9QGPS3100P
Pendular compression load cell
Measurement made easy
Compression load cell

Material
• Totally made of stainless steel

IP rating IP 67

Canister, high capacity load cell (up to 500 t)

Pendular technology – Self restoring

Available in C1,5 (1'500 d) OIML / R 60 (EN 45501)

Matched impedance and sensitivity (for parallel connection)

A whole range of mounting accessories available

Available options (non exhaustive list)
• ATEX intrinsic safety
• High service temperature (up to 180 °C [356 °F])
• IP rating IP 68
Applications
The load cell 9QGPS3100P is perfectly designed to the following applications:
- Weighbridges, high capacity reactors weighing
- Silos, tanks or hoppers weighing

Capacities
5 - (7.5) - 10 - (15) - 20 - 30 - 50 - (75) - 100 - (150) - 200 - 300 - 500 t

Explosion protection (option)
ATEX intrinsic safety:
- Ex II 1GD Ex ia IIC T6 or T4 Ga Ex ia IIIc T80°C Da

Specification

<table>
<thead>
<tr>
<th>Measuring accuracy</th>
<th>0.25 % F.S</th>
<th>0.1 % F.S</th>
<th>1.5 % F.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy class</td>
<td>0.25 % F.S</td>
<td>0.1 % F.S</td>
<td>1500 d OIML</td>
</tr>
<tr>
<td>Combined error (Non linearity + hysteresis)</td>
<td>&lt; ±0.25 % F.S.</td>
<td>&lt; ±0.1 % F.S.</td>
<td>&lt; ±0.035 % F.S.</td>
</tr>
<tr>
<td>Linearity error</td>
<td>&lt; ±0.25 % F.S.</td>
<td>&lt; ±0.1 % F.S.</td>
<td>&lt; ±0.03 % F.S.</td>
</tr>
<tr>
<td>Repeatability error</td>
<td>&lt; ±0.1 % F.S.</td>
<td>&lt; ±0.03 % F.S.</td>
<td>&lt; ±0.015 % F.S.</td>
</tr>
<tr>
<td>Creep error over 30 min.</td>
<td>&lt; ±0.1 % F.S.</td>
<td>&lt; ±0.06 % F.S.</td>
<td>&lt; ±0.035 % F.S.</td>
</tr>
<tr>
<td>Sensitivity tolerance</td>
<td>&lt; ±0.3 %</td>
<td>&lt; ±0.3 %</td>
<td>&lt; ±0.2 %</td>
</tr>
<tr>
<td>Temperature coefficient of the sensitivity</td>
<td>&lt; ±0.05 % F.S./10 °C</td>
<td>&lt; ±0.05 % F.S./10 °C</td>
<td>&lt; ±0.017 % F.S./10 °C</td>
</tr>
<tr>
<td>Temperature coefficient of zero signal</td>
<td>&lt; ±0.035 % F.S./10 °C</td>
<td>&lt; ±0.035 % F.S./10 °C</td>
<td>&lt; ±0.025 % F.S./10 °C</td>
</tr>
<tr>
<td>Reference temperature</td>
<td>23 °C (73.4 °F)</td>
<td>23 °C (73.4 °F)</td>
<td>23 °C (73.4 °F)</td>
</tr>
</tbody>
</table>

Temperature data
- Nominal temperature range: -10 to 45 °C (-14 to 113 °F)
- Service temperature range: -25 to 70 °C (-13 to 158 °F)
- Storage temperature range: -50 to 85 °C (-58 to 185 °F)

Electrical Data
- Input resistance: 350 to 702 Ω ±2 Ω
- Output resistance: 350 to 702 Ω ±2 Ω
- Insulation resistance (50 V): > 5000 MΩ
- Reference excitation voltage: 10 V DC
- Nominal range of excitation voltage: 3 to 12 V DC
- Nominal sensitivity: 1.5 mV/V

Load limits
- Safe load limit: 150 % F.S.
- Breaking load: > 300 % F.S.
- Static lateral force limit: 15 % F.S.
- Permissible dynamic loading: 50 % F.S.

F.S.: Full scale
**Dimensions**

**Load cell model 9QGPS3100P (Pendular compression load cells)**

Range 5 to 500 t, IP 67 (optional IP 68)

All dimensions in mm (in)

Figure 1: Standard dimensions load cell model 9QGPS3100P

### Capacities

<table>
<thead>
<tr>
<th>Range</th>
<th>Ø A (mm)</th>
<th>Ø B (mm)</th>
<th>D (mm)</th>
<th>H (mm)</th>
<th>M (mm)</th>
<th>RR1 (mm)</th>
<th>RR2 (mm)</th>
<th>H1 (mm)</th>
<th>H2 (mm)</th>
<th>Max deflexion</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 30 t</td>
<td>54 (2.13)</td>
<td>42 (1.65)</td>
<td>13 (0.51)</td>
<td>135 (5.31)</td>
<td>M10</td>
<td>200 (7.87)</td>
<td>250 (9.84)</td>
<td>165 (6.50)</td>
<td>205 (8.07)</td>
<td>0.03 to 0.1 (0.0012 to 0.0039)</td>
<td>2.2 (4.85)</td>
</tr>
<tr>
<td>50 to 100 t</td>
<td>89 (3.50)</td>
<td>64 (2.52)</td>
<td>30 (1.18)</td>
<td>190 (7.48)</td>
<td>M12</td>
<td>300 (11.81)</td>
<td>300 (11.81)</td>
<td>234 (9.17)</td>
<td>294 (11.57)</td>
<td>0.26 to 0.34 (0.0102 to 0.0134)</td>
<td>5 (11.02)</td>
</tr>
<tr>
<td>150 to 200 t</td>
<td>115 (4.53)</td>
<td>90 (3.54)</td>
<td>20 (0.79)</td>
<td>210 (8.27)</td>
<td>M16</td>
<td>400 (15.75)</td>
<td>400 (15.75)</td>
<td>290 (11.42)</td>
<td>370 (14.57)</td>
<td>0.33 (0.0130)</td>
<td>15 (33.07)</td>
</tr>
<tr>
<td>300 t</td>
<td>136 (5.35)</td>
<td>110 (4.33)</td>
<td>240 (9.45)</td>
<td>338 (13.31)</td>
<td>418 (16.46)</td>
<td>0.4 (0.0157)</td>
<td>23 kg (50.71)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 t</td>
<td>180 (7.09)</td>
<td>130 (5.12)</td>
<td>25 (0.98)</td>
<td>350 (13.78)</td>
<td>M12</td>
<td>600 (23.62)</td>
<td>600 (23.62)</td>
<td>610 (24.02)</td>
<td>—</td>
<td>0.57 (0.0224)</td>
<td>46 kg (101.41)</td>
</tr>
</tbody>
</table>

* Tolerance 0 to −0.1 (0 to −0.0039)

Figure 2: Accessories

**Wiring code**

- Ext. - Yellow (Jaune)
- Ext. - Green (Vert)
- Ext. - White (Blanc)
- Ext. - Brown (Brun)

Standard: Cable screen not connected to transducer

Fonctionnement non connecté au capteur
Load cell model H3100P (Hard compression pieces for 3100P)

Material stainless steel
All dimensions in mm (in)

<table>
<thead>
<tr>
<th>Capacities</th>
<th>Ø A</th>
<th>Ø B</th>
<th>C</th>
<th>H</th>
<th>Ø (O-Ring)</th>
<th>Weight kg (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 30 t</td>
<td>64  (2.52)</td>
<td>44  (1.73)</td>
<td>20 (0.79)</td>
<td>30 (1.18)</td>
<td>42 × 3 (1.65 × 0.12)</td>
<td>±0.65 (1.43)</td>
</tr>
<tr>
<td>50 to 100 t</td>
<td>99  (3.90)</td>
<td>66  (2.60)</td>
<td>32 (1.26)</td>
<td>43 (1.69)</td>
<td>64 × 4 (2.52 × 0.16)</td>
<td>±2.3 (5.07)</td>
</tr>
<tr>
<td>150 to 200 t</td>
<td>128 (5.04)</td>
<td>92  (3.62)</td>
<td>50 (1.97)</td>
<td>65 (2.56)</td>
<td>90 × 5 (3.45 × 0.20)</td>
<td>±6 (13.23)</td>
</tr>
<tr>
<td>300 t</td>
<td>148 (5.83)</td>
<td>112 (4.41)</td>
<td>59 (2.32)</td>
<td>75 (2.95)</td>
<td>110 × 5 (4.33 × 0.20)</td>
<td>±9 (19.84)</td>
</tr>
<tr>
<td>500 t</td>
<td>178 (7.01)</td>
<td>132 (5.20)</td>
<td>90 (3.54)</td>
<td>105 (4.13)</td>
<td>130 × 5 (5.12 × 0.20)</td>
<td>±19.3 (42.55)</td>
</tr>
</tbody>
</table>

Other capacities and dimensions available on request.
... Dimensions

Accessories

Load cell model I3100 stainless steel (including rod ends), model I3105 coated steel
Easy mount for models 9QGPS3100P and 9QGPS3105P
Range 5 to 30 t
All dimensions in mm (in)
Figure 6: How to install 9QGPS3100P load cells with easy mount I310x and M310x on different applications correctly.
... Dimensions

Accessories

Load cells model M3100 (stainless steel), model M3105 (coated steel)
Pendular kit unit for models 9QGPS3100P and 9QGPS3105P, Range 5 to 500 t
All dimensions in mm (in)

---

<table>
<thead>
<tr>
<th>Capacities t</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Ø1</th>
<th>H2</th>
<th>Weight kg (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 30</td>
<td>118</td>
<td>150</td>
<td>78</td>
<td>110</td>
<td>20</td>
<td>17</td>
<td>205</td>
<td>≈ 5.7 (12.57)</td>
</tr>
<tr>
<td>50 to 100</td>
<td>130</td>
<td>170</td>
<td>90</td>
<td>130</td>
<td>30</td>
<td>21</td>
<td>294</td>
<td>≈ 13 (28.66)</td>
</tr>
<tr>
<td>150 to 200</td>
<td>185</td>
<td>235</td>
<td>135</td>
<td>185</td>
<td>40</td>
<td>25</td>
<td>370</td>
<td>≈ 35.5 (78.26)</td>
</tr>
<tr>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>416</td>
<td>594</td>
<td>≈ 41 (90.39)</td>
</tr>
<tr>
<td>500</td>
<td>200</td>
<td>260</td>
<td>200</td>
<td>260</td>
<td>40</td>
<td>27</td>
<td>594</td>
<td>≈ 78 (171.96)</td>
</tr>
</tbody>
</table>

Figure 7: Accessories, pendular kit unit for models 9QGPS3100P and 9QGPS3105P

Figure 8: Correct use of tie rods
Notes
Measurement made easy

Compression load cell

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Abb Automation GmbH
Measurement & Analytics
Force Measurement
Oberhausener Str. 33
40472 Ratingen
Deutschland
Tel: +49 2102 12-2520
Fax: +49 2102 12-1414
Email: forcemeasurement@de.abb.com

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