

Universal I/f converter

4222



- Input for RTD, TC, Ohm, potentiometer, mA and V
- Frequency output NPN, PNP and TTL
- Generates frequencies from 0...25000 Hz
- 2-wire supply > 16 V
- Universal AC or DC supply



Advanced features

- Programmable via detachable display front (PR 4500 series), process calibration, signal simulation, password protection, error diagnostics and selection of help text in several languages.

Application

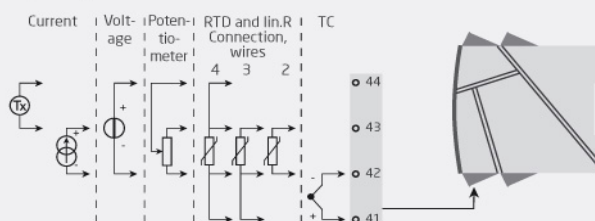
- Linearized, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a frequency signal, e.g. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control by way of a frequency signal transmitted to e.g. a PLC or a process computer.
- Galvanic separation and conversion of analog signals to frequency signals.

Technical characteristics

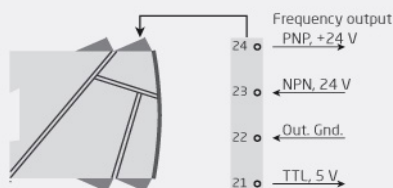
- When 4222 is used in combination with the PR 4500 display / programming fronts, all operational parameters can be modified to suit any application. As the 4222 is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP switches.
- A green front LED indicates normal operation.
- Continuous check of vital stored data for safety reasons.
- 3-port 2.3 kVAC galvanic isolation.

Applications

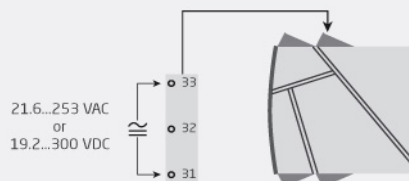
Input signals:



Output signals:



Supply:



Order:

Type
4222

Environmental Conditions

Operating temperature.....	-20°C to +60°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP20

Mechanical specifications

Dimensions (HxWxD).....	109 x 23.5 x 104 mm
Dimensions (HxWxD) w/ PR 4500.....	109 x 23.5 x 131 mm
Weight approx.....	155 g
Weight incl. 4501 / 451x (approx.).....	170 g / 185 g
Wire size.....	0.13...2.08 mm ² AWG 26...14 stranded wire
Screw terminal torque.....	0.5 Nm

Common specifications

Supply

Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse.....	400 mA SB / 250 VAC
Max. required power.....	≤ 2.5 W
Max. power dissipation.....	≤ 2.5 W

Isolation voltage

Isolation voltage, test / working.....	2.3 kVAC / 250 VAC
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Response time

Temperature input, programmable (0...90%, 100...10%).....	1...60 s
mA / V input (programmable).....	0.4...60 s

Auxiliary supplies

2-w. supply (term. 44...43).....	25...16 VDC / 0...20 mA
Programming.....	PR 4500 communication interfaces
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Accuracy.....	Better than 0.1% of sel. range
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst.....	< ±1% of span

Input specifications

RTD input

RTD type.....	Pt100, Ni100, lin. R
Cable resistance per wire.....	50 Ω (max.)
Sensor current.....	Nom. 0.2 mA
Sensor error detection.....	Yes
Short circuit detection.....	< 15 Ω

TC input

Thermocouple type.....	B, E, J, K, L, N, R, S, T, U, W3, W5, LR
CJC via int. mounted sensor.....	< ±1.0°C
Sensor error detection.....	Yes
Sensor error current: When detecting / else.....	Nom. 2 µA / 0 µA

Current input

Measurement range.....	0...23 mA
Programmable measurement ranges.....	0...20 and 4...20 mA
Input resistance.....	Nom. 20 Ω + PTC 50 Ω

Voltage input

Measurement range.....	0...12 VDC
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Programmable measurement ranges.....	0/0.2...1, 0/0.5...2.5, 0/1...5, 0/2...10 VDC
Input resistance.....	Nom. 10 MΩ

Output specifications

Frequency output range.....	0...25000 Hz
Min. frequency (span).....	0 Hz
Other output types.....	PNP, NPN and TTL
Sensor error indication, programmable.....	0...26250 Hz
of span.....	= of the presently selected range

Observed authority requirements

EMC.....	2014/30/EU & UK SI 2016/1091
LVD.....	2014/35/EU & UK SI 2016/1101
RoHS.....	2011/65/EU & UK SI 2012/3032
EAC.....	TR-CU 020/2011
EAC LVD.....	TR-CU 004/2011

Approvals

c UL us, UL 508.....	E231911
FM.....	3025177