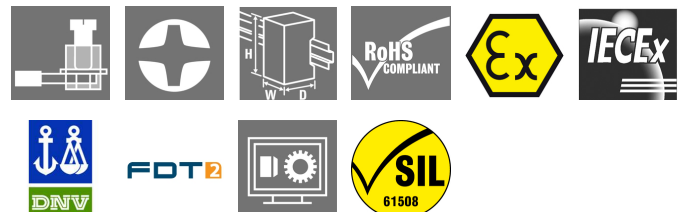


ACT20X
ACT20X-HUI-SAO-S

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 16
 D-32758 Detmold
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 www.weidmueller.com

Product image, Similar to illustration


The ACT 20X HUI-SAO-S/ SAO-LP universal measurement and signal isolating converters can be configured individually.

Temperature signals from PT100 sensors and thermocouples as well as analogue DC current and voltage signals can be recorded from Ex zone 0.

On the output side, optional current/voltage (SAO-S) or 4...20 mA current loop signals (SAO-LP / SAO-S) are provided for the safe zone.

The ACT20X-HUI-SAO-S also has a relay output for configuring its switching threshold.

An integrated alarm contact is available on this device for issuing an alert in the event of a malfunction. This makes troubleshooting easier and also increases system availability.

The power supply of the signal isolating converter is either done using the integrated power supply (SAO-S) or alternatively over the output-side current loop (SAO-LP).

The rail mountable devices are designed with one channel, and are optionally available in widths of 12.5 mm (SAO-LP) or 22.5 mm (SAO-S).

General ordering data

Type	ACT20X-HUI-SAO-S
Order No.	8965490000
Version	EX signal isolating converter, Ex-output: U, I, R, 9, Safe-output: 4-20mA/ relay, 1-channel
GTIN (EAN)	4032248785100
Qty.	1 pc(s).

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Technical data

Dimensions and weights

Width	22.5 mm	Width (inches)	0.886 inch
Height	117.2 mm	Height (inches)	4.614 inch
Depth	113.6 mm	Depth (inches)	4.472 inch
Net weight	202 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	74 Years
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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	0...20 mA, 4...20 mA	Input resistance	configurable, 0...10 kΩ
Input resistance, current	20 Ω + PTC 50 Ω	Input resistance, voltage	> 10 MΩ @ 600 mV, 2 MΩ @ 28 V
Input voltage	configurable, 0...1 V DC, 0,2...1 V DC, 1...5 V DC, 0...(5)10 V, 2...10 V DC	Line resistance in measuring circuit	≤ 50 Ω
Potentiometer		Sensor	2-/3-/4-wire, RTD: PT10, PT20, PT50, PT100, PT250, PT300, PT400, PT500, PT1000, Ni50, Ni100, Ni120, Ni1000, Thermocouples: B, E, J, K, N, R, S, T ; in compliance with IEC 60584-1 and L, U in compliance with DIN43710, Potentiometer, Resistance: 0 - 12 kΩ
Temperature input range	10 Ω...10 kΩ Adjustable from -200...+800°C	Type	intrinsically safe circuit, active (as current source) or passive (as current sink)

Output

Type	active (as current source) or passive (as current sink)	Influence of load resistance	≤ 0.01% of span / 100 Ω
Output signal limit		Output current	0...23 mA, configurable: 0...20 / 4...20 / 20...4 mA, configurable downscale (3.5 mA) / upscale (23 mA) @ error
load impedance current	3.8...20.5 mA / 0...20.5 mA (dependent on range)		
	≤ 600 Ω		

Creation date May 28, 2019 12:37:41 AM CEST

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Alarm output

Alarm function	No supply voltage, Device error	Type	Relay, 1 NC (voltage-free)
Nominal switching voltage	$\leq 125 \text{ V AC} / 110 \text{ V DC}$ (safe area) $\leq 32 \text{ V AC} / 32 \text{ V DC}$ (zone 2)	Continuous current	$\leq 0.5 \text{ A AC} / 0.3 \text{ A DC}$ (safe zone), $\leq 0.5 \text{ A AC} / 1 \text{ A DC}$ (zone 2)
Power rating	$\leq 62.5 \text{ VA} / 32 \text{ W}$ (safe area) $\leq 16 \text{ VA} / 32 \text{ W}$ (Zone 2)		

General specifications

Configuration	With FDT/DTM software	Voltage supply	19.2...31.2 V DC
Type of connection	Screw connection	Power consumption	$\leq 2.1 \text{ W}$
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

Digital output

Type		Nominal switching voltage	$\leq 250 \text{ V AC} / 30 \text{ V DC}$ (safe area) $\leq 32 \text{ V AC} / 32 \text{ V DC}$ (zone 2)
Power rating	Relay, 1 NO / NC contact $\leq 500 \text{ VA} / 60 \text{ W}$ (safe area) $\leq 16 \text{ VA} / 32 \text{ W}$ (Zone 2)	Continuous current	$\leq 2 \text{ A AC/DC}$ (safe area, Zone 2 area)
Function	Configurable switching thresholds, Sensor error, Window function		

Data for Ex applications (ATEX)

Voltage U_0	8.7 V DC	Current I_0	18.4 mA
Power P_0		Marking	II (1) G [Ex ia Ga] IIC/IIB/ IIA, I (M1) [Ex ia Ma] I, II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC
	40 mW		

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Safety-related basic specifications

Demand mode	High	Demand rate	3,000 s
Demand response time	Signal input: < 0.5 s (opto output), Temperature input: < 1.1 s (opto output)	Description of the "safe state"	analogue Output ≤ 3.6 mA or output ≥ 21 mA, de-energized (relay output)
Device type	B	Diagnostic test interval	30 s
Hardware fault tolerance (HFT)	0	Mean Time To Repair (MTTR)	24 h
Relay lifetime	100000 times	Safe Failure Fraction (SFF)	93 %
T _{proof}	4 Years	Total failure rate for dangerous detected failures (λ _{DD})	352 FIT
Total failure rate for dangerous undetected failures (λ _{DU})	43 FIT	Total failure rate for safe detected failures (λ _{SD})	0 FIT
Total failure rate for safe undetected failures (λ _{SU})	278 FIT	Safety category	SIL 2
Probability of outage PFH	4.33 x 10 ⁻⁸ h ⁻¹		

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD _{avg})	2.82 x 10 ⁻⁴ (T _{proof} = 1 year), 4.63 x 10 ⁻⁴ (T _{proof} = 2 years), 1.00 x 10 ⁻³ (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 23	Wire connection cross section AWG, max.	AWG 14

Ratings IECEx/ATEX/cUL

ATEX certificate	10ATEX0071X.pdf	IEC Ex certificate	IECEx certification
Certificate No. (ATEX)	KEMA10ATEX0071X	Certificate No. (IECEX)	IECEXKEM10.0034X

Classifications

ETIM 3.0	EC002479	ETIM 4.0	EC002479
ETIM 5.0	EC002479	ETIM 6.0	EC002653
UNSPSC	30-21-18-01	eClass 5.1	27-21-01-07
eClass 6.2	27-21-01-07	eClass 7.1	27-21-01-07
eClass 8.1	27-21-01-07	eClass 9.0	27-21-01-20
eClass 9.1	27-21-01-20		

Product information

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

Approvals



Approvals	DNVGL;
ROHS	Conform

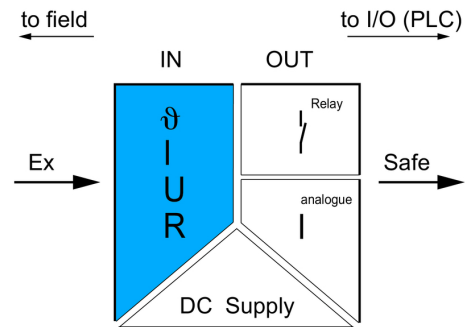
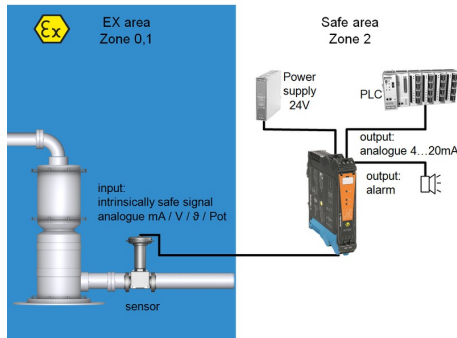
Downloads

Approval/Certificate/Document of Conformity	SIL certificate Certification DNV GL 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 Manual MAN SAFETY ACT20X-HUI-SAO

ACT20X ACT20X-HUI-SAO-S

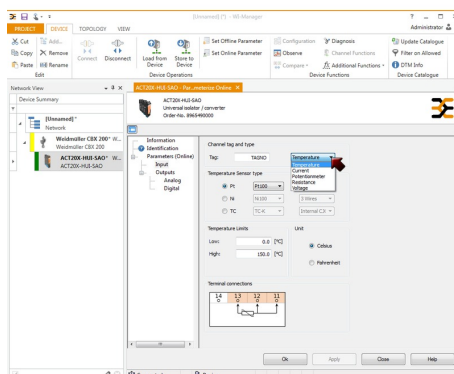
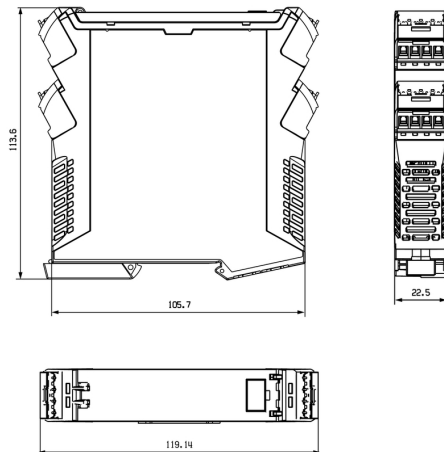
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Drawings

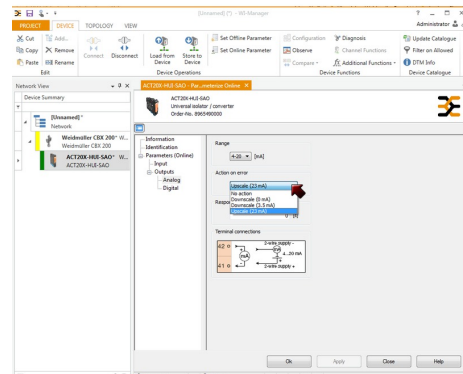


application schematic

Dimensioned drawing



screenshot of temperature input
configuration with FDT2 / DTM software

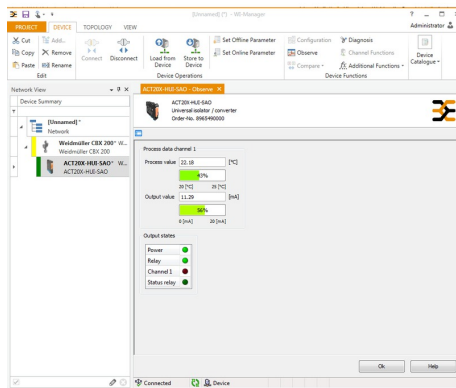


screenshot of output configuration
with FDT2 / DTM software

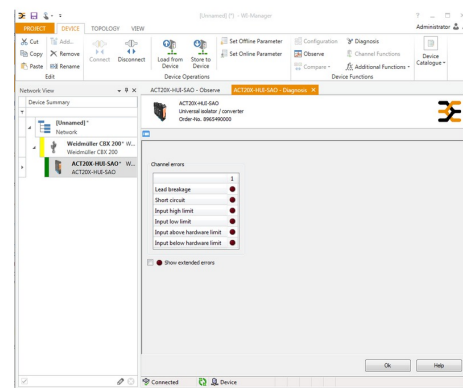
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Drawings



screenshot of "observe" with FDT2 / DTM software



screenshot of "diagnosis" with FDT2 / DTM software

