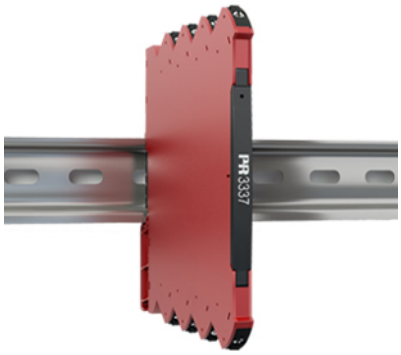
PERFORMANCE MADE SMARTER



HART 7 temperature converter, loop-powered

3337

- High accuracy, better than 0.05% of span
- Slimline housing of 6 mm
- Excellent EMC performance
- Selectable 60 ms / 60 s response time
- Pre-calibrated temperature ranges selectable via DIP-switches

Application

- The 3337 temperature converter measures a standard Pt100, TC J and K temperature sensor, and provides an isolated passive analog current and HART® signal output.
- High 2 port isolation provides surge suppression and protects the control system from transients and noise.
- The 3337 can be mounted in the safe area or in Zone 2 / Division 2 areas.
- Approved for marine applications.

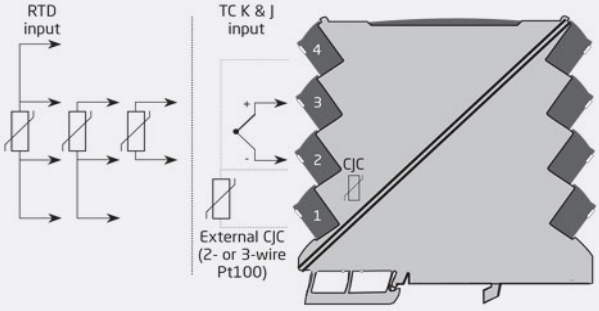
Technical characteristics

- Flexibly loop powered by 6.2...35 VDC via connectors.
- A 60 ms fast response time with simultaneous sensor error detection when selected.
- Selectable internal/external CJC.
- Excellent conversion accuracy in all available ranges, better than 0.05% of span.
- Meeting the NAMUR NE21 recommendations, the 3337 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.
- High galvanic isolation of 2.5 kVAC.
- Excellent signal/noise ratio of > 60 dB.

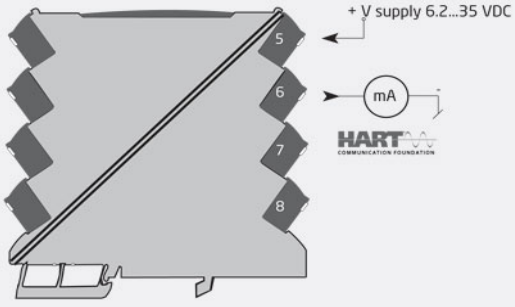
Mounting / installation / programming

- Selectable HART® mode with HART® 7 revision protocol enables extended device programming.
- Selectable DIP-mode for easy configuration of more than 1000 factory calibrated measurement ranges with HART® read only feature.
- 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
3337

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
Vibration	IEC 60068-2-6 : 2007
Vibration: 2...25 Hz	±1.6 mm
Vibration: 25...100 Hz	±4 g

Common specifications

Supply

Supply voltage	6.2...35 VDC

Isolation voltage

Test voltage	2.5 kVAC
Working voltage	300 VAC (reinforced) / 250 VAC (Zone 2, Div. 2)

Response time

HART® mode, (0...90%, 100...10%)	60 ms...60 s, programmable
DIP mode, (0...90%, 100...10%)	< 60 ms
Voltage drop	6.2 VDC
Signal / noise ratio	> 60 dB
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
Accuracy: the greater of	Better than 0.05% of span or 0.1°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

TC input

Temperature range, TC J	-100...+1200°C
Temperature range, TC K	-180...+1372°C
Accuracy: the greater of	Better than 0.05% of span or 0.5°C
Temperature coefficient: the greater of	0.1°C/°C or ≤ ±0.01%/°C
Sensor cable resistance	< 5 kΩ per wire
Cold junction compensation (CJC): Accuracy @ external Pt100 input	Better than ±0.15°C
Cold junction compensation (CJC): Accuracy @ internal CJC	Better than ±2.5°C
Open Thermocouple detection	Yes - selectable via DIP-switch
Internal CJC error detection	Yes
External CJC error detection	Yes - selectable via DIP-switch

Output specifications

Current output

Programmable signal ranges	4...20 and 20...4 mA
Load resistance	≤ (Vsupply - 6.2) / 0.023 [Ω]
Load stability	≤0.01% of span / 100 Ω

Common output specifications

Updating time	10 ms
Range limits	3.8...20.5 mA NAMUR NE43
Sensor error indication	3.5 mA or 23 mA / acc. to NAMUR NE43 or OFF
HART protocol revisions	HART 7

Approvals

EMC	2004/108/EC
LVD	2006/95/EC
ATEX 94/9/EC	KEMA 10ATEX0147 X, II 3 G Ex nA IIC T4 Gc
IECEx	KEM 10.0068X
FM	3041043-C
DNV Marine	Stand. f. Certific. No. 2.4
GL	V1-7-2
EAC	TR-CU 020/2011
UL	UL 61010-1