

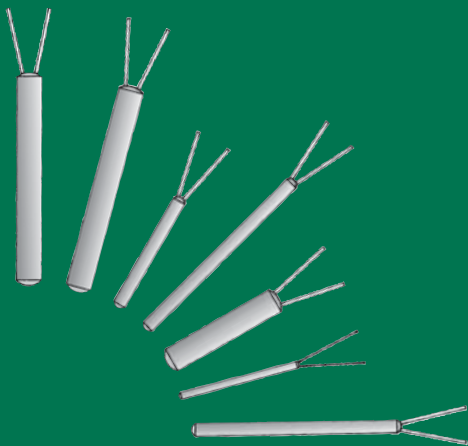
TEMPERATURE MEASUREMENT SPECIALISTS

TO INDUSTRY

H&B SENSORS



TEMPERATURE



Platinum Resistance  
Detectors

■ HBS 005A ■

MEASUREMENT SPECIALISTS TO INDUSTRY



## H & B Sensors Limited

is a long established manufacturer of Platinum Resistance Detectors, for the Cryogenic Industry.

H&B have now set up a manufacturing plant to produce a standard range of detectors for the Industrial Markets. These detectors are manufactured to BSEN60751:1996 and are available in five grades:

- Class B  $\pm 0.12$  ohms
- Class A  $\pm 0.06$  ohms
- 1/3 CLASS B  $\pm .04$
- 1/5 CLASS B  $\pm .024$
- 1/10 CLASS B  $\pm .012$
- Measured at 0°C

Ceramic bodied, internally wound detectors, offer a stable high performance element, which, with its partially supported coil will withstand rigorous applications.

Materials and workmanship are of the highest standards and are controlled within the BSEN ISO 9002 system.

The standard range of detectors is as shown in the table opposite, these detectors are PT100. 100 ohms @0°C. With a nominal Alpha value of 0.00385°C.

Alternative detectors manufactured in the following materials are available on request from our sales office.




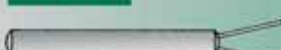
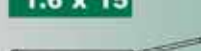
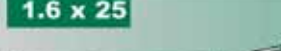


Rhodium Iron

Copper 10 ohms @ 25°C

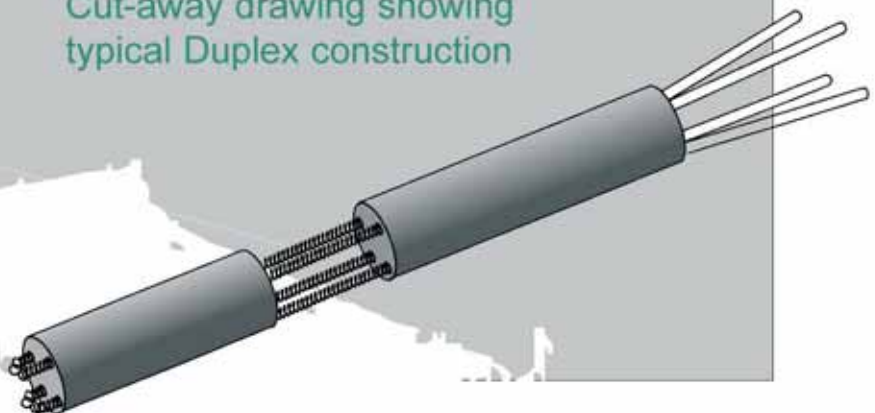
Nickel 100 ohms @ 0°C

Customer Designs and specials will be considered for manufacture.

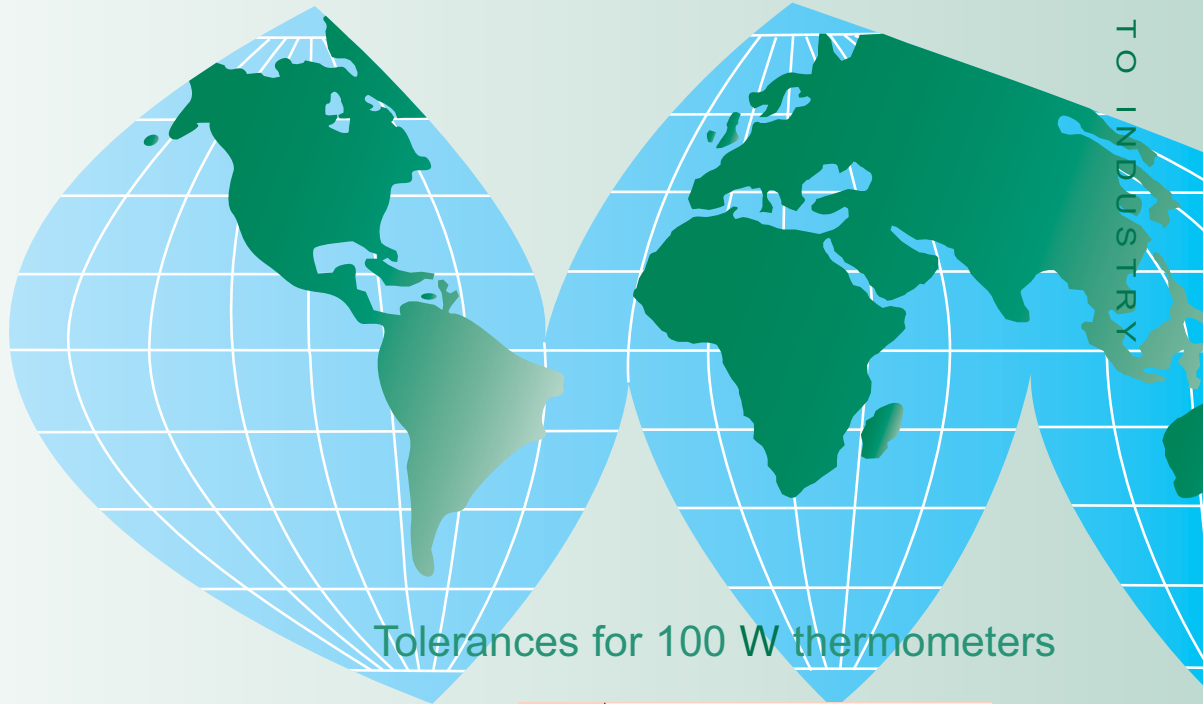
## Detector Selection Chart

	Diameter	Length	Single Winding	Duplex Winding
<b>3.0 x 15</b> 	3.0	15	HBS005A. 1530-S	HBS005A. 1530-D
<b>3.0 x 25</b> 	3.0	25	HBS005A. 2530-S	HBS005A. 2530-D
<b>2.8 x 15</b> 	2.8	15	HBS005A. 1528-S	HBS005A. 1528-D
<b>2.8 x 25</b> 	2.8	25	HBS005A. 2528-S	HBS005A. 2528-D
<b>1.6 x 15</b> 	1.6	15	HBS005A. 1516-S	HBS005A. 1516-D
<b>1.6 x 25</b> 	1.6	25	HBS005A. 2516-S	HBS005A. 2516-D
<b>1.6 x 8</b> 	1.6	8	HBS005A. 0816-S	
<b>0.9 x 15</b> 	0.9	15	HBS005A. 1509-S	

### Cut-away drawing showing typical Duplex construction



High grade Platinum Wire is wound into a minute coil which is inserted into the bores of a high purity Alumina bead, wherein it is "partially supported" by a small amount of high temperature glass. This form of construction results in a detector with excellent stability.



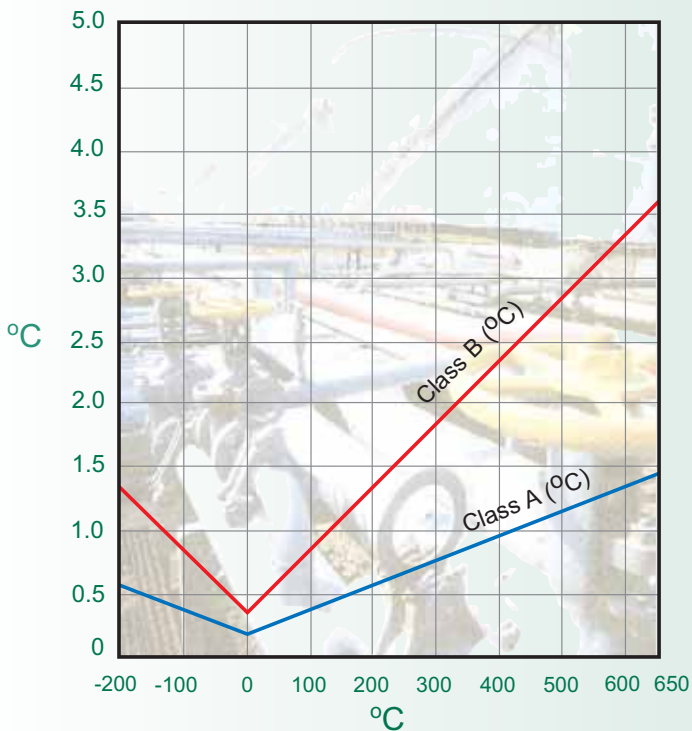
### Tolerances for 100 W thermometers

The tolerance values of detectors may be calculated as follows:

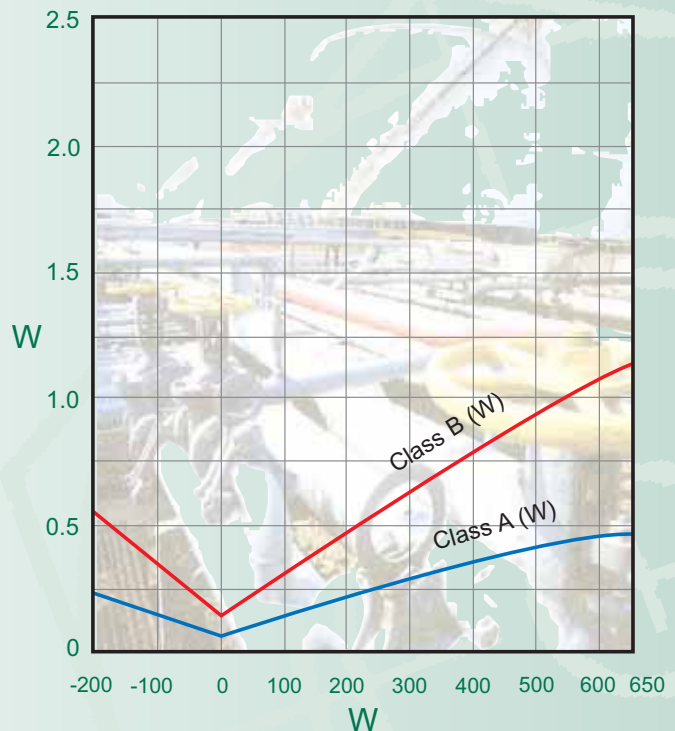
Class A  $0.15 + 0.002 [t]^*$   
 Class B  $0.3 + 0.005 [t]^*$

\* [t]\*= the modules of temperature in degrees Celsius without regard to sign.

TEM °C	TOLERANCE			
	Class A		Class B	
	±°C	± W	±°C	± W
-200	0.55	0.24	1.3	0.56
-100	0.35	0.14	0.8	0.32
0	0.15	0.06	0.3	0.12
100	0.35	0.13	0.8	0.30
200	0.55	0.20	1.3	0.48
300	0.75	0.27	1.8	0.64
400	0.95	0.33	2.3	0.79
500	1.15	0.38	2.8	0.93
600	1.35	0.43	3.3	1.06
650	1.45	0.46	3.6	1.13



Tolerance values in °C as a function of temperature for 100 W thermometers

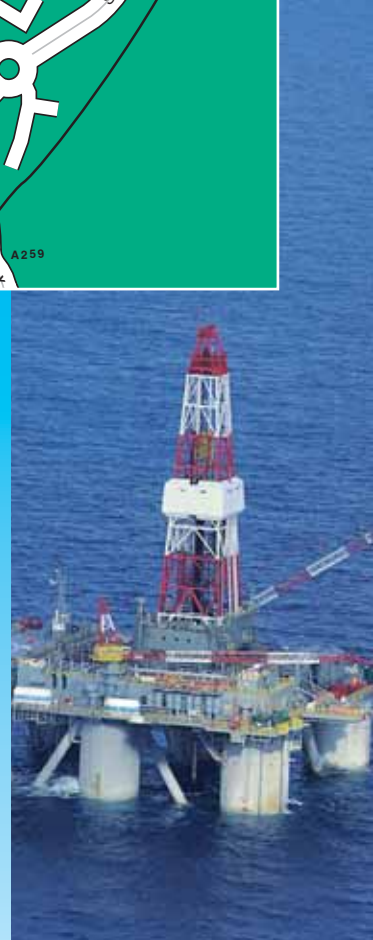
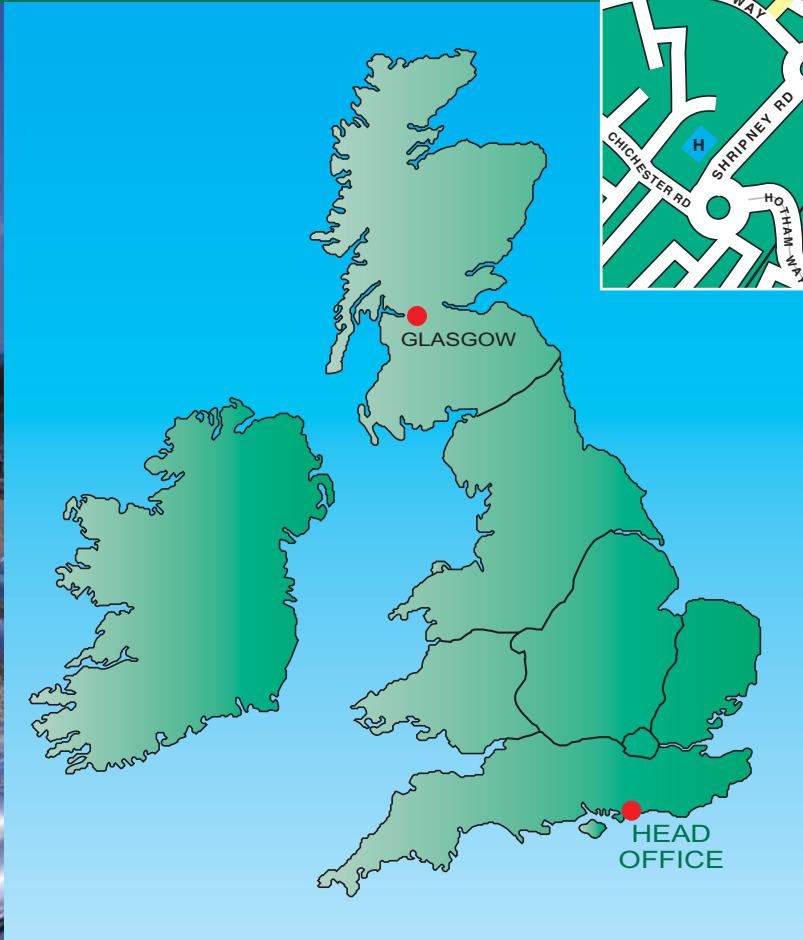
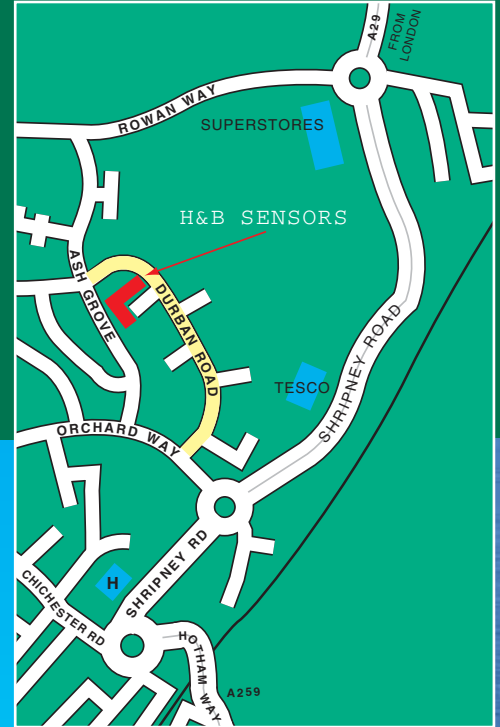


Tolerance values in W as a function of temperature for 100 W thermometers



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TEMPERATURE



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