

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, Safe-output: 4-20mA, 2-channel
Order No.	8965480000
Type	ACT20X-2HTI-2SAO-S
GTIN (EAN)	4032248785094
Qty.	1 pc(s).

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

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 Years		

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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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

Influence of load resistance	≤ 0.01% of span / 100 Ω	Load impedance current	≤ 600 Ω
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)		

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Alarm output

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

General specifications

Configuration	With FDT/DTM software	Humidity	0...95 % (no condensation)
Power consumption	$\leq 1.4 \text{ W}$	Protection degree	IP20
Step response time	$\leq 400 \text{ ms}$ (with current), $\leq 1 \text{ s}$ (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		

Safety-related basic specifications

Demand mode	High	Demand rate	3,000 s
Demand response time	Signal input: $< 0.5 \text{ s}$ (opto output), Temperature input: $< 1.1 \text{ s}$ (opto output)	Description of the "safe state"	analogue Output $\leq 3.6 \text{ mA}$ or output $\geq 21 \text{ mA}$
Device type	B	Diagnostic test interval	30 s
Hardware fault tolerance (HFT)	0	Mean Time To Repair (MTTR)	24 h
Probability of outage PFH	$6.1 \times 10^{-8} \text{ h}^{-1}$	Safe Failure Fraction (SFF)	90 %
Safety category	SIL 2	T_{proof}	3 Years
Total failure rate for dangerous detected failures (λ_{DD})	367 FIT	Total failure rate for dangerous undetected failures (λ_{DU})	61 FIT
Total failure rate for safe detected failures (λ_{SD})	0 FIT	Total failure rate for safe undetected failures (λ_{SU})	234 FIT

Safety-related specifications Low demand mode

Average Probability of Failure on Demand (PFD_{avg})	3.96×10^{-4} ($T_{\text{proof}} = 1$ year), 6.5×10^{-4} ($T_{\text{proof}} = 2$ years), 1.41×10^{-4} ($T_{\text{proof}} = 5$ years)
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Type of connection	Screw connection	Tightening torque, min.	0.4 Nm
Tightening torque, max.	0.6 Nm	Clamping range, rated connection	2.5 mm ²
Clamping range, min.	0.25 mm ²	Clamping range, max.	2.5 mm ²
Wire connection cross section AWG, min.	AWG 26	Wire connection cross section AWG, max.	AWG 12

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	ECLASS 11.0	27-21-01-29

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Technical data

Tender specification sheets

Long 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 mm²
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

Short specification

Creation date March 30, 2021 12:04:26 AM CEST 32 V

AC @ 0.5 A/ 32 VDC @ 1

A Zone 2

Catalogue status 12.03.2021 / Weidmüller reserves the right to make technical changes.

Alarm

power

12...24 VDC

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Technical data**Important note**

Product information

Weidmüller provides an extended guarantee period of 36 months for this device.

Approvals

Approvals



Approvals	DNVGL;
ROHS	Conform
UL File Number Search	E337701

Downloads

Approval/Certificate/Document of Conformity	Certification SIL Certification DNV GL Certification ATEX Certification IECEx Certification UL Declaration of Conformity
Engineering Data	STEP
Engineering Data	EPLAN, WSCAD
Software	WI-Manager, DTM-Library for online installation V.1.2.2
User Documentation	Instruction sheet Safety Manual for SIL application Handbuch ACT20X- Serie, deutsch Manual ACT20X- series, english

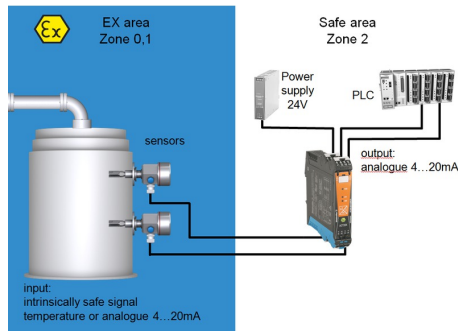
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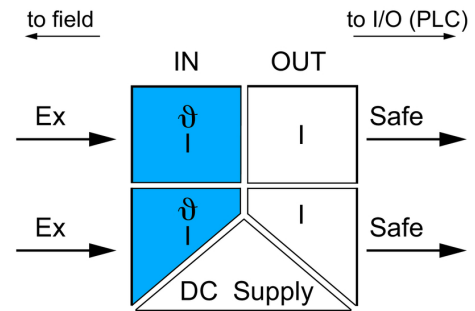
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Drawings

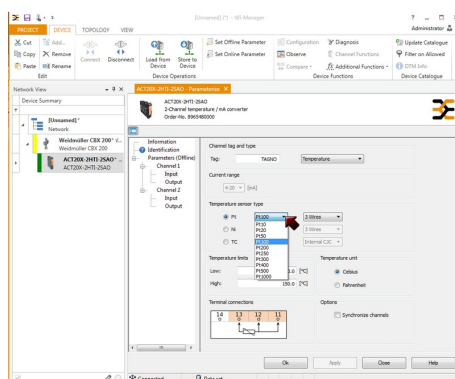
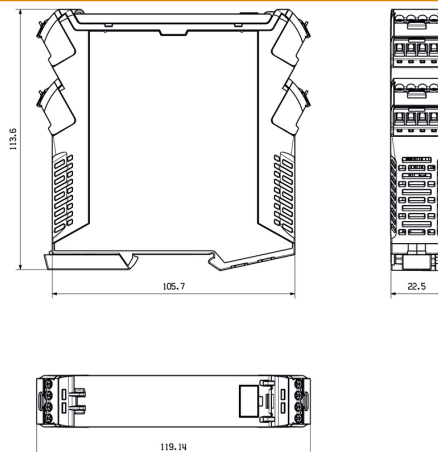
Application



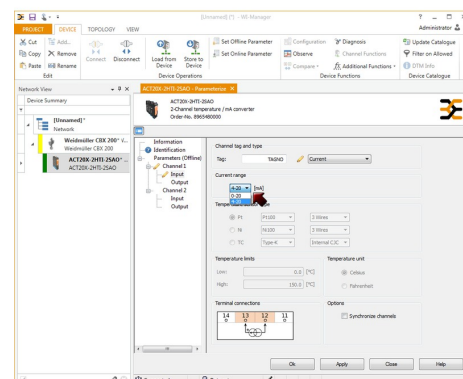
Block diagram



Dimensioned drawing



screenshot of temperature configuration
with FDT2 / DTM software



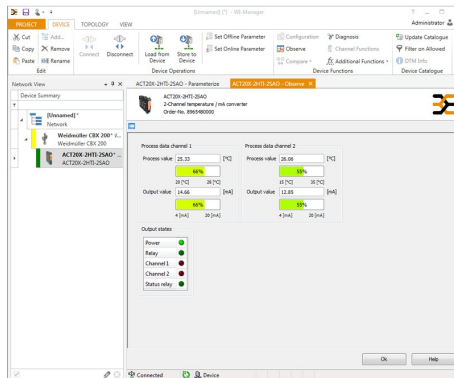
screenshot of current configuration
with FDT2 / DTM software

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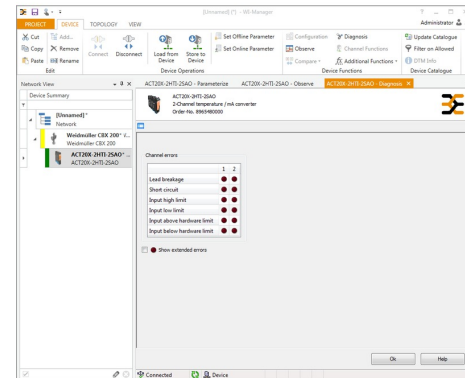
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Drawings



screenshot of "observe" with FDT2 / DTM software



screenshot of "diagnosis" with FDT2 / DTM software

Connection diagram

