

ACT20P-UI-AO-DO-LP

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

www.weidmueller.com



Universal, Output Loop Powered Signal Converter

General ordering data

Version	Limit value monitoring, Input : universal U, I, R, S, Output : 4-20 mA, (loop powered), Transistor (Alarm)
Order No.	1453210000
Type	ACT20P-UI-AO-DO-LP
GTIN (EAN)	4050118259605
Qty.	1 items

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Technical data

Approvals

Approvals CE; CULSEX

Approvals CULUS;

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate no. (cULusEX) E338066

Dimensions and weights

Depth	113.6 mm	Depth (inches)	4.4724 inch
Height	119.2 mm	Height (inches)	4.6929 inch
Width	12.5 mm	Width (inches)	0.4921 inch
Net weight	150.63 g		

Temperatures

Storage temperature	-20 °C...70 °C	Operating temperature	-20 °C...60 °C
Humidity at operating temperature	0...95 % (no condensation)	Humidity	10...90 %, no condensation

Probability of failure

SIL in compliance with IEC 61508 None

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

Input

Sensor	PT100 (2-/3- wire), PT1000 (2-/3- wire), PT200, N120, Cu 10, Thermocouples: B, E, J, K, L, N, R, S, T, U	Number inputs	1
Type	Universal signal isolator / signal amplifier, thermocouple, RTD	Potentiometer	1.2...500 kΩ
Sensor supply	0.1 mA / 0.05 mA (depending on measuring range) @ RTD cable	Input voltage	configurable, ± 150 mV DC (min. measurement range 15 mV), ± 600 mV DC (min. measurement range 50 mV), ± 12 V DC (min. measurement range 1 V), ± 28 V DC (min. measurement range 2 V), ± 300 V DC (min. measurement range 100 V), 0...300 V AC
Temperature input range	CU10: -100...+260 °C, Ni120: -80 °C...+320 °C, PT100 / 200 / 1000:	Resistance	0...750 Ω, 0...1.5 kΩ, 0... 12 kΩ

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-200 °C...+850 °C, B:
+100...+1820 °C, E: -270...
+1000 °C, J: -270...+1200
°C, K: -270...+1372 °C, L:
+100...+900 °C, N: -180...
+1300 °C, R: -50...+1768
°C, S: -50...+1768 °C, T:
-270...+400 °C, U: -200...
+600 °C

Input current	configurable, ± 5 A DC (min. measurement range 0.5 A), ± 25 mA DC	Input resistance, voltage	> 10 M Ω @ 600 mV, 2 M Ω
Input resistance, current	40 Ω	Cable-length compensation	$< \pm 0.002$ Ω per cable resistance Ω
Influence of the sensor cable resistance	5 Ω @ RTD- Kabel		

Output

Load impedance current	≤ 600 Ω	Type	passive, connected control must be active
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Output (digital)

Rated switching voltage	≤ 30 V DC	Rated switching current	20 mA
Number of digital outputs	1	Max. switching voltage, AC	30 V
Hysteresis	≥ 0.1 % of FS	Type	Transistor, open collector
Alarm function	configurable, Top and bottom limit values, window range, Alarm delay: 0...99 s		

Output (analogue)

Signal output	direct or inverted	Number analogue outputs	1
Load resistance current	typ. 700 Ω @ 24 V DC	Output current	4...20 mA (current loop)

General data

Accuracy	< 0.1 % of measuring range	Protection degree	IP20
Supply voltage	Output loop powered, (10...45 V)	Cold-junction compensation error	± 1.0 °C @ -20° C - 65°C
Step response time	450 ms	Mounting rail	TS 35
Temperature coefficient	< 0.02 °C of measuring range / °C	Nominal power consumption	2 VA
Configuration	With FDT/DTM software, Requires configuration adapter 8978580000 CBX200 USB	Operating altitude	≤ 2000 m

Insulation coordination

Impulse withstand voltage	4 kV (1.2/50 μ s)	EMC standards	EN 61326-1
Surge voltage category	III	Pollution severity	2
Galvanic isolation	2-way isolator, between input/output	Insulation voltage	3.51 kV between input and output
Rated voltage	300 V _{eff}		

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 ²

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Clamping range, min.	0.5 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

Part description

Product description	<p>The ACT20P-UI-AO-DO-LP-X converts and isolates current, voltage, potentiometer and temperature sensor signals (mA, A, mV, V, potentiometer, RTD and TC). The transmit function between the input and output can be set via the configuration program either to predefined functions (x0.5, x, x2) or via a freely definable function table. The device is powered via the output current loop.</p> <p>Features</p> <ul style="list-style-type: none"> • Configuration and monitoring are performed via FDT/DTM-Software „WI-Manager“. • The active or passive signal inputs for RTD, TC, potentiometer, mV, V, mA and A are completely electrically isolated. • The TC signal input has internal cold-junction compensation. • Alarm output (for example, for limit monitoring, sensor error detection and more) • 3-way galvanic isolation between input, output/supply and alarm output.
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Classifications

ETIM 8.0	EC002653	ETIM 9.0	EC002653
ETIM 10.0	EC002653	ECLASS 14.0	27-21-01-20
ECLASS 15.0	27-21-01-20		

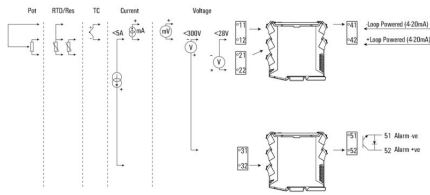
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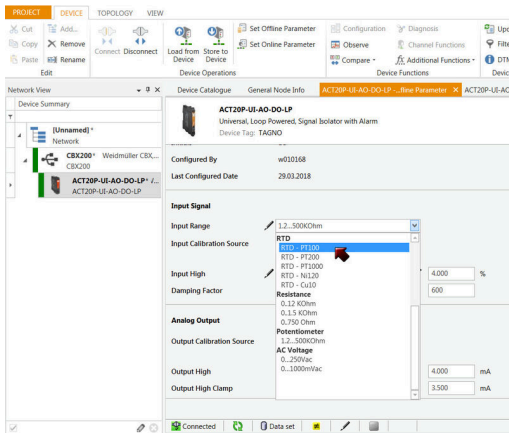
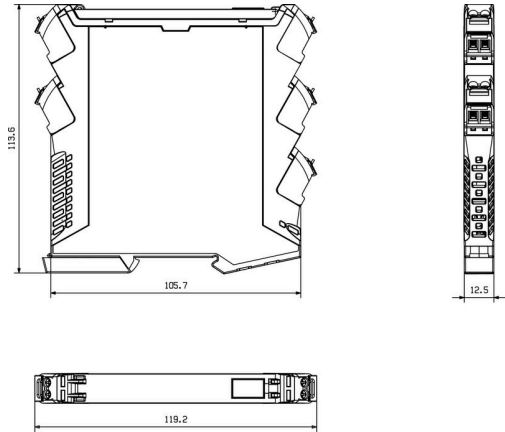
Drawings

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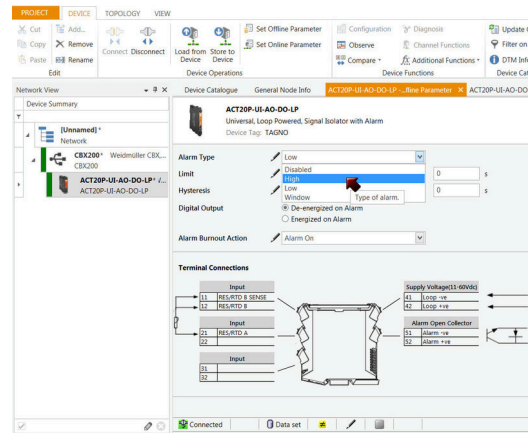
Connection diagram



Dimensioned drawing



screenshot of configuration with FDT2 / DTM software



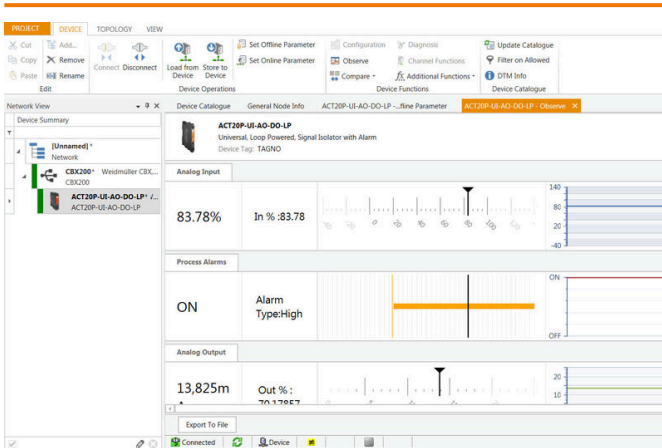
screenshot of configuration with FDT2 / DTM software

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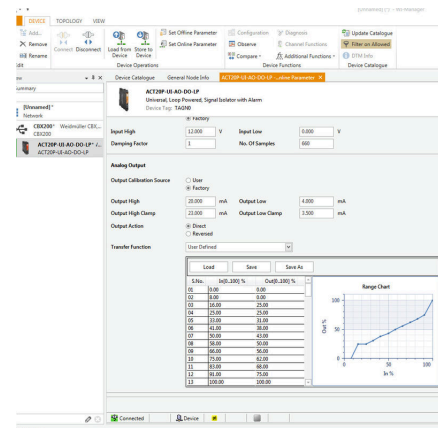
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screenshot of "observe" with FDT2 / DTM software"



example of user defined transfer function for assigning customized output values