

**ACT20X-2HTI-2SAO-P****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**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**

Version	EX signal isolating converter, Ex-input: I,9, Safe-output: 4-20mA, 2-channel, Input : Temperature, 4-20 mA, EX, Output : 4-20 mA, Safe
Order No.	<a href="#">2456190000</a>
Type	ACT20X-2HTI-2SAO-P
GTIN (EAN)	4050118471588
Qty.	1 pc(s).

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**Technical data****Dimensions and weights**

Depth	114.6 mm	Depth (inches)	4.512 inch
Height	127.3 mm	Height (inches)	5.012 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
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	DIN 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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**Technical data****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...0 / 20...4 mA, configurable downscale (3.5 mA) / up- scale (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 in- put, 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 (volt- age-free)		

**General specifications**

Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Humidity	0...95 % (no condensation)
Operating altitude	$\leq 2000$ m	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	PUSH IN	Voltage supply	19.2...31.2 V DC

**Insulation coordination**

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

**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 <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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**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>		

**Guarantee**

Time interval	3 years
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**Classifications**

ETIM 6.0	EC002919	ETIM 7.0	EC002919
ETIM 8.0	EC002919	ETIM 9.0	EC002919
ETIM 10.0	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
ECLASS 13.0	27-21-01-29	ECLASS 14.0	27-21-01-29
ECLASS 15.0	27-21-01-29		

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Approvals**

Approvals



Approvals MAMID	<a href="https://mdcop.weidmueller.com/mediadelivery/rendition/900_319222/-T1z1mm-S800/">https://mdcop.weidmueller.com/mediadelivery/rendition/900_319222/-T1z1mm-S800/</a> <a href="https://mdcop.weidmueller.com/mediadelivery/rendition/900_319228/-T1z1mm-S800/">https://mdcop.weidmueller.com/mediadelivery/rendition/900_319228/-T1z1mm-S800/</a> <a href="https://mdcop.weidmueller.com/mediadelivery/rendition/900_319234/-T1z1mm-S800/">https://mdcop.weidmueller.com/mediadelivery/rendition/900_319234/-T1z1mm-S800/</a>
ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

**Environmental Product Compliance**

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

**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>
Software	<a href="#">WI-Manager, DTM-Library for online installation</a> <a href="#">Release notes for Weidmueller FDT-DTM Software version</a>
User Documentation	<a href="#">Safety Manual for SIL application</a> <a href="#">Instruction sheet</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>

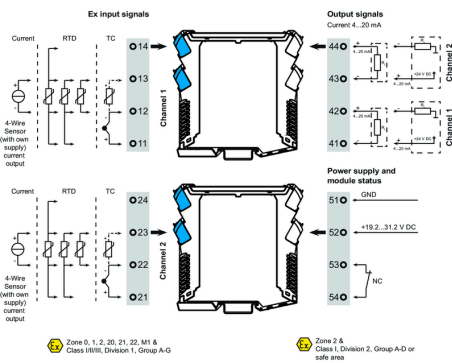
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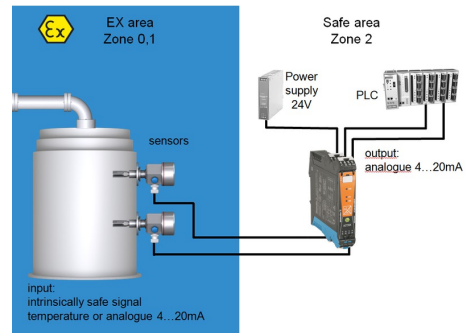
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## Drawings

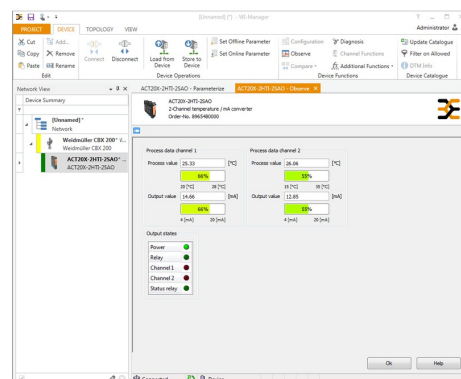
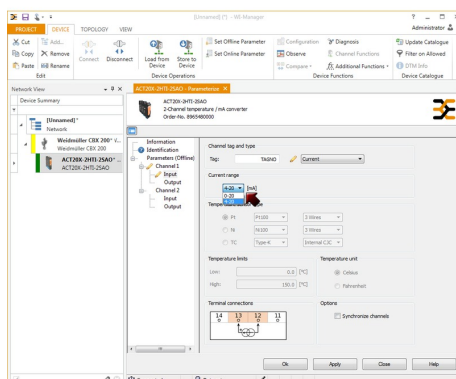
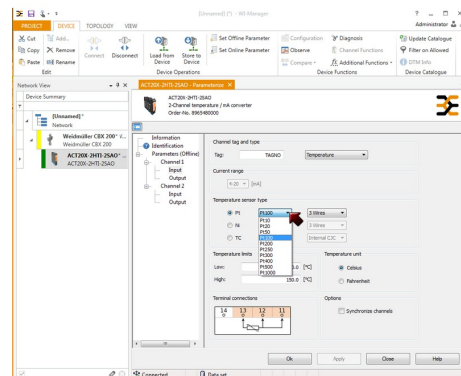
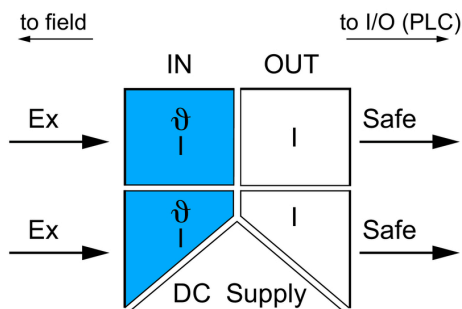
### Connection diagram



### Application



### Block diagram



screenshot of current configuration  
 with FDT2 / DTM software

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## Accessories

### Blank



ESG is the tried-and-tested marker in MultiCard format for use on many well-known electrical devices. The result is high-quality device marking with a high-contrast appearance.

Various types are available for devices from manufacturers like Siemens, ABB, Beckhoff etc.

Advantages at a glance:

- Tags for universal usage, self-adhesive or clip-on tags, depending on type
- For aligned equipment, e.g. circuit breakers, we supply ESG markers for clipping onto tag rails
- Individual laser-quality printing according to specifications

**For custom printing:** Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

### 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	pluggable
Qty.	5 pc(s).	

### Cold-junction compensation terminals



### General ordering data

Type	ACT20X-CJC-HTI-S PRT 11	Version
Order No.	<a href="#">1160640000</a>	(CJC) cold-junction compensation terminal for ACT20X thermal
GTIN (EAN)	4032248948345	module, built-in PT100 sensor, Labelling for channel 1 (11,12,13,14)
Qty.	1 pc(s).	
Type	ACT20X-CJC-HTI-S PRT 21	Version
Order No.	<a href="#">1160650000</a>	(CJC) cold-junction compensation terminal for ACT20X thermal
GTIN (EAN)	4032248948352	module, built-in PT100 sensor, Labelling for channel 2 (21, 22, 23,
Qty.	1 pc(s).	24)

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## Accessories

### Configuration interfaces



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

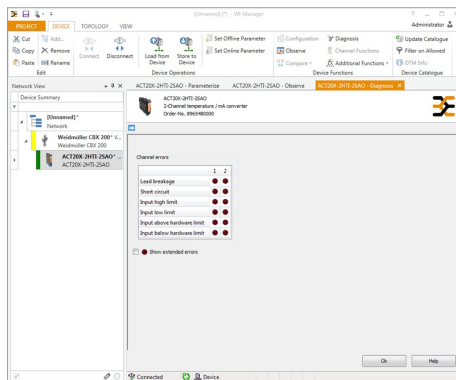


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## Drawings



screenshot of "observe" with FDT2 / DTM software



Removable terminals with coding