



935

Semi Standard Platinum Resistance  
Thermometer, -200°C to 670°C

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.

## Description

These industrial platinum resistance thermometers are working standards 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 909 range of true Standard Platinum Resistance Thermometers used in 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.

### Key features:

- High stability reference probes
- High stability Platinum coil element
- Wide operating range

# Specifications

## General specifications

|                        |                                         |  |  |
|------------------------|-----------------------------------------|--|--|
| R0                     | 100 $\Omega \pm 0.05 \Omega$            |  |  |
| Alpha                  | 0.003850 $\pm 0.000005$                 |  |  |
| Standard               | IEC 60751                               |  |  |
| Stability              | 0.010 $\Omega$ / year                   |  |  |
| Recommended current    | 1 mA                                    |  |  |
| Self heating at 1 mA   | 0.004°C                                 |  |  |
| Connection             | Four wire                               |  |  |
| Max handle temperature | 80°C                                    |  |  |
| Calibration            | Optional UKAS calibration at extra cost |  |  |

## General purpose probes

| Reference  | Temperature range | Diameter | Length (A) | Sensing length (B) | Handle (C)  | Cable    | Application                            |
|------------|-------------------|----------|------------|--------------------|-------------|----------|----------------------------------------|
| 935-14-112 | -50 to 250°C      | 3 mm     | 225 mm     | 6 mm               | No handle   | 2 m PTFE | General purpose With TTI-10            |
| 935-14-61  | -50 to 250°C      | 4 mm     | 300 mm     | 6 mm               | 19 x 120 mm | 2 m PTFE | Fast response time Low stem conduction |
| 935-14-13  | -196 to 250°C     | 6 mm     | 350 mm     | 25 mm              | 25 x 115 mm | 2 m PTFE | Low temperature                        |
| 935-14-113 | -100 to 250°C     | 6 mm     | 350 mm     | 25 mm              | 19 x 120 mm | 2 m PTFE | General purpose                        |
| 935-14-16  | -100 to 450°C     | 6 mm     | 450 mm     | 25 mm              | 19 x 120 mm | 2 m PTFE | General purpose                        |
| 935-14-116 | -100 to 450°C     | 6 mm     | 350 mm     | 25 mm              | 19 x 120 mm | 2 m PTFE | General purpose With MilliK            |
| 935-14-72  | -50 to 670°C      | 6 mm     | 375 mm     | 25 mm              | No handle   | 2 m PTFE | With Jupiter /                         |

|           |              |      |        |      |           |          |                     |
|-----------|--------------|------|--------|------|-----------|----------|---------------------|
|           |              |      |        |      |           |          | Gemini              |
| 935-14-98 | -50 to 350°C | 4 mm | 300 mm | 8 mm | No handle | 2 m PTFE | Low stem conduction |

## Angled probes

(Angled head provides maximum clearance at top of calibration bath)

## Working industrial standards

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

## Typical uncertainties of 935 PRTs with UKAS calibration

| Temperature °C | 935-14-95L | 935-14-61<br>935-14-13 | 935-14-13 | 935-14-95H<br>935-14-72<br>935-14-16 | 935-14-95H<br>935-14-72 |
|----------------|------------|------------------------|-----------|--------------------------------------|-------------------------|
| -196           | 25 mK      |                        | 25 mK     |                                      |                         |
| -80            | 20 mK      |                        | 20 mK     | 25 mK                                | 25 mK                   |
| -50            | 15 mK      | 15 mK                  | 15 mK     | 20 mK                                | 20 mK                   |
| 0              | 10 mK      | 10 mK                  | 10 mK     | 15 mK                                | 15 mK                   |
| 50             | 10 mK      | 10 mK                  | 10 mK     | 15 mK                                | 15 mK                   |
| 156            | 10 mK      | 10 mK                  | 10 mK     | 15 mK                                | 20 mK                   |
| 232            |            | 15 mK                  | 15 mK     | 20 mK                                | 25 mK                   |
| 420            |            |                        |           | 40 mK                                | 40 mK                   |

|     |  |  |  |  |       |
|-----|--|--|--|--|-------|
| 550 |  |  |  |  | 50 mK |
| 660 |  |  |  |  | 50 mK |

## Models and accessories

935 Working Standard Platinum Resistance  
Thermometers, -200°C to 670°C Delivered in standard with:

- Carrying case

### General purpose probes:

|            |                                                                      |                                                                     |                                                                      |
|------------|----------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------|
| 935-14-112 | Semi standard Pt100 (-50°C to 250°C), with carrying case 935-14-61   | Semi standard Pt100 (-50°C to 250°C), with carrying case 935-14-13  | Semi standard Pt100 (-196°C to 250°C), with carrying case 935-14-113 |
| 935-14-16  | Semi standard Pt100 (-100°C to 450°C), with carrying case 935-14-116 | Semi standard Pt100 (-100°C to 450°C), with carrying case 935-14-72 | Semi standard Pt100 (-50°C to 670°C), with carrying case 935-14-98   |
|            |                                                                      |                                                                     | Semi standard Pt100 (-50°C to 350°C), with carrying case             |

### Angled probes:

*(Angled head provides maximum clearance at top of calibration bath)* 935-14-82  
Semi standard Pt100 (-50°C to 250°C), with carrying case 935-14-85  
Semi standard Pt100 (-50°C to 250°C), with carrying case

### Working industrial standards:

|            |                                                                      |                                                          |
|------------|----------------------------------------------------------------------|----------------------------------------------------------|
| 935-14-95L | Semi standard Pt100 (-200°C to 165°C), with carrying case 935-14-95H | Semi standard Pt100 (-80°C to 670°C), with carrying case |
|------------|----------------------------------------------------------------------|----------------------------------------------------------|

### Connexion options:

|                                                   |            |
|---------------------------------------------------|------------|
| Ordering code example: 935-xx-xx/BW BW            | Bare wires |
| (will be supplied unless otherwise specified) TTI | LEMO       |

connector for milliK, TTI-1 to TTI 7 TTI-b

LEMO connector

for TTI 22 DB

Connector for dry block calibrators model

SITE