

ACT20X
ACT20X-HAI-SAO-S

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
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Germany
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Product image, Similar to illustration

The ACT20X-HAI-SAO/2HAI-2SAO HART-protocol transparent current-supply isolators are capable of transmitting 4...20 mA signals from Ex zone 0 into the safe zone.

External sensors can be supplied with power through the device.

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

The rail mounted current-supply 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

Type	ACT20X-HAI-SAO-S
Order No.	8965430000
Version	EX signal isolating converter, Ex-input: 4 - 20 mA, Safe-output: 4-20mA, 1-channel
GTIN (EAN)	4032248785049
Qty.	1 pc(s).

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Technical data
Dimensions and weights

Width	22.5 mm	Width (inches)	0.886 inch
Height	119.2 mm	Height (inches)	4.693 inch
Depth	113.6 mm	Depth (inches)	4.472 inch
Net weight	186 g		

Temperatures

Humidity	0...95 % (no condensation)	Operating temperature, max.	60 °C
Operating temperature, min.	-20 °C	Storage temperature, max.	85 °C
Storage temperature, min.	-20 °C	Operating temperature	-20 °C...60 °C
Storage temperature	-20 °C...85 °C		

Probability of failure

MTBF	177 Years	SFF	80 %
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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Rated data UL

UL certificate	E337701.pdf
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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	Residual ripple (current loop)	< 7.5 mV _{eff}
Sensor supply	3.8...26 V DC	Type	intrinsically safe circuit, active (as current source) or passive (as current sink)
Voltage drop not powered	< 6 V	Voltage drop powered	< 4.5 V

Output

Load stability	≤ 0.01 % of end value / 100 Ω	Type	active (as current source) or passive (as current sink)
Influence of load resistance	≤ 0.01% of span / 100 Ω	2-wire supply	≤ 26 V DC
Output signal limit	< 28 mA	Output current	4...20 mA
Cut-off frequency (-3 dB)	0.5...2.5 kHz @ 3.5...23 mA bi-directional HART® signal	Load impedance current	≤ 600 Ω

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Alarm output

Alarm function	Signal limit exceeded, Line interruption at the input, No supply voltage, Device error	Type	Relay, 1 NC (voltage-free)
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

Configuration	With FDT/DTM software	Voltage supply	19.2...31.2 V DC
Type of connection	Screw connection	Power consumption	≤ 1.0 W
Accuracy	< 0.1% span	Temperature coefficient	< 0.01% of span/°C (TU)
Step response time	≤ 5 ms	Protection degree	IP20
Humidity	0...95 % (no condensation)		

Insulation coordination

EMC standards	DIN EN 61326, NE 21	Insulation voltage	2.6 kV (input / output)
Pollution severity	2	Rated voltage	300 V
Surge voltage category	II		

Data for Ex applications (ATEX)

Voltage U_0	Current loop 28 V / externally 10 V	Current I_0	Current loop 93 mA / externally 10 mA
Power P_0	Current loop 0.65 W / externally 0.1 W	Marking	II (1) G [Ex ia Ga] IIC/IIB / IIA, II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
Installation location	Device installed in safe area, zone 2		

Safety-related basic specifications

Demand mode	High	Description of the "safe state"	analogue Output ≤ 3.6 mA or output ≥ 21 mA
Device type	A	Hardware fault tolerance (HFT)	0
Mean Time To Repair (MTTR)	24 h	Safe Failure Fraction (SFF)	80 %
T_{proof}	5 Years	Total failure rate for dangerous detected failures (λ_{DD})	173 FIT
Total failure rate for dangerous undetected failures (λ_{DU})	41 FIT	Total failure rate for safe detected failures (λ_{SD})	0 FIT
Total failure rate for safe undetected failures (λ_{SU})	0 FIT	Safety category	SIL 2
Probability of outage PFH	$4.1 \times 10^{-8} h^{-1}$		

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Technical data

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	1.92×10^{-4} ($T_{proof} = 1$ year), 3.67×10^{-4} ($T_{proof} = 2$ years), 8.92×10^{-4} ($T_{proof} = 5$ years), additional data in the safety manual
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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

Classifications

ETIM 6.0	EC002475	ETIM 7.0	EC002475
eClass 9.0	27-21-01-23	eClass 9.1	27-21-01-23
eClass 10.0	27-21-01-23	UNSPSC	30-21-18-01

Product information

Product information	Weidmüller provides an extended guarantee period of 36 months for this device.
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Approvals

Approvals



Approvals	DNVGL;
ROHS	Conform

Downloads

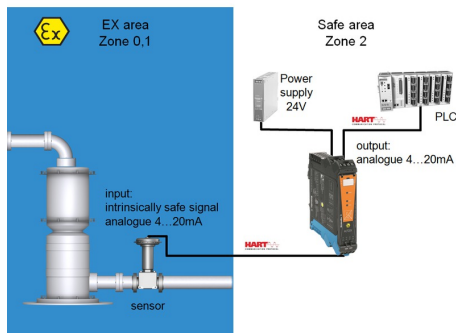
Approval/Certificate/Document of Conformity	Certification SIL Certification DNV GL Certification ATEX Certification IECEx Certification UL Declaration of Conformity
Brochure/Catalogue	CAT 4.1 ELECTR 16/17 EN
Engineering Data	EPLAN, WSCAD
Engineering Data	STEP
Software	WI-Manager, DTM-Library for online installation V.1.2.1
User Documentation	Instruction sheet MAN SAFETY ACT20X-HAI-SAO Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english

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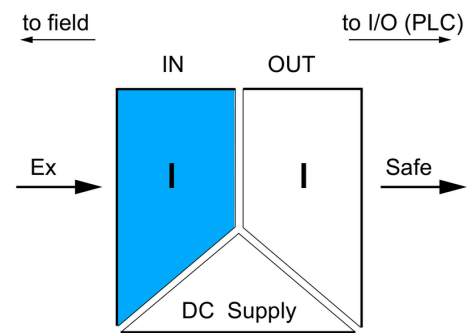
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Drawings

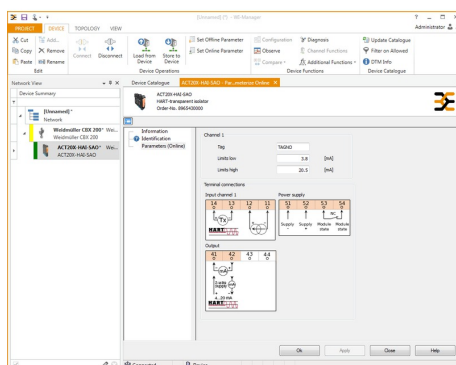
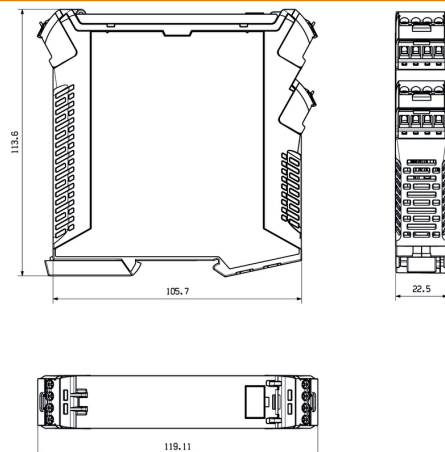
Application



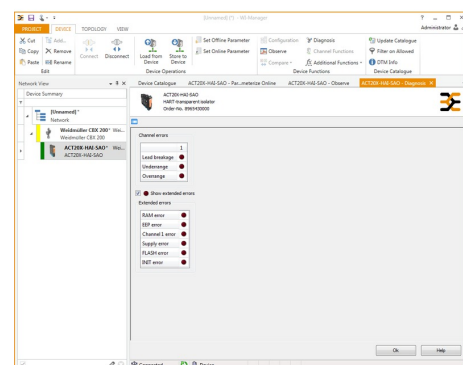
Block diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software

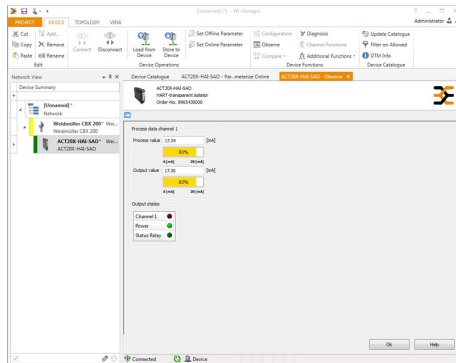


screenshot "diagnosis" with FDT2 / DTM software

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Drawings



screenshot of "observe" with FDT2 / DTM software

Connection diagram

