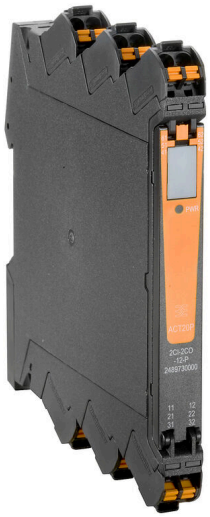
Data sheet

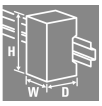
ACT20P-PRO-FI-AO-DO-P

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

www.weidmueller.com

Product image, Similar to illustration





Universal, electrically-isolated signal converters for measuring frequencies with auxiliary power supply and optional limit-value monitoring.
Similar frequency signals from 2-/3-wire PNP/NPN- or Namur initiators can be processed on the input side.
Frequency converters can be used to measure speeds for drives and motors. They can also be used for counting and checking the flow of incoming goods in industrial shipping and handling applications.

General ordering data

Version	Frequency signal converter, Limit value monitoring, Frequency, PWM, analogue V / mA, Transistor (Alarm)
Order No.	2447950000
Type	ACT20P-PRO-FI-AO-DO-P
GTIN (EAN)	4050118462128
Qty.	1 items

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Technical data

Approvals

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

Dimensions and weights

Depth	113.7 mm	Depth (inches)	4.4764 inch
Height	117.2 mm	Height (inches)	4.6142 inch
Width	12.5 mm	Width (inches)	0.4921 inch
Net weight	170.72 g		

Temperatures

Storage temperature	-40 °C...85 °C	Operating temperature	-25 °C...60 °C
Humidity	0...95 % (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, 7cI
REACH SVHC	Lead 7439-92-1
SCIP	2f6dd957-421a-46db-a0c2-cf1609156924

Input Frequency measurement

Sensor	NPN/PNP sensor, NAMUR sensor, according to EN60947-5-6, switch with or without RS, RP, 2-wire transmitter (without own power supply), 3 wire NPN/PNP-transistor, frequency generator, PDM	Number inputs	1
Input frequency	0,01 Hz...200 kHz	Frequency range, max.	200000 Hz
Frequency range, min.	0 Hz	Sensor supply	18 V ±15 %, 8.2 V ±15% (@ NAMUR sensor)
Input voltage	Threshold voltage (NPN / PNP Sensor): 3 V...43.5 V (configurable), Hysterisis level: ≥0.5 V		

Input PWM signal measurement

PWM measurement, gate time	20 ms ... 20 s	Pulse duty factor	0–-100% push/pull or push, parameterisable
PWM measurement, step response time	20 ms ... 20 s + 20 ms		

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Output (digital)

Rated switching voltage	24 VDC ±30%	Rated switching current	100 mA
Number of digital outputs	1	Hysteresis	1...20 %
Type	NPN-Transitor, Switching frequency 5 kHz	Switch-on delay	0...180 s
Alarm function	configurable, Top and bottom limit values, window range, Short circuit at input, Alarm delay: 0...10 s, Hysteresis: 10 V		

Output (analogue)

Signal output	direct or inverted	Type (analogue output)	Voltage and current output (configurable)
Transmit function	linear, √X, X1, X1.5, X2, X2.5, 1-X, direct or inverted	Output voltage	0...5 V, 0(1)...5 V, 0(2)...10 V, -5...+5 V, -10...+10 V
Output behaviour on failure downscale	3.5 mA	TRIM function (similar to zero / span), max.	+5%
TRIM function (similar to zero / span), min.	-5%	Output behaviour on failure upscale	23 mA
Load resistance voltage	≥ 1 kΩ	Number analogue outputs	1
Load resistance current	≤ 600 Ω	Output current	0(4)...20 mA, ± 10mA, -20...+20 mA

Display

Display range	-999...999, Depends on selected input type	Display value	current measured value
Resolution (display)	1 µA/ mV per bit for small ranges	Type	Dot-matrix display with ticker text, green

General data

Accuracy	≤0.05 % of span	Protection degree	IP20
Supply voltage	24...230 V DC ±15%, 24... 230 V AC ±15% @48...62 Hz	Long-term drift	≤±0.05% of the measurement range / year
Step response time	40 ms + period	Mounting rail	TS 35
Power consumption	≤ 2.6 W	Temperature coefficient	≤ 100 ppm/K of final value, ≤ 0.01 % / °C
Nominal power consumption	1 VA	Configuration	with push-buttons and display
Operating altitude	≤ 2000 m		

Insulation coordination

Impulse withstand voltage	5 kV (1.2/50 µs)	EMC standards	EN 61326-1
Surge voltage category	II	Pollution severity	2
Galvanic isolation	4-way isolator;	Insulation voltage	4 kVeff / 1 min.
Rated voltage	600 V		

Safety-related basic specifications

Safety category	No

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Connection data

Type of connection	PUSH IN	Stripping length, rated connection	10 mm
Wire connection cross section, finely stranded, min.	0.5 mm²	Wire connection cross section, finely stranded, max.	2.5 mm²
Wire cross-section, finely stranded, min. (AWG)	AWG 24	Wire cross-section, finely stranded, max. (AWG)	AWG 14

Part description

Product description	The ACT20P-PRO-FI-AO-DO-x universal frequency signal converter separates, converts and monitors frequency signals and the duty cycle of pulse width modulated signals (PWM signals). The device converts the signals from sensors, mechanical switches and encoders into electrically isolated analogue output signals (current or voltage). A NPN tranistor output can be used for limit value detection. The device is intended for use in the industrial environment. The specifications described must be observed (see Technical specifications).

Classifications

ETIM 8.0	EC002918	ETIM 9.0	EC002918
ETIM 10.0	EC002918	ECLASS 14.0	27-21-01-28
ECLASS 15.0	27-21-01-28		

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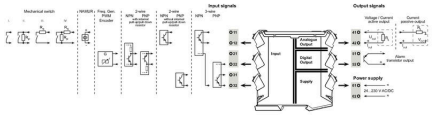
Drawings

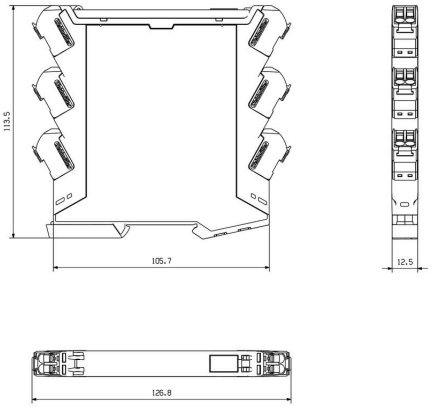
Connection diagram



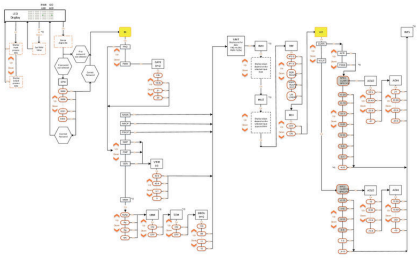
setting via display and push-buttons

coding of terminal block

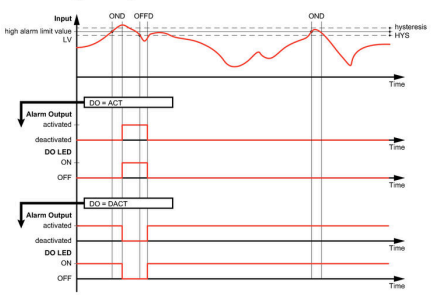
Dimensioned drawing



Flow diagram part



Measuring overrange



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