

ACT20X-HDI-SDO-RNC-S**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.	8965350000
Type	ACT20X-HDI-SDO-RNC-S
GTIN (EAN)	4032248784868
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	175 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 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	Humidity	0...95 % (no condensation)
NAMUR supply	8 V DC / 8 mA	Power consumption	≤ 1.3 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_{proof}	4 Years	Total failure rate for dangerous detected failures (λ_{DD})	130 FIT
Total failure rate for dangerous undetected failures (λ_{DU})	46 FIT	Total failure rate for safe detected failures (λ_{SD})	0 FIT
Total failure rate for safe undetected failures (λ_{SU})	289 FIT		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	2.04×10^{-4} ($T_{\text{proof}} = 1$ year), 4.08×10^{-4} ($T_{\text{proof}} = 2$ years), 1.02×10^{-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 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

Creation date March 30, 2021 12:03:24 AM CEST

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

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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 a potential-free relay contact with opening function and an 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 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
 Relay 1 NC 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 to 31.2 VDC Power loss approx. 1.8 W Ambient temperature range -20 °C to +60 °C

Secure isolation EN 61010, 3-way isolation up to 2.6 kV AC/DC of all circuits against each other

Working voltage 800 V AC/DC at overvoltage category II and

Ex isolating switch amplifiers for Namur sensors
1-channel isolating switch amplifiers in

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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

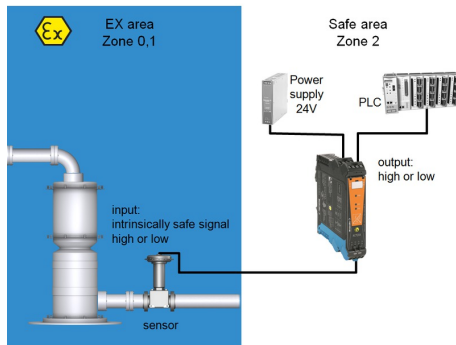
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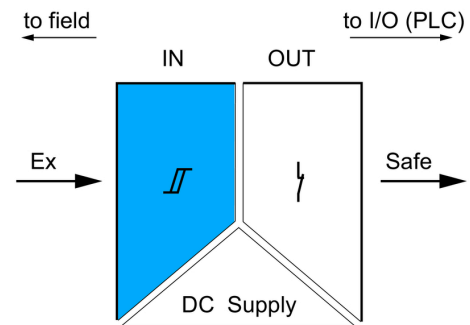
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Drawings

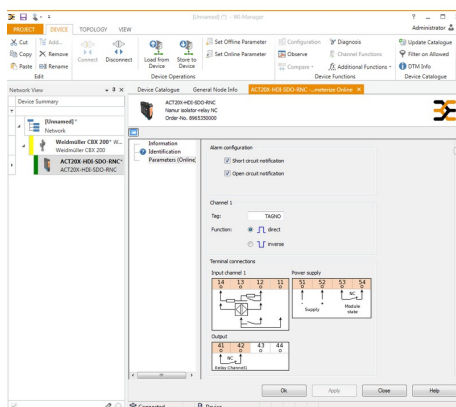
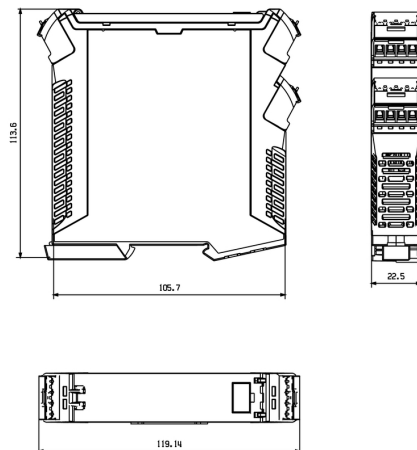
Application



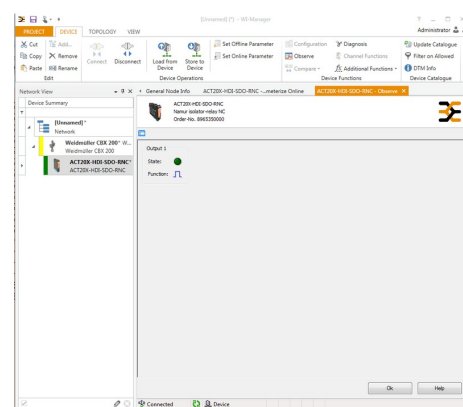
Block diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



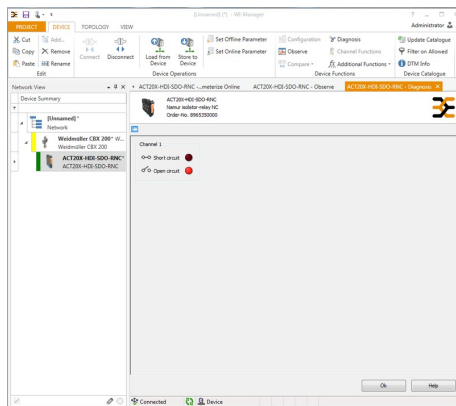
screenshot of "observe" with FDT2 / DTM software

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Drawings



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

