



BI

### SPECIAL FEATURES

- C & ATEX APPROVED ELECTRICAL CONTACTS
- STAINLESS STEEL CASE & MEASURING SYSTEM
- FILLED VERSION AVAILABLE
- STANDARD FOLLOWED IN GENERAL EN 837-1

### APPLICATIONS

TO CONTROL THE ELECTRICAL OPERATION OF COMPRESSORS, PUMPS, MOTORS, PRESSES, HYDRAULIC & PNEUMATIC EQUIPMENTS, CHEMICALS & PETROCHEMICAL PLANTS.



### SPECIFICATIONS

#### STANDARD VERSION : 100 mm

|                                 |  |
|---------------------------------|--|
| <b>Accuracy</b>                 | : ±1.0% of F. S.   |
| <b>Ambient temperature</b>      | : - 20°C to + 65°C   |
| <b>Process temperature</b>      | : Max. 100°C   |
| <b>Electric Wiring</b>          | : DIN Connector  |
| <b>Contact Setting</b>          | : Over on arc of 270° through a knob placed on front of lens |
| <b>Operating pressure range</b> | : 75% of Scale Value   |
| <b>Over pressure limit</b>      | : Not Suitable   |

|                         |  |
|-------------------------|--|
| <b>Case &amp; Bezel</b> | : AISI 304 SS (Bayonet Type)             |
| <b>Bourdon</b>          | : AISI 316L SS                           |
| <b>Socket</b>           | : AISI 316L SS (Directly welded to case) |
| <b>Movement</b>         | : AISI 304 SS                            |
| <b>Joints</b>           | : Tig Argon Arc Welding                  |

|                                  |  |
|----------------------------------|--|
| <b>Protection</b>                | : IP 65  |
| <b>Dial</b>                      | : Aluminum, black graduation on white background |
| <b>Pointer</b>                   | : Aluminum, black coloured Fixed                 |
| <b>Window</b>                    | : Plexi Glass                                    |
| <b>Electrical Contacts*</b>      | : Refer How to Order                             |
| <b>Blow off Disc</b>             | : Neoprene                                       |
| <b>Gasket &amp; Filling Plug</b> | : Neoprene                                       |

\* Please specify contact set points while ordering.

#### FILLED VERSION - DIELECTRIC OIL (OPTION - ZZ)

|                                   |   |
|-----------------------------------|---|
| <b>Accuracy</b>                   | : ±1.6% of F. S.                          |
| <b>Ambient Temperature</b>        | : Maximum 65°C                            |
| <b>Process Temperature</b>        | : +15°C / 65° C                           |
| <b>Window</b>                     | : Plexi Glass                             |
| <b>Blow off Disc*</b>             | : NBR                                     |
| <b>Gasket &amp; Filling Plug*</b> | : NBR                                     |
| <b>Dampening Liquids</b>          | : Dielectric Oil                          |
| <b>Other Features</b>             | : Refer Specification of Standard Version |

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

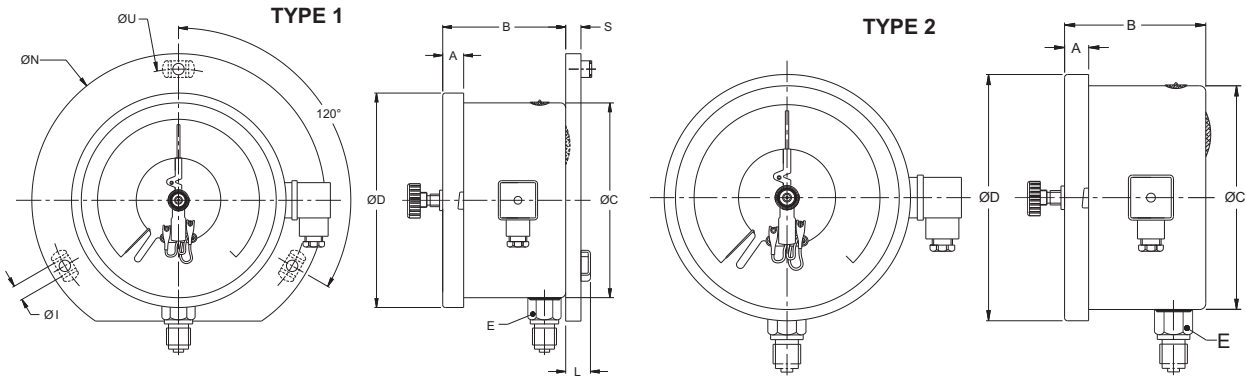
|                            |   |
|----------------------------|---|
| <b>Temperature effect:</b> | The variation of indication caused by effects of temperature is to be calculated by below formula; which is to be added in the specified accuracy while measurement :-<br>Formula : ± 0.04 x (t2 - t1) % of F. S.<br>where t1 = reference temperature (+20°C) and t2 = ambient temperature in °C. |
|----------------------------|---|

**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.)

# ELECTRIC CONTACT TYPE (HIGH CASE VERSION)

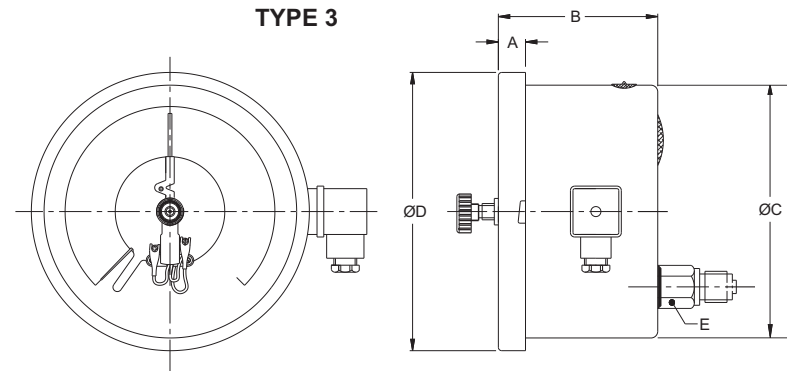
## DIMENSIONS - STANDARD VERSION

BI



| NS  | A    | B  | ØC  | ØD  | E      | ØI | ØN  | ØU  | L  | S | Weight in gram (With Box) |
|-----|------|----|-----|-----|--------|----|-----|-----|----|---|---------------------------|
| 100 | 12.5 | 90 | 100 | 111 | A/F 22 | 6  | 134 | 118 | 15 | 6 | 920.0                     |

| NS  | A    | B  | ØC  | ØD  | E      | Weight in gram (With Box) |
|-----|------|----|-----|-----|--------|---------------------------|
| 100 | 12.5 | 90 | 100 | 111 | A/F 22 | 840.0                     |



| NS  | A    | B  | ØC  | ØD  | E      | Weight in gram (With Box) |
|-----|------|----|-----|-----|--------|---------------------------|
| 100 | 12.5 | 90 | 100 | 111 | A/F 22 | 820.0                     |

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

### RANGE TABLE

Note : Waaree offers National / International Scales like kPa, MPa, bar, psi, kg/cm<sup>2</sup> & Dual Scale like kPa with psi, kPa with bar, bar with psi or Equivalent scales as per the requirement can be provided on request.

Following are the example tables for kg/cm<sup>2</sup> & psi scales

### PRESSURE & COMPOUND

| PRESSURE - SINGLE SCALE (kg/cm <sup>2</sup> or bar) |                    |        |                    |        | COMPOUND - SINGLE SCALE (kg/cm <sup>2</sup> or bar) |         |                    |
|---|--------------------|--------|--------------------|--------|---|---------|--------------------|
| 0/1.6   | 0/10               | 0/60   | 0/400              |        |   |         | -1/5               |
| 0/2.5   | 0/16               | 0/100  | 0/600              |        |   |         | -1/9               |
| 0/4   | 0/25               | 0/160  | 0/1000             |        |   |         | -1/15              |
| 0/6   | 0/40               | 0/250  | 0/1600             |        |   |         |                    |
| DUAL SCALE (psi with kg/cm <sup>2</sup> )           |                    |        |                    |        |   |         |                    |
| psi   | kg/cm <sup>2</sup> | psi    | kg/cm <sup>2</sup> | psi    | kg/cm <sup>2</sup>                                  | psi     | kg/cm <sup>2</sup> |
| 0/25  | 0/1.6              | 0/220  | 0/16               | 0/1500 | 0/100   | 0/10000 | 0/700              |
| 0/35  | 0/2.5              | 0/300  | 0/20               | 0/2200 | 0/160   | 0/15000 | 0/1000             |
| 0/60  | 0/4                | 0/400  | 0/28               | 0/3000 | 0/200   | 0/22000 | 0/1600             |
| 0/100   | 0/7                | 0/600  | 0/40               | 0/4000 | 0/280   |         |                    |
| 0/150   | 0/10               | 0/1000 | 0/70               | 0/6000 | 0/400   |         |                    |

Note: Range above 1600 kg/cm<sup>2</sup>, consult factory.

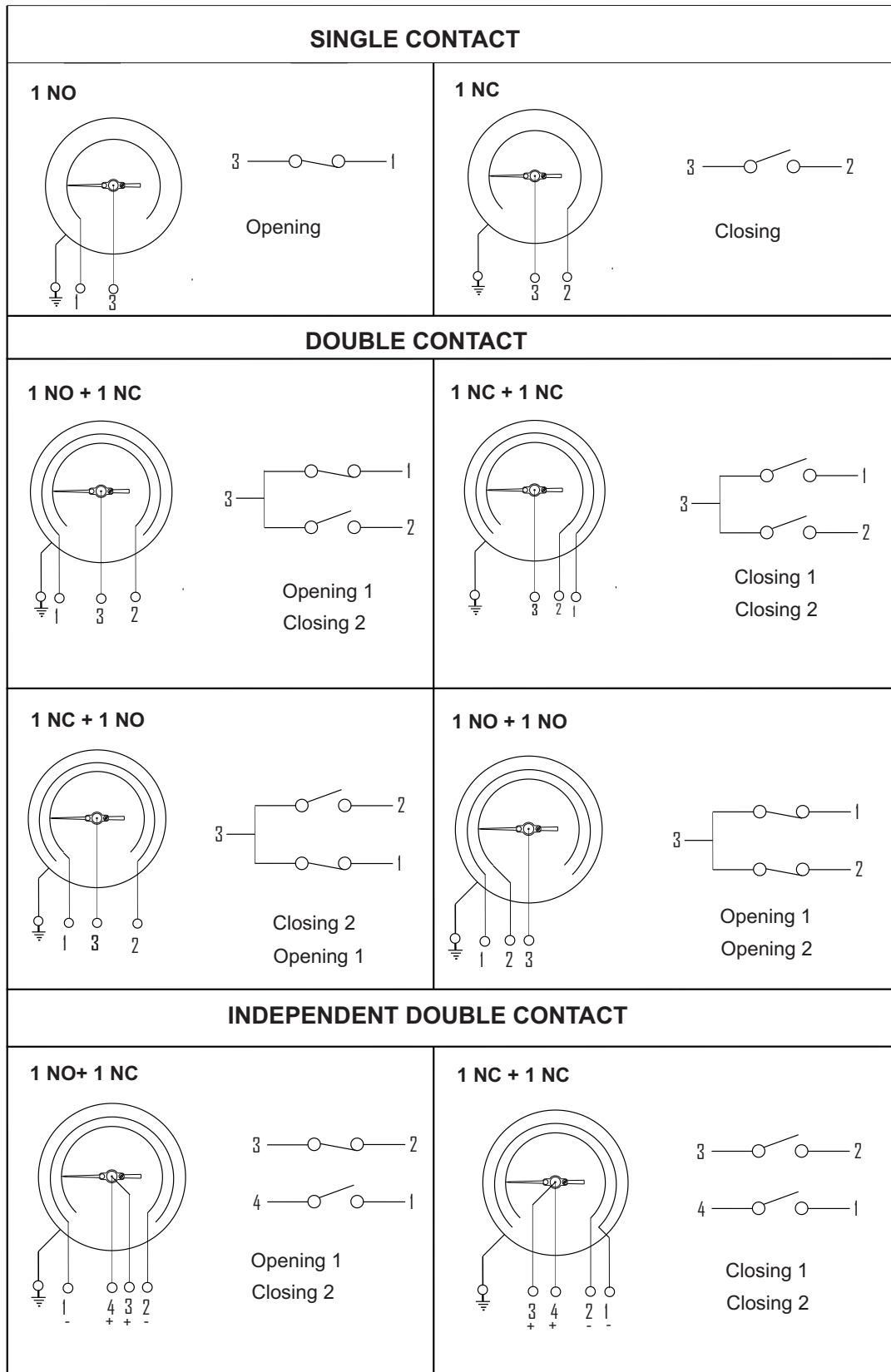
### ACCESSORIES (Refer Datasheet for complete specifications)

|                  |  |            |
|------------------|--|------------|
| EB COOLING TOWER | ED OVER LOAD PROTECTOR (GAUGE SAVER)** | EG SNUBBER |
| EC GAUGE COCK    | * NEEDLE VALVE                         | EH SIPHON  |

\* Refer catalogue for Valves & Manifolds.

\*\* For Pressure Ranges.

WIRING DIAGRAMS FOR ELECTRIC CONTACTS



# ELECTRIC CONTACT TYPE (HIGH CASE VERSION)

**BI**

## HOW TO ORDER

Example

### BASIC MODEL

CODE

**BI**

### NOMINAL SIZE

F

100 mm

**X**

### TYPE OF MOUNTING

- 1 WALL, SURFACE, PROJECTION MOUNTING WITH BOTTOM ENTRY
- 2 DIRECT BOTTOM ENTRY
- 3 DIRECT LOWER BACK ENTRY

**X**

### ELECTRIC CONTACTS (CE & ATEX APPROVED)

**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.)**

**RJ** Single; NORMALLY CLOSED (1 NC)  
**RK** Double; NORMALLY CLOSED + NORMALLY OPEN (1 NC +1 NO)  
**RL** Single; NORMALLY OPEN (1 NO)  
**RM** Double; NORMALLY OPEN + NORMALLY CLOSED (1 NO + 1 NC)  
**RN** Double; NORMALLY CLOSED (BOTH NC)  
**RO** Double; NORMALLY OPEN (BOTH NO)  
**RU** BOOSTER WITH RELAY FOR CURRENT UPTO 5 Amp.  
**RA** SPDT  
**RC** DPDT

**YW** Single; NORMALLY OPEN (1 NO)  
**YV** Single; NORMALLY CLOSED (1 NC)  
**YX** Double; NORMALLY CLOSED + NORMALLY OPEN (1 NC +1 NO)  
**YY** Double; NORMALLY OPEN (BOTH NO)  
**YZ** Double; NORMALLY CLOSED (BOTH NC)  
**ZA** Double; NORMALLY OPEN + NORMALLY CLOSED (1 NO + 1 NC)

**XX**

\* FOR DOUBLE INSULATED ELECTRICAL CONTACTS, CONSULT FACTORY FOR PRICE & DELIVERY.

### GAUGE CONNECTION

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

**XXX**

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

### RANGE

REFER RANGE TABLE

**0/10 kg/cm<sup>2</sup>**

### OPTIONS

**TI** MONEL BOURDON & SOCKET (MONEL VERSION)\*\*      **TF** CONFORMITY AS PER NACE MR 0175  
**PS** AISI 316 SS CASE & BEZEL\*      **RH** CUSTOM DESIGNED DIAL##  
**PW** FIVE POINT CALIBRATION CERTIFICATE      **QB** INTEGRAL DAMPENING SCREW (AISI 316 SS)  
**ZZ** DIELECTRIC OIL FILLED#      **FL** INTEGRAL DAMPENING SCREW (MONEL)\*\*  
**SX** SS TAG PLATE      **SA** INTERNAL OVERPRESSURE STOP  
**TB** HELIUM LEAK TEST      **SB** INTERNAL VACUUM STOP  
**GH** MATERIAL TEST CERTIFICATES\*\*\*      **SF** MOVEMENT WITH DAMPENING JELLY

**XX**

\* CONSULT FACTORY FOR MINIMUM ORDER QUANTITY & DELIVERY. # BOD, Gasket & Filling plug of NBR. Refer Price List for Viton.

\*\*INTEGRAL DAMPENING SCREW WILL BE IN MONEL IF ORDERED. REFER OPTION FL. ## Consult factory for dial design approval.

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

## Ordering Example: BI - X - X - XX - XXX - 0/10kg/cm<sup>2</sup> - XX

FOR OTHER OPTIONAL ITEMS, PLEASE CONTACT FACTORY FOR DELIVERY AND MINIMUM QUANTITY OF ORDER.

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.



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