Data sheet

ACT20X-HUI-SAO-S

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

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

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

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Technical data

Approvals

Approvals	CE; CULUS; DETNORVER; FMEX; FUSAFETY; IECEXKEM; KEMAATEX
Approvals	DNVGL;
Approvals	
ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

Dimensions and weights

Depth	113.6 mm	Depth (inches)	4.4724 inch
Height	119.2 mm	Height (inches)	4.6929 inch
Width	22.5 mm	Width (inches)	0.8858 inch
Net weight	202 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 - PDF/ Cert_Weidmueller_070902_PA002EC0615_V2R1.pdf (application/pdf)	Safety integrity level (SIL) in compliance with IEC 61508	2
MTBF	74 a		

Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption
RoHS Exemption (if applicable/known)	7a, 7cI
REACH SVHC	Lead 7439-92-1
SCIP	2f6dd957-421a-46db-a0c2-cf1609156924

Assembling

Type of mounting	Snap mounting support rail	Mounting rail	TS 35
Mounting position	horizontal or vertical		

Input EX

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	Input resistance	configurable, 0...10 kΩ

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	L, U in compliance with DIN43710, Potentiometer, Resistance: 0 - 12 kΩ		
Type	intrinsically safe circuit, active (as current source) or passive (as current sink)	Line resistance in measuring circuit	≤ 50 Ω
Potentiometer	10 Ω...10 kΩ	Sensor supply	21.4...16.5 V DC / 0...20 mA
Input voltage	configurable, 0...1 V DC, 0,2...1 V DC, 1...5 V DC, 0...(5)10 V, 2...10 V DC	Temperature input range	Configurable, PT100: -200...+850 °C, PT200: -200...+850 °C, PT1000: -200...+850 °C, NI100: -60°C...+250 °C, Ni120: -80 °C...+320 °C, NI1000: -60°C...+250 °C, B: +100...+1820 °C, E: (-100...+1000 °C), J: (-100...+1200 °C), K: (-180...+1372 °C), L: (-200...+900 °C), N: (-180...+1300 °C), R: (-50...+1760 °C), S: (-50...+1760 °C), T: (-200...+400 °C), U: (-200...+600 °C), W3: (0...+2300 °C), W5: (0...+2300 °C), LR: (-200...+800 °C)
Input current	0...20 mA, 4...20 mA	Input resistance, voltage	> 10 MΩ @ 600 mV, 2 MΩ @ 28 V
Input resistance, current	20 Ω + PTC 50 Ω	Number of inputs, Ex	1

Output (analogue)

Output behaviour on failure downscale	23 mA	Output behaviour on failure upscale	3.5 mA
Number of analogue outputs	1	Load resistance current	< 600 Ω
Output current	0(4)...20 mA (active), 0(4)...20 mA (passive), 20...0(4) mA (active), 20...0(4) mA (passive)		

Output (Status)

Contact material	AgNi	Hysteresis	0.1 mA (switching threshold)
Type	Status relay, 1 NC (voltage-free)	Alarm function	Device error, Failure of power supply
Number of alarm outputs	1	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)

Alarm output

Hysteresis	0.1 mA (switching threshold)	Alarm function	configurable, Limit values: high, low, window, Sensor error, No supply voltage
Number of alarm outputs	1	Nominal switching voltage	≤ 125 V AC / 110 V DC (safe area) ≤ 32 V AC / 32 V DC (zone 2)

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Technical data

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)

General specifications

Type of connection	Screw connection	Humidity	0...95 % (no condensation)
Protection degree	IP20	Supply voltage	19.2...31.2 V DC
Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Operating altitude	≤ 2000 m
Heat dissipation	≤1,7 W		

Insulation coordination

EMC standards	EN 61326-1	Standards	EN 61010-1
Pollution severity	2	Insulation voltage	2.6 kV (input / output)
Rated voltage	300 V		

Data for Ex applications (ATEX)

ATEX - gas labelling	II (1) G [Ex ia Ga] IIC/IIB/IIA	ATEX - dust labelling	II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
IECEx - gas labelling	Ex ec nC IIC T4 Gc, [Ex ia Ga] IIC/IIB/IIA	Installation location	Device installed in safe area, zone 2

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

Guarantee

Time interval	3 years

Part description

Product description	The device ACT20X-HUI-SAO-S transmits analog signals from hazardous areas safely galvanically separated into non or less hazardous areas. For this purpose the input circuits are designed intrinsically safe. Features • Configuration and diagnosis via FDT/DTM Software “WI-Manager”. • The device can be mounted in the safe area and in zone 2 / division 2 and receive signals from zone 0, 1, 2, 20, 21 and 22, as well as Class I/II/III, division 1, group A-G. • The active or passive signal inputs for RTD, TC, potentiometer, V and mA are completely electrically isolated. • The device detects automatically whether an active or passive current signal is connected. • As cold junction compensation for the TC signal input, either the internal cold junction compensation or for even higher accuracy an external cold junction compensation terminal is used. • Extended self diagnostic: Monitoring of error events (e.g. cable breakage) via status relay. • Front LEDs indicates operation status and malfunction. • 3-way galvanic isolation between input, output and power supply.

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Technical data

Classifications

ETIM 8.0	EC002653	ETIM 9.0	EC002653
ETIM 10.0	EC002653	ECLASS 14.0	27-21-01-20
ECLASS 15.0	27-21-01-20		

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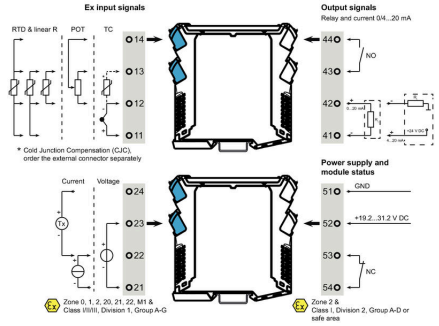
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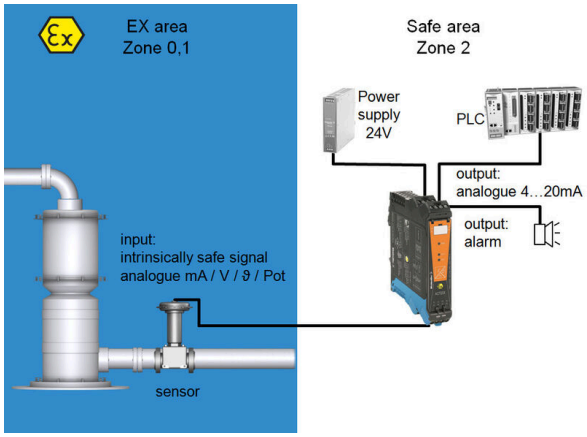
Drawings

Connection diagram

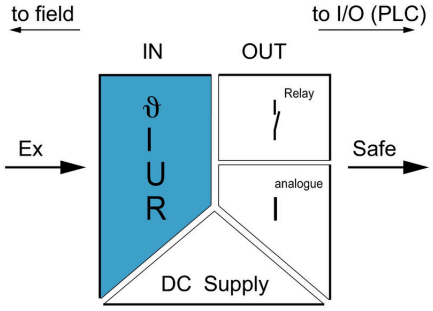


Limit value setting options

Application



Block diagram



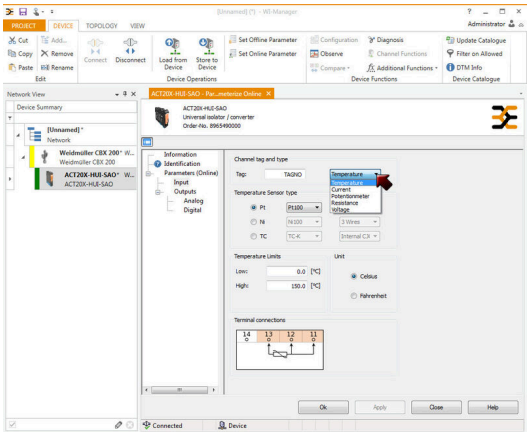
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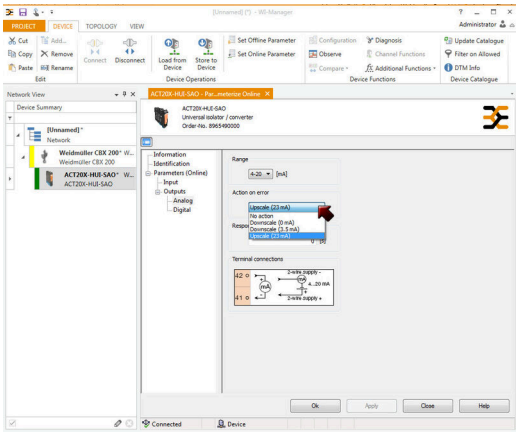
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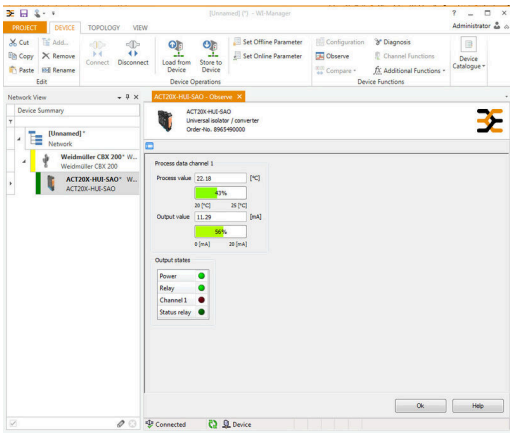
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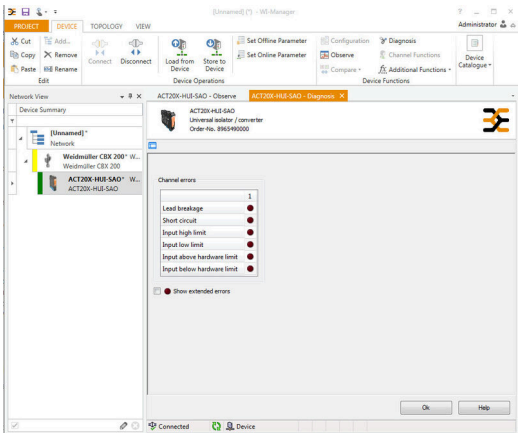
screenshot of input configuration
with FDT2 / DTM software



screenshot of output configuration
with FDT2 / DTM software



screenshot of "observe" with FDT2 / DTM software



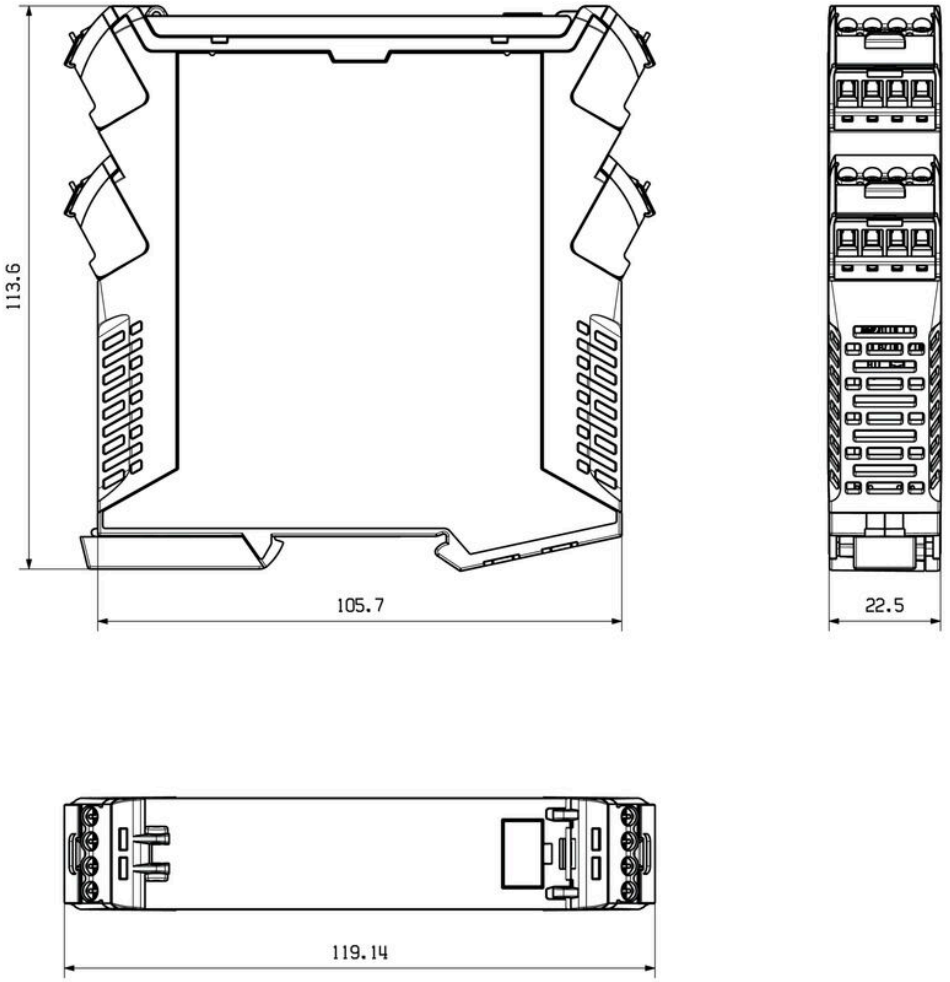
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Drawings



Dimensioned drawing

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Drawings



Removable terminals with coding

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