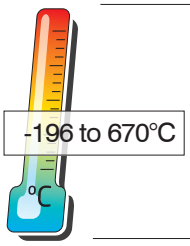


Reference Probes - Semi Standards
Platinum Resistance Thermometers

- High Stability Reference Probes
- Wide Temperature Ranges
- High Stability Platinum Coil Elements

These industrial platinum resistance thermometers are ideal for field and lab use. Suitable for use as working standards in Dry Blocks and Liquid Baths or as high accuracy probes for our range of True Temperature Indicators.

All the thermometers are metal sheathed and both less fragile and more affordable than the Isotech range of true Standard Platinum Resistance Thermometers that are used in laboratories and are found in our publication *"Solutions for Primary and Secondary Laboratories".*

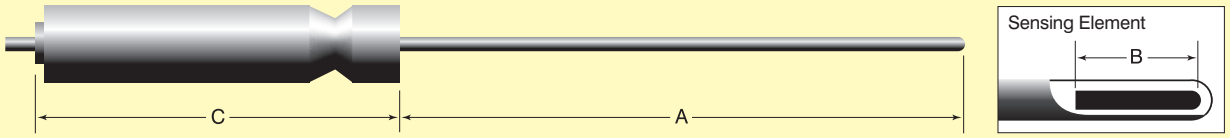
All the thermometers use handmade coil wound platinum sensing elements to give high accuracy and low drift. Isotech's UKAS accredited lab can calibrate to the smallest of uncertainties.

Calibration should be specified to suit the particular operating range and application. Isotech can advise on which service is appropriate to match the temperature range and application.

Universal Specifications

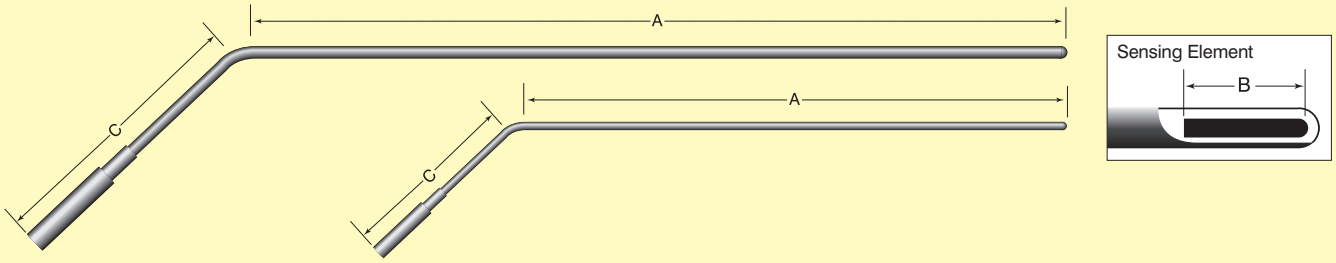
Ro	100Ω ± 0.05 Ω
Alpha	0.003850 ± 0.000005
Standard	IEC 60751
Stability	0.010 Ω/year
Recommended Current	1mA
Self Heating at 1mA	0.004°C
Calibration	Optional UKAS Calibration at extra cost. See table for typical uncertainties
Connection	Four Wire
Max. Handle Temperature	80°C

After manufacture all Isotech Semi Standard PRTs are thermally pre-conditioned to provide optimal stability.



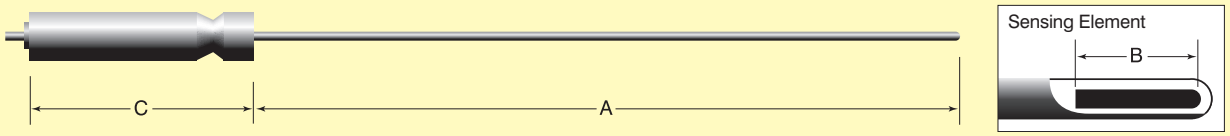
■ **General Purpose** Probes

Model	Range	Diameter	Length (A)	Sensing Length (B)	Handle (C)	Cable	Application
935-14-112	-50°C to 250°C	3mm	225mm	6mm	No Handle	2m PTFE	General Purpose/TTI-10
935-14-61	-50°C to 250°C	4mm	300mm	6mm	19 x 120mm	2m PTFE	Fast Response, Low Stem Conduction
935-14-13	-196°C to 250°C	6mm	350mm	25mm	25 x 115mm	2m PTFE	Low Temperature
935-14-113	-100°C to 250°C	6mm	350mm	25mm	19 x 120mm	2m PTFE	General Purpose
935-14-16	-100°C to 450°C	6mm	450mm	25mm	19 x 120mm	2m PTFE	General Purpose
935-14-116	-100°C to 450°C	6mm	350mm	25mm	19 x 120mm	2m PTFE	General Purpose/Fits milliK Case
935-14-72	-50°C to 670°C	6mm	375mm	25mm	No Handle	2m PTFE	Fits Jupiter / Gemini Carry Case
935-14-98	-50°C to 350°C	4mm	300mm	8mm	No Handle	2m PTFE	Low Stem Conduction



■ **Angled** Probes - *angled head provides maximum clearence at top of calibration bath*

Model	Range	Diameter	Length (A)	Sensing Length (B)	(C)	Cable	Application
935-14-82	-50°C to 250°C	4mm	210mm	6mm	50mm	1.5m PTFE	Europa - Venus - Calisto
935-14-85	-50°C to 250°C	6mm	420mm	25mm	35mm	0.54 m PTFE	Oceanus-6



■ **Working** Industrial Standards

These thermometers use premium grade wire wound elements to IEC-751 and the same internal construction as our working Standard SPRTs. The 95L is optimised for low temperature with minimum stem conduction. The 95H is optimised for high temperature operation. Both models employ strain free construction.

Model	Range	Diameter	Length (A)	Sensing Length (B)	Handle (C)	Cable
935-14-95L	-200°C to 165°C	6mm	480mm	25mm	25 x 115mm	2m PTFE
935-14-95H	-80°C to 670°C	6mm	480mm	25mm	19 x 120mm	2m PTFE

Termination Options

Bare Wire (BW)
TTI suits milliK and TTI-1 to TTI-7, TTI-b – suits TTI-22
DB Connector for Dry Block Calibrator Site Indicator

How to Order

Please Specify Model Type and Termination Option
(for example 935-14-13/BW)
Please state whether UKAS Certification is required

Typical Uncertainties of PRT Semi Standards with Range

Temperature	**Uncertainty mK**				
Model	**935-14-95L***	**935-14-61*** **935-14-13**	**935-14-13***	**935-14-95H*** **935-14-72** **935-14-16**	**935-14-95H*** **935-14-72**
-196	25	N/A	25	N/A	N/A
-80	20	N/A	20	25	25
-50	15	15	15	20	20
0	10	10	10	15	15
50	10	10	10	15	15
156	10	10	10	15	20
232	N/A	15	15	20	25
420	N/A	N/A	N/A	40	40
550	N/A	N/A	N/A	N/A	50
660	N/A	N/A	N/A	N/A	50

*Preferred Models

The above uncertainties do not include long term drift
Typical Stability of correctly used semi standard is 0.01°C/year at 0°C
Actual uncertainty of a probe determined at time of calibration

Isotech have generated a long history of many of our semi-standards.

Here are a few documented facts:

The 935-14-95 model has the widest temperature range and in consequence is likely to suffer the largest changes in characteristics.

Guy Snelling sent the following email about the 935-14-95.

UKAS Calibration
available for these systems
International Traceability - Best Practice

UKAS CALIBRATION 0175