

# Temperature Probe Catalogue



[www.intech.co.nz](http://www.intech.co.nz)

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# Intech Temperature Probes

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**Product Liability.** This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units at 25C, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

**Warning:** These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.

## RTD's with Leads

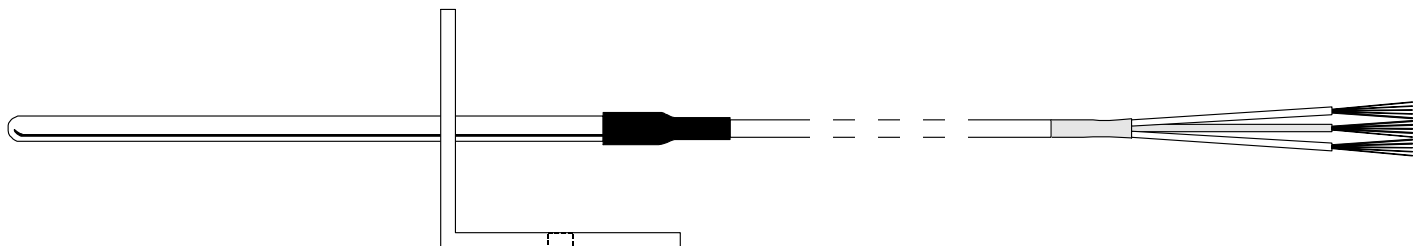
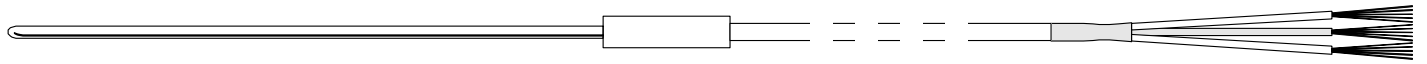
[www.intech.co.nz/rl](http://www.intech.co.nz/rl)

### General Specifications:

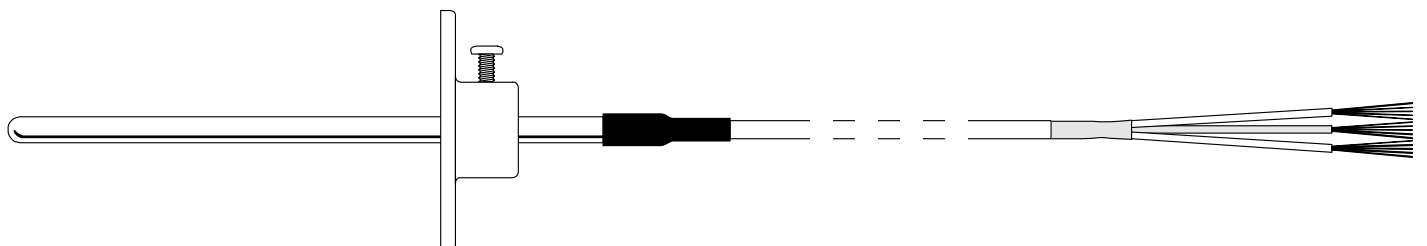
- RTD Pt100 DIN Standard Element
- Temperature ranges from -190 to +260°C
- Sheath Material 316SS
- Sheath Diameters from 3.3 mm to 6.4 mm
- Various Lead Insulation Materials (PVC, Tefzel, Silicone Rubber)
- Various RTD transmitters are also available to suit your particular application



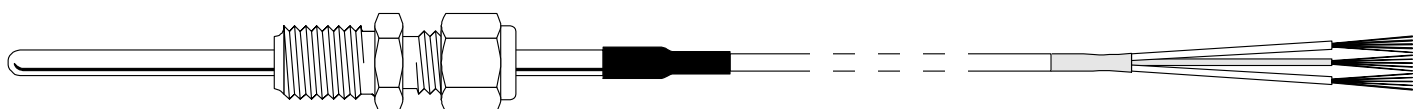
Small Diameter Probe with Collar to Adapt to Large Lead



Optional Wall Mount Bracket



Optional Sliding Flange



Optional Compression Fitting

## RTD's with Leads

[www.intech.co.nz/rl](http://www.intech.co.nz/rl)

Item	Code		Specification
Model	RL-		
Element	S		Single
	D		Duplex *
	X		Others
Outer Diameter	3.3-		Millimetres (316SS)
	4.7-		Millimetres (316SS)
	6.4-		Millimetres (316SS)
	X-		Others
Sheath Length	150		Millimetres (Standard)
	<input type="text"/>		Millimetres
Lead	A		3 Core PVC 16/0.2 (-10/80°C)
	B		4 Core PVC Screened 7/0.2 (-10/80°C)
	C		3 Core Silicone Rubber 14/0.15 (-30/180°C)
	D		3 Core Tefzel 19/0.13 (-100/150°C)
	E		3 Core PFA 7/0.2 (-190/260°C)
	F		6 Core Tefzel 19/0.13 (-100/150°C) *
	X		Others
Lead Length	3000		Millimetres (Standard)
	<input type="text"/>		Millimetres
Accessories	N		None
	W		Wall Mount Bracket
	B		Brass Compression Fitting
	S		Stainless Compression Fitting
	F		Sliding Flange
	X		Others

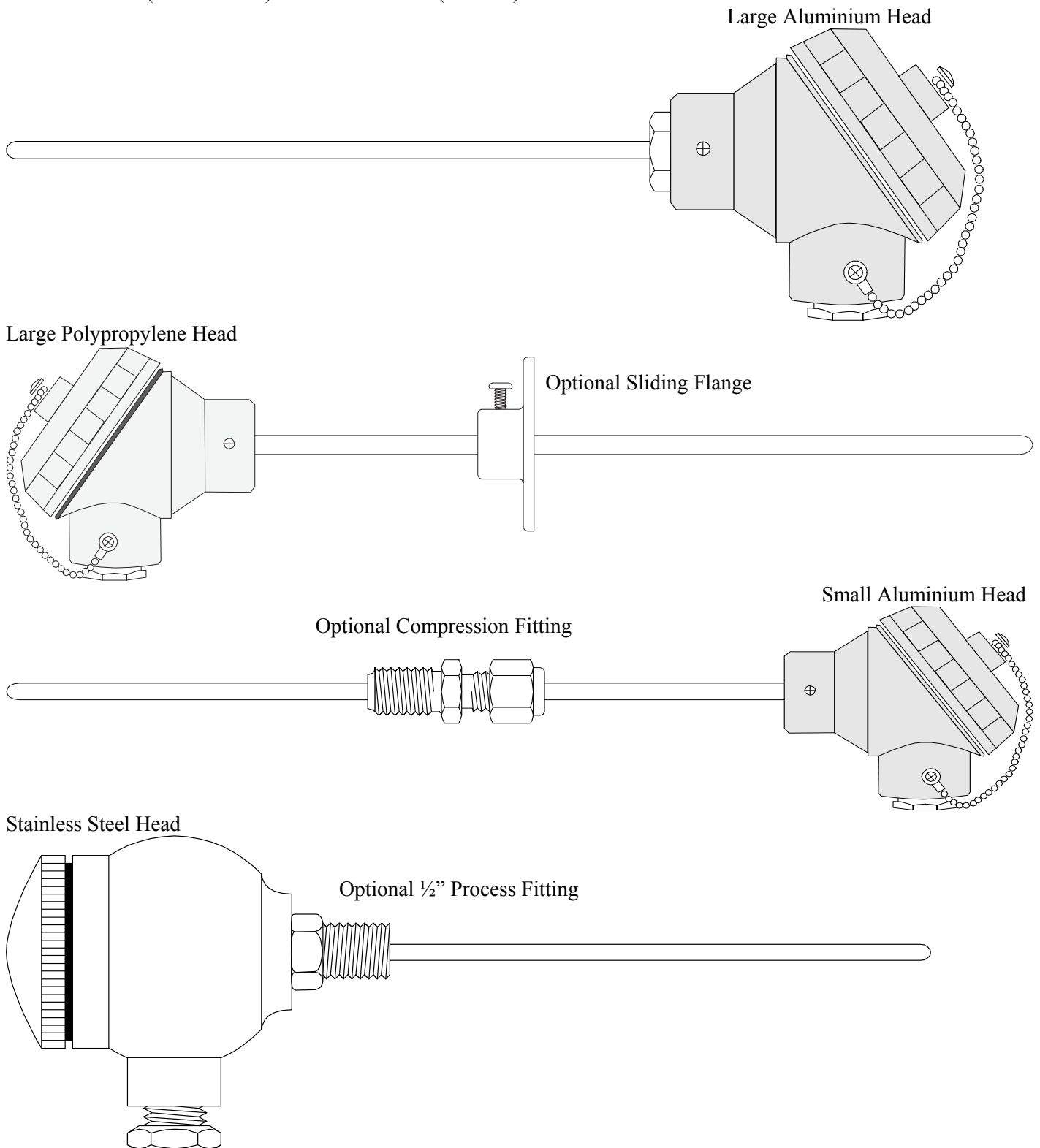
Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

## RTD Probe with Protection Head

[www.intech.co.nz/rh](http://www.intech.co.nz/rh)

### General Specifications:

- RTD Pt100 DIN standard element
- Temperature range from -190 to +260°C
- Sheath materials 304SS and 316SS
- Various terminal heads, (Bakelite, Aluminium, Stainless Steel, Polypropylene)
- Optional head-mount transmitter, Models:
  - XU2HN (Non-Isolated)      XU2HI (Isolated)



## RTD Probe with Protection Head

[www.intech.co.nz/rh](http://www.intech.co.nz/rh)

Item	Code		Specification
Model	RH-		
Element	S		Single
	D		Duplex
	X		Others
Outer Diameter	6.4-		Millimetres (Standard, 304SS) * <sup>1</sup>
	X-		Other
Sheath Length		□□□	Millimetres
Protection Head		SA	Small Aluminium
		SB	Small Bakelite
		LA	Large Aluminium
		LB	Large Bakelite
		LP	Large Polypropylene
		SS	Stainless Steel
Transmitter		N	None
		TX	Head-Mount Transmitter * <sup>2</sup>
Transmitter Range		N-	None
		□□	See Measuring Range Code
		X-	Other
Accessories		N	None
		S	Stainless Compression Fitting
		B	Brass Compression Fitting
		F	Sliding Flange
		P	½" BSP Process Fitting
		X	Other

\*<sup>1</sup> 316SS material available on request.

\*<sup>2</sup> Fits Large Head only.

### Measuring Range Codes

Measuring Range	Code
-50 to +50°C	55
0 to +50°C	05
0 to +100°C	10
0 to +150°C	15
0 to +200°C	20
0 to +250°C	25

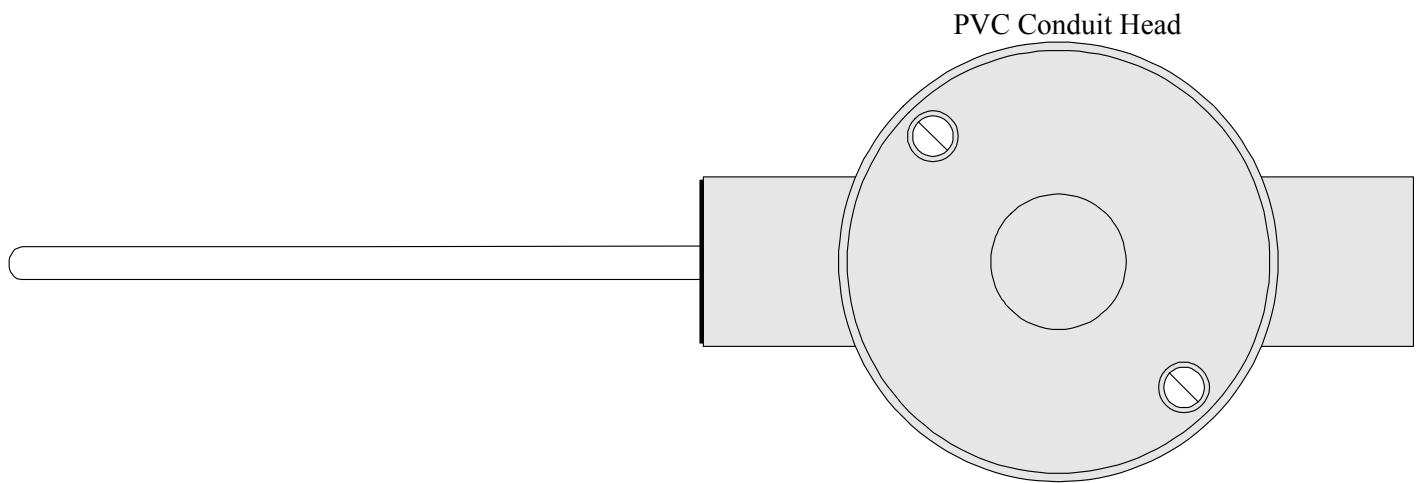
Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

## Wall Mounted RTD Assembly

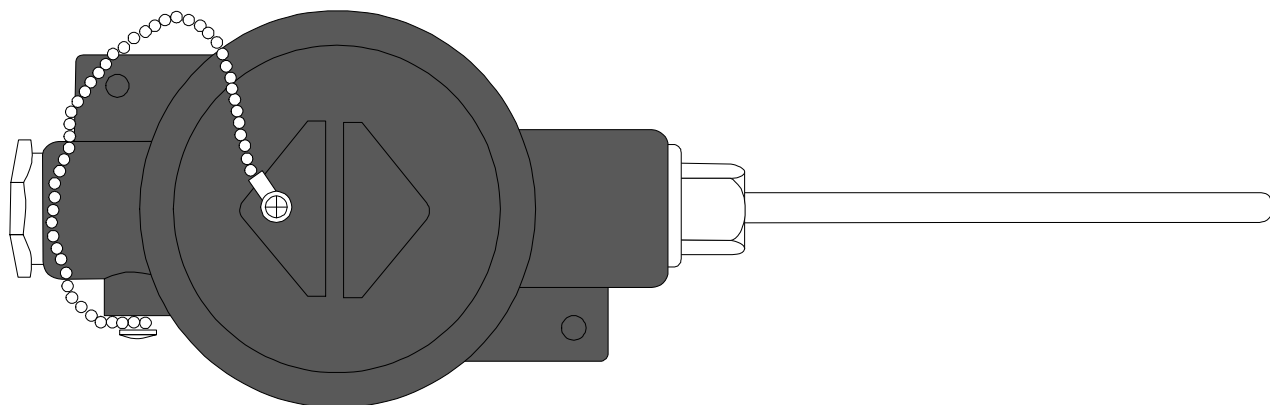
[www.intech.co.nz/wmr](http://www.intech.co.nz/wmr)

### General Specifications:

- RTD Pt100 Din standard element
- Temperature ranges from -40 to +110°C
- Sheath materials 304SS and 316SS
- Optional head-mount transmitter, Models:
  - **XU2HN** (Non-Isolated)
  - **XU2HI** (Isolated)



### Black Alloy Head



## Wall Mounted RTD Assembly

[www.intech.co.nz/wmr](http://www.intech.co.nz/wmr)

Item	Code		Specifications
Model	WMR-		
Element	S		Single
	D		Duplex
	X		Others
Outer Diameter	6.4-		Millimetres (Standard, 304SS) *
	X-		Millimetres
Sheath Length		100	Millimetres (Standard)
		150	Millimetres
		□□□	Millimetres
Connection		CB-	Conduit Box [PVC] (-20/80°C)
		AH-	Alloy Head (-40/110°C)
Transmitter		N	None
		TX	Head-Mount Transmitter
Transmitter Range		N-	None
		05-	0 to 50°C
		55-	-50 to +50°C
		X-	Others
Accessories		N	None
		C	Cable Gland for Conduit Box

\* 316SS material available on request.

Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

# Intech Temperature Probes

# Pt100 Patch

## Surface Pt100 Patch

[www.intech.co.nz/surface](http://www.intech.co.nz/surface)

### General Specifications:

- Pt100 Class B in moulded silicone rubber patch
- 40mm x 13mm x 5mm
- 2 metres PTFE insulated twisted pair lead
- Temperature range from -50 to +150°C
- Oil and chemical resistant
- Various RTD transmitters are also available to suit your particular application



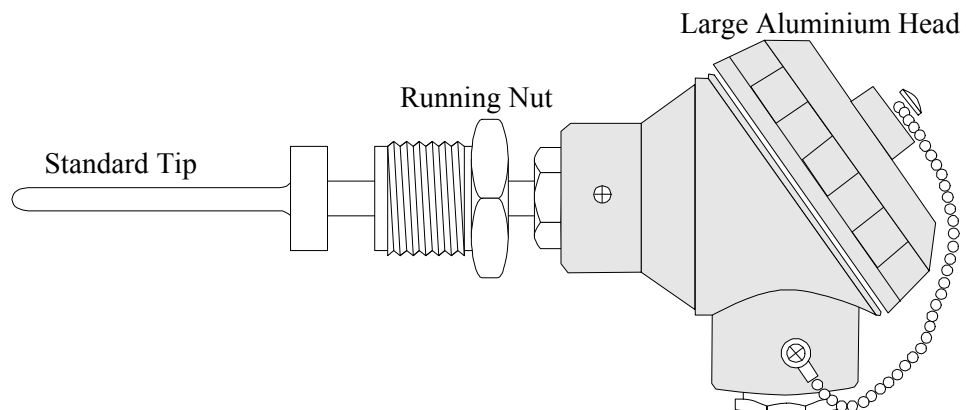
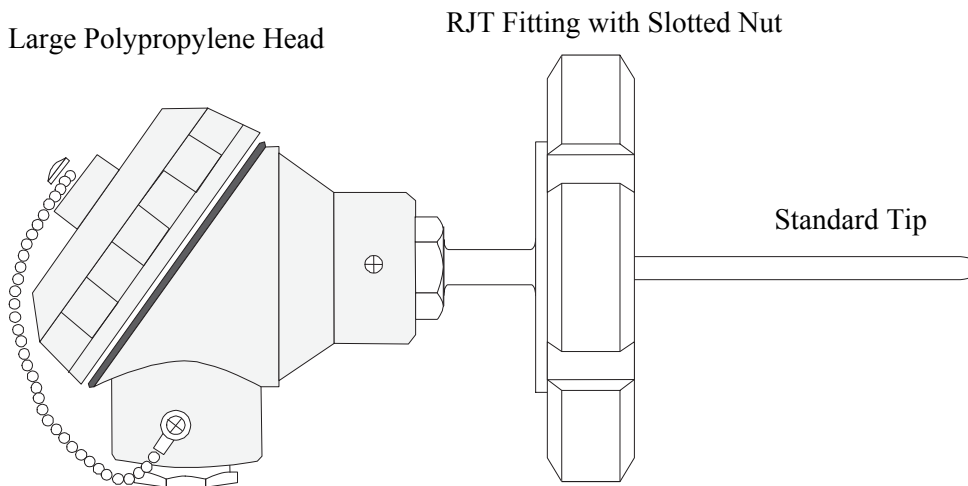
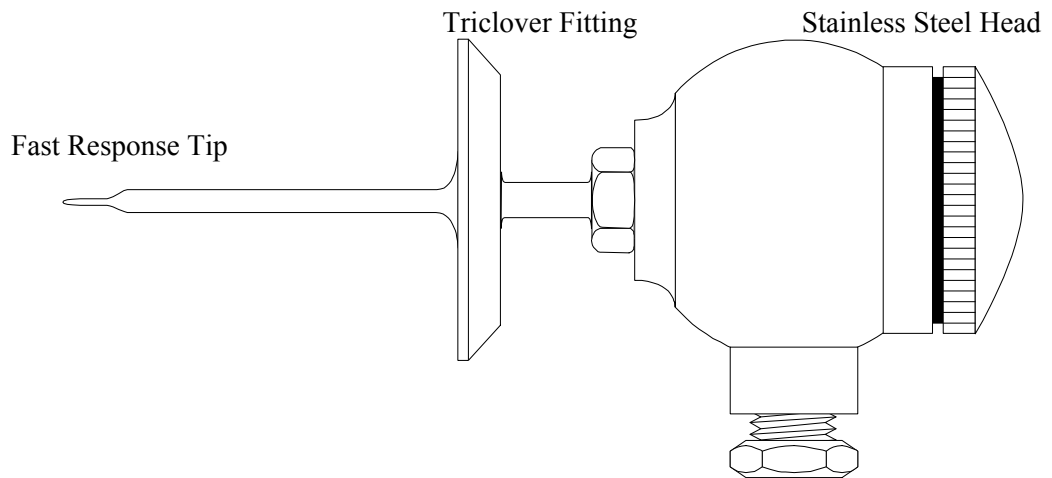


## Sanitary RTD Assembly

[www.intech.co.nz/sr](http://www.intech.co.nz/sr)

### General Specifications:

- RTD Pt100 DIN standard element
- 3-wire RTD configuration
- Temperature range from -190 to +260°C
- All sheath material 316SS
- Optional fast response tip
- Optional head-mount transmitter, Models:
  - **XU2HN** (Non-Isolated)      **XU2HI** (Isolated)
- Environmental Rating IP67



## Sanitary RTD Assembly

[www.intech.co.nz/sr](http://www.intech.co.nz/sr)

Item	Code				Specification
Model	SR-				
Tip	S				Standard
	F				Fast Response
Outer Diameter	6.4-				Millimetres (Standard)
	X-				Other
Sheath Length	75				Millimetres (Standard)
	X				Other
Sanitary Fitting			TC		Triclover
			RJT		RJT
			RN		Running Nut
Sanitary Fitting Size			□ □		See Size Codes
Protection Head			LA		Large Aluminium
			LP		Large Polypropylene
			SS		Stainless Steel
Transmitter			N		None
			TX		Head-Mount Transmitter
Transmitter Range			N-		None
			□ □		See Measuring Range Code
Accessories			N		None
			C		Triclover Clamp
			RH		RJT Hex Nut 316SS
			RS		RJT Slotted Nut 304SS

Note: Response time graph and traceable certificate of accuracy available on request.

### Size Codes

Fitting Cover	Size in Inches	Code
Triclover	1	10
Triclover	1.5	15
Triclover	2	20
Triclover	2.5	25
RJT	1	10
RJT	1.5	15
RJT	2	20
RJT	2.5	25
Running Nut	0.75 BSPP	75

### Measuring Range Code

Measuring Range	Code
-50 to +50°C	55
0 to +50°C	05
0 to +100°C	10
0 to +150°C	15
0 to +200°C	20
0 to +250°C	25

Note: The above covers the more common Sanitary RTD probes. We can supply probes to your particular specification.

## RTD Food Probes

[www.intech.co.nz/rfp](http://www.intech.co.nz/rfp)

### General Specifications:

- RTD Pt100 DIN standard element
- Temperature range from -30°C to +180°C
- Varying sheath materials
- Various RTD transmitters are also available to suit your particular application

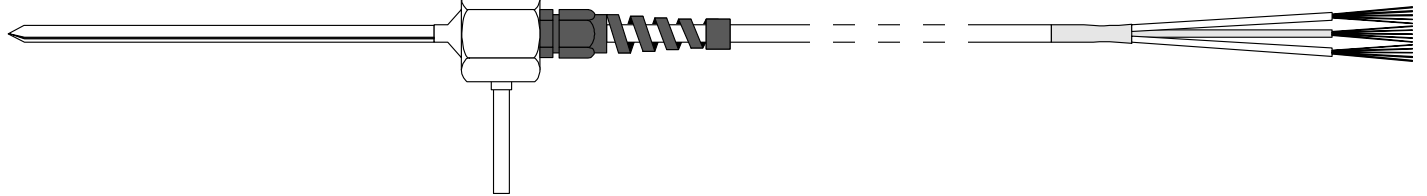


Deep Bone with Ring Handle - DB-R

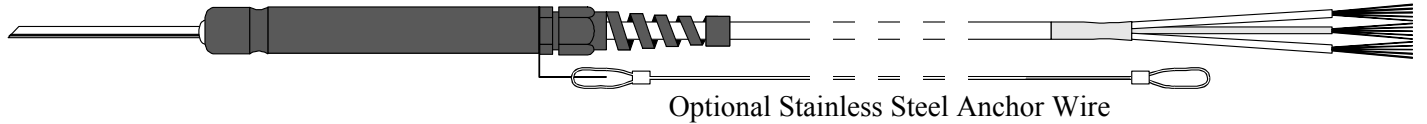
### Deep Bone - DB



### Deep Bone with T-Bar Handle - DB-T

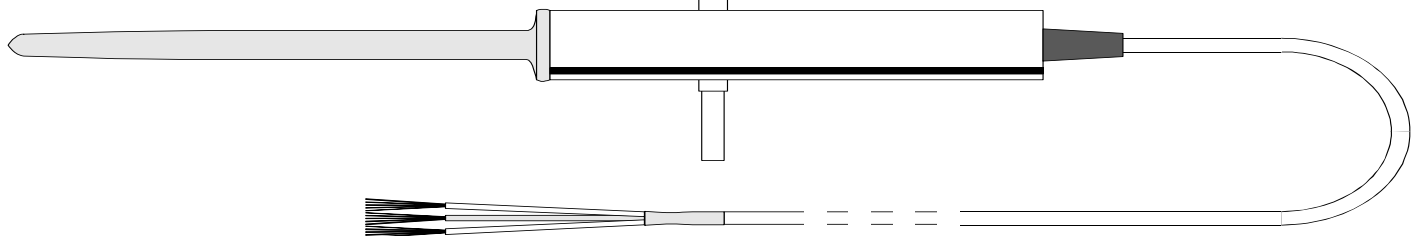


### Fruit Probe - FP



Optional Stainless Steel Anchor Wire

### Carcass Probe - CP



### Meat Carton Probe - MC



## RTD Food Probes

[www.intech.co.nz/rfp](http://www.intech.co.nz/rfp)

Item	Code		Specification
<b>Deep Bone Probe</b>			
Model	DB		
	DB-T		T-Bar Handle
	DB-R		140mm Ring Handle
Outer Diameter	6.4-		Millimetres (Standard)
	X-		Others
Sheath Length	150		Millimetres (Standard)
	□□□		Millimetres
Lead	C		3 Core Silicone 14/0.15 (-30/180°C)
	X		Others
Lead Length	7000		Millimetres (Standard)
	□□□□		Millimetres
<b>Fruit Probe</b>			
Model	FP		
Outer Diameter	3.3-		Millimetres (Standard)
	X-		Others
Sheath Length	50		Millimetres (Standard)
	□□		Millimetres
Lead	A		3 Core PVC 16/0.2 (-30/150°C)
	C		3 Core Silicone Rubber 14/0.15 (-30/180°C)
	X		Others
Lead Length	10000		Millimetres (Standard)
	□□□□		Millimetres
Accessories	N		None
	W		Stainless Anchor Wire
<b>Carcass Probe</b>			
Model	CP		
Outer Diameter	10-		Millimetres (Standard)
	X-		Others
Sheath Length	100		Millimetres (Standard)
	□□□		Millimetres
Lead	C		3 Core Silicone 14/0.15 (-30/150°C)
	X		Others
Lead Length	4000		Millimetres (Standard)
	□□□□		Millimetres
<b>Meat Carton</b>			
Model	MC		
Outer Diameter	6.4-		Millimetres (Standard)
	X-		Others
Sheath Length	150		Millimetres (Standard)
	□□□		Millimetres
Lead	C		3 Core Silicone Rubber 14/0.15 (-30/150°C)
	X		Others
Lead Length	4000		Millimetres (Standard)
	□□□□		Millimetres

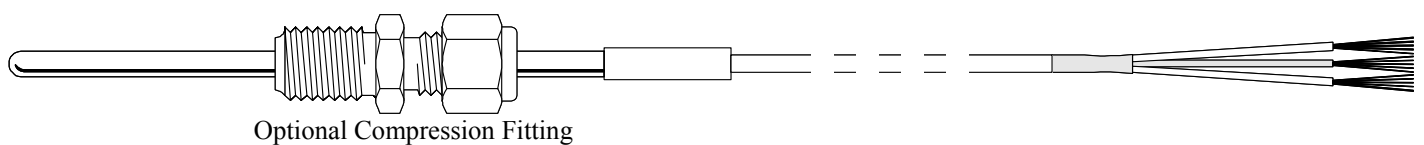
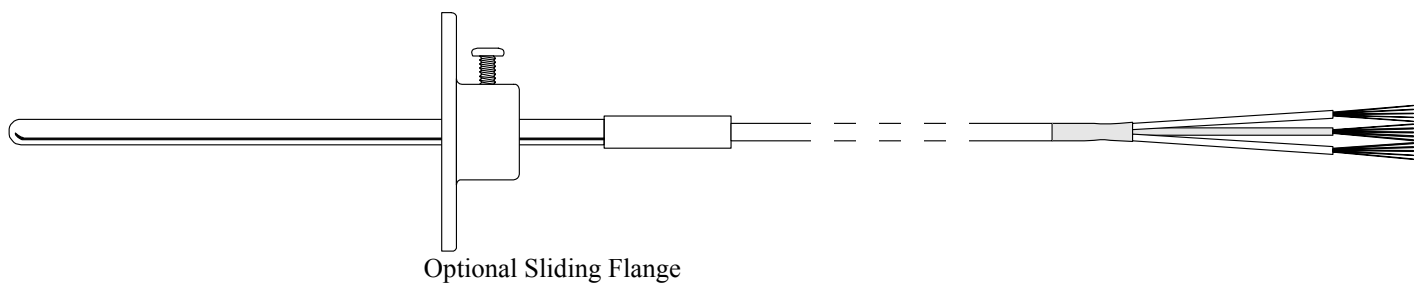
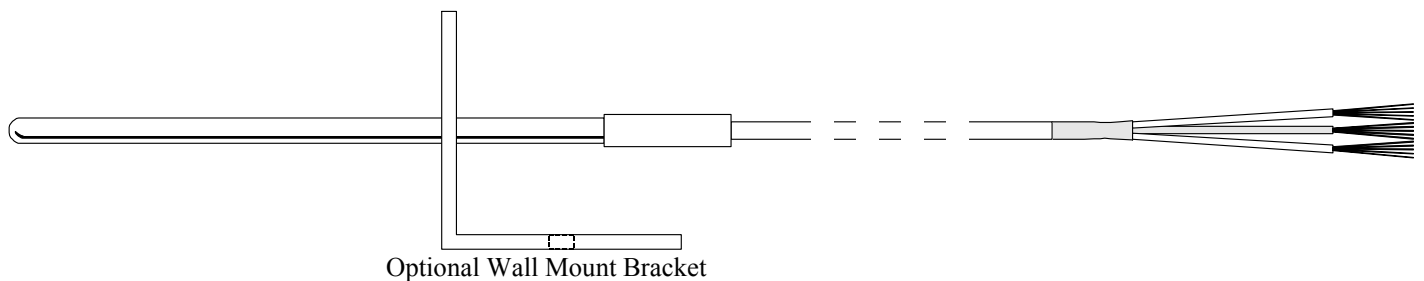
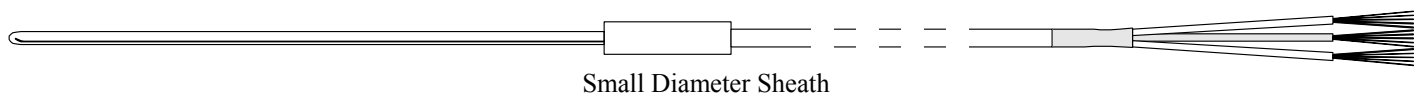
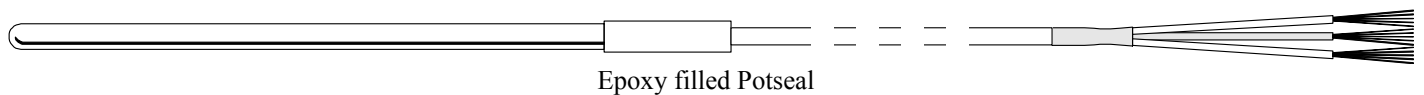
Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

## Mineral Insulated RTD's with Leads

[www.intech.co.nz/mrl](http://www.intech.co.nz/mrl)

### General Specifications:

- RTD Pt100 DIN Standard Element
- Maximum Temperature Rating (at probe tip) 500°C
- All Sheath Material 316SS
- Sheath diameters from 3 mm to 6.4 mm
- Various Lead Insulation Materials (PVC, Tefzel, Silicone Rubber)
- Various RTD transmitters are also available to suit your particular application



## Mineral Insulated RTD's with Leads

[www.intech.co.nz/mrl](http://www.intech.co.nz/mrl)

Item	Code		Specification
Model	MRL-		
Element	S		Single
	D		Duplex *
	X		Others
Outer Diameter	3.0-		Millimetres
	4.5-		Millimetres
	6.4-		Millimetres
	X-		Others
Sheath Length		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Millimetres
Lead		A	3 Core PVC 16/0.2 (80°C)
		B	4 Core PVC Screened 7/0.2 (80°C)
		C	3 Core Silicone Rubber 14/0.15 (180°C)
		D	3 Core Tefzel 19/0.13 (150°C)
		E	3 Core PFA 7/0.2 (-190/260°C)
		F	6 Core Tefzel 19/0.13 (-100/150°C) *
		X	Others
Lead Length		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Millimetres
Accessories		N	None
		W	Wall Mount Bracket
		B	Brass Compression Fitting
		S	Stainless Compression Fitting
		F	Sliding Flange
		X	Others

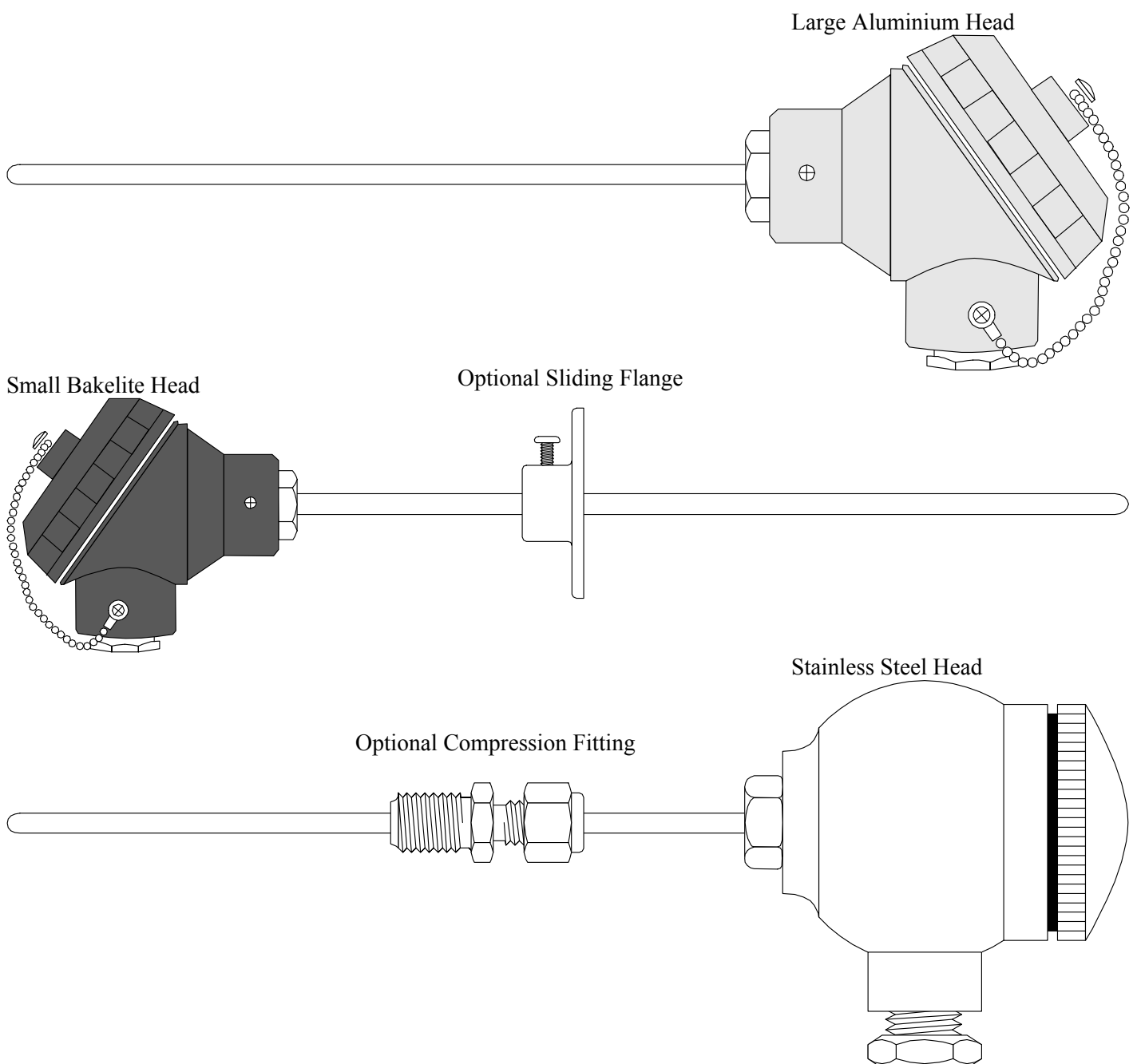
Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

## Mineral Insulated RTD Probe with Protection Head

[www.intech.co.nz/mrh](http://www.intech.co.nz/mrh)

### General Specifications:

- RTD Pt100 DIN Standard Element
- Temperature range from -190 to +500°C
- All Sheath Material 316SS
- Various terminal heads, (Bakelite, Aluminium, Polypropylene, Stainless Steel)
- Optional head-mount transmitter, Models:
  - **XU2HN** (Non-Isolated)      **XU2HI** (Isolated)



## Mineral Insulated RTD Probe with Protection Head

[www.intech.co.nz/mrh](http://www.intech.co.nz/mrh)

Item	Code		Specification
Model	MRH-		
Element	S		Single
	D		Duplex
	X		Others
Outer Diameter	6.4-		Millimetres (Standard)
	X-		Other
Sheath Length		□□□	Millimetres
Protection Head		SA	Small Aluminium
		SB	Small Bakelite
		LA	Large Aluminium
		LP	Large Polypropylene
		LB	Large Bakelite
		SS	Stainless Steel
Transmitter		N	None
		TX	Head-Mount Transmitter *
Transmitter Range		N-	None
		□□	See Measuring Range Code
		X-	Other
Accessories		N	None
		S	Stainless Compression Fitting
		B	Brass Compression Fitting
		F	Sliding Flange
		X	Other

\* Fits Large Head only.

### Measuring Range Codes

Measuring Range	Code
-50 to +50°C	55
0 to +50°C	05
0 to +100°C	10
0 to +150°C	15
0 to +200°C	20
0 to +250°C	25
0 to +300°C	30

Note: The above covers the more common RTD probes. We can supply probes to your particular specification.



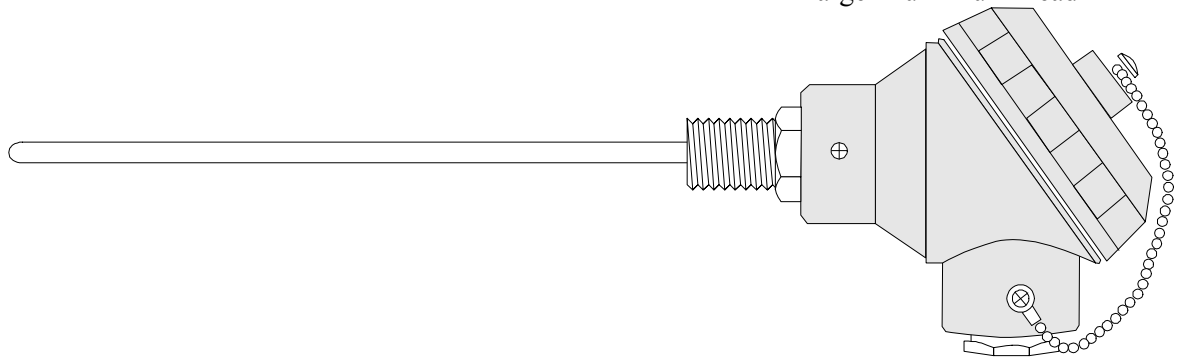
## Mineral Insulated RTD Probe with Head and Process Fitting

### General Specifications:

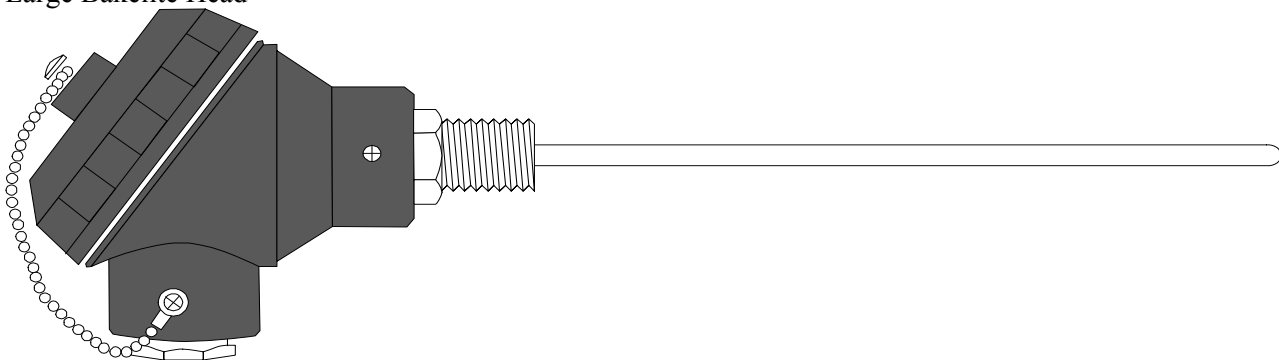
[www.intech.co.nz/mrph](http://www.intech.co.nz/mrph)

- RTD Pt100 DIN Standard Element
- Temperature range from -190 to +500°C
- All Sheath Material 316SS
- Various terminal heads
- Optional head-mount transmitter, Models:
  - **XU2HN** (Non-Isolated)      **XU2HI** (Isolated)

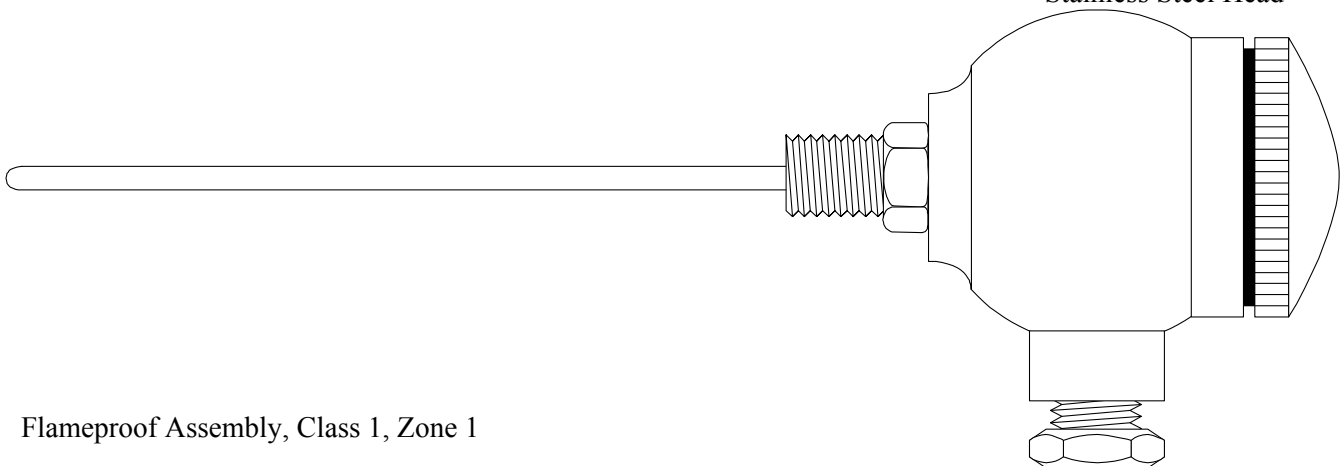
Large Aluminium Head



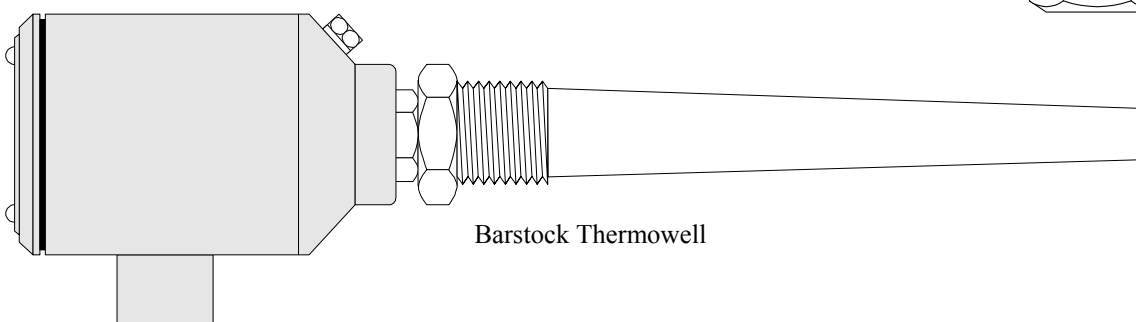
Large Bakelite Head



Stainless Steel Head



Flameproof Assembly, Class 1, Zone 1



Barstock Thermowell

## Mineral Insulated RTD Probe with Head and Process Fitting

[www.intech.co.nz/mrph](http://www.intech.co.nz/mrph)

Item	Code		Specification
Model	MRPH-		
Element	S		Single
	D		Duplex
	X		Others
Outer Diameter	6.4-		Millimetres (Standard)
	X-		Other
Sheath Length		□□□	Millimetres
Sheath Loading		F	Fixed (Standard)
		S	Spring Loaded
Protection Head		LA	Large Aluminium
		LB	Large Bakelite
		LP	Large Polypropylene
		SS	Stainless Steel
		FP	Flame Proof <sup>*1</sup>
Transmitter		N	None
		TX	Head-Mount Transmitter <sup>*2</sup>
Transmitter Range		N-	None
		□□	See Measuring Range Code
		X-	Other
Accessories		P	½" BSP Process Fitting
		X	Other

<sup>\*1</sup> Flame Proof Head must be used with a Barstock Thermowell.

<sup>\*2</sup> Fits Large Head only.

### Measuring Range Codes

Measuring Range	Code
-50 to +50°C	55
0 to +50°C	05
0 to +100°C	10
0 to +150°C	15
0 to +200°C	20
0 to +250°C	25
0 to +300°C	30

Note: The above covers the more common RTD probes. We can supply probes to your particular specification.

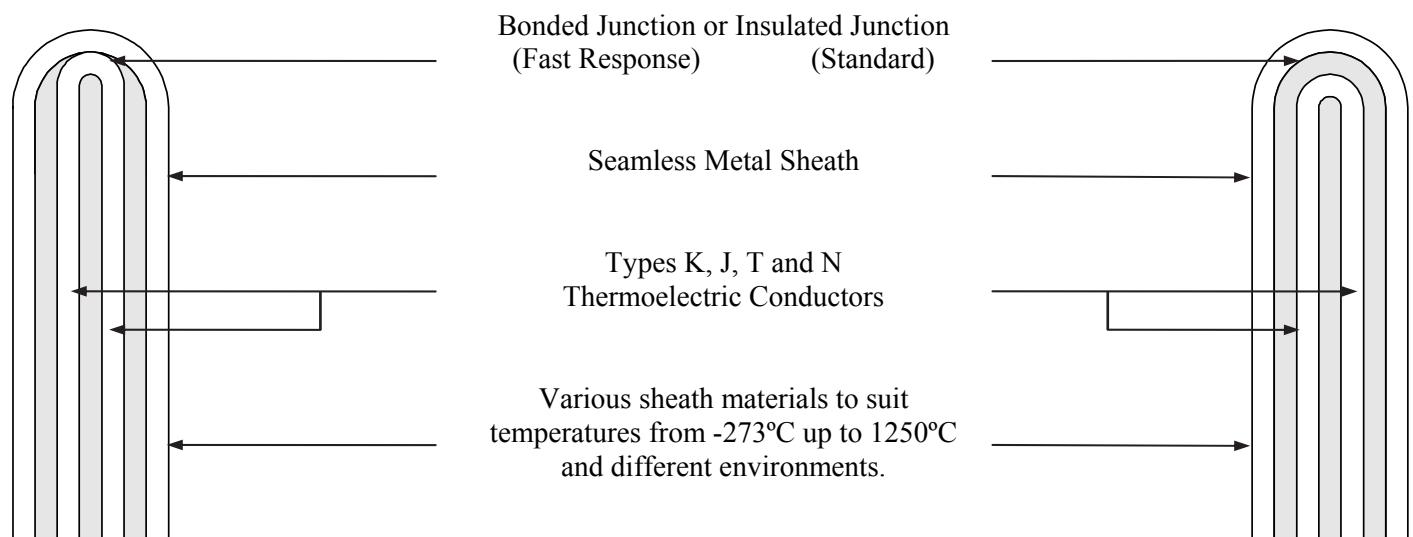
## Mineral Insulated Metal Sheath (MIMS)

[www.intech.co.nz/mims](http://www.intech.co.nz/mims)

There are many types of thermocouples available on today's market. Each has its own particular advantages and disadvantages. In some cases thermocouples are designed for specific measurement problems. In other cases, thermocouples are manufactured for a wide variety of applications. No one thermocouple will suit all applications. Thermocouples must be selected to meet the needs of a particular application.

The most basic thermocouple is the wire and bead type. The disadvantage of this type is that they all have an exposed junction. Although the exposed junction provides a good response time, it is open to the environment. This will cause the thermoelectric conductors to become contaminated by the environment (oxidising and reducing atmospheres) leading to unstable temperature readings.

The Mineral Insulated Metal Sheathed (MIMS) thermocouple overcomes these disadvantages. The MIMS consists of two thermoelectric conductors embedded in highly compacted magnesium oxide insulation and protected by a metallic sheath.



## Advantages of MIMS Thermocouples

- Small in Diameter.
- Can be supplied in long lengths.
- Pliable for ease of installation.
- No additional protection is required.
- Can withstand high pressure and thermal shock.
- Fast response time.
- High insulation resistance over a wide range of temperatures.
- Impervious to water, oil and gas.
- Thermoelectric conductors protected from oxidation, environmental corrosion providing more stable temperature readings.

## EMF Standards and Tolerances

Mineral Insulated Thermocouples are manufactured with nominal EMF/ temperature characteristics complying with the new International Thermocouple Reference Tables which are published in the following standards: BS 4937 (UK), ASTM E230-72 (USA), JISC 1602 (Japan).

## MI Cable sizes and Sheaths Available

[www.intech.co.nz/mims](http://www.intech.co.nz/mims)

Type	Outer Diameter (mm)	Sheath Material	Maximum Temperature
Type 'K' Single	1.0	310SS	1100°C
	1.5	310SS	1100°C
	1.5	Inconel 600*1	1150°C
	3.0	310SS	1100°C
	3.0	Inconel 600*1	1150°C
	3.0	Nicrobell*2	1200°C
	4.5	310SS	1100°C
	4.5	Inconel 600*1	1150°C
	6.0	310SS	1100°C
	6.0	Inconel 600*1	1150°C
	6.0	Nicrobell*2	1200°C
	5.5 Heavy Wall	310SS	1100°C
	5.5 Heavy Wall	Inconel 600*1	1150°C
	10.8 Heavy Wall	310SS	1100°C
10.8 Heavy Wall	Inconel 600*1	1150°C	
Type 'K' Duplex	3.0	310SS	1100°C
	4.5	310SS	1100°C
	6.0	310SS	1100°C
	6.0	Inconel 600*1	1150°C
Type 'J' Single	1.5	304SS	750°C
	3.0	310SS	750°C
	6.0	310SS	750°C
	6.0	321SS	750°C
Type 'J' Duplex	6.0	310SS	750°C
Type 'T' Single	1.5	Cupro-Nickel	400°C
	3.0	321SS	400°C
	6.0	310SS	400°C
Type 'T' Duplex	6.0	310SS	400°C
Type 'N' Single	1.5	Nicrobell*2	1200°C
	3.0	Nicrobell*2	1200°C
	6.0	Nicrobell*2	1200°C
Type 'N' Duplex	6.0	Nicrobell*2	1200°C

\*1 Inconel is a registered trade name of Henry Wiggin & Co Ltd.

\*2 Nicrobell is a trademark of Nicrobell Pty Ltd.

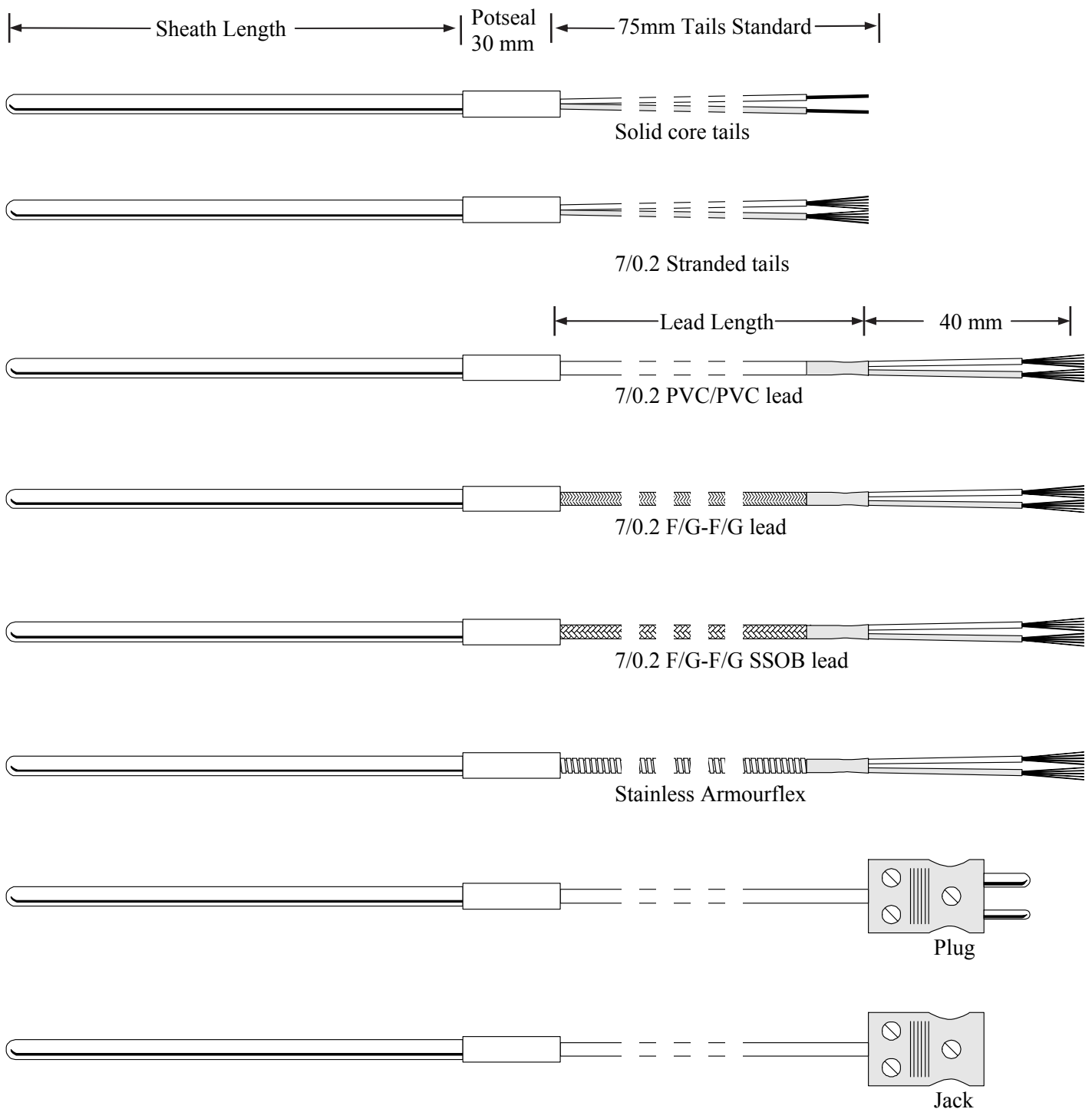
Note: Other sizes and sheath materials available on request.

## Mineral Insulated Thermocouples with Leads



[www.intech.co.nz/mtl](http://www.intech.co.nz/mtl)

### General Specifications:

- K, J, T and N calibration
- Temperature range from -200 to +1250°C
- Isolated and bonded hot junctions
- Various sheath materials for different environments (Inconel 600, 310SS, Cupro-Nickel, Microbell)
- Sheath diameters from 1.0mm to 10.8mm
- Various lead insulation materials (PVC, FibreGlass, Stainless Steel Overbraid, Stainless ArmourFlex)
- Various Thermocouple transmitters are also available to suit your particular application



## Mineral Insulated Thermocouples with Leads [www.intech.co.nz/mtl](http://www.intech.co.nz/mtl)

Item	Code		Specification
Model	MTL-		
Hot Junction	I		Isolated Junction (Standard)
	B		Bonded Junction
Outer Diameter	1.0		Millimetres
	1.5		Millimetres
	3.0		Millimetres
	4.5		Millimetres
	5.5		Millimetres
	6.0		Millimetres
	10.8		Millimetres
Calibration	K		Thermocouple
	J		Thermocouple
	T		Thermocouple
	N		Thermocouple
	2K		Duplex Thermocouple
	2J		Duplex Thermocouple
	2T		Duplex Thermocouple
	2N		Duplex Thermocouple
Sheath Material	600-		Inconel (K, N) <sup>*1</sup>
	310-		Stainless Steel (K, J)
	CNT-		Cupro Nickel (T)
	NCB-		Nicrobell (N, K) <sup>*2</sup>
	X-		Other
Sheath Length			Millimetres
Potseal Epoxy	EL		Max Temp. 120°C
	EH		Max Temp. 300°C
Tails/Lead	A		Solid Core Tails
	B		7/0.2 PVC Insulated Tails
	C		7/0.2 Fibreglass Insulated Tails
	D		70.2 PVC/PVC Lead
	E		7/0.2 F/G-F/G-Lead
	F		7/0.2 F/G- F/G- SSOB Lead <sup>*3</sup>
	G		Stainless Armourflex
	X		Other
Tail/Lead Length			Millimetres
Connector	X-		None
	MP-		Mini Plug (245°C)
	MJ-		Mini Jack (245°C)
	P-		Standard Plug (245°C)
	J-		Standard Jack (245°C)
	XP-		Ext. Lim. Temp. Plug (350°C) <sup>*4</sup>
	XJ-		Ext. Lim. Temp. Jack (350°C) <sup>*4</sup>
Accessories	N		None
	S		Stainless Compression Fitting
	B		Brass Compression Fitting
	F		Sliding Flanges
	X		Others

<sup>\*1</sup> Inconel is a registered trade name of Henry Wiggin & Co Ltd.

<sup>\*2</sup> Nicrobell is a trademark of Nicrobell Pty Ltd.

<sup>\*3</sup> Stainless Steel OverBraid - SSOB.

<sup>\*4</sup> Standard size Plugs and Jacks only.

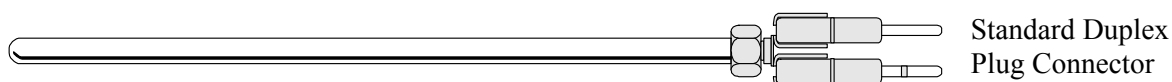
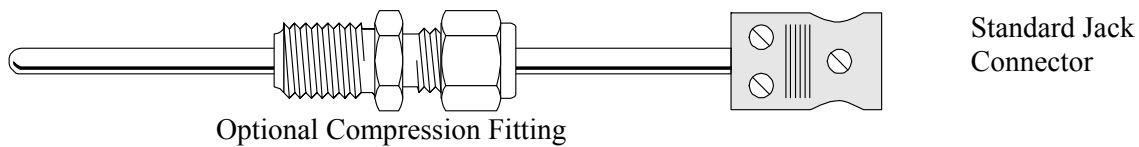
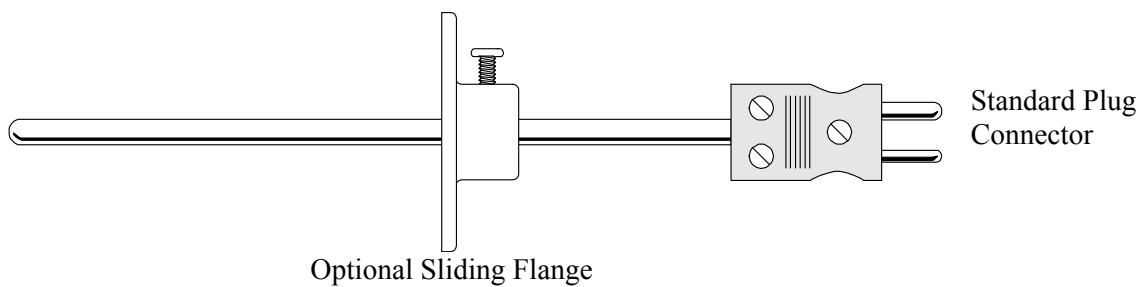
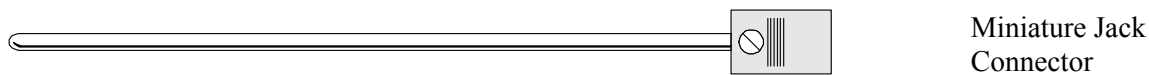
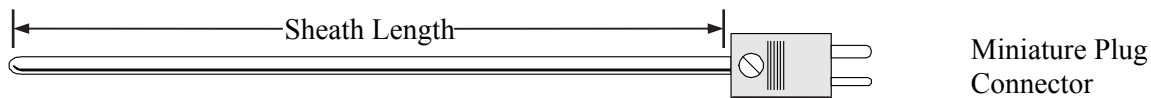
Note: The above covers the more common Thermocouple probes. We can supply probes to your particular specification.

## Mineral Insulated Thermocouples with Connectors

[www.intech.co.nz/mtc](http://www.intech.co.nz/mtc)

### General Specifications:

- K, J, T and N calibration
- Temperature range from -200 to +1250°C
- Isolated and bonded hot junctions
- Various sheath materials for different environments (Inconel 600, 310SS, Cupro-Nickel, Microbell)
- Sheath diameters from 1.0mm to 6.0mm
- Various plug and jack connectors
- Various Thermocouple transmitters are also available to suit your particular application



## Mineral Insulated Thermocouples with Connectors

[www.intech.co.nz/mtc](http://www.intech.co.nz/mtc)

Item	Code		Specification
Model	MTC-		
Hot Junction	I		Isolated Junction (Standard)
	B		Bonded Junction
Outer Diameter	1.0		Millimetres
	1.5		Millimetres
	3.0		Millimetres
	4.5		Millimetres
	5.5		Millimetres
	6.0		Millimetres
Calibration	K		Thermocouple
	J		Thermocouple
	T		Thermocouple
	N		Thermocouple
	2K		Duplex Thermocouple
	2J		Duplex Thermocouple
	2T		Duplex Thermocouple
2N		Duplex Thermocouple	
Sheath Material	600-		Inconel (K, N) <sup>*1</sup>
	310-		Stainless Steel (K, J)
	CNT-		Cupro Nickel (T)
	NCB-		Nicrobell (N, K) <sup>*2</sup>
	X-		Other
Sheath Length		□□□□	Millimetres
Connector	X-		None
	MP-		Mini Plug <sup>*3</sup> (245°C)
	MJ-		Mini Jack <sup>*3</sup> (245°C)
	P-		Standard Plug (245°C)
	J-		Standard Jack (245°C)
	XP-		Extreme Temp. Plug (350°C) <sup>*4</sup>
	XJ-		Extreme Temp. Jack (300°C) <sup>*4</sup>
	DJ-		Duplex Jack
Accessories	N		None
	S		Stainless Compression Fitting
	B		Brass Compression Fitting
	F		Sliding Flange
	X		Others

<sup>\*1</sup> Inconel is a registered trade name of Henry Wiggin & Co Ltd.

<sup>\*2</sup> Nicrobell is a trademark of Nicrobell Pty Ltd.

<sup>\*3</sup> 1.5 mm and 3.0 mm diameter.

<sup>\*4</sup> Standard size Plugs and Jacks only.

Note: The above covers the more common Thermocouple probes. We can supply probes to your particular specification.



## Mineral Insulated Thermocouples with Protection Head

[www.intech.co.nz/mth](http://www.intech.co.nz/mth)

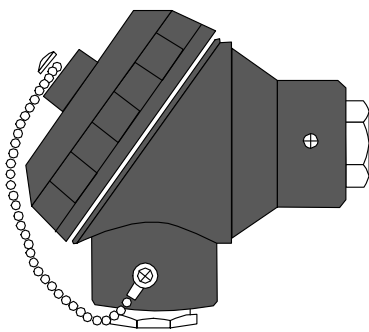
### General Specifications:

- K, J, T and N calibration
- Temperature range from -200 to +1250°C
- Isolated and bonded hot junctions
- Various sheath materials for different environments (Inconel 600, 310SS, Cupro-Nickel, Nichobell)
- Sheath diameters from 1.0 mm to 10.8 mm
- Various protection heads (Bakelite, Aluminium, Stainless Steel, Polypropylene, Cast Iron)
- Optional head-mount transmitter, Model: **XU2HI** (Isolated)

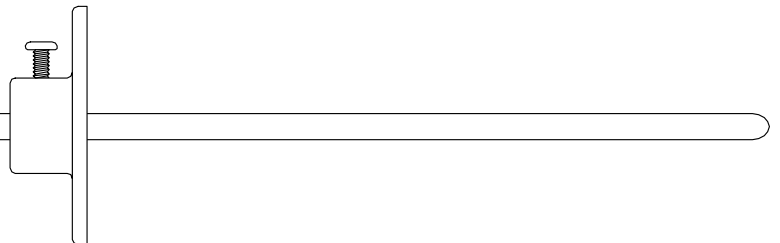
Large Aluminium Head



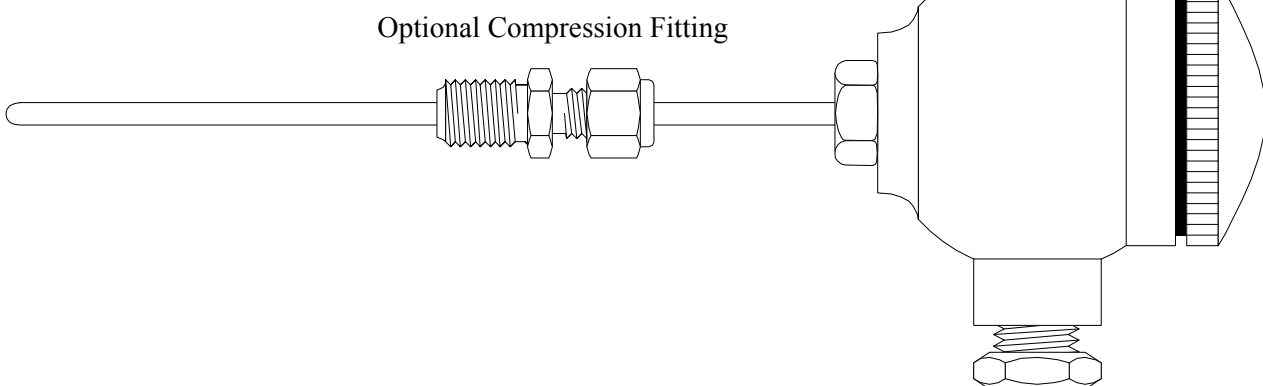
Small Bakelite Head



Optional Sliding Flange



Stainless Steel Head



Optional Compression Fitting

## Mineral Insulated Thermocouples with Protection Head

[www.intech.co.nz/mth](http://www.intech.co.nz/mth)

Item	Code		Specification
Model	MTH-		
Hot Junction	I		Isolated Junction (Standard)
	B		Bonded Junction
Outer Diameter	3.0		Millimetres
	4.5		Millimetres
	5.5		Millimetres
	6.0		Millimetres
	10.8		Millimetres
	X		Others
Calibration	K		Thermocouple
	J		Thermocouple
	T		Thermocouple
	N		Thermocouple
	2K		Duplex Thermocouple
	2J		Duplex Thermocouple
	2T		Duplex Thermocouple
	2N		Duplex Thermocouple
Sheath Material	600-		Inconel (K, N) <sup>*1</sup>
	310-		Stainless Steel (K, J, T)
	CNT-		Cupro Nickel (T)
	NCB-		Nicrobell (N, K) <sup>*2</sup>
	X		Other
Sheath Length		□□□	Millimetres
Protection Head	SA-		Small Aluminium
	LA-		Large Aluminium
	SB-		Small Bakelite
	LB-		Large Bakelite
	LP-		Large Polypropylene
	SS-		Stainless Steel
	CI-		Cast Iron
	FP-		Flame Proof
Accessories	N		None
	S		Stainless Compression Fitting
	B		Brass Compression Fitting
	F		Sliding Flange
	X		Others

<sup>\*1</sup> Inconel is a registered trade name of Henry Wiggin & Co Ltd.

<sup>\*2</sup> Nicrobell is a trademark of Nicrobell Pty Ltd.

Note: The above covers the more common Thermocouple probes. We can supply probes to your particular specification.

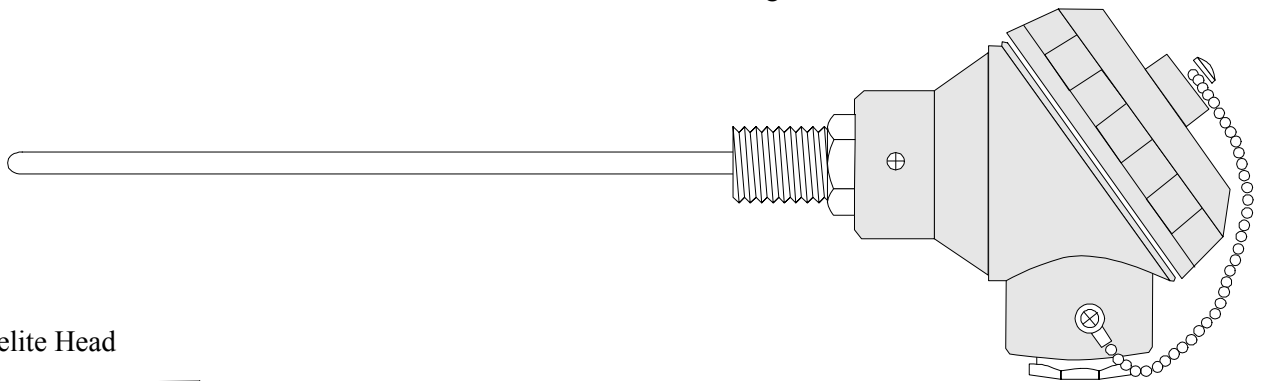
## Mineral Insulated Thermocouples with Head and Process Fitting

[www.intech.co.nz/mthp](http://www.intech.co.nz/mthp)

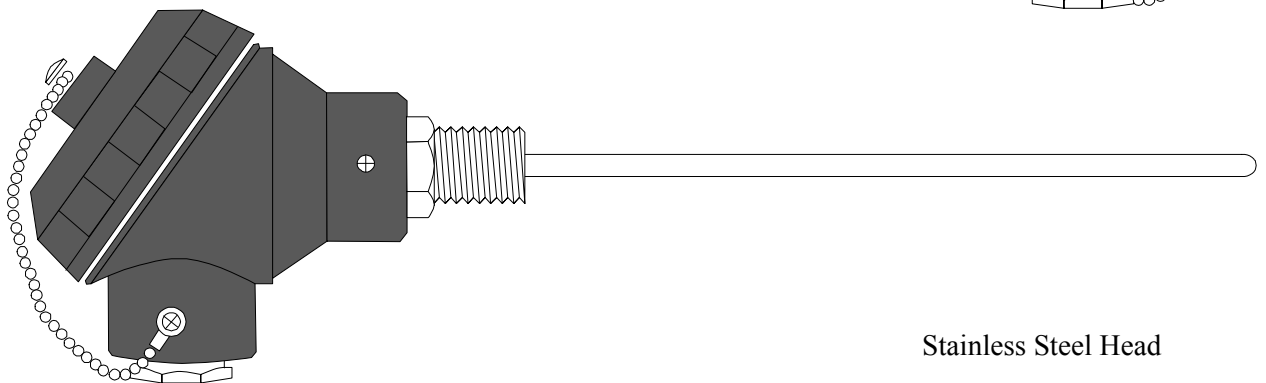
### General Specifications:

- K, J, T and N calibration
- Temperature range from -200 to +1250°C
- Isolated and Bonded Hot Junctions
- Various sheath materials for different environments (Inconel 600, 310SS, Cupro-Nickel, Nichobell)
- Sheath diameters from 1.0 mm to 10.8 mm
- Various protection heads, (Bakelite, Aluminium, Stainless Steel, Polypropylene, Cast Iron)
- Optional head-mount transmitter, Model: **XU2HI** (Isolated)

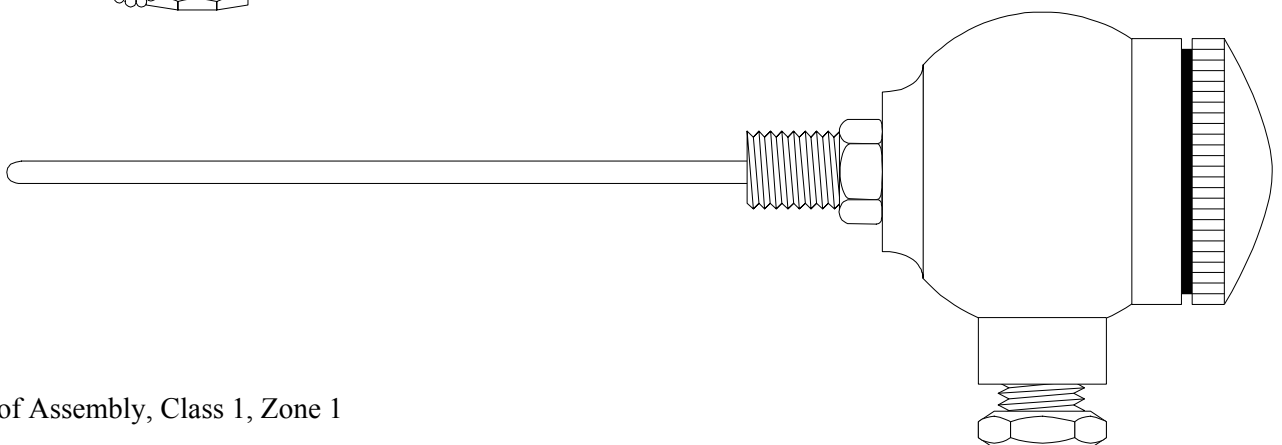
Large Aluminium Head



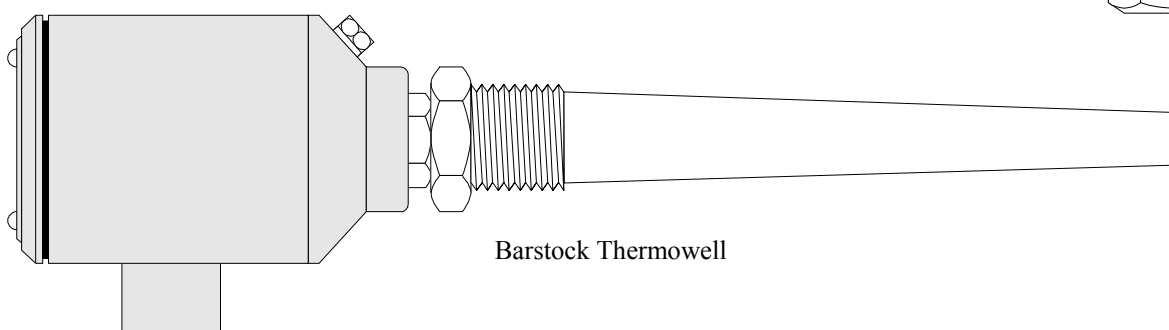
Large Bakelite Head



Stainless Steel Head



Flameproof Assembly, Class 1, Zone 1



Barstock Thermowell

## Mineral Insulated Thermocouples with Head and Process Fitting

[www.intech.co.nz/mthp](http://www.intech.co.nz/mthp)

Item	Code		Specification
Model	MTHP-		
Hot Junction		I	Isolated Junction (Standard)
		B	Bonded Junction
Outer Diameter		3.0	Millimetres
		4.5	Millimetres
		5.5	Millimetres
		6.0	Millimetres
		10.8	Millimetres
		X	Millimetres
Calibration		K	Thermocouple
		J	Thermocouple
		T	Thermocouple
		N	Thermocouple
		2K	Duplex Thermocouple
		2J	Duplex Thermocouple
		2T	Duplex Thermocouple
		2N	Duplex Thermocouple
Sheath Material		600-	Inconel (K, N) <sup>*1</sup>
		310-	Stainless Steel (K, J)
		CNT-	Cupro Nickel (T)
		NCB-	Nicrobell (N, K) <sup>*2</sup>
		X-	Other
Sheath Length		□□□	Millimetres <sup>*3</sup>
Sheath Loading		F	Fixed (Standard)
		S	Spring Loaded
Process Connection		P	½" BSP SS (Standard)
		X	Other
Protection Head		LA	Large Aluminium
		LB	Large Bakelite
		LP	Large Polypropylene
		SS	Stainless Steel
		CI	Cast Iron
		FP	Flame Proof <sup>*4</sup>

<sup>\*1</sup> Inconel is a registered trade name of Henry Wiggin & Co Ltd.

<sup>\*2</sup> Nicrobell is a trademark of Nicrobell Pty Ltd.

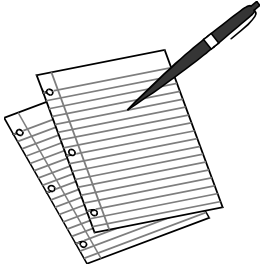
<sup>\*3</sup> Sheath Length from sheath to tipHex. of process fitting.

<sup>\*4</sup> Flame Proof Head must be used with a Barstock Thermowell.

Note: The above covers the more common Thermocouple probes. We can supply probes to your particular specification.

# Intech Temperature Probes

*For Notes:*

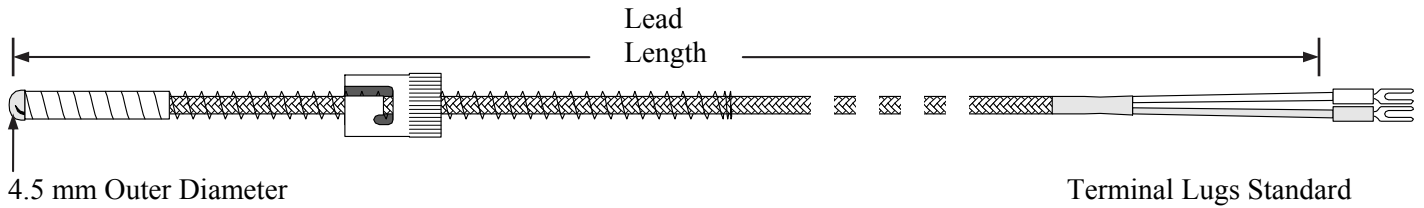


## Universal Thermocouple

[www.intech.co.nz/ut](http://www.intech.co.nz/ut)

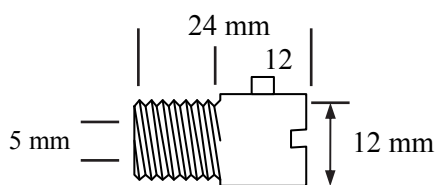
### General Specifications:

- K and J calibration
- Maximum temperature rating 350°C
- Various lead length
- Fibreglass insulated lead with stainless steel overbraid (SSOB)
- Various Thermocouple transmitters are also available to suit your particular application



Item	Code		Specification
Model	UT-		
Calibration		K	Thermocouple
		J	Thermocouple
Lead Length		2.0-	Metres
		3.5-	Metres
		6.5-	Metres
Accessories		N	None
		A	Bayonet Adaptor
		P	Plug

Note: The above covers the more common Thermocouple probes. We can supply probes to your particular specification.



Bayonet Adaptor, Single Pin  
1/8" BSP Tapered Thread



Plug: Standard Round Pin

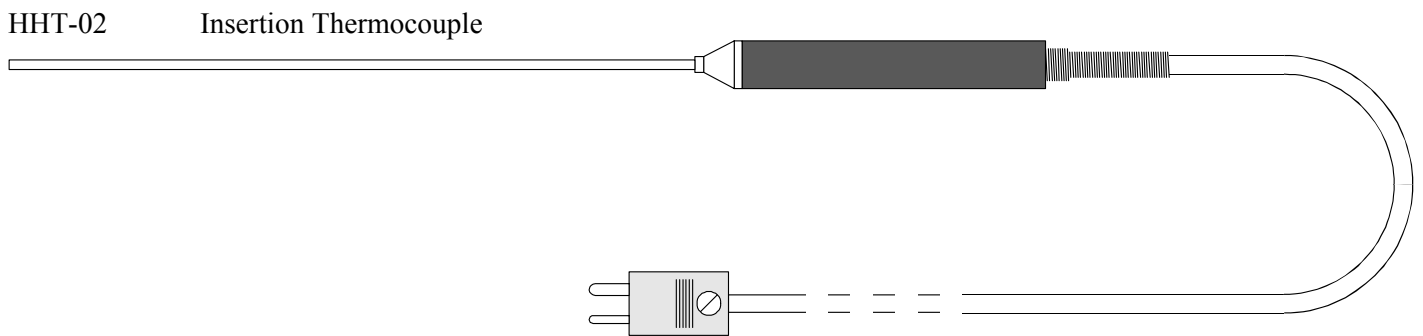
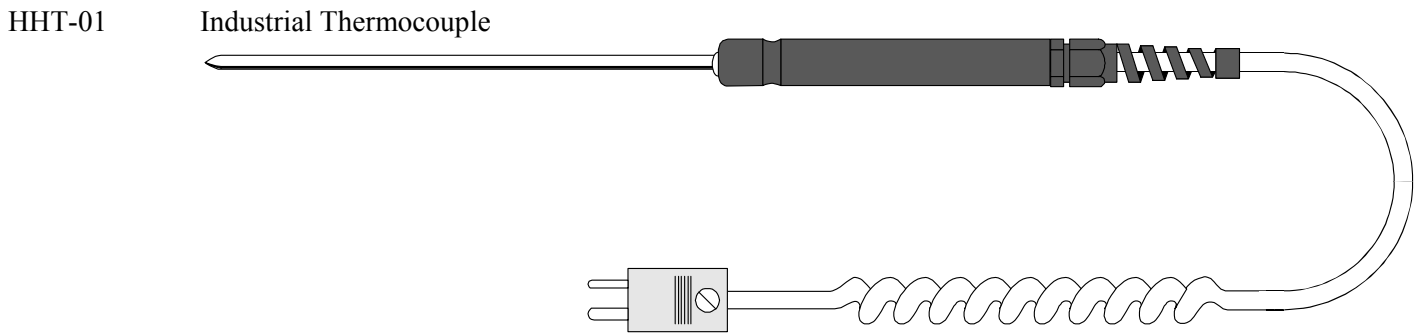
Part Number: IN-UTA

## Hand-Held Thermocouples

[www.intech.co.nz/hht](http://www.intech.co.nz/hht)

### General Specifications:

- Various models - Surface, Spear and Immersion.
- Type 'K' thermocouple calibration.
- Fitted with a 2-pin miniature plug for connection to hand-held digital thermometers, loggers, etc



## Hand-Held Thermocouples

[www.intech.co.nz/hht](http://www.intech.co.nz/hht)

Item	Code	Thermocouple Type	Tip Diameter mm	Sheath Outer Diameter mm	Sheath Length mm	Lead Length mm	Minimum Temp °C	Maximum Temp °C
Industrial	HHT-01	K	N/A	4.7	100	900	-30	400
Insertion	HHT-02	K	N/A	3.2	200	900	-30	600
Mini-Spear	HHT-03	K	N/A	3.2	100	900	-30	300
Fast-Response Surface	HHT-04	K	14.5	N/A	N/A	900	0	400

Note: The above covers the more common Hand-Held Thermocouple probes. We can supply probes to your particular specification.



## Platinum Resistance (-200°C to 239°C)

Temperature Coefficient - 0.00385 Ohms/Ohm/°C

°C	Ohms	°C	Ohms	C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms
-200	18.49	-137	45.11	-74	70.73	-11	95.69	51	119.78	114	143.80	177	167.35
-199	18.93	-136	45.52	-73	71.13			52	120.16	115	144.17	178	167.72
-198	19.36	-135	45.94	-72	71.53	-10	96.09	53	120.55	116	144.55	179	168.09
-197	19.79	-134	46.35	-71	71.93	-9	96.48	54	120.93	117	144.93		
-196	20.22	-133	46.76			-8	96.87	55	121.32	118	145.31	180	168.46
-195	20.65	-132	47.18	-70	72.33	-7	97.26	56	121.70	119	145.68	181	168.83
-194	21.08	-131	47.59	-69	72.73	-6	97.65	57	122.09			182	169.20
-193	21.51			-68	73.13	-5	98.04	58	122.47	120	146.06	183	169.57
-192	21.94	-130	48.00	-67	73.53	-4	98.44	59	122.86	121	146.44	184	169.94
-191	22.37	-129	48.41	-66	73.93	-3	98.83			122	146.81	185	170.31
		-128	48.82	-65	74.33	-2	99.22	60	123.24	123	147.19	186	170.68
-190	22.80	-127	49.23	-64	74.73	-1	99.61	61	123.62	124	147.57	187	171.05
-189	23.23	-126	49.64	-63	75.13			62	124.01	125	147.94	188	171.42
-188	23.66	-125	50.06	-62	75.53	0	100.00	63	124.39	126	148.32	189	171.79
-187	24.09	-124	50.47	-61	75.93	1	100.39	64	124.77	127	148.70		
-186	24.52	-123	50.88			2	100.78	65	125.16	128	149.07	190	172.16
-185	24.94	-122	51.29	-60	76.33	3	101.17	66	125.54	129	149.45	191	172.53
-184	25.37	-121	51.70	-59	76.73	4	101.56	67	125.92			192	172.90
-183	25.80			-58	77.13	5	101.95	68	126.31	130	149.82	193	173.26
-182	26.23	-120	52.11	-57	77.52	6	102.34	69	126.69	131	150.20	194	173.63
-181	26.65	-119	52.52	-56	77.92	7	102.73			132	150.57	195	174.00
		-118	52.92	-55	78.32	8	103.12	70	127.07	133	150.95	196	174.37
-180	27.08	-117	53.33	-54	78.72	9	103.51	71	127.45	134	151.33	197	174.74
-179	27.50	-116	53.74	-53	79.11			72	127.84	135	151.70	198	175.10
-178	27.93	-115	54.15	-52	79.51	10	103.90	73	128.22	136	152.08	199	175.47
-177	28.35	-114	54.56	-51	79.91	11	104.29	74	128.60	137	152.45		
-176	28.78	-113	54.97			12	104.68	75	128.98	138	152.83	200	175.84
-175	29.20	-112	55.38	-50	80.31	13	105.07	76	129.37	139	153.20	201	176.21
-174	29.63	-111	55.78	-49	80.70	14	105.46	77	129.75			202	176.57
-173	30.05			-48	81.10	15	105.85	78	130.13	140	153.58	203	176.94
-172	30.47	-110	56.19	-47	81.50	16	106.24	79	130.51	141	153.95	204	177.31
-171	30.90	-109	56.60	-46	81.89	17	106.63			142	154.32	205	177.68
		-108	57.00	-45	82.29	18	107.02	80	130.89	143	154.70	206	178.04
-170	31.32	-107	57.41	-44	82.69	19	107.40	81	131.27	144	155.07	207	178.41
-169	31.74	-106	57.82	-43	83.08			82	131.66	145	155.45	208	178.78
-168	32.16	-105	58.22	-42	83.48	20	107.79	83	132.04	146	155.82	209	179.14
-167	32.59	-104	58.63	-41	83.88	21	108.18	84	132.42	147	156.19		
-166	33.01	-103	59.04			22	108.57	85	132.80	148	156.57	210	179.51
-165	33.43	-102	59.44	-40	84.27	23	108.96	86	133.18	149	156.94	211	179.88
-164	33.85	-101	59.85	-39	84.67	24	109.35	87	133.56			212	180.24
-163	34.27			-38	85.06	25	109.73	88	133.94	150	157.31	213	180.61
-162	34.69	-100	60.25	-37	85.46	26	110.12	89	134.32	151	157.69	214	180.97
-161	35.11	-99	60.66	-36	85.85	27	110.51			152	158.06	215	181.34
		-98	61.06	-35	86.25	28	110.90	90	134.70	153	158.43	216	181.71
-160	35.53	-97	61.47	-34	86.64	29	111.28	91	135.08	154	158.81	217	182.07
-159	35.95	-96	61.87	-33	87.04			92	135.46	155	159.18	218	182.44
-158	36.37	-95	62.28	-32	87.43	30	111.67	93	135.84	156	159.55	219	182.80
-157	36.79	-94	62.68	-31	87.83	31	112.06	94	136.22	157	159.93		
-156	37.21	-93	63.09			32	112.45	95	136.60	158	160.30	220	183.17
-155	37.63	-92	63.49	-30	88.22	33	112.83	96	136.98	159	160.67	221	183.53
-154	38.04	-91	63.90	-29	88.62	34	113.22	97	137.36			222	183.90
-153	38.46			-28	89.01	35	113.61	98	137.74	160	161.04	223	184.26
-152	38.88	90	64.30	-27	89.40	36	113.99	99	138.12	161	161.42	224	184.63
-151	39.30	-89	64.70	-26	89.80	37	114.38			162	161.79	225	184.99
		-88	65.11	-25	90.19	38	114.77	100	138.50	163	162.16	226	185.36
-150	39.71	-87	65.51	-24	90.59	39	115.15	101	138.88	164	162.53	227	185.72
-149	40.13	-86	65.91	-23	90.98			102	139.26	165	162.90	228	186.09
-148	40.55	-85	66.31	-22	91.37	40	115.54	103	139.64	166	163.27	229	186.45
-147	40.96	-84	66.72	-21	91.77	41	115.93	104	140.02	167	163.65		
-146	41.38	-83	67.12			42	116.31	105	140.39	168	164.02	230	186.82
-145	41.79	-82	67.52	-20	92.16	43	116.70	106	140.77	169	164.39	231	187.18
-144	42.21	-81	67.92	-19	92.55	44	117.08	107	141.15			232	187.54
-143	42.63			-18	92.95	45	117.47	108	141.53	170	164.76	233	187.91
-142	43.04	-80	68.33	-17	93.34	46	117.85	109	141.91	171	165.13	234	188.27
-141	43.45	-79	68.73	-16	93.73	47	118.24			172	165.50	235	188.63
		-78	69.13	-15	94.12	48	118.62	110	142.29	173	165.87	236	189.00
-140	43.87	-77	69.53	-14	94.52	49	119.01	111	142.66	174	166.24	237	189.36
-139	44.28	-76	69.93	-13	94.91			112	143.04	175	166.61	238	189.72
-138	44.70	-75	70.33	-12	95.30	50	119.40	113	143.42	176	166.98	239	190.09

## Platinum Resistance (240°C to 629°C)

Temperature Coefficient - 0.00385 Ohms/Ohm/°C

°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms
240	190.45	301	212.37	362	233.87	423	254.93	484	275.56	545	295.75	606	315.52
241	190.81	302	212.73	363	234.22	424	255.27	485	275.89	546	296.08	607	315.84
242	191.18	303	213.09	364	234.56	425	255.61	486	276.23	547	296.41	608	316.16
243	191.54	304	213.44	365	234.91	426	255.95	487	276.56	548	296.74	609	316.48
244	191.90	305	213.80	366	235.26	427	256.29	488	276.89	549	297.06		
245	192.26	306	214.15	367	235.61	428	256.63	489	277.23			610	316.80
246	192.63	307	214.51	368	235.96	429	258.98			550	297.39	611	317.12
247	192.99	308	214.86	369	236.31			490	277.56	551	297.72	612	317.44
248	193.35	309	215.22			430	257.32	491	277.90	552	298.04	613	317.76
249	193.71			370	236.65	431	257.66	492	278.23	553	298.37	614	318.08
		310	215.57	371	237.00	432	258.00	493	278.56	554	298.70	615	318.40
250	194.07	311	215.93	372	237.35	433	258.34	494	278.90	555	299.02	616	318.72
251	194.44	312	216.28	373	237.70	434	258.68	495	279.23	556	299.35	617	319.04
252	194.80	313	216.64	374	238.04	435	259.02	496	279.56	557	299.68	618	319.36
253	195.16	314	216.99	375	238.39	436	259.36	497	279.90	558	300.00	619	319.68
254	195.52	315	217.35	376	238.74	437	259.70	498	280.23	559	300.33		
255	195.88	316	217.70	377	239.09	438	260.04	499	280.56			620	319.99
256	196.24	317	218.05	378	239.43	439	260.38			560	300.65	621	320.31
257	196.60	318	218.41	379	239.78			500	280.90	561	300.98	622	320.63
258	196.96	319	218.76			440	260.72	501	281.23	562	301.31	623	320.95
259	197.33			380	240.13	441	261.06	502	281.56	563	301.63	624	321.27
		320	219.12	381	240.47	442	261.40	503	281.89	564	301.96	625	321.59
260	197.69	321	219.47	382	240.82	443	261.74	504	282.23	565	302.28	626	321.91
261	198.05	322	219.82	383	241.17	444	262.08	505	282.56	566	302.61	627	322.22
262	198.41	323	220.18	384	241.51	445	262.42	506	282.89	567	302.93	628	322.54
263	198.77	324	220.53	385	241.86	446	262.76	507	283.22	568	303.26	629	322.86
264	199.13	325	220.88	386	242.20	447	263.10	508	283.55	569	303.58		
265	199.49	326	221.24	387	242.55	448	263.43	509	283.89				
266	199.85	327	221.59	388	242.90	449	236.77			570	303.91		
267	200.21	328	221.94	389	243.24			510	284.22	571	304.23		
268	200.57	329	222.29			450	264.11	511	284.55	572	304.56		
269	200.93			390	243.59	451	264.45	512	284.88	573	304.88		
		330	222.65	391	243.93	452	264.79	513	285.21	574	305.20		
270	201.29	331	223.00	392	244.28	453	265.13	514	285.54	575	305.53		
271	201.65	332	223.35	393	244.62	454	265.46	515	285.87	576	305.85		
272	202.01	333	223.70	394	244.97	455	265.80	516	286.21	577	306.18		
273	202.36	334	224.06	395	245.31	456	266.14	517	286.54	578	306.50		
274	202.72	335	224.41	396	245.66	457	266.48	518	286.87	579	306.82		
275	203.08	336	224.76	397	246.00	458	266.82	519	287.20				
276	203.44	337	225.11	398	246.35	459	267.15			580	307.15		
277	203.80	338	225.46	399	246.69			520	287.53	581	307.47		
278	204.16	339	225.81			460	267.49	521	287.86	582	307.79		
279	204.52			400	247.04	461	267.83	522	288.19	583	308.12		
		340	226.17	401	247.38	462	268.17	523	288.52	584	308.44		
280	204.88	341	226.52	402	247.72	463	268.50	524	288.85	585	308.76		
281	205.23	342	226.87	403	248.07	464	268.84	525	289.18	586	309.09		
282	205.59	343	227.22	404	248.41	465	269.18	526	289.51	587	309.41		
283	205.95	344	227.57	405	248.76	466	269.51	527	289.84	588	309.73		
284	206.31	345	227.92	406	249.10	467	269.85	528	290.17	589	310.05		
285	206.67	346	228.27	407	249.45	468	270.19	529	290.50				
286	207.02	347	228.62	408	249.79	469	270.52			590	310.38		
287	207.38	348	228.97	409	250.13			530	290.83	591	310.70		
288	207.74	349	229.32			470	270.86	531	291.16	592	311.02		
289	208.10			410	250.48	471	271.20	532	291.49	593	311.34		
		350	229.67	411	250.82	472	271.53	533	291.81	594	311.66		
290	208.45	351	230.02	412	251.16	473	271.87	534	292.14	595	311.99		
291	208.81	352	230.37	413	251.50	474	272.20	535	292.47	596	312.31		
292	209.17	353	230.72	414	251.85	475	272.54	536	292.80	597	312.63		
293	209.52	354	231.07	415	252.19	476	272.88	537	293.13	598	312.95		
294	209.88	355	231.42	416	252.53	477	273.21	538	293.46	599	313.27		
295	210.24	356	231.77	417	252.87	478	273.55	539	293.79				
296	210.59	357	232.12	418	253.22	479	273.88			600	313.59		
297	210.95	358	232.47	419	253.56			540	294.11	601	313.91		
298	211.31	359	232.82			480	274.22	541	294.44	602	314.24		
299	211.66			420	253.90	481	274.55	542	294.77	603	314.56		
		360	233.17	421	254.24	482	274.89	543	295.10	604	314.88		
300	212.02	361	233.52	422	254.59	483	275.22	544	295.43	605	315.20		

## Iron vs Constantan (-200°C to 390°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
-200	-7.890	-7.912	-7.934	-7.955	-7.976	-7.996	-8.017	-8.037	-8.057	-8.076	-8.096	-200
-190	-7.659	-7.683	-7.707	-7.731	-7.755	-7.778	-7.801	-7.824	-7.846	-7.868	-7.890	-190
-180	-7.402	-7.429	-7.455	-7.482	-7.508	-7.533	-7.559	-7.584	-7.609	-7.634	-7.659	-180
-170	-7.122	-7.151	-7.180	-7.209	-7.237	-7.265	-7.293	-7.321	-7.348	-7.375	-7.402	-170
-160	-6.821	-6.852	-6.883	-6.914	-6.944	-6.974	-7.004	-7.034	-7.064	-7.093	-7.122	-160
-150	-6.499	-6.532	-6.56	-6.598	-6.630	-6.663	-6.695	-6.727	-6.758	-6.790	-6.821	-150
-140	-6.159	-6.194	-6.228	-6.263	-6.297	-6.331	-6.365	-6.399	-6.433	-6.466	-6.499	-140
-130	-5.801	-5.837	-5.874	-5.910	-5.946	-5.982	-6.018	-6.053	-6.089	-6.124	-6.159	-130
-120	-5.426	-5.464	-5.502	-5.540	-5.578	-5.615	-5.653	-5.690	-5.727	-5.764	-5.801	-120
-110	-5.036	-5.076	-5.115	-5.155	-5.184	-5.233	-5.272	-5.311	-5.349	-5.388	-5.426	-110
-100	-4.632	-4.673	-4.714	-4.755	-4.795	-4.836	-4.876	-4.916	-4.956	-4.996	-5.036	-100
-90	-4.215	-4.257	-4.299	-4.341	-4.383	-4.425	-4.467	-4.508	-4.550	-4.591	-4.632	-90
-80	-3.785	-3.829	-3.872	-3.915	-3.958	-4.001	-4.044	-4.087	-4.130	-4.172	-4.215	-80
-70	-3.344	-3.389	-3.433	-3.478	-3.522	-3.566	-3.610	-3.654	-3.698	-3.742	-3.785	-70
-60	-2.892	-2.938	-2.984	-3.029	-3.074	-3.120	-3.165	-3.210	-3.255	-3.299	-3.344	-60
-50	-2.431	-2.478	-2.524	-2.570	-2.617	-2.663	-2.709	-2.755	-2.801	-2.847	-2.892	-50
-40	-1.960	-2.008	-2.055	-2.102	-2.150	-2.197	-2.244	-2.291	-2.338	-2.384	-2.431	-40
-30	-1.481	-1.530	-1.578	-1.626	-1.674	-1.722	-1.770	-1.818	-1.865	-1.913	-1.960	-30
-20	-0.995	-1.044	-1.093	-1.141	-1.190	-1.239	-1.288	-1.336	-1.385	-1.433	-1.481	-20
-10	-0.501	-0.550	-0.600	-0.650	-0.699	-0.748	-0.798	-0.847	-0.896	-0.945	-0.995	-10
0	.000	-0.050	-0.101	-0.151	-0.201	-0.251	-0.301	-0.351	-0.401	-0.451	-0.501	0
0	.000	.050	.101	.151	.202	.253	.303	.354	.405	.456	.507	0
10	.507	.558	.609	.660	.711	.762	.813	.865	.916	.967	1.019	10
20	1.019	1.070	1.122	1.174	1.225	1.277	1.329	1.381	1.432	1.484	1.536	20
30	1.536	1.588	1.640	1.693	1.745	1.797	1.849	1.901	1.954	2.006	2.058	30
40	2.058	2.111	2.163	2.216	2.268	2.321	2.374	2.426	2.479	2.532	2.585	40
50	2.585	2.638	2.691	2.743	2.796	2.849	2.902	2.956	3.009	3.062	3.115	50
60	3.115	3.168	3.221	3.275	3.328	3.381	3.435	3.488	3.542	3.595	3.649	60
70	3.649	3.702	3.756	3.809	3.863	3.917	3.971	4.024	4.078	4.132	4.186	70
80	4.186	4.239	4.293	4.347	4.401	4.455	4.509	4.563	4.617	4.671	4.725	80
90	4.725	4.780	4.834	4.888	4.942	4.996	5.050	5.105	5.159	5.213	5.268	90
100	5.268	5.322	5.376	5.431	5.485	5.540	5.594	5.649	5.703	5.758	5.812	100
110	5.812	5.867	5.921	5.976	6.031	6.085	6.140	6.195	6.249	6.304	6.359	110
120	6.359	6.414	6.468	6.523	6.578	6.633	6.688	6.742	6.797	6.852	6.907	120
130	6.907	6.962	7.017	7.072	7.127	7.182	7.237	7.292	7.347	7.402	7.457	130
140	7.457	7.512	7.567	7.622	7.677	7.732	7.787	7.843	7.898	7.953	8.008	140
150	8.008	8.063	8.118	8.174	8.229	8.284	8.339	8.394	8.450	8.505	8.560	150
160	8.560	8.616	8.671	8.726	8.781	8.837	8.892	8.947	9.003	9.058	9.113	160
170	9.113	9.169	9.224	9.279	9.335	9.390	9.446	9.501	9.556	9.612	9.667	170
180	9.667	9.723	9.778	9.834	9.889	9.944	10.000	10.055	10.111	10.166	10.222	180
190	10.222	10.277	10.333	10.388	10.444	10.499	10.555	10.610	10.666	10.721	10.777	190
200	10.777	10.832	10.888	10.943	10.999	11.054	11.110	11.165	11.221	11.276	11.332	200
210	11.332	11.387	11.443	11.498	11.554	11.609	11.665	11.720	11.776	11.831	11.887	210
220	11.887	11.943	11.998	12.054	12.109	12.165	12.220	12.276	12.331	12.387	12.442	220
230	12.442	12.498	12.553	12.609	12.664	12.720	12.776	12.831	12.887	12.942	12.998	230
240	12.998	13.053	13.109	13.164	13.220	13.275	13.331	13.386	13.442	13.497	13.553	240
250	13.553	13.608	13.664	13.719	13.775	13.830	13.886	13.941	13.997	14.052	14.108	250
260	14.108	14.163	14.219	14.274	14.330	14.385	14.441	14.496	14.552	14.607	14.663	260
270	14.663	14.718	14.774	14.829	14.885	14.940	14.995	15.051	15.106	15.162	15.217	270
280	15.217	15.273	15.328	15.383	15.439	15.494	15.550	15.605	15.661	15.716	15.771	280
290	15.771	15.827	15.882	15.938	15.993	16.048	16.104	16.159	16.214	16.270	16.325	290
300	16.325	16.380	16.436	16.491	16.547	16.602	16.657	16.713	16.768	16.823	16.879	300
310	16.879	16.934	16.989	17.044	17.100	17.155	17.210	17.266	17.321	17.376	17.432	310
320	17.432	17.487	17.542	17.597	17.653	17.708	17.763	17.818	17.874	17.929	17.984	320
330	17.984	18.039	18.095	18.150	18.205	18.260	18.316	18.371	18.426	18.481	18.537	330
340	18.537	18.592	18.647	18.702	18.757	18.813	18.868	18.923	18.978	19.033	19.089	340
350	19.089	19.144	19.199	19.254	19.309	19.364	19.420	19.475	19.530	19.585	19.640	350
360	19.640	19.695	19.751	19.806	19.861	19.916	19.971	20.026	20.081	20.137	20.192	360
370	20.192	20.247	20.302	20.357	20.412	20.467	20.523	20.578	20.633	20.688	20.743	370
380	20.743	20.798	20.853	20.909	20.964	21.019	21.074	21.129	21.184	21.239	21.295	380
390	21.295	21.350	21.405	21.460	21.515	21.570	21.625	21.680	21.736	21.791	21.846	390

## Iron vs Constantan (400°C to 1030°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
400	21.846	21.901	21.956	22.011	22.066	22.122	22.177	22.232	22.287	22.342	22.397	400
410	22.397	22.453	22.508	22.563	22.618	22.673	22.728	22.784	22.839	22.894	22.949	410
420	22.949	23.004	23.060	23.115	23.170	23.225	23.280	23.336	23.391	23.446	23.501	420
430	23.501	23.556	23.612	23.667	23.722	23.777	23.833	23.888	23.943	23.999	24.054	430
440	24.054	24.109	24.164	24.220	24.275	24.330	24.386	24.441	24.496	24.552	24.607	440
450	24.607	24.662	24.718	24.773	24.829	24.884	24.939	24.995	25.050	25.106	25.161	450
460	25.161	25.217	25.272	25.327	25.383	25.438	25.494	25.549	25.605	25.661	25.716	460
470	25.716	25.772	25.827	25.883	25.938	25.994	26.050	26.105	26.161	26.216	26.272	470
480	26.272	26.328	26.383	26.439	26.495	26.551	26.606	26.662	26.718	26.774	26.829	480
490	26.829	26.885	26.941	26.997	27.053	27.109	27.165	27.220	27.276	27.332	27.388	490
500	27.388	27.444	27.500	27.556	27.612	27.668	27.724	27.780	27.836	27.893	27.949	500
510	27.949	28.005	28.061	28.117	28.173	28.230	28.286	28.342	28.398	28.455	28.511	510
520	28.511	28.567	28.624	28.680	28.736	28.793	28.849	28.906	28.962	29.019	29.075	520
530	29.075	29.132	29.188	29.245	29.301	29.358	29.415	29.471	29.528	29.585	29.642	530
540	29.642	29.698	29.755	29.812	29.869	29.926	29.983	30.039	30.096	30.153	30.210	540
550	30.210	30.267	30.324	30.381	30.439	30.496	30.553	30.610	30.667	30.724	30.782	550
560	30.782	30.839	30.896	30.954	31.011	31.068	31.126	31.183	31.241	31.298	31.356	560
570	31.356	31.413	31.471	31.528	31.586	31.644	31.702	31.759	31.817	31.875	31.933	570
580	31.933	31.991	32.048	32.106	32.164	32.222	32.280	32.338	32.396	32.455	32.513	580
590	32.513	32.571	32.629	32.687	32.746	32.804	32.862	32.921	32.979	33.038	33.096	590
600	33.096	33.155	33.213	33.272	33.330	33.389	33.448	33.506	33.565	33.624	33.683	600
610	33.683	33.742	33.800	33.859	33.918	33.977	34.036	34.095	34.155	34.214	34.273	610
620	34.273	34.332	34.391	34.451	34.510	34.569	34.629	34.688	34.748	34.807	34.867	620
630	34.867	34.926	34.986	35.046	35.105	35.165	35.225	35.285	35.344	35.404	35.464	630
640	35.464	35.524	35.584	35.644	35.704	35.764	35.825	35.885	35.945	36.005	36.066	640
650	36.066	36.126	36.186	36.247	36.307	36.368	36.428	36.489	36.549	36.610	36.671	650
660	36.671	36.732	36.792	36.853	36.914	36.975	37.036	37.097	37.158	37.219	37.280	660
670	37.280	37.341	37.402	37.463	37.525	37.586	37.647	37.709	37.770	37.831	37.893	670
680	37.893	37.954	38.016	38.078	38.139	38.201	38.262	38.324	38.386	38.448	38.510	680
690	38.510	38.572	38.633	38.695	38.757	38.819	38.882	38.944	39.006	39.068	39.130	690
700	39.130	39.192	39.255	39.317	39.379	39.442	39.504	39.567	39.629	39.692	39.754	700
710	39.754	39.817	39.880	39.942	40.005	40.068	40.131	40.193	40.256	40.319	40.382	710
720	40.382	40.445	40.508	40.571	40.634	40.697	40.760	40.823	40.886	40.950	41.013	720
730	41.013	41.076	41.139	41.203	41.266	41.329	41.393	41.456	41.520	41.583	41.647	730
740	41.647	41.710	41.774	41.837	41.901	41.965	42.028	42.092	42.156	42.219	42.283	740
750	42.283	42.347	42.411	42.475	42.538	42.602	42.666	42.730	42.794	42.858	42.922	750
760	42.922	42.986	43.050	43.114	43.178	43.242	43.306	43.370	43.435	43.499	43.563	760
770	43.563	43.627	43.692	43.756	43.820	43.885	43.949	44.014	44.078	44.142	44.207	770
780	44.207	44.271	44.336	44.400	44.465	44.529	44.594	44.658	44.723	44.788	44.852	780
790	44.852	44.917	44.981	45.046	45.111	45.175	45.240	45.304	45.369	45.434	45.498	790
800	45.498	45.563	45.627	45.692	45.757	45.821	45.886	45.950	46.015	46.080	46.144	800
810	46.144	46.209	46.273	46.338	46.403	46.467	46.532	46.596	46.661	46.725	46.790	810
820	46.790	46.854	46.919	46.983	47.047	47.112	47.176	47.241	47.305	47.369	47.434	820
830	47.434	47.498	47.562	47.627	47.691	47.755	47.819	47.884	47.948	48.012	48.076	830
840	48.076	48.140	48.204	48.269	48.333	48.397	48.461	48.525	48.589	48.653	48.716	840
850	48.716	48.780	48.844	48.908	48.972	49.036	49.099	49.163	49.227	49.291	49.354	850
860	49.354	49.418	49.481	49.545	49.608	49.672	49.735	49.799	49.862	49.926	49.989	860
870	49.989	50.052	50.116	50.179	50.242	50.305	50.369	50.432	50.495	50.558	50.621	870
880	50.621	50.684	50.747	50.810	50.873	50.936	50.998	51.061	51.124	51.187	51.249	880
890	51.249	51.312	51.375	51.437	51.500	51.562	51.625	51.687	51.750	51.812	51.875	890
900	51.875	51.937	51.999	52.061	52.124	52.186	52.248	52.310	52.372	52.434	52.496	900
910	52.496	52.558	52.620	52.682	52.744	52.806	52.868	52.929	52.991	53.053	53.115	910
920	53.115	53.176	53.238	53.299	53.361	53.422	53.484	53.545	53.607	53.668	53.729	920
930	53.729	53.791	53.852	53.913	53.974	54.035	54.096	54.157	54.219	54.280	54.341	930
940	54.341	54.401	54.462	54.523	54.584	54.645	54.706	54.766	54.827	54.888	54.948	940
950	54.948	55.009	55.070	55.130	55.191	55.251	55.312	55.372	55.432	55.493	55.553	950
960	55.553	55.613	55.674	55.734	55.794	55.854	55.914	55.974	56.035	56.095	56.155	960
970	56.155	56.215	56.275	56.334	56.394	56.454	56.514	56.574	56.634	56.693	56.753	970
980	56.753	56.813	56.873	56.932	56.992	57.051	57.111	57.170	57.230	57.289	57.349	980
990	57.349	57.408	57.468	57.527	57.586	57.646	57.705	57.764	57.824	57.883	57.942	990
1000	57.942	58.001	58.060	58.120	58.179	58.238	58.297	58.356	58.415	58.474	58.533	1000
1010	58.533	58.592	58.651	58.710	58.769	58.827	58.886	58.945	59.004	59.063	59.121	1010
1020	59.121	59.180	59.239	59.298	59.356	59.415	59.474	59.532	59.591	59.650	59.708	1020
1030	59.708	59.767	59.825	59.884	59.942	60.001	60.059	60.118	60.176	60.235	60.293	1030

## Iron vs Constantan (1040°C to 1090°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
1040	60.293	60.351	60.410	60.468	60.527	60.585	60.643	60.702	60.760	60.818	60.876	1040
1050	60.876	60.935	60.993	61.051	61.109	61.168	61.226	61.284	61.342	61.400	61.459	1050
1060	61.459	61.517	61.575	61.633	61.691	61.749	61.807	61.865	61.923	61.981	62.039	1060
1070	62.039	62.097	62.156	62.214	62.272	62.330	62.388	62.446	62.504	62.562	62.619	1070
1080	62.619	62.677	62.735	62.793	62.851	62.909	62.967	63.025	63.083	63.141	63.199	1080
1090	63.199	63.257	63.314	63.372	63.430	63.488	63.546	63.604	63.662	63.719	63.777	1090

## Chromel vs Alumel (0°C to 640°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
0	.000	.039	.079	.119	.158	.198	.238	.277	.317	.357	.397	0
10	.397	.437	.477	.517	.557	.597	.637	.677	.718	.758	.798	10
20	.798	.838	.879	.919	.960	1.000	1.041	1.081	1.122	1.162	1.203	20
30	1.203	1.244	1.285	1.325	1.366	1.407	1.448	1.489	1.529	1.570	1.611	30
40	1.611	1.652	1.693	1.734	1.776	1.817	1.858	1.899	1.940	1.981	2.022	40
50	2.022	2.064	2.105	2.146	2.188	2.229	2.270	2.312	2.353	2.394	2.436	50
60	2.436	2.477	2.519	2.560	2.601	2.643	2.684	2.726	2.767	2.809	2.850	60
70	2.850	2.892	2.933	2.975	3.016	3.058	3.100	3.141	3.183	3.224	3.266	70
80	3.266	3.307	3.349	3.390	3.432	3.473	3.515	3.556	3.598	3.639	3.681	80
90	3.681	3.722	3.764	3.805	3.847	3.888	3.930	3.971	4.012	4.054	4.095	90
100	4.095	4.137	4.178	4.219	4.261	4.302	4.343	4.384	4.426	4.467	4.508	100
110	4.508	4.549	4.590	4.632	4.673	4.714	4.755	4.796	4.837	4.878	4.919	110
120	4.919	4.960	5.001	5.042	5.083	5.124	5.164	5.205	5.246	5.287	5.327	120
130	5.327	5.368	5.409	5.450	5.490	5.531	5.571	5.612	5.652	5.693	5.733	130
140	5.733	5.774	5.814	5.855	5.895	5.936	5.976	6.016	6.057	6.097	6.137	140
150	6.137	6.177	6.218	6.258	6.298	6.338	6.378	6.419	6.459	6.499	6.539	150
160	6.539	6.579	6.619	6.659	6.699	6.739	6.779	6.819	6.859	6.899	6.939	160
170	6.939	6.979	7.019	7.059	7.099	7.139	7.179	7.219	7.259	7.299	7.338	170
180	7.338	7.378	7.418	7.458	7.498	7.538	7.578	7.618	7.658	7.697	7.737	180
190	7.737	7.777	7.817	7.857	7.897	7.937	7.977	8.017	8.057	8.097	8.137	190
200	8.137	8.177	8.216	8.256	8.296	8.336	8.376	8.416	8.456	8.497	8.537	200
210	8.537	8.577	8.617	8.657	8.697	8.737	8.777	8.817	8.857	8.898	8.938	210
220	8.938	8.978	9.018	9.058	9.099	9.139	9.179	9.220	9.260	9.300	9.341	220
230	9.341	9.381	9.421	9.462	9.502	9.543	9.583	9.624	9.664	9.705	9.745	230
240	9.745	9.786	9.826	9.867	9.907	9.948	9.989	10.029	10.070	10.111	10.151	240
250	10.151	10.192	10.233	10.274	10.315	10.355	10.396	10.437	10.478	10.519	10.560	250
260	10.560	10.600	10.641	10.682	10.723	10.764	10.805	10.846	10.887	10.928	10.969	260
270	10.969	11.010	11.051	11.093	11.134	11.175	11.216	11.257	11.298	11.339	11.381	270
280	11.381	11.422	11.461	11.504	11.546	11.587	11.628	11.669	11.711	11.752	11.793	280
290	11.793	11.835	11.876	11.918	11.959	12.000	12.042	12.083	12.125	12.166	12.207	290
300	12.207	12.249	12.290	12.332	12.373	12.415	12.456	12.498	12.539	12.581	12.623	300
310	12.623	12.664	12.706	12.747	12.789	12.831	12.872	12.914	12.955	12.997	13.039	310
320	13.039	13.080	13.122	13.164	13.205	13.247	13.289	13.331	13.372	13.414	13.456	320
330	13.456	13.497	13.539	13.581	13.623	13.665	13.706	13.748	13.790	13.832	13.874	330
340	13.874	13.915	13.957	13.999	14.041	14.083	14.125	14.167	14.208	14.250	14.292	340
350	14.292	14.334	14.376	14.418	14.460	14.502	14.544	14.586	14.628	14.670	14.712	350
360	14.712	14.754	14.796	14.838	14.880	14.922	14.964	15.006	15.048	15.090	15.132	360
370	15.132	15.174	15.216	15.258	15.300	15.342	15.384	15.426	15.468	15.510	15.552	370
380	15.552	15.594	15.636	15.679	15.721	15.763	15.805	15.847	15.889	15.931	15.974	380
390	15.974	16.016	16.058	16.100	16.142	16.184	16.227	16.269	16.311	16.353	16.395	390
400	16.395	16.438	16.480	16.522	16.564	16.607	16.649	16.691	16.733	16.776	16.818	400
410	16.818	16.860	16.902	16.945	16.987	17.029	17.072	17.114	17.156	17.199	17.241	410
420	17.241	17.283	17.326	17.368	17.410	17.453	17.495	17.537	17.580	17.622	17.664	420
430	17.664	17.707	17.749	17.792	17.834	17.876	17.919	17.961	18.004	18.046	18.088	430
440	18.088	18.131	18.173	18.216	18.258	18.301	18.343	18.385	18.428	18.470	18.513	440
450	18.513	18.555	18.598	18.640	18.683	18.725	18.768	18.810	18.853	18.895	18.938	450
460	18.938	18.980	19.023	19.065	19.108	19.150	19.193	19.235	19.278	19.320	19.363	460
470	19.363	19.405	19.448	19.490	19.533	19.576	19.618	19.661	19.703	19.746	19.788	470
480	19.788	19.831	19.873	19.916	19.959	20.001	20.044	20.086	20.129	20.172	20.214	480
490	20.214	20.257	20.299	20.342	20.385	20.427	20.470	20.512	20.555	20.598	20.640	490
500	20.640	20.683	20.725	20.768	20.811	20.853	20.896	20.938	20.981	21.024	21.066	500
510	21.066	21.109	21.152	21.194	21.237	21.280	21.322	21.365	21.407	21.450	21.493	510
520	21.493	21.535	21.578	21.621	21.663	21.706	21.749	21.791	21.834	21.876	21.919	520
530	21.919	21.962	22.004	22.047	22.090	22.132	22.175	22.218	22.260	22.303	22.346	530
540	22.346	22.388	22.431	22.473	22.516	22.559	22.601	22.644	22.687	22.729	22.772	540
550	22.772	22.815	22.857	22.900	22.942	22.985	23.028	23.070	23.113	23.156	23.198	550
560	23.198	23.241	23.284	23.326	23.369	23.411	23.454	23.497	23.539	23.582	23.624	560
570	23.624	23.667	23.710	23.752	23.795	23.837	23.880	23.923	23.965	24.008	24.050	570
580	24.050	24.093	24.136	24.178	24.221	24.263	24.306	24.348	24.391	24.434	24.476	580
590	24.476	24.519	24.561	24.604	24.646	24.689	24.731	24.774	24.817	24.859	24.902	590
600	24.902	24.944	24.987	25.029	25.072	25.114	25.157	25.199	25.242	25.284	25.327	600
610	25.327	25.369	25.412	25.454	25.497	25.539	25.582	25.624	25.666	25.709	25.751	610
620	25.751	25.794	25.836	25.879	25.921	25.964	26.006	26.048	26.091	26.133	26.176	620
630	26.176	26.218	26.260	26.303	26.345	26.387	26.430	26.472	26.515	26.557	26.599	630
640	26.599	26.642	26.684	26.726	26.769	26.811	26.853	26.896	26.938	26.980	27.022	640

## Chromel vs Alumel (650°C to 1280°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
650	27.022	27.065	27.107	27.149	27.192	27.234	27.276	27.318	27.361	27.403	27.445	650
660	27.445	27.487	27.529	27.572	27.614	27.656	27.698	27.740	27.783	27.825	27.867	660
670	27.867	27.909	27.951	27.993	28.035	28.078	28.120	28.162	28.204	28.246	28.288	670
680	28.288	28.330	28.372	28.414	28.456	28.498	28.540	28.583	28.625	28.667	28.709	680
690	28.709	28.751	28.793	28.835	28.877	28.919	28.961	29.002	29.044	29.086	29.128	690
700	29.128	29.170	29.212	29.254	29.296	29.338	29.380	29.422	29.464	29.505	29.547	700
710	29.547	29.589	29.631	29.673	29.715	29.756	29.798	29.840	29.882	29.924	29.965	710
720	29.965	30.007	30.049	30.091	30.132	30.174	30.216	30.257	30.299	30.341	30.383	720
730	30.383	30.424	30.466	30.508	30.549	30.591	30.632	30.674	30.716	30.757	30.799	730
740	30.799	30.840	30.882	30.924	30.965	31.007	31.048	31.090	31.131	31.173	31.214	740
750	31.214	31.256	31.297	31.339	31.380	31.422	31.463	31.504	31.546	31.587	31.629	750
760	31.629	31.670	31.712	31.753	31.794	31.836	31.877	31.918	31.960	32.001	32.042	760
770	32.042	32.084	32.125	32.166	32.207	32.249	32.290	32.331	32.372	32.414	32.455	770
780	32.455	32.496	32.537	32.578	32.619	32.661	32.702	32.743	32.784	32.825	32.866	780
790	32.866	32.907	32.948	32.990	33.031	33.072	33.113	33.154	33.195	33.236	33.277	790
800	33.277	33.318	33.359	33.400	33.441	33.482	33.523	33.564	33.604	33.645	33.686	800
810	33.686	33.727	33.768	33.809	33.850	33.891	33.931	33.972	34.013	34.054	34.095	810
820	34.095	34.136	34.176	34.217	34.258	34.299	34.339	34.380	34.421	34.461	34.502	820
830	34.502	34.543	34.583	34.624	34.665	34.705	34.746	34.787	34.827	34.868	34.909	830
840	34.909	34.949	34.990	35.030	35.071	35.111	35.152	35.192	35.233	35.273	35.314	840
850	35.314	35.354	35.395	35.435	35.476	35.516	35.557	35.597	35.637	35.678	35.718	850
860	35.718	35.758	35.799	35.839	35.880	35.920	35.960	36.000	36.041	36.081	36.121	860
870	36.121	36.162	36.202	36.242	36.282	36.323	36.363	36.403	36.443	36.483	36.524	870
880	36.524	36.564	36.604	36.644	36.684	36.724	36.764	36.804	36.844	36.885	36.925	880
890	36.925	36.965	37.005	37.045	37.085	37.125	37.165	37.205	37.245	37.285	37.325	890
900	37.325	37.365	37.405	37.445	37.484	37.524	37.564	37.604	37.644	37.684	37.724	900
910	37.724	37.764	37.803	37.843	37.883	37.923	37.963	38.002	38.042	38.082	38.122	910
920	38.122	38.162	38.201	38.241	38.281	38.320	38.360	38.400	38.439	38.479	38.519	920
930	38.519	38.558	38.598	38.638	38.677	38.717	38.756	38.796	38.836	38.875	38.915	930
940	38.915	38.954	38.994	39.033	39.073	39.112	39.152	39.191	39.231	39.270	39.310	940
950	39.310	39.349	39.388	39.428	39.467	39.507	39.546	39.585	39.625	39.664	39.703	950
960	39.703	39.743	39.782	39.821	39.861	39.900	39.939	39.979	40.018	40.057	40.096	960
970	40.096	40.136	40.175	40.214	40.253	40.292	40.332	40.371	40.410	40.449	40.488	970
980	40.488	40.527	40.566	40.605	40.645	40.684	40.723	40.762	40.801	40.840	40.879	980
990	40.879	40.918	40.957	40.996	41.035	41.074	41.113	41.152	41.191	41.230	41.269	990
1000	41.269	41.308	41.347	41.385	41.424	41.463	41.502	41.541	41.580	41.619	41.657	1000
1010	41.657	41.696	41.735	41.774	41.813	41.851	41.890	41.929	41.968	42.006	42.045	1010
1020	42.045	42.084	42.123	42.161	42.200	42.239	42.277	42.316	42.355	42.393	42.432	1020
1030	42.432	42.470	42.509	42.548	42.586	42.625	42.663	42.702	42.740	42.779	42.817	1030
1040	42.817	42.856	42.894	42.933	42.971	43.010	43.048	43.087	43.125	43.164	43.202	1040
1050	43.202	43.240	43.279	43.317	43.356	43.394	43.432	43.471	43.509	43.547	43.585	1050
1060	43.585	43.624	43.662	43.700	43.739	43.777	43.815	43.853	43.891	43.930	43.968	1060
1070	43.968	44.006	44.044	44.082	44.121	44.159	44.197	44.235	44.273	44.311	44.349	1070
1080	44.349	44.387	44.425	44.463	44.501	44.539	44.577	44.615	44.653	44.691	44.729	1080
1090	44.729	44.767	44.805	44.843	44.881	44.919	44.957	44.995	45.033	45.070	45.108	1090
1100	45.108	45.146	45.184	45.222	45.260	45.297	45.335	45.373	45.411	45.448	45.486	1100
1110	45.486	45.524	45.561	45.599	45.637	45.675	45.712	45.750	45.787	45.825	45.863	1110
1120	45.863	45.900	45.938	45.975	46.013	46.051	46.088	46.126	46.163	46.201	46.238	1120
1130	46.238	46.275	46.313	46.350	46.388	46.425	46.463	46.500	46.537	46.575	46.612	1130
1140	46.612	46.649	46.687	46.724	46.761	46.799	46.836	46.873	46.910	46.948	46.985	1140
1150	46.985	47.022	47.059	47.096	47.134	47.171	47.208	47.245	47.282	47.319	47.356	1150
1160	47.356	47.393	47.430	47.468	47.505	47.542	47.579	47.616	47.653	47.689	47.726	1160
1170	47.726	47.763	47.800	47.837	47.874	47.911	47.948	47.985	48.021	48.058	48.095	1170
1180	48.095	48.132	48.169	48.205	48.242	48.279	48.316	48.352	48.389	48.426	48.462	1180
1190	48.462	48.499	48.536	48.572	48.609	48.645	48.682	48.718	48.755	48.792	48.828	1190
1200	48.828	48.865	48.901	48.937	48.974	49.010	49.047	49.083	49.120	49.156	49.192	1200
1210	49.192	49.229	49.265	49.301	49.338	49.374	49.410	49.446	49.483	49.519	49.555	1210
1220	49.555	49.591	49.627	49.663	49.700	49.736	49.772	49.808	49.844	49.880	49.916	1220
1230	49.916	49.952	49.988	50.024	50.060	50.096	50.132	50.168	50.204	50.240	50.276	1230
1240	50.276	50.311	50.347	50.383	50.419	50.455	50.491	50.526	50.562	50.598	50.633	1240
1250	50.633	50.669	50.705	50.741	50.776	50.812	50.847	50.883	50.919	50.954	50.990	1250
1260	50.990	51.025	51.061	51.096	51.132	51.167	51.203	51.238	51.274	51.309	51.344	1260
1270	51.344	51.380	51.415	51.450	51.486	51.521	51.556	51.592	51.627	51.662	51.697	1270
1280	51.697	51.733	51.768	51.803	51.838	51.873	51.908	51.943	51.979	52.014	52.049	1280

## Chromel vs Alumel (1290°C to 1370°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
1290	52.049	52.084	52.119	52.154	52.189	52.224	52.259	52.294	52.329	52.364	52.398	1290
1300	52.398	52.433	52.468	52.503	52.538	52.573	52.608	52.642	52.677	52.712	52.747	1300
1310	52.747	52.781	52.816	52.851	52.886	52.920	52.955	52.989	53.024	53.059	53.093	1310
1320	53.093	53.128	53.162	53.197	53.232	53.266	53.301	53.335	53.370	53.404	53.439	1320
1330	53.439	53.473	53.507	53.542	53.576	53.611	53.645	53.679	53.714	53.748	53.782	1330
1340	53.782	53.817	53.851	53.885	53.920	53.954	53.988	54.022	54.057	54.091	54.125	1340
1350	54.125	54.159	54.193	54.228	54.262	54.296	54.330	54.364	54.398	54.432	54.466	1350
1360	54.466	54.501	54.535	54.569	54.603	54.637	54.671	54.705	54.739	54.773	54.807	1360
1370	54.807	54.841	54.875									1370









## Pt 13% RH vs Platinum (0°C to 610°C)

EMF in millivolts - Reference junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
0	.000	.005	.011	.016	.021	.027	.032	.038	.043	.049	.054	0
10	.054	.060	.065	.071	.077	.082	.088	.094	.100	.105	.111	10
20	.111	.117	.123	.129	.135	.141	.147	.152	.158	.165	.171	20
30	.171	.177	.183	.189	.195	.201	.207	.214	.220	.226	.232	30
40	.232	.239	.245	.251	.258	.264	.271	.277	.283	.290	.296	40
50	.296	.303	.310	.316	.323	.329	.336	.343	.349	.356	.363	50
60	.363	.369	.376	.383	.390	.397	.403	.410	.417	.424	.431	60
70	.431	.438	.445	.452	.459	.466	.473	.480	.487	.494	.501	70
80	.501	.508	.515	.523	.530	.537	.544	.552	.559	.566	.573	80
90	.573	.581	.588	.595	.603	.610	.617	.625	.632	.640	.647	90
100	.647	.655	.662	.670	.677	.685	.692	.700	.708	.715	.723	100
110	.723	.730	.738	.746	.754	.761	.769	.777	.784	.792	.800	110
120	.800	.808	.816	.824	.831	.839	.847	.855	.863	.871	.879	120
130	.879	.887	.895	.903	.911	.919	.927	.935	.943	.951	.959	130
140	.959	.967	.975	.983	.992	1.000	1.008	1.016	1.024	1.032	1.041	140
150	1.041	1.049	1.057	1.065	1.074	1.082	1.090	1.099	1.107	1.115	1.124	150
160	1.124	1.132	1.140	1.149	1.157	1.166	1.174	1.183	1.191	1.200	1.208	160
170	1.208	1.217	1.225	1.234	1.242	1.251	1.259	1.268	1.276	1.285	1.294	170
180	1.294	1.302	1.311	1.319	1.328	1.337	1.345	1.354	1.363	1.372	1.380	180
190	1.380	1.389	1.398	1.407	1.415	1.424	1.433	1.442	1.450	1.459	1.468	190
200	1.468	1.477	1.486	1.495	1.504	1.512	1.521	1.530	1.539	1.548	1.557	200
210	1.557	1.566	1.575	1.584	1.593	1.602	1.611	1.620	1.629	1.638	1.647	210
220	1.647	1.656	1.665	1.674	1.683	1.692	1.701	1.711	1.720	1.729	1.738	220
230	1.738	1.747	1.756	1.766	1.775	1.784	1.793	1.802	1.812	1.821	1.830	230
240	1.830	1.839	1.849	1.858	1.867	1.876	1.886	1.895	1.904	1.914	1.923	240
250	1.923	1.932	1.942	1.951	1.960	1.970	1.979	1.988	1.998	2.007	2.017	250
260	2.017	2.026	2.036	2.045	2.054	2.064	2.073	2.083	2.092	2.102	2.111	260
270	2.111	2.121	2.130	2.140	2.149	2.159	2.169	2.178	2.188	2.197	2.207	270
280	2.207	2.216	2.226	2.236	2.245	2.255	2.264	2.274	2.284	2.293	2.303	280
290	2.303	3.313	2.322	2.332	2.342	2.351	2.361	2.371	2.381	2.390	2.400	290
300	2.400	2.410	2.420	2.429	2.439	2.449	2.459	2.468	2.478	2.488	2.498	300
310	2.498	2.508	2.517	2.527	2.537	2.547	2.557	2.567	2.577	2.586	2.596	310
320	2.596	2.606	2.616	2.626	2.636	2.646	2.656	2.666	2.676	2.685	2.695	320
330	2.695	2.705	2.715	2.725	2.735	2.745	2.755	2.765	2.775	2.785	2.795	330
340	2.795	2.805	2.815	2.825	2.835	2.845	2.855	2.866	2.876	2.886	2.896	340
350	2.896	2.906	2.916	2.926	2.936	2.946	2.956	2.966	2.977	2.987	2.997	350
360	2.997	3.007	3.017	3.027	3.037	3.048	3.058	3.068	3.078	3.088	3.099	360
370	3.099	3.109	3.119	3.129	3.139	3.150	3.160	3.170	3.180	3.191	3.201	370
380	3.201	3.211	3.221	3.232	3.242	3.252	3.263	3.273	3.283	3.293	3.304	380
390	3.304	3.314	3.324	3.335	3.345	3.355	3.366	3.376	3.386	3.397	3.407	390
400	3.407	3.418	3.428	3.438	3.449	3.459	3.470	3.480	3.490	3.501	3.511	400
410	3.511	3.522	3.532	3.543	3.553	3.563	3.574	3.584	3.595	3.605	3.616	410
420	3.616	3.626	3.637	3.647	3.658	3.668	3.679	3.689	3.700	3.710	3.721	420
430	3.721	3.731	3.742	3.752	3.763	3.774	3.784	3.795	3.805	3.816	3.826	430
440	3.826	3.837	3.848	3.858	3.869	3.879	3.890	3.901	3.911	3.922	3.933	440
450	3.933	3.943	3.954	3.964	3.975	3.986	3.996	4.007	4.018	4.028	4.039	450
460	4.039	4.050	4.061	4.071	4.082	4.093	4.103	4.114	4.125	4.136	4.146	460
470	4.146	4.157	4.168	4.178	4.189	4.200	4.211	4.222	4.232	4.243	4.254	470
480	4.254	4.265	4.275	4.286	4.297	4.308	4.319	4.329	4.340	4.351	4.362	480
490	4.362	4.373	4.384	4.394	4.405	4.416	4.427	4.438	4.449	4.460	4.471	490
500	4.471	4.481	4.492	4.503	4.514	4.525	4.536	4.547	4.558	4.569	4.580	500
510	4.580	4.591	4.601	4.612	4.623	4.634	4.645	4.656	4.667	4.678	4.689	510
520	4.689	4.700	4.711	4.722	4.733	4.744	4.755	4.766	4.777	4.788	4.799	520
530	4.799	4.810	4.821	4.832	4.843	4.854	4.865	4.876	4.888	4.899	4.910	530
540	4.910	4.921	4.932	4.943	4.954	4.965	4.976	4.987	4.998	5.009	5.021	540
550	5.021	5.032	5.043	5.054	5.065	5.076	5.087	5.099	5.110	5.121	5.132	550
560	5.132	5.143	5.154	5.166	5.177	5.188	5.199	5.210	5.221	5.233	5.244	560
570	5.244	5.255	5.266	5.278	5.289	5.300	5.311	5.322	5.334	5.345	5.356	570
580	5.356	5.368	5.379	5.390	5.401	5.413	5.424	5.435	5.446	5.458	5.469	580
590	5.469	5.480	5.492	5.503	5.514	5.526	5.537	5.548	5.560	5.571	5.582	590
600	5.582	5.594	5.605	5.616	5.628	5.639	5.650	5.662	5.673	5.685	5.696	600
610	5.696	5.707	5.719	5.730	5.742	5.753	5.764	5.776	5.787	5.799	5.810	610



## Pt 13% RH vs Platinum (1260°C to 1760°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
1260	14.062	14.076	14.090	14.104	14.118	14.132	14.146	14.160	14.174	14.188	14.202	1260
1270	14.202	14.216	14.230	14.244	14.258	14.272	14.286	14.301	14.315	14.329	14.343	1270
1280	14.343	14.357	14.371	14.385	14.399	14.413	14.427	14.441	14.455	14.469	14.483	1280
1290	14.483	14.497	14.511	14.525	14.539	14.554	14.568	14.582	14.596	14.610	14.624	1290
1300	14.624	14.638	14.652	14.666	14.680	14.694	14.708	14.722	14.737	14.751	14.765	1300
1310	14.765	14.779	14.793	14.807	14.821	14.835	14.849	14.863	14.877	14.891	14.906	1310
1320	14.906	14.920	14.934	14.948	14.962	14.976	14.990	15.004	15.018	15.032	15.047	1320
1330	15.047	15.061	15.075	15.089	15.103	15.117	15.131	15.145	15.159	15.173	15.188	1330
1340	15.188	15.202	15.216	15.230	15.244	15.258	15.272	15.286	15.300	15.315	15.329	1340
1350	15.329	15.343	15.357	15.371	15.385	15.399	15.413	15.427	15.442	15.456	15.470	1350
1360	15.470	15.484	15.498	15.512	15.526	15.540	15.555	15.569	15.583	15.597	15.611	1360
1370	15.611	15.625	15.639	15.653	15.667	15.682	15.696	15.710	15.724	15.738	15.752	1370
1380	15.752	15.766	15.780	15.795	15.809	15.823	15.837	15.851	15.865	15.879	15.893	1380
1390	15.893	15.908	15.922	15.936	15.950	15.964	15.978	15.992	16.006	16.021	16.035	1390
1400	16.035	16.049	16.063	16.077	16.091	16.105	16.119	16.134	16.148	16.162	16.176	1400
1410	16.176	16.190	16.204	16.218	16.232	16.247	16.261	16.275	16.289	16.303	16.317	1410
1420	16.317	16.331	16.345	16.360	16.374	16.388	16.402	16.416	16.430	16.444	16.458	1420
1430	16.458	16.472	16.487	16.501	16.515	16.529	16.543	16.557	16.571	16.585	16.599	1430
1440	16.599	16.614	16.628	16.642	16.656	16.670	16.684	16.698	16.712	16.726	16.741	1440
1450	16.741	16.755	16.769	16.783	16.797	16.811	16.825	16.839	16.853	16.867	16.882	1450
1460	16.882	16.896	16.910	16.924	16.938	16.952	16.966	16.980	16.994	17.008	17.022	1460
1470	17.022	17.037	17.051	17.065	17.079	17.093	17.107	17.121	17.135	17.149	17.163	1470
1480	17.163	17.177	17.192	17.206	17.220	17.234	17.248	17.262	17.276	17.290	17.304	1480
1490	17.304	17.318	17.332	17.346	17.360	17.374	17.388	17.403	17.417	17.431	17.445	1490
1500	17.445	17.459	17.473	17.487	17.501	17.515	17.529	17.543	17.557	17.571	17.585	1500
1510	17.585	17.599	17.613	17.627	17.641	17.655	17.669	17.684	17.698	17.712	17.726	1510
1520	17.726	17.740	17.754	17.768	17.782	17.796	17.810	17.824	17.838	17.852	17.866	1520
1530	17.866	17.880	17.894	17.908	17.922	17.936	17.950	17.964	17.978	17.992	18.006	1530
1540	18.006	18.020	18.034	18.048	18.062	18.076	18.090	18.104	18.118	18.132	18.146	1540
1550	18.146	18.160	18.174	18.188	18.202	18.216	18.230	18.244	18.258	18.272	18.286	1550
1560	18.286	18.299	18.313	18.327	18.341	18.355	18.369	18.383	18.397	18.411	18.425	1560
1570	18.425	18.439	18.453	18.467	18.481	18.495	18.509	18.523	18.537	18.550	18.564	1570
1580	18.564	18.578	18.592	18.606	18.620	18.634	18.648	18.662	18.676	18.690	18.703	1580
1590	18.703	18.717	18.731	18.745	18.759	18.773	18.787	18.801	18.815	18.828	18.842	1590
1600	18.842	18.856	18.870	18.884	18.898	18.912	18.926	18.939	18.953	18.967	18.981	1600
1610	18.981	18.995	19.009	19.023	19.036	19.050	19.064	19.078	19.092	19.106	19.119	1610
1620	19.119	19.133	19.147	19.161	19.175	19.188	19.202	19.216	19.230	19.244	19.257	1620
1630	19.257	19.271	19.285	19.299	19.313	19.326	19.340	19.354	19.368	19.382	19.395	1630
1640	19.395	19.409	19.423	19.437	19.450	19.464	19.478	19.492	19.505	19.519	19.533	1640
1650	19.533	19.547	19.560	19.574	19.588	19.602	19.615	19.629	19.643	19.656	19.670	1650
1660	19.670	19.684	19.698	19.711	19.725	19.739	19.752	19.766	19.780	19.793	19.807	1660
1670	19.807	19.821	19.834	19.848	19.862	19.875	19.889	19.903	19.916	19.930	19.944	1670
1680	19.944	19.957	19.971	19.985	19.998	20.012	20.025	20.039	20.053	20.066	20.080	1680
1690	20.080	20.093	20.107	20.120	20.134	20.148	20.161	20.175	20.188	20.202	20.215	1690
1700	20.215	20.229	20.242	20.256	20.269	20.283	20.296	20.309	20.323	20.336	20.350	1700
1710	20.350	20.363	20.377	20.390	20.403	20.417	20.430	20.443	20.457	20.470	20.483	1710
1720	20.483	20.497	20.510	20.523	20.537	20.550	20.563	20.576	20.590	20.603	20.616	1720
1730	20.616	20.629	20.642	20.656	20.669	20.682	20.695	20.708	20.721	20.734	20.748	1730
1740	20.748	20.761	20.774	20.787	20.800	20.813	20.826	20.839	20.852	20.865	20.878	1740
1750	20.878	20.891	20.904	20.916	20.929	20.942	20.955	20.968	20.981	20.994	21.006	1750
1760	21.006	21.019	21.032	21.045	21.057	21.070	21.083	21.096	21.108			1760

## Pt 10% RH vs Platinum (0°C to 620°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
0	.000	.005	.011	.016	.022	.027	.033	.038	.044	.050	.055	0
10	.055	.061	.067	.072	.078	.084	.090	.095	.101	.107	.113	10
20	.113	.119	.125	.131	.137	.142	.148	.154	.161	.167	.173	20
30	.173	.179	.185	.191	.197	.203	.210	.216	.222	.228	.235	30
40	.235	.241	.247	.254	.260	.266	.273	.279	.286	.292	.299	40
50	.299	.305	.312	.318	.325	.331	.338	.345	.351	.358	.365	50
60	.365	.371	.378	.385	.391	.398	.405	.412	.419	.425	.432	60
70	.432	.439	.446	.453	.460	.467	.474	.481	.488	.495	.502	70
80	.502	.509	.516	.523	.530	.537	.544	.551	.558	.566	.573	80
90	.573	.580	.587	.594	.602	.609	.616	.623	.631	.638	.645	90
100	.645	.653	.660	.667	.675	.682	.690	.697	.704	.712	.719	100
110	.719	.727	.734	.742	.749	.757	.764	.772	.780	.787	.795	110
120	.795	.802	.810	.818	.825	.833	.841	.848	.856	.864	.872	120
130	.872	.879	.887	.895	.903	.910	.918	.926	.934	.942	.950	130
140	.950	.957	.965	.973	.981	.989	.997	1.005	1.013	1.021	1.029	140
150	1.029	1.037	1.045	1.053	1.061	1.069	1.077	1.085	1.093	1.101	1.109	150
160	1.109	1.117	1.125	1.133	1.141	1.149	1.158	1.166	1.174	1.182	1.190	160
170	1.190	1.198	1.207	1.215	1.223	1.231	1.240	1.248	1.256	1.264	1.273	170
180	1.273	1.281	1.289	1.297	1.306	1.314	1.322	1.331	1.339	1.347	1.356	180
190	1.356	1.364	1.373	1.381	1.389	1.398	1.406	1.415	1.423	1.432	1.440	190
200	1.440	1.448	1.457	1.465	1.474	1.482	1.491	1.499	1.508	1.516	1.525	200
210	1.525	1.534	1.542	1.551	1.559	1.568	1.576	1.585	1.594	1.602	1.611	210
220	1.611	1.620	1.628	1.637	1.645	1.654	1.663	1.671	1.680	1.689	1.698	220
230	1.698	1.706	1.715	1.724	1.732	1.741	1.750	1.759	1.767	1.776	1.785	230
240	1.785	1.794	1.802	1.811	1.820	1.829	1.838	1.846	1.855	1.864	1.873	240
250	1.873	1.882	1.891	1.899	1.908	1.917	1.926	1.935	1.944	1.953	1.962	250
260	1.962	1.971	1.979	1.988	1.997	2.006	2.015	2.024	2.033	2.042	2.051	260
270	2.051	2.060	2.069	2.078	2.087	2.096	2.105	2.114	2.123	2.132	2.141	270
280	2.141	2.150	2.159	2.168	2.177	2.186	2.195	2.204	2.213	2.222	2.232	280
290	2.232	2.241	2.250	2.259	2.268	2.277	2.286	2.295	2.304	2.314	2.323	290
300	2.323	2.332	2.341	2.350	2.359	2.368	2.378	2.387	2.396	2.405	2.414	300
310	2.414	2.424	2.433	2.442	2.451	2.460	2.470	2.479	2.488	2.497	2.506	310
320	2.506	2.516	2.525	2.534	2.543	2.553	2.562	2.571	2.581	2.590	2.599	320
330	2.599	2.608	2.618	2.627	2.636	2.646	2.655	2.664	2.674	2.683	2.692	330
340	2.692	2.702	2.711	2.720	2.730	2.739	2.748	2.758	2.767	2.776	2.786	340
350	2.786	2.795	2.805	2.814	2.823	2.833	2.842	2.852	2.861	2.870	2.880	350
360	2.880	2.889	2.899	2.908	2.917	2.927	2.936	2.946	2.955	2.965	2.974	360
370	2.974	2.984	2.993	3.003	3.012	3.022	3.031	3.041	3.050	3.059	3.069	370
380	3.069	3.078	3.088	3.097	3.107	3.117	3.126	3.136	3.145	3.155	3.164	380
390	3.164	3.174	3.183	3.193	3.202	3.212	3.221	3.231	3.241	3.250	3.260	390
400	3.260	3.269	3.279	3.288	3.298	3.308	3.317	3.327	3.336	3.346	3.356	400
410	3.356	3.365	3.375	3.384	3.394	3.404	3.413	3.423	3.433	3.442	3.452	410
420	3.452	3.462	3.471	3.481	3.491	3.500	3.510	3.520	3.529	3.539	3.549	420
430	3.549	3.558	3.568	3.578	3.587	3.597	3.607	3.616	3.626	3.636	3.645	430
440	3.645	3.655	3.665	3.675	3.684	3.694	3.704	3.714	3.723	3.733	3.743	440
450	3.743	3.752	3.762	3.772	3.782	3.791	3.801	3.811	3.821	3.831	3.840	450
460	3.840	3.850	3.860	3.870	3.879	3.889	3.899	3.909	3.919	3.928	3.938	460
470	3.938	3.948	3.958	3.968	3.977	3.987	3.997	4.007	4.017	4.027	4.036	470
480	4.036	4.046	4.056	4.066	4.076	4.086	4.095	4.105	4.115	4.125	4.135	480
490	4.135	4.145	4.155	4.164	4.174	4.184	4.194	4.204	4.214	4.224	4.234	490
500	4.234	4.243	4.253	4.263	4.273	4.283	4.293	4.303	4.313	4.323	4.333	500
510	4.333	4.343	4.352	4.362	4.372	4.382	4.392	4.402	4.412	4.422	4.432	510
520	4.432	4.442	4.452	4.462	4.472	4.482	4.492	4.502	4.512	4.522	4.532	520
530	4.532	4.542	4.552	4.562	4.572	4.582	4.592	4.602	4.612	4.622	4.632	530
540	4.632	4.642	4.652	4.662	4.672	4.682	4.692	4.702	4.712	4.722	4.732	540
550	4.732	4.742	4.752	4.762	4.772	4.782	4.792	4.802	4.812	4.822	4.832	550
560	4.832	4.842	4.852	4.862	4.873	4.883	4.893	4.903	4.913	4.923	4.933	560
570	4.933	4.943	4.953	4.963	4.973	4.984	4.994	5.004	5.014	5.024	5.034	570
580	5.034	5.044	5.054	5.065	5.075	5.085	5.095	5.105	5.115	5.125	5.136	580
590	5.136	5.146	5.156	5.166	5.176	5.186	5.197	5.207	5.217	5.227	5.237	590
600	5.237	5.247	5.258	5.268	5.278	5.288	5.298	5.309	5.319	5.329	5.339	600
610	5.339	5.350	5.360	5.370	5.380	5.391	5.401	5.411	5.421	5.431	5.442	610
620	5.442	5.452	5.462	5.473	5.483	5.493	5.503	5.514	5.524	5.534	5.544	620





## Pt 10% RH vs Platinum (1250°C to 1760°C)

EMF in millivolts - Reference Junction 0°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
1250	12.550	12.562	12.574	12.586	12.598	12.610	12.622	12.634	12.647	12.659	12.671	1250
1260	12.671	12.683	12.695	12.707	12.719	12.731	12.743	12.755	12.767	12.780	12.792	1260
1270	12.792	12.804	12.816	12.828	12.840	12.852	12.864	12.876	12.888	12.901	12.913	1270
1280	12.913	12.925	12.937	12.949	12.961	12.973	12.985	12.997	13.010	13.022	13.034	1280
1290	13.034	13.046	13.058	13.070	13.082	13.094	13.107	13.119	13.131	13.143	13.155	1290
1300	13.155	13.167	13.179	13.191	11.203	13.216	13.228	13.240	13.252	13.264	13.276	1300
1310	13.276	13.288	13.300	13.313	13.325	13.337	13.349	13.361	13.373	13.385	13.397	1310
1320	13.397	13.410	13.422	13.434	13.446	13.458	13.470	13.482	13.495	13.507	13.519	1320
1330	13.519	13.531	13.543	13.555	13.567	13.579	13.592	13.604	13.616	13.628	13.640	1330
1340	13.640	13.652	13.664	13.677	13.689	13.701	13.713	13.725	13.737	13.749	13.761	1340
1350	13.761	13.774	13.786	13.798	13.810	13.822	13.834	13.846	13.859	13.871	13.883	1350
1360	13.883	13.895	13.907	13.919	13.931	13.943	13.956	13.968	13.980	13.992	14.004	1360
1370	14.004	14.016	14.028	14.040	14.053	14.065	14.077	14.089	14.101	14.113	14.125	1370
1380	14.125	14.138	14.150	14.162	14.174	14.186	14.198	14.210	14.222	14.235	14.247	1380
1390	14.247	14.259	14.271	14.283	14.295	14.307	14.319	14.332	14.344	14.356	14.368	1390
1400	14.368	14.380	14.392	14.404	14.416	14.429	14.441	14.453	14.465	14.477	14.489	1400
1410	14.489	14.501	14.513	14.526	14.538	14.550	14.562	14.574	14.586	14.598	14.610	1410
1420	14.610	14.622	14.635	14.647	14.659	14.671	14.683	14.695	14.707	14.719	14.731	1420
1430	14.731	14.744	14.756	14.768	14.780	14.792	14.804	14.816	14.828	14.840	14.852	1430
1440	14.852	14.865	14.877	14.889	14.901	14.913	14.925	14.937	14.949	14.961	14.973	1440
1450	14.973	14.985	14.998	15.010	15.022	15.034	15.046	15.058	15.070	15.082	15.094	1450
1460	15.094	15.106	15.118	15.130	15.143	15.155	15.167	15.179	15.191	15.203	15.215	1460
1470	15.215	15.227	15.239	15.251	15.263	15.275	15.287	15.299	15.311	15.324	15.336	1470
1480	15.336	15.348	15.360	15.372	15.384	15.396	15.408	15.420	15.432	15.444	15.456	1480
1490	15.456	15.468	15.480	15.492	15.504	15.516	15.528	15.540	15.552	15.564	15.576	1490
1500	15.576	15.589	15.601	15.613	15.625	15.637	15.649	15.661	15.673	15.685	15.697	1500
1510	15.697	15.709	15.721	15.733	15.745	15.757	15.769	15.781	15.793	15.805	15.817	1510
1520	15.817	15.829	15.841	15.853	15.865	15.877	15.889	15.901	15.913	15.925	15.937	1520
1530	15.937	15.949	15.961	15.973	15.985	15.997	16.009	16.021	16.033	16.045	16.057	1530
1540	16.057	16.069	16.080	16.092	16.104	16.116	16.128	16.140	16.152	16.164	16.176	1540
1550	16.176	16.188	16.200	16.212	16.224	16.236	16.248	16.260	16.272	16.284	16.296	1550
1560	16.296	16.308	16.319	16.331	16.343	16.355	16.367	16.379	16.391	16.403	16.415	1560
1570	16.415	16.427	16.439	16.451	16.462	16.474	16.486	16.498	16.510	16.522	16.534	1570
1580	16.534	16.546	16.558	16.569	16.581	16.593	16.605	16.617	16.629	16.641	16.653	1580
1590	16.653	16.664	16.676	16.688	16.700	16.712	16.724	16.736	16.747	16.759	16.771	1590
1600	16.771	16.783	16.795	16.807	16.819	16.830	16.842	16.854	16.866	16.878	16.890	1600
1610	16.890	16.901	16.913	16.925	16.937	16.949	16.960	16.972	16.984	16.996	17.008	1610
1620	17.008	17.019	17.031	17.043	17.055	17.067	17.078	17.090	17.102	17.114	17.125	1620
1630	17.125	17.137	17.149	17.161	17.173	17.184	17.196	17.208	17.220	17.231	17.243	1630
1640	17.243	17.255	17.267	17.278	17.290	17.302	17.313	17.325	17.337	17.349	17.360	1640
1650	17.360	17.372	17.384	17.396	17.407	17.419	17.431	17.442	17.454	17.466	17.477	1650
1660	17.477	17.489	17.501	17.512	17.524	17.536	17.548	17.559	17.571	17.583	17.594	1660
1670	17.594	17.606	17.617	17.629	17.641	17.652	17.664	17.676	17.687	17.699	17.711	1670
1680	17.711	17.722	17.734	17.745	17.757	17.769	17.780	17.792	17.803	17.815	17.826	1680
1690	17.826	17.838	17.850	17.861	17.873	17.884	17.896	17.907	17.919	17.930	17.942	1690
1700	17.942	17.953	17.965	17.976	17.988	17.999	18.010	18.022	18.033	18.045	18.056	1700
1710	18.056	18.068	18.079	18.090	18.102	18.113	18.124	18.136	18.147	18.158	18.170	1710
1720	18.170	18.181	18.192	18.204	18.215	18.226	18.237	18.249	18.260	18.271	18.282	1720
1730	18.282	18.293	18.305	18.316	18.327	18.338	18.349	18.360	18.372	18.383	18.394	1730
1740	18.394	18.405	18.416	18.427	18.438	18.449	18.460	18.471	18.482	18.493	18.504	1740
1750	18.504	18.515	18.526	18.536	18.547	18.558	18.569	18.580	18.591	18.602	18.612	1750
1760	18.612	18.623	18.634	18.645	18.655	18.666	18.677	18.687	18.698			1760

## Thermocouple Extension and Compensating Cable

EMF in millivolts—Reference junction 0 °C

Code	Conductor Combinations +leg	-leg	American to ANSI/ MC96.1	British to BS 1843	German to DIN 43714	Japanese to JISC 1610- 1981	French to NF C 42- 323	Magnetic Conductor		
<b>KX</b>	<b>Nickel-Chromium</b> As known as: Chromel, Ni-Cr, T1.	<b>Nickel Aluminium</b> (Magnetic) Also known as: Ni-Al, Alumel KN, T2.						Nickel- Aluminium (-)		
<b>TX</b>	<b>Copper</b>	<b>Copper-Nickel</b> Also known as: Nickel, Cupron, Constantan.						None		
<b>JX</b>	<b>Iron</b> Also known as: Fe.	<b>Copper Nickel</b> Also known as: Nickel, Copper, Constantan.						Iron (+)		
<b>EX</b>	<b>Nickel-Chromium</b> Also known as: Chromel, Chromium, Nickel.	<b>Copper Nickel</b> Also known as: Nickel, Copper, Constantan.						None		
<b>NX</b>	<b>Nickel Chromium Silicon</b> Also known as: Nicrosil.	<b>Nickel-Silicon Magnesium</b> Also known as: Nisil.						None		
<b>VX</b> (K Compensating Lead)	<b>Copper</b>	<b>Copper-Nickel</b> Also known as: Constantan, Nick- el.						None		
<b>SX/RX</b>	<b>Copper</b>	<b>Copper- Low Value Nickel</b> Also known as: Nickel.						None		
<b>WX</b>	<b>Iron</b>	<b>Copper-Nickel Alloy</b>						None		
							Extension		Compensating	