PERFORMANCE MADE SMARTER

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

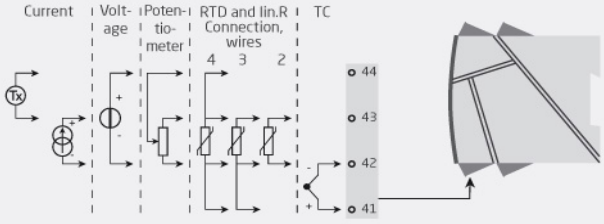
Advanced features
- Programmable via detachable display front (PR 4500 series), process calibration, signal simulation, password protection, error diagnostics and selection of help text in several languages.

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.

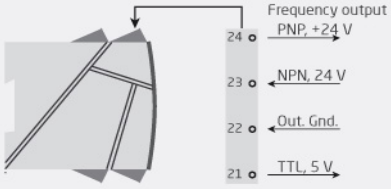
Technical characteristics
- When 4222 is used in combination with the PR 4500 display / programming fronts, all operational parameters can be modified to suit any application. As the 4222 is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP switches.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

Applications

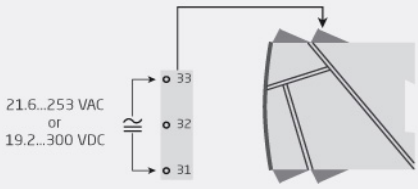
Input signals:



Output signals:



Supply:



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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/ 4501/451x	109 x 23.5 x 116 / 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

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
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