

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

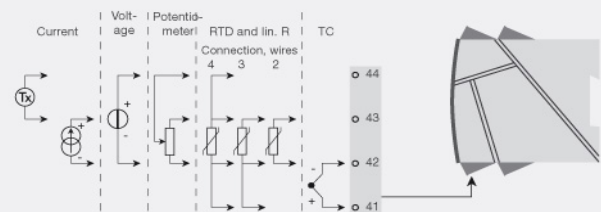
- Linearized, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a frequency signal, e.g. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control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

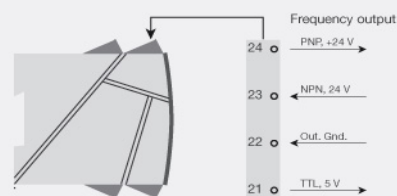
- When 4222 is used in combination with the 4501 display / programming front, all operational parameters can be modified to suit any application. As the 4222 is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP switches.
- A green front LED indicates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

Connection

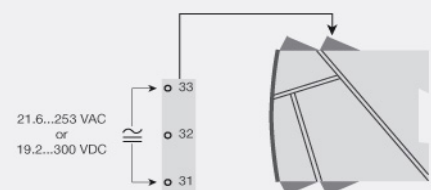
Input signals:



Output signals:



Supply:



Environmental Conditions

Specifications range.....	-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/ display 4501.....	109 x 23.5 x 116 mm
Weight approx.....	155 g
Weight incl. 4501 / 4511 (approx.).....	170 g / 255 g
Wire size.....	1 x 2.5 mm ² stranded wire
Screw terminal torque.....	0.5 Nm

Common specifications

Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse.....	400 mA SB / 250 VAC
Max. power consumption.....	≤ 2.5 W
Isolation voltage, test / working.....	2.3 kVAC / 250 VAC
Communications interface.....	Programming front 4501
Communications interface.....	Modbus communication enabler 4511
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%): Temperature input (programmable).....	1...60 s
mA / V input (programmable).....	0.4...60 s
Auxiliary supplies: 2-wire supply (terminal 44...43).....	25...16 VDC / 0...20 mA
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

RTD input.....	Pt100, Ni100, lin. R
RTD input.....	Potentiometer
Cable resistance per wire (max.), RTD.....	50 Ω
Sensor current, RTD.....	Nom. 0.2 mA
Sensor error detection, RTD.....	Yes
Short circuit detection, RTD.....	< 15 Ω
TC input: Thermocouple type.....	B, E, J, K, L, N, R, S, T, U, W3, W5, LR
CJC via internally mounted sensor.....	< ±1.0°C
Sensor error detection, TC.....	Yes
Sensor error current - when detecting / else.....	Nom. 2 μA / 0 μA
Current input: Measurement range.....	0...20 mA
Current input: Programmable measurement ranges.....	0...20 and 4...20 mA
Input resistance, current input.....	Nom. 20 Ω + PTC 50 Ω
Voltage input: Measurement range.....	0...12 VDC
Programmable measurement ranges, VDC.....	0/0.2...1, 0/0.5...2.5, 0/1...5, 0/2...10 VDC
Input resistance, voltage input.....	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 detection, programmable.....	0...26250 Hz
*of span.....	= of the currently selected measurement range

Approvals

EMC.....	EN 61326-1
LVD.....	EN 61010-1
UL.....	UL 508