



TIWac

INDUSTRIAL THERMOMETERS

- MERCURY -IN STEEL
- GAS FILLED
- BI-METAL
- LIQUID FILLED



WALCHANDNAGAR INDUSTRIES LTD.,

An ISO 9001:2000 Company



A Tradition of Engineering Excellence

TIWAC

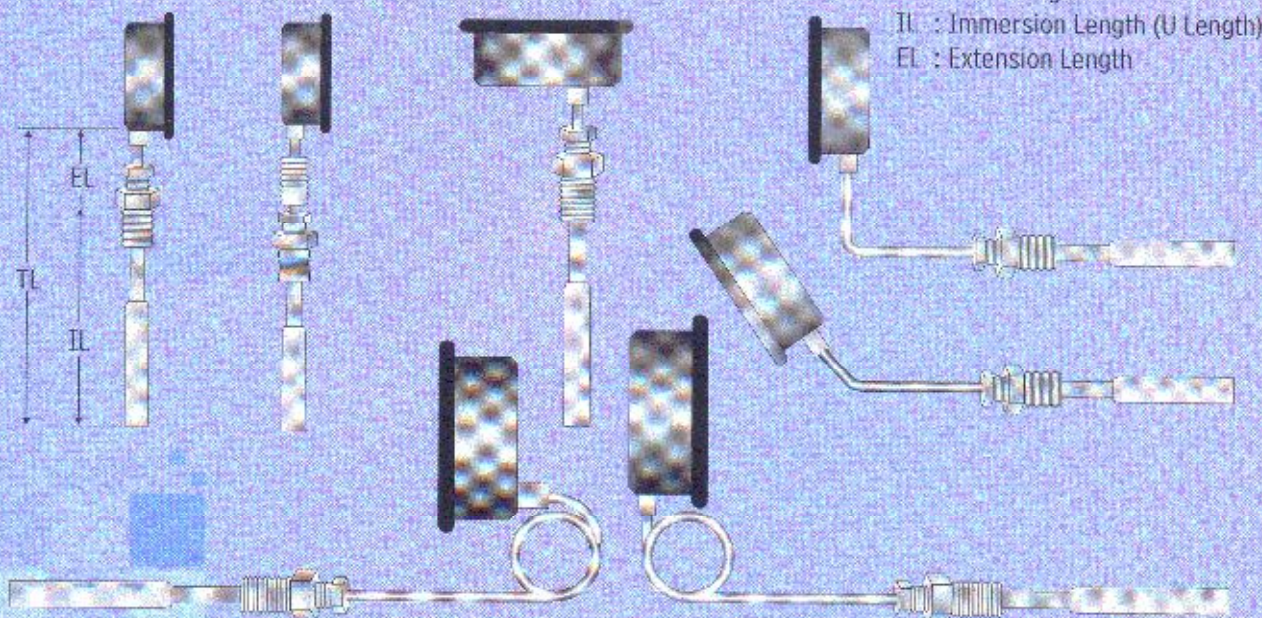
MERCURY IN STEEL ■ GAS FILLED (N₂) ■ BI-METAL ■ LIQUID FILLED THERMOMETERS

Tiwac is a division of Walchandnagar Industries Limited, a multi divisional company catering to the requirements of a number of industries such as cement, sugar, paper, fertilizers, material handling, petrochemicals, defense, nuclear power, space research and others. It has undertaken a number of large turnkey projects in these fields and also manufactures a wide range of industrial boilers, heat exchanger, industrial gearboxes and gears, centrifugals and other hi-tech custom made products.

At Tiwac, We are manufacturing mercury in steel, Gasfilled, Bi-Metal and Liquid Filled Thermometers along with wide range of Pressure Gauges. Having a long horological back ground our manpower consists of some of the best brains from the Precision Industry perfectly suited for instrumentation line. Tiwac's organizational culture centers on "Quality, Precision and Time". Our Quality Consciousness begins at the raw material stage and continues till the finished product leaves our factory. Our parent company being involved in various hi-tech activities, has excellent R & D facilities which are available to us. As a result, innovative product improvement is an on going process.

All these enable us to offer you a product which guarantees the best return for your money.

MOUNTINGS AVAILABLE



TL : Total Length
IL : Immersion Length (U Length)
EL : Extension Length

TECHNICAL SPECIFICATIONS

Type	: Mercury in Steel / Gas filled (Rigid stem / Distant)
Dial Size	: 63mm, 100mm, 150mm, 200mm, 250mm,
Housing	: Die-cast Aluminium, Stove Enamelled Black Finish Weather Proof
	: SS 304 / SS316 (Bayonet type)
Bourdon	: SS 316
Window	: Plain Glass
Connection	: 3/8", 1/2", 3/4" BSP/NPT (Adjustable Gland)
Entry	: Bottom / Back
Mounting	: Direct / Surface / Panel
Movement	: Brass/SS 304
Pointer	: Zero adjustment type
Joints	: Argon Arc Welding
Protection Class	: IP 65

OPTIONAL ACCESSORIES

Window	: Toughened Glass / Shatter proof Glass
Thermowell	: Fabricated / Bar stock SS 304 / SS 316 / Flanged
Antivibration Spring	: For rigid stem type only
Electrical Contact	
Maximum Indicator Pointer	
Every Angle	

BULB & STEM

Material of Construction	: SS 304 / SS316
Standard Stem Dia	: 10mm - Other size on request
Standard Stem Length	: 250 mm. (Max. up to 2000 mm length on request)
Standard Dia of Bulb	: 10mm. Std. (6 mm & 9 mm 12 mm on request)

CAPILLARY IN CASE OF DISTANT TYPE

Material of Construction	: MS / SS 316
Armour	: Copper / SS/SS flexible / PVC Sheath
Standard Length	: 3 mtrs. (Max up to 16 mts. on request)

STANDARD RANGES

Range in °C	Range in °C
-38 ° to 50 °C	0 to 250 °C
0 to 50 °C	0 to 300 °C
0 to 100 °C	0 to 350 °C
0 to 120 °C	0 to 400 °C
0 to 150 °C	0 to 500 °C
0 to 200 °C	0 to 600 °C
Accuracy	: $\pm$ 1% of the Span
Response Time	: 3.5 Seconds

TECHNICAL SPECIFICATIONS

Type	: Bi-Metal
Dial Size	: 63mm, 100mm, 150mm
Housing	: Die cast Aluminium stove enamelled Black Finish Weather Proof
	: SS 304 Bayonet Type
Sensing Element	: Spiral Wound-Bi-Metal strip
Window	: Plain Glass
Connection	: 3/8", 1/2" BSP/NPT
Entry	: Bottom / Back
Mounting	: Direct / Every Angle type
Pointer	: M.S. Black Painted
Accuracy	: $\pm$ 2% of span
Protection Class	: IP 65

BULB & STEM

Material of Construction	: Brass / SS 304 / SS316
Standard Stem Dia	: 10mm. (6 mm & 9 mm on request)
Standard Stem Length	: 250 mm. (Other size on request)

STANDARD RANGES

Range in °C
0 to 50 °C
0 to 100 °C
0 to 120 °C
0 to 150 °C
0 to 200 °C
0 to 250 °C
0 to 300 °C

TIWAC

TECHNICAL SPECIFICATIONS

Type	: Liquid Filled (Vapour Pressure)
Dial Size	: 50mm, 63mm,
Housing	: M.S Zinc plated case /Nickel Plated Bezel
Bourdon	: Brass
Window	: Plain glass
Connection	: Back
Mounting	: Clamp /Pannel
Movement	: Brass
Pointer	: M.S. Black Painted
Accuracy	: $\pm 3\%$

BULB & STEM

Material of Construction	: Brass
Standard Stem Dia	: 8 mm
Standard Stem Length	: 50 mm , 70 mm
Capillary	: Netted Copper
Standard capillary length	: 1.5 mtrs. (Max up to 5 mtrs)
Thermowell (Pocket)	: Brass 1/2" BSP, NPT (other on request)

STANDARD RANGES

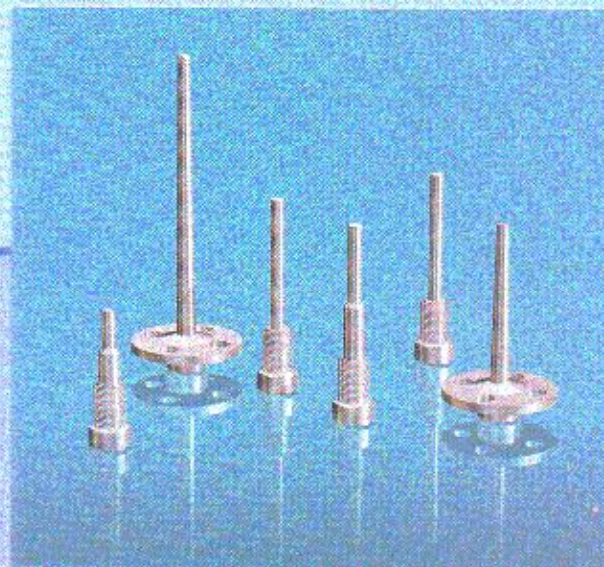
Range in $^{\circ}\text{C}$

0 to 50 $^{\circ}\text{C}$
0 to 100 $^{\circ}\text{C}$
0 to 110 $^{\circ}\text{C}$
0 to 120 $^{\circ}\text{C}$
40 to 110 $^{\circ}\text{C}$
40 to 120 $^{\circ}\text{C}$
40 to 130 $^{\circ}\text{C}$
40 to 150 $^{\circ}\text{C}$



VARIOUS TYPES OF THERMOWELLS

For	: Mercury, Gasfilled and Bi-metal Thermometers
Construction	: Straight, Tapered and stepped Flanged (Flange can be provided as per ANSI B-16.5 standard as per requirement)
Material	: SS 304, 316, 316L, other on request
Bore Dia	: 7mm, 9mm, 11mm, 13mm other on request
Process connection	: 1/2", 3/4", 1" BSP /NPT
Instrument Connection	: 1/2 NPT (F)
Standard 'u' Length	: As per requirement



Manufacturers



WALCHANDNAGAR INDUSTRIES LTD.,
TIWAC DIVISION
An ISO 9001: 2000 Company

Authorised Dealer