

**ACT20X-HAI-SAO-P****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Product image**

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**

Version	EX signal isolating converter, Ex-input: 4 - 20 mA, Safe-output: 4-20mA, 1-channel
Order No.	<a href="#">2456140000</a>
Type	ACT20X-HAI-SAO-P
GTIN (EAN)	4050118471540
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
Width	22.5 mm	Width (inches)	0.886 inch
Net weight	186 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	177 a	SFF	80 %

**Assembling**

Mounting position	horizontal or vertical	Rail	TS 35
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**Input EX**

Input current	4...20mA	Output signal in case of wire break	<1 mA
Residual ripple (current loop)	<7.5 mV <sub>eff</sub>	Sensor supply	> 16 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 impedance current	≤ 600 Ω	Load stability	≤ 0.01 % of end value / 100 Ω
Output current	4...20 mA	Output signal limit	<28 mA
Type	active (as current source) or passive (as current sink)		

**Alarm output**

Alarm function	Signal limit exceeded, Line interruption at the input, 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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## Technical data

### General specifications

Accuracy	<0.1% span	Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB
Humidity	0...95 % (no condensation)	Power consumption	≤ 1.9 W
Protection degree	IP20	Step response time	≤ 5 ms
Temperature coefficient	<0.01% of span/°C (TU)	Type of connection	PUSH IN
Voltage supply	19.2...31.2 V DC		

### Insulation coordination

EMC standards	EN 61326-1	Insulation voltage	2.6 kV (input / output)
Rated voltage	300 V	Standards	EN 61010-1

### Data for Ex applications (ATEX)

Current $I_0$	Current loop 93 mA / externally 10 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 $P_0$	Current loop 0.65 W / externally 0.1 W
Voltage $U_0$	Current loop 28 V / externally 10 V		

### Safety-related basic specifications

Description of the "safe state"	analogue Output ≤ 3.6 mA or output ≥ 21 mA	Device type	A
$T_{proof}$	5 a	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	$4.1 \times 10^{-8} \text{ h}^{-1}$
Demand mode	High		

### Safety-related specifications Low demand mode

Average Probability of Failure on Demand ( $PFD_{avg}$ )	$1.92 \times 10^{-4}$ ( $T_{proof} = 1$ year), $3.67 \times 10^{-4}$ ( $T_{proof} = 2$ years), $8.92 \times 10^{-4}$ ( $T_{proof} = 5$ years), additional data in the safety manual
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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 <sup>2</sup>
Wire cross-section, solid, max.	2.5 mm <sup>2</sup>	Wire connection cross section, finely stranded, min.	0.2 mm <sup>2</sup>
Wire connection cross section, finely stranded, max.	2.5 mm <sup>2</sup>	Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min.	0.2 mm <sup>2</sup>
Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max.	2.5 mm <sup>2</sup>		

## Guarantee

Time interval	3 years
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## Classifications

ETIM 6.0	EC002653	ETIM 7.0	EC002653
ETIM 8.0	EC002653	ETIM 9.0	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	ECLASS 13.0	27-21-01-20

## Environmental Product Compliance

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

## Approvals

Approvals



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

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****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>
Software	<a href="#">WI-Manager, DTM-Library for online installation</a>
	<a href="#">Release notes for Weidmueller FDT-DTM Software version</a>
User Documentation	<a href="#">Safety Manual for SIL application</a>
	<a href="#">Instruction sheet</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>

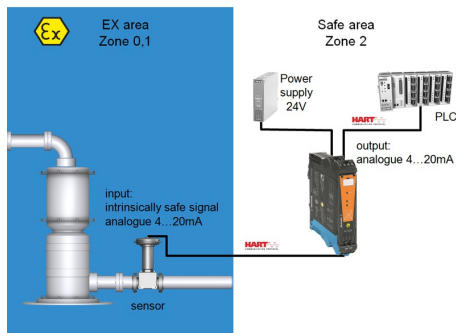
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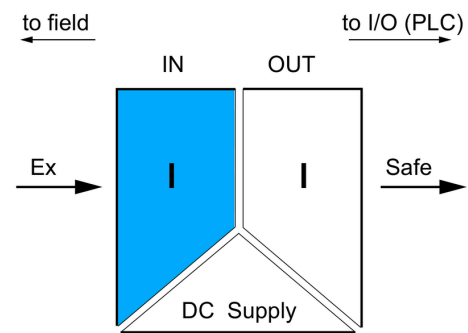
[www.weidmueller.com](http://www.weidmueller.com)

## Drawings

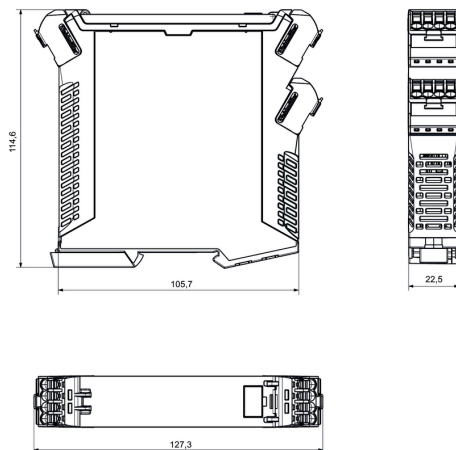
### Application



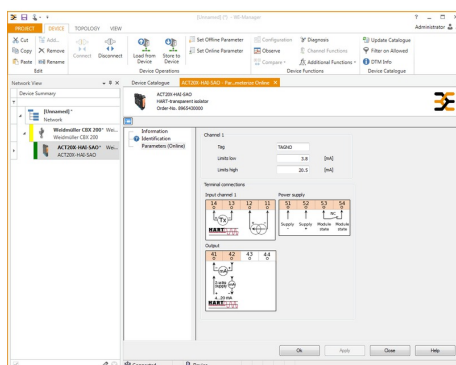
### Block diagram



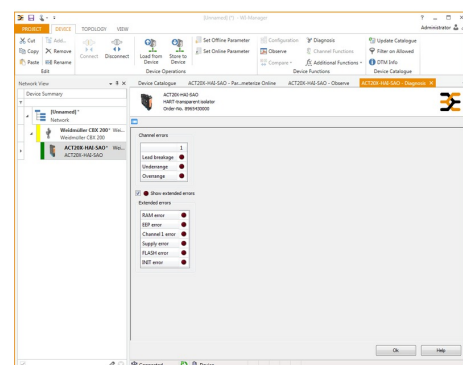
### Dimensioned drawing



### Similar to illustration



screenshot of configuration with FDT2 / DTM software



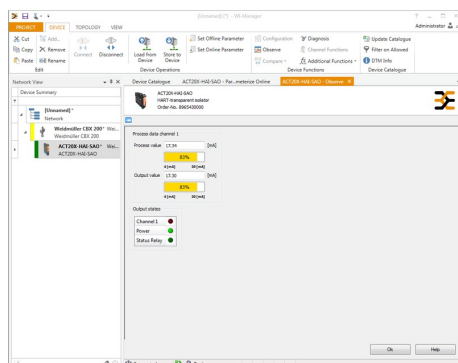
screenshot "diagnosis" with FDT2 / DTM software

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**Drawings**


screenshot of "observe" with FDT2 / DTM software

**Connection diagram**
