

ACT20X-2SDI-2HDO-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, 2-channel, Output current : max. 35 mA
Order No.	8965420000
Type	ACT20X-2SDI-2HDO-S
GTIN (EAN)	4032248785032
Qty.	1 pc(s).

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Catalogue status 18.02.2023 / We reserve the right to make technical changes.

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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	180 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	176 Years		

Input

Input resistance, voltage	3.5 kΩ	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)
Number of inputs	2	Sensor	NAMUR sensor, according to EN60947-5-6, switch with or without RS, RP
Type	NPN, PNP transistor, switching signal [input safe-side valve component]		

Output

Output current	max. 35 mA		
Output values	Voltage	min.	12.5 V
	Current	max.	35 mA
	Voltage	min.	13.5 V
	Current	max.	35 mA
	Voltage	min.	14.5 V
	Current	max.	35 mA
Output values	depending on terminal assignment		
Output values	depending on terminal assignment: 12.5 V @ 35 mA / 13.5 V @ 35 mA / 14.5 V @ 35 mA		
Residual ripple (current loop)	< 40 mV _{eff}		
Type	intrinsically safe circuit, digital, output = input, direct or inverse (configurable)		

Alarm output

Alarm function	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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General specifications

Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Humidity	0...95 % (no condensation)
Power consumption	≤ 3.1 W	Protection degree	IP20
Step response time	10 ms	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	≤ 110 mA	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	≤ 0.95 W
Voltage U_0	28 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}	5 Years
Total failure rate for safe detected failures (λ_{SD})	0 FIT	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 (λ_{SU})	477 FIT
Total failure rate for dangerous detected failures (λ_{DD})	61 FIT	Total failure rate for dangerous undetected failures (λ_{DU})	43 FIT
Probability of outage PFH	$4.3 \times 10^{-8} \text{ h}^{-1}$	Demand mode	High
Demand rate	1,000 s	Demand response time	< 10 ms (opto output)

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD_{avg})	2.73×10^{-4} ($T_{proof} = 1$ year), 4.52×10^{-4} ($T_{proof} =$ 2 years), 9.89×10^{-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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Technical data**Classifications**

ETIM 6.0	EC002653	ETIM 7.0	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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Tender specification sheets

Long specification

Short specification

Ex valve control modules, 35 mA ignition protection group IIC, 2 channel 2-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 four-way, 2.6 kV separation.
On the input side, NPN/ PNP switching sensors can be connected.
On the output side, there are optionally three 35 mA driver steps per channel for ignition protection group IIC with a minimum driver voltage of 12.5 V/13.5 V or 14.5 V available.
 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/channel NPN, PNP switch signal max. 28 VDC

channel I_{max} 35 mA @ ignition protection group IIC
 U with load min. 12.5 V / min. 13.5 V / min. 14.5 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 2 Auxiliary power 19 W
 31.2 VDC Power loss approx. 1.8 W

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

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The module comes with

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Secure isolation EN 61010 4-way isolation

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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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 Certification UL 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	

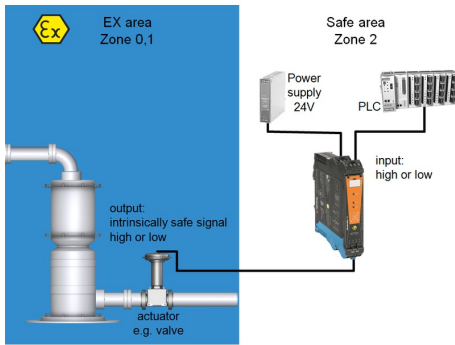
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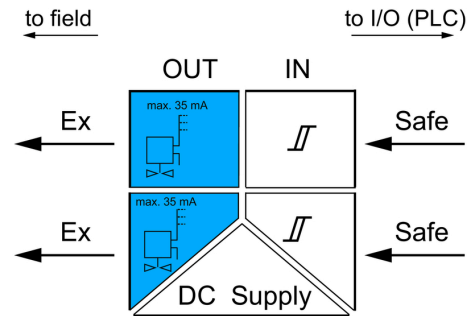
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Drawings

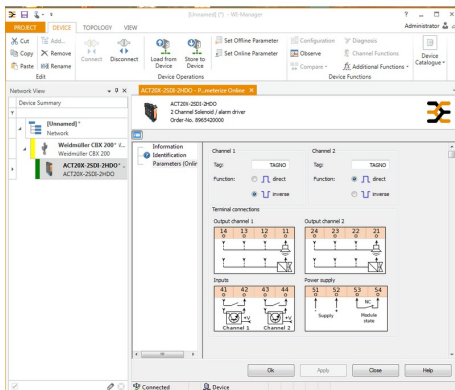
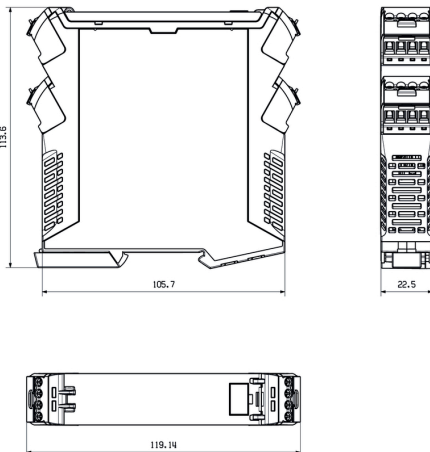
Application



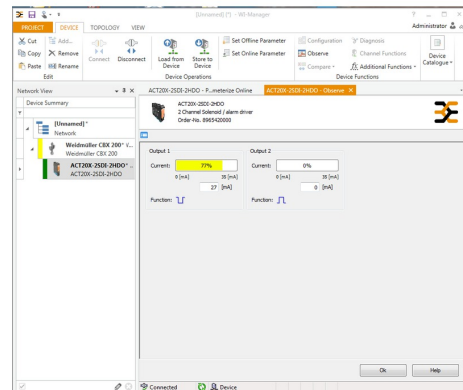
Block diagram



Dimensioned drawing



screenshot of setup configuration with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

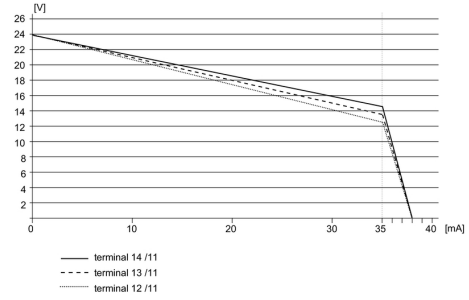
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Drawings

Derating curve



Connection diagram

