Subsea Gauge - All Stainless Steel
Type 233.50 - Special Compensated

Applications
- Suitable in compensated subsea environments: Tested to working depths of up 10,000 feet of sea water
- Suitable for corrosive environments and gaseous or liquid media that will not obstruct the pressure system

Special Features
- Excellent load-cycle and shock resistance
- All 316 stainless steel construction
- Positive pressure ranges up to 20,000 psi (1,600 bar)
- Black dial face with white enlarged numerals for subsea visualization
- Matte black finish case and mounting hardware for low reflectivity

Standard Features

Design
ASME B40.100

Sizes
2½" & 4" (63, 100 mm)

Accuracy class
2½": ±2/1/2% of span per ASME B40.100 Grade A
4": ± 1% of span per ASME B40.100 Grade 1A

Ranges
Vacuum / Compound to 200 psi (16 bar)
Pressure from 0/15 psi (1 bar) to 0/20,000 psi (1,600 bar) or other equivalent units of pressure or vacuum

Working pressure
2½": Steady: ¼ scale value
Fluctuating: 2/3 full scale value
Short time: Full scale value
4": Steady: Full scale value
Fluctuating: 0.9 x full scale value
Short time: 1.3 x full scale value

Operating temperature
Ambient: - 40°F to + 140°F (-20°C to + 60°C) dry
Media: Maximum +212°F (+ 100°C)

Temperature error
Additional error when temperature changes from reference temperature of 68°F (20°C) ±0.4% of span for every 18°F (10°K) rising or falling.

Weather protection
IP 68
Protected against continuous submersion in up to 10,000 feet (3048 m) of ocean depth

Pressure connection
Material: 316L stainless steel
Center back mount (CBM) for size 2½"
Lower back mount (LBM) for size 4"
1/8” NPT (size 2½”) ¼"NPT (size 2½" & 4") and ½”NPT (size 4")
High-pressure autoclave, F250C, available (consult factory for other connections)
Bourdon tube
316L stainless steel
≤ 1,000 psi (70 bar): C-type Bourdon tube
< 1,000 psi (70 bar): Helical type

Movement
Stainless steel

Dial
Black aluminum (matte finish) with white lettering;
2½" with stop pin

Pointer
White aluminum, adjustable

Case
316 Stainless Steel with vinyl compensating membrane

Case Fill
Glycerin / water mixture 86.5 / 13.5%
FDA compliant
Degassed to remove any impurities (N2, Oxygen, entrained gases) in order to minimize/eliminate compressibility of the fill fluid. 99% case fill, (air bubble no larger than ½” behind window when gauge is laid flat).

Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D²</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>S</th>
<th>T</th>
<th>Weight³</th>
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<tbody>
<tr>
<td>2½&quot;</td>
<td>mm</td>
<td>63</td>
<td>54</td>
<td>33</td>
<td>62</td>
<td>9.5</td>
<td>57</td>
<td>Note1</td>
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<td>85</td>
<td>75</td>
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<td>14</td>
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<tr>
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<td>2.13</td>
<td>1.30</td>
<td>2.44</td>
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<td>2.24</td>
<td>0.14</td>
<td>0.12</td>
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<td>0.20</td>
<td>1/4&quot;</td>
<td>0.55</td>
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<tr>
<td>4&quot;</td>
<td>mm</td>
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<td>15.5</td>
<td>83</td>
<td>30</td>
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<td>116</td>
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<tr>
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<td>3.43</td>
<td>1.95</td>
<td>3.90</td>
<td>0.61</td>
<td>3.27</td>
<td>1.18</td>
<td>0.19</td>
<td>0.12</td>
<td>5.20</td>
<td>4.57</td>
<td>0.20</td>
<td>1/2&quot;</td>
</tr>
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</table>

1 Plus 0.63” (16 mm) for pressure ranges ≥ 1,500 psi
2 Weight without optional accessories
3 D (+) 1mm for panel cutout

Crimp ring
316L stainless steel, matte black powder coated

Window
Safety Glass with Buna-N gasket

Optional Features
- Other process connections (limited to wrench flat size)
- Polycarbonate window (2½")
- Monel wetted parts
- Front Flange 316 SS, matte black powder coated
- Custom dial layouts
- Restrictor (NPT connections only)
- Other pressure scales available (bar, kPa, mPa, kg/cm²) and dual scales

Ordering information
Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.