

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

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

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

Version	EX signal isolating converter, Ex-input: 4 - 20 mA, Safe-output: 4-20mA, 1-channel
Order No.	8965430000
Type	ACT20X-HAI-SAO-S
GTIN (EAN)	4032248785049
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
Net weight	186 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	177 Years
SFF	80 %		

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	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

2-wire supply	≤ 26 V DC	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	≤ 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
Humidity	0...95 % (no condensation)	Power consumption	≤ 1.0 W
Protection degree	IP20	Step response time	≤ 5 ms
Temperature coefficient	< 0.01% of span/°C (TU)	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)
Pollution severity	2	Rated voltage	300 V
Surge voltage category	II		

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

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	Probability of outage PFH	4.1 x 10 ⁻⁸ h ⁻¹
Safe Failure Fraction (SFF)	80 %	Safety category	SIL 2
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-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	1.92 x 10 ⁻⁴ (T _{proof} = 1 year), 3.67 x 10 ⁻⁴ (T _{proof} = 2 years), 8.92 x 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

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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	ECLASS 11.0	27-21-01-23

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Technical data

Tender specification sheets

Long specification

Ex supply isolator for standard DC current signals, 2-channel, HART transparent 2-channel supply isolator in 22.5 mm width with external power supply, for transmitting and isolating 4...20 mA standard signals from Ex Zones 0,1,2 to the safe zones. The component has an active and passive input. External sensors can be supplied with > 15 VDC. The 4...20 mA output circuit can be operated either passively or actively. Status and 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 mm²
Protection degree: IP
20
Input
4...20 mA

> 15 V DC sensor supply
Output

active
mA
passive 4...20 mA
current loop max. 26 V
DC
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

Short specification

4...20

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Technical data**Important note**

Product information

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

Approvals

Approvals



Approvals

DNVGL;

ROHS

Conform

UL File Number Search

E337701

DownloadsApproval/Certificate/Document of
Conformity

[Certification SIL](#)
[Certification DNV GL](#)
[Certification ATEX](#)
[Certification IECEx](#)
[Certification UL](#)
[Declaration of Conformity](#)

Engineering Data

[STEP](#)

Engineering Data

[EPLAN, WSCAD](#)

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](#)

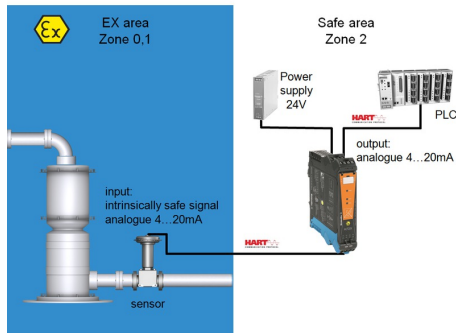
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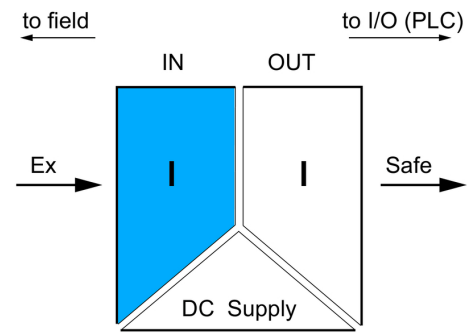
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Drawings

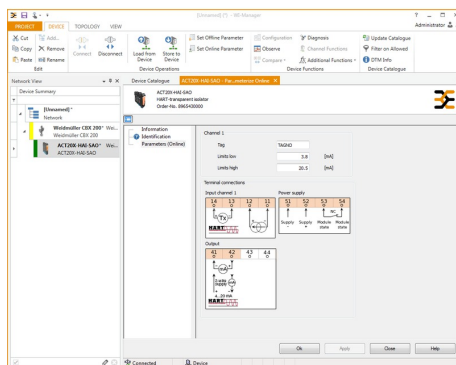
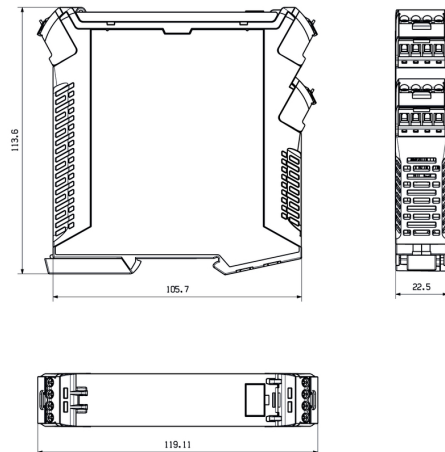
Application



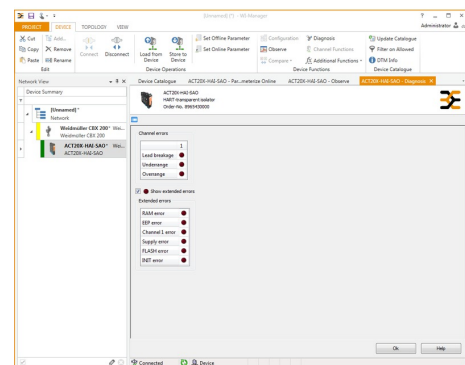
Block diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



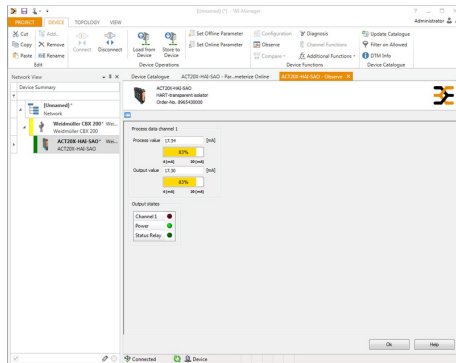
screenshot "diagnosis" with FDT2 / DTM software

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Drawings



screenshot of "observe" with FDT2 / DTM software

Connection diagram

