HART COMMUNICATION PROTOCOL

2-wire HART 7 temperature transmitter

5437D

– RTD, TC, potentiometer, linear resistance and bipolar mV input
– Single or true dual inputs with sensor redundancy and drift detection
– Wide ambient operating temperature of -50 to +85°C
– Total accuracy from 0.014%
– 2.5 kVAC galvanic isolation
– Full assessment to IEC61508 : 2010 up to SIL 2/3

Application

• Temperature measurement of a wide range of TC and RTD types.
• Conversion of wide span linear resistance and potentiometer inputs.
• Conversion of bipolar mV signals to 4...20 mA.
• Integration into asset management schemes.
• Critical applications requiring superior accuracy and/or sensor redundancy and drift detection.

Technical characteristics

• True dual input transmitter. High density 7-terminal design accepts the widest range of dual input combinations.
• Sensor redundancy - output automatically switches to secondary sensor in event of primary sensor failure, maintaining uptime.
• Sensor drift detection - alerts when sensor differential exceeds user-defined limits, for maintenance optimization.
• Dynamic variable mapping for process data in addition to the primary variable e.g. dual input features such as average, differential and min./max. tracking.
• Groundbreaking digital and analog signal accuracy over full input span and ambient conditions.
• Extensive sensor matching including Callendar Van Dusen and custom linearizations.
• Programmable input limits with runtime metering ensure maximum process traceability and sensor out of range protection.
• IEC 61508 : 2010 full assessment up to SIL 3 together with enhanced EMC Functional Safety testing to IEC 61236-3-1.
• Meets NAMUR NE21, NE43, NE44, NE89, NE95 and NE107 compliant diagnostics information.

Mounting / installation

• For DIN form B sensor head mounting.
• Configuration via standard HART communication interfaces or by PR 5909 Loop Link.
• The 5437D can be mounted in zone 0, 1, 2 and zone 20, 21, 22 including M1 / Class I, Division 1, Groups A, B, C, D.

Applications

Dual input

Input

2 x 2/3/4 w RTD
2 x TC (2/3/4 w ext. CJC)
2 xTC (int. CJC)
TC (int. CJC) + 2/3/4 w RTD
TC (2/3 w ext. CJC) +
2/3/4 w RTD
2 x 2/3/4 w lin. R
2 x 3/4 w Pot
5 w Pot + 3 w Pot
2 x mV unipolar
2 x mV bipolar

Output

→ 4...20 mA
(Advanced functions)

Single input

2/3/4 w RTD
TC (2/3 w. ext. CJC)
TC (int. CJC)
2/3/4 w lin. R
3/4 w Pot
mV unipolar
mV bipolar

→ 4...20 mA