

**ACT20P-UI-AO-DO-LP-P**

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

www.weidmueller.com

**Similar to illustration**



Universal, Output Loop Powered Signal Converter

**General ordering data**

Version	Analogue isolating amplifier, Limit value monitoring, Input : universal U, I, R,9, Output : 4-20 mA, (loop powered), Transistor (Alarm)
Order No.	<a href="#">2456850000</a>
Type	ACT20P-UI-AO-DO-LP-P
GTIN (EAN)	4050118471786
Qty.	1 items

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## Technical data

## Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate no. (cULusEX) E338066

## Dimensions and weights

Depth	113.7 mm	Depth (inches)	4.4764 inch
Height	127.1 mm	Height (inches)	5.0039 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, ± 12 V DC (min. measurement range 1 V), ± 28 V DC (min. measurement range 2 V), ± 300 V DC (min. measurement range 100 V)
Temperature input range	CU10: -100...+260 °C, Ni120: -80 °C...+320 °C, PT100 / 200 / 1000: -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	Resistance	0...750 Ω, 0...1.5 kΩ, 0... 12 kΩ

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	°C, S: -50...+1768 °C, T: -270...+400 °C, U: -200...+600 °C		
Input current	configurable, $\pm 5$ A DC (min. measurement range 0.5 A), $\pm 25$ mA DC	Input resistance, voltage	> 10 M $\Omega$ @ 600 mV, 2 M $\Omega$
Input resistance, current	40 $\Omega$	Cable-length compensation	$\leq \pm 0.002$ $\Omega$ per cable resistance $\Omega$
Influence of the sensor cable resistance	5 $\Omega$ @ RTD- Kabel		

## Output

Load impedance current	$\leq 600$ $\Omega$	Type	passive, connected control must be active
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## Output (digital)

Rated switching voltage	$\leq 30$ V DC	Rated switching current	20 mA
Number of digital outputs	1	Max. switching voltage, AC	0 V
Max. switching voltage, DC	30 V	Hysteresis	$\geq 0.1$ % 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 $\Omega$ @ 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	$\pm 1.0^\circ\text{C}$ @ $-20^\circ\text{C}$ - $65^\circ\text{C}$
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	$\leq 2000$ m

## Insulation coordination

Impulse withstand voltage	4 kV (1.2/50 $\mu\text{s}$ )	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 Veff		

## Connection data

Type of connection	PUSH IN	Tightening torque, min.	0.4 Nm
Tightening torque, max.	0.6 Nm	Clamping range, rated connection	2.5 mm <sup>2</sup>
Clamping range, min.	0.5 mm <sup>2</sup>	Clamping range, max.	2.5 mm <sup>2</sup>
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.	0.5 mm <sup>2</sup>	Wire connection cross section, finely stranded, max.	2.5 mm <sup>2</sup>

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## Technical data

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>
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### 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"> <li>• Configuration and monitoring are performed via FDT/DTM-Software „WI-Manager“.</li> <li>• The active or passive signal inputs for RTD, TC, potentiometer, mV, V, mA and A are completely electrically isolated.</li> <li>• The TC signal input has internal cold-junction compensation.</li> <li>• Alarm output (for example, for limit monitoring, sensor error detection and more)</li> <li>• 3-way galvanic isolation between input, output/supply and alarm output.</li> </ul>
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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		

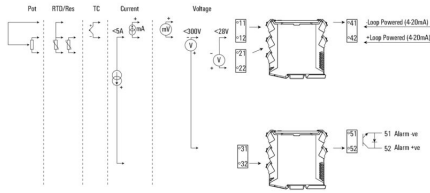
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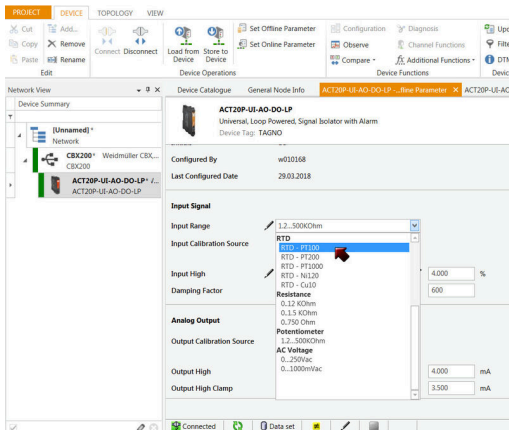
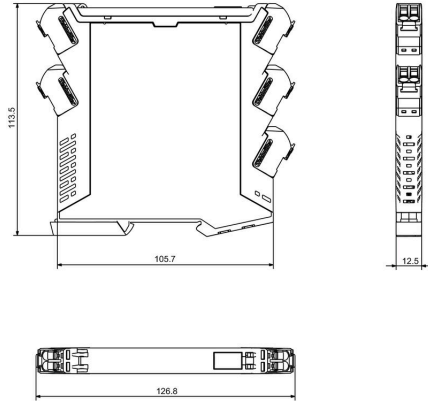
**Drawings**

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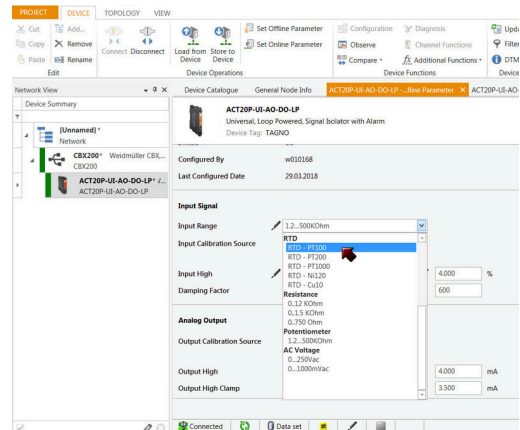
**Connection diagram**



**Dimensioned drawing**



screenshot of configuration with FDT2 / DTM software



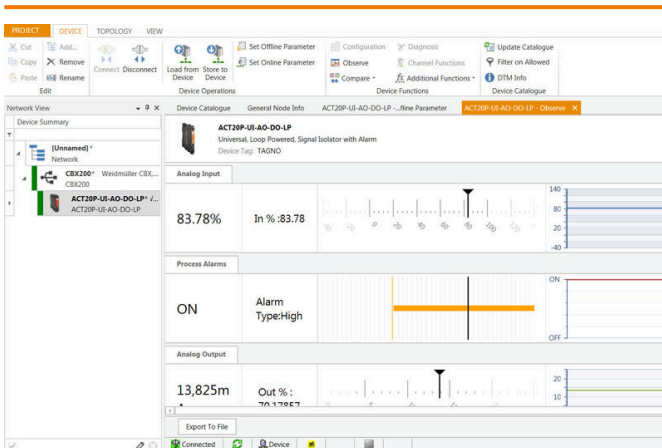
screenshot of configuration with FDT2 / DTM software

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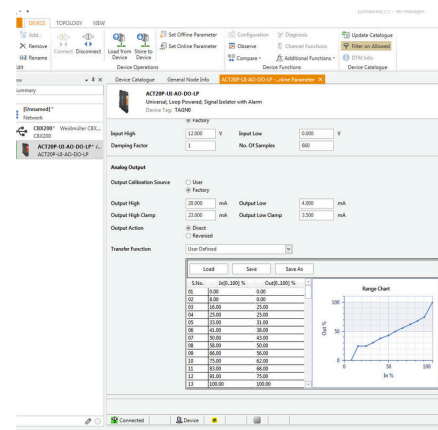
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## Drawings

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screenshot of "observe" with FDT2 / DTM software"



example of user defined transfer function for assigning customized output values