Data sheet

ACT20X-SDI-HDO-H-S

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com

Product image, Similar to illustration

The ACT20X-SDI-HDO/2SDI-2HDO valve control modules are controlled from the safe zone on the input side by the switching signals (NPN, PNP) and provide digital outputs to switch actuators (solenoids, alarms) in Ex zone 0. Depending on the module, the output current is limited for the ignition protection groups IIC/IIB to 35 mA or 60 mA (only one channel). 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, Safe-input: relay, Ex-output: Opto module, High-current, 1-channel, Output current : max. 60 mA
Order No.	8965410000
Type	ACT20X-SDI-HDO-H-S
GTIN (EAN)	4032248785025
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_C004_V2R1.pdf (application/pdf)	SIL in compliance with IEC 61508	2
MTBF	175 a	SFF	91 %

Environmental Product Compliance

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

Assembling

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

Input

Number inputs	1	Type	NPN, PNP transistor, switching signal [input safe-side valve component]
Input voltage	≤ 28 V DC, Trigger level low: ≤ 2.0 V DC (NPN), ≤ 8.0 V DC (PNP), Trigger level high: ≥ 4.0 V DC (NPN), ≥ 10.0 V DC (PNP)	Input resistance, voltage	3.5 kΩ

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Output

Type	intrinsically safe circuit, digital, output = input, direct or inverse (configurable)		
Output current	max. 60 mA		
Output values	Current	max.	60 mA
	Voltage	min.	9 V
	Current	max.	50 mA
	Voltage	min.	11.5 V
	Current	max.	60 mA
	Voltage	min.	10 V
	Current	max.	50 mA
	Voltage	min.	12.5 V
	Current	max.	60 mA
	Voltage	min.	11 V
	Current	max.	50 mA
	Voltage	min.	13.5 V
Output values	depending on terminal assignment: 9 V @ 60 mA / 11.5 V @ 50 mA / 10 V @ 60 mA / 12.5 V @ 50 mA / 11 V @ 60 mA / 13.5 V @ 50 mA		
Number of outputs, Ex	1		
Residual ripple (current loop)	<40 mVeff		
Output values	depending on terminal assignment		

Digital output

Max. switching frequency	20 Hz

Output (Status)

Hysteresis	0.1 mA (switching threshold)	Type	Status relay, 1 NC (voltage-free)
Alarm function	No supply voltage, Device error	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
Step response time	10 ms	Power consumption	≤ 2.5 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"	de-energized (relay output)	Tproof	4 a
Diagnostic test interval	10 s	Total failure rate for safe detected failures (λSD)	0 FIT
Device type	B	Hardware fault tolerance (HFT)	0
Safety category	SIL 2	Safe Failure Fraction (SFF)	91 %
Mean Time To Repair (MTTR)	24 h	Total failure rate for safe undetected failures (λSU)	480 FIT
Total failure rate for dangerous detected failures (λDD)	61 FIT	Total failure rate for dangerous undetected failures (λDU)	46 FIT
Probability of outage PFH	4.6 x 10-8 h-1	Demand mode	High
Demand rate	1000 s	Demand response time	<10 ms (opto output)

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFDavg)	2.92 x 10-4 (Tproof = 1 year), 4.84 x 10-4 (Tproof = 2 year), 1.06 x 10-4 (Tproof = 5 year)

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 mm²
Clamping range, min.	0.25 mm²	Clamping range, max.	2.5 mm²
Wire connection cross section AWG, min.	AWG 26	Wire connection cross section AWG, max.	AWG 12

Guarantee

Time interval	3 years

Part description

Product description	The ACT20X-SDI-HDO-S solenoid valve switch/alarm transmitter has one input in the non-hazardous area and one output in the hazardous area Zone 0. The device is suitable for switching e.g. magnetic valves or alarm transmitters. The device is available as single-channel or dual-channel version. Features • Solenoid valve switch / alarm transmitter for the control of solenoids, acoustic alarms and LED's installed in the hazardous area. • Two variants with 35 mA or 60 mA output current are available in 1-channel or 2-channel versions. • Configuration and diagnosis via FDT/DTM Software "WI-Manager". • Selection of direct or inverted function for each channel and the possibility of reducing the output current to the hazardous area to suit the application. • The device can be mounted in the safe area and in Zone 2 / Division 2 and receive signals from Zone 0, 1, 2, 20, 21 and 22, as well as Class I/II/III, Division 1, Group A-G. • Extended self diagnostic: Monitoring of error events via the individual status relay. • LED indication: green and 2 yellow/red front LED´s to indicate operation status and malfunction • 3-way galvanic isolation between input, output and power supply.

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

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Technical data

ECLASS 15.0	27-21-01-20

Tender specification sheets

Long specification	Ex valve control modules, 60 mA ignition protection group IIB 1-channel valve control modules in 22.5 mm width with external power supply, to control valves in Ex areas zone 0,1,2 from the safe zone. The module comes with full three-way, 2.6 kV separation. On the input side, NPN/ PNP switching sensors can be connected. On the output side, there are three 60 mA driver steps for ignition protection group IIB with a minimum driver voltage of 9 V/11 V or 12.5 V available optionally. An additional alarm contact ("a" contact) reports status and error messages The module 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 NPN, PNP switch signal max. 28 VDC output Ex Imax 60 mA @ ignition protection group IIB U with load min. 9 V / min. 11 V / min. 12.5 V U without load min. 24 V Alarm output relay 1 NO contact 250 VAC / 30 VDC @ 2A safe zone 32 VAC @ 0.5 A / 32 VDC @ 1 A zone 2Auxiliary power 19 to 31.2 VDCPower loss approx. 1.8 W Ambienttemperature range -20 °C to +60 °C Secure isolation EN 61010, 3-way isolation	Short specification	Ex valve control modules, 60 mA ignition protection group IIB 1-channel valve control modules in 22.5 mm width with external power supply, to control valves in Ex zones 0,1,2 from the safe zone. The module comes with full three-way, 2.6 kV separation. On the input side, NPN/ PNP switching sensors can be connected. On the output side, there are three 60 mA driver steps for ignition protection group IIB with a minimum driver voltage of 9 V/11 V or 12.5 V available optionally. An additional alarm contact ("a" contact) reports status and error messages The module can be configured using standard FDT/DTM software.

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Technical data

	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 Ex nA nC IIC T4
ATEX characteristic data	U0 = 28 V DC I0 = 125 mA P0 = 0.77 W
Type	ACT20X-SDI-HDO-H-S

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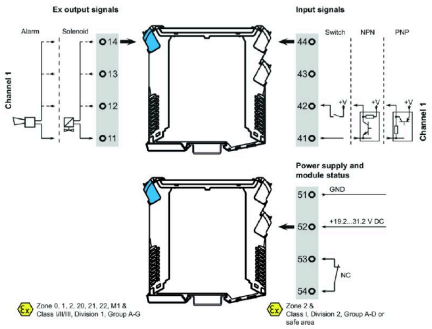
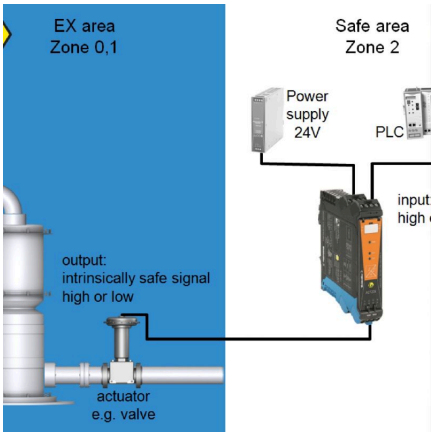
Drawings

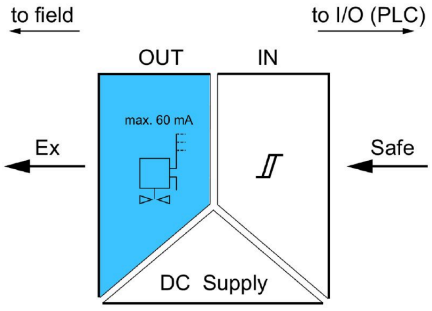
Connection diagram

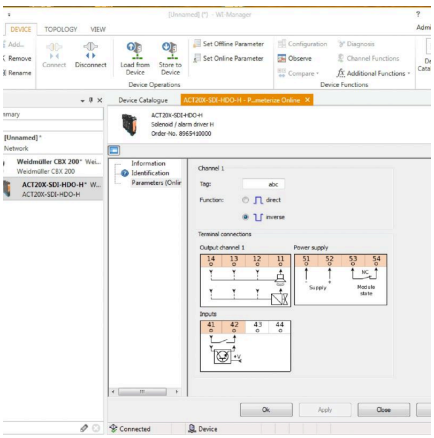


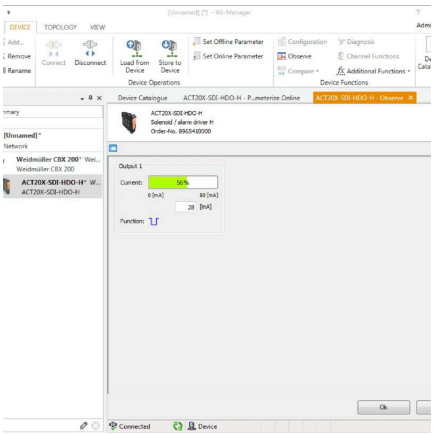
Application

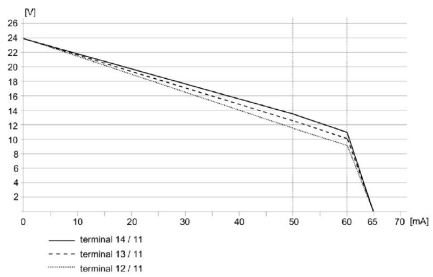


Block diagram









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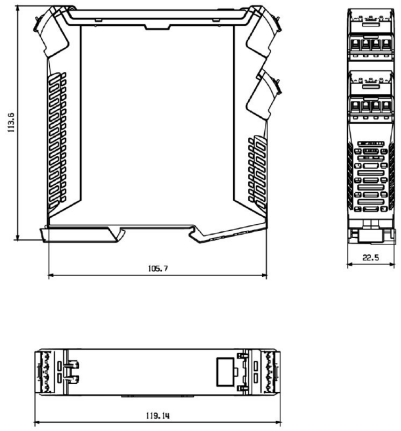
Drawings

Dimensioned drawing



Removable terminals with coding

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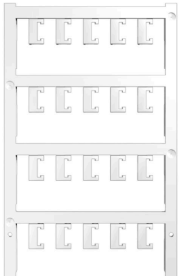
Accessories

Blank



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- 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,
GTIN (EAN)	4032248541164	pluggable
Qty.	5 ST	

Configuration interfaces

General ordering data

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