

ACT20X-2SAI-2HAO-P**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com**Product image, Similar to illustration**

The ACT20X-SAI-HAO/2SAI-2HAO current output isolators are suitable for controlling field devices in Ex areas, up to Zone 0.

The input/output-side HART protocol transparent signal connection is implemented using 4 to 20 mA current loops.

Integrated alarm contacts issue an alert in the event of a malfunction; this makes troubleshooting easier and increases system availability.

The rail-mounted current output isolators 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: 4-20mA, Ex output: 4 - 20 mA, 2-channel
Order No.	2456170000
Type	ACT20X-2SAI-2HAO-P
GTIN (EAN)	4050118471571
Qty.	1 pc(s).

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Technical data**Dimensions and weights**

Depth	114.6 mm	Depth (inches)	4.512 inch
Height	127.3 mm	Height (inches)	5.012 inch
Net weight	212 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	MTBF	135 Years
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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Input EX

Input current	4...20mA	Input frequency	0,5...2,5 kHz @ 3,5...23 mA bi-directional HART [®] signal
Output signal in case of wire break	< 1 mA	Voltage drop	< 2 V
Voltage drop not powered	< 6 V	Voltage drop powered	< 2 V

Input

Input current	4...20mA	Input frequency	0,5...2,5 kHz @ 3,5...23 mA bi-directional HART [®] signal
Voltage drop	< 2 V		

Output

2-wire supply	> 14.5 V @ 20 mA	Cut-off frequency (-3 dB)	0.5...2.5 kHz @ 3.5...23 mA bi-directional HART [®] signal
Influence of load resistance	≤ 0.01% of span / 100 Ω	Load impedance current	≤ 725 Ω
Output current	4...20 mA (max. 23 mA)	Output signal limit	< 28 mA
Residual ripple (current loop)	< 7.5 mV _{eff}	Type	intrinsically safe circuit

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Technical data**Alarm output**

Alarm function	Signal limit exceeded, Line interruption at the input, 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)
Hysteresis	0.1 mA (switching threshold)	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)	Switching thresholds	0...29.9 mA (programmable)
Type	Status relay, 1 NC (voltage-free)		

General specifications

Accuracy	$< 0.1\%$ span	Configuration	With FDT/DTM software
Humidity	0...95 % (no condensation)	Power consumption	$\leq 1.8 \text{ W}$
Protection degree	IP20	Step response time	$\leq 5 \text{ ms}$
Temperature coefficient	$< 0.01\%$ of span/ $^{\circ}\text{C}$ (TU)	Type of connection	PUSH IN
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	93 mA	Installation location	Device installed in safe area, zone 2
Marking	II (1) G [Ex ia Ga] IIC/IIB/I IIA, II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I	Power P_0	$< 650 \text{ mW}$
Voltage U_0	28 V DC		

Safety-related basic specifications

Demand mode	High	Description of the "safe state"	analogue Output $\leq 3.6 \text{ mA}$ or output $\geq 21 \text{ mA}$
Device type	A	Hardware fault tolerance (HFT)	0
Mean Time To Repair (MTTR)	24 h	Probability of outage PFH	$4.8 \times 10^{-8} \text{ h}^{-1}$
Safe Failure Fraction (SFF)	85 %	Safety category	SIL 2
T_{proof}	5 Years	Total failure rate for dangerous detected failures (λ_{DD})	127 FIT
Total failure rate for dangerous undetected failures (λ_{DU})	48 FIT	Total failure rate for safe detected failures (λ_{SD})	0 FIT
Total failure rate for safe undetected failures (λ_{SU})	164 FIT		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	2.29×10^{-4} ($T_{\text{proof}} = 1$ year), 4.37×10^{-4} ($T_{\text{proof}} = 2$ years), 1.06×10^{-4} ($T_{\text{proof}} = 5$ year)
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Technical data

Connection data

Type of connection	PUSH IN	Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 14	Wire cross-section, solid, min.	0.2 mm ²
Wire cross-section, solid, max.	2.5 mm ²	Wire connection cross section, finely stranded, min.	0.2 mm ²
Wire connection cross section, finely stranded, max.	2.5 mm ²	Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min.	0.2 mm ²
Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max.	2.5 mm ²		

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

Approvals

Approvals



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
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
Brochure/Catalogue	Catalogues in PDF-format

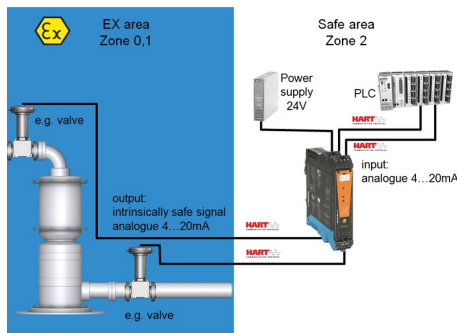
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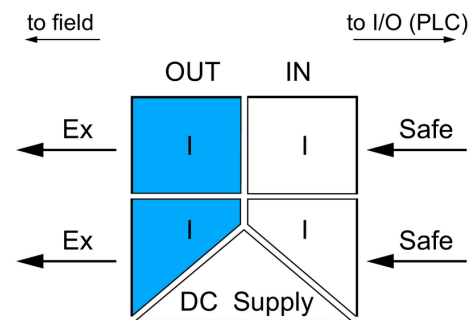
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Drawings

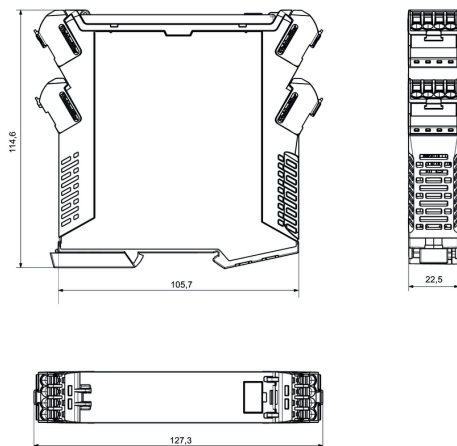
Application



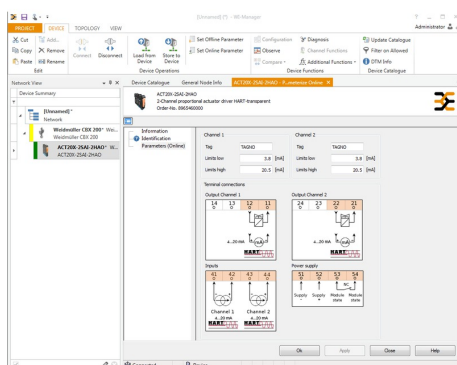
Block diagram



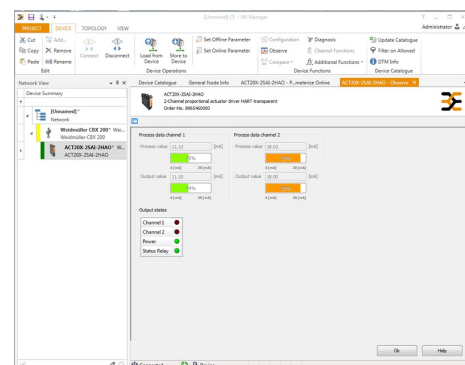
Dimensioned drawing



Similar to illustration



screenshot of configuration with FDT2 / DTM software



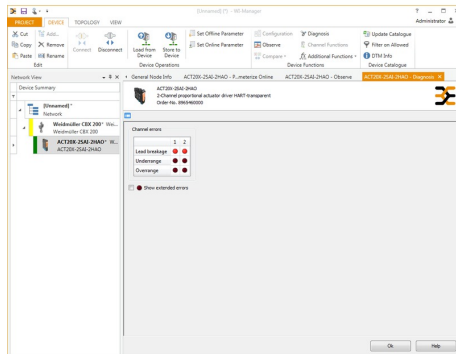
screenshot of "observe" with FDT2 / DTM software

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Drawings



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

