

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.	8965360000
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
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	MTBF	215 Years
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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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	≤ 5 kHz	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)		

General specifications

Configuration	With FDT/DTM software	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		

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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	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
Description of the "safe state"	High impedance	Device type	B
Diagnostic test interval	10 s	Hardware fault tolerance (HFT)	0
Mean Time To Repair (MTTR)	8 h	Probability of outage PFH	$3.62 \times 10^{-8} \text{ h}^{-1}$
Safe Failure Fraction (SFF)	92 %	Safety category	SIL 2
T_{proof}	5 Years	Total failure rate for dangerous detected failures (λ_{DD})	135 FIT
Total failure rate for dangerous undetected failures (λ_{DU})	36 FIT	Total failure rate for safe detected failures (λ_{SD})	0 FIT
Total failure rate for safe undetected failures (λ_{SU})	275 FIT		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD_{avg})	1.58×10^{-4} ($T_{\text{proof}} = 1$ year), 3.17×10^{-4} ($T_{\text{proof}} = 2$ years), 7.92×10^{-4} ($T_{\text{proof}} = 5$ 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 ²
Clamping range, min.	0.25 mm ²	Clamping range, max.	2.5 mm ²
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, 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 mm²**

**Protection degree:
IP20**

Input

**NAMUR 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**

Creation date March 30, 2021 12:03:10 PM CEST

**Operating
temperature range -20
°C to +60 °C**

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

**Secure isolation
EN 61010-2**

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Technical data**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	Certification SIL Certification DNV GL Certification ATEX Certification IECEx Declaration of Conformity
Engineering Data	STEP
Engineering Data	EPLAN, WSCAD
Software	WI-Manager, DTM-Library for online installation V.1.2.2
User Documentation	Instruction sheet Safety Manual for SIL application Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english

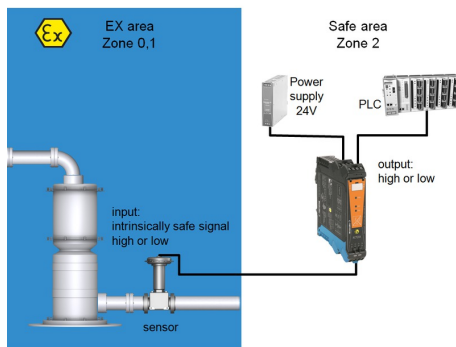
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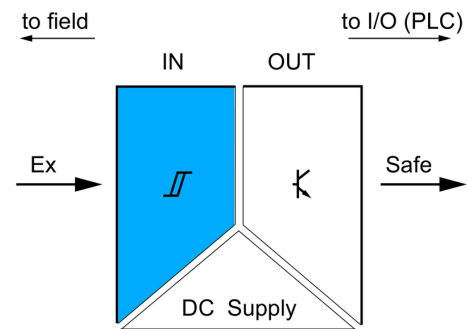
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Drawings

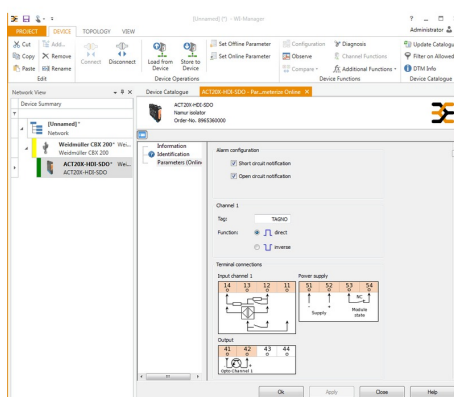
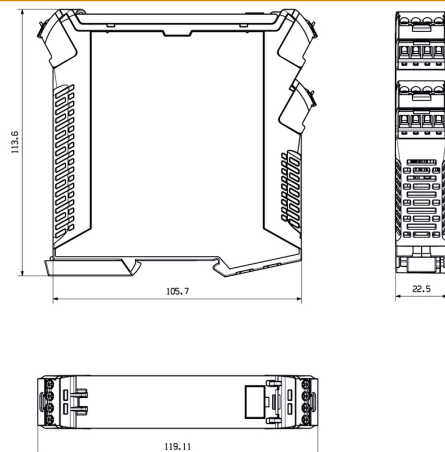
Application



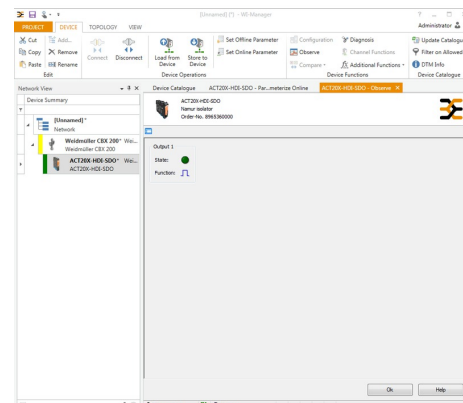
Block diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



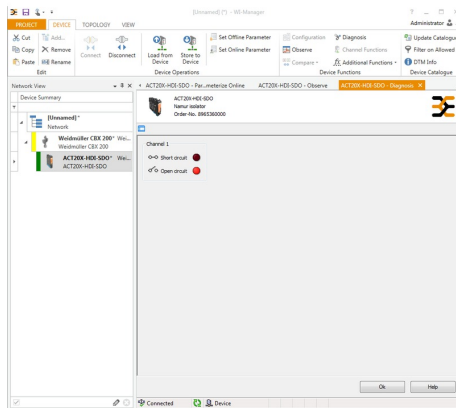
screenshot of "observe" with FDT2 / DTM software

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Drawings



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

