# Sight Glass Level Gauges

## Description
Level Gauges for direct reading of liquid levels in vessels and tanks.

## Applications
- Refineries
- Off-shore
- Oil and gas
- Power stations
- Chemical plants
- Thermofluid oil installations
- Refrigerating plants
- Cryogenic services

## Rating
- Pressure rating PN 6 – 250
- Operating temperatures from −200 up to + 400 °C

## Product groups
- Reflex type
- Transparent type with glass or mica
- Refraction type
- Tubular type

## Chambers
- fixed, flanged, pivoted, screwed or weldable
- interrupted or continuous visible length

## Materials
- Forged steel, stainless steel, suitable for pressure equipment according to EN or ASME
- Particularly corrosion resistant materials as Duplex, Monel, Inconel, Hastelloy, Titanium, etc.

## Shut-off valves
- handwheel or quick closing lever
- with ball check
- flanged or union connection

## Accessories
- Drain and vent
- Illumination
- Heating
- Scale
- Frost protection
- Ultraviolet protection
- Corrosion protection
- Lining/coating PTFE/Halar, rubber

## Certificates
- Test certificates according to DIN EN 10204
- Sour gas regulation NACE
- Tests to customers requirements

## Necessary data
Glass type, Design pressure (p), Design temperature (T), center to center distance (ME), visible length (SL), materials, process connection, ex classification, quantity

Special constructions available upon request. For further details please use our datasheets.
## Sight Glass Level Gauges Type Overview

<table>
<thead>
<tr>
<th>Basic-Type</th>
<th>Pressure rating</th>
<th>Body type</th>
<th>Connection</th>
<th>Gauge valve</th>
<th>Internal connection</th>
<th>Actuation</th>
<th>Special</th>
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*) GH = Glass holder in-between
### Valves Type Overview

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### Sight Glass Level Gauges Accessories

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<th>Description</th>
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<td>Sight Glass Level Gauges Connections</td>
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<td>Frost protection / Flat glasses / Gaskets</td>
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<td></td>
<td>Mica and gasket / Mica packages PDESIGN / Corrosion protection / Pointer low water</td>
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<td></td>
<td>Corrosion protection with mica / Corrosion protection and anti-adhesive / Scale / Heating</td>
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**Functional Description Sight Glass Level Gauges**

**Reflex glass type acc. to DIN 7081**
Incident light is reflected at the reflex grooves of the sight glass plate covered by gas and is broken into the liquid in the part covered by medium. The liquid level is visible as a dark bar, the gaseous space as a silvery bar.

**Transparent glass type acc. to DIN 7081**
Incident light is reflected at the reflex grooves of the sight glass plate covered by gas and is broken into the liquid in the part covered by medium. The liquid level is visible as a dark bar, the gaseous space as a silvery bar.

**Refraction type with mica sheets**
The incident light of a lamp is guided through the two mica sheet packages in an angle and passes the medium between them. In gaseous phase the light is guided straight forward and passes both mica packets, in liquid the light is refracted away. The liquid level is visible as a black bar and the gas as a bright bar.
**Design Sight Glass Level Gauges**

The main part of the sight glass level gauge is the chamber. A duct for the medium (or heating agent) is machined into the gauge body as well as the support surfaces for the gaskets and glasses or micas. Glass plates and/or micas are mounted with gasket and cushion and are fixed with the cover plate or pressure frames and bolts. The glass plates used for sight glass level gauges correspond to DIN 7081 and are suitable for temperatures up to 243 °C (280 °C when protected with mica) for steam, up to 300 °C for other liquids, and in special cases up to 400 °C. Borosilicate glass is standard quality. For conditions above the natural mineral mica is used. The process connection normally is equipped with gauge valves. Drain valves are used for draining the gauge and are generally mounted on the lower end of the gauge body. In Special cases a vent valve can be installed on the upper end.

**Gauge body**
Contains the liquid duct, the level corresponds with the level in the vessel.

**Cover**
Clamping for Glass plate.

**Gasket**
Recessed sealing between liquid duct and ambient.

**Glass**
Glass plates according to DIN 7081, made of Borosilicate-Glass, quartz, Aluminum silicate.

**Cushion**
Mechanical protection between cover and glass.

**Bolt / Nut**
Take up the forces of the pressure inside.
**Gauge valves**

**Functional description**
The gauge valves are used to shut off the vessel against the level gauge. The actuation can be done by a lever (120°) or a handwheel. All gauge valves are equipped with a ball check as a safety device.

**Functional principle ball check**

The ball check is a safety device which is used in all gauge valves. Its task is to avoid heavy leakage after breaking of a glass or mica window or leakages due to other reasons. The ball is located below the seat. As soon as there is leakage causing flow of liquid, the ball is driven to the seat by the liquid (L1p > 0.5 bar). This closes the valve and stops heavy leakage.

**Operation directions of quick closing valve and handwheel**

**View direction onto vessel**

**Complete specification for view direction and valve orientation**

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<tr>
<th>Sight direction</th>
<th>actuation direction</th>
<th>valve actuator</th>
<th>valve type</th>
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<td>LI-RE-SS-Eck</td>
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*E. g. view direction left, actuation direction right, quick closing, angle type: LI-RE-SS-Eck*
Arrangement of Sections
Flat glasses acc. to DIN 7081

Visible length and glass type

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</tbody>
</table>

Matrix valid for $A = 45$

We recommend max. 7 segments and above the use of multiple gauges.
Sight Glass Level Gauge CL 300
Type 700.1201 (reflex) / 700.1202 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 300 (depends on glass type). Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection side–side fixed
- Connection gauge valve to gauge chamber: union
- Handwheel

General Data
Visible length SL ≤ ME
Connection gauge valve-body union
Gauge valve types see datasheet 760.51/52
Actuation handwheel
Material glass plates acc. to DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frost protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
**Sight Glass Level Gauge CL 900**

Type 700.1201A (reflex) / 700.1202A (transparent)

### Applications

Direct reading liquid level indicator for general applications up to CL 900 (depends on glass type). Increased safety with ball check valves.

### Special Features

- Light execution
- Reflex, Transparent
- Connection side–side fixed
- Connection gauge valve to gauge chamber: union
- Handwheel

### General Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible length SL</td>
<td>≤ ME</td>
</tr>
<tr>
<td>Connection gauge valve-body</td>
<td>union</td>
</tr>
<tr>
<td>Gauge valve types</td>
<td>see datasheet 760.51/52</td>
</tr>
<tr>
<td>Actuation</td>
<td>handwheel</td>
</tr>
<tr>
<td>Material glass plates acc. to DIN7081</td>
<td>Borosilicate</td>
</tr>
<tr>
<td>Material media wetted parts</td>
<td>CS, SS</td>
</tr>
</tbody>
</table>

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

### Design Data

Derating depends on temperature and window size.

### Further Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process connection</td>
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<tr>
<td>Vent</td>
<td>see Connections</td>
</tr>
<tr>
<td>Drain</td>
<td>see Connections</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass protection etc.</td>
<td>see Accessories</td>
</tr>
<tr>
<td>Frosts protection</td>
<td>see Accessories</td>
</tr>
<tr>
<td>Illumination</td>
<td>see Accessories</td>
</tr>
<tr>
<td>Scale</td>
<td>see Accessories</td>
</tr>
<tr>
<td>Heating</td>
<td>see Accessories</td>
</tr>
</tbody>
</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 300
Type 700.1301 (reflex) / 700.1302 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 300 (depends on glass type). Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection side–side fixed
- Connection gauge valve to gauge chamber: union
- Quick closing

General Data
Visible length SL \( \leq \) ME
Connection gauge valve-body union
Gauge valve types see datasheet 760.56/57
Actuation quick closing
Material glass plates acc. to DIN 7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 600
Type 700.1301A (reflex) / 700.1302A (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 900 (depends on glass type). Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection side–side fixed
- Connection gauge valve to gauge chamber: union
- Quick closing

General Data
Visible length SL ≤ ME
Connection gauge valve-body union
Gauge valve types see datasheet 760.56/57
Actuation quick closing
Material glass plates acc. to DIN 7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 300
Type 700.2101 (reflex) / 700.2102 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 300 (depends on glass type). Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection top-bottom pivoted
- Connection gauge valve to gauge chamber: union
- Offset, handwheel

General Data
Visible length SL  < ME – 180 mm
Connection gauge valve-body union
Gauge valve types see datasheet 760.53
Actuation handwheel
Material glass plates acc. to DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frost protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 900
Type 700.2101A (reflex) / 700.2102A (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 900 (depends on glass type). Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection top-bottom pivoted
- Connection gauge valve to gauge chamber: union
- Offset, handwheel

General Data
Visible length SL < ME – 180 mm
Connection gauge valve-body union
Gauge valve types see datasheet 760.53
Actuation handwheel
Material glass plates acc. to DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 300
Type 700.2301 (reflex) / 700.2302 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 300 (depends on glass type).
Increased safety with ball check valves.

Special Features
- Light execution
- Reflex, Transparent
- Connection top-bottom pivoted
- Connection gauge valve to gauge chamber: union
- Offset, quick closing

General Data
Visible length SL < ME – 180 mm
Connection gauge valve-body union
Gauge valve types see datasheet 760.58
Actuation quick closing
Material glass plates acc. To DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary.
Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 600
Type 700.2301A (reflex) / 700.2302A (transparent)

**Applications**
Direct reading liquid level indicator for general applications up to CL 900 (depends on glass type).
Increased safety with ball check valves.

**Special Features**
- Light execution
- Reflex, Transparent
- Connection top-bottom pivoted
- Connection gauge valve to gauge chamber: union
- Offset, quick closing

**General Data**
Visible length \( SL < ME - 180 \text{ mm} \)
Connection gauge valve-body union
Gauge valve types see datasheet 760.58
Actuation quick closing
Material glass plates acc. To DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary.
Types with special materials e.g. Hastelloy, Monel etc. are available.

**Design Data**
Derating depends on temperature and window size.

**Further Data**
Process connection see Connections
Vent see Connections
Drain see Connections

**Accessories**
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 300
Type 700.2601 (reflex) / 700.2602 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 1500 (depends on glass type). Increased safety with ball check valves.

Special Features
■ „Cold“ High pressure
■ Reflex, Transparent
■ Connection side-side fixed
■ Connection gauge valve to gauge chamber: union
■ Handwheel

General Data
Visible length SL ≤ ME
Connection gauge valve-body union
Gauge valve types see datasheet 760.51/52
Actuation handwheel
Material glass plates acc. To DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frost protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL 1500
Type 700.2701(reflex) / 700.2702 (transparent)

Applications
Direct reading liquid level indicator for general applications up to CL 1500 (depends on glass type). Increased safety with ball check valves.

Special Features
- „Cold“ High pressure
- Reflex, Transparent
- Connection top-bottom pivoted
- Connection gauge valve to gauge chamber: union
- Offset, handwheel

General Data
Visible length SL ≤ ME – 180 mm
Connection gauge valve-body union
Gauge valve types see datasheet 760.53
Actuation handwheel
Material glass plates acc. To DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge weld-in CL 600
Type 700.31/3201(reflex) / 700.31/3202 (transparent)

Applications
Direct reading liquid level indicator for welding in a container wall, up to CL 600.

Special Features
- Reflex, Transparent
- Body open, closed

General Data
Body  | weld-in
Process connection | welded
Material glass plates acc. To DIN7081 | Borosilicate
Material media wetted parts | CS, SS

Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Accessories
Glass protection etc.  | see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Dimension table glass sizes

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<th>Glass size</th>
<th>length L</th>
<th>sight length SL</th>
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<tbody>
<tr>
<td>0</td>
<td>118</td>
<td>75</td>
</tr>
<tr>
<td>1</td>
<td>138</td>
<td>95</td>
</tr>
<tr>
<td>2</td>
<td>153</td>
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<td>3</td>
<td>188</td>
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<td>4</td>
<td>213</td>
<td>170</td>
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<td>5</td>
<td>243</td>
<td>200</td>
</tr>
<tr>
<td>6</td>
<td>273</td>
<td>230</td>
</tr>
<tr>
<td>7</td>
<td>303</td>
<td>260</td>
</tr>
<tr>
<td>8</td>
<td>343</td>
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<td>363</td>
<td>320</td>
</tr>
<tr>
<td>10</td>
<td>393</td>
<td>350</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glass size</th>
<th>length L</th>
<th>sight length SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>423</td>
<td>380</td>
</tr>
<tr>
<td>12</td>
<td>453</td>
<td>410</td>
</tr>
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<td>13</td>
<td>483</td>
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<td>683</td>
<td>640</td>
</tr>
<tr>
<td>20</td>
<td>723</td>
<td>680</td>
</tr>
</tbody>
</table>
Sight Glass Level Gauge CL 300
Type 700.4601 (reflex) / 700.4602 (transparent)

Applications
Direct reading liquid level indicator with glass tube for out-gasing media up to CL 300 (depends on glass type).

Special Features
- Reflex, Transparent
- Connection top-bottom pivoted
- Gauge heads 760.51/52/53

General Data
Visible length SL < GL
Process connection flange, nipple
Material glass plates acc. To DIN7081 Borosilicate
Material media wetted parts CS, SS

Depending on delivery situation material can vary. Types with special materials e.g. Hastelloy, Monel etc. are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Reflection Water Level Gauge CL 300
Type 700.B1 (Reflex)

Applications
The liquid water level gauge type 700.B1 is a reflection gauge for direct reading water level in steam boilers. They are equipped with sight glasses with grooves for a clear contrast in the display.

Special Features
- Reflection
- Connection side-side fixed
- Gauge heads integrated
- Glass holder: side plates, hinged
- Handwheel

General Data
Sight length SL*) < ME
Glass size**) 2 – 11 (34 x 17 mm)
Actuation handwheel
Connection gauge head-body valves integrated
Valve passage 8 mm
Process connection flange DIN, EN or ANSI
Materials
- Sight glasses DIN 7081 Borosilikate
- Glass holder CS
- Connection flanges CS
- Shut off parts SS
- Gaskets Graphite

Design Data
Design temperature / Design pressure –10...100°C / 40 bar
up to 200°C / 32 bar
up to 243°C / 30 bar

Accessories
Pointer NW-mark acc. to TRD
For shut off valves automatically closing ball (safety device)
(least 1 bar pressure tanks required for the function)
Glass protection Mica exterior protection

*) Sight length „SL“ = min. center-center-distance ME – 80 mm
**) Other glass sizes available on request.
CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
<td>370</td>
<td>400</td>
</tr>
<tr>
<td>SL per segment</td>
<td>120</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
<td>350</td>
<td>380</td>
</tr>
<tr>
<td>1 x glass size</td>
<td>200</td>
<td>225</td>
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<td>280</td>
<td>310</td>
<td>340</td>
<td>380</td>
<td>400</td>
<td>430</td>
<td>460</td>
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<tr>
<td>2 x glass size</td>
<td>370</td>
<td>420</td>
<td>470</td>
<td>530</td>
<td>590</td>
<td>650</td>
<td>730</td>
<td>770</td>
<td>830</td>
<td>890</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>540</td>
<td>615</td>
<td>690</td>
<td>780</td>
<td>870</td>
<td>960</td>
<td>1080</td>
<td>1140</td>
<td>1230</td>
<td>1320</td>
</tr>
</tbody>
</table>
Applications

The liquid level gauge type NIVOFLEX 22/230 is a universal direct reading reflection level gauge for heating engineering, refrigerating engineering as well as for storage vessels, considering the chemical resistance of the used materials. They are equipped with sight glasses with grooves for a clear contrast in the display.

General Data

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Valves</td>
<td>integrated at top and bottom</td>
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<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>flange DIN 20-25/PN 40, Form C</td>
</tr>
<tr>
<td>Draining valve</td>
<td>Type 17501</td>
</tr>
<tr>
<td>Vent screw</td>
<td>G ½ x 14 mm, DIN 910</td>
</tr>
</tbody>
</table>

Materials

- Glass holder: CS or SS
- Connection flanges: CS or SS
- Draining valve: CS or SS
- Shut-off parts: SS Mat. 1.4401, 1.4571
- Reflection sight glasses: Borosilikat, with grooves acc. to DIN 7081
- Gaskets: non-asbestos (Graphite with foil)

Accessories

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pointer</td>
<td>NW-mark acc. to TRD</td>
</tr>
<tr>
<td>For shut off valves</td>
<td>automatically closing ball (safety device)</td>
</tr>
<tr>
<td></td>
<td>(at least 1 bar pressure tanks required for the function)</td>
</tr>
<tr>
<td>Glass protection</td>
<td>Mica exterior protection</td>
</tr>
</tbody>
</table>

CS (carbon steel) and SS (stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
**Glass size / range of centre-to-centre distance**

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>120</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>min. center-to-center-distance / mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x glass size</td>
</tr>
<tr>
<td>2 x glass size</td>
</tr>
<tr>
<td>3 x glass size</td>
</tr>
<tr>
<td>4 x glass size</td>
</tr>
<tr>
<td>5 x glass size</td>
</tr>
</tbody>
</table>

* Reflection glasses DIN 7081, width 34 mm, thickness 17 mm

**Sight length SL = min. center-to-center-distance ME – 80 mm**

** Interruption between 2 sight glasses min. 45 mm**

**Design Data**

<table>
<thead>
<tr>
<th>Design pressure PN 40 (with shut-off valve)</th>
<th>Design pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design temperature*</td>
<td></td>
</tr>
<tr>
<td>– 10 ... 120 °C</td>
<td>40 bar</td>
</tr>
<tr>
<td>– 10 ... 200 °C</td>
<td>35 bar</td>
</tr>
<tr>
<td>– 10 ... 243 °C</td>
<td>32 bar</td>
</tr>
</tbody>
</table>

max. temperature for reflection glass acc. to DIN 7081 = 243 °C

*Design – 60°C available on request

**Anordnung C**

![Diagram](image_url)

Reflection glass

Direction of view
Reflection Water Level Gauge PN 40
Type 700.B5 (Reflex)

Applications
The liquid water level gauge type 700.B5 is a reflection
gauge for direct reading water level in steam boilers. They are
equipped with sight glasses with grooves for a clear contrast
in the display.

Special Features
- Reflection
- Connection side-side fixed
- Gauge heads side-side
- Glass holder: side plates, hinged
- Lever

General Data
Sight length SL*) <ME
Glass size**) 2 – 11 (34 x 17 mm)
Actuation lever
Connection gauge head-body valves side-side
Valve type 760.11
Valve passage 8 mm
Process connection flange DIN, EN or ANSI
Materials
- Sight glasses DIN 7081 Borosilicate
- Glass holder CS
- Connection flanges CS
- Shut off parts SS
- Gaskets Graphite

Design Data
Design temperature / Design pressure – 10...100°C / 40 bar
up to 200°C / 32 bar
up to 243°C / 30 bar

Accessories
Pointer NW-mark acc. to TRD
For shut off valves automatically closing ball
(safety device)
(at least 1 bar pressure tanks
required for the function)
Glass protection Mica exterior protection

*) Sight length SL = min. center-center-distance ME – 80 mm
**) Other glass sizes available on request.

) Reflection glass
- Connection flanges
- Shut off parts
- Gaskets
- Materials:
- Sight glasses DIN 7081
- Glass holder
- Connection flanges
- Shut off parts
- Gaskets

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
<td>370</td>
<td>400</td>
</tr>
<tr>
<td>SL per segment</td>
<td>120</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
<td>350</td>
<td>380</td>
</tr>
<tr>
<td>1 x glass size</td>
<td>200</td>
<td>225</td>
<td>250</td>
<td>280</td>
<td>310</td>
<td>340</td>
<td>380</td>
<td>400</td>
<td>430</td>
<td>460</td>
</tr>
<tr>
<td>2 x glass size</td>
<td>370</td>
<td>420</td>
<td>470</td>
<td>530</td>
<td>590</td>
<td>650</td>
<td>730</td>
<td>770</td>
<td>830</td>
<td>890</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>540</td>
<td>615</td>
<td>690</td>
<td>780</td>
<td>870</td>
<td>960</td>
<td>1080</td>
<td>1140</td>
<td>1230</td>
<td>1320</td>
</tr>
</tbody>
</table>

Materials:
- Sight glasses DIN 7081
- Glass holder
- Connection flanges
- Shut off parts
- Gaskets

CS (= carbonsteel) and SS (= stainless steel type 316SS) are
materials suitable for Pressure Vessels according to
EN or ASME.
Reflection Water Level Gauge PN 40
Type 700.B7 (Reflex)

Applications
The water level gauge type 700.B7 is a universal reflection gauge for direct reading water level e.g. for storage vessels. They are equipped with sight glasses with grooves for a clear contrast in the display.

Special Features
- Reflection
- Connection side-side fixed
- Gauge heads side-side
- Glass holder: side plates, hinged
- Lever

General Data

<table>
<thead>
<tr>
<th>Sight length SL*)</th>
<th>&lt;ME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuation</td>
<td>lever</td>
</tr>
<tr>
<td>Connection gauge head – glass holder</td>
<td>valves side-side</td>
</tr>
<tr>
<td>Valve type</td>
<td>760.11</td>
</tr>
<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>flange DIN, EN or ANSI</td>
</tr>
<tr>
<td>Vent plug</td>
<td>M 12x12, DIN 910</td>
</tr>
</tbody>
</table>

Materials
- Sight glasses DIN 7081
- Glass holder
- Connection flanges
- Shut off parts
- Gaskets

Design Data

Design temperature / Design pressure
-10 … 120 °C / 40 bar
-10 … 238 °C / 32 bar

Accessories

<table>
<thead>
<tr>
<th>Pointer</th>
<th>NW-mark acc. to TRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>For shut off valves</td>
<td>automatically closing ball (safety device) (at least 1 bar pressure tanks required for the function)</td>
</tr>
</tbody>
</table>

Glass protection
- Mica exterior protection

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>120</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
<tr>
<td>vertical CCD* from</td>
<td>233,5</td>
<td>257,5</td>
<td>281,5</td>
<td>310,5</td>
<td>339,5</td>
<td>368,5</td>
<td>407</td>
<td>426,5</td>
</tr>
<tr>
<td>to</td>
<td>265</td>
<td>290</td>
<td>320</td>
<td>345</td>
<td>375</td>
<td>415</td>
<td>435</td>
<td>465</td>
</tr>
</tbody>
</table>
Transparent Sight Glass Level Gauge PN 40
Type 700.C0 (Transparent)

Applications
The transparent sight glass level gauge type 700.C0 is für direct reading e.g. for storage vessels.

Special Features
- Transparent
- Connection back-side
- Gauge heads integrated
- Glass holder with smooth sight glasses
- Handwheel

General Data
- Sight length SL*) < ME
- Actuation: handwheel
- Connection gauge head-body: valves integrated
- Valve passage: 8 mm
- Process connection: flange DIN, EN or ANSI
- Materials:
  - Sight glasses DIN 7081: Borosilicate
  - Glass holder: CS
  - Connection flanges: CS
  - Drain valve: CS
  - Shut off parts: SS
  - Gaskets: Graphite

Design Data
- Design temperature / Design pressure:
  - 10 ... 100°C / 40 bar
  - 10 ... 200°C / 32 bar
  - 10 ... 243°C / 30 bar
  - 10 ... 300°C* / 30 bar
  (* with mica protection inner side)

Accessories
- Pointer: NW-mark acc. to TRD
- For shut off valves: automatically closing ball (safety device) (at least 1 bar pressure tanks required for the function)
- Glass protection: Mica exterior protection

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
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<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>120</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1 x glass size</th>
<th>2 x glass size</th>
<th>3 x glass size</th>
<th>4 x glass size</th>
<th>5 x glass size</th>
</tr>
</thead>
<tbody>
<tr>
<td>min. center-to-center-distance / mm</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>400</td>
</tr>
<tr>
<td>1 x glass size</td>
<td>525</td>
<td>600</td>
<td>675</td>
<td>750</td>
<td>825</td>
</tr>
<tr>
<td>2 x glass size</td>
<td>770</td>
<td>870</td>
<td>960</td>
<td>1050</td>
<td>1140</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>1015</td>
<td>1135</td>
<td>1255</td>
<td>1375</td>
<td>1495</td>
</tr>
<tr>
<td>4 x glass size</td>
<td>1280</td>
<td>1410</td>
<td>1560</td>
<td>1700</td>
<td>1860</td>
</tr>
<tr>
<td>5 x glass size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) Sight length SL = center-to-center-distance ME – 80 mm
Interruption between 2 sight glasses: min. 45 mm

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Transparent Sight Glass Level Gauge PN 63
Type 700.C4 (Transparent)

Applications
The transparent sight glass level gauge type 700.C4 is für direct reading e.g. for storage vessels.

Special Features
- Transparent
- Connection back-side
- Gauge heads backside
- Glass holder with smooth sight glasses
- Lever

General Data
Sight length SL*) < ME
Actuation lever
Connection gauge head-body valves backside
Valve type 760.68
Valve passage 8 mm
Process connection flange DIN, EN or ANSI
Materials CS, SS
Material sight glasses DIN 7081 Borosilikate
Material Gaskets Graphite
Other materials on request.

Design Data
Design temperature / Design pressure – 10 ... 120°C / 63 bar
(for glass sizes 2 to 9)
– 10 ... 200°C / 50 bar
– 10 ... 243°C / 45 bar
– 10 ... 300°C* / 40 bar
*) with mica protection inner side

Accessories
Pointer NW-mark acc. to TRD
For shut off valves automatically closing ball (safety device)
(at least 1 bar pressure tanks required for the function)
Glass protection Mica exterior protection
Illumination device series see 709
Valves with stuffing box enlarged version for easy outgasing fluids.

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

min. center-to-center-distance / mm

| 1 x glass size | 330 | 360 | 390 | 430 | 450 |
| 2 x glass size | 585 | 645 | 705 | 785 | 825 |
| 3 x glass size | 840 | 930 | 1020 | 1140 | 1200 |
| 4 x glass size | 1095 | 1215 | 1335 | 1495 | 1575 |
| 5 x glass size | 1350 | 1500 | 1650 | 1850 | 1950 |
Transparent Sight Glass Level Gauge PN 100
Type 700.C5 (Transparent)

Applications

The transparent sight glass level gauge type 700.C5 is für direct reading e.g. for storage vessels.

Special Features

- Transparent
- Connection back-side
- Gauge heads backside
- Glass holder with smooth sight glasses
- Lever

General Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight length SL*)</td>
<td>&lt; ME</td>
</tr>
<tr>
<td>Actuation</td>
<td>lever</td>
</tr>
<tr>
<td>Connection gauge head-body</td>
<td>valves backside</td>
</tr>
<tr>
<td>Valve type</td>
<td>760.6B</td>
</tr>
<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>flange DIN, EN or ANSI</td>
</tr>
<tr>
<td>Materials</td>
<td>CS, SS</td>
</tr>
<tr>
<td>Material sight glasses DIN 7081</td>
<td>Borosilikate</td>
</tr>
<tr>
<td>Material Gaskets</td>
<td>Graphite</td>
</tr>
<tr>
<td>Other materials on request.</td>
<td></td>
</tr>
</tbody>
</table>

Design Data

Design temperature / Design pressure – 10...120°C / 100 bar
(for glass sizes 2 to 9) – 10...200°C / 90 bar
– 10...300°C*/ 82 bar

*) with mica protection inner side

Accessories

- Pointer NW-mark acc. to TRD
- For shut off valves automatically closing ball
  (safety device)
  (at least 1 bar pressure tanks required for the function)
- Glass protection Mica exterior protection
- Illumination device series see 709

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
<tr>
<td>min. center-to-center-distance / mm</td>
<td>330</td>
<td>360</td>
<td>390</td>
<td>430</td>
<td>450</td>
</tr>
<tr>
<td>1 x glass size</td>
<td>585</td>
<td>645</td>
<td>705</td>
<td>785</td>
<td>825</td>
</tr>
<tr>
<td>2 x glass size</td>
<td>840</td>
<td>930</td>
<td>1020</td>
<td>1140</td>
<td>1200</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>1095</td>
<td>1215</td>
<td>1335</td>
<td>1495</td>
<td>1575</td>
</tr>
<tr>
<td>4 x glass size</td>
<td>1350</td>
<td>1500</td>
<td>1650</td>
<td>1850</td>
<td>1950</td>
</tr>
</tbody>
</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Sight Glass Level Gauge CL up to 600
Type 700.C601 (Reflex), 700.C602 (Transparent)

Applications
Direct reading liquid level indicator for boiler level up to CL 600 (depends on glass type). Increased safety with ball check valves.

Special Features
- Reflex, Transparent
- Connection side-side fixed
- Connection gauge valve to gauge chamber: flange
- Double shut-off, handwheel and lever

General Data
Sight length SL ≤ ME
Connection gauge valve - body flange
Gauge valve types 760.18
Actuation handwheel and lever
Material sight glasses DIN 7081 Borosilikate, mica protection
Material media wetted parts CS
Types with special materials are available.

Design Data
Derating depends on temperature and window size.

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Glass protection etc. see Accessories
Frosts protection see Accessories
Illumination see Accessories
Scale see Accessories
Pointer low water see Accessories
Heating see Accessories

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Transparent Sight Glass Level Gauge PN 100
Type 700.C7

Applications
The transparent sight glass level gauge type 700.C7 is for direct reading e.g. for steam boilers.

Special Features
- Red - green
- Connection back-side
- Gauge heads backside
- Glass holder with smooth sight glasses
- Lever

General Data
- Sight length SL*) < ME
- Actuation lever
- Connection gauge head-body valves backside
- Valve type 760.68
- Valve passage 8 mm
- Process connection flange DIN, EN or ANSI
- Materials CS
- Material sight glasses DIN 7081 Borosilikate
- Material gaskets Graphite
- Other materials on request.

Design Data
- Design temperature / Design pressure –10...120°C / 70 bar
  (for glass sizes 2 to 9)
  –10...200°C / 65 bar
  –10...243°C / 55 bar
  –10...300°C* / 45 bar

  *) with mica protection inner side

Accessories
- Pointer NW-mark acc. to TRD
- For shut off valves automatically closing ball
  (safety device)
  (at least 1 bar pressure tanks required for the function)
- Glass protection Mica exterior protection
- Illumination device series see 709

Sight length SL = min. center-center-distance ME –130 mm
Interruption between 2 sight glasses: min. 55 mm

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1 x glass</th>
<th>2 x glass</th>
<th>3 x glass</th>
<th>4 x glass</th>
<th>5 x glass</th>
</tr>
</thead>
<tbody>
<tr>
<td>min. center-to-center-distance / mm</td>
<td>330</td>
<td>360</td>
<td>390</td>
<td>430</td>
<td>450</td>
</tr>
<tr>
<td>2 x glass size</td>
<td>585</td>
<td>645</td>
<td>705</td>
<td>785</td>
<td>825</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>840</td>
<td>930</td>
<td>1020</td>
<td>1140</td>
<td>1200</td>
</tr>
<tr>
<td>4 x glass size</td>
<td>1095</td>
<td>1215</td>
<td>1335</td>
<td>1495</td>
<td>1575</td>
</tr>
<tr>
<td>5 x glass size</td>
<td>1350</td>
<td>1500</td>
<td>1650</td>
<td>1850</td>
<td>1950</td>
</tr>
</tbody>
</table>
Transparent Sight Glass Level Gauge PN 160
Type 700.C8 (Transparent)

Application
The refraction liquid level gauge type 700.C8, with the special design of the water channel, effects a brilliant dark-light contrast between water and steam space and is well suited for TV remote indication.

Special Features
- Refraction
- Connection back-side
- Double shut-off valves side-side, with automatically closing ball
- Mica holder with mica sheets
- Lever

General Data
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight length SL *)</td>
<td>&lt; ME</td>
</tr>
<tr>
<td>Actuation</td>
<td>lever, handwheel</td>
</tr>
<tr>
<td>Connection gauge head-body</td>
<td>valves side-side</td>
</tr>
<tr>
<td>Valve type</td>
<td>760.18</td>
</tr>
<tr>
<td>Process connection</td>
<td>flange DIN, EN or ANSI</td>
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<tr>
<td>Materials</td>
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</tr>
<tr>
<td>Material mica package</td>
<td>mica</td>
</tr>
<tr>
<td>Material gaskets</td>
<td>Graphite</td>
</tr>
<tr>
<td>Other materials on request.</td>
<td></td>
</tr>
</tbody>
</table>

Design Data
Derating depends on temperature and window size.

Accessories
<table>
<thead>
<tr>
<th>Accessory</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pointer</td>
<td>NW-mark acc. to TRD</td>
</tr>
<tr>
<td>Illumination device series</td>
<td>see 709</td>
</tr>
</tbody>
</table>

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass length / mm</td>
<td>165</td>
<td>190</td>
<td>220</td>
<td>250</td>
<td>280</td>
<td>320</td>
<td>340</td>
</tr>
<tr>
<td>SL per segment</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
<tr>
<td>min. center-to-center-distance / mm</td>
<td>225</td>
<td>250</td>
<td>280</td>
<td>310</td>
<td>340</td>
<td>380</td>
<td>400</td>
</tr>
<tr>
<td>1 x glass size</td>
<td>490</td>
<td>540</td>
<td>600</td>
<td>660</td>
<td>720</td>
<td>800</td>
<td>840</td>
</tr>
<tr>
<td>2 x glass size</td>
<td>755</td>
<td>830</td>
<td>920</td>
<td>1010</td>
<td>1100</td>
<td>1220</td>
<td>1280</td>
</tr>
<tr>
<td>3 x glass size</td>
<td>1020</td>
<td>1120</td>
<td>1240</td>
<td>1360</td>
<td>1480</td>
<td>1640</td>
<td>1720</td>
</tr>
<tr>
<td>4 x glass size</td>
<td>1285</td>
<td>1410</td>
<td>1560</td>
<td>1710</td>
<td>1860</td>
<td>2060</td>
<td>2160</td>
</tr>
<tr>
<td>5 x glass size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) Sight length SL = center-to-center-distance ME – 80 mm

Interruption between 2 sight glasses: min. 120 mm

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Liquid Level Gauge CL 1500
Type 700.CA

Application
The refraction liquid level gauge type 700.CA, with the special design of the water channel, effects a brilliant dark-light contrast between water and steam space and is well suited for TV remote indication.

Special Features
- Refraction
- Connection back-side
- Double shut-off valves side-side, with automatically closing ball
- Mica holder with mica sheets
- Lever

General Data
- Sight length SL *) < ME
- Actuation: lever, handwheel
- Connection gauge head-body: valves side-side
- Valve type: 760.18
- Process connection: flange DIN, EN or ANSI
- Materials: CS
- Material mica package: mica
- Material gaskets: Graphite
- Other materials on request.

Design Data
- Nominal pressure: CL 1500
- Design temperature / pressure max.: 374°C / 165 bar

Accessories
- Pointer: NW-mark acc. to TRD
- Illumination device series: see 709

*) Sight length SL = center-to-center-distance ME – 80 mm
Interruption between 2 sight glasses: min. 120 mm

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Glass size / range of centre-to-centre distance

<table>
<thead>
<tr>
<th>Glass size*</th>
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<td>SL per segment</td>
<td>145</td>
<td>170</td>
<td>200</td>
<td>230</td>
<td>260</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

| 1 x glass size | 225 | 250 | 280 | 310 | 340 | 380 | 400 |
| 2 x glass size | 490 | 540 | 600 | 660 | 720 | 800 | 840 |
| 3 x glass size | 755 | 830 | 920 | 1010 | 1100 | 1220 | 1280 |
| 4 x glass size | 1020 | 1120 | 1240 | 1360 | 1480 | 1640 | 1720 |
| 5 x glass size | 1285 | 1410 | 1560 | 1710 | 1860 | 2060 | 2160 |

min. center-to-center-distance / mm

Dimensions in mm

Type 700.CA

Arrangement

Direction of view
Glass Tube Liquid Level Gauge PN 10
Type 700.A1

Applications
Direct reading liquid level indicator with glass tube for general applications up to CL150. Increased safety with ball check valves and glass protection.

Special Features
- Connection top-bottom pivoted
- Handwheel
- Glass protection

General Data
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-to-center ME</td>
<td>max. 1200 mm</td>
</tr>
<tr>
<td>Sight length</td>
<td>ME – 110 mm</td>
</tr>
<tr>
<td>Diameter of glass tube*)</td>
<td>Ø 13,5 x 1,75mm</td>
</tr>
<tr>
<td>Actuation</td>
<td>handwheel</td>
</tr>
<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>male thread G 1/2</td>
</tr>
<tr>
<td></td>
<td>DIN ISO 228</td>
</tr>
<tr>
<td></td>
<td>flange DN 15 - 25 / PN 10</td>
</tr>
</tbody>
</table>

Materials
- gauge heads: steel 1.0570 / 1.0460
- gaskets for glass tube: PTFE
- glass tube: DURAN

The materials may vary depending upon availability.

Design Data
Design temperature / Design pressure
- up to 120°C / 10bar
- up to 200°C / 8bar

Accessories
- glass protection**)
  - plexiglass cover Ø 42mm
- visual help: coloured float
- Scale: division and unity to customers spec.

Flange | h
---|---
DN 15  | 49,5
DN 20 / 25 | 51,5

*) length glasstube = ME – 65 mm
**) length = ME – 55, product temperature max. 80°C.
Glass Tube Liquid Level Gauge PN 10
Type 700.A2

Applications
Direct reading liquid level indicator with glass tube for general applications up to CL150. Increased safety with ball check valves and glass protection.

Special Features
- Connection top-bottom pivoted
- Handwheel
- Glass protection

General Data
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-to-center ME</td>
<td>max. 1200 mm</td>
</tr>
<tr>
<td>Sight length</td>
<td>ME – 70 mm</td>
</tr>
<tr>
<td>Diameter of glass tube*</td>
<td>Ø 13.5 x 1.75mm</td>
</tr>
<tr>
<td>Actuation</td>
<td>handwheel</td>
</tr>
<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>male thread G 1/2</td>
</tr>
<tr>
<td></td>
<td>DIN ISO 228</td>
</tr>
<tr>
<td>Flange</td>
<td>DN 15 - 25 / PN 10</td>
</tr>
</tbody>
</table>

Materials
- gauge heads: brass 2.0401
- gaskets for glass tube: rubber (Pebunan)
- glass tube: DURAN

The materials may vary depending upon availability.

Design Data
Design temperature / Design pressure: up to 120°C / 10bar

Accessories
- glass protection**: plexiglass cover Ø 42mm
- visual help: coloured float
- Scale: division and unity to customers spec.

*) length glass tube = ME – 65 mm
**) length = ME – 55, product temperature max. 80°C.
Length of brass-protection rods ME + 30 mm
**Applications**

Direct reading liquid level indicator with glass tube for general applications up to CL150. Increased safety with ball check valves and glass protection.

**Special Features**

- Connection top-bottom pivoted
- Handwheel
- Glass protection

**General Data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-to-center ME</td>
<td>up to 1200 mm</td>
</tr>
<tr>
<td>Sight length</td>
<td>ME – 110 mm</td>
</tr>
<tr>
<td>Diameter of glass tube*)</td>
<td>Ø 13,5 x 1,75 mm</td>
</tr>
<tr>
<td>Actuation</td>
<td>handwheel</td>
</tr>
<tr>
<td>Valve passage</td>
<td>8 mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>male thread G 1/2</td>
</tr>
<tr>
<td></td>
<td>DIN ISO 228</td>
</tr>
<tr>
<td></td>
<td>flange DN 15 - 25 / PN 10</td>
</tr>
</tbody>
</table>

**Materials**

- gauge heads
- gaskets for glass tube
- glass tube

The materials may vary depending upon availability.

**Design Data**

Design temperature / Design pressure

- up to 120°C / 10bar
- up to 200°C / 8bar

**Accessories**

- glass protection**)
- plexiglass cover Ø 42mm
- visual help coloured float
- Scale division and unity to customers spec.

<table>
<thead>
<tr>
<th>Flange</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN 15</td>
<td>49,5</td>
</tr>
<tr>
<td>DN 20 / 25</td>
<td>51,5</td>
</tr>
</tbody>
</table>

*) length glass tube = ME – 65 mm
***) length = ME – 55, product temperature max. 80°C.
Glass Tube Liquid Level Gauge PN 10
Type 700.A4

Applications
Direct reading liquid level indicator with glass tube for general applications up to CL150. Increased safety with ball check valves and glass protection.

Special Features
- Connection top-bottom pivoted
- without gauge heads
- Glass protection

General Data
Center-to-center ME       max. 1000 mm
Sight length              ME – 80 mm
Diameter of glass tube*)  Ø 13.5 x 1.75 mm
Process connection        male thread G 1/2
                          DIN ISO 228

Materials
- gauge heads            SS 1.4571
- gaskets for glass tube PTFE
- glass tube             DURAN
The materials may vary depending upon availability.

Design Data
Design temperature / Design pressure up to 100°C / 10 bar
up to 200°C / 8 bar

Accessories
- glass protection**)
- plexiglass cover Ø 42 mm
- visual help
- coloured float
- Scale
division and unity to customers spec.

*) length glass tube = ME – 20 mm
**) length = ME – 30, product temperature max. 80°C.
Glass Tube Liquid Level Gauge PN 25
Type 700.01

Applications
Direct reading liquid level indicator with glass tube for general applications up to CL 150. Increased safety with ball check-valves and glass protection.

Special Features
- Connection top - bottom pivoted
- Offset, handwheel
- Glass protection

General Data
Visible length SL
- ME – 130 mm
- from 1500 mm and up every 1000 mm glass-holder in-between

Process connection
- union, flange

Gauge valve types
- s. data sheet 760.01

Actuation
- handwheel

Material glass tube
- Borosilicate

Material media wetted parts
- CS, SS

Material glass protection device
- Acrylicglass / SS

Material sealing glass tube
- Viton

Types with special materials e.g. Hastelloy, Monel etc. are available.

Weight
- basic weight for ME ≤1500 mm: 3,6 kg
- basic weight for ME >1500 mm: 4,9 kg
- + weight / m: 0,2 kg
- - weight glass protection device / m: 0,2 kg

Design Data
Design pressure /temperature
- – 20...+ 200°C / 0...25 bar

Further Data
Process connection
- see Connections

Vent
- see Connections

Drain
- see Connections

Accessories
Scale
- see Accessories

Spare parts
Glasstube
- length = ME – 40

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Applications
Direct reading liquid level indicator with glass tube for general applications up to CL 150. Increased safety with ball check-valves and glass protection.

Special Features
- Connection top - bottom pivoted
- Offset, quick closing
- Glass protection

General Data
Visible length SL ME – 130 mm from 1500 mm and up every 1000 mm glass-holder in-between
Process connection union, flange
Gauge valve types s. data sheet 760.03
Actuation quick closing
Material glass tube Borosilicate
Material media wetted parts CS, SS
Material glass protection device Acrylic glass / SS
Material sealing glass tube Viton
Types with special materials e.g. Hastelloy, Monel etc. are available.
Weight
- basic weight for ME ≤1500 mm 3.6 kg
- basic weight for ME >1500 mm 4.9 kg
- + weight / m 0.2 kg
- weight glass protection device / m 0.2 kg

Design Data
Design pressure / temperature –20...+ 200°C / 0...25 bar

Further Data
Process connection see Connections
Vent see Connections
Drain see Connections

Accessories
Scale see Accessories

Spare parts
Glass tube length = ME – 40

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Handwheel
- Nipple connection to gauge
- Angle seat Spindle screw inside, seat renewable
- Special execution up to 2500 lbs

General Data
Material
- Housing, nipple, flange CS or SS
- Trim SS
other materials on request
Orientation horizontally, see Fig. orientation
Ball check diff. pressure > 0,5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 2,0 kg

Design Data
Operating pressure up to 25 MPa / 1500 lbs
Temperature media
Housing, nipple, flange SS – 200...+ 400°C
Housing, nipple, flange CS – 10...+ 400°C

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Spare parts kit BG5XHEKIT consisting of

<table>
<thead>
<tr>
<th>Pos</th>
<th>Denomination</th>
<th>Order no.</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Bonnet</td>
<td>5720124159B</td>
<td>SS</td>
</tr>
<tr>
<td>6</td>
<td>Spindle</td>
<td>5650320759</td>
<td>SS</td>
</tr>
<tr>
<td>7</td>
<td>Cone</td>
<td>5610255459</td>
<td>SS</td>
</tr>
<tr>
<td>8</td>
<td>Nut</td>
<td>5921024059B</td>
<td>SS</td>
</tr>
<tr>
<td>9</td>
<td>Stuffing box</td>
<td>5706010059</td>
<td>SS</td>
</tr>
<tr>
<td>10</td>
<td>Seat</td>
<td>5604120459</td>
<td>SS</td>
</tr>
<tr>
<td>11</td>
<td>Ball</td>
<td>D054011120</td>
<td>SS</td>
</tr>
<tr>
<td>21</td>
<td>Sealing</td>
<td>D07603121026</td>
<td>SS</td>
</tr>
</tbody>
</table>
**Gauge Valve CL 1500**

**Type 760.52**

### Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer's specification.

### Special Features
- Handwheel
- Nipple connection to gauge
- Angle seat
- Spindle screw inside, seat renewable
- Special execution up to 2500 lbs

### General Data

**Material**
- Housing, nipple, flange: CS or SS
- Trim: SS
- Other materials on request: CS or SS

**Orientation**
- Horizontally, see Fig. orientation

**Ball check diff. pressure**
- > 0.5 bar

**Process connection**
- DIN / ANSI acc. to cust. spec.

**Weight**
- ca. 2.0 kg

### Design Data

**Operating pressure**
- up to 25 MPa / 1500 lbs

**Temperature media**
- Housing, nipple, flange SS: -200...+400°C
- Housing, nipple, flange CS: -10...+400°C

---

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

---

**Spare parts kit BG5XHEKIT consisting of**

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<td>SS</td>
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<tr>
<td>9</td>
<td>Stuffing box</td>
<td>5706010059</td>
<td>SS</td>
</tr>
<tr>
<td>13</td>
<td>Base ring</td>
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<td>Sil4400</td>
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<tr>
<td>14</td>
<td>Packing</td>
<td>0016001040GR</td>
<td>Graphit</td>
</tr>
<tr>
<td>10</td>
<td>Seat</td>
<td>5604120459</td>
<td>SS</td>
</tr>
<tr>
<td>11</td>
<td>Ball</td>
<td>D054011120</td>
<td>SS</td>
</tr>
<tr>
<td>21</td>
<td>Sealing</td>
<td>D07603121026</td>
<td>SS</td>
</tr>
</tbody>
</table>
Gauge Valve CL 1500
Type 760.53

Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Handwheel
- Nipple connection to gauge
- Angle seat, offset
- Spindle screw inside, seat renewable
- Special execution up to 2500 lbs

General Data
Material
- Housing, nipple, flange CS or SS
- Trim SS
other materials on request
Orientation horizontally, see Fig. orientation
Ball check diff. pressure > 0,5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 2,0 kg

Design Data
Operating pressure up to 25 MPa / 1500 lbs
Temperature media
Housing, nipple, flange SS − 200...+ 400°C
Housing, nipple, flange CS − 10...+ 400°C

Spare parts kit BG5XHEKIT consisting of

<table>
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<td>5706010059</td>
<td>SS</td>
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<tr>
<td>13</td>
<td>Base ring</td>
<td>0100016020SI</td>
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<td>Seat</td>
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<td>SS</td>
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<td>11</td>
<td>Ball</td>
<td>D054011120</td>
<td>SS</td>
</tr>
<tr>
<td>21</td>
<td>Sealing</td>
<td>D07603121026</td>
<td>SS</td>
</tr>
</tbody>
</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 600
Type 760.56

Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a lever. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer's specification.

Special Features
- Quick closing lever
- Nipple connection to gauge
- Straight seat
- Spindle screw inside
- Seat renewable

General Data
Material
- Housing, nipple, flange CS or SS
- Trim SS
other materials on request
Orientation horizontally, see Fig. orientation
Ball check diff. pressure > 0,5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 1,5 kg

Design Data
Operating pressure up to 10 MPa / 600 lbs
Temperature media
Housing, nipple, flange SS ~ 200...+ 400°C
Housing, nipple, flange CS ~ 10...+ 400°C

Spare parts kit BG5XSEKIT consisting of

<table>
<thead>
<tr>
<th>Pos</th>
<th>Denomination</th>
<th>Order no.</th>
<th>Material</th>
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<tbody>
<tr>
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<td>SS</td>
</tr>
<tr>
<td>9</td>
<td>Stuffing box</td>
<td>5706010059</td>
<td>SS</td>
</tr>
<tr>
<td>42</td>
<td>Base ring</td>
<td>0100016020SI</td>
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<td>Packing</td>
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<td>40</td>
<td>Seat</td>
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<td>SS</td>
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<td>11</td>
<td>Ball</td>
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</tr>
<tr>
<td>49</td>
<td>Sealing</td>
<td>D07603121026</td>
<td>SS</td>
</tr>
</tbody>
</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Quick closing lever
- Nipple connection to gauge
- Angle seat
- Spindle screw inside
- Seat renewable

General Data
Material
- Housing, nipple, flange: CS or SS
- Trim: SS
- Other materials on request
Orientation: horizontally, see Fig. orientation
Ball check diff. pressure: > 0.5 bar
Weight: ca. 1.5 kg

Design Data
Operating pressure: up to 10 MPa / 600 lbs
Temperature media
Housing, nipple, flange SS: – 200...+ 400°C
Housing, nipple, flange CS: – 10...+ 400°C

Spare parts kit BG5XSEKIT consisting of

<table>
<thead>
<tr>
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<th>Denomination</th>
<th>Order no.</th>
<th>Material</th>
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</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 600
Type 760.58

Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer's specification.

Special Features
- Quick closing lever
- Nipple connection to gauge
- Angle seat, offset
- Spindle screw inside
- Seat renewable

General Data
Material
- Housing, nipple, flange CS or SS
- Trim SS
other materials on request
Orientation horizontally, see Fig. orientation
Ball check diff. pressure > 0.5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 1.5 kg

Design Data
Operating pressure up to 10 MPa / 600 lbs
Temperature media
Housing, nipple, flange SS ~ 200...+ 400°C
Housing, nipple, flange CS ~ 10...+ 400°C

Spare parts kit BG5XSEKIT consisting of

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</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 1500
Type 760.01

Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Handwheel
- Angle seat, offset
- Spindle screw inside
- Seat renewable

General Data
Material
- Housing, nipple, flange CS or SS
- Trim SS
other materials on request
Orientation horizontally, see Fig. orientation
Ball check diff. pressure > 0,5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 2,0 kg

Design Data
Operating pressure up to 25 MPa / 1500 lbs
Temperature media
Housing, nipple, flange SS – 200...+ 400°C
Housing, nipple, flange CS – 10...+ 400°C

Spare parts kit BG5XHEKIT consisting of

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</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 600
Type 760.03

Applications
The gauge valve is to close the tank against the level gauge. It is actuated by a handwheel. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer's specification.

Special Features
- Quick closing lever
- Angle seat, offset
- Spindle screw inside
- Seat renewable

General Data
Material
- Housing, nipple, flange: CS or SS
- Trim: SS
- other materials on request
Orientation: horizontally, see Fig. orientation
Ball check diff. pressure: > 0,5 bar
Weight: ca. 2,0 kg

Design Data
Operating pressure: up to 10 MPa / 600 lbs
Temperature media
- Housing, nipple, flange SS: –200...+ 400°C
- Housing, nipple, flange CS: –10...+ 400°C

Spare parts kit BGSXSEKIT consisting of

<table>
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<tr>
<th>Pos</th>
<th>Denomination</th>
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<th>Material</th>
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<td>SS</td>
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</table>

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 300
Type 760.11

Applications
The gauge valve is to close the vessel against the level
gauge. It is actuated by a quick closing lever. As a standard
an automatic ball check is integrated. The process connec-
tion is manufactured acc. to customer’s specification.

Special Features
- Lever and quick closing
- Angle seat
- Spindle thread inside
- Seats and cone renewable
- flanged

General Data
Orientation horizontally
valve opening 8 mm
Material
- Housing, flange CS
- Trim SS
other materials on request
Ball check diff. pressure > 1 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 5,0 kg

Design Data
Nominal pressure CL 300
Design temperature / Design pressure – 10...+ 243°C / 30 bar

CS (= carbonsteel) and SS (= stainless steel type 316SS)
are materials suitable for Pressure Vessels according to EN
or ASME.

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<td>4</td>
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<td>Reingraphit</td>
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</table>
Gauge Valve CL 900
Type 760.18

Applications
The gauge valve is to close the vessel against the level gauge. It is actuated by a handwheel and quick closing lever. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Double shut-off with handwheel and quick closing
- Angle seat
- Spindle thread inside
- Seats and cone renewable
- flanged

General Data
Orientation horizontally
valve opening 8 mm
Material
- Housing, flange CS
- Trim SS
other materials on request Ball check diff. pressure > 1 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 5.0 kg

Design Data
Nominal pressure CL 900
Design temperature / Design pressure max. –10...+ 350°C / 120 bar

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Spare part kit BG181HEKIT (handwheel, ball) consisting of

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<td>Screw connect.</td>
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<td>SS</td>
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<tr>
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<tr>
<td>11</td>
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</table>

Spare part kit BG181SEKIT (lever) consisting of

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<tr>
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<td>Seat</td>
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</table>
Gauge Valve CL 1500  
Type 760.19

Applications
The gauge valve is to close the vessel against the level gauge. It is actuated by a handwheel and quick closing lever. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer's specification.

Special Features
- Double shut-off with handwheel and quick closing
- Angle seat
- Spindle thread inside
- Seats and cone renewable
- flanged

General Data
Orientation  
valve opening  
Material  
- Housing, flange  
- Trim  
other materials on request  
Ball check diff. pressure  
Process connection  
Weight  
Orientation  
valve opening  
Material  
- Housing, flange  
- Trim  
other materials on request  
Ball check diff. pressure  
Process connection  
Weight  

Design Data
Nominal pressure  
Design temperature /  
Design pressure max.  

Spare part kit BG182HEKIT (handwheel) consisting of

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Spare part kit BG182SEKIT (lever, ball) consisting of

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CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.
Gauge Valve CL 600
Type 760.68

Applications
The gauge valve is to close the vessel against the level gauge. It is actuated by a quick closing lever. As a standard an automatic ball check is integrated. The process connection is manufactured acc. to customer’s specification.

Special Features
- Lever, quick closing
- Angle seat
- Spindle thread inside
- Seats and cone renewable
- flanged

General Data
Orientation horizontally, see Fig. orientation valve opening 8 mm
Material
- Housing, flange CS
- Trim SS
other materials on request
Ball check diff. pressure > 0.5 bar
Process connection DIN / ANSI acc. to cust. spec.
Weight ca. 5.0 kg

Design Data
Nominal pressure CL 600
Design temperature / Design pressure max. –10...+ 300°C / 82 bar

CS (= carbonsteel) and SS (= stainless steel type 316SS) are materials suitable for Pressure Vessels according to EN or ASME.

Spare parts kit BG681HEKIT considering of

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<tr>
<td>69</td>
<td>Lens gasket</td>
<td>218238</td>
<td>1.0305</td>
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</table>
### Applications
The illuminations are designed for illuminating sight windows according to DIN 7081 and mica sight windows. By variation segment length and number of segments as well as the optical power illumination can be adapted to most applications. Can be operated in hazardous area.

### Special Features
- Even bright illumination
- Bulb, highlight-performance and long lifetime

### General Data
<table>
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<th>Parameter</th>
<th>Description</th>
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<td></td>
</tr>
<tr>
<td>A</td>
<td>ca. 160 mm</td>
</tr>
<tr>
<td>B</td>
<td>up to glass size 12 ca. 200 mm</td>
</tr>
<tr>
<td></td>
<td>from glass size 12 ca. 300 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1.8 kg</td>
</tr>
</tbody>
</table>

### Design Data
| Classification            | II 2 GD Ex d(Ex de) IIC T2...T6     |
| Surface temperature       | depends on temperature class and lamp power |
| Ambient temperature       | – 50...+ 55°C                        |

### Electrical Data
| Power supply              | 120 / 230 VAC                       |
| Lamp power                | max. 100 W                          |
| Illustration              | Halogen bulb                        |
| Lampholder                | E 27                                 |
| Ingress protection        | IP 66                                |

### Certificates
- EC-Type Examination Certificate: CESI 01 ATEX 028

*) Type of mount varies with length, count and weight. Lamp with mount can be mounted on the right hand too. Shown level gauge only for example.
## Sight Glass Level Gauges Connections

### Process connection:
- Flange
- Male thread / female thread
- Weld end / weld sleeve
- Screw joint / spherical union
- Further designs on request

### Vent / Drain
- Plug
- Valve
- Flange piece
- Male thread / female thread
- Weld-on end / welded sleeve
- Further designs on request
Frost protection

Material: PMMA (Plexiglas)

<table>
<thead>
<tr>
<th>Glass type</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td>L</td>
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<td>637</td>
<td>677</td>
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</tbody>
</table>

H in mm covers temperature in °C below zero, standard heights: 80, 120, 180 und 200 mm recommended types

Flat glasses

acc. to DIN 7081

<table>
<thead>
<tr>
<th>Glass type</th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>GL</td>
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<td>115</td>
<td>140</td>
<td>165</td>
<td>190</td>
<td>220</td>
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<td>560</td>
<td>600</td>
<td>630</td>
<td>660</td>
<td>700</td>
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</table>

recommended types

Gaskets

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>560</td>
<td>600</td>
<td>630</td>
<td>660</td>
<td>700</td>
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</table>
### Mica and gasket

![Mica and gasket diagram](image)

For each mica window a mica package up to 1.7 mm thickness and a gasket for each package is needed.

<table>
<thead>
<tr>
<th>mica size</th>
<th>L</th>
<th>mica round 34 mm wide 0.2 – 0.3 mm</th>
<th>mica round 24 mm wide 0.13 mm</th>
<th>mica package round, 24 mm wide</th>
<th>mica round 24 mm wide 0.13 mm</th>
<th>mica round 24 mm wide 0.15 mm</th>
<th>mica round 24 mm wide 1.7 mm thick</th>
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</thead>
<tbody>
<tr>
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<td>39897700GL</td>
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</tr>
</tbody>
</table>

### Mica packages PDesign

For each mica window a mica package up to 1.7 mm thickness and a gasket for each package is needed.

<table>
<thead>
<tr>
<th>package thickness</th>
<th>80</th>
<th>120</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,9 – 1,0</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,7</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions in mm

### Corrosion protection

Corrosion protection for sight glasses from water side acc.to DIN 7081 above 243 °C 1 mica sheet is needed.

### Pointer low water

Form, size and inscription vary depending up on execution of the boiler level gauge.
Corrosion protection with mica

for transparent glasses acc. to DIN 7081

As corrosion protection you shall use 1 mica sheet with 0.2 to 0.3 mm thickness fitted to the inner side of a transparent glass acc. to DIN 7081 (marking ‘waterside’ inward).

Corrosion protection and anti-adhesive

FEP-foil thickness 0.1 mm for transparent glasses acc. to DIN 7081 up to +200 °C, as corrosion protection or as anti-blocking means for media which are adherent to glass.

<table>
<thead>
<tr>
<th>Glass type</th>
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</tbody>
</table>

Scale

- Foil on Aluminum graduated in cm (up to 100 °C)
- Foil on SS graduated in cm (up to 100 °C)
- SS engraving graduated in cm
- Pointer for water low indication, material Aluminum

Heating

- Steam heating

Orientation of the heating connection by customers specification. Electrical heating also possible.
Ordering information Illumination
Model / Visible length SL / Reflector / Length / Glass type

Ordering information Valves
Model / Process connection / Orientation

Ordering information Sight Glass Level Gauges
Model / Visible length SL / Process connection / Glass type (Reflex / Transparent) / Options

Modifications may take place and materials specified may be replaced by others without prior notice.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.