

Pt100 converter, loop-powered

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- High accuracy, better than 0.1% of span
- 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.

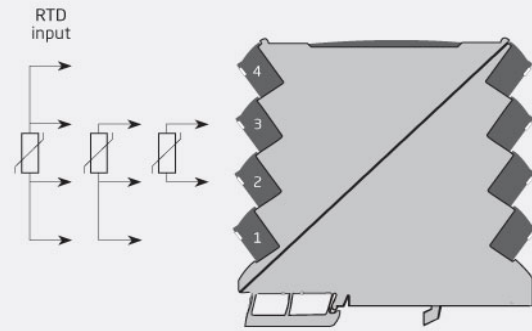
Technical characteristics

- 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 span.
- 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.

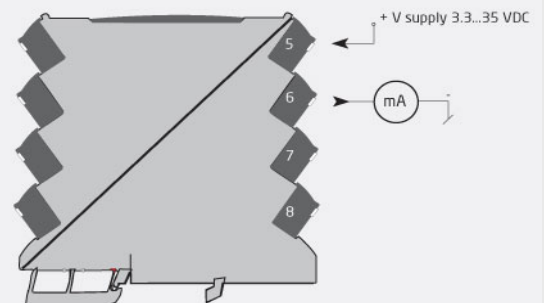
Mounting / installation / programming

- Selectable DIP-settings 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.

Applications



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



For pricing or any further information, please contact Omni Instruments Ltd.

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Order:

Type
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Environmental Conditions

Operating temperature.....	-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
Vibration.....	IEC 60068-2-6
2...25 Hz.....	±1.6 mm
25...100 Hz.....	±4 g

Common specifications

Supply	
Supply voltage.....	3.3...35 VDC
Internal power dissipation.....	12 mW...0.8 W
Response time	
Response time (0...90%, 100...10%).....	< 30 ms / 300 ms (selectable)
Voltage drop.....	3.3 VDC
Signal / noise ratio.....	> 60 dB
Programming.....	DIP-switches
Signal dynamics, input.....	23 bit
Signal dynamics, output.....	18 bit
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR	
NE 21, A criterion, burst.....	< ±1% of span
Incorrect DIP-switch setting identification.....	3.5 mA

Input specifications

RTD input	
Temperature range, Pt100.....	-200...+850°C
Min. measurement range (span).....	10°C
Accuracy: the greater of.....	Better than 0.1% of span or 0.2°C
Temperature coefficient: the greater of.....	0.02°C/°C or ≤ ±0.01%/°C
Sensor current.....	< 150 µA
Sensor cable resistance.....	< 50 Ω per wire
Effect of sensor cable resistance (3-/4-wire).....	< 0.002 Ω / Ω
Sensor error detection.....	Yes - selectable via DIP-switch
Broken sensor detection.....	> 800 Ω
Shorted sensor detection.....	< 18 Ω

Output specifications

Common output specifications	
Updating time.....	10 ms
Current output	
Signal range.....	0...23 mA
Programmable signal ranges.....	4...20 and 20...4 mA
Load (@ current output).....	≤ (Vsupply - 3.3) / 0.023 [Ω]
Load stability.....	≤ 0.01% of span / 100 Ω
Sensor error indication.....	3.5 mA or 23 mA / acc. to NAMUR NE43 or OFF

Observed authority requirements

EMC.....	2014/30/EU
LVD.....	2014/35/EU
RoHS.....	2011/65/EU

Approvals

ATEX 2014/34/EU.....	KEMA 10ATEX0147 X
IECEx.....	KEM 10.0068X
FM.....	FM17US0004X / FM17CA0003X
DNV-GL Marine.....	Stand. f. Certific. No. 2.4
DNV-GL Marine.....	V1-7-2
EAC.....	TR-CU 020/2011
UL.....	UL 61010-1

Whilst every effort has been made to ensure the accuracy of this specification, we cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

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Measurement and data acquisition solutions

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