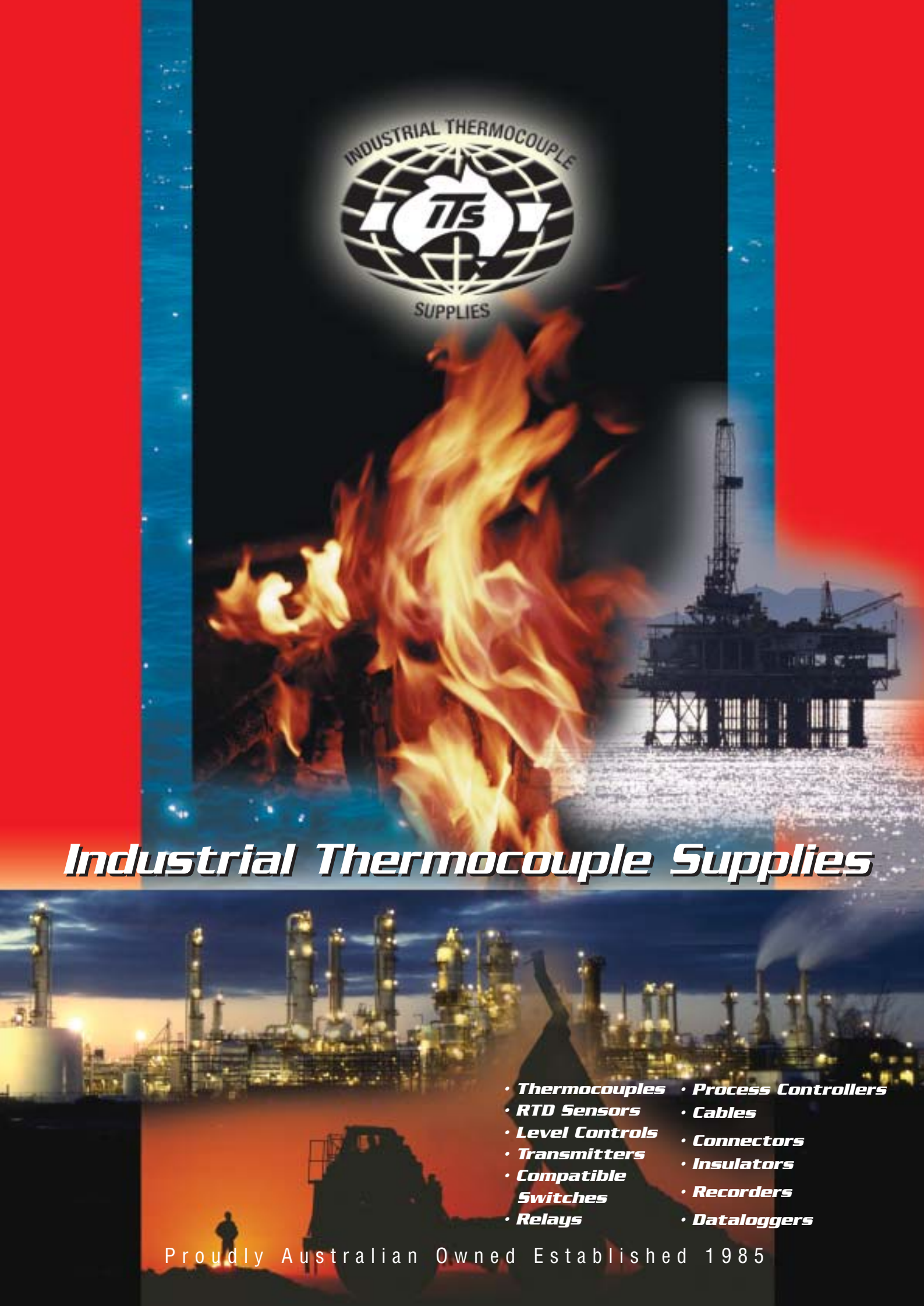


Industrial Thermocouple Supplies

- Thermocouples
- RTD Sensors
- Level Controls
- Transmitters
- Compatible Switches
- Relays
- Process Controllers
- Cables
- Connectors
- Insulators
- Recorders
- Dataloggers

Proudly Australian Owned Established 1985

Industrial Thermocouple Supplies Pty Ltd

Company Profile

Product Range Includes:

- Thermocouples
- RTD Sensors
- Level Controls
- Transmitters
- Compatible Switches
- Relays
- Process Controllers
- Cables
- Connectors
- Insulators
- Recorders
- Dataloggers

Industrial Thermocouple Supplies is one of the largest Australian manufacturers of temperature sensor assemblies for all facets of industry.

With 50 Years combined knowledge and experience, our Victorian and New South Wales teams are committed to the highest standards of manufacturing quality and customer satisfaction.

Our manufacturing plants concentrate in the production of Thermocouples, Resistance Temperature Detectors (RTDs), Thermowells and Float Level assemblies. Cartridge and Band heaters, Level, Flow and other monitoring and Control equipment are sourced through our vast network of technical equipment suppliers.

With manufacturing plants in Melbourne and NSW, ITS is able to meet the needs of customers Australia Wide.

HEAD OFFICE:

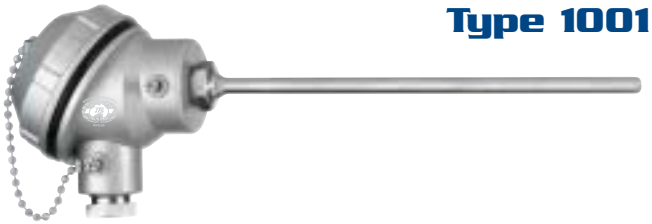
VICTORIA
39 Macquarie Drive, Thomastown, Victoria. 3074
Phone: (03) 9464 6700
Fax: (03) 9464 2507
Email Sales: sales@industrialthermocouple.com
www.industrialthermocouple.com

NEW SOUTH WALES
16 Alison Street, Coffs Harbour, New South Wales. 2450
Phone: (02) 6652 5500
Fax: (02) 6652 6966
Email Sales: david.rosser@industrialthermocouple.com
www.industrialthermocouple.com

Proudly Australian Owned Established 1985

Thermocouples Type 1000

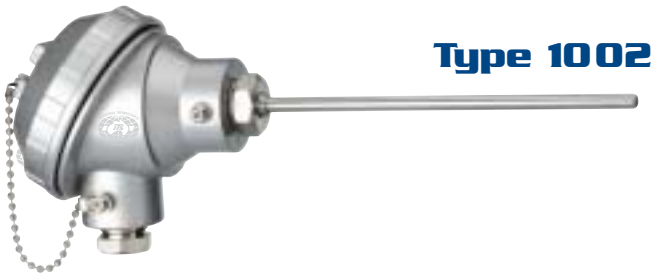
Type 1001



Thermocouple, complete with small aluminium head. Constructed using mineral insulated cable.

Calibration	Diameter	Type No.
K	3mm	1001-K-030
K	4.5mm	1001-K-045
K	6mm	1001-K-060
J	3mm	1001-J-030
J	4.5mm	1001-J-045
J	6mm	1001-J-060

Type 1002



Thermocouple, complete with large aluminium head. Constructed using mineral insulated cable.

Calibration	Diameter	Type No.
K	6mm	1002-K-060
J	6mm	1002-J-060

Type 1003

Duplex version of Type 1002.

Calibration	Diameter	Type No.
K	6mm	1003-K-060
J	6mm	1003-J-060

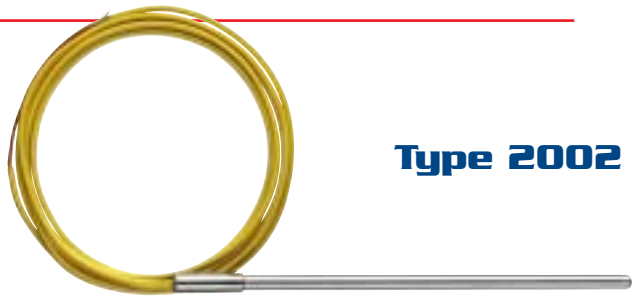
Available in all Calibrations and Diameters K,J,N,T

Thermocouples Type 2000

Type 2001

Calibration	Diameter	Type No.
K	3mm	2001-K-030
K	4.5mm	2001-K-045
K	6mm	2001-K-060
J	3mm	2001-J-030
J	4.5mm	2001-J-045
J	6mm	2001-J-060

Type 2002



Calibration	Diameter	Type No.
K	3mm	2002-K-030
K	4.5mm	2002-K-045
K	6mm	2002-K-060
J	3mm	2002-J-030
J	4.5mm	2002-J-045
J	6mm	2002-J-060

Available in all Calibrations and Diameters K,J,N,T

Thermocouples 3000 Series

Type 3001

Thermocouple, complete with standard plug and tube adaptor, 310 stainless steel sheath, constructed using mineral insulated cable, ungrounded junction.

Calibration	Diameter	Type No.
K	3mm	3001-K-030
K	4.5mm	3001-K-045
K	6mm	3001-K-060
J	3mm	3001-J-030
J	4.5mm	3001-J-045
J	6mm	3001-J-060

Type 3002

Pad Style complete with Stainless Steel, Brass or CU Pad and 2 Mtrs of PVC Cable.
Part No. K or J - PAD

Type 3003

Extended Style c/w Exd Head and Coupling

Type 3004

Extra Heavy Wall MI Thermocouples made to order.

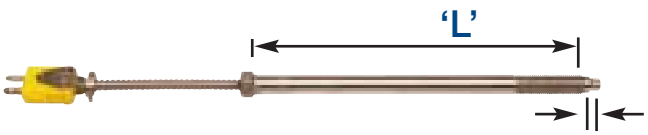
Available in all Calibrations and Diameters K,J,N,T

Thermocouples Extruder Type

Type ITS-Adj-Melt

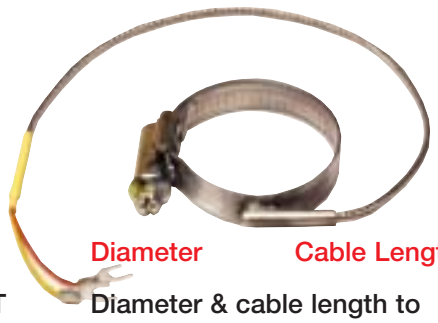
Calibration	Length
K	75mm
J	100mm
	150mm

Type ITS-Flex-Melt



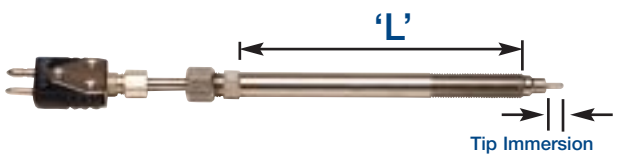
Calibration	Length	Tip Immersion
K	75mm	0mm
J	100mm	6mm
	150mm	Other

Type ITS-H-Clamp



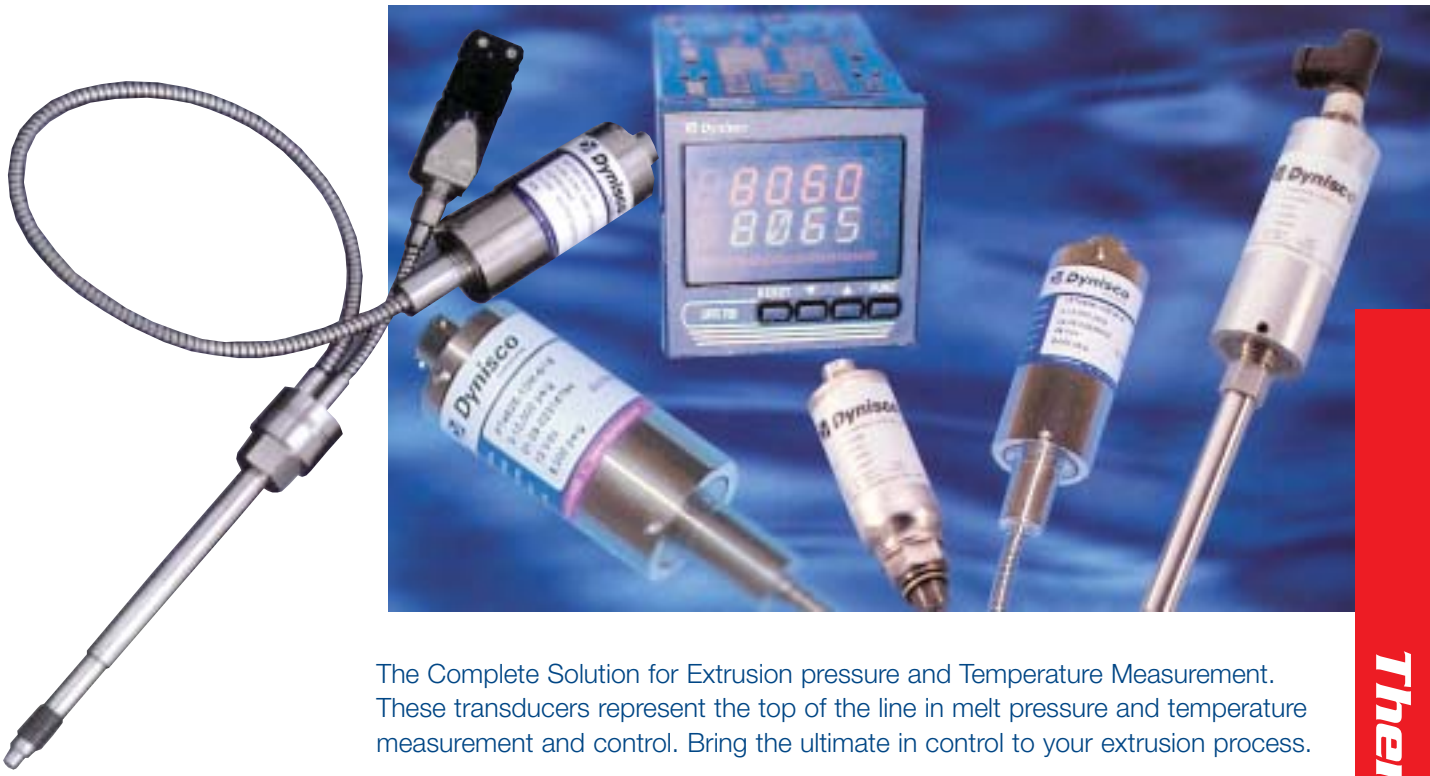
Calibration	Diameter	Cable Length
K,J & T	Diameter & cable length to customer specification	

Type ITS-Fixed-Melt



Calibration	Length	Tip Immersion
K	75mm	0mm
J	100mm	6mm
	150mm	Other

Melt Pressure Transducer Extruder Type



The Complete Solution for Extrusion pressure and Temperature Measurement. These transducers represent the top of the line in melt pressure and temperature measurement and control. Bring the ultimate in control to your extrusion process.

Thermocouples - Plastic Industry

Type YM3

A Style

Bayonet cap type. Thermocouple complete with spring, spring clamp and bayonet cap, constructed using thermocouple grade fibreglass coated wire with metal braided outer protection. 4.5mm diameter tip section, grounded junction.
Available in various diameters, lengths and calibrations.

Type YM3

B Style

Bayonet cap type. Thermocouple complete with wind down spring and bayonet cap, constructed using thermocouple grade fibreglass coated wire with metal braided outer protection. 4.5mm diameter tip section, grounded junction.
Available in various diameters, lengths and calibrations.

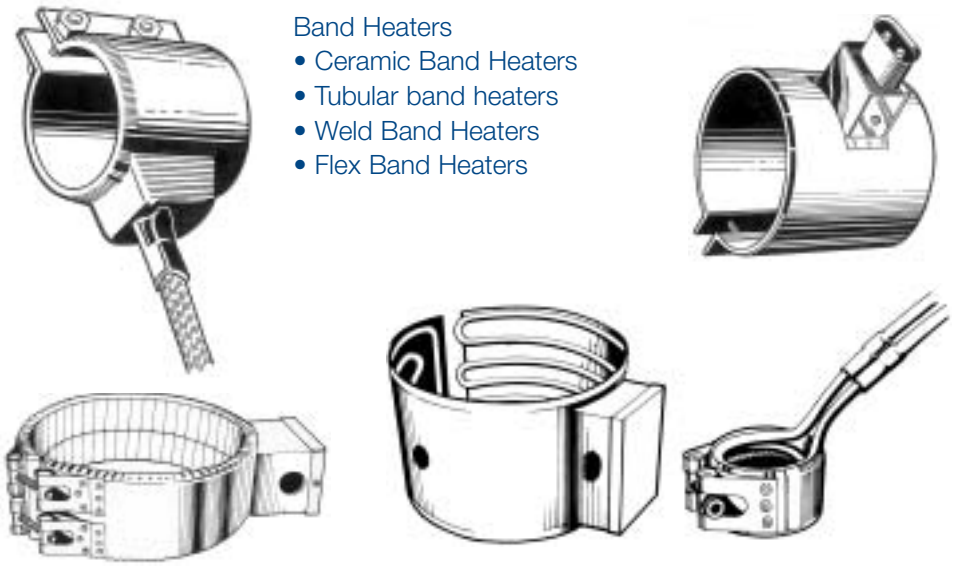
Adaptors

Available in 75, 50 and 30mm. Specials made to order.

Type YM4

Bolt type M6 thread. Thermocouple complete with swivel retaining bolt, constructed using thermocouple grade fibreglass coated wire with metal braided outer protection, grounded junction and isolated junction.
Available in all calibrations.
Available in all thread sizes.

Cartridge Band and Tubular Elements

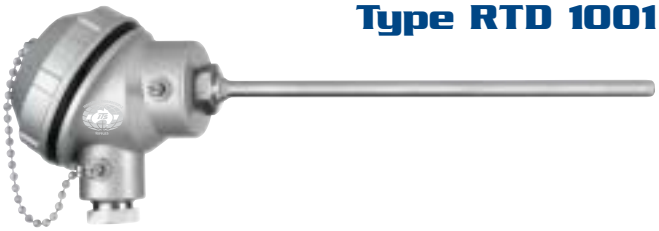


Band Heaters
- Ceramic Band Heaters
- Tubular band heaters
- Weld Band Heaters
- Flex Band Heaters

Cartridge Heaters

RTD Sensors RTD 1000 Series

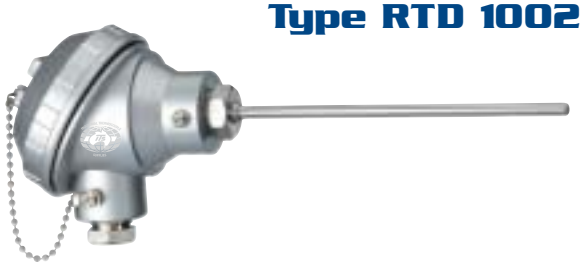
Type RTD 1001



RTD 3 wire type, complete with small aluminium head. 316 stainless steel sheath, maximum operating temperature 200°C.

Calibration	Diameter	Type No.
RTD Pt100	3mm	RTD 1001-030
RTD Pt100	4.5mm	RTD 1001-045
RTD Pt100	6mm	RTD 1001-060

Type RTD 1002



RTD 3 wire type, complete with large aluminium head, 316 stainless steel sheath,maximum operating temperature 200°C.

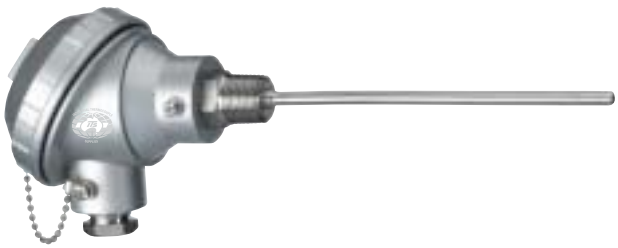
Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1002-060

Type RTD 1001a

As for Model 1001 complete with 1/2" BSP 316 stainless steel fixed nipple.

Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1001a-060

Type RTD 1002a

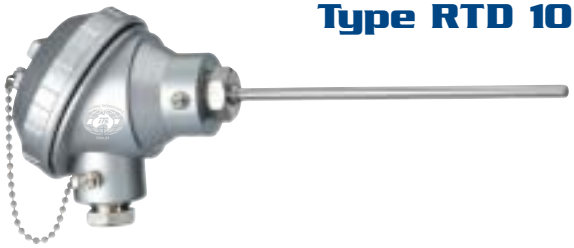


As for Model 1002 complete with 1/2" BSP 316 stainless steel fixed nipple.

Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1002a-060

Available in all diameters and lengths.

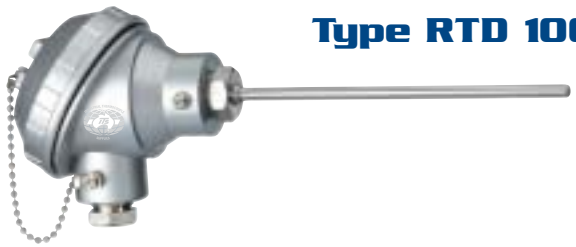
Type RTD 1003



RTD 6 wire type (duplex), stainless steel sheath.

Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1003-060

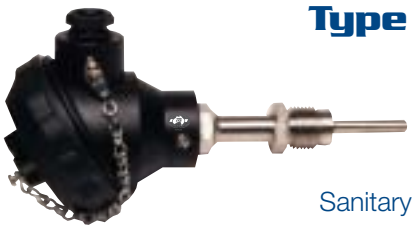
Type RTD 1004



RTD 3 wire, high temperature using 316 stainless steel sheath.

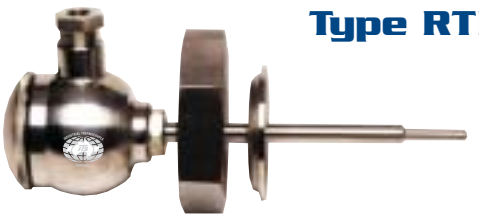
Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1004-060

Type RTD 1005



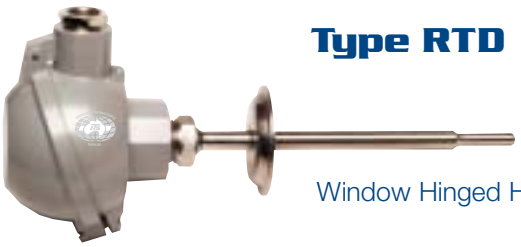
Sanitary Swivel Nut

Type RTD 1006



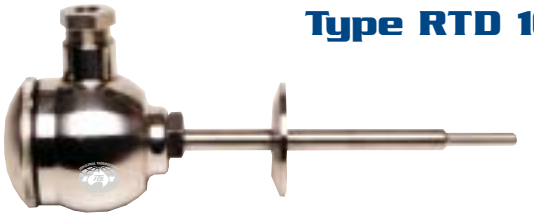
Stainless Steel head BSM Blank and Nut

Type RTD 1007



Window Hinged Head

Type RTD 1008

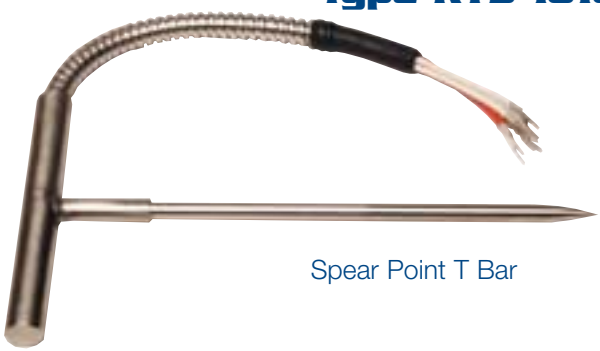


Stainless Steel Head and Triclover Blank

Type RTD 1009

Spring Loaded Assembly With Stainless Steel Head

Type RTD 1010



Spear Point T Bar

Type RTD 1011

Teflon Handle Stab Probe

Available in all Diameters and lengths.

High Temperature RTDs available.

Type RTD 1012

Wall Mount

Type RTD 1015

Calibration	Diameter	Type No.
RTD Pt100	4.5mm	RTD 1015-045
RTD Pt100	6mm	RTD 1015-060

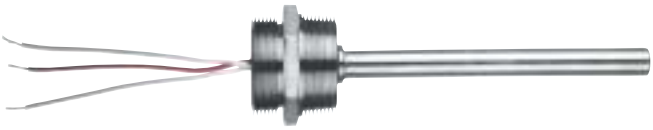
Type RTD 1013

Calibration	Diameter	Type No.
RTD Pt100	4.5mm	RTD 1013-045
RTD Pt100	6mm	RTD 1013-060

Type RTD 1016

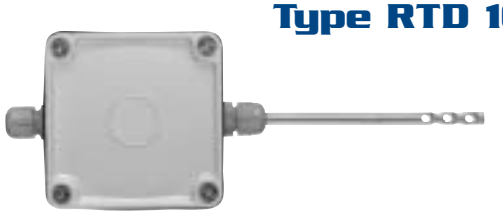
RTD 3 wire waterproof and chemical resistant, constructed using a PVC cable incorporating a unique method of sealing cable, rated operating temperature 90°C.

Type RTD 1014



Calibration	Diameter	Type No.
RTD Pt100	6mm	RTD 1014-060

Type RTD 1017



RTD 3 wire industrial air probe.

Available with or without Transmitter.

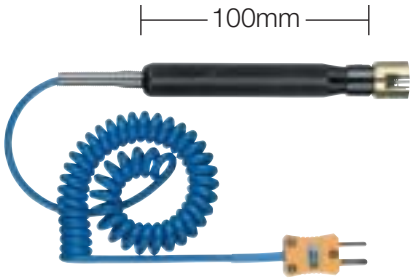
Available in all Diameters and lengths.

Transmitters

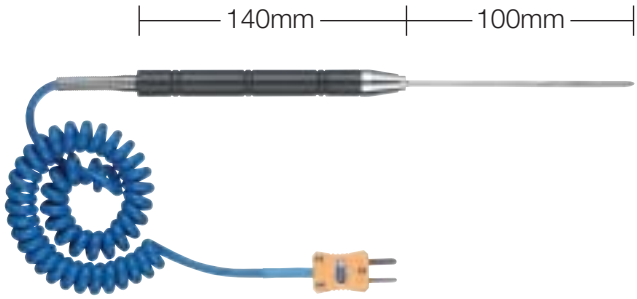
Loop Powered
4-20mA
RTD or Thermocouple
Non Isolated
Isolated
EXD Versions
Din-Rail Models
available

- Push Button TC Selection
- Push Button Ranging
- Galvanically Isolated
- Temperature Linear
- Low Cost
- 8 Standard Thermocouple Types

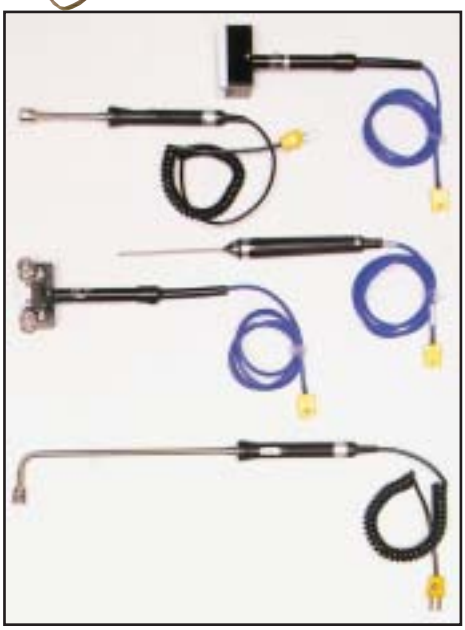
Hand held instruments and Probes

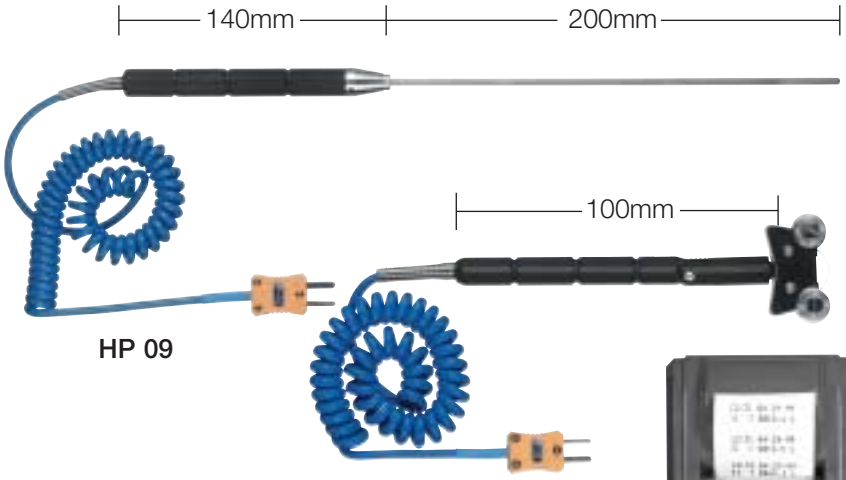


HP 05



HP 11





HP 09

HP 18

TES 1304

TES 1303

TES 1300

TES 1305

- TES - 1300/1302/1303 Thermometer - K type
- TES - 1304/1305 (RS-232) K.J.E.T Printing Thermometer
- TES - 2700 Digital multimeter
- TES - 1306 K/J Dual Channels Thermometer

TES 2700

TES 1306

Digital Thermometers Battery Operated

Temperature measurement technology for the new millennium.

Food, Brewing, HVAC, Pharmaceutical and all industrial temperature measurement applications.

- Wide Temperature Range
- Long Battery Life
- Fast Response
- Continuous Display
- Fully self-contained - no installation costs
- Stainless Steel Housing - immersion proof (IP67 sealing)
- Retransmission Output option (4-20mA loop powered)
- Long battery life from standard AA batteries (user replaceable)
- Wide variety of probe and entry configurations
- Manufactured in Australia - 2 year warranty
- 0.1°C resolution
- High Accuracy
- Self-calibrating microprocessor unit

Digital Microprocessor Thermometers for Probes with Pt100 Platinum Sensor: HD 9215 - HD 9214 - HD 9219

These are very compact portable instruments. Their high technological features are accompanied by a pleasing design. With their range of interchangeable probes, they are indispensable instruments for measuring temperature in the fields of maintenance,
- heating/air - conditioning,
- laboratories,
- food and
- agriculture and all other

sectors where temperature measurements must be precise, fast and repeatable. The reading can be in °C or in °F the calibration is managed by the keyboard.

Infra Red Non Contact Thermometers

Infrared Non Contact Thermometer

A vast range of portable hand held and fixed Infrared Detectors are available to cover most industrial applications where surface temperature needs to be monitored.

All surfaces emit Infrared Radiation at varying spectral response. This is referred to as emissivity and varies between 0 and 1 depending on surface colour and texture. An enclosed Black Body Furnace has an emissivity of 1.0 and is accepted as a Calibration standard.

For accurate measurement the emissivity of the surface should be known and an IR unit with adjustable emissivity to match the surface should be used.

Remember, Infrared is for surface temperature only, it does not penetrate.

Hand held units with no emissivity adjustment are usually preset at around 0.95 which covers dull surfaces from Grey to Black.

When enquiring, the following information is essential:

1. Surface of Product

2. Temperature Range

3. Target Distance

4. Target Size

5. Surround atmosphere, eg: Vapour, Dust etc.

As these units are an optical focused device, it is necessary to keep the front lens free of dust and vapour. To achieve this, both cooling and air purge attachments are available for fixed installations.

Models TES - 1326/1327

Hand Held & Fixed Models Available.

- 0.1°C/0.2°F Resolution
- -20°C~500°C
- Built-in Laser sighting/Backlight
- LCD display
- Real-Time Measurement
- Memory/Read logging Capacity (99Sets) (1327)
- Adjustable emissivity (1327)
- MAX/MIN Reading (1327)

Calibrators

Dry Block DBC 150/650

- Ranges from -45 to 650°C
- Rapid heating, cooling and settling
- Reads set temperature and device output simultaneously
- Measures reference probe, RTD's, T/Cs, mA, mV and ohms
- Ramp, step and preset functions
- Automatic switch test

DBC 811/812

- Measure and source RTD's
- 2,3 and 4 wire auto detection
- Temperature test and maintenance
- Transmitter calibration
- Loop set-up and diagnostics
- Switch verification
- Measure and source 0 to 24 mA
- Accuracy 0.01% of reading
- Dual mA and % readout, linear or flow
- Step, Span Check, Valve Check, Ramp
- 60 Vd.c. measurement and continuity
- HART® compatible

The DPI 800 Series is a complete range of advanced, robust and simple to use hand-held instruments. Highly cost effective, these tools are ideal for test/calibration of many popular process parameters. Advanced features and technical innovations address more applications in less time and deliver results you can rely on.

Accessories

Terminal Heads

Small Aluminium

Large Aluminium

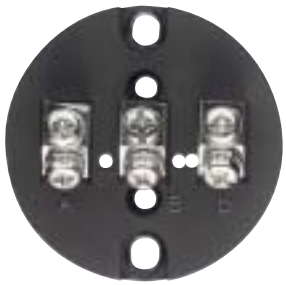
Large Bakelite

Large Stainless Steel

Machined Stainless Steel

Terminal Blocks

Small 2 Way



Large 3 Way

Available in 2,3,4,& 6 way Bakelite Ceramic

Compression Fittings

Available in Brass & Stainless Steel

Flange

Aluminium, Cast Steel, Stainless Steel

Plugs & Jacks

Available in all calibrations.

Protective sheaths and insulators

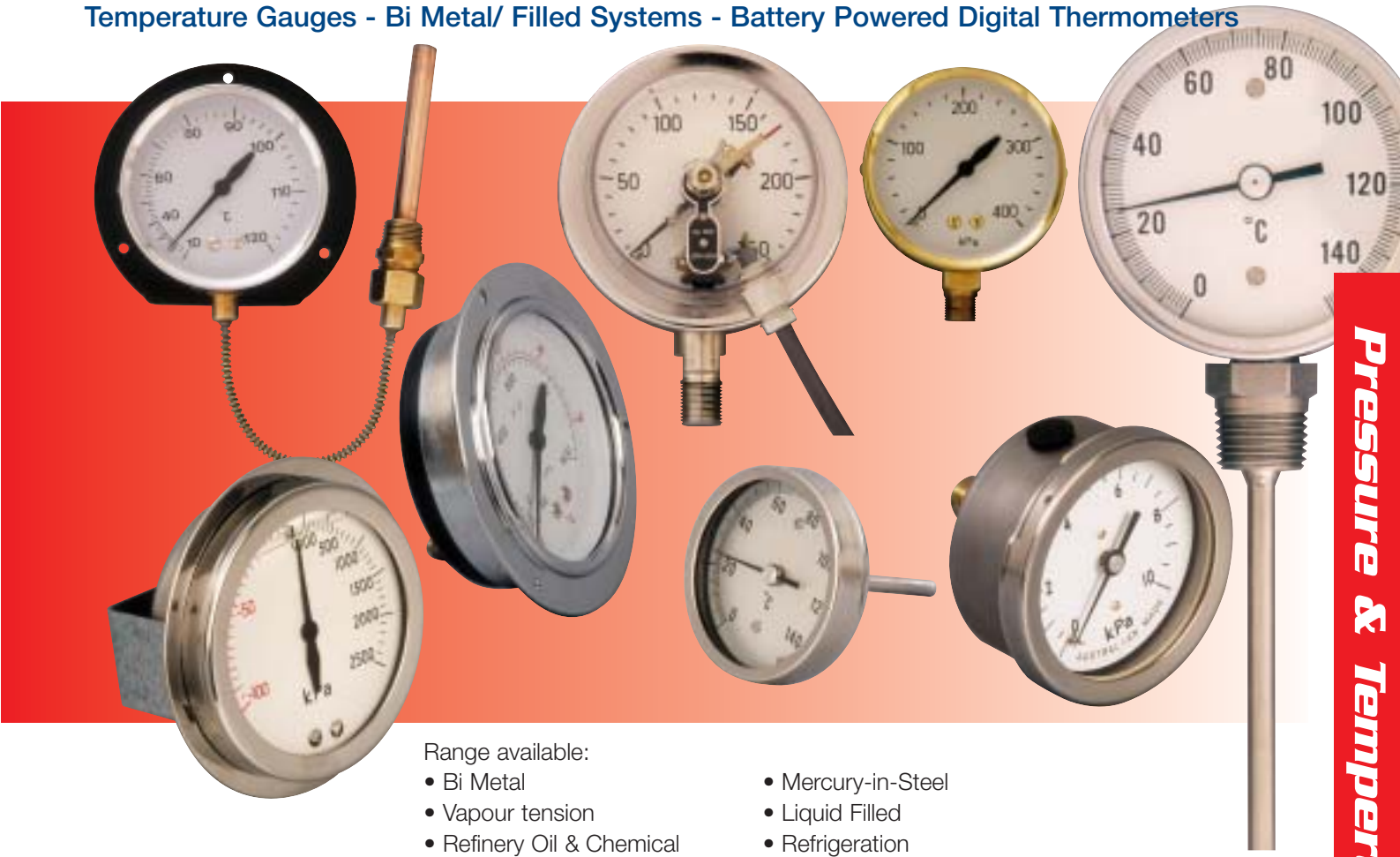
Materials available:

1. Pythagoras GR610 (1400°C)
2. Alsint AL23 (1700°C)
3. Mullite
4. Sialon (silicon nitrade & alumina)
5. Silicon carbide
6. Laminated ceramic c/w 3/4" BSP
7. Speciality laminated ceramic
8. 316 Stainless Steel
9. 253MA (3/8", 1/2" and 3/4" NB Schd 40)
10. Inconel 600 and 601
11. Cast Iron
12. Chrome Iron (4C54) and more

I.T.S. can supply the above with or without special protective coatings for your exact requirements. I.T.S. also stock a full range of insulator rods, tubes and insulator beads in various materials for your exact temperature needs.

Pressure & Temperature Gauges *Direct/Flush/Surface*

Temperature Gauges - Bi Metal/ Filled Systems - Battery Powered Digital Thermometers



Range available:

- Bi Metal
- Vapour tension
- Refinery Oil & Chemical
- Ammonia
- Low Pressure Capsule
- Foodstuffs & Beverage
- Mercury-in-Steel
- Liquid Filled
- Refrigeration
- Receiver
- Electric Contacts (Magnetic Assisted)

Diaphragm Seals

For all industries. Corrosive or Non Corrosive.
Offered in 316 Stainless Steel, Brass, PTFE.
Special Materials on request.

Thermowells

I.T.S. manufacture and supply an extensive range of fabricated and machined barstock thermowells. These are available in numerous material grades, construction styles, process and instrument connection threads, flange size and ratings and immersion lengths. A sample of the vast range we can supply for your specific application requirements is pictured.

Ordering information required.

- **Construction type:** Fabricated or barstock
- **Construction style:** Parallel, taper or step-down
- **Material:** Brass, S/S, incoloy etc
- Instrument and process connection thread type & size
- Flange size & rating, head/lagging length (std 50mm)
- Immersion length
- Bore diameter
- Stem diameters: **1.** Parallel (OD)
  2. Taper (stem major & minor OD's)
  3. Step-down (all OD's)
- Lagging length (if required)
- Contact fluids/materials
- Process maximum pressure and temperature

Additional information

- Standard materials inc: Brass, 316 S/S, 304 S/S, monel, incoloy, 253MA, carbon steel and many others. (Materials selection chart available on request).
- Standard instrument connections: 1/4" to 1" BSP or NPT (others on request).
- Standard process connections: 3/8" to 2" BSP or NPT (others on request).
- Flange and weld metal are of the same material unless otherwise specified.
- All flanged fabricated thermowells are supplied with forged flanges conforming to Australian, American, British and European standards as specified and are stamped accordingly.
- Test thermowells can be supplied with plug and chain or cap and chain, in either brass or steel.
- All thermowells can be stamped with material, part no. and location tag no.
- Thermowell overall maximum length subject to material availability and some manufacturing limits - eg. bore drilling.

Special Coatings

Special coatings are available on all I.T.S. thermowells to provide extra protection against specific contact fluids in the process. Coatings include:- Unichrome, PVC, teflon, stellite, tungsten carbide, ceramic, lead and others.

Heat Treatment

I.T.S. can supply thermowells that have been heat treated for your specific application requirements.

All I.T.S. barstock thermowells are subjected to a hydrostatic pressure test to ensure reliability. Extremely critical installations may require further inspection of the metal structure. Listed below are various testing certificates available if required:-

- Certified material test certificate
- Certified spectroanalysis test certificate
- Certified dye penetrant test certificate
- Certified ultrasonic test certificate
- Certified material hardness test certificate
- Certified material compliance certificate.

Level Measurement Float Switches

Description

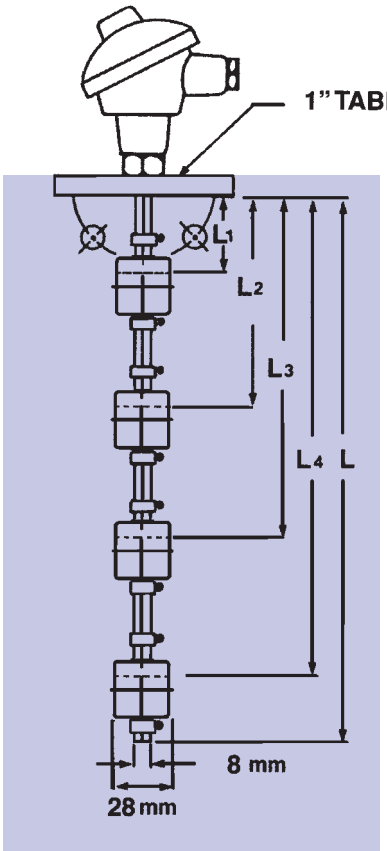
- Aluminium Terminal Head
- 1” Table D Flange or 1” BSP Plug
- All Wetted Part 316 SS
- Multiple Floats
- Operating Temperature -55 to 150°C

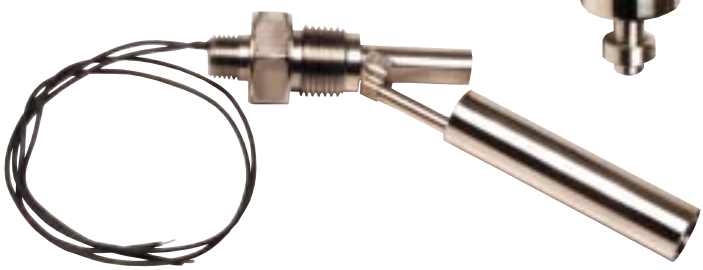
Electrical Specification

- Switching Voltage 250 VAC /200DC
- Switching Current 1 Amps AC / DC
- Switching Power 30 W AC / DC
- Minimum Voltage Breakdown 430V DC

Options

- 316 SS or Plastic Terminal Head
- BSM, Tri-Clamp and other Process Connections
- Customisation Available on Request



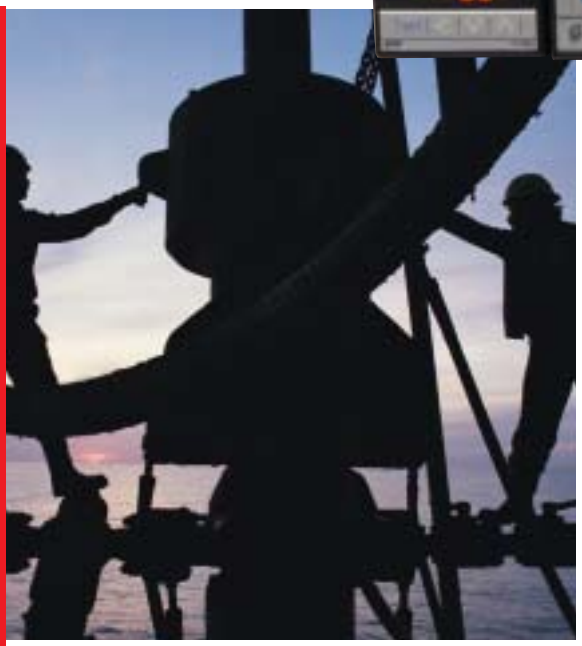


Other types of Level Measurement available:

- RF Admittance
- Radar
- Magnetostrictive
- Conductivity Switch
- Ultrasonic
- Time Domain Reflectometry (TDR)
- Hydrostatic Pressure
- Float Switch

MODEL	TERMINATION	PROCESS CONNECTION	FLOAT No.
BKF	S/S Head Diecast Head Bakelite Head Flying Leads	F.Table ‘D’ Flange P. 1” BSP Plug O. Other on request	1. One Float 2. Two Float 3. Three Float 4. Four Float 5. Specify

Temperature Controllers



GRC Series are the state of the art temperature controllers developed to provide easy and user friendly control.

Features:

- Universal Temperature Sensor Input
- PID with Auto Tune Function
- Analogue input - scaleable
- Large Bright Dual LED display
- Supply 85-240 VAC or 24VDC
- Input: T/C, RTD, DC Volt, 4-20mA
- Output 1: Relay contact, SSR DC Voltage pulse, 4-20 mA
- Output 2: Relay contact, SSR DC Voltage pulse, 4-20 mA
- Alarms: Relay contact: configurable.

Ordering Code

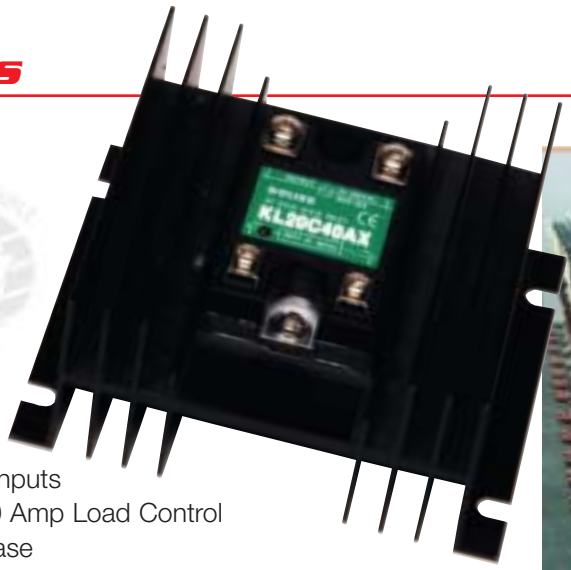
Specifications	Description	Model
	48 X 48	FY400
	96 X48	FY600
Size	72 X 72	FY700
	48 X 96	FY800
	96 X 96	FY900
Control Output 1	None	0
	Relay contact SPDT 3A/240VAC	1
	SSR voltage pulse, 20Vdc/20mA	2
	Current, 4~20mA into 500 ohms	3
	Open loop motor	7
Control Output 2	None	0
	Relay contact SPDT 3A/240VAC	1
	SSR voltage pulse, 20Vdc/20mA	2
	Current, 4~20mA into 500 ohms	3
Alarm	None	0
	First alarm	1
	Second alarm	2
	Third alarm	3
Auxiliary output	None	0
	0-20mA	1
Remote input	None	0
	4~20mA	1
	0~20mA	2

Solid State Relays

KR SERIES
KR2010AX
KR2025AX
KR2040AX

KD SERIES
KD20C10AX
KD20C25AX
KD20C40AX
KD20C75AX

KL SERIES
KL20C10AX
KL20C25AX
KL20C40AX
KL20C75AX



Available in:
- AC & DC Control Inputs
- 240 Volt AC 10-40 Amp Load Control
- Single & Three Phase
- Heat Sinks
- Air Cooled Assemblies

Clamp Meters

ITS can supply a full range of TES measurement instruments to meet each customer's particular specification requirements.

TES3092 AC/DC Digital Clamp Meter (Mini Type)

TES-3074 Phase Sequence Clamp Meter

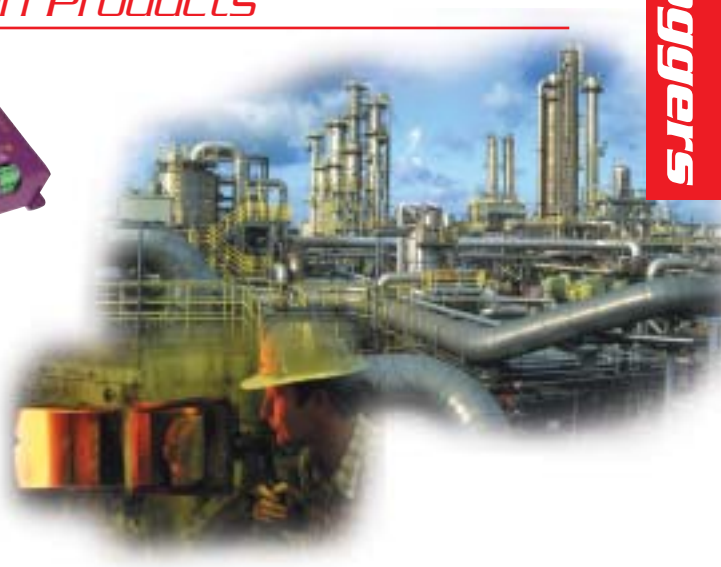
TETES-3010/3012 AC Clamp Meter

Data Loggers & Data Acquisition Products

DT800 High Performance

DT500 Low Power

DT600 General Purpose



	Insulation	Max Temp	Gauge	Wire Size	Grade	Type No.
Type K	PVC/ PVC	105°C	24	7/ 0.2	EXT	KX - 0702 - PPO
	PVC/ PVC	105°C	20	14/ 0.2	EXT	KX - 1402 - PPO
	PVC/ Mylar /PVC	105°C	20	7/ 0.28	EXT	KX - 201PC/ PC031- 20F
	Fibreglass	480°C	24	Solid	T/C	K - FB/ FB - 24
	Fibreglass	480°C	20	Solid	T/C	K - FB/ FB - 20
	Fibreglass	480°C	24	7/ 0.2	T/C	K - FB/ FB - 24F
	Fibreglass	480°C	20	7/ 0.28	T/C	K - FB/ FB - 20F
	Fibreglass TC Braid	480°C	24	7/ 0.2	T/C	K - FB/ FBTC - 24F
	Fibreglass TC Braid	480°C	20	7/ 0.28	T/C	K - FB/ FBTC - 20F
	Fibreglass SS Braid	480°C	24	7/ 0.2	T/C	K - FB/ FBSS - 24F
	Fibreglass SS Braid	480°C	20	7/ 0.28	T/C	K - FB/ FBSS - 20F
	Teflon - FEP Twisted Pair	204°C	24	Solid	T/C	K - TE/ TW - 24
	Teflon - FEP Twisted Pair	204°C	24	7/ 0.2	T/C	K - TE/ TW - 24F
	Teflon - PFA	260°C	24	Solid	T/C	K - TA/ TA - 24
	Teflon - PFA	260°C	24	7/ 0.2	T/C	K - TA/ TA - 24F
	Teflon - PFA	260°C	20	7/ 0.28	T/C	K - TA/ TA - 20F
Type J	PVC/ PVC	105°C	24	7/ 0.2	EXT	JX - 0702 - PPO
	PVC/ PVC	105°C	20	14/ 0.2	EXT	JX - 1402 - PPO
	PVC/ Mylar /PVC	105°C	20	7/ 0.28	EXT	JX - 201PC/ PC301- 20F
	Fibreglass	480°C	24	Solid	T/C	J - FB/ FB - 24
	Fibreglass	480°C	20	Solid	T/C	J - FB/ FB - 20
	Fibreglass	480°C	24	7/ 0.2	T/C	J - FB/ FB - 24F
	Fibreglass	480°C	20	7/ 0.28	T/C	J - FB/ FB - 20F
	Fibreglass TC Braid	480°C	24	7/ 0.2	T/C	J - FB/ FBTC - 24F
	Fibreglass TC Braid	480°C	20	7/ 0.28	T/C	J - FB/ FBTC - 20F
	Fibreglass SS Braid	480°C	24	7/ 0.2	T/C	J - FB/ FBSS - 24F
	Fibreglass SS Braid	480°C	20	7/ 0.28	T/C	J - FB/ FBSS - 20F
	Teflon - PFA	260°C	24	7/ 0.2	T/C	J - TA/ TA - 24F
Type N	PVC/ PVC	105°C	24	7/ 0.2	EXT	NX - PC/ PC - 24F
	PVC/ PVC	105°C	20	7/ 0.28	EXT	NX - PC/ PC - 20F
	PVC/ Mylar /PVC	105°C	20	7/ 0.28	EXT	NX - 201PC/ PC031- 20F
	Fibreglass	480°C	24	Solid	T/C	N - FB/ FB - 24
	Fibreglass	480°C	20	Solid	T/C	N - FB/ FB - 20
	Fibreglass	480°C	24	7/ 0.2	T/C	N - FB/ FB - 24F
	Fibreglass	480°C	20	7/ 0.28	T/C	N - FB/ FB - 20F
	Fibreglass TC Braid	480°C	24	7/ 0.2	T/C	N - FB/ FBTC - 24F
	Fibreglass TC Braid	480°C	20	7/ 0.28	T/C	N - FB/ FBTC - 20F
	Fibreglass SS Braid	480°C	24	7/ 0.2	T/C	N - FB/ FBSS - 24F
	Fibreglass SS Braid	480°C	20	7/ 0.28	T/C	N - FB/ FBSS - 20F
Type T	PVC/ PVC	105°C	24	7/ 0.2	EXT	TX - PC/ PC - 24F
	PVC/ PVC	105°C	20	7/ 0.28	EXT	TX - PC/ PC - 20F
	PVC/ Mylar /PVC	105°C	20	7/ 0.28	EXT	TX - 201PC/ PC031- 20F
	Teflon - FEP Twisted Pair	204°C	24	Solid	T/C	T - TE/ TW - 24
	Teflon - FEP Twisted Pair	204°C	24	7/ 0.2	T/C	T - TE/ TW - 24F
	Teflon - PFA	260°C	24	Solid	T/C	T - TA/ TA - 24
	Teflon - PFA	260°C	24	7/ 0.2	T/C	T - TA/ TA - 24F
Type R/S	PVC/ PVC	105°C	20	7/ 0.28	EXT	RSX - PC/ PC - 20F
	PVC/ Mylar/ PVC	105°C	20	7/ 0.28	EXT	RSX - 201PC/PC031-20F

Thermocouple Wire - Colour Chart

ANSI Code	Alloy Combination + Lead	Alloy Combination - Lead	Colour Coding Thermocouple Grade	Colour Coding Extension Grade	Maximum Temperature Range	EMF (mV) Over Max. Temperature Range	Limits of Error (Whichever is Greater) for new wire Standard	Limits of Error (Whichever is Greater) for new wire Special	International IEC 584-3	International IEC 584-3 *Intrinsically safe*	CZECH BRITISH to BS 1843	DUTCH GERMAN to DIN 43710	JAPANESE to JIS C1610-1981	FRENCH to NFE-18001	Comments Environment- Bare Wire	ANSI Code
J	IRON Fe (magnetic)	CONSTANTAN - COPPER-NICKEL Cu-Ni			-210 to 760°C Thermocouple Grade 0 to 200°C Extension Grade	-8.095 to 43.559	2.2°C or 0.75%	1.1°C or 0.4%							Reducing, Vacuum, Inert, Limited Use in Oxidizing at High Temperatures Not Recommended for Low Temperatures	J
K	NICKEL-CHROMIUM Ni-Cr	NICKEL-ALUMINUM Ni-Al (magnetic)			-270 to 1150°C Thermocouple Grade 0 to 200°C Extension Grade	-6.458 to 49.995	2.2°C or 0.75% Above 0°C 2.2°C or 2.0% Below 0°C	1.1°C or 0.4%							Clean Oxidizing and Inert. Limited Use in Vacuum or Reducing. Becomes unstable from 1050°C	K
V*	COPPER Cu	CONSTANTAN COPPER-NICKEL Cu-Ni	NONE ESTABLISHED	NONE ESTABLISHED	0 to 80°C Extension Grade										Alternative to KX type extension wire for low temperatures; Not recommended for general use	V*
T	COPPER Cu	CONSTANTAN COPPER-NICKEL Cu-Ni			-270 to 400°C Thermocouple Grade -60 to 100°C Extension Grade	-6.258 to 20.872	1.0°C or 0.75% Above 0°C 1.0°C or 1.5% Below 0°C	0.5°C or 0.4%							Mild Oxidizing, Reducing Vacuum or Inert. Good where Moisture is Present. Low Temperature and Cryogenic Applications	T
E	NICKEL-CHROMIUM Ni-Cr	CONSTANTAN COPPER-NICKEL Cu-Ni			-270 to 1000°C Thermocouple Grade 0 to 200°C Extension Grade	-9.835 to 76.373	1.7°C or 0.5% Above 0°C 1.7°C or 1.0% Below 0°C	1.0°C or 0.4%							Oxidizing or Inert. Limited use in Vacuum or Reducing. Highest EMF Change per Degree	E
N	NICROSIL Ni-Cr-Si	NISIL Ni-Si-Mg			-270 to 1300°C Thermocouple Grade 0 to 200°C Extension Grade	-4.345 to 47.513	2.2°C or 0.75% Above 0°C 2.2°C or 2.0% Below 0°C	1.1°C or 0.4%				NO STANDARD USE AMERICAN COLOUR CODES			Clean, Oxidizing, Inert, Reducing, Vacuum. More Stable up to 1300°C	N
R	PLATINUM-13% RHODIUM Pt-13% Rh	PLATINUM Pt	NONE ESTABLISHED		-50 to 1768°C Thermocouple Grade 0 to 150°C Extension Grade	-0.226 to 21.101	1.5°C or 0.25%	0.6°C or 0.1%							Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature	R
S	PLATINUM-10% RHODIUM Pt-10% Rh	PLATINUM Pt	NONE ESTABLISHED		-50 to 1768°C Thermocouple Grade 0 to 150°C Extension Grade	-0.236 to 18.693	1.5°C or 0.25%	0.6°C or 0.1%							Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature	S
U*	COPPER Cu	COPPER LOW NICKEL Cu-Ni	NONE ESTABLISHED		0 to 50°C Extension Grade										Extension grade connecting wire for R & S thermocouples; also known as RX and SX extension wire	U*
B	PLATINUM-30% RHODIUM Pt-30% Rh	PLATINUM-6% RHODIUM Pt-6% Rh	NONE ESTABLISHED		0 to 1820°C Thermocouple Grade 0 to 100°C Extension Grade	0 to 13.820	0.5% over 800°C	NOT ESTABLISHED			NO STANDARD USE COPPER WIRE			NO STANDARD USE COPPER WIRE	Oxidizing or Inert. Do Not Insert in Metal Tubes. Beware of Contamination. High Temperature. Common Use in Glass Industry	B
G* (W)	TUNGSTEN W	TUNGSTEN 26% RHENIUM W-26% Re	NONE ESTABLISHED		0 to 2320°C Thermocouple Grade 0 to 260°C Extension Grade	0 to 38.564	4.5°C to 425°C 1.0% to 2320°C	NOT ESTABLISHED			NO STANDARD USE AMERICAN COLOUR CODES				Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C. Not for Oxidizing Atmosphere	G* (W)
C* (W5)	TUNGSTEN-5% RHENIUM W-5% Re	TUNGSTEN 26% RHENIUM W-26% Re	NONE ESTABLISHED		0 to 2320°C Thermocouple Grade 0 to 870°C Extension Grade	0 to 37.066	4.5°C to 425°C 1.0% to 2320°C	NOT ESTABLISHED			NO STANDARD USE AMERICAN COLOUR CODES				Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C. Not for Oxidizing Atmosphere	C* (W5)
D* (W3)	TUNGSTEN-3% RHENIUM W-3% Re	TUNGSTEN-25% RHENIUM W-25% Re	NONE ESTABLISHED		0 to 2320°C Thermocouple Grade 0 to 260°C Extension Grade	0 to 39.506	4.5°C to 425°C 1.0% to 2320°C	NOT ESTABLISHED			NO STANDARD USE AMERICAN COLOUR CODES				Vacuum, Inert, Hydrogen. Beware of Embrittlement. Not Practical Below 399°C. Not for Oxidizing Atmosphere	D* (W3)

*Not official symbol or standard

Industrial Thermocouple Supplies Pty Ltd

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