
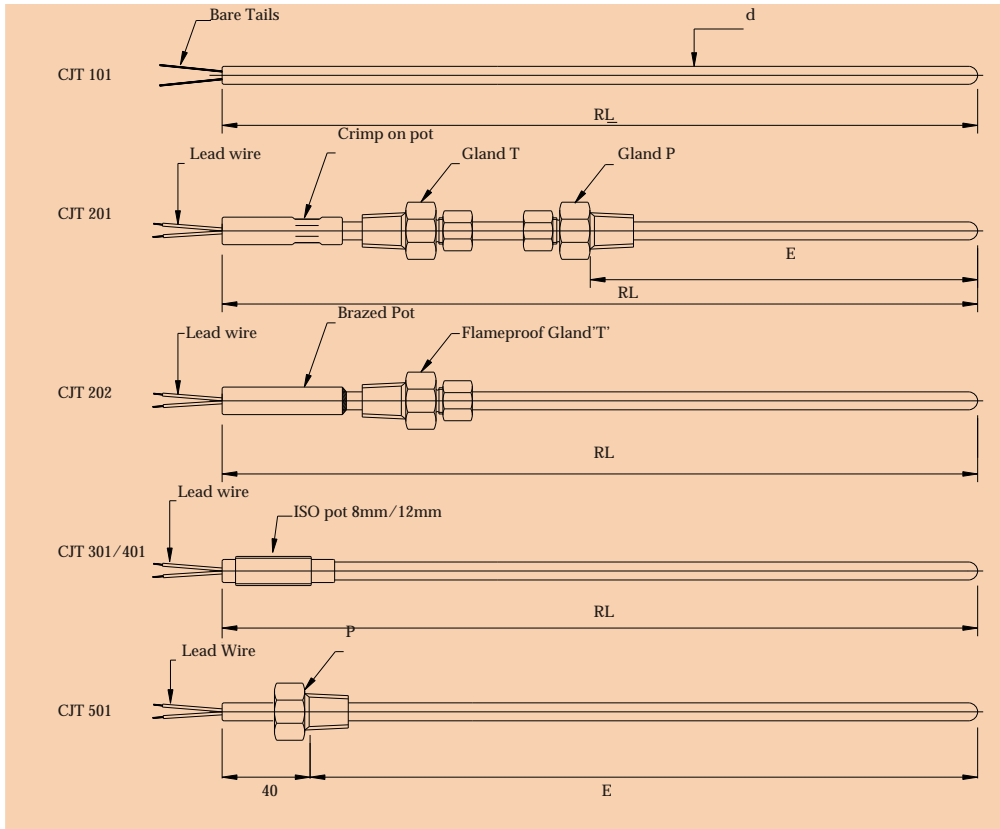


100 Series
Thermocouple &
Resistance Thermometer
Inserts/probes

- Manufactured as per IEC 1515-1995
- Metal Sheathing and mineral insulation reduces overall size of inserts.
- Can be used at relatively higher temperatures.
- Pliable and can be routed through high temperature environment.
- Available with a choice of cold end termination (CJT's) and connectors.
-  Certified for use in hazardous area.



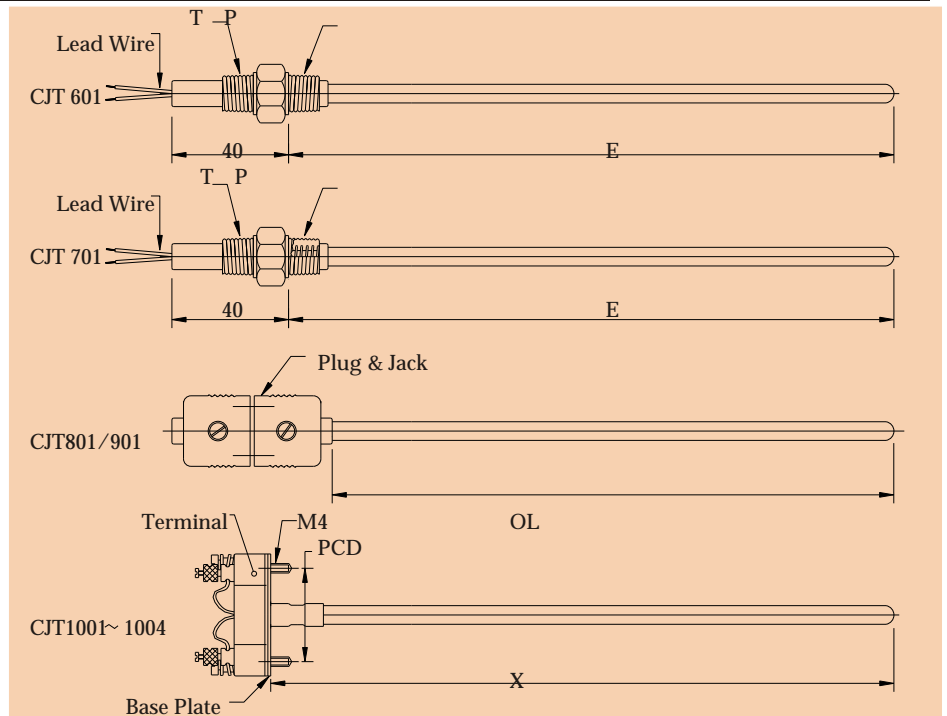
| Code | No of Elements | Code | Options |
|---------|---|---------|--|
| 1 | Simplex | 0 | None |
| 2 | Duplex | 15 | Grounded Junction |
| 3 | Triplex | | |
| Code | Elements | Code | Mounting Threads |
| J | Iron-Constantan | P/T | 1/4", 1/2"NPT or M20x1.5 |
| K | Chromel-Alumel | C | Not applicable. |
| T | Copper-Constantan | | |
| E | Chromel-Constantan | | |
| N | Nicrosil-Nisil | | |
| R | PtRh 13%-Pt | | |
| S | PtRh 10%-Pt | | |
| B | PtRh30%-PtRh6% | | |
| Pt | Pt100 RTD | | |
| Code | Sheath Dia | Code | Lead wire types |
| 1.5 | 1.5mm | 1 | PTFE insulated |
| 3 | 3.0mm | 2 | PTFE with SS over braid |
| 4.5 | 4.5mm | 3 | PTFE with SS flexhose |
| 6.0 | 6.0mm | 4 | PTFE + FG with SS over braid |
| 8.0 | 8.0mm | 5 | PTFE + FG with SS Flexhose |
| 10 | 10.0mm | | |
| 12 | 12.0mm | | |
| Code | Sheath Material | Code | Lead wire length |
| 316 | 316SS | A | Standard length 150mm |
| 321 | 321SS | B | Longer length (define) |
| 446 | 446SS | C | None, bare tails. |
| Inc | Inconel 600 | | |
| Code | CJT Details | Code | CJT Details |
| CJT 101 | none, hot end junction made & baretails | CJT 701 | Crimp-on pot + Spring loaded connector both sided. |
| CJT 201 | Crimp-on Pot with lead wire | CJT 801 | Miniature Plug & Jack |
| CJT 301 | Brazed pot with flameproof(Exd IIC) gland | CJT 901 | Standard Plug and jack |
| CJT 401 | 12mm ISO pot with lead wire | CJT1001 | Spring loaded Terminal block OD=41, PCD=33 |
| CJT 501 | Crimp-On pot + Fixed connector P on one side | CJT1001 | SS Base plate OD=41, PCD=33 |
| CJT601 | Crimp-On pot + Fixed connector P&T on both side | CJT1001 | SS Base plate OD=55, PCD=46 |
| Code | Length of Insert/Probe | | |
| RL | Route length | | |
| 'E' | Length inclusive of connector threads | | |
| 'X' | Length below base plate of terminal Block | | |

ORDERING EXAMPLE
100 SERIES 1-K-6-316-CJT101-RL-A-1-C-Op0

100 Series

Thermocouple & Resistance Thermometer Inserts/Probes

- Available in ANSI TC Types J,K,T,E,N,R,S & B (IEC- 584- Part 1,2, &3)
- Pt100 RTDs to IEC 751- 1995
- Ungrounded Hot junction As a standard feature.
- Integral lead wires with PTFE Or fiberglass insulation
- Special designs to suit Your applications.



MI TC CABLE DETAILS(BASE METAL Tc's)

MsMi Thermocouple sensors employ a metal sheathed, Mineral insulated cable with matched Thermocouple conductors. The insulation is a compacted mass of MgO and this heterogenous cable, when converted into a Thermocouple sensor offers many unique advantages over the conventional ceramic bead insulated Thermocouples. MsMi Thermocouple sensors are pliable, can be bent, coiled, routed through bends or intricate paths, bundled together to form a Multiple sensor assembly or welded to a tube or any surface to measure skin temperatures. The junction and Thermocouple conductors are not exposed to process fluids thus ensuring a longer usable life.

Mi Thermocouples sensors are generally supplied with their hot junction isolated or ungrounded from the sheath. This enables the users to carry out periodical checking of the Thermocouple sensors. Bonded or grounded junction sensors are also supplied against request.

Mi Resistance Thermometer sensor incorporates a wire wound element conforming to IEC 751 Class "A" or "B". The element leads are extended to the open end of the sensor by means of a MsMi Transducer lead out cable employing copper conductors, compact mass of MgO as insulation and stainless steel sheath conforming to AISI 316. This standard overall sheath diameter available are 6mm and 3.2mm employing Ms MI cable of 5mm and 2.8mm dia respectively.

Sensors, when built, are subject to all the routine tests as per IEC 751-1995. Type tests and any other special test can be carried out by mutual agreement.

| SINGLE | | J,K,T,E,N | 3.0 4.5 6.0 8.0 | 0.6 0.9 1.2 1.6 | | |
|--------|--|-----------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | DUPLEX | | J,K,T,E,N | 3.0 4.5 6.0 8.0 | 0.5 0.5 0.9 1.2 |

LEAD OUT CABLE DETAILS

| | |
|---|--|
| CODE 1: PTFE Insulated Lead wires | |
| CODE 2: PTFE Insulated Lead wires with SS Over braid | |
| CODE 3: PTFE Insulated Lead wires with SS Flexhose | |
| CODE 4: PTFE + FG With SS Over Braid | |
| CODE 5: PTFE + FG With SS Flexhose | |

110 Series

*Thermocouple & Resistance
Thermometer Assemblies less well*

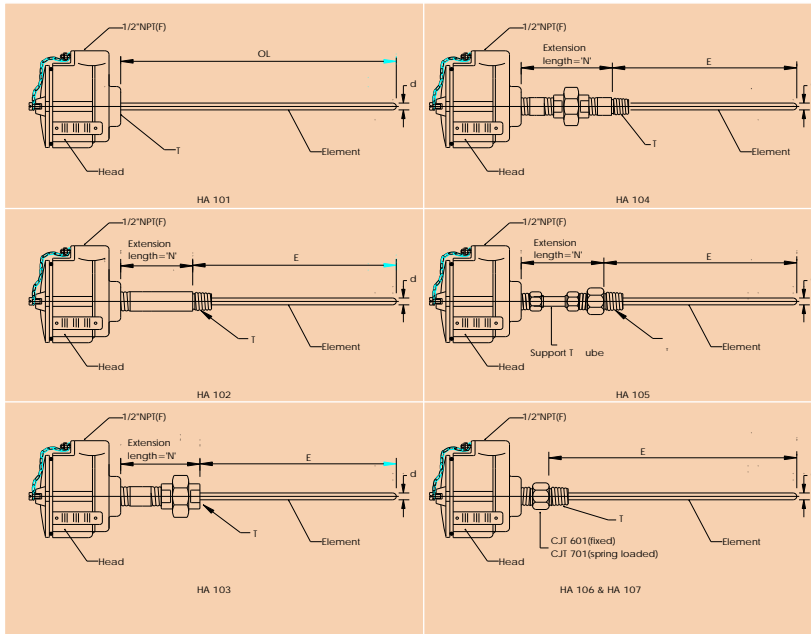
Suitable for replacement for existing installations.

Various head assembly types to choose from.

Flameproof or Weatherproof execution in SS316 or Aluminum.

Terminal head in die cast Aluminum or in 316SS.

Available with "in-head" 2-wire Temperature Transmitter.



| Code | No of Elements |
|------|----------------|
| 1 | Simplex |
| 2 | Duplex |
| 3 | Triplex |

| Code | Elements |
|------|--------------------|
| J | Iron-Constantan |
| K | Chromel-Alumel |
| T | Copper-Constantan |
| E | Chromel-Constantan |
| N | Nicrosil-Nisil |
| R | PtRh 13%-Pt |
| S | PtRh 10%-Pt |
| B | PIRh30%-PIRh6% |
| Pt | Pt100 RTD |

| Code | Sheath Dia |
|------|------------|
| 1.5 | 1.5mm |
| 3 | 3.0mm |
| 4.5 | 4.5mm |
| 6.0 | 6.0mm |
| 8.0 | 8.0mm |
| 10 | 10.0mm |
| 12 | 12.0mm |

| Code | Sheath Material |
|------|-----------------|
| 316 | 316SS |
| 321 | 321SS |
| 446 | 446SS |
| Inc | Inconel 600 |

| Code | Head T type |
|------|--------------------|
| D | Weatherproof |
| F | Flameproof IIA/IIB |
| C | Flameproof IIC |
| JB | Junction Box |

| Code | No of entries |
|------|---------------|
| 1 | One entry |
| 2 | Two entries |

| Code | Options |
|------|---------------------|
| 0 | None |
| 1 | Head in 304SS |
| 2 | Head in 316SS |
| 3 | Extension in 304SS |
| 4 | Other Conduit entry |
| 6 | In Head Transmitter |
| 7 | Brass Cable Gland |
| 8 | SS Cable Gland |
| 10 | Special requirement |

| Code | Mounting Threads |
|------|------------------|
| 1 | 1/2" NPT(F) |
| 2 | 1/2" NPT(M) |
| 3 | M20x1.5(F) |
| 4 | M20x1.5(M) |
| 5 | 1/2" BSP(F) |
| 6 | 1/2" BSP(M) |
| 7 | Other (Define) |

| Code | Length 'N' |
|------|--------------------------|
| A | Standard length of 150mm |
| B | Define 'N' |
| C | None |

| Code | Length of Insert/ Probe |
|------|---------------------------------|
| E | Length inclusive of threads 'T' |
| OL | Overall length |

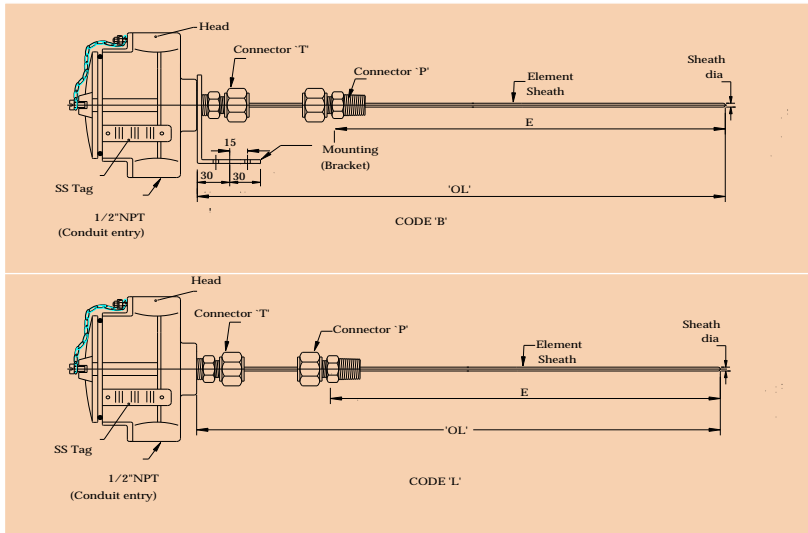
| Code | Head | Assembly |
|-------|--|----------|
| HA101 | Head only with female threads 'T' | |
| HA102 | Head-Nipple with male threads 'T' | |
| HA103 | Head-Nipple-Union with female Threads 'T' | |
| HA104 | Head-Nipple-Union-Nipple with Male threads 'T' | |
| HA105 | Head with support Tube and Connector 'T' | |
| HA106 | Head with insert C/JT 601 | |
| HA107 | Head with insert C/JT 701 | |

ORDERING EXAMPLE
110 SERIES 1-Pt-6-316-D-1-HA105-E-N=75-3-Op0

120 Series

Thermocouple & Resistance Thermometer Assemblies less well

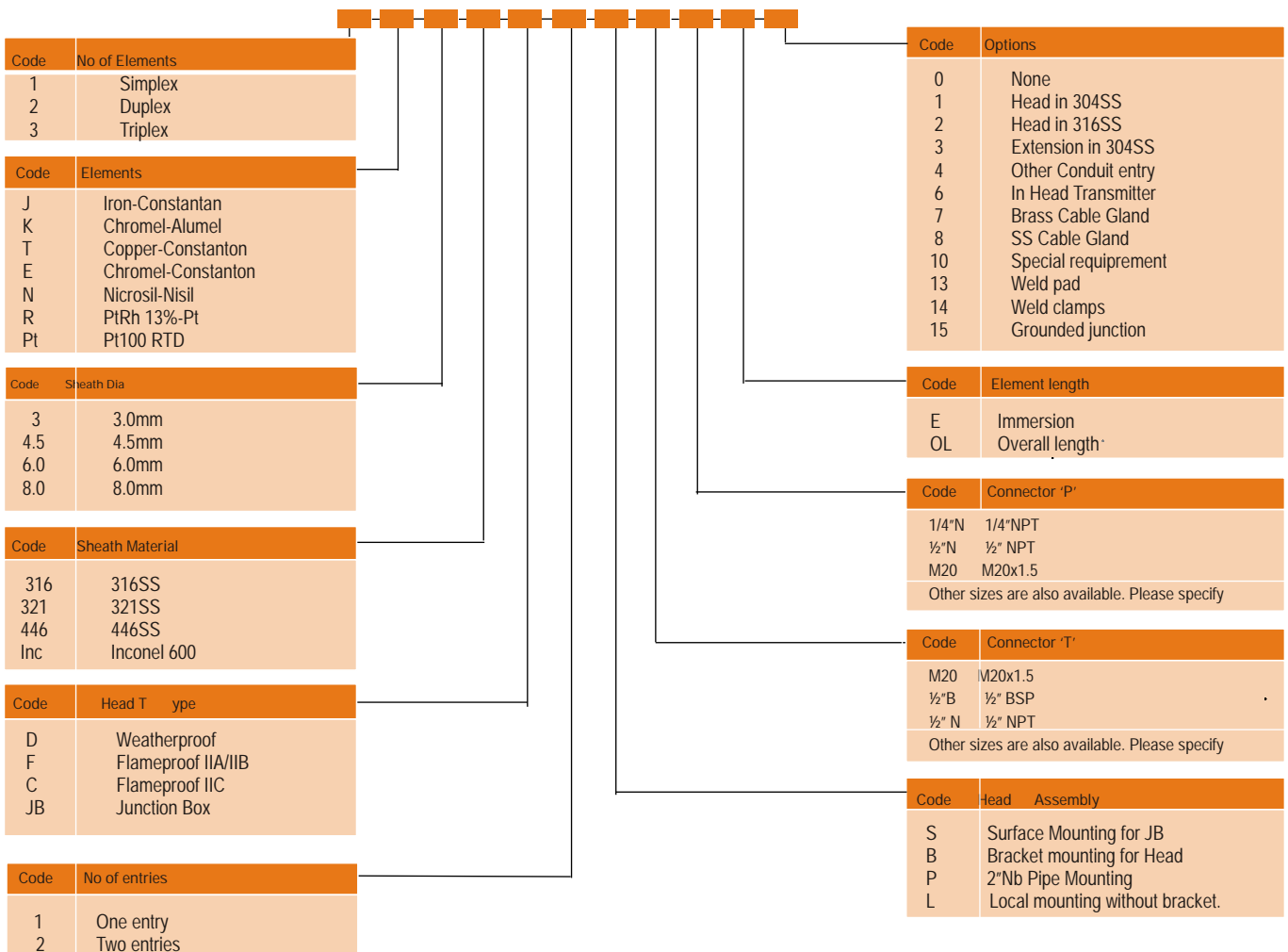
- With choice of adjustable connectors
- Long Pliable MI lead out, where required for intricate installation and high temperature route.
- Flameproof or Weatherproof execution in SS316 or Aluminum.
- Available with “in-head” 2-wire Temperature Transmitter.



Ms Mi Thermocouple or Resistance Thermometers can be provided with a long MI Lead out cable to engage its usage in intricate installations and in high temperature environment.

Typical application in turbine casing, SH/RH and drum metal temperature measurements in power plants and measurement of temperature in high temperature application in Fertiliser and Petrochemical plants.

These thermocouples can be provided with suitable connectors, weld pads and other accessories for particular use.

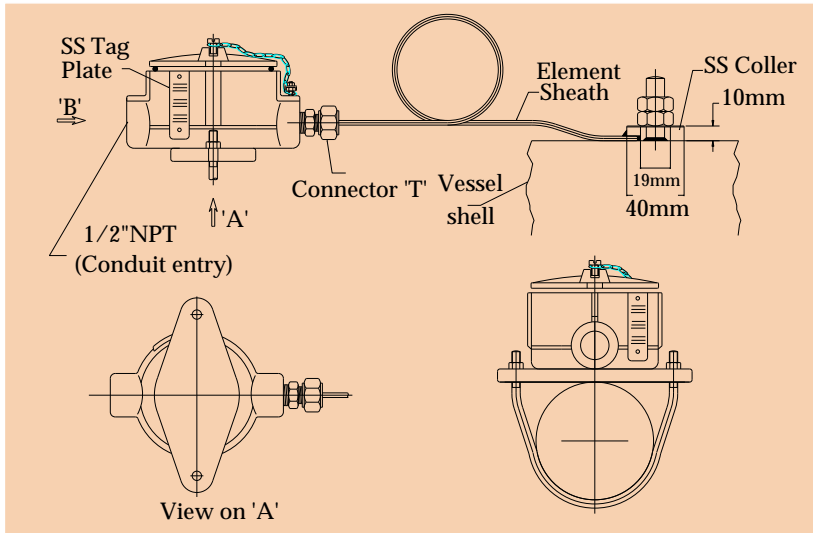


ORDERING EXAMPLE
120 SERIES 2-K-6-316-D-2-B-1/2\"/>

121 Series

Thermocouple & Resistance Thermometer Assemblies with

- Integral Coller.
- Long Pliable MI lead out, ideal for skin Temperature measurement.
- Weatherproof execution in SS316 or Aluminum.
- Available with "in-head" 2-wire Temperature Transmitter.
- Bracket mounting or 2"Nb pipe mounting.



Ms Mi Thermocouple or Resistance Thermometers can be provided with a long MI Lead out cable to engage its usage in intricate installations and in high temperature environment. An integral coller enables the Thermocouple to be fitted on the vessel/reactor surface.

Typical application are measurement of surface temperature of refractory lined vessels, columns, reactors in Petrochemicals plants and Oil Refineries.

These thermocouples are provided with a bracket for surface mounting or for mounting on 2" Nb Pipe.

| Code | No of Elements |
|------|----------------|
| 1 | Simplex |
| 2 | Duplex |
| 3 | Triplex |

| Code | Elements |
|------|-----------------|
| J | Iron-Constantan |
| K | Chromel-Alumel |
| Pt | Pt100 RTD |

| Code | Sheath Dia |
|------|------------|
| 3 | 3.0mm |
| 4.5 | 4.5mm |
| 6.0 | 6.0mm |
| 8.0 | 8.0mm |

| Code | Sheath Material |
|------|-----------------|
| 316 | 316SS |
| Inc | Inconel 600 |

| Code | Head Type |
|------|--------------------|
| D | Weatherproof |
| F | Flameproof IIA/IIB |
| C | Flameproof IIC |
| JB | Junction Box |

| Code | No of entries |
|------|---------------|
| 1 | One entry |
| 2 | Two entries |

| Code | Options |
|------|---------------------|
| 0 | None |
| 1 | Head in 304SS |
| 2 | Head in 316SS |
| 3 | Extension in 304SS |
| 4 | Other Conduit entry |
| 6 | In Head Transmitter |
| 7 | Brass Cable Gland |
| 8 | SS Cable Gland |
| 10 | Special requirement |
| 15 | Grounded junction |

| Code | Element length |
|------|-----------------------|
| OL | Define Overall length |

| Code | Coller Dimension |
|------|------------------------|
| A | OD=30, ID=19, thick=10 |
| B | OD=40, ID=19, thick=10 |
| C | OD=50, ID=19, thick=10 |

Other sizes are also available. Please specify

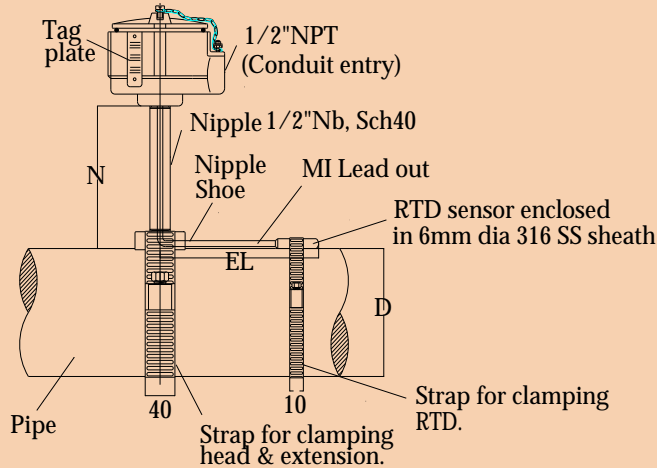
| Code | Connector 'T' |
|--------|---------------|
| 1/4" N | 1/4" NPT |
| 1/2" N | 1/2" NPT |

| Code | Head Assembly |
|------|---------------------------------|
| S | Surface Mounting for JB |
| B | Bracket mounting for Head |
| P | 2"Nb Pipe Mounting |
| L | Local mounting without bracket. |

ORDERING EXAMPLE
121 SERIES 2-K-6-316-D-2-B-1/2"N-A-OL=15M-Op15

123 Series

Thermocouple & Resistance Thermometer Assemblies with



- “Strap on” for pipe surface measurement.
- Pliable MI lead out, ideal for skin Temperature measurement of pipe or vessel surface.
- Weatherproof execution in SS316 or Aluminum.
- Available with “in-head” 2-wire Temperature Transmitter.
- Quick disconnect jack for using with hand held monitor

Ms Mi Thermocouple or Resistance Thermometers can be provided with a Pliable MI Lead out cable to engage its usage in intricate installations and for strapping on the pipe surface for skin temperature measurement of gas/oil pipelines or heat traced pipe lines.

These thermocouples or RTD's are provided with a stand out nipple for local mounting.

Thermocouples are provided with ungrounded junction unless specified otherwise.

| Code | No of Elements |
|------|----------------|
| 1 | Simplex |
| 2 | Duplex |

| Code | Elements |
|------|-----------------|
| J | Iron-Constantan |
| K | Chromel-Alumel |
| Pt | Pt100 RTD |

| Code | Sheath Dia |
|------|------------|
| 3 | 3.0mm |
| 4.5 | 4.5mm |
| 6.0 | 6.0mm |
| 8.0 | 8.0mm |

| Code | Sheath Material |
|------|-----------------|
| 316 | 316SS |
| Inc | Inconel 600 |

| Code | Head Type |
|------|--------------------|
| D | Weatherproof |
| F | Flameproof IIA/IIB |
| C | Flameproof IIC |
| JB | Junction Box |

| Code | No of entries |
|------|---------------|
| 1 | One entry |
| 2 | Two entries |

| Code | Options |
|------|-----------------------|
| 0 | None |
| 1 | Head in 304SS |
| 2 | Head in 316SS |
| 3 | Extension in 304SS |
| 4 | Other Conduit entry |
| 6 | In Head Transmitter |
| 7 | Brass Cable Gland |
| 8 | SS Cable Gland |
| 10 | Special requirement |
| 15 | Grounded junction |
| 28 | SS Pipe Strap |
| 40 | Quick Disconnect jack |

| Code | Element length along the pipe |
|------|-------------------------------|
| EL | Define |

| Code | Pipe Diameter |
|------|---------------|
| D | Define |

| Code | Extension length |
|------|------------------|
| N | Define |

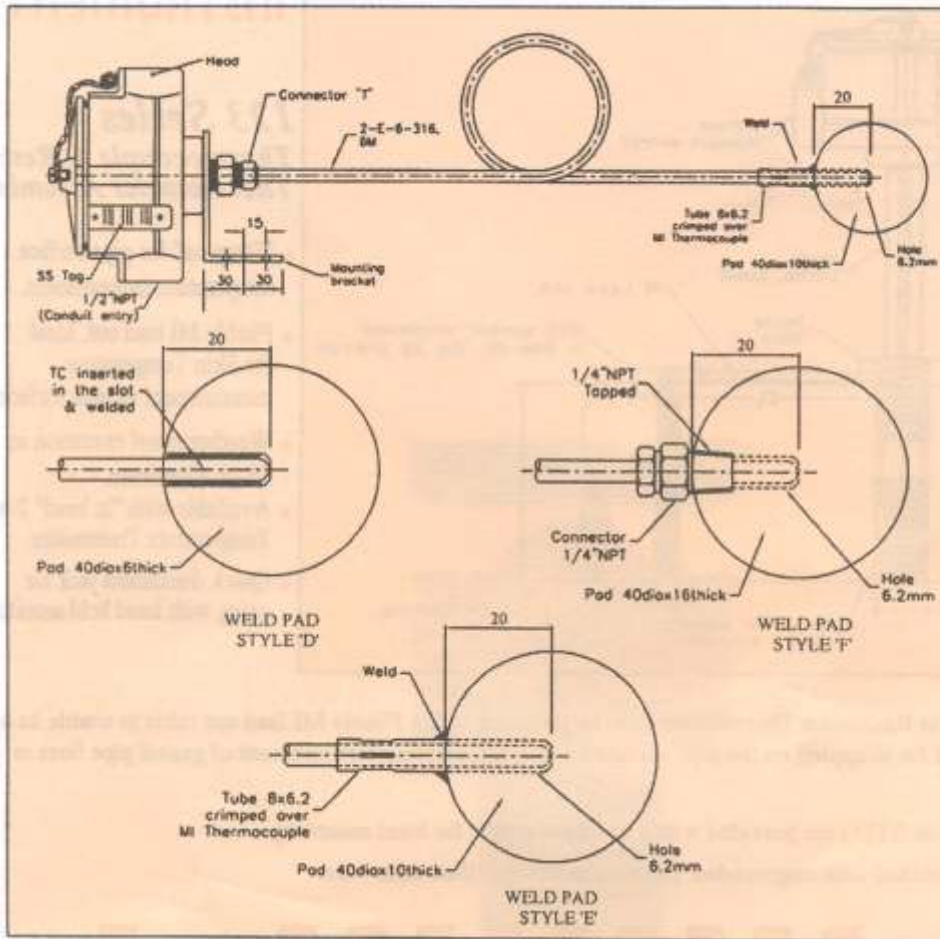
| Code | Mounting |
|------|--------------------------------------|
| L | Local mounting with extension Nipple |

ORDERING EXAMPLE
123 SERIES 1-Pt-6-316-D-1-L-N=200-D=32"-EL=200-Op28,40

Pyro Electric Instruments Goa Pvt Ltd.

Office : G/B, Hill Crown Apartments, College Road, Mapusa, Goa 403507; Email: pyroadmin@pyro-electric.in

Tel : 091-832-2252719/2264391; Fax : 091-832-2263294.



124 Series Thermocouple & Resistance Thermometer Assemblies, with

- Weld pad.
- Long, pliable MI lead out. Ideal for Skin Temperature measurement for vessel surface.
- Weather proof or flame proof execution in SS or Aluminum.
- Available with "in head" 2-wire Temperature Transmitter.
- Bracket mounting or 2"Nb pipe mounting.

124 Series

| Code | No of Elements |
|------|----------------|
| 1 | Simplex |
| 2 | Duplex |

| Code | Elements |
|------|--------------------|
| K | Chromel-Alumel |
| E | Chromel-Constantan |

| Code | Sheath Diameter |
|------|-----------------|
| 6.0 | 6.0mm |

| Code | Sheath Material |
|------|-----------------|
| 316 | 316 SS |
| Inc | Inconel 600 |

| Code | Head Type |
|------|----------------|
| D | Weatherproof |
| F | Flameproof IIC |

| Code | No of Entries |
|------|---------------|
| 1 | One Entry |
| 2 | Two Entry |

| Code | Mounting |
|------|---------------------------|
| B | Bracket mounting for Head |
| P | 2"Nb pipe Mounting |

| Code | Options |
|------|---------------------|
| 10 | Special requirement |
| 15 | Grounded junction |

| Code | Element Length |
|------|----------------|
| OL | 6M |

| Code | Pad dimn. |
|------|-----------------------|
| D | 40mm dia x 6mm thick |
| E | 40mm dia x 10mm thick |
| F | 40mm dia x 16mm thick |

Other sizes also available
Define pad material

| Code | Weld pad style |
|------|--------------------------------------|
| D | TC inserted in slot & TIG welded. |
| E | TC crimped to the tube welded to pad |
| F | TC fixed to pad through a connector |

| Code | Connector 'T' |
|-------|---------------|
| 1/4"N | 1/4"NPT |

ORDERING EXAMPLE

124 SERIES 2-E-6-316-D-2-B-1/4"N-E-E(Inc 600)-OL=6M-OPTION 15

PYRO ELECTRIC INSTRUMENTS GOA PVT.LTD.

Hill Crown Apt, College Road, Mapuca- 403507 Tel : 0832 - 2252719/ 2264391 Fax : 0832- 2263294
Email : sales@pyroelectricgoa.com, pyrogoa@sancharnet.in

Plot No. 71, Bicholim Ind. Estate, Bicholim (Goa) Tel.:0832 - 2361212 / 2362579 Fax: 0832 - 2363381
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Tel : (022) 24461547 Tel/Fax : (022) 24459936 Cell: 3897034 | Email : pyroelectric@sify.com Visit us at www.pyroelectricgoa.com

