

## Pt100 converter

### 3102

- High accuracy, better than 0.2°C or 0.1% of selected range
- Slimline housing of 6 mm
- Excellent EMC performance and 50/60 Hz noise suppression
- Selectable < 30 ms / 300 ms response time
- Pre-calibrated temperature ranges are selectable via DIP-switches



#### Application

- The 3102 temperature converter measures a standard 2-, 3- or 4-wire Pt100 temperature sensor, and provides an analog voltage or current output.
- The narrow 6 mm housing and very low power consumption allows up to 165 units to be mounted per meter of DIN rail, without any air gap between units.
- The 3102 can be mounted in the safe area or in Zone 2 / Division 2 areas.
- Approved for marine applications.

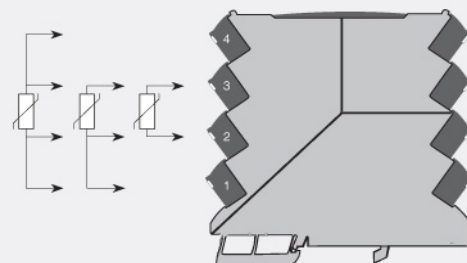
#### Technical characteristics

- Flexibly powered by 24 VDC (±30%) via connectors.
- Selectable < 30 ms / 300 ms response time provides either fast response or signal dampening as needed.
- High conversion accuracy in all available ranges, better than 0.2°C or 0.1% of selected range.
- Meeting the NAMUR NE21 recommendations, the 3102 provides top measurement performance in harsh EMC environments.
- The device meets the NAMUR NE43 standard defining out of range and sensor error output values.
- A visible green LED indicates operational status of the unit and the input sensor.
- All terminals are protected against overvoltage and polarity error.
- Excellent signal/noise ratio of > 60 dB.

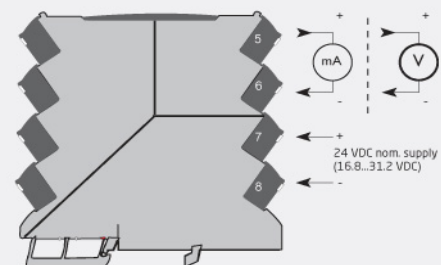
#### Mounting / installation / programming

- Easy configuration of more than 1000 factory calibrated measurement ranges via DIP-switches.
- A very low power consumption allows DIN rail mounting without the need for any air gap.
- Wide ambient temperature range of -25...+70°C.

#### Connection



Safe Area or  
Zone 2 & Cl. 1, Div. 2, gr. A-D



**Order:**

Type
3102

**Environmental Conditions**

Specifications range.....	-25°C to +70°C
Storage temperature.....	-40°C to +85°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP20
Installation in.....	Pollution degree 2 & measurement / overvoltage category II

**Mechanical specifications**

Dimensions (HxWxD).....	113 x 6.1 x 115 mm
Weight approx.....	70 g
DIN rail type.....	DIN EN 60715 - 35 mm
Wire size.....	0.13 x 2.5 mm <sup>2</sup> / AWG 26...12 stranded wire
Screw terminal torque.....	0.5 Nm

**Common specifications**

Supply voltage.....	16.8...31.2 VDC
Max. power consumption.....	1 W
Internal consumption.....	Max. 0.65 W
Signal / noise ratio.....	> 60 dB
Response time (0...90%, 100...10%).....	< 30 ms / 300 ms (selectable)
Accuracy.....	Better than 0.1% of selected range
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span
of span.....	= of the selected input range

**Input specifications**

Temperature range.....	-200...+850°C
Sensor current, RTD.....	< 0.2 mA
Sensor cable specifications.....	50 Ω per wire or 50 nF
Effect of sensor cable resistance (3-/4-wire), RTD.....	< 0.002 Ω / Ω
Broken sensor detection.....	> 800 Ω
Shorted sensor detection.....	< 18 Ω

**Output specifications**

Programmable signal ranges.....	0...20 and 4...20 mA
Current output: Range limits, NAMUR NE43 out of range.....	0 / 3.8 and 20.5 mA
Sensor error detection, current output.....	0 / 3.5 / 23 mA / none
Incorrect DIP-switch setting identification.....	0 / 3.5 mA + LED 15 ms/1 Hz
Load (max.).....	21 mA/600 Ω/12.6 V
Load stability, current output.....	≤0.01% of span/100 Ω
Programmable signal ranges, VDC.....	0/2...10 and 0/1...5 V
Voltage output: Range limits, NAMUR NE43 out of range.....	0 / ±2.5% of selected range
Incorrect DIP-switch setting identification, voltage output.....	0 V + LED 0.5 s / 1 Hz
Load (min.).....	> 10 kΩ

**Approvals**

EMC.....	EN 61326-1
LVD.....	EN 61010-1
ATEX.....	KEMA 10ATEX0147 X
IECEX.....	KEM 10.0068X
FM.....	3041043-C
DNV Marine.....	Stand. f. Certific. No. 2.4
GL.....	V1-7-2
GOST R.....	Yes
UL.....	UL 61010-1