

**ACT20X**  
**ACT20X-2HTI-2SAO-P**

**Weidmüller Interface GmbH & Co. KG**  
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**Product image, Similar to illustration**

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**

Type	ACT20X-2HTI-2SAO-P
Order No.	<a href="#">2456 190000</a>
Version	EX signal isolating converter, Ex-input: I, 9, Safe-output: 4-20mA, 2-channel
GTIN (EAN)	4050118471588
Qty.	1 pc(s).

## Data sheet

### ACT20X ACT20X-2HTI-2SAO-P

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## Technical data

### Dimensions and weights

Width	22.5 mm	Width (inches)	0.886 inch
Height	127.3 mm	Height (inches)	5.012 inch
Depth	114.6 mm	Depth (inches)	4.512 inch
Net weight	180 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	111 Years	SIL in compliance with IEC 61508	2
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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...20mA	Input resistance, current	20 Ω + PTC 50 Ω
Line resistance in measuring circuit		Sensor	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	Type	intrinsically safe circuit, RTD, TC, DC (mA)

### 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&hellip;20 / 20&hellip;0 / 20...4 mA, configurable downscale (3.5 mA) / upscale (23 mA) @ error
	3.8...20.5 mA / 0...20.5 mA (dependent on range)		
Load impedance current	≤ 600 Ω		

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**Technical data****Alarm output**

Alarm function	Line interruption at the input, Short circuit at 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)		

**General specifications**

Configuration	With FDT/DTM software	Voltage supply	19.2...31.2 V DC
Type of connection	PUSH IN	Power consumption	≤ 1.4 W
Step response time	≤ 400 ms (with current), ≤ 1 s (with temperature)	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 $U_0$	8.7 V DC	Current $I_0$	18.4 mA
Power $P_0$	40 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	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
Device type	B	Diagnostic test interval	30 s
Hardware fault tolerance (HFT)	0	Mean Time To Repair (MTTR)	24 h
Safe Failure Fraction (SFF)	90 %	$T_{proof}$	3 Years
Total failure rate for dangerous detected failures ( $\lambda_{DD}$ )	367 FIT	Total failure rate for dangerous undetected failures ( $\lambda_{DU}$ )	61 FIT
Total failure rate for safe detected failures ( $\lambda_{SD}$ )	0 FIT	Total failure rate for safe undetected failures ( $\lambda_{SU}$ )	234 FIT
Safety category	SIL 2	Probability of outage PFH	$6.1 \times 10^{-8} h^{-1}$

**Safety-related specifications Low demand mode**

Average Probability of Failure on Demand (PFD <sub>avg</sub> )	$3.96 \times 10^{-4}$ ( $T_{proof} = 1$ year), $6.5 \times 10^{-4}$ ( $T_{proof} = 2$ years), $1.41 \times 10^{-4}$ ( $T_{proof} = 5$ years)
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# Technical data

### Connection data

Type of connection	PUSH IN	Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 14	Wire cross-section, solid, min.	0.2 mm <sup>2</sup>
Wire cross-section, solid, max.	2.5 mm <sup>2</sup>	Wire connection cross-section, finely stranded, min.	0.2 mm <sup>2</sup>
Wire connection cross section, finely stranded, max.	2.5 mm <sup>2</sup>	Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min.	0.2 mm <sup>2</sup>
Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max.	2.5 mm <sup>2</sup>		

### Classifications

ETIM 6.0	EC002919	ETIM 7.0	EC002919
eClass 9.0	27-21-01-29	eClass 9.1	27-21-01-29
eClass 10.0	27-21-01-29		

### Approvals

Approvals



ROHS Conform

### 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="#">STEP</a>
Software	<a href="#">WI-Manager, DTM-Library for online installation V.1.2.0</a>
User Documentation	<a href="#">MAN SAFETY ACT20X-(2)HTI-(2)SAO</a> <a href="#">Instruction sheet</a> <a href="#">Handbuch ACT20X- Serie, deutsch</a> <a href="#">Manual ACT20X- series, english</a>

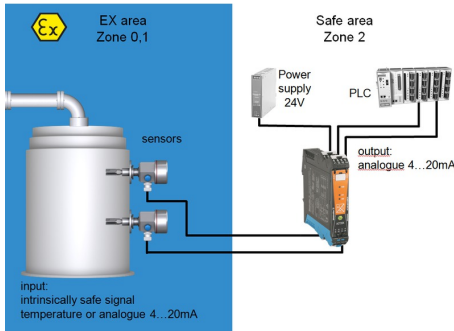
**Data sheet**

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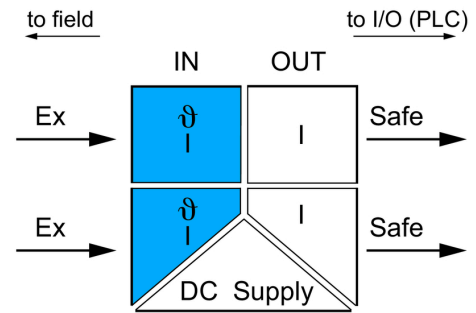
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**Drawings**

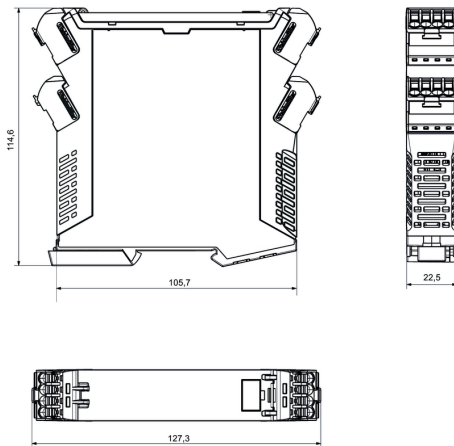
**Application**



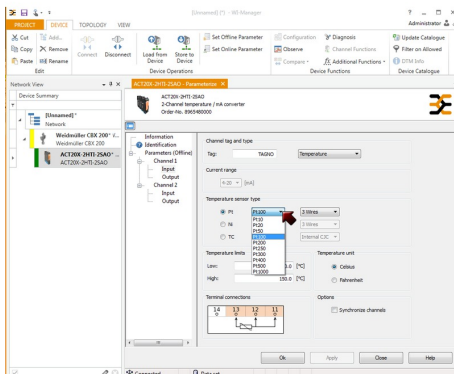
**Block diagram**



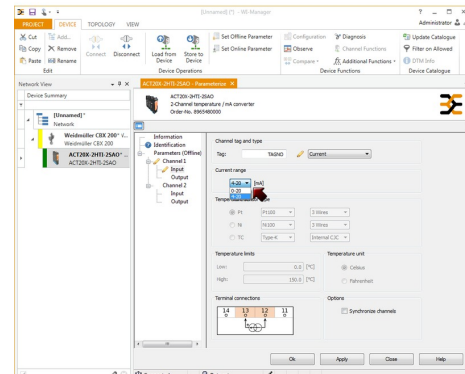
**Dimensioned drawing**



**Similar to illustration**



screenshot of temperature configuration with FDT2 / DTM software



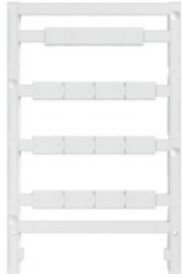
screenshot of current configuration with FDT2 / DTM software

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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.	<a href="#">8978580000</a>
GTIN (EAN)	4032248813759
Qty.	1 pc(s).

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## General ordering data

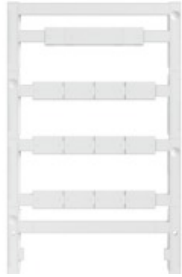
Type	ESG 8/13.5/43.3 SAI AU	Version	
Order No.	<a href="#">1912130000</a>	ESG, Device markers x 13.5 mm, PA 66, Colour: Transparent	
GTIN (EAN)	4032248541164		
Qty.	5 pc(s).		

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**Accessories**

**Accessories for network-compatible current measuring transducers**



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- Cross-connector
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- Optional connection terminals and cold-junction compensation terminals

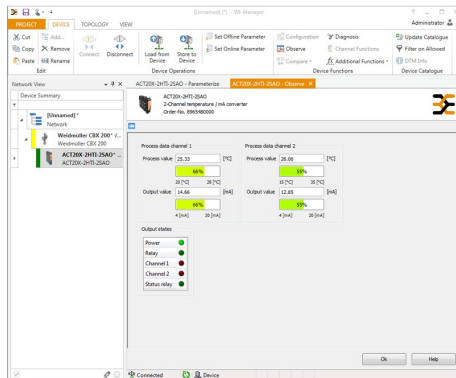
**General ordering data**

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

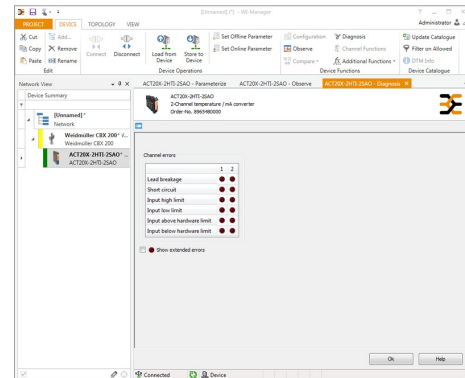
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Drawings



screenshot of "observe" with FDT2 / DTM software



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

