

## ACT20X-2HTI-2SAO-S

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

www.weidmueller.com

### Product image



The ACT20X-HTI-SAO / 2HTI-2SAO temperature transducers record temperatures from PT100 sensors and thermocouples from Ex zone 0. Current loops from 0(4) to 20 mA can also be connected on the input side. On the output side, there are active and passive current loops available for the safe zone. 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

Version	EX signal isolating converter, Ex-input: I,Ø, Safe-output: 4-20mA, 2-channel
Order No.	<a href="#">8965480000</a>
Type	ACT20X-2HTI-2SAO-S
GTIN (EAN)	4032248785094
Qty.	1 pc(s).

Creation date 15 June 2023 04:07:36 CEST

Catalogue status 09.06.2023 / We reserve the right to make technical changes.

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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
Width	22.5 mm	Width (inches)	0.886 inch
Net weight	180 g		

### Temperatures

Storage temperature	-20 °C...85 °C	Operating temperature	-20 °C...60 °C
Operating temperature, min.	-20 °C	Operating temperature, max.	60 °C
Humidity	0...95 % (no condensation)		

### Probability of failure

SIL PAPER	SIL certificate	SIL in compliance with IEC 61508	2
MTBF	111 a		

### Assembling

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

### Input EX

Input current	0...20 mA, 4...20mA	Input resistance, current	20 Ω + PTC 50 Ω
Line resistance in measuring circuit		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
	≤ 50 Ω		
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)	Type	intrinsically safe circuit, RTD, TC, DC (mA)

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### Output

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

### Alarm output

Alarm function	Line interruption at the input, Short circuit at input, No supply voltage, Device error	Continuous current	$\leq 0.5$ A AC / 0.3 A DC (safe zone), $\leq 0.5$ A AC / 1 A DC (zone 2)
Nominal switching voltage	$\leq 125$ V AC / 110 V DC (safe area) $\leq 32$ V AC / 32 V DC (zone 2)	Power rating	$\leq 62.5$ VA / 32 W (safe area) $\leq 16$ VA / 32 W (Zone 2)
Type	Status relay, 1 NC (voltage- free)		

### General specifications

Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Humidity	0...95 % (no condensation)
Power consumption	$\leq 1.4$ W	Protection degree	IP20
Step response time	$\leq 400$ ms (with current), $\leq$ 1 s (with temperature)	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)
Rated voltage	300 V		

### Data for Ex applications (ATEX)

Current $I_0$	18.4 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 $P_0$	40 mW
Voltage $U_0$	8.7 V DC		

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**Technical data****Safety-related basic specifications**

Description of the "safe state"	analogue Output $\leq 3.6$ mA or output $\geq 21$ mA	Device type	B
Diagnostic test interval	30 s	$T_{proof}$	3 a
Total failure rate for safe detected failures ( $\lambda_{SD}$ )	0 FIT	Hardware fault tolerance (HFT)	0
Safety category	SIL 2	Safe Failure Fraction (SFF)	90 %
Mean Time To Repair (MTTR)	24 h	Total failure rate for safe undetected failures ( $\lambda_{SU}$ )	234 FIT
Total failure rate for dangerous detected failures ( $\lambda_{DD}$ )	367 FIT	Total failure rate for dangerous undetected failures ( $\lambda_{DU}$ )	61 FIT
Probability of outage PFH	$6.1 \times 10^{-8} \text{ h}^{-1}$	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)

**Safety-related specifications Low demand mode**

Average Probability of Failure on Demand ( $PFD_{avg}$ )	$3.96 \times 10^{-4}$ ( $T_{proof} = 1$ year), $6.5 \times 10^{-4}$ ( $T_{proof} = 2$ years), $1.41 \times 10^{-4}$ ( $T_{proof} = 5$ years)
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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 <sup>2</sup>
Clamping range, min.	0.25 mm <sup>2</sup>	Clamping range, max.	2.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 26	Wire connection cross section AWG, max.	AWG 12

**Guarantee**

Time interval	3 years
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**Classifications**

ETIM 6.0	EC002919	ETIM 7.0	EC002919
ETIM 8.0	EC002919	ECLASS 9.0	27-21-01-29
ECLASS 9.1	27-21-01-29	ECLASS 10.0	27-21-01-29
ECLASS 11.0	27-21-01-29	ECLASS 12.0	27-21-01-29

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## Technical data

### Tender specification sheets

Long specification

Short specification

**Ex temperature transducer for RTD-/TC temperature signals and DC current signals, 2-channel**  
**2-channel temperature transducer in 22.5 mm width with external power supply, for capturing and isolating RTD- / TC sensors and DC current signals 0(4)...20 mA from the Ex Zones 0, 1, 2.**  
**The outputs can be operated as either an active 0(4)...20 mA signal or as a passive 4...20 mA current loop.**  
**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 mm<sup>2</sup>**  
**Protection degree: IP 20**  
**Input / channel RTD:**  
**PT100, PT500, PT1000, Ni100, Ni120, Ni1000**  
**TC-**  
**Type: B, E, J, K, N, R, S, T, U, L**

**0(4)...20 mA**

**Output / channel active**

**0(4)...20 mA / 20..4 mA configurable**  
**passive 4...20 mA current loop 3.5...26 V DC**

**Load / channel < 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**

Creation date 15 June 2023 04:07:36 CEST **32 V**

**AC @ 0.5 A/ 32 VDC @ 1**

**A Zone 2**

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**power**

**10...31 VDC**

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### Environmental Product Compliance

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

### Approvals

Approvals



Approvals	DNVGL;
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>
Engineering Data	<a href="#">WSCAD, EPLAN</a>
Software	<a href="#">Runtime Software – WI-Manager, DTM-Library for online installation</a> <a href="#">Release notes for Weidmueller FDT-DTM Software version</a>
User Documentation	<a href="#">Instruction sheet</a> <a href="#">Safety Manual for SIL application</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>
Brochures	

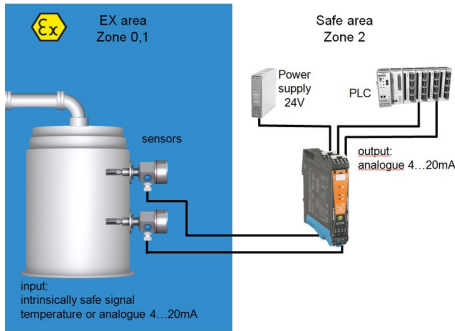
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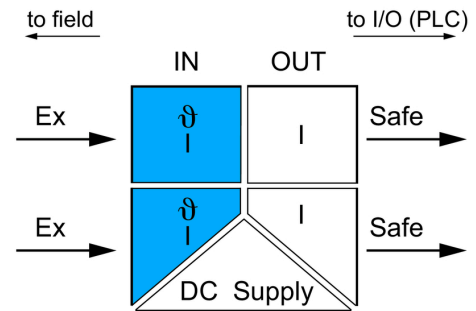
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**Drawings**

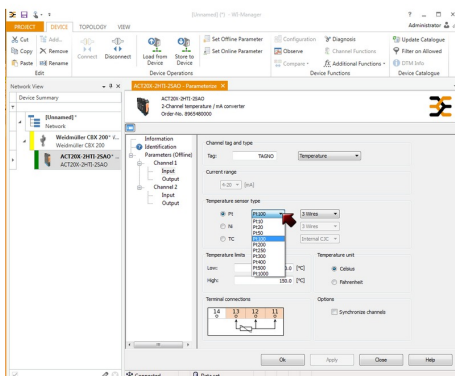
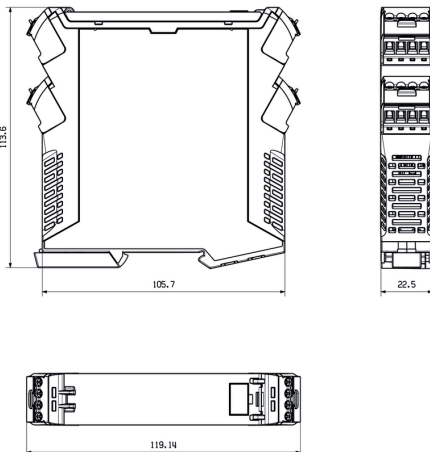
**Application**



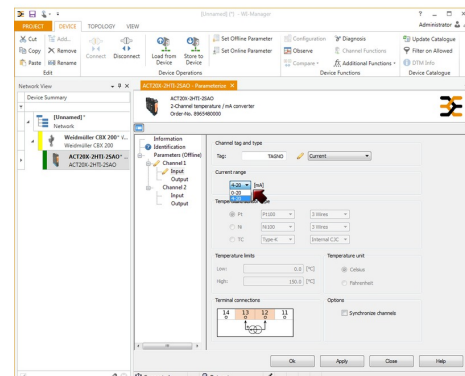
**Block diagram**



**Dimensioned drawing**



screenshot of temperature configuration with FDT2 / DTM software



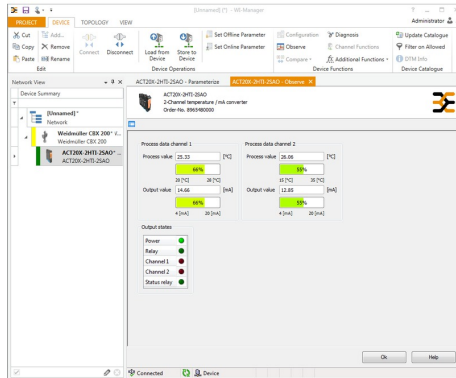
screenshot of current configuration with FDT2 / DTM software

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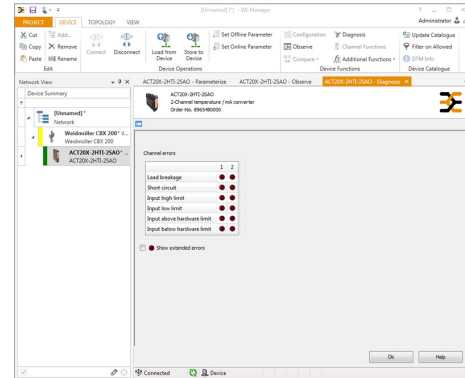
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**Drawings**



screenshot of "observe" with FDT2 / DTM software



screenshot of "diagnosis" with FDT2 / DTM software

**Connection diagram**

