ACT20X
ACT20X-2SAI-2HAO-S

Weidmüller Interface 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

Type	ACT20X-2SAI-2HAO-S
Order No.	8965460000
Version	EX signal isolating converter, Safe-input: 4-20mA, Ex output: 4 - 20 mA, 2-channel
GTIN (EAN)	4032248785070
Qty.	1 pc(s).

Creation date May 1, 2020 4:07:38 AM CEST

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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	212 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	135 Years

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1

Rated data UL

UL certificate	E337701.pdf

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	Voltage drop	< 2 V
Voltage drop not powered	< 6 V	Voltage drop powered	< 2 V

Input

Input current	4...20mA	Input frequency	0,5...2,5 kHz @ 3,5...23 mA bi-directional HART® signal
Voltage drop	< 2 V		

Output

Type	intrinsically safe circuit	Influence of load resistance	≤ 0.01% of span / 100 Ω
2-wire supply	> 14.5 V @ 20 mA	Output signal limit	< 28 mA
Residual ripple (current loop)	< 7.5 mV_{eff}	Output current	4...20 mA (max. 23 mA)
Cut-off frequency (-3 dB)	0.5...2.5 kHz @ 3.5...23 mA bi-directional HART® signal	Load impedance current	≤ 725 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)	Hysteresis	0.1 mA (switching threshold)
Switching thresholds	0...29.9 mA (programmable)		

General specifications

Configuration	With FDT/DTM software	Voltage supply	19.2...31.2 V DC
Type of connection	Screw connection	Power consumption	≤1.8 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)
Rated voltage	300 V		

Data for Ex applications (ATEX)

Voltage U_0	28 V DC	Current I_0	93 mA
Power P_0	< 650 mW	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)	85 %
T_{proof}	5 Years	Total failure rate for dangerous detected failures (λ_{DD})	127 FIT
Total failure rate for dangerous undetected failures (λ_{DU})	48 FIT	Total failure rate for safe detected failures (λ_{SD})	0 FIT
Total failure rate for safe undetected failures (λ_{SU})	164 FIT	Safety category	SIL 2
Probability of outage PFH	$4.8 \times 10^{-8}\ h^{-1}$		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD_{avg})	2.29×10^{-4} (T_{proof} = 1 year), 4.37×10^{-4} (T_{proof} = 2 years), 1.06×10^{-4} (T_{proof} = 5 year)

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Technical data

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 mm²
Clamping range, min.	0.25 mm²	Clamping range, max.	2.5 mm²
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.

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.1.2.0
User Documentation	Instruction sheet SIL certificate Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english

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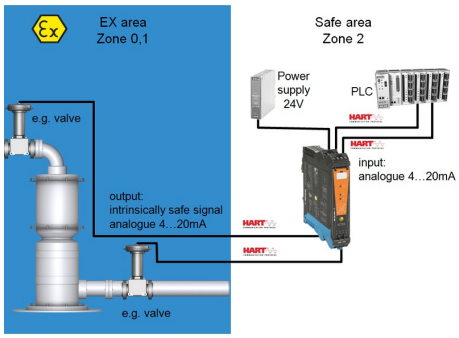
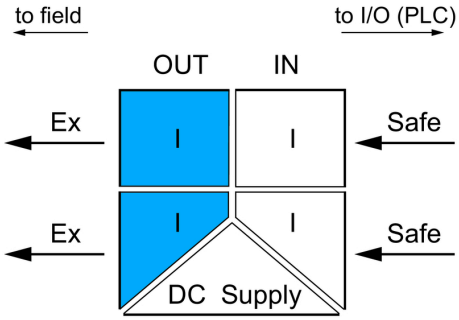
Drawings

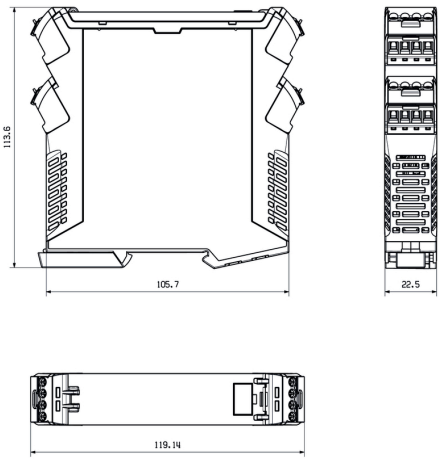
Application

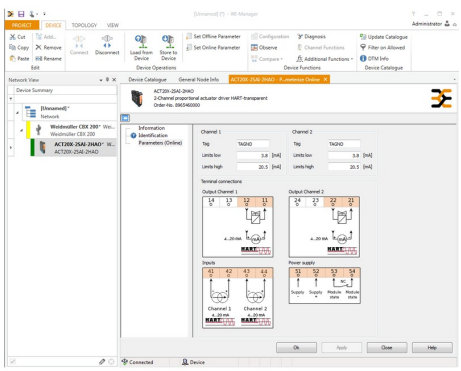


Block diagram

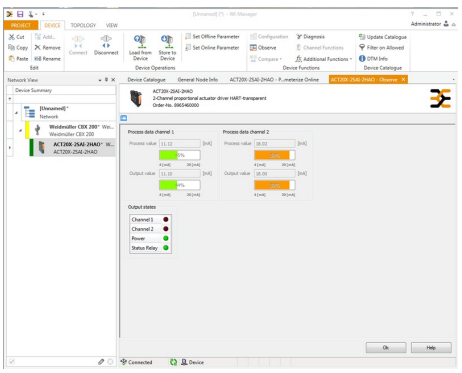


Dimensioned drawing





screenshot of configuration with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software

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Accessories

Accessories

Accessories for the analogue signal processing products:
- End plates: for components with terminal-block design
- Retaining clips: for mounting IP6X signal isolators and displays
- Calibration devices: for calibrating and setting analogue signal converters
- MICRO interface: for direct transmission to a controller thus minimizing the wiring overhead
- markers
- Programming adapter: for configuring PC-configurable modules
- Cross-connector
- Power supply modules / power supplies
- Optional connection terminals and cold-junction compensation terminals

General ordering data

Type	CBX200 USB
Order No.	8978580000
GTIN (EAN)	4032248813759
Qty.	1 pc(s).

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- Programming adapter: for configuring PC-configurable modules
- Cross-connector
- Power supply modules / power supplies
- Optional connection terminals and cold-junction compensation terminals

General ordering data

Type	ESG 8/13.5/43.3 SAI AU	Version
Order No.	1912130000	ESG, Device markers x 13.5 mm, PA 66, Colour: Transparent
GTIN (EAN)	4032248541164	
Qty.	5 pc(s).	

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Accessories

Accessories for network-compatible current measuring transducers

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- MICRO interface: for direct transmission to a controller thus minimizing the wiring overhead
- markers
- Programming adapter: for configuring PC-configurable modules
- Cross-connector
- Power supply modules / power supplies
- Optional connection terminals and cold-junction compensation terminals

General ordering data

Type	ESG 6.6/20 BHZ 5.00/04	Version
Order No.	1082540000	ESG, Device markers x 20 mm, PA 66, Colour: white
GTIN (EAN)	4032248845439	
Qty.	200 pc(s).	

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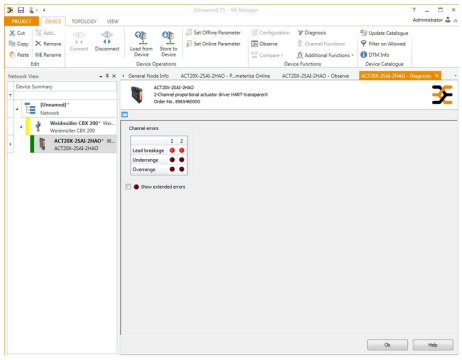
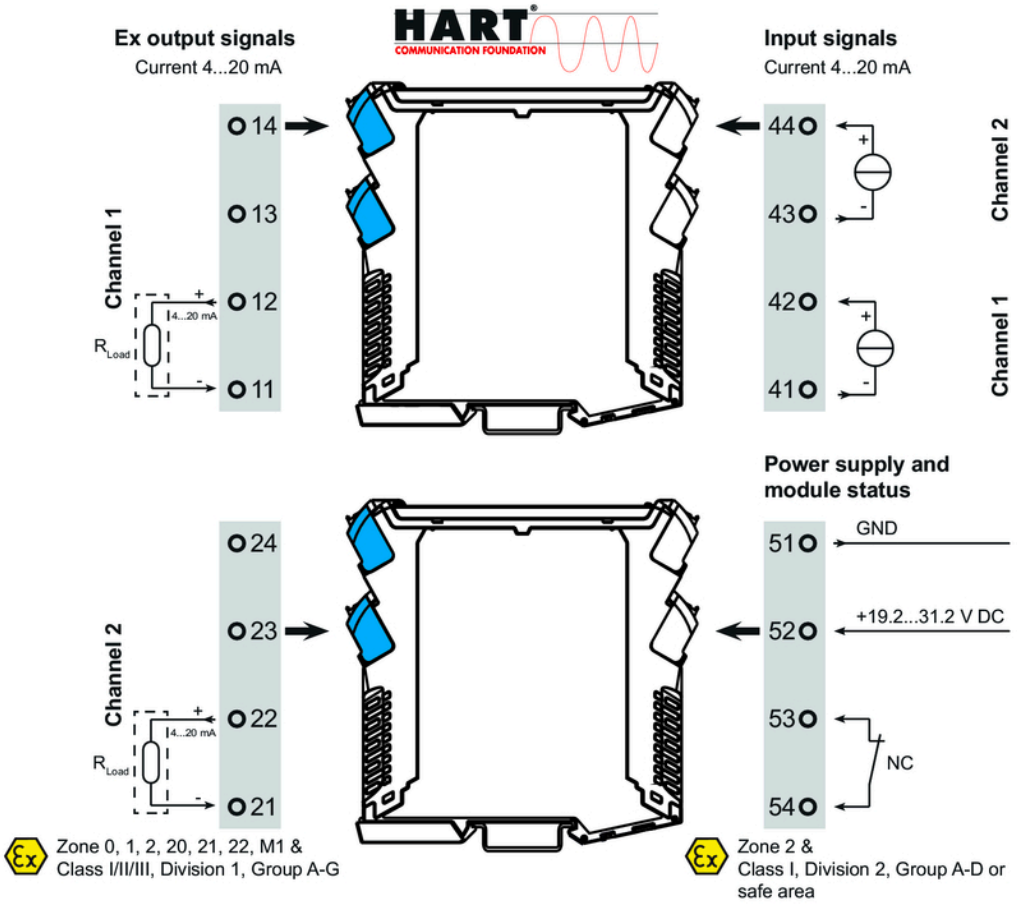


screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram