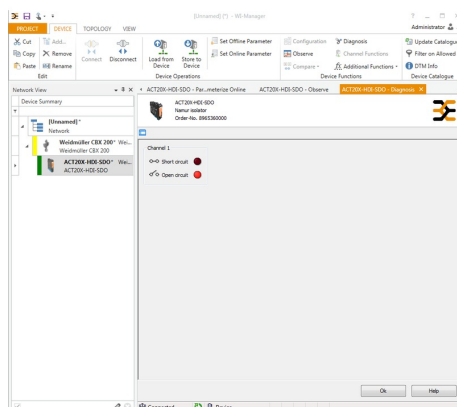


screenshot of "observe" with FDT2 / DTM software

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**Drawings**


screenshot of "diagnosis" with FDT2 / DTM software

**Connection diagram**
