

FILLED SYSTEM

SPECIAL FEATURES

- CE & ATEX APPROVED ELECTRICAL CONTACTS.
- INERT GAS FILLED EXPANSION SYSTEM.
- STAINLESS STEEL CASE & STEM
- WITH OR WITHOUT THERMOWELL
- SILICON OIL FILLED (OPTIONAL)
- STANDARD FOLLOWED EN 13190.

APPLICATIONS

ALL STAINLESS STEEL INERT GAS FILLED THERMOMETERS ARE SUITABLE FOR CORROSIVE MEDIA / ENVIRONMENTS IN PROCESS INDUSTRY LIKE CHEMICAL, FOOD & PHARMACEUTICAL, PULP & PAPER, REFINERY, CEMENT & MANY MORE.



IPS-TG-07

SPECIFICATIONS

STANDARD VERSION : 100 mm, 125 mm, 150 mm, 200 mm & 250 mm

Accuracy	: Class 1 as per EN 13190
Ambient Temperature	: -25° C to 65° C
Operating Pressure	: 15 kg/cm ² (without thermowell)
Over Range Limit	: 120 % of Full Scale
Stem Diameter	: 8 mm
Process Connection	: ½”BSP (M) Adjustable

Case & Bezel	: AISI 304 SS (Bayonet Type)
Stem & Connection	: AISI 316 SS
Joints	: Tig Argon arc welding

Protection	: IP 65
Dial	: Aluminium, black graduation on white background
Pointer	: Aluminium, black Coloured Micrometer Zero adjustable
Window	: Sheet Glass
Gasket & Filling Plug	: Neoprene

STANDARD VERSION : ELECTRICAL CONTACTS

Accuracy	: Class 1 as per EN 13190
Ambient Temperature	: Maximum 65°C
Window	: Polycarbonate Dome
Dampening Liquids	: Dielectric Oil (Optional)
Other Features	: Refer Specification of Standard Version

STANDARD VERSION : SILICON OIL FILLED

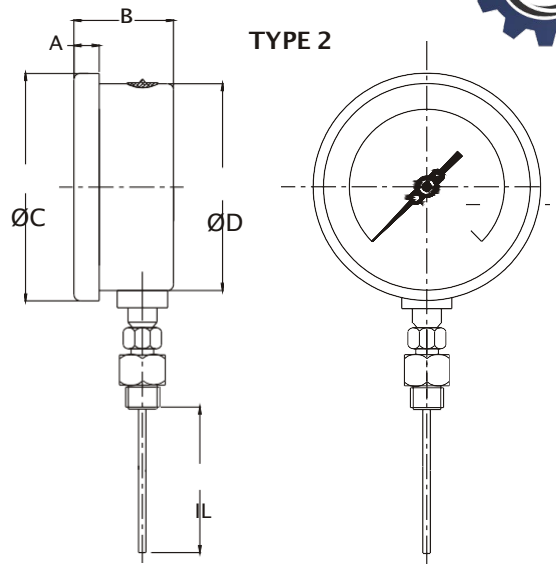
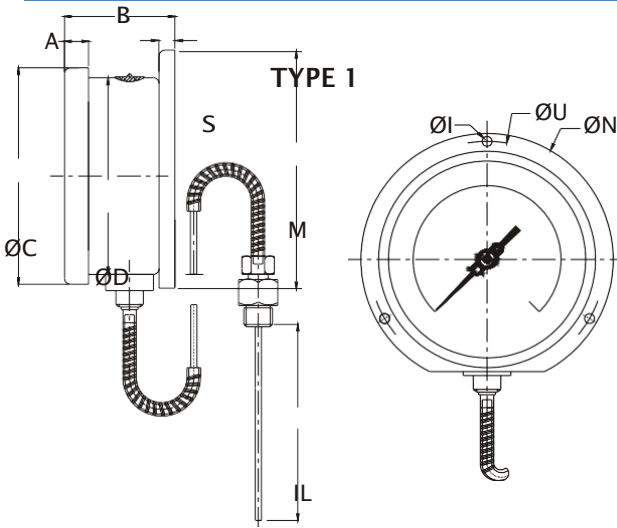
Accuracy	: Class 1 as per EN 13190
Ambient Temperature	: Maximum 65°C
Window	: Plexi Glass
Dampening Liquids	: Silicon Oil (Option QA)
Gasket & Filling Plug*	: NBR
Other Features	: Refer Specification of Standard Version

*Gasket & Filling plug of NBR. Refer Price List for Viton.

Note : The addition of mechanical electric contacts affects the accuracy of instruments such that 1% becomes 1.5%, 1.6% becomes 2.4% etc. (Add the 50% of accuracy; If the contact is of the magnetically assisted type, this value can't be added within the ±5% of setting point.)

Nominal Range, Measuring Ranges & Limits of Error as per EN 13190

Nominal Range (°C)	Measuring Range (°C)	Limits of Error (± °C)
-20 to +40	-10 to +30	1
-20 to +60	-10 to +50	1
-20 to +120	-10 to +110	2
-30 to +30	-20 to +20	1
-30 to +50	-20 to +40	1
-30 to +70	-20 to +60	1
-40 to +40	-30 to +30	1
-40 to +60	-30 to +50	1
-100 to +60	-80 to +40	2
0 to 60	10 to 50	1
0 to 80	10 to 70	1
0 to 100	10 to 90	1
0 to 120	10 to 110	2
0 to 160	20 to 140	2
0 to 200	20 to 180	2
0 to 250	30 to 220	2.5
0 to 300	30 to 270	5
0 to 400	50 to 350	5
0 to 500	50 to 450	5
0 to 600	100 to 500	10



NS	A	B	ØC	ØD	S	M	IL	ØU	ØN	ØI	Approx. Wt.#
100	12.5	45	111	100	6	128	*	118	134	6	1000.0
125	15	46	129	119	4	-	*	137	150	6	1250.0
150	15	46.5	161	149	6	174.5	*	168	186	6	1550.0
200	18	49	216.5	201.5	1.5	-	*	230	245	7	2000.0
250	18	52	263	250	1.5	286.5	*	276	290	7	2250.0

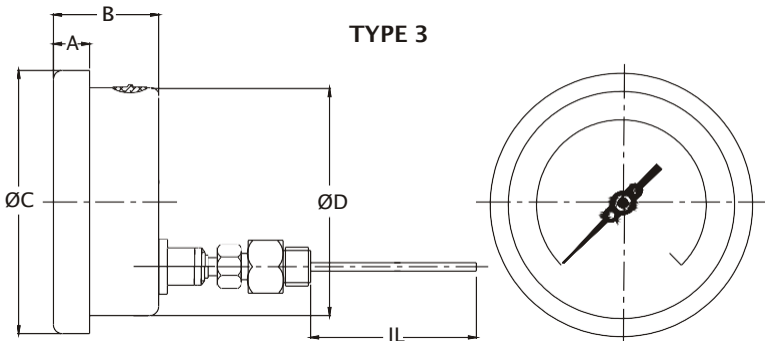
(* As per customer requirement.)

(# Weight in grams with box for 300 mm stem length & 3 meter capillary.)

NS	A	B	ØC	ØD	IL	Approx. Wt.#
100	12.5	47	111	100	*	750.0
125	15	48	129	119	*	1000.0
150	15	49	161	149	*	1250.0
200	18	49	216.5	201.5	*	1500.0
250	18	52	263	250	*	2000.0

(* As per customer requirement.)

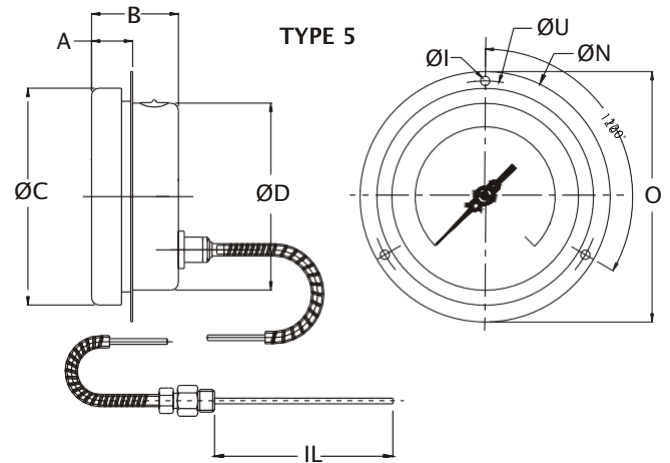
(# Weight in grams with box for 300 mm stem length.)



NS	A	B	ØC	ØD	IL	Approx. Wt.#
100	12.5	47	111	100	*	750.0
125	15	49	129	119	*	1000.0
150	15	49	161	149	*	1250.0
200	18	49	216.5	201.5	*	1500.0
250	18	52	263	250	*	2000.0

(* As per customer requirement.)

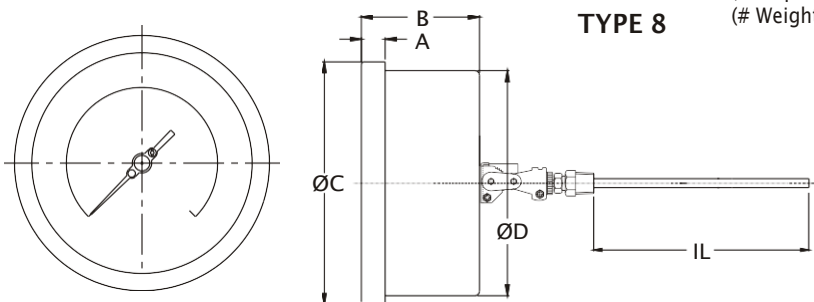
(# Weight in grams with box for 300 mm stem length.)



NS	A	B	ØC	ØD	S	IL	ØU	ØN	ØI	Approx. Wt.#
100	12.5	47	111	100	1	*	118	134	6	1000.0
125	15	49	129	119	4	*	137	150	6	1250.0
150	15	49	161	149	1	*	168	186	6	1500.0
200	18	49	216.5	201.5	1.5	*	230	245	7	2000.0
250	18	52	263	250	1.5	*	276	290	7	2250.0

(* As per customer requirement.)

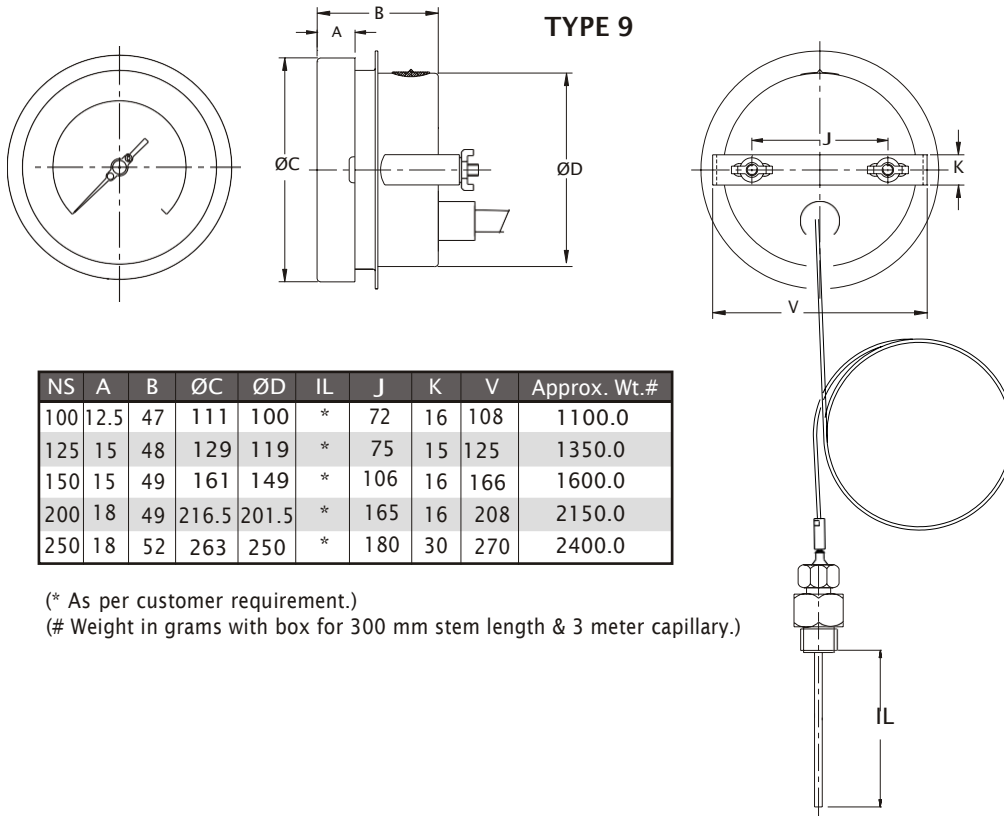
(# Weight in grams with box for 300 mm stem length & 3 meter capillary.)



NS	A	B	ØC	ØD	IL	Approx. Wt.#
100	12.5	48	111	100	*	750.0
125	15	49	129	119	*	1000.0
150	15	49	161	149	*	1250.0
200	15	49	216.5	201.5	*	1500.0
250	14.5	49.5	263	250	*	2000.0

(* As per customer requirement.)

(# Weight in grams with box for 300 mm stem length.)



NS	A	B	ØC	ØD	IL	J	K	V	Approx. Wt.#
100	12.5	47	111	100	*	72	16	108	1100.0
125	15	48	129	119	*	75	15	125	1350.0
150	15	49	161	149	*	106	16	166	1600.0
200	18	49	216.5	201.5	*	165	16	208	2150.0
250	18	52	263	250	*	180	30	270	2400.0

(* As per customer requirement.)

(# Weight in grams with box for 300 mm stem length & 3 meter capillary.)

Notes : • Drawings are not to scale. • All Dimensions are in mm. • NS = Nominal Size.

RANGE TABLE

Note : IP SPL offers National / International Scales like °C, °F & Dual Scale in °C & °F & Scales as per the requirement can be provided on request.

Following are the example tables for °C

STANDARD RANGES

POSITIVE RANGE SINGLE SCALE IN °C			
RANGE	RANGE	RANGE	RANGE
0/60	0/120	0/250	0/500
0/80	0/160	0/300	0/600
0/100	0/200	0/400	50/650
COMPOUND RANGE SINGLE SCALE IN °C*			
RANGE	RANGE	RANGE	RANGE
- 80 / 60	- 20 / 60	- 40 / 60	- 20 / 180
- 60 / 40	- 20 / 80	- 30 / 50	- 20 / 100

Note: *Compound ranges are not recommended for electrical contact option.

Refer table for limits of error as per EN 13190 (On front page of CA)

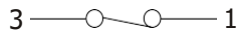
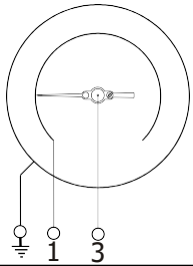
ACCESSORIES (* Refer Datasheet for Thermowells)

* Thermowell

WIRING DIAGRAMS FOR ELECTRIC CONTACTS

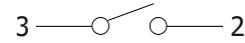
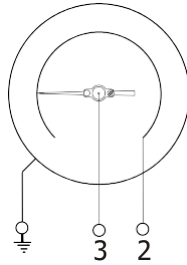
SINGLE CONTACT

1 NO



Opening

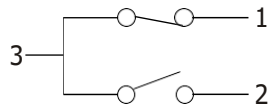
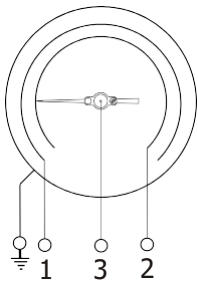
1 NC



Closing

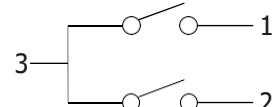
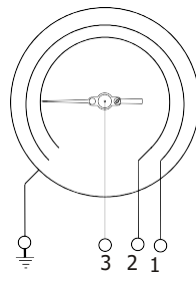
DOUBLE CONTACT

1 NO + 1 NC



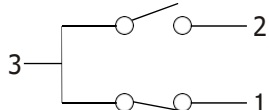
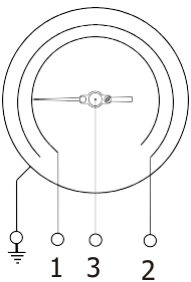
Opening 1
Closing 2

1 NC + 1 NC



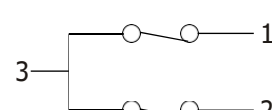
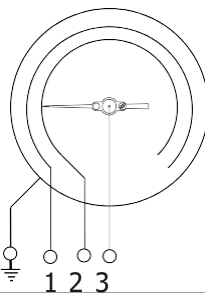
Closing 1
Closing 2

1 NC + 1 NO



Closing 2
Opening 1

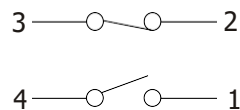
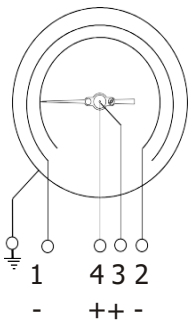
1 NO + 1 NO



Opening 1
Opening 2

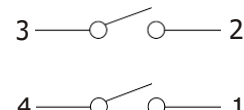
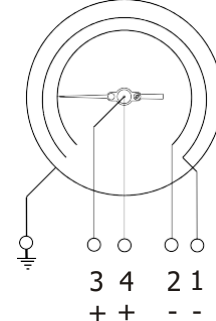
INDEPENDENT DOUBLE CONTACT

1 NO+ 1 NC



Opening 1
Closing 2

1 NC + 1 NC



Closing 1
Closing 2



HOW TO ORDER BASIC MODEL

CODE

NOMINAL SIZE

	F	G	H	I	J
	100 mm	125 mm	150 mm	200 mm	250 mm

TYPE OF MOUNTING (*Without capillary option)

1 WALL / SURFACE / PROJECTION MOUNTING WITH BOTTOM ENTRY	5 LOWER BACK ENTRY WITH FRONT FLANGE
2 DIRECT BOTTOM ENTRY*	8 EVERY ANGLE BACK ENTRY*
3 DIRECT LOWER BACK ENTRY*	9 LOWER BACK ENTRY WITH MOUNTING BRACKET

PROCESS CONNECTION (# Not recommended for Revolving/ Swivel connections.)

3BM 3/8" BSP (M)*	4BM 1/2" BSP (M) (Standard)*	5BM 3/4" BSP (M)
3NM 3/8" NPT (M)*#	4NM 1/2" NPT (M)*#	4MM M20 x 1.5 (M)*
3TM 3/8" BSPT (M)*#	4TM 1/2" BSPT (M)*#	

* Suitable for stem diameter 6 to 10 mm

Note : Connections like Metric/ PT/ PF/ Flaired/ UNF/ G/ R etc can be provided on request.

PROCESS CONNECTION TYPE

ZI ADJUSTABLE (Standard)	ZJ FIXED	KJ REVOLVING / SWIVEL
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STEM DIAMETER

1U 6 mm	2M 6.35 mm	2C 8 mm (Standard)	2I 9.5 mm	2J 10 mm	2K 12 mm
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STEM LENGTH (Below thread Max. 600 mm)

PLEASE SPECIFY IN mm	Minimum stem Length (Below Thread)	130 mm	120 mm	120 mm	120 mm	110 mm
	Stem OD	6 / 6.35mm	8 mm	9.5 mm	10 mm	12 mm

RANGE

REFER RANGE TABLE

TYPE

A1 WITH RIGID STEM	A2 WITH CAPILLARY
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CAPILLARY LENGTH (Max up to 15 Mtrs.)

IN METERS (e.g. 1.5 = 1.5 METERS 2.0 = 2 METERS)

CAPILLARY

PE AISI 304 SS	PG AISI 316 SS	
PF AISI 304 SS	PH AISI 316 SS	PI PVC (Ambient Temp. Max. 60°C)

ELECTRIC CONTACTS (FOR NS 100 mm & 150 mm Only) (C € & ATEX APPROVED)

(WITH IP PROTECTION UP TO IP 55 & WINDOW POLYCARBONATE DOME TYPE)

A) SINGLE INSULATED MAGNETIC SNAP ACTION TYPE*# (230 V AC, 1 Amp.)(48 V DC, 0.5 Amp.)	B) INDUCTIVE TYPE (220 V AC, 0.4 Amp.)#
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RJ Single; NORMALLY CLOSED (1 NC)	YW Single; NORMALLY OPEN (1 NO)
RK Double; NORMALLY CLOSED + NORMALLY OPEN (1 NC +1 NO)	YV Single; NORMALLY CLOSED (1 NC)
RL Single; NORMALLY OPEN (1 NO)	YX Double; NORMALLY CLOSED + NORMALLY OPEN (1 NC +1 NO)
RM Double; NORMALLY OPEN + NORMALLY CLOSED (1 NO + 1 NC)	YY Double; NORMALLY OPEN (BOTH NO)
RN Double; NORMALLY CLOSED (BOTH NC)	YZ Double; NORMALLY CLOSED (BOTH NC)
RO Double; NORMALLY OPEN (BOTH NO)	ZA Double; NORMALLY OPEN + NORMALLY CLOSED (1 NO + 1 NC)
RU BOOSTER WITH RELAY FOR CURRENT UPTO 5 Amp.	

* Dry version & except electrical contacts.

** Available for NS 100 mm to 150 mm. Consult factory for minimum order quantity & delivery. *** Gasket & Filling plug of NBR. Refer Price List for Viton.

MATERIAL TEST CERTIFICATES WILL BE PROVIDED FOR WETTED PARTS ONLY WITH CHEMICAL COMPOSITION TESTING. FOR OTHERS, PLEASE CONSULT FACTORY.

Note : Specifications and dimensions given in this product catalogue represents the state of engineering at the time of printing.

Modifications may take place and materials specified may be replaced by others without prior notice.

IPS-TG-07

X

X

XXX

XX

XX

100 mm

0/100 °C

XX

3Mtr.

XX

XX

XX



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