

## ACT20X-SAI-HAO-S

Weidmüller Interfaces GmbH & Co. KG

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### 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, 1-channel
Order No.	<a href="#">8965450000</a>
Type	ACT20X-SAI-HAO-S
GTIN (EAN)	4032248785063
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
Width	22.5 mm	Width (inches)	0.886 inch
Net weight	189 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	SIL in compliance with IEC 61508	2
MTBF	135 Years		

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1	SCIP	2f6dd957-421a-46db-a0c2-cf1609156924
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### Input

Input current	4...20mA	Input frequency	0.5...2.5 kHz @ 3.5...23 mA bi-directional HART <sup>®</sup> signal
Number of inputs	1	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 <sup>®</sup> 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 <sub>eff</sub>	Type	intrinsically safe circuit

### Alarm output

Alarm function	Signal limit exceeded, Line interruption at the input, No supply voltage, Device error	Continuous current	≤ 0,5 A AC / 1 A DC (zone 2)
Hysteresis	0.1 mA (switching threshold)	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)	Switching thresholds	0...29.9 mA (programmable)
Type	Status relay, 1 NC (voltage-free)		

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www.weidmueller.com With FDT/DTM software

Power consumption ≤ 1.0 W

Step response time ≤ 5 ms

Voltage supply 19.2...31.2 V DC

**Technical data****General specifications**

Accuracy	< 0.1% span	Configuration	www.weidmueller.com
Humidity	0...95 % (no condensation)	Power consumption	≤ 1.0 W
Protection degree	IP20	Step response time	≤ 5 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 $I_0$	93 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 $P_0$	< 650 mW
Voltage $U_0$	28 V DC		

**Safety-related basic specifications**

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

**Safety-related specifications Low demand mode**

Average Probability of Failure on Demand ( $PF_{D,avg}$ )	$2.29 \times 10^{-4}$ ( $T_{proof} = 1$ year), $4.37 \times 10^{-4}$ ( $T_{proof} = 2$ years), $1.06 \times 10^{-4}$ ( $T_{proof} = 5$ year)
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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 <sup>2</sup>
Clamping range, min.	0.25 mm <sup>2</sup>	Clamping range, max.	2.5 mm <sup>2</sup>
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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**Technical data**

**Tender specification sheets**

Long specification

Short specification

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**Ex output isolation amplifier for standard DC current signals, HART transparent 1-channel output isolation amplifier in 22.5 mm width with external power supply, for transmitting and isolating standard signals 4 to 20 mA from the safe zone to Ex zones 0,1,2.**

**Status-/ error messages are available via a relay contact (NO).**

The component can be configured using standard FDT/DTM software.

**Add-on housing for TS35 rail mounting Dimensions: L/W/H**

**119.2/ 22.5/ 113.6**

**Screw connection/**

**Nominal cross-section 2.5 mm<sup>2</sup>**

**Protection degree: IP**

**20**

**Input**

**4...20**

**mA**

**Output**

**4...20**

**mA**

**Load**

**<**

**600 Ohm**

**Accuracy**

**< 0,1**

**% v.E**

**Temperature**

**coefficient < 0,01%**

**v.E./°C (Tu)**

**Alarm output relay 1**

**NO contact**

**250**

**V AC / 30 V DC @ 2A**

**safe zone**

**32 V**

**AC @ 0.5 A/ 32 VDC @ 1**

**A Zone 2**

**Auxiliary**

**power**

**19...31.2 V DC**

**Power loss approx. 1.8**

**W**

**Ambient**

**temperature range -20**

**°C...+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**

**300 V AC Category II**

**and pollution degree 2**

**Approvals cULus, ATEX**

**IECEx, FM**

**ATEX marking II 3 G**

**Ex A, Ex C, Ex D**

**Ex output isolation amplifier for standard DC current signals, HART transparent 1-channel output isolation amplifier in 22.5 mm width with external power supply,**

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## Technical data

## Approvals

Approvals



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

## Downloads

Approval/Certificate/Document of Conformity	<a href="#">Certification SIL</a> <a href="#">Certification DNV GL</a> <a href="#">Certification ATEX</a> <a href="#">Certification IECEX</a> <a href="#">Certification UL</a> <a href="#">Declaration of Conformity</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">EPLAN, WSCAD</a>
Software	<a href="#">Library and function block – WI-Manager, DTM-Library for online installation V.1.2.3</a> <a href="#">Release notes for Weidmueller FDT-DTM Software version 1.2.3.</a>
User Documentation	<a href="#">Instruction sheet</a> <a href="#">Safety Manual for SIL application</a> <a href="#">Handbuch ACT20X- Serie, deutsch</a> <a href="#">Manual ACT20X-series, english</a> <a href="#">20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	

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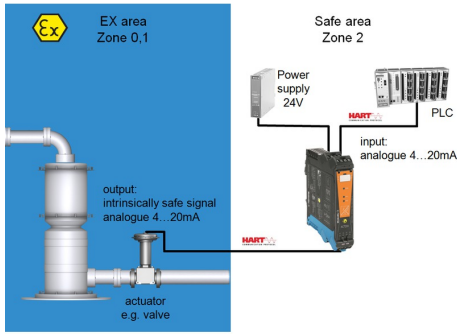
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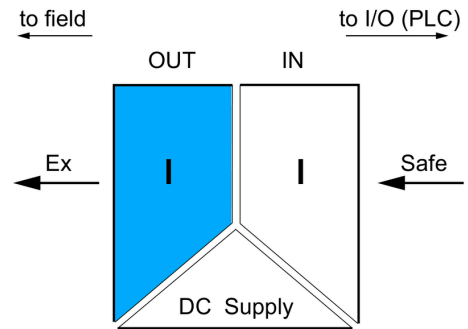
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**Drawings**

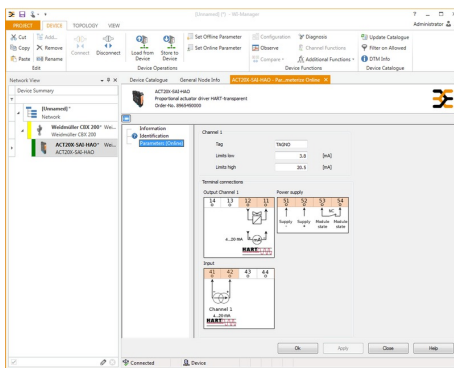
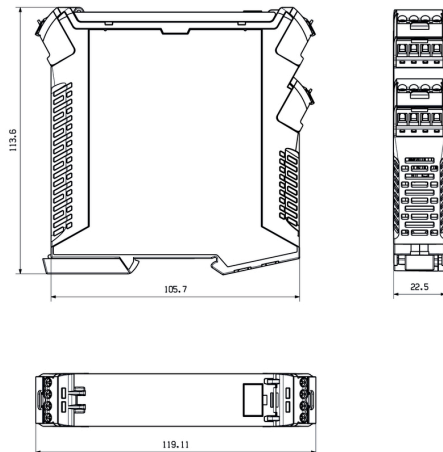
**Application**



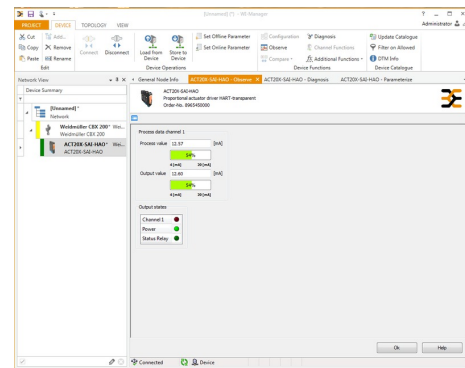
**Block diagram**



**Dimensioned drawing**



screenshot of configuration with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

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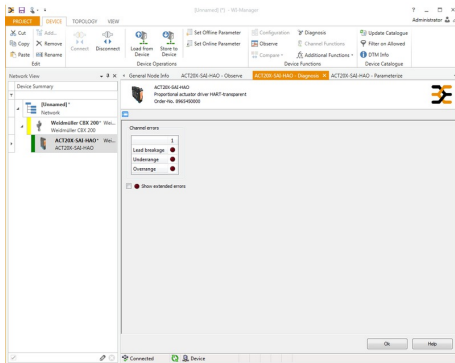
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**Drawings**



screenshot of "diagnosis" with FDT2 / DTM software

**Connection diagram**

