

ACT20X-HDI-SDO-RNC-S

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

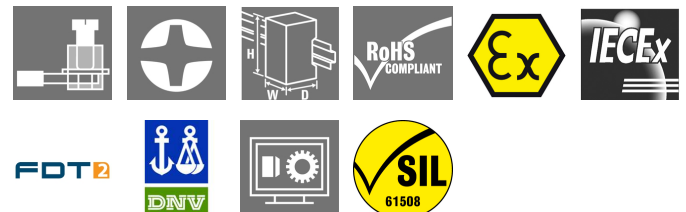
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Product image, Similar to illustration



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
Width	22.5 mm	Width (inches)	0.886 inch
Net weight	175 g		

Temperatures

Storage temperature	-20 °C...85 °C	Operating temperature	-20 °C...60 °C
Operating temperature, min.	-20 °C	Operating temperature, max.	60 °C
Humidity	0...95 % (no condensation)		

Probability of failure

SIL PAPER	SIL certificate	SIL in compliance with IEC 61508	2
MTBF	207 Years		

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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0...95 % (no condensation)

Technical data

General specifications

Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Humidity	www.weidmueller.com
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

Description of the "safe state"	de-energized (relay output)	Device type	B
Diagnostic test interval	10 s	T _{proof}	4 Years
Total failure rate for safe detected failures (λ _{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 failures (λ _{SU})	289 FIT	Total failure rate for dangerous detected failures (λ _{DD})	130 FIT
Total failure rate for dangerous undetected failures (λ _{DU})	46 FIT	Probability of outage PFH	4.66 x 10 ⁻⁸ 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)	90 %	Average Probability of Failure on Demand (PFD _{avg})	2.04 x 10 ⁻⁴ (T _{proof} = 1 year), 4.08 x 10 ⁻⁴ (T _{proof} = 2 years), 1.02 x 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 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

Guarantee

Time interval	3 years
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Creation date February 21, 2023 2:27:27 PM CET

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Technical data

Classifications

ETIM 6.0	EC002653	ETIM 7.0	www.weidmueller.com	EC002653
ETIM 8.0	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

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Technical data

Tender specification sheets

Long specification

Short specification

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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 output
 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

Creation date February 21, 2023 2023/02/21 TMC/ET

Catalogue status 18.02.2023 / Weidmüller reserves the right to make technical changes.

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

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REACH SVHC	Lead 7439-92-1	www.weidmueller.com
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	Certification SIL Certification DNV GL Certification ATEX Certification IECEX Declaration of Conformity
Engineering Data	CAD data – STEP
Engineering Data	WSCAD
Software	Library and function block – WI-Manager, DTM-Library for online installation Release notes for Weidmueller FDT-DTM Software version
User Documentation	Instruction sheet Safety Manual for SIL application Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english 20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability
Catalogues	Catalogues in PDF-format
Brochures	

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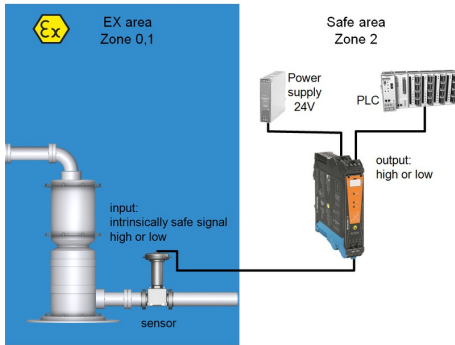
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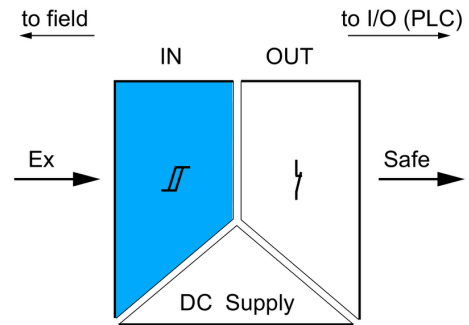
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Drawings

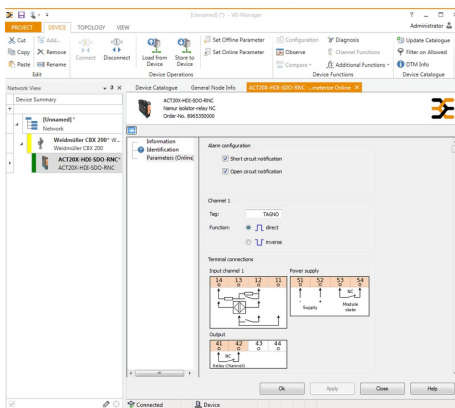
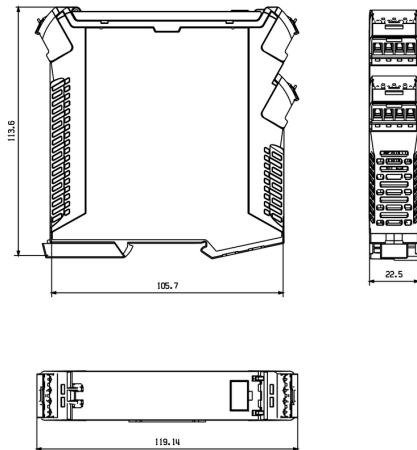
Application



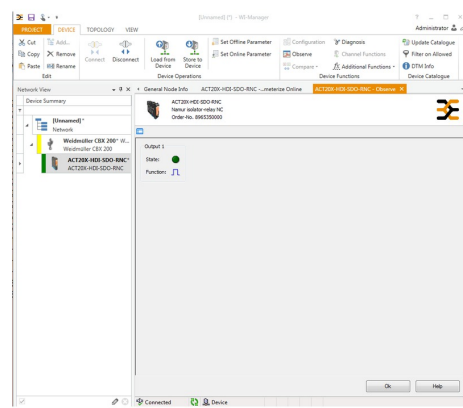
Block diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

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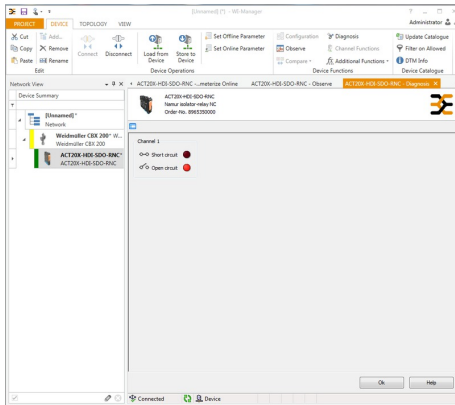
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Drawings



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

