
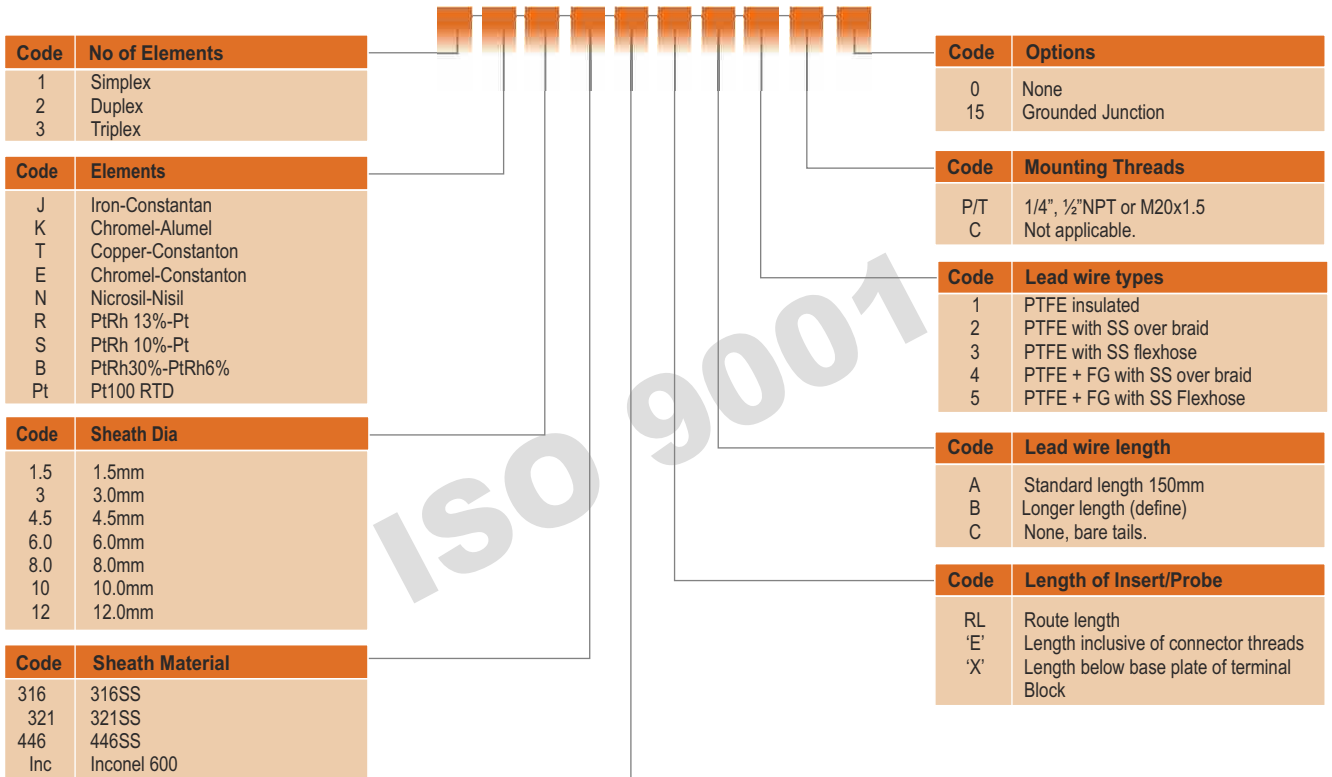
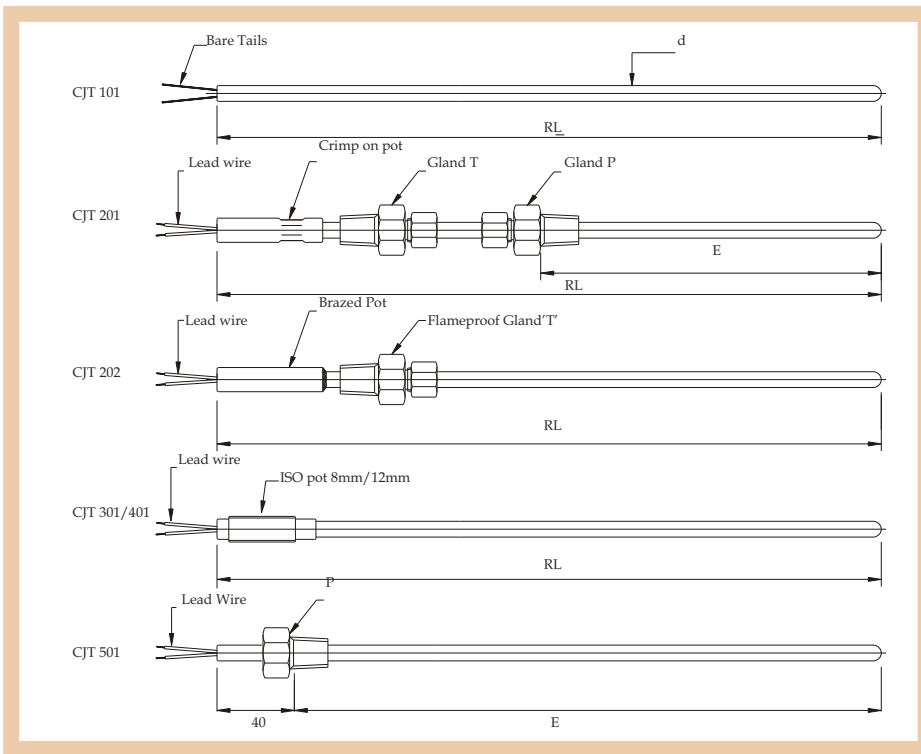


# 100# Series

## 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 (CJTs) and connectors.
- Certified for use in hazardous area. 

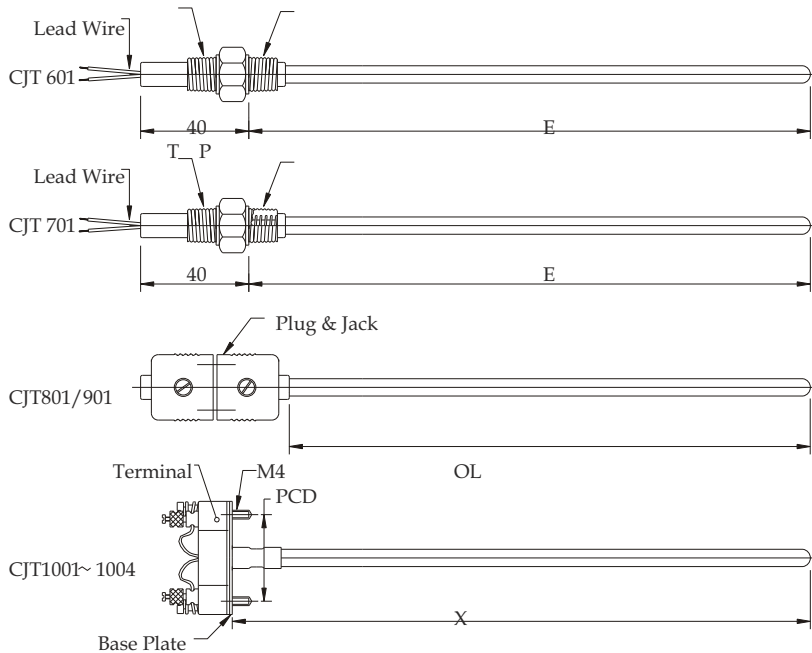


Code	CJT Details	Code	CJT Details
CJT 101	None, hot end junction made & baretails	CJT 701	Crimp-on pot + Spring loaded connector both sided.
CJT 201	Crimp-on Pot with lead wire	CJT 801	Miniature Plug & Jack
CJT 301	Brazed pot with flameproof(EEExd IIC) gland	CJT 901	Standard Plug and jack
CJT 401	12mm 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

**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)

Mi 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. Mi 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

	ANSI Type	Sheath dia	Wire dia
SINGLE	J,K,T,E,N	3.0	0.6
		4.5	0.9
		6.0	1.2
		8.0	1.6
DUPLEX	J,K,T,E,N	3.0	0.5
		4.5	0.5
		6.0	0.9
		8.0	1.2

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

### LEAD OUT CABLE DETAILS


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 Mi Transducer lead out cable employing Nickel conductors, compact mass of MgO as insulation and stainless steel sheath conforming to AISI 316. The standard overall sheath diameter available are 6mm, 4.8mm and 3.2mm.

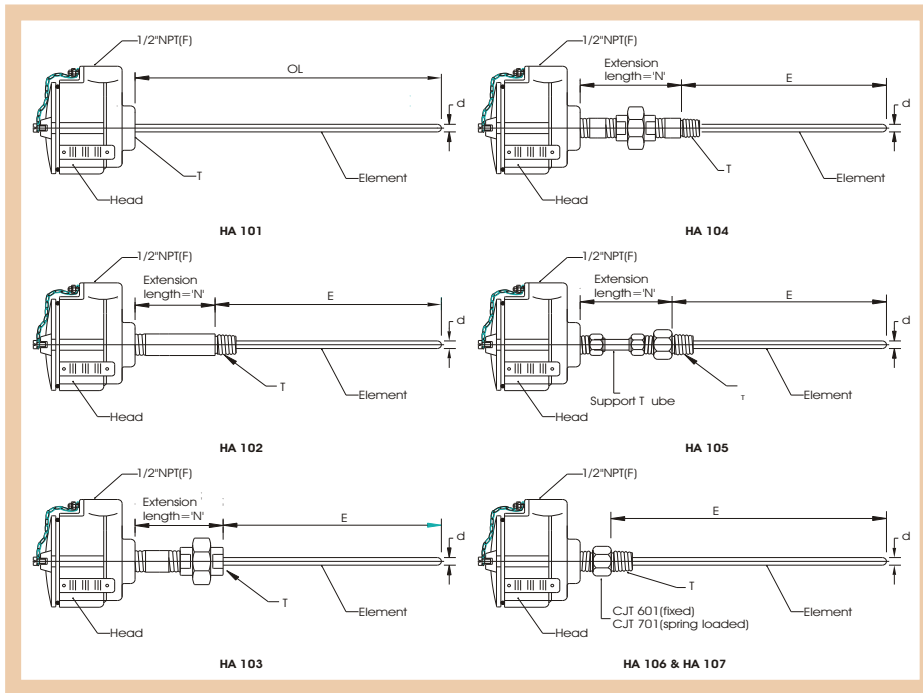
CODE 1: PTFE Insulated Lead wires	
CODE 2: PTFE Insulated Lead wires with SS Over braid	
CODE 3: PTFE Insulated Lead wires with SS Flexhose	
CODE 4: PTFE + FG With SS Over Braid	
CODE 5: PTFE + FG With SS Flexhose	

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.

# 110# Series

## Thermocouple & Resistance Thermometer Assemblies less well

- Suitable for replacement for existing installations.
- Various head assembly types to choose from.
- Certified for use in hazardous area. 
- 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	PtRh30%-PtRh6%
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 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	Extension in 316SS
5	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.J.T 601
HA107	Head with insert C.J.T 701


ISO 9001

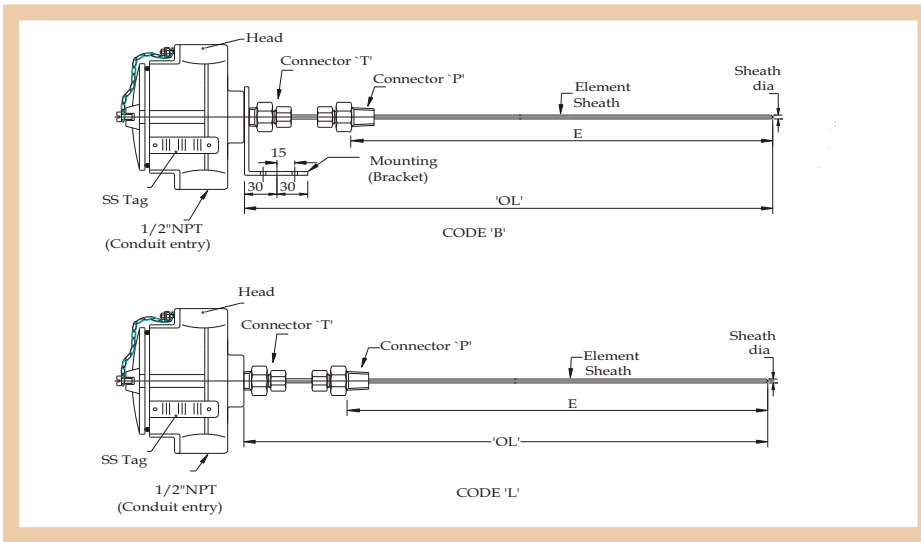
### ORDERING EXAMPLE

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.
- Certified for use in hazardous area. 
- Available with "in-head" 2-wire Temperature Transmitter.



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

Typical application are, 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, flame proof packing glands, weld pads and other accessories for particular use.

Code	No of Elements
1	Simplex
2	Duplex
3	Triplex

Code	Options
0	None
1	Head in 304SS
2	Head in 316SS
5	Other Conduit entry
6	In Head Transmitter
7	Brass Cable Gland
8	SS Cable Gland
10	Special requirement
13	Weld pad
14	Weld clamps
15	Grounded junction

Code	Elements
J	Iron-Constantan
K	Chromel-Alumel
T	Copper-Constantan
E	Chromel-Constantan
N	Nicrosil-Nisil
R	PtRh 13%-Pt
Pt	Pt100 RTD

Code	Element length
E	Immersion
OL	Overall length

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

Code	Connector 'P'
1/4"N	1/4"NPT
1/2"N	1/2" NPT
M20	M20x1.5

Other sizes are also available. Please specify

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

Code	Connector 'T'
M20	M20x1.5
1/2"B	1/2" BSP
1/2" N	1/2" NPT

Other sizes are also available. Please specify

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

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

Code	Connector 'P'
1/4"N	1/4"NPT
1/2"N	1/2" NPT
M20	M20x1.5

Other sizes are also available. Please specify

Code	Connector 'T'
M20	M20x1.5
1/2"B	1/2" BSP
1/2" N	1/2" NPT

Other sizes are also available. Please specify

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

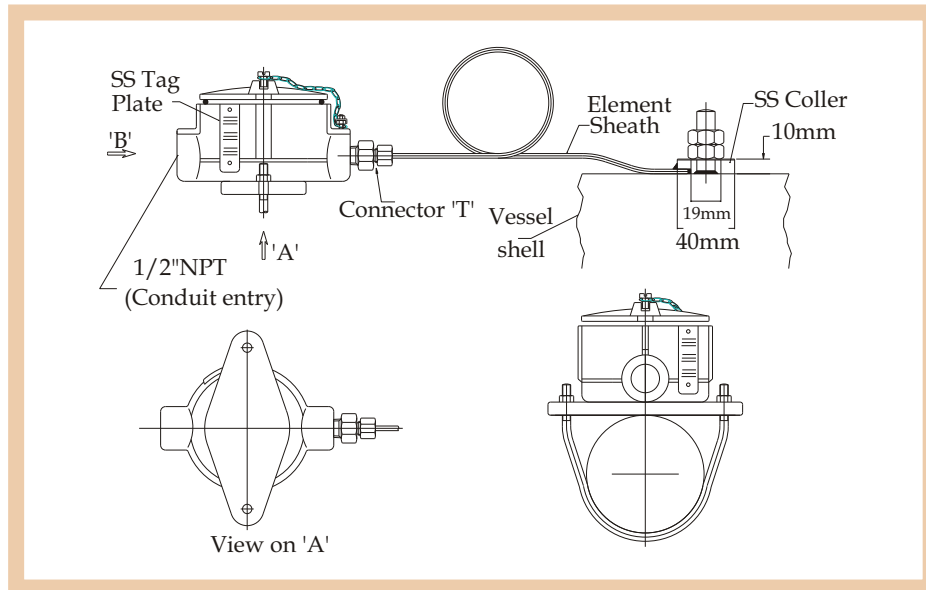
Code	No of entries
1	One entry
2	Two entries


### ORDERING EXAMPLE

120# SERIES 2-K-6-316-D-2-B-1/2"B-1/2"N-OL=15M-Op13,14

# 121# Series

## Thermocouple & Resistance Thermometer Assemblies with



- Integral Coller.
- Long Pliable MI lead out, ideal for skin Temperature measurement.
- Certified for use in hazardous area. 
- Available with “in-head” 2-wire Temperature Transmitter.
- Bracket mounting or 2”Nb pipe mounting.

Mi Thermocouple or Resistance Thermometers can be provided with a long MI Lead out cable to enable 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
5	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.

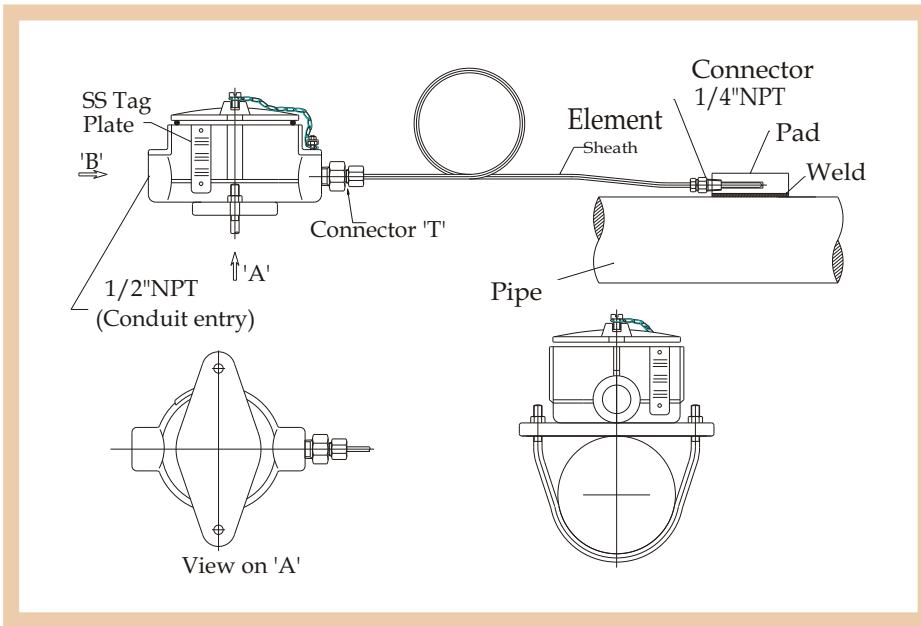
### ORDERING EXAMPLE

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

# 122# Series

## Thermocouple & Resistance Thermometer Assemblies with

- Weld pad or "Strap on" pad.
- Long Pliable MI lead out, ideal for skin Temperature measurement of pipe or vessel surface.
- Certified for use in hazardous area. 
- Available with "in-head" 2-wire Temperature Transmitter.
- Bracket mounting or 2" Nb pipe mounting.



Mi Thermocouple or Resistance Thermometers can be provided with a long MI Lead out cable to enable its usage in intricate installations and in high temperature environment. A separate weld pad or "Strap-on" pad is provided for fixing the Thermocouple to vessel/reactor or on pipe surface.

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

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

Thermocouples are provided with ungrounded junction unless specified otherwise.


Code	No of Elements	Code	Options
1	Simplex	0	None
2	Duplex	1	Head in 304SS
3	Triplex	2	Head in 316SS
Code	Elements	5	Other Conduit entry
J	Iron-Constantan	6	In Head Transmitter
K	Chromel-Alumel	7	Brass Cable Gland
Pt	Pt100 RTD	8	SS Cable Gland
Code	Sheath Dia	10	Special requirement
3	3.0mm	15	Grounded junction
4.5	4.5mm	28	SS Pipe Strap
6.0	6.0mm	Code	Element length
8.0	8.0mm	OL	Define Overall length
Code	Sheath Material	Code	Pad Dimension
316	316SS	A	25 x 15x 25
Inc	Inconel 600	B	25 x 25 x 50
		C	25 x 25 x 100
		Other sizes are also available. Please specify	
Code	Head Type	Code	Connector 'T'
D	Weatherproof	1/4" N	1/4" NPT
F	Flameproof IIA/IIB	1/2" N	1/2" NPT
C	Flameproof IIC		
JB	Junction Box	Code	Head Assembly
Code	No of entries	S	Surface Mounting for JB
1	One entry	B	Bracket mounting for Head
2	Two entries	P	2"Nb Pipe Mounting
		L	Local mounting without bracket.

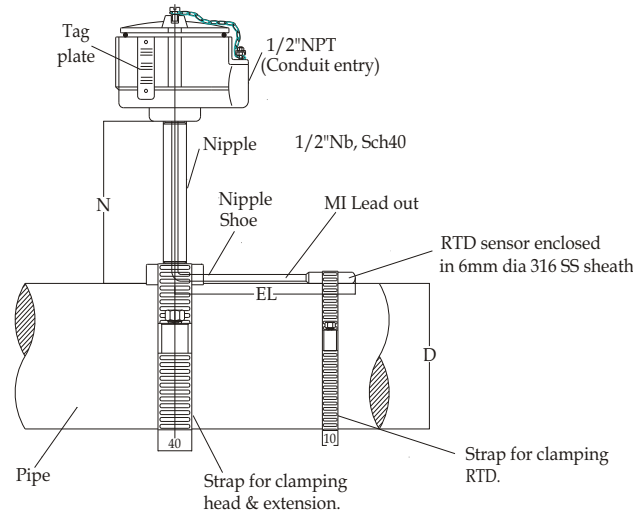
### ORDERING EXAMPLE

122# SERIES 2-Pt-6-316-D-2-B-1/2"N-C-OL=3M-Op28

# 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.
- Certified for use in hazardous area. 
- Available with “in-head” 2-wire Temperature Transmitter.
- Quick disconnect jack for using with hand held monitor



Mi Thermocouple or Resistance Thermometers can be provided with a Pliable MI Lead out cable to enable 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	Code	Options
1	Simplex	0	None
2	Duplex	1	Head in 304SS
Code	Elements	2	Head in 316SS
J	Iron-Constantan	3	Extension in 304SS
K	Chromel-Alumel	4	Extension in 316SS
Pt	Pt100 RTD	5	Other Conduit entry
Code	Sheath Dia	6	In Head Transmitter
3	3.0mm	7	Brass Cable Gland
4.5	4.5mm	8	SS Cable Gland
6.0	6.0mm	10	Special requirement
8.0	8.0mm	15	Grounded junction
Code	Sheath Material	28	SS Pipe Strap
316	316SS	40	Quick Disconnect jack
Inc	Inconel 600	Code	Element length along the pipe
Code	Head Type	EL	Define
D	Weatherproof	Code	Pipe Diameter
F	Flameproof IIA/IIB	D	Define
C	Flameproof IIC	Code	Extension length
JB	Junction Box	N	Define
Code	No of Entries	Code	Mounting
1	One entry	L	Local mounting with extension Nipple
2	Two entries		

### ORDERING EXAMPLE

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