

## bourdon tube "solid-front" pressure gauges

### HEAVY WORK

### DS 4", 6" (100-150mm)



PED 2014/68/UE ATEX 2014/34/UE TP TC 012/2011

These instruments comply with the constructive and safety prescriptions of standards **EN 837-1** and **ASME B40.1**.

In case of leaks or failure of the elastic element the operator is protected by a solid baffle wall on the front and by a blow-out back. Their design makes them suitable for use in chemical and petrochemical processing industries, and in conventional power plants. The TIG welding between the case and the process connection improves the instrument's resistance and ensures a perfect tightness when the instrument is filled with dampening liquid to dampen the fluctuations of the pointer protecting the parts in motion from vibrations and pulsating pressures. Furthermore, the instrument's internal parts are protected from condensation and corrosive atmospheres that may prevent it from operating correctly. They are suitable to withstand overpressures up to 4 times the full scale range without affecting neither the accuracy nor the repeatability.

#### 1.21.1 - Standard Model

**Design:** EN 837-1.

**Safety designation:** S3 as per EN 837-2.

**Campi scala:** from 0...15 to 10000 psi; (from 0...1 to 0...600 bar or other equivalent units)

**Accuracy class:** 1 as per EN 837-1.

**Ambient temperature:**

-4 ... +149 °F (-20...+65 °C), IP55 housing (EN 60529/IEC 529);

-63,4...+149 °F (-53...+65 °C), vented IP65/67 housing

(EN 60529/IEC 529).

**Process fluid temperature:** -40...+302°F (-40...+150 °C).

**Thermal drift:** ±0,4 %/10 °C of range (starting from 68°F - 20°C).

**Working pressure:**

100% del FSV for static pressure;

90% del FSV for pulsating pressure.

**Overpressure limit:** 400% of FSV (see table at pag. 2)

**Socket material:** AISI 316L st.st.

**Bourdon tube:** AISI 316L st.st. steamless tube

**Case:** stainless steel.

**Ring:** stainless steel, bayonet lock.

**Blow out disc:** stainless steel.

**Window:** safety glass.

**Movement:** stainless steel with internal limit stop.

**Dial:** aluminium, white with black markings

**Pointer:** adjustable, aluminium, black.

#### 1.21.2 - Fillable Model - Lower connection only

**Ambient temperature:** -4...+149 °F (-20...+65 °C), IP 67 housing (EN 60529/IEC 529).

**Other features:** as Standard Model.

#### 1.21.3 - Filled Model - Lower connection only

**Accuracy class:** 1,6 as per EN 837-1.

**Damping liquid:** glycerine 98%, silicon oil or fluorinated fluid.

**Ambient temperature:**

+32...+149°F (0...+65 °C) with glycerine filling;

-4...+149°F (-20...+65 °C) with silicon oil filling or fluorurate fluid filling.

-76...+149°F (-60...+65 °C) with silicon oil filling for low temperatures

**Process fluid temperature:** max +149°F (+65 °C).

**Protection degree:** IP 65/67 as per EN 60529/IEC 529.

**Window:** tempered glass.

**Other features:** as Standard Model.

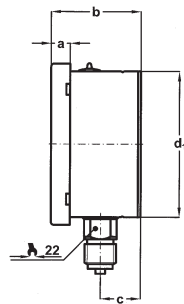
#### OXYGEN INSTRUMENTS

Glycerine and silicon oil should not be used when highly oxidizing agents as oxygen, chlorine, nitric acid or hydrogen peroxide are involved in the system because spontaneous chemical reactions, flammability or explosion may occur. The use of fluorinate fluid is recommended in these case.

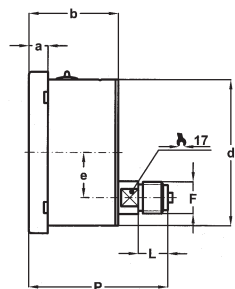
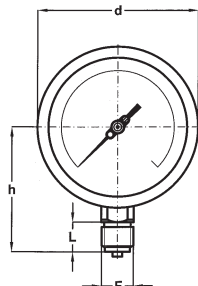
# bourdon tube "solid-front" pressure gauges

## HEAVY WORK, DS 4", 6" (100-150mm)

# MGS21



**A - LOWER CONNECTION**



**D - BACK CONNECTION**



| Mounting | DS            | F                | a     | b      | c      | d       | d <sub>1</sub> | e     | h      | p         | L         | Weight   |
|----------|---------------|------------------|-------|--------|--------|---------|----------------|-------|--------|-----------|-----------|----------|
| Lower    | E<br>4" (100) | 41M - G 1/2 A    | 0.51" | 2.46"  | 1.16"  | 4.35"   | 3.97"          |       | 3.38"  |           | 0.78"     | 1.43 lbs |
|          |               | 43M - 1/2-14 NPT | (13)  | (62,5) | (29,5) | (110,6) | (101)          | (86)  | (20)   | (0,65 kg) |           |          |
| Lower    | G<br>6" (150) | 41M - G 1/2 A    | 0.59" | 2.51"  | 1.18"  | 6.33"   | 5.92"          |       | 4.60"  |           | 0.78"     | 2.64 lbs |
|          |               | 43M - 1/2-14 NPT | (15)  | (64)   | (30)   | (161)   | (150,5)        | (117) | (20)   | (1,2 kg)  |           |          |
| Back     | E<br>4" (100) | 41M - G 1/2 A    | 0.51" | 2.46"  |        | 4.35"   | 3.97"          | 1.22" |        | 3.75"     | 0.78"     | 1.54 lbs |
|          |               | 43M - 1/2-14 NPT | (13)  | (62,5) |        | (110,6) | (101)          | (31)  | (95,5) | (20)      | (0,70 kg) |          |
| Back     | G<br>6" (150) | 41M - G 1/2 A    | 0.59" | 2.51"  |        | 6.33"   | 5.92"          | 1.22" |        | 3.77"     | 0.78"     | 2.53 lbs |
|          |               | 43M - 1/2-14 NPT | (15)  | (64)   |        | (161)   | (150,5)        | (31)  | (96)   | (20)      | (1,15 kg) |          |

dimensions : inches (mm)

(1) add 0.95 lbs (0,43 kg) for DS 4" (100) and 1.76 lbs (0,8 kg) for DS 6" (150), when filled

| bar (l) | Ranges       | 0...1 | 0...1,6 | 0...2,5 | 0...4 | 0...6 | 0...10 | 0...16 | 0...25 | 0...40 | 0...60 | 0...100 | 0...160 | 0...250 | 0...400 | 0...600 |
|---------|--------------|-------|---------|---------|-------|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
|         | Overpressure |       | 4       | 6       | 10    | 16    | 25     | 40     | 48     | 75     | 80     | 120     | 200     | 320     | 500     | 800     |

| psi | Ranges       | 0...15 | 0...30 | 0...60 | 0...100 | 0...160 | 0...200 | 0...300 | 0...400 | 0...600 | 0...1000 | 0...1500 | 0...2000 | 0...3000 | 0...4000 | 0...6000 | 0...10000 |
|-----|--------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|-----------|
|     | Overpressure |        | 60     | 120    | 240     | 400     | 480     | 600     | 900     | 1000    | 1200     | 2000     | 3000     | 4000     | 6000     | 8000     | 10000     |

| bar (l) | Ranges       | -1...0 | -1...0,6 | -1...1,5 | -1...3 | -1...5 | -1...9 | -1...15 | -1...24 |
|---------|--------------|--------|----------|----------|--------|--------|--------|---------|---------|
|         | Overpressure |        | 3        | 5        | 9      | 15     | 23     | 39      | 47      |

| psi | Ranges (2)   | -30...0 | -30...15 | -30...30 | -30...150 |
|-----|--------------|---------|----------|----------|-----------|
|     | Overpressure |         | 45       | 100      | 125       |

(1) Available measurement units kPa, MPa, kg/cm<sup>2</sup>

(2) Vacuum measurement unit: InHg

| Model   | standard  | fillable | filled |
|---|-----------|----------|--------|
| <b>C</b> - Back flange, for lower connection pressure gauges                              | ◆         | ◆        | ◆      |
| <b>E</b> - Front flange, for back connection pressure gauges                              | ◆         |          |        |
| <b>C40</b> - AISI 316L st. st. case, ring and blow out disc (compulsory option for DN100) | ◆         | ◆        | ◆      |
| <b>2G2</b> - ATEX II 2G h - A.t. -20...+60 °C (3)   | ◆         |          |        |
| <b>2D2</b> - ATEX II 2GD h - A.t. -20...+60 °C (3)  |           |          | ◆ (4)  |
| <b>2D0</b> - ATEX II 2GD h - A.t. 0...+60 °C (3)  |           |          | ◆      |
| <b>2D5</b> - ATEX II 2GD h - A.t. -53...+60 °C (3)  | ◆ (5) (6) |          |        |
| <b>2D6</b> - ATEX II 2GD h - A.t. -60...+60 °C (3)  |           |          | ◆ (7)  |
| <b>P02</b> - Oxygen service   | ◆         | ◆ (1)    | ◆ (2)  |
| <b>S10</b> - Silicone filling   |           |          | ◆      |
| <b>S60</b> - Low temperatures silicone oil filling - A.t. -60...+65°C                     |           |          | ◆      |
| <b>ECV</b> - Vented housing version, Ambient temperature -53...+65 °C (5) (8)             | ◆         |          |        |
| <b>E67</b> - Protection degree IP65/67  | ◆         |          |        |

(1) to be ordered as instruments suitable for fluorinated fluid filling with code P01

(2) to be ordered filled with fluorate fluid with code F30

(3) see ATEX execution catalogue sheet

(4) to be ordered with S10 option

(5) to be ordered with E67 option

(6) to be ordered with ECV option

(7) to be ordered with option S60

(8) the filled type is recommended in case of corrosive atmosphere

### "HOW TO ORDER" SEQUENCE

Section / Model / Case / Mounting / Diameter / Range / Process connection / Options

1 21 1 A E 41M C, E  
2 D G 43M C40...E67  
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