

TEMPERATURE

Product Data Sheet

DS3001

Smart PT-100 Temp Transmitter

GEN205 SERIES

The GEN205 is an encapsulated low cost 'Smart' in head temperature transmitter that accepts Pt100 temperature sensors and converts the output to the industry standard 4-20mA transmission signal. Also an ATEX approved version is available.

The linearisation range and other parameters are easily programmed using a software package running under 'Windows™' without the need for re-calibration. If no ranges are specified at order point, units will be factory set to; 0-100°C, adaptive, BS EN 60751 linearisation and up scale burn out.

INPUTS

Pt100 Platinum resistance sensors may be connected to the unit. The Process Variable may be filtered to remove incoming signal noise using one of four settings. If the 'Adaptive' function is selected the filter continuously adjusts to the incoming signal to noise ratio in order to choose an appropriate level of filtering. In this way, a slowly changing input can be heavily filtered but if the signal goes through a sudden change the filter quickly reduces allowing a rapid response, other settings are; off, 2 seconds and 10 seconds.

A user programmable offset is available to remove any system errors that may be present and a sensor referencing feature enables the sensor and transmitter to be easily calibrated to a known reference.

SPECIFICATION @ 20°C

Input

Sensor	Pt100 to BS EN 60751 100 ohm at 0°C 2 or 3 wire
Senor Range	-200 to +850°C [18-390 ohm]
Minimum Span	25°C
Linearisation	Standard BS-EN60751 (IEC 751) BS 1904 (DIN 43760), JISC 1604
Custom Linearisation	Contact Sales Office
Basic Accuracy	±0.1°C ±0.05% Rdg
Thermal Drift	Zero 0.008°C/°C Span 0.01%/°C
Excitation Current	1mA max
Max Lead Resistance	50 ohms/leg
Lead Resistance Effect	0.002°C/ohm

General Specification

Update Time	1 s to final valve
Filter Factor	Off, 2 or 10 secs or adaptive
Stability	0.1% FRI or 0.1°C/year
Case Size	43mm dia x 21mm
Weight	32 g encapsulated
Enclosure	ABS



Communications

PC Interface	RS232 via interface adaptor
Minimum Output Load	100 ohms for 'In Loop' Programming
Maximum Cable Length	1000m
Configurable Parameters	Sensor type: Burnout: °C/°F: Output: Hi/Lo: Filter: Tag: User Offset
Comms Protocol	ANSI X3.28 1976
Data Rate	1200 baud

Approvals

EMC	BS EN 61326
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Hazardous Area (ATEX version)

Intrinsically Safe	II 1G EEx ia IIC T4-T6
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Environmental

Ambient Operating Range	-40 to 85°C
Ambient Storage Temp	-50 to 100°C
Ambient Humidity Range	0 to 100% RH non-condensing

Output

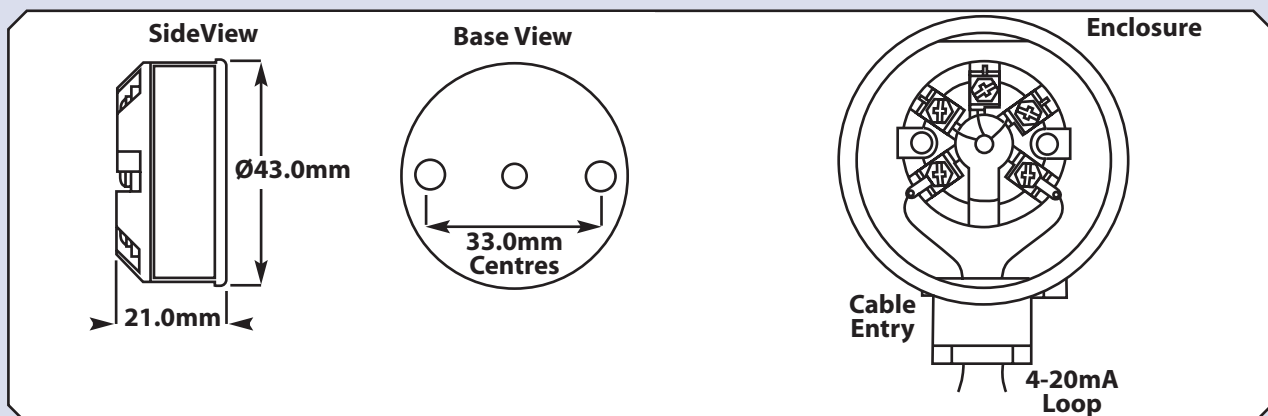
Output Range	4-20mA (Min 3.8 to Max 20.2mA)
Max Output	23mA
Accuracy	±5µA
Voltage Effect	0.2µA/V
Thermal Drift	1µA/°C
Supply Voltage	10 to 35V
Max Output Load	$\frac{(V_{supply} - 10)}{20}$ k ohms eg (700 ohms @ 24V)

ELECTRICAL CONNCTIONS

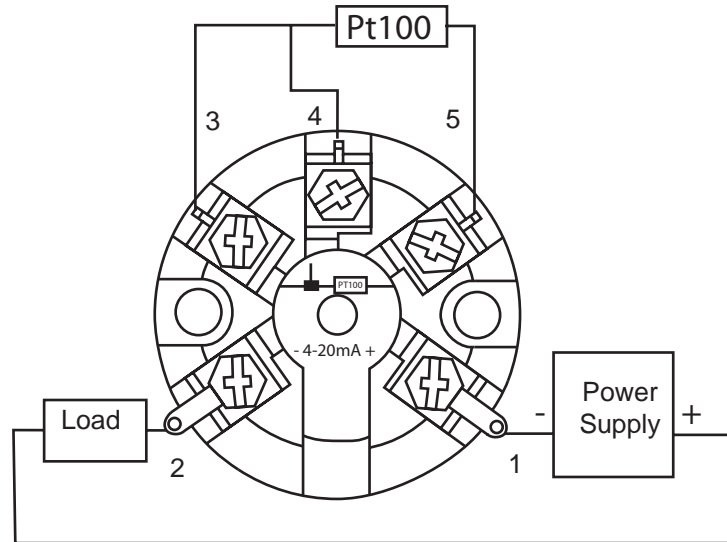
Connections to the transmitter are made to the screw terminals provided on the top face. The transmitter is protected against reverse connection so that incorrect connection of the output wires results in near zero current flow in the loop.

The transmitter is accessed via the comms interface adapter for re-programming or examination of the process variable and status information. The interface adapter converts the special communications signals on the transmitter power connection cables to the standard RS232 in order to connect directly to a PC serial port. There are two methods of connecting own interface adapter to the transmitter i.e. using the adapters own power supply or using the power from an existing loop. Power supply must be capable of supplying 40 mA when powered from the lopp. If other RCPW driven products have been purchased, RCPW latest upgrade is available.

Mechanical details



Connections



ORDER CODES

Code	Description
SHX0018	Standard unit (default range 0 to 100°C)
SHX0019	Standard unit, factory set to customers required range. Range to be stated when ordering.
SHX0020	Intrinsically Safe to EEx ia IIC T4 - T6 (default range 0 to 100°C)
SHX0021	Intrinsically Safe to CENELEC standards EEx ia IIC T5, factory set to customers required range
SHX0022	Programming kit for GEN205 units

Every effort has been made during the preparation of this document to ensure the accuracy of statements and specifications. However, we do not accept liability for damage, injury, loss or expense caused by errors or omissions made. We reserve the right to withdraw or amend products or documentation without notice.

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