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Temperature Probes

A wide range of temperature sensors and accessories including:

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- RTD's
- Thermistors



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In head transmitter with built-in display and 4-20mA output



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Industrial Interface *The Signal Conditioning People*

Tel: 01242 251794

Email: sales@industrialinterface.co.uk

Industrial Interface Ltd
www.industrialinterface.co.uk



Cert. No: FM512984

Fax: 01242 571683

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TEMPERATURE PROBES

THERMOCOUPLE RTD AND THERMISTOR ASSEMBLIES

- Standard or Custom Probes
- Thermocouple, RTD or Thermistor
- Choice of Connection Heads
- Can be supplied with in-head transmitter
- Thermowells, compression fittings and other accessories available
- UKAS calibration service available



Description

Industrial Interface can supply a complete range of temperature probes including thermocouples RTD's and thermistor type sensors.

In addition we can supply the Z-HEAD ZigBee wireless temperature transmitter which can be used with any temperature sensor and the Z-PORT or Z-200 receivers to obtain a 4-20mA or RS232/Ethernet output via a wireless link.

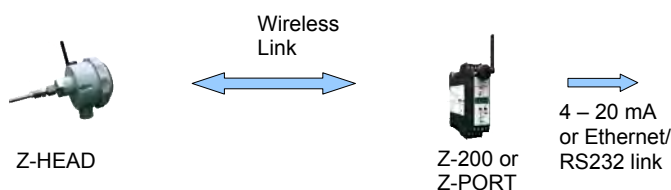
The following is a brief list of the type of probes we can offer.

- Mineral Insulated thermocouples
- General Purpose thermocouples
- Explosion Proof thermocouple
- Exposed junction thermocouples
- Noble metal thermocouples
- Chemical resistive thermocouples
- Molten metal thermocouples
- Platinum resistance thermometers
- Thermistor sensor elements and probes.

A wide range of connection heads are available, from plastic general purpose units to Explosion proof ATEX rated units.

Industrial Interface can also arrange calibration to UKAS standards for all temperature and humidity sensors and instruments. This can be done either on or off-site.

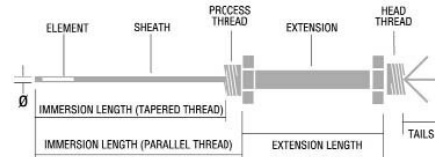
For more details please contact our sales department.



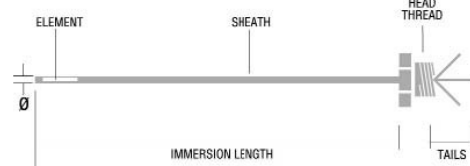
Temperature Sensor Styles

A number of different sensor styles are available, if the particular configuration you are after isn't listed please call.

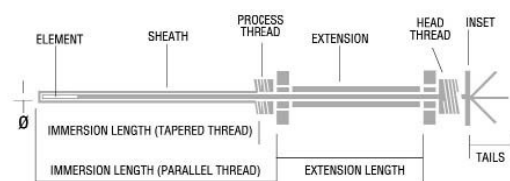
Style 1: Welded 316 stainless steel construction with 1/2" BSP process connection. Wide range of heads.



Style 2: Welded 316 construction for use with a compression fitting.



Style 3: Combined inset sensor and pocket, a spring mounting kit allows the sensor to be quickly replaced without affecting an on-going process as the pocket remains in-situ.

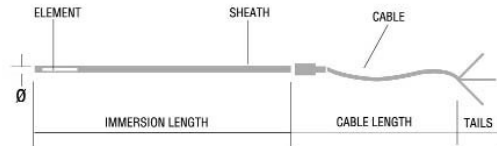


More styles overleaf.

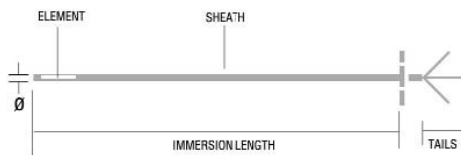


Temperature Sensor Styles, continued..

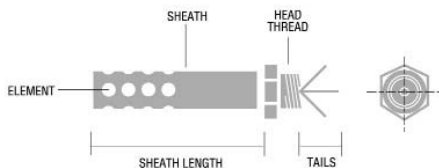
Style 4: Flying lead sensor with stainless steel sheath for use with a compression fitting.



Style 5: 316 Stainless steel sensor suitable for energy management applications such as duct air temperature.



Style 6: 316 Stainless steel sensor with protective sheath, typically used for outside air temperature measurement.



Connection Heads

A wide range of connection heads are available from plastic heads to stainless steel heads and the more common aluminium flip-top or sc. There is also a head with built-in DISP.



Accessories

A wide range of accessories can be chosen, from plastic and metal cable glands to compression fittings and ceramic connection blocks.

Please contact our sales department with details of the probe you are looking for and we will give you a very competitive quotation.

Ordering Information	
Please supply:	
Sensor type	I.e K type mineral insulated thermocouple
Sensor style	See above or send a drawing or sample sensor
Connection Head	See above or send a drawing or sample head
Accessories	Please specify any accessories required
Wireless	If a wireless sensor is required please specify Z-HEAD
In-Head Transmitter	Please select either TC-HEAD or RTD-HEAD or for a built-in display UNIHEAD-DISP
Dimensions	Please list dimensions required to obtain an accurate quotation.



UNIHEAD-DISP

IN-HEAD TRANSMITTER WITH BUILT-IN DISPLAY

- Isolated Thermocouple & RTD inputs
- 4 Digit Display temperature in °C or °F
- Simple Configuration
- Push Button zero & span
- 4 – 20 mA 2-wire output
- Isolated Transmitter Supply
- ABS Plastic or Stainless steel housing
- 10 Year Warranty



Description

The UNIHEAD-DISP combines a standard universal input in-head transmitter with a loop powered display to give both a useful local indication of temperature and a standard 4-20mA process output.

500 V isolation is provided between the input and the 4-20mA 2-wire output which can drive into a load of 450 Ohms when using a nominal 24 Vdc supply.

The unit can be factory configured or user-configured using a simple USB connection and PC software. During this configuration the unit may be powered directly from the USB interface.

Non-interactive push button zero and span controls make adjustment of the 4-20mA output quick and simple.

Other features include high or low burnout indication either an ABS plastic enclosure or a stainless steel option

Inputs

Standard Ranges are shown below - contact Sales for others.

Thermocouples

Types: K	(-200 to 1370) 0.1% fsd +/-0.5°C
J	(-100 to 1200) 0.1% fsd +/-0.5°C
E	(-100 to 1000) 0.1% fsd +/-0.5°C
N	(-180 to 1300) 0.1% fsd +/-0.5°C
T	(-100 to 400) 0.2% fsd +/-0.5°C
R	(-10 to 1760) 0.1% from 800-1600°C
S	(-10 to 1760) 0.1% from 800-1600°C

Stability of 0.01% of fsd
 Cold junction compensation
 Upscale or downscale t/c burnout options
 Impedance 1 MΩ

Resistance Thermometers

2 or 3 wire PT100
 (-200 to 850) 0.05% rdg +/-0.1 °C
 Maximum lead resistance 20 Ω
 Lead effect 0.015 degC / Ω
 Sensor excitation <450 uA



Parameter	Min	Typ	Max	Comments
Supply Voltage	15	24V	30	Max 450 ohm load with 24V supply
Supply Current (mA)	3.8	4 – 20	24	
Input Impedance (t/c)		1MΩ		
Calibration accuracy		+/- 5 uA		
Isolation V		500		Input to output tested at 500V
Time Response 0-95%		<500mS		Start up time 3 seconds
Operating Ambient	-40°C		85°C	
Relative Humidity	10%		95%	non-condensing
Protection		IP67		With SCH4 Head
Approvals	CE tested to BS EN 61326			
Display	4 Digit seven segment LED height 7.3mm			
Display resolution	0.1 degC 0.1 degF or 0.00 mA			
Display Errors	Err (sensor error) Flash OVEr (over range)		Flash Undr (under range)	
Notes	Accuracy for PT100 and t/c do not include sensor and cold junction errors			

Connection Details		
1.	Thermocouple -ve	or RTD 3 rd Wire
2.	Thermocouple +ve	or RTD +ve
3.	Not connected	or RTD -ve
+	24 Vdc Supply	
-	4 – 20 mA Output	

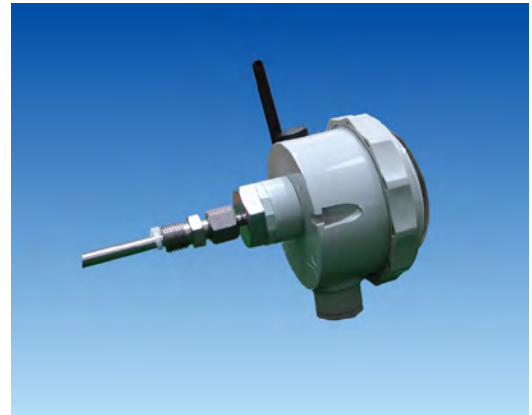
Ordering Information	
Please supply:	
Part Number:	UNIHEAD-DISP
Input Type:	T/C, RTD
Input Range:	0-500°C
Options:	SCH4 ABS plastic head SCH15 Stainless head



Z-HEAD

UNIVERSAL INPUT ZIGBEE WIRELESS TRANSMITTER

- Battery Powered Wireless ZigBee Pressure Transmitter
- Wide Range of Inputs Including: RTD, Thermocouple, mA and Volts
- Long Battery Life, Low level Alarm
- Wide range of connection heads
- Complete Thermocouple, RTD, Pressure and Level probes available



Description

The Z-HEAD universal input ZigBee transmitter can accept a wide range of inputs from most process measurement devices and transmits the measured variable to a 2.4GHz ZigBee receiver unit.

The Z-HEAD is specially designed to maximise battery life and in a typical application the battery life can exceed three years. The data update rate is user selectable to suit the requirement of each measured variable and so maximise battery life.

Typical update rates include 1 second, 10 seconds, 60 seconds or 1 hour. The unit also transmits a signal strength reading which can be remotely monitored.

The unit mounts in most standard process connection heads and complete assemblies are available for RTD, Thermocouple, Pressure and Level sensors.

The Z-HEAD is designed to operate with the Z-200 or Z-PORT units. The Z-200 can output a 4-20mA or 0-10V signal whilst the Z-PORT can store up to 1024 variables for transmission to an Industrial Ethernet connection or an RS232/485 communications link.

Inputs

The input types and ranges included below are our standard ones only. Contact Sales for others.

DC Current & Voltage

0-20mA, 4-20mA, 0-10mA into 15/30 Ω
0-1V, 0-10V, 1-5V into 100kΩ / 1MΩ

Thermocouples

Types E,J,K,N,R,S,T,B linearised or non-linearised
Ranges: Wide range of inputs
Cold junction compensation (can be turned off)
Upscale or downscale t/c burnout options

Resistance Thermometers

2, or 3 wire PT100 , linearised or non-linearised.
Wide range of inputs upscale or downscale burnout.

Bridge Circuits

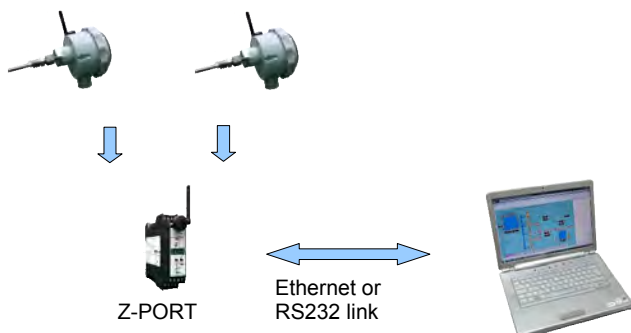
Most standard bridge circuits with mV outputs.

Pressure and Level Sensors

A full range of ZigBee enabled pressure and level sensors are available, please see Pressure and Level Section

Digital Inputs

A module for digital inputs is available which can operate in counting mode or status on/off mode





Parameter	Min	Typ	Max	Comments
Supply Voltage		3.6V		Battery Powered
Supply Current (mA)			40	When transmitting data
Input Impedance (Volt)		100kΩ		Dependent on range, typical = 0-10V
Operating Ambient	-200°C		70°C	
Relative Humidity	0%		90%	
Isolation Voltage ^{see note 1}	1kV			
Notes				



Installation Data	
Mounting	In Head or wall mount
Orientation	Any
Connections	Screw Clamp with pressure plate
Conductor size	0.5-4.0mm
Insulation Stripping	12mm
Weight	Approx 70g
Enclosure Size	85mm dia x 57mm deep

Connection Details

1. Power Supply -ve
2. Power Supply +ve

3. Input +ve
4. Input -ve
5. RTD 3rd wire
6. Bridge Excitation

Ordering Information

Please supply:

Part Number:	Z-HEAD
Input Type:	e.g mA, Volt, T/C, RTD
Input Range:	e.g 4-20, 0-10, 0-500°C
Power Supply:	Battery powered