

# DIFFERENTIAL PRESSURE GAUGE

DIAPHRAGM OPERATED

BG







## **SPECIAL FEATURES**

- FM APPROVED ENCLOSURE
- HIGH OPERATING PRESSURE UP TO 100 bar
- SIMPLE AND COMPACT DESIGN
- COST EFFECTIVE
- RELIABLE

#### **APPLICATIONS**

FILTERS, HYDRAULIC SYSTEMS, WATER TREATMENT PLANTS, CHEMICAL PLANTS, NATURAL GAS PROCESSING, HEAT EXCHANGERS, GASOLINE / DIESEL ENGINE FILTERS, PUMPS & VALVES, COMPRESSORS.

#### **SPECIFICATIONS**

STANDARD VERSION: 63 mm, 80 mm, 100 mm, 115 mm & 150 mm

Accuracy : ± 2% of F. S.(Ascending)

Ambient temperature : Max. 65°C Process temperature : Max. 80°C

Over Pressure Range : Up to the Full Scale Value Connection : 1/4" NPT (F) x 2 Nos.

Case : AISI 304 SS

Wetted Parts : Diaphragm, Ceramic Magnet & SS Spring

Body : AISI 316 SS

Protection : IP 65

Dial & Pointer : Aluminum, black Colored, Fixed

Window : Glass

#### **EXPLOSION PROOF VERSION**

Enclosure Material : Die Cast Aluminum

Enclosure Protection : Explosion proof, Class I, Div. 1, Group B, C & D,

Class II, Div. 1, Group E, F & G, Class III, Div. 1,

Hazardous Locations, Indoor & Outdoors,

(Type 4X/IP66/IP67)

Switch 1 SPST / 1 SPDT / 2 SPDT

Switch Rating : SPST: 10 VA, 125 V, 0.5 A AC/DC (Max)

SPDT: 5 VA, 125 V, 0.25 A AC/DC (Max)

# **GLYCERINE FILLED VERSION (OPTION PY)**

Accuracy : ±4.0% of F. S.(Ascending)

Ambient Temperature : Maximum 65°C
Process Temperature : Maximum 65°C
Window : Maximum 65°C
Plexi Glass

Dampening Liquids : Glycerin 99.7% (others available as option)
Other Features : Refer Specification of Standard Version

#### Temperature effect:

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 :-

Formula: ± 0.08 x (t2 - t1) % of F. S.

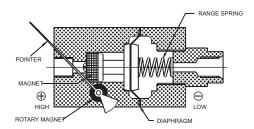
where t<sub>1</sub> = reference temperature (+20°C) and t<sub>2</sub> = ambient temperature in °C.







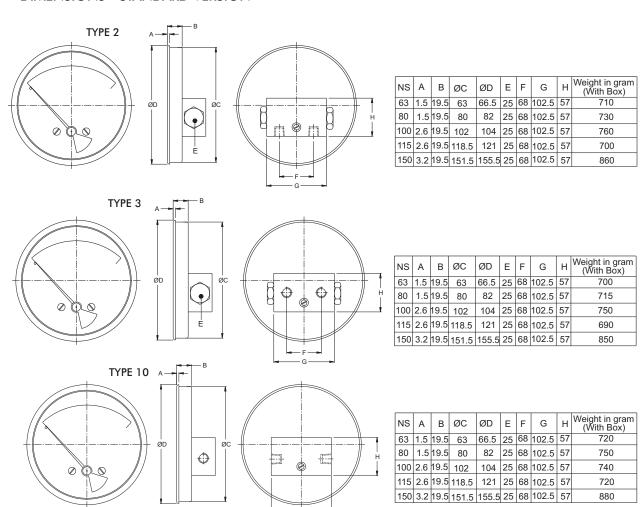
#### **OPERATING PRINCIPLE**



High and Low pressures are separated by a sensor assembly consisting of a magnet, piston, Teflon seal and a range spring. The difference in pressure causes the sensor assembly to move in proportion to the change against a range spring.

A rotary magnet, located in a separate body cavity and isolated from the acting pressures, is rotated by magnetic coupling as per the linear movement of the sensor assembly. A pointer attached to the rotary magnet indicates differential pressure on the dial.

### **DIMENSIONS - STANDARD VERSION**



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



# **RANGE TABLE**

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Note: Waaree offers National / International Scales like kPa, bar, psi, kg/cm², mbar, mmWC, inWC or Equivalent scales as per the requirement can be provided on request.

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

# **GAUGE PRESSURE RANGE**

| SINGLE S | SINGLE SCALE |         |  |           |          |          |  |  |
|----------|--------------|---------|--|-----------|----------|----------|--|--|
| kPa      | kPa          | kPa     |  | kg/cm²    | kg/cm²   | kg/cm²   |  |  |
| 0 / 7.5  | 0 / 50       | 0 / 250 |  | 0 / 0.075 | 0 / 0.50 | 0 / 2.5  |  |  |
| 0 / 10   | 0 / 75       | 0 / 300 |  | 0 / 0.10  | 0 / 0.75 | 0 / 3.0  |  |  |
| 0 / 20   | 0 / 100      | 0 / 400 |  | 0 / 0.20  | 0 / 1.0  | 0 / 4.00 |  |  |
| 0 / 25   | 0 / 200      |         |  | 0 / 0.25  | 0 / 2.0  |          |  |  |

Note: Other Scale are available on customer request.

# **HOW TO ORDER**

| нО   | W TO ORDER               |                      |                     |                  |           |            | Example       |
|------|--------------------------|----------------------|---------------------|------------------|-----------|------------|---------------|
| BAS  | SIC MODEL                |                      |                     |                  |           |            |               |
| COI  | DE                       |                      |                     |                  |           |            | BG            |
|      |                          | D                    | Е                   | F                | G         | Н          |               |
| NOI  | MINAL SIZE               | 63 mm                | 80 mm               | 100 mm           | 115 mm    | 150 mm     | X             |
| CAS  | SE TYPE                  |                      |                     |                  |           |            |               |
| HN   | CASE WITHOUT FR          | ONT FLANGE           | HO CA               | SE WITH FRO      | NT FLANGE |            | XX            |
|      |                          |                      |                     |                  |           |            |               |
| TYP  | E OF MOUNTING            | G                    |                     |                  |           |            | X             |
| 2    | DIRECT BOTTOM EI         | NTRY 3 [             | DIRECT BACK         | ENTRY            | 10 IN     | LINE ENTRY | OR            |
| вог  | OY MATERIAL              |                      |                     |                  |           |            | XX            |
| HU   | ALUMINIUM                | CL A                 | AISI 316 SS         | CN MO            | NEL       |            | XX            |
| GAL  | JGE CONNECTION           | ON                   |                     |                  |           |            |               |
| 2NF  | 1/4" NPT (F) X 2         | Nos. (Standard)      | )                   |                  |           |            | XXX           |
| 2BF  | 1/4" BSP (F) X 2         | Nos.                 |                     |                  |           |            |               |
| Note | Connections like Metric/ | PT/ PF/ Flaired/ UNF | F/ G/ R etc. can be | provided on requ | est.      |            |               |
| RAN  | IGE                      |                      |                     |                  |           |            | 0.70          |
| REF  | ER RANGE TABLE           |                      |                     |                  |           |            | 0/2<br>kg/cm² |
| OP1  | TIONS                    |                      |                     |                  |           |            |               |
| RH   | CUSTOM DESIGN            | IED DIAL             |                     |                  |           |            |               |
| SW   | DIAL TAG MARKIN          | lG                   |                     |                  |           |            | XX            |
| SX   | SS TAG PLATE             |                      |                     |                  |           |            | 701           |

Ordering Example: BG - X - XX - X OR XX - XX - XXX - 0/2 kg/cm<sup>2</sup> - XX

2" PIPE/YOKE MOUNTING BRACKET & 'U' CLAMP (AISI 304 SS)

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.

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NG

JU

CALIBRATION CERTIFICATE

DAMPENING LIQUID GLYCERINE FILLED

# **DIMENSIONS - STANDARD VERSION** Differential Pressure Gauge With Diaphragm 134.5 Mounting Hole Ø120.5 **–** 20.0 Earthing 68.0 Cable Entry Process - 134.5 -Connection - 310.0 -

| NS  | ØA    | ØB    | Weight in gram (With Box) |
|-----|-------|-------|---------------------------|
| 63  | 63    | 66.5  | 3500                      |
| 80  | 80    | 82    | 3600                      |
| 100 | 102   | 104   | 3810                      |
| 115 | 118.5 | 121   | 3880                      |
| 150 | 151.5 | 155.5 | 4000                      |

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



# DIAPHRAGM OPERATED

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| HOW TO ORDER                        |              |                |                |                  |                              | F            |
|-------------------------------------|--------------|----------------|----------------|------------------|------------------------------|--------------|
| BASIC MODEL                         |              |                |                |                  |                              | Examp        |
| CODE                                |              |                |                |                  |                              | BG           |
|                                     | D            | Е              | F              | G                | Н                            |              |
| NOMINAL SIZE                        | 63 mm        | 80 mm          | 100 mm         | 115 mm           | 150 mm                       | X            |
| TYPE                                |              |                |                |                  |                              |              |
| W SWITCH GS GAUGE + S               | SWITCH       |                |                |                  |                              | XX           |
| BODY MATERIAL                       |              |                |                |                  |                              |              |
| IU ALUMINIUM CL                     | AISI 316 SS  | S CN           | MONEL          | BR BRASS         | ;                            | XX           |
| CONNECTION                          |              |                |                |                  |                              |              |
| 2NF 1/4" NPT (F) X 2 Nos. (Standard | d)           |                |                |                  |                              | XXX          |
| 2BF 1/4" BSP (F) X 2 Nos.           |              |                |                |                  |                              |              |
| MOUNTING                            |              |                |                |                  |                              |              |
|                                     | DIRECT BA    | ACK ENTRY      | 10             | IN LINE ENT      | RY                           | X<br>OR      |
|                                     |              |                |                |                  |                              | XX           |
| CASE TYPE                           |              |                |                |                  |                              |              |
| IN CASE WITHOUT FRONT FLANGE        | НО           | CASE WITH      | FRONT FLAN     | IGE              |                              | XX           |
| VINDOW                              |              |                |                |                  |                              |              |
|                                     | TOUGHEN      | NED GLASS      |                |                  |                              | XX           |
| ,                                   | TOOGNE       | VED OLINOO     |                |                  |                              | ^^           |
| DIAPHRAGM                           |              |                |                |                  |                              | VV           |
| B BUNA - N (Standard) E EPD         | OM           | V VITON        |                |                  |                              | XX           |
| RANGE                               |              |                |                |                  |                              | 0/2          |
| REFER RANGE TABLE                   |              |                |                |                  |                              | kg/ci        |
| SWITCH (# DIN PLUG - We mount it    | on top, on t | he plastic swi | tch cover, how | ever we can give | e it at the back on request) | <b>3</b> , - |
| 01 1 SPST WITH A DIN PLUG#          |              |                | ,              |                  | , ,                          |              |
| 02 1 SPST WITH A DIN PLUG#          | RIP          |                |                |                  |                              | VV           |
| 2A 1 SPST WITH BUILT IN RELAY       |              |                |                |                  |                              | XX           |
| 03 2 SPST WITH A DIN PLUG#          |              |                |                |                  |                              |              |
| 04 2 SPST WITH A TERMINAL STR       | RIP          |                |                |                  |                              |              |
| 4A 2 SPST WITH BUILT IN RELAY       |              |                |                |                  |                              |              |
| 05 1 SPDT WITH A DIN PLUG#          |              |                |                |                  |                              |              |
| 06 1 SPDT WITH A TERMINAL STR       | RIP          |                |                |                  |                              |              |
| 07 2 SPDT WITH 2 DIN PLUGS#         |              |                |                |                  |                              |              |
| 08 2 SPDT WITH A TERMINAL STR       | RIP          |                |                |                  |                              |              |
| PTIONS                              |              |                |                |                  |                              |              |
| H CUSTOM DESIGNED DIAL              | NG C         | CALIBRATION    | I CERTIFICAT   | Ε                |                              | XX           |
| W DIAL TAG MARKING                  | PY D         | DAMPENING I    | LIQUID GLYC    | ERINE FILLED     |                              | - 4          |
| X SS TAG PLATE                      | JU 2         | " PIPE/YOKE    | MOUNTING I     | BRACKET & 'U'    | CLAMP (AISI 304 SS)          |              |

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