

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

Klingenbergstraße 26

D-32758 Detmold

Germany

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, 1-channel
Order No.	2456180000
Type	ACT20X-HTI-SAO-P
GTIN (EAN)	4050118471595
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	178 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
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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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Output

Influence of load resistance	$\leq 0.01\%$ of span / 100 Ω	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	≤ 0.5 A AC / 0.3 A DC (safe zone), ≤ 0.5 A AC / 1 A DC (zone 2)
Nominal switching voltage	≤ 125 V AC / 110 V DC (safe area) ≤ 32 V AC / 32 V DC (zone 2)	Power rating	≤ 62.5 VA / 32 W (safe area) ≤ 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	≤ 2000 m	Power consumption	≤ 0.8 W
Protection degree	IP20	Step response time	≤ 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 ≤ 3.6 mA or output ≥ 21 mA	Device type	B
Diagnostic test interval	30 s	T_{proof}	3 a
Total failure rate for safe detected failures (λ_{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 (λ_{SU})	234 FIT
Total failure rate for dangerous detected failures (λ_{DD})	367 FIT	Total failure rate for dangerous undetected failures (λ_{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})	3.96×10^{-4} ($T_{proof} = 1$ year), 6.5×10^{-4} ($T_{proof} = 2$ years), 1.41×10^{-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 ²
Wire cross-section, solid, max.	2.5 mm ²	Wire connection cross section, finely stranded, min.	0.2 mm ²
Wire connection cross section, finely stranded, max.	2.5 mm ²	Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min.	0.2 mm ²
Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max.	2.5 mm ²		

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
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

Environmental Product Compliance

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

Creation date July 16, 2024 8:52:12 PM CEST

Catalogue status 13.07.2024 / We reserve the right to make technical changes.

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Technical data**Approvals**

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

Downloads

Approval/Certificate/Document of Conformity	Certification SIL Certification DNV GL Application notes – Certification ATEX Application notes – Certification IECEx Application notes – Certification UL Declaration of Conformity
Engineering Data	CAD data – STEP
Software	WI-Manager, DTM-Library for online installation Release notes for Weidmueller FDT-DTM Software version
User Documentation	Safety Manual for SIL application Instruction sheet Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english 20210120 Security Advisory - WI-Manager affected by MundM Software fdtCONTAINER vulnerability Measuring range table
Catalogues	Catalogues in PDF-format

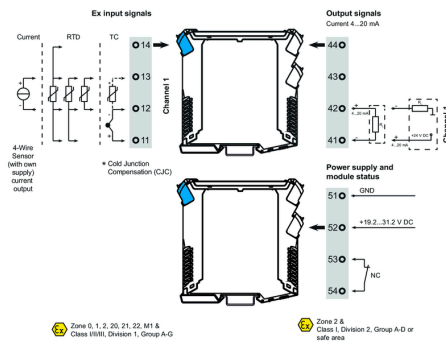
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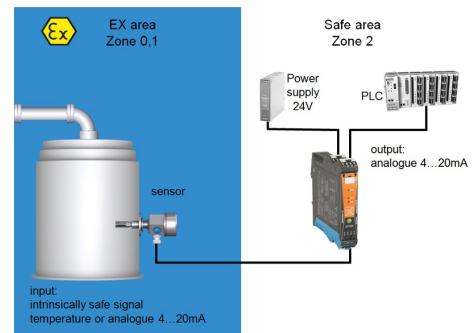
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Drawings

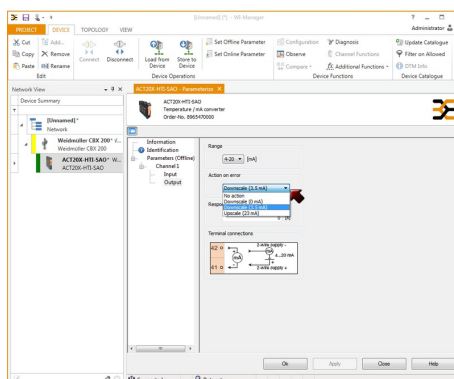
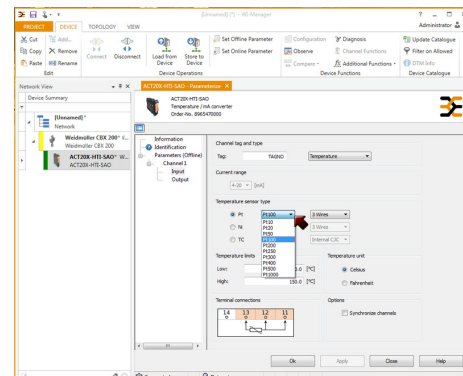
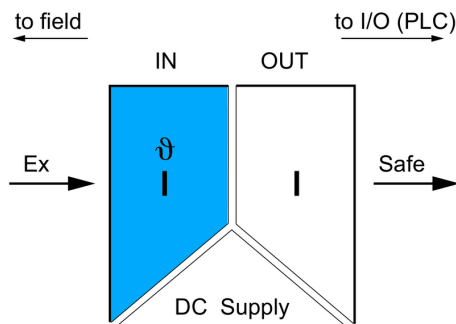
Connection diagram



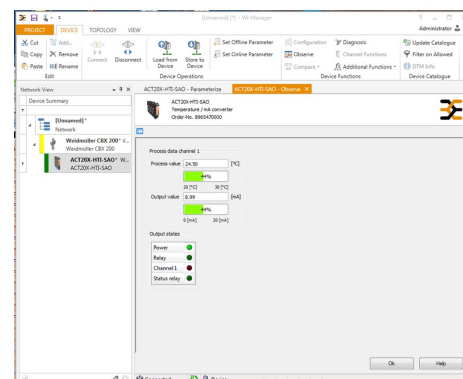
Application



Block diagram



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screenshot of output configuration
 with FDT2 / DTM software

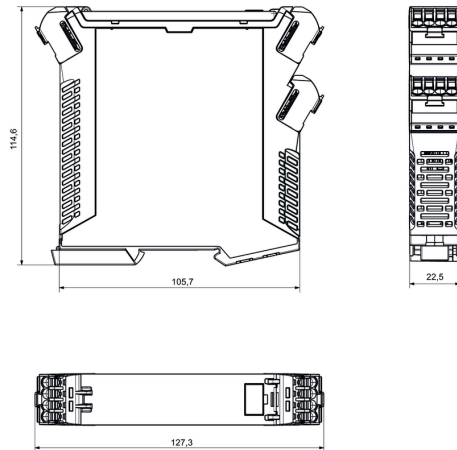
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Drawings

Dimensioned drawing



Removable terminals with coding