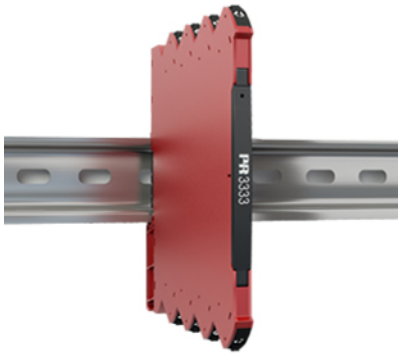
PERFORMANCE MADE SMARTER



# Pt100 converter, loop-powered

## 3333

– High accuracy, better than 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 selectable via DIP-switches

### Application

- The 3333 temperature converter measures a standard 2-, 3- or 4-wire Pt100 temperature sensor, and provides a passive analog current output signal.
- The 3333 can be mounted in the safe area or in Zone 2 / Division 2 areas.
- Approved for marine applications.

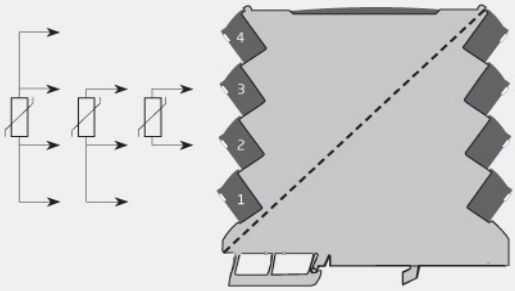
### Technical characteristics

- Flexibly loop powered by 3.3...35 VDC via connectors.
- 30 ms fast response time with simultaneous sensor error detection when selected.
- Selectable 300 ms response time when signal dampening is needed.
- High conversion accuracy in all available ranges, better than 0.1% of selected range.
- Meeting the NAMUR NE21 recommendations, the 3333 provides top measurement performance in harsh EMC environments.
- The device meets the NAMUR NE43 standard defining out of range and sensor error output values.
- All terminals are protected against overvoltage and polarity error.
- Excellent signal/noise ratio of > 60 dB.

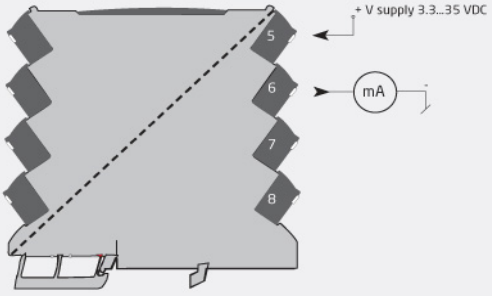
### Mounting / installation / programming

- Selectable DIP-mode for easy configuration of more than 1000 factory calibrated measurement ranges.
- The narrow 6 mm housing allows up to 165 units to be mounted per meter of DIN rail, without any air gap between units.
- Wide ambient temperature range of -25...+70°C.

### Connections




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



Order:

| Type |
| --- |
| 3333 |

## 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 cat. 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 $mm^2$ / AWG 26...12 stranded wire |
| Screw terminal torque | 0.5 Nm |

## Common specifications

| | |
| --- | --- |
| Supply voltage | 3.3...35 VDC |
| Voltage drop | 3.3 VDC |
| Max. power consumption | 0.7 W |
| Signal / noise ratio | > 60 dB |
| Response time (0...90%, 100...10%) | < 30 ms / 300 ms (selectable) |
| EMC immunity influence | < ±0.5% of sel. range |
| Extended EMC immunity: NAMUR NE 21, A criterion, burst | < ±1% of sel. range |
| Incorrect DIP-switch setting identification | 3.5 mA |

## Input specifications

| | |
| --- | --- |
| Temperature range | -200...+850°C |
| Accuracy, RTD | Better than 0.1% of selected range or 0.2°C |
| Sensor current, RTD | < 150 µA |
| Sensor cable resistance, RTD | < 50 Ω per wire |
| 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 | 4...20 and 20...4 mA |
| Range limits | 3.8...20.5 mA NAMUR NE43 |
| Sensor error indication | 3.5 mA or 23 mA / acc. to NAMUR NE43 or OFF |
| Load resistance, current output | ≤ (Vsupply - 3.3) / 0.023 [Ω] |
| Load stability, current output | ≤0.01% of span/100 Ω |

## 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 |