

# HBS4400

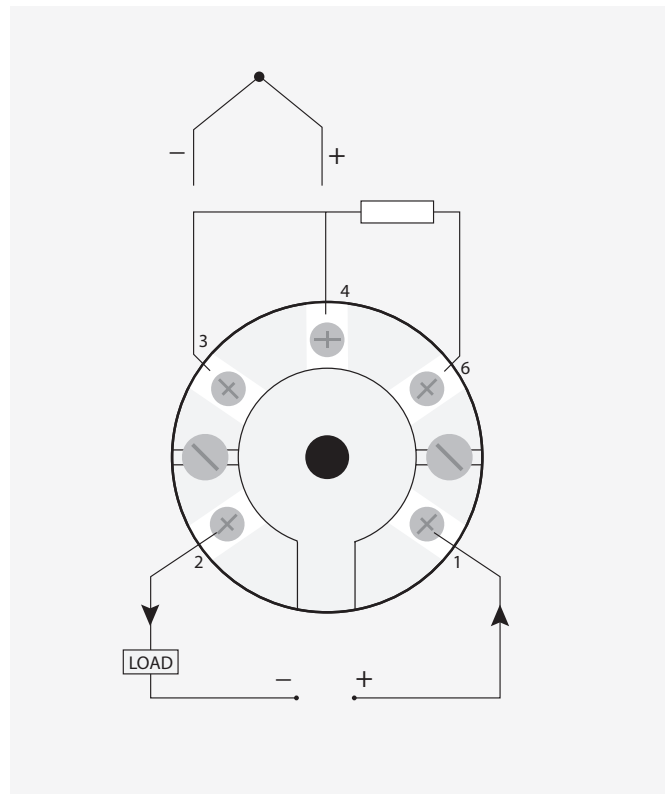
## Temperature Transmitter

Temperature Transmitters

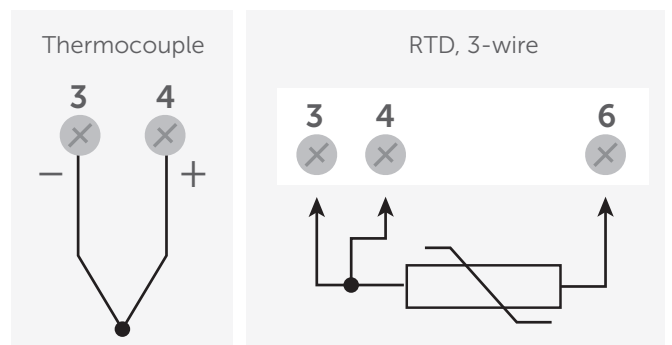


The HBS4400 is an ATEX Exia IECEx and FM approved high accuracy head-mounted programmable transmitter suitable for RTD Pt100 or Thermocouple inputs. The temperature transmitter is loop powered and converts the input signal into a 4 to 20mA current output.

The RTD and Thermocouple input types and ranges including upscale or downscale error detection can be programmed using the configuration kit HBSUSB9.



### Connections:



#### Linear Resistance Input:

Type	Min. Value	Max. Value	Min. Span
Pt100	-200°C	+850°C	25°C

#### Thermocouple Input:

Sensor Type	Range (°C)		Minimum Span
	Min Temp	Max Temp	
K	-200	+1370	50
J	-100	+1200	50
E	-200	+1000	50
N	-180	+1300	50
T	-200	+400	25
R	-10	+1760	100
S	-10	+1760	100
L	-100	+600	50

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### Environmental Conditions

<b>Specifications Range</b>	-40°C to +85°C
<b>Calibration Temperature</b>	+20°C
<b>Ambient Storage Temperature</b>	(-50 to 100) °C
<b>Ambient Humidity Range</b>	(10 to 100) % RH non-condensing

### Mechanical Specifications

<b>Dimensions</b>	Ø43.0 mm x 21.3 mm
<b>Weight Approx</b>	40 g

### Common Specifications

<b>Input/Output Breakdown Isolation</b>	500V AC rms
<b>Update Time</b>	250 ms
<b>Response Time (filter off)</b>	<1 second
<b>Filter Factor</b>	Programmable: Off, 2s, 10s or adaptive
<b>Warm-up Time</b>	120s to full accuracy
<b>Power Supply</b>	(10 to 35) Volts dc
<b>Stability</b>	0.1% of full range Input or 0.1°C / year

### HBS4400 Working Parameters

<b>U</b>	30V
<b>Ii</b>	100 mA
<b>Pi</b>	750 mW
<b>Ci</b>	10 nF
<b>Li</b>	0

### Input Specifications - RTD (Pt100)

<b>Sensor Type</b>	PT100 100 Ohms @ 0°C 3 wire
<b>Sensor Range</b>	-200 to +850 °C
<b>Sensor Connection</b>	Screw terminal
<b>Minimum Span</b>	25 °C
<b>Linearisation</b>	BS-EN60751 BS1904 DIN 43760 JISC 1604
<b>Measurement Accuracy</b>	± 0.01% of full range input ± 0.05% of reading
<b>Thermal Drift</b>	Zero 0.008 °C / °C Span 0.01% / °C
<b>Excitation Current</b>	350 to 550 uA
<b>Lead Resistance effect</b>	0.002 °C / Ohm
<b>Maximum Lead Resistance</b>	50 Ohms per leg

### Input Specifications – Thermocouple

<b>Measurement Accuracy</b>	± 0.04% of full range input ± 0.04% of reading or 0.5 °C (whichever is greater)
<b>Linearisation</b>	BS4937/EC584-3
<b>Cold Junction Error</b>	±0.5 °C
<b>Cold Junction Tracking</b>	0.05 °C / °C
<b>Cold Junction Range</b>	-40 to +85 °C
<b>Thermal Drift</b>	Zero 0.1 uV / °C Span 0.01% / °C

### Output Specifications

<b>Output Type</b>	2 wire (4 to 20) mA current loop
<b>Output Range</b>	(<3.8 to 20.2) mA
<b>Output Connection</b>	Screw terminal
<b>Maximum Output</b>	23mA
<b>Accuracy</b>	±5 uA
<b>Loop Voltage Effect</b>	0.2 uA / V
<b>Thermal Drift</b>	1 uA / °C
<b>Maximum Output Load</b>	[(Vsupply-10)/21]K Ohms (700 Ohms @ 24V)

### Approvals

<b>EMC</b>	BS EN 61326
<b>ATEX</b>	II 1G EEx ia IIC T4-T6
<b>FM</b>	IS/1/1/ABCD/T4