

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 items

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Technical data

Approvals

Approvals	CE; CULUS; DETNORVER; FMEX; FUSAFETY; IECEXKEM; KEMAATEX
Approvals	DNVGL;
Approvals	



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

Dimensions and weights

Depth	113.6 mm	Depth (inches)	4.4724 inch
Height	119.2 mm	Height (inches)	4.6929 inch
Width	22.5 mm	Width (inches)	0.8858 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 - PDF/ Cert_Weidmueller_070902_P0002_C001_V2R1.pdf (application/pdf)	SIL in compliance with IEC 61508	2
MTBF	215 a		

Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption		
RoHS Exemption (if applicable/known)	7a, 7cl		
REACH SVHC	Lead 7439-92-1		
SCIP	2f6dd957-421a-46db-a0c2-cf1609156924		

Assembling

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

Input EX

Sensor	NAMUR sensor, according to EN60947-5-6, switch with or without RS, RP	Input frequency	0...5 kHz
Input resistance	1 kΩ	Type	intrinsically safe circuit
Sensor supply	8 V DC / 8 mA	Resistance	Series resistor 750Ω, Parallel resistor 15kΩ
Output signal in case of wire break	<0.1 mA, > 6.5 mA (in case of wire break)	Pulse duration	> 0.1 ms

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NAMUR supply	8 V DC / 8 mA	Trigger level low	<1.2 mA
Trigger level high	> 2.1 mA		

Output

Number of outputs	1		
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Digital output

Max. switching frequency	≤ 5 kHz	Type	NPN-Transistor
Function	Output = input, direct or inverse (configurable)	Nominal switching voltage	30 V DC
Continuous current	80 mA		

Output (Status)

Hysteresis	0.1 mA (switching threshold)	Type	Status relay, 1 NC (voltage-free)
Alarm function	Device error, No supply voltage, Short circuit at input, Open circuit at input	Number of alarm outputs	1
Nominal switching voltage	≤ 125 V AC / 110 V DC (safe area) ≤ 32 V AC / 32 V DC (zone 2)	Continuous current	≤ 0.5 A AC / 0.3 A DC (safe zone), ≤ 0,5 A AC / 1 A DC (zone 2)
Power rating	≤ 62.5 VA / 32 W (safe area) ≤ 16 VA / 32 W (Zone 2)		

General specifications

Type of connection	Screw connection	Humidity	0...95 % (no condensation)
Protection degree	IP20	Supply voltage	19.2...31.2 V DC
Power consumption	≤ 1.1 W	Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB
Operating altitude	≤ 2000 m		

Insulation coordination

EMC standards	EN 61326-1	Standards	EN 61010-1
Insulation voltage	2.6 kV (input / output)	Rated voltage	300 V

Data for Ex applications (ATEX)

Installation location	Device installed in safe area, zone 2		
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Safety-related basic specifications

Description of the "safe state"	High impedance	Tproof	5 a
Diagnostic test interval	10 s	Total failure rate for safe detected failures (ASD)	0 FIT
Device type	B	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 failures (ASU)	275 FIT
Total failure rate for dangerous detected failures (ADD)	135 FIT	Total failure rate for dangerous undetected failures (ADU)	36 FIT

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Probability of outage PFH	3.62 x 10 ⁻⁸ h ⁻¹	Demand mode	High
Demand rate	1000 s		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFDavg)	1.58 x 10 ⁻⁴ (Tproof = 1 year), 3.17 x 10 ⁻⁴ (Tproof = 2 years), 7.92 x 10 ⁻⁴ (Tproof = 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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Part description

Product description	The devices of the ACT20X-HDI-SDO-S family transmit digital signals galvanic isolated from potentially explosive atmospheres to non-hazardous or less hazardous areas. For this purpose the input circuits are designed intrinsically safe. They can process NAMUR sensor signals according to EN 60947-5-6 or be connected to potential-free contacts (with or without resistor circuitry). Single and dual channel versions are available with relay or transistor outputs.
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Classifications

ETIM 6.0	EC002653	ETIM 7.0	EC002653
ETIM 8.0	EC002653	ETIM 9.0	EC002653
ETIM 10.0	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	ECLASS 14.0	27-21-01-20
ECLASS 15.0	27-21-01-20		

Tender specification sheets

Long 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.	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.
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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
 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 300 V AC/DC at overvoltage category II and pollution degree 2
 Approvals cULus, ATEX IECEx, FM
 ATEX marking II 3 G ExnA nC IIC T4
 ATEX characteristic data
 U₀ = 10, 6 V DC
 I₀ =
 12 mA DC
 P₀ =
 32 W
 Type
 ACT20X-HDI-2SDO-2SDO-S

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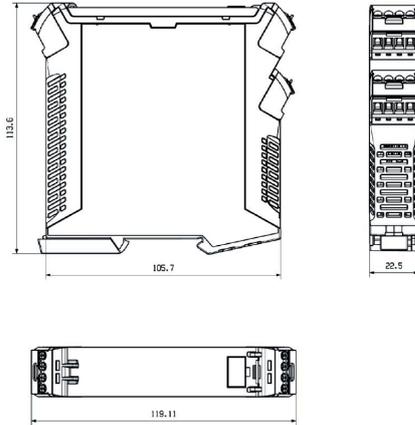
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Drawings

Dimensioned drawing



Removable terminals with coding

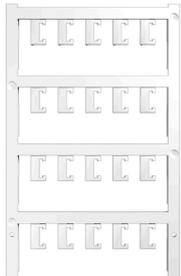
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Accessories

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.	1082540000	ESG, Device markers x 20 mm, PA 66, Colour: white, pluggable	
GTIN (EAN)	4032248845439		
Qty.	200 ST		
Type	ESG 8/13.5/43.3 SAI AU	Version	
Order No.	1912130000	ESG, Device markers x 13.5 mm, PA 66, Colour: Transparent, pluggable	
GTIN (EAN)	4032248541164		
Qty.	5 ST		

Configuration interfaces



General ordering data

Type	CBX200 USB	Version	
Order No.	8978580000		
GTIN (EAN)	4032248813759		
Qty.	1 ST		