

# Temperature Probes

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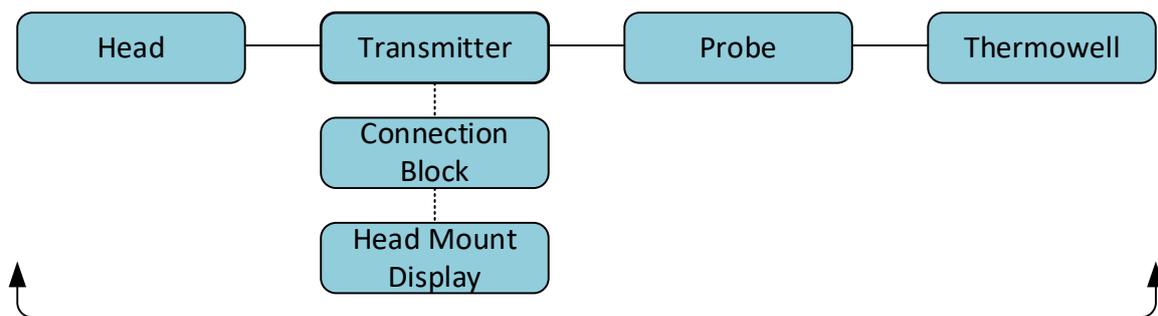
- **Made to your specification**
- **RTD, Thermocouple or Thermistor sensors**
- **Safe or Hazardous area**
- **Connection Head / Display options**
- **Temperature transmitter options**



## ➤ INTRODUCTION

Our temperature probes cover a huge range of applications including Exia and Exd intrinsically safe areas. All our temperature probes are made here in the UK to order. This datasheet highlights useful information for you, and also shows what we need from you to satisfy your application.

The diagram below shows the main components of a typical probe assembly.



## ➤ Probe requirements

### Pt100 or Thermocouple?

Generally, a Pt100 probe is more accurate but has a smaller working range than a thermocouple. Thermocouple probes, as well as having a faster response time and a larger temperature range, tend to be less susceptible to vibration and shock in applications where this may be a factor. There may be other reasons why a temperature application is more suited to either a Pt100 or thermocouple probe. If you have any questions, please ask.

### Templates to help you choose

In Section 3 we have templates for the most common types of probes. If you can match your requirement to one of our templates by filling in the missing mechanical dimensions this will help save time. If your application is not suited to one of our templates we can manufacture to your specific needs and help you create the required drawing/specification. Please call to discuss any requirements.

### Calibration Service

In power generation for example, being able to make accurate measurements can save energy. Even a small improvement such as 0.5 °C better accuracy could save thousands of pounds each year. As any process or monitoring system is only as good as the control values it uses, reliable data is essential for reliable performance. To this end periodic checks or calibration is performed on measuring instruments to ensure they are operating within specification.

We can provide calibration certificates at the point of order and at regular intervals to suit your requirement thereafter.

# Temperature Probes

<b>WHAT WE NEED TO KNOW TO MANUFACTURE YOUR TEMPERATURE PROBE</b>	
If you only require a probe, consider the Section entries 1, 2 and 3 in <b>bold</b> below If you require a complete assembly, please consider all optional entries	
<b>Sensor or element type</b> <b>Section 1</b>	Pt100/Thermocouple type (others are available on request). If you are unsure of your requirement, please contact us.
<b>Working temperature</b> <b>Section 2</b>	The process temperature range that the application will be working over.
<b>Probe style</b> <b>Section 3</b>	Mechanical detail and dimensions of the probe See probe types available for the most common types.
<b>Probe Material</b>	316 Stainless Steel standard. Others available depending on application.
Thermowell (Optional) Section 4	Helps protect the sensor in harsh environments. Also allows sensor removal without disturbing the process. See the thermowell datasheet.
Mounting accessories (Optional) Section 5	Products to help mount a temperature probe to the application.
Connection head (Optional) Section 6	Plastic, Aluminium, Stainless Steel. See the connection head datasheets.
Temperature Transmitter (Optional) Section 7	Converts the sensor reading into 4 to 20mA (HART optional).
Connection block (Optional) Section 7	Sensor wires directly to a connection block in the head.
Process Display (Optional) Section 7	Display the temperature value at the point of measurement.
ATEX Approval (Optional) Section 8	Exia or Exd Must have an approved connection head.

<b>Section 1: SENSORS</b>		
<b>Sensor or element type</b>		
Pt100	DIN EN 60751	Class B - Standard Class A - Optional 1/10 DIN - Optional
Sensor Configuration	Single, Dual, Triple (single sensor is standard)	
Pt100 Wiring	2, 3 or 4 wire (3 wire is standard)	
Other RTD types	Please contact sales@status.co.uk	
Thermocouple	DIN EN 60584	
Thermocouple types	K, J, T types most common, others available on request	

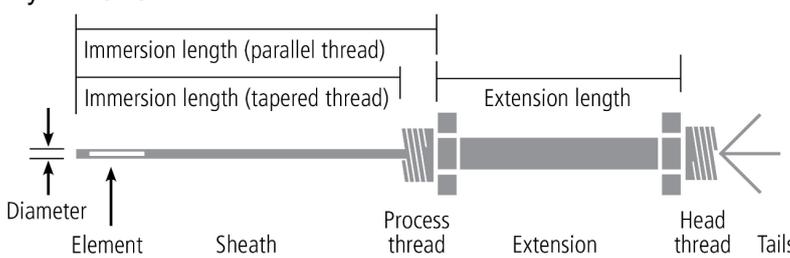
<b>Section 2: WORKING TEMPERATURE RANGE</b>	
Standard temperature ranges Pt100 Thermocouple	Standard between (-50 to 250) °C. Maximum (-200 to 450) °C Depends on type of thermocouple. Maximum (-200 to 1480) °C
Maximum temperature ranges	For these temperatures, different sensor construction/probe materials will be required to cope with the extended temperature, please call to discuss your requirements.

# Temperature Probes

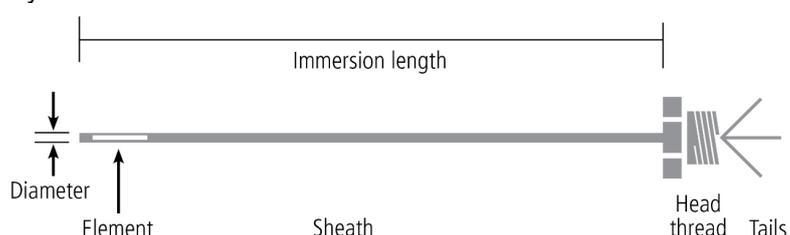
## Section 3: PROBES STYLES AVAILABLE

**Type specific parameters.** We can manufacture any style of probe, but here are some of the most popular. For each style below we need to know the parameters in **bold** to be able to supply your probe

General purpose probe with process thread

<b>Immersion length in mm</b> Length of sensor immersed into the process Note the difference between immersion lengths for parallel and tapered threads	<b>Style 1: STS1</b> 	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process thread</b> Standard is 1/2" BSP *2	<b>Head thread</b> Standard is M24 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP

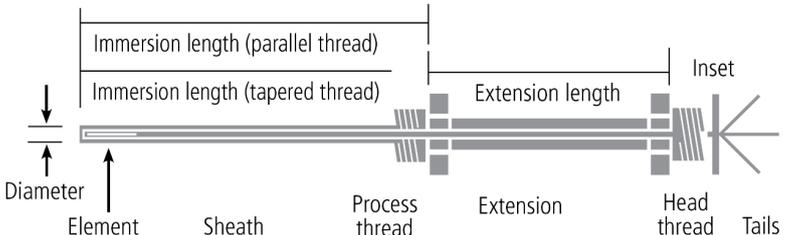
General purpose probe with no process thread used with compression or duct gland

<b>Immersion length in mm</b> Length of sensor immersed into the process	<b>Style 2: STS2</b> 	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Head thread</b> Standard is M24 x 1.5 *3		
<b>Tails in mm</b> Standard is 150 mm FEP		

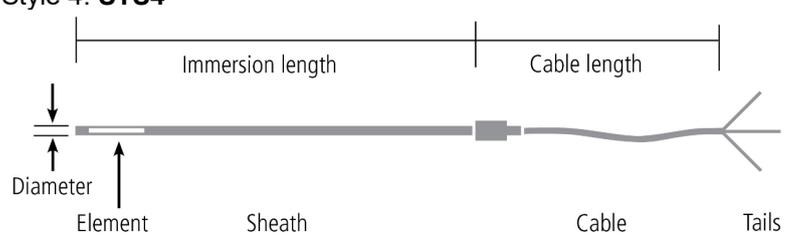
**Compression fitting (optional)** Thread size: standard is 1/2" BSP \*2

Insert type sensor

Spring loaded sensor allows removal of the sensor from the probe body.

<b>Immersion length in mm</b> Length of sensor immersed into the process Note the difference between immersion lengths for parallel and tapered threads	<b>Style 3: STS3</b> 	
<b>Sheath diameter in mm</b> Standard is 8.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process thread</b> Standard is 1/2" BSP *2	<b>Head thread</b> Standard is M24 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP

Flying lead probe

<b>Immersion length in mm</b> <b>Sheath diameter in mm</b> Standard is 6.0 mm *1	<b>Style 4: STS4</b> 	
<b>Cable length in m</b> Standard is 1 m *4		
<b>Cable type</b> Standard is PVC *5		
<b>Tails in mm</b> Standard is 50 mm		

**Compression fitting (optional)** Thread size: standard is 1/2" BSP or 1/4" BSP \*2

\*1, Is the standard diameter strong enough for the application? Larger options available.

Reduced diameter and reduced tip options for quicker response times are available.

\*2, We can provide any process thread.

\*3, We can provide any head thread.

\*4, Length of cable to the metre.

\*5, Cable type: Standard is PVC use FEP (Fluorinated Ethylene Propylene) below -20 °C and over 50 °C.

# Temperature Probes

## Section 3: PROBES STYLES AVAILABLE (continued)

**Type specific parameters.** We can manufacture any style of probe, but here are some of the most popular. For each style below we need to know the parameters in **bold** to be able to supply your probe

Surface mounted probe, with square profile

Used for non-invasive pipe temperature (may require insulation/lagging)

### Style 5: STS5

**Sheath length in mm**

Standard is 50 mm

### Extension in mm

Standard is 19 mm

### Sheath profile in mm

6.35mm square

### Cable length in m

Standard is 1 m \*4

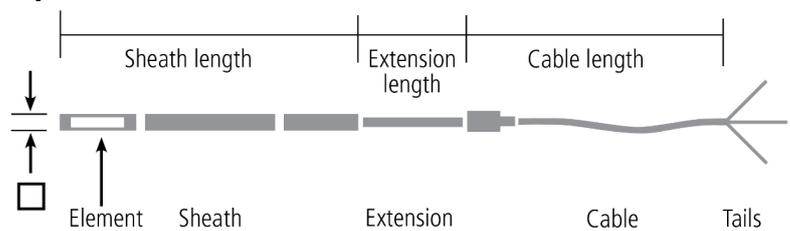
### Cable type

Standard is PVC \*5

### Tails in mm

Standard is 50 mm

### Style 5: STS5



### Probe material

Aluminium

Low cost for energy management applications, can only be used with the SCH4 Status head

### Style 6: STS6

**Immersion Length in mm**  
Length of sensor immersed into the process

### Sheath diameter in mm

Standard is 6.0 mm \*1

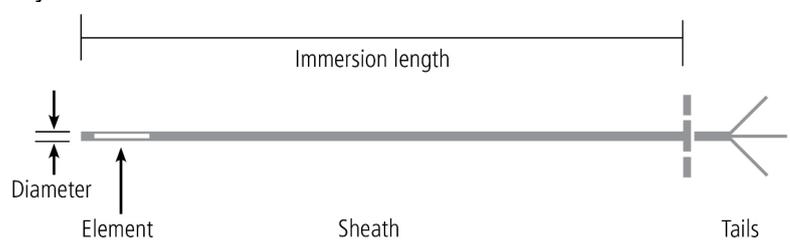
### Tails in mm

Standard is 150 mm

### Compression fitting (optional)

Thread size: standard is 1/2" or 1/4" BSP \*2

### Style 6: STS6



Ambient air temperature probe

### Style 7: STS7

**Sheath length in mm**  
Length of sensor immersed into the process

Standard is 50 mm

### Sheath diameter in mm

Standard is 12 mm

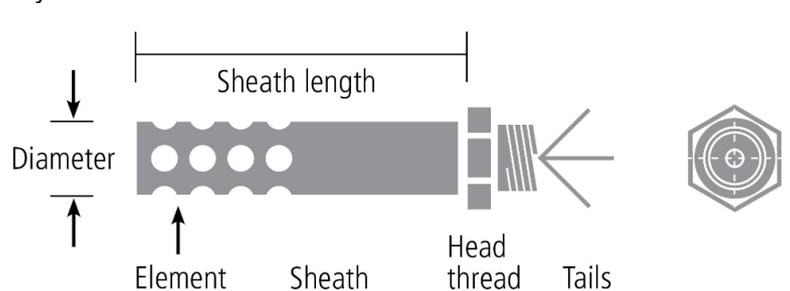
### Head thread

Standard is M16 x 1.5 \*3

### Tails in mm

Standard is 150 mm FEP

### Style 7: STS7



Heavy duty flying lead sensor with armoured cable

### Style 8: STS8

**Immersion Length in mm**  
Length of sensor immersed into the process

### Sheath diameter in mm

Standard is 6.0 mm \*1

### Cable length in m

Standard is 1 m \*4

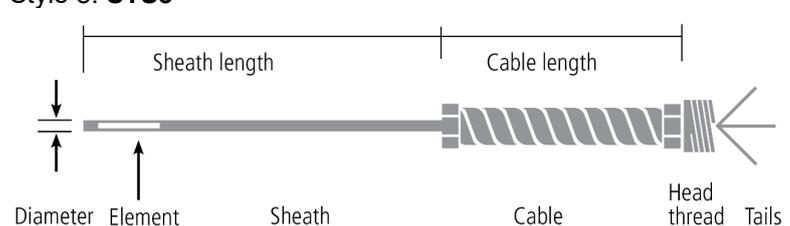
### Head thread

Standard is M16 x 1.5 \*3

### Tails in mm

Standard is 150 mm FEP

### Style 8: STS8



**Compression fitting (optional)** Thread size: standard is 1/2" or 1/4" BSP \*2

\*1, Is the standard diameter strong enough for application? Larger options available. Reduced diameter and reduced tip options for quicker response times are available.

\*2, We can provide any process thread.

\*3, We can provide any head thread.

\*4, Length of cable to the meter.

\*5, Cable type: Standard is PVC use FEP (Fluorinated Ethylene Propylene) below -20 °C and over 50 °C.

# Temperature Probes

Section 3: PROBES STYLES AVAILABLE (continued)		
Running nut probe, allows orientation of a display by use of a running nut instrument connection		
<b>Immersion length in mm</b> Length of sensor immersed into the process Note the difference between immersion lengths for parallel and tapered threads	<b>Style 9: STS9</b> (Use with DM650 and DM670 displays)	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process thread</b> Standard is 1/2" or 1/4" BSP *2	<b>Head thread (running nut)</b> Standard is M16 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP
Running nut (process) probe, allows orientation of the probe by use of a male running nut process connection		
<b>Immersion length in mm</b> Length of sensor immersed into the process	<b>Style 10: STS10</b>	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process thread (male running nut)</b> Standard is 1/2" BSP *2	<b>Head thread</b> Standard is M24 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP
Running nut (process) probe, allows orientation of the probe by use of a female running nut process connection		
<b>Immersion length in mm</b> Length of sensor immersed into the process	<b>Style 11: STS11</b>	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process thread (female running nut)</b> Standard is 1/2" BSP *2	<b>Head thread</b> Standard is M24 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP
Hygienic fitting temperature probe is available with a range of hygienic fittings including DIN, IDF, SMS, tri clover and tri clamp		
<b>Immersion length in mm</b> Length of sensor immersed into the process Note: Check immersion lengths	<b>Style 12: STS12</b>	
<b>Sheath diameter in mm</b> Standard is 6.0 mm *1		
<b>Extension in mm</b> Reduces heat travel up to the connection head Standard is 75 mm (others available)		
<b>Process fitting</b> Please let use know your requirements	<b>Head thread</b> Standard is M24 x 1.5 *3	<b>Tails in mm</b> Standard is 150 mm FEP
*1, *2, *3, *4, *5 See Section on previous page for key.		

# Temperature Probes

## Section 3: PROBE STYLES AVAILABLE (continued)

### Custom Probes to your specification or drawings

If your application is not suited to one of our templates we can manufacture to your specific needs and help you create the required drawing/specification

#### Options include

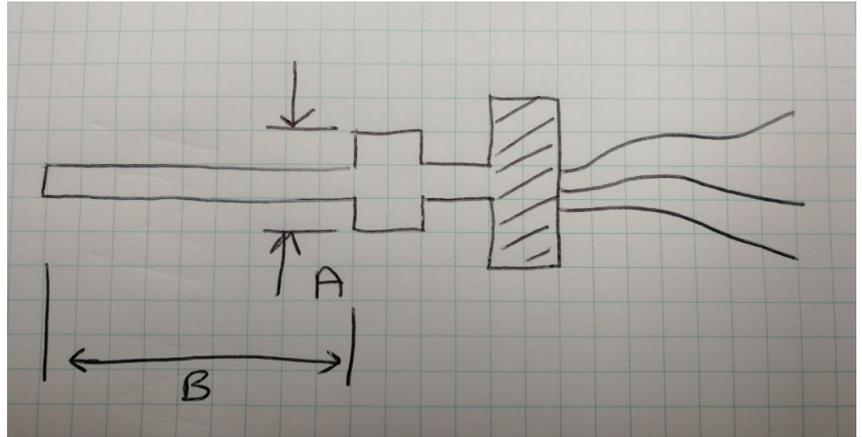
MI flexible mineral insulated probe can be bent to shape

Non-metallic coatings for aggressive mediums

Extra-long immersion lengths

Contact [sales@status.co.uk](mailto:sales@status.co.uk)

Custom: TSSxxxx



## Section 4: THERMOWELLS (Pockets)

We can provide a range of thermowells to meet your needs.

Helps protect the sensor in harsh environments. Also allows sensor removal without disturbing the process.

#### Options include

Threaded

Welded in

Hygienic fitting

Flanged fitting

See the thermowell datasheet on the Status Instruments website  
[www.status.co.uk](http://www.status.co.uk)

Thermowells



Visit [www.status.co.uk](http://www.status.co.uk) or contact [sales@status.co.uk](mailto:sales@status.co.uk) for more information on thermowells.

## Section 5 MOUNTING ACCESSORIES

Status Instruments can supply a range of probe mounting accessories

#### Options include

Compression glands  
Standard 1/4" or 1/2" BSP (others available)

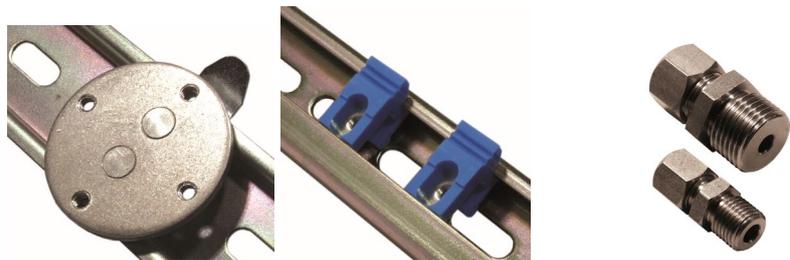
#### Also available

Pipe mounting kits

Rail mounting kits

Threaded bosses

Mounting plates



Contact [sales@status.co.uk](mailto:sales@status.co.uk) for more information on mounting options.

# Temperature Probes

Section 6: Connection Heads For temperature probe assemblies	
<p>ABS plastic connection head</p> <p>Multiple entry configurations available, with single, dual and triple entries in various thread sizes</p> <p>Suitable for probe or wall mount applications</p> <p>Can also be used with Status Instruments field mounted displays</p> <p>IP67</p> <p>See the SCH4 datasheet for full details</p>	<p><b>SCH4 range</b></p> 
<p>Aluminium connection head</p> <p>Aluminium alloy with M24 probe entry, M20 cable entry</p> <p>Industry standard head</p> <p>Suitable for probe mount applications</p> <p>IP68</p> <p>See the SCH11 datasheet for full details</p>	<p><b>SCH11</b></p> 
<p>Stainless-steel connection head</p> <p>Only for use with Status Instruments range of field mount display instruments</p> <p>M20 and M16 entry options</p> <p>Suitable for probe or wall mount applications</p> <p>IP67</p> <p>See the SCH15 datasheet for full details</p>	<p><b>SCH15</b></p> 
<p>Aluminium or stainless-steel connection head</p> <p>ATEX Ex d or EX ia approval Ex d version must have the sensor supplied and fitted by us as it forms part of the Ex d approval</p> <p>Windowed version available for use with Status Instruments displays</p> <p>Suitable for probe and surface mount applications</p> <p>IP68</p> <p>See the SCH55 datasheet for full details</p>	<p><b>SCH55</b></p> 
<p>Visit <a href="http://www.status.co.uk">www.status.co.uk</a> or contact <a href="mailto:Sales@status.co.uk">Sales@status.co.uk</a> for more information on connection heads</p>	

# Temperature Probes

Section 7: TEMPERATURE TRANSMITTER, CONNECTION BLOCK, HEAD MOUNTED DISPLAY		
Temperature transmitters We can provide a full range of temperature transmitters to meet your needs.		
Provides a (4 to 20) mA loop powered output signal.	Temperature transmitters	
<b>Options include</b> (product dependent) RTD (Pt100), T/C, mV, Thermistor, Resistance and Slide-wire inputs		
Push button programmable		USB programmable
HART protocol		Wireless
User calibration/linearisation		
See the full range on the Status Instruments website. <a href="http://www.status.co.uk">www.status.co.uk</a>		
Connection block for in-head use		
<b>Options include</b> 4 or 6 way Material ceramic	Connection blocks	
		
Displays		
To provide a local process indication in the field	Head mount displays	
<b>Options include</b> (product dependent) Loop or battery powered ABS or stainless-steel housing Larger display options Data logging Probe, pipe, or wall mounting See the full range on the Status Instruments website <a href="http://www.status.co.uk">www.status.co.uk</a>		

Section 8: ATEX ASSEMBLIES	
Exia	Approved connection head required
Exd	Approved connection head and flame proof collar required
Please contact our sales team to discuss your requirements	

ORDERING	
For probes and probe assemblies. Please contact our sales team to discuss your requirements.	
Tel: +44 (0)1684 296818	<a href="mailto:sales@status.co.uk">sales@status.co.uk</a>