

## Universal I/f converter

### 4222



- Input for RTD, TC, Ohm, potentiometer, mA and V
- Frequency output NPN, PNP and TTL
- Generates frequencies from 0.001...25000 Hz
- 2-wire supply > 16 V
- Universal AC or DC supply



#### Advanced features

- Programmable via detachable display front (4501), process calibration, signal simulation, password protection, error diagnostics and selection of help text in several languages.

#### Application

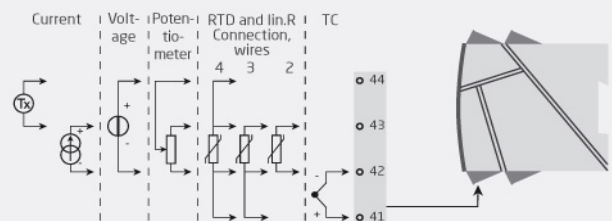
- Linearized, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a frequency signal, e.g. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control 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

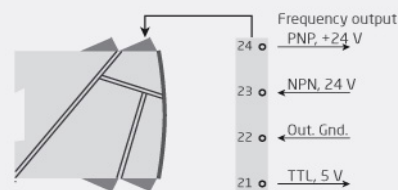
- When 4222 is used in combination with the 4501 display / programming front, all operational parameters can be modified to suit any application. As the 4222 is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP switches.
- A green front LED indicates normal operation.
- Continuous check of vital stored data for safety reasons.
- 3-port 2.3 kVAC galvanic isolation.

#### Applications

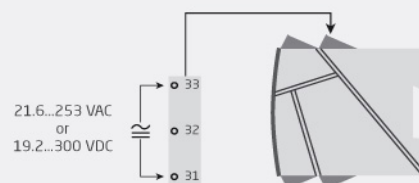
##### Input signals:



##### Output signals:



##### Supply:



**Order:**

<b>Type</b>
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 <sup>2</sup> 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 45xx
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).....	0.001 Hz
Other output types.....	PNP, NPN and TTL
Sensor error indication, programmable.....	0...26250 Hz
of span.....	= of the currently selected measurement range

**Observed authority requirements**

EMC.....	2014/30/EU
LVD.....	2014/35/EU
RoHS.....	2011/65/EU
EAC.....	TR-CU 020/2011
EAC LVD.....	TR-CU 004/2011

**Approvals**

c UL us, UL 508 / C22.2 No.	
14.....	E231911
FM.....	3025177