

## ACT20X-HAI-SAO-P

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

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).

Creation date September 17, 2022 10:58:26 PM CEST

Catalogue status 09.09.2022 / We reserve the right to make technical changes.

## ACT20X-HAI-SAO-P

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## 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 Years	SFF	80 %

### Environmental Product Compliance

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

### Input EX

Input current	4...20mA	Input frequency	0,5...2,5 kHz @ 3,5...23 mA bi-directional HART <sup>®</sup> signal
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

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	≤ 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)		

Creation date September 17, 2022 10:58:26 PM CEST

Catalogue status 09.09.2022 / We reserve the right to make technical changes.

## ACT20X-HAI-SAO-P

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany

www.weidmueller.com

## Technical data

### General specifications

Accuracy	< 0.1% span	Configuration	With FDT/DTM software
Humidity	0...95 % (no condensation)	Power consumption	≤ 1.9 W
Protection degree	IP20	Step response time	≤ 5 ms
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 <sub>0</sub>	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 <sub>0</sub>	Current loop 0.65 W / externally 0.1 W
Voltage U <sub>0</sub>	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 <sub>proof</sub>	5 Years	Total failure rate for safe detected failures (λ <sub>SD</sub> )	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 (λ <sub>SU</sub> )	164 FIT	Total failure rate for dangerous detected failures (λ <sub>DD</sub> )	127 FIT
Total failure rate for dangerous undetected failures (λ <sub>DU</sub> )	48 FIT	Probability of outage PFH	4.1 x 10 <sup>-8</sup> h <sup>-1</sup>
Demand mode	High		

### Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD <sub>avg</sub> )	1.92 x 10 <sup>-4</sup> (T <sub>proof</sub> = 1 year), 3.67 x 10 <sup>-4</sup> (T <sub>proof</sub> = 2 years), 8.92 x 10 <sup>-4</sup> (T <sub>proof</sub> = 5 years), additional data in the safety manual
---	---

### 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>		

Creation date September 17, 2022 10:58:26 PM CEST

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

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Technical data****Guarantee**

Time interval 3 years

**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

**Approvals**

Approvals



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>
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="#">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>

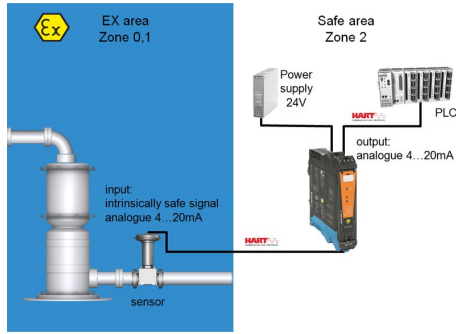
**ACT20X-HAI-SAO-P**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

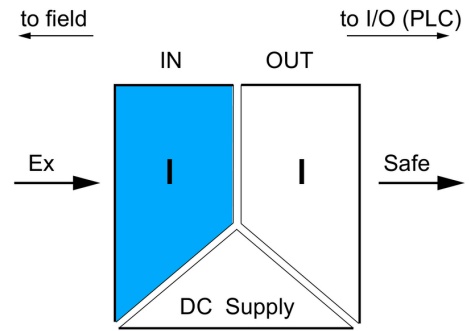
www.weidmueller.com

**Drawings**

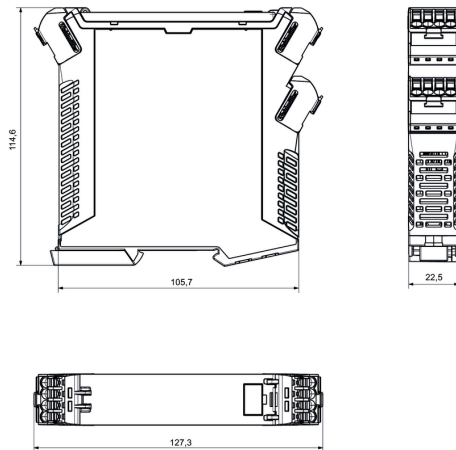
**Application**



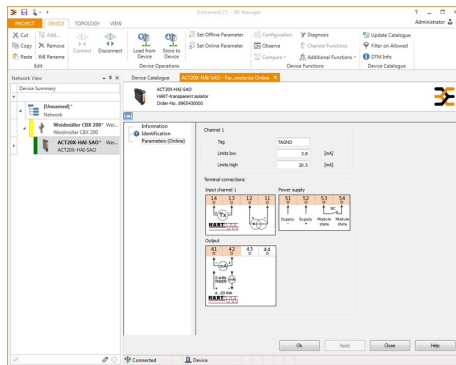
**Block diagram**



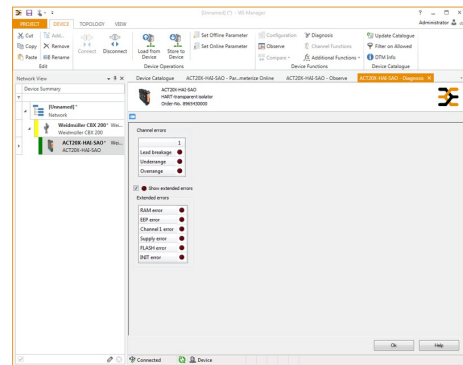
**Dimensioned drawing**



**Similar to illustration**



screenshot of configuration with FDT2 / DTM software



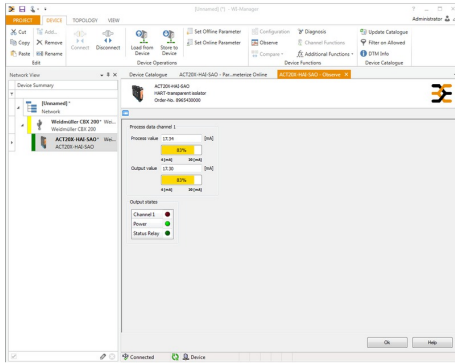
screenshot "diagnosis" with FDT2 / DTM software

**ACT20X-HAI-SAO-P**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

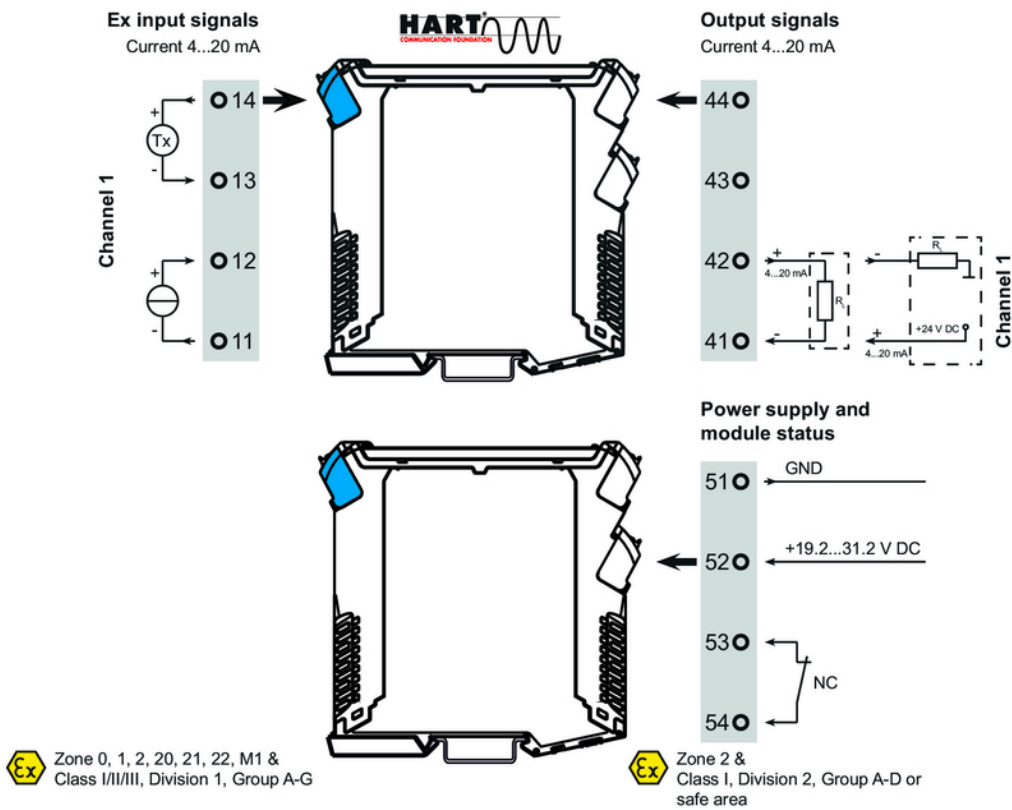
www.weidmueller.com

**Drawings**



screenshot of "observe" with FDT2 / DTM software

**Connection diagram**



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Weidmuller:](#)

[2456140000](#)