

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, 1-channel, Output current : max. 60 mA
Order No.	8965410000
Type	ACT20X-SDI-HDO-H-S
GTIN (EAN)	4032248785025
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	170 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	175 Years	SFF	91 %

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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Input

Input resistance, voltage	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)
3.5 kΩ		
Number of inputs	Type	NPN, PNP transistor, switching signal [input safe-side valve component]
1		

Output

Output current	max. 60 mA		
Output values	Voltage	min.	9 V
	Current	max.	60 mA
	Voltage	min.	11.5 V
	Current	max.	50 mA
	Voltage	min.	10 V
	Current	max.	60 mA
	Voltage	min.	12.5 V
	Current	max.	50 mA
	Voltage	min.	11 V
	Current	max.	60 mA
	Voltage	min.	13.5 V
	Current	max.	50 mA
Output values	depending on terminal assignment		
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		
Residual ripple (current loop)	< 40 mV _{eff}		
Type	intrinsically safe circuit, digital, output = input, direct or inverse (configurable)		

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Alarm output

Alarm function	No supply voltage, Device error	Continuous current	$\leq 0.5 \text{ A AC} / 0.3 \text{ A DC}$ (safe zone), $\leq 0.5 \text{ A AC} / 1 \text{ A DC}$ (zone 2)
Nominal switching voltage	$\leq 125 \text{ V AC} / 110 \text{ V DC}$ (safe area) $\leq 32 \text{ V AC} / 32 \text{ V DC}$ (zone 2)	Power rating	$\leq 62.5 \text{ VA} / 32 \text{ W}$ (safe area) $\leq 16 \text{ VA} / 32 \text{ W}$ (Zone 2)
Type	Status relay, 1 NC (voltage-free)		

General specifications

Configuration	With FDT/DTM software	Humidity	0...95 % (no condensation)
Power consumption	$\leq 2.5 \text{ W}$	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	$\leq 135 \text{ mA}$	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	$\leq 0.77 \text{ W}$
Voltage U_0	28 V DC		

Safety-related basic specifications

Demand mode	High	Demand rate	1,000 s
Demand response time	$< 10 \text{ ms}$ (opto 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)	24 h
Probability of outage PFH	$4.6 \times 10^{-8} \text{ h}^{-1}$	Safe Failure Fraction (SFF)	91 %
Safety category	SIL 2	T_{proof}	4 Years
Total failure rate for dangerous detected failures (λ_{DD})	61 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})	480 FIT

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	2.92×10^{-4} ($T_{\text{proof}} = 1$ year), 4.84×10^{-4} ($T_{\text{proof}} = 2$ year), 1.06×10^{-4} ($T_{\text{proof}} = 5$ year)
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www.weidmueller.com**Technical data****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	27-21-01-90
ECLASS 10.0	27-21-01-20	ECLASS 11.0	27-21-01-20

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Technical data

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
 I_{max} 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...55 °C

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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

Creation date March 30, 2021 12:09:53 AM CEST

Catalogue status 12.03.2021 / Weidmüller reserves the right to make technical changes.

Secure isolation EN 61010, 3-way isolation up to 2.6 kV AC/DC of

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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 Certification UL 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

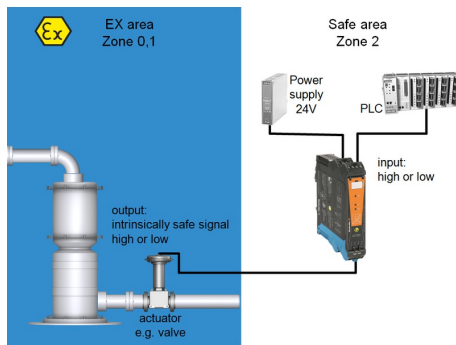
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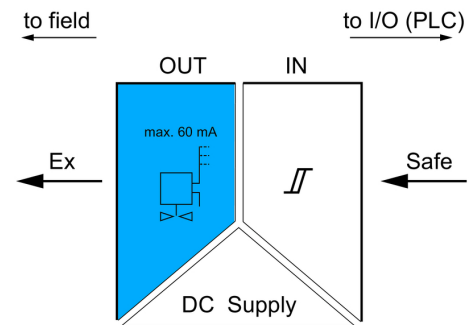
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Drawings

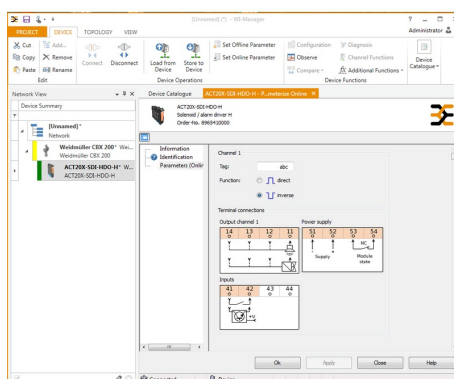
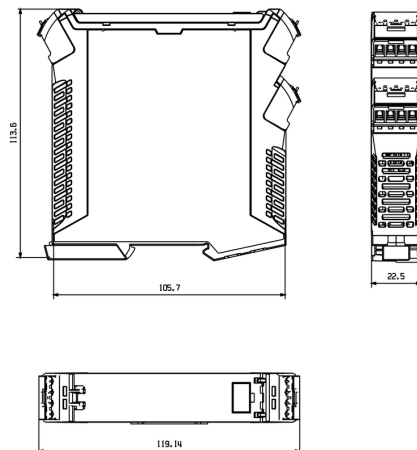
Application



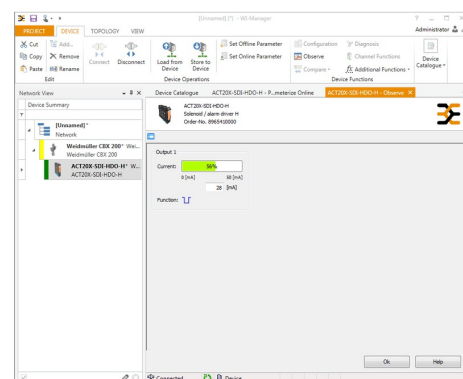
Block diagram



Dimensioned drawing



screenshot of configuration with
FDT2 / DTM software example



screenshot of "observe" with FDT2 / DTM software

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Drawings
Connection diagram
