REFLEX LEVEL GAUGES

Technical Information

October 2008
**General description (SRG series)**

Reflex Liquid Level Gauges use the R-form sight glasses. One side surface of Reflex Glass to use flat glass has several grooves for reflecting prism. The principle of the Reflex Glass is based on the difference in the refractive indices of liquid and gas or in particular of water and steam. Liquid level shows conspicuously dark hard color for liquid space and light white color for empty space. These Reflex series are not used with a mica shield. Therefore, this kind of level gauge is not recommended for use with caustic, hydrofluoric, distilled water or other liquid corrosive to glass. The Reflex Gauge is assembled firmly with gasket, reflex glass, cushion gasket and gauge cover on the body by U-bolts for SRG-1 & 2 and stud bolts for SRG-3 & 4.

**SRG-1 / SRG-2**

**Options:**
- scale plate (units: cm, Liter)
- vent (needle valve / gate valve / globe valve / nipple & cap)
- drain (needle valve / gate valve / globe valve / nipple & cap)
- bracket (longer than 300 mm of c to c)
- gauge valve (hand wheel with chain / arm lever)

**SRG-3 / SRG-4**

**Specifications:**

- **material**: CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- **visible length**: 90...3510 mm
- **max. no. of sections**: 10 sections
- **vessel connection**: ¾” or 1” flanged ANSI 150…2500#
- **gauge body & gauge valve connection**: not rotatable & 360° rotatable
- **shell test pressure**: 1,5 times max. working pressure.

For other specifications, please let us have your request.
Section for types: SRG-1 & 2

<table>
<thead>
<tr>
<th>No.</th>
<th>Part</th>
<th>Material</th>
<th>No.</th>
<th>Part</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Gauge Body</td>
<td>CS, SS</td>
<td>G5</td>
<td>Gauge Cover</td>
<td>CS</td>
</tr>
<tr>
<td>G2</td>
<td>Sealing Gasket</td>
<td>Graphite</td>
<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
</tr>
<tr>
<td>G3</td>
<td>Reflex Glass</td>
<td>Borosilicate</td>
<td>G7</td>
<td>Nuts</td>
<td>A194 Gr.2H</td>
</tr>
<tr>
<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G8</td>
<td>Stud-Bolts</td>
<td>A193 Gr.B7</td>
</tr>
</tbody>
</table>

Pressure-Temperature rating for the different types:
Section for types: SRG-3 & 4

<table>
<thead>
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<th>No.</th>
<th>Part</th>
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</tr>
</tbody>
</table>

Pressure-Temperature rating for the different types:
General description (SRLG series)

The most advantage of this type is for easy reading of boiling liquids. In the event of liquids boiling, the bubbling make indistinct the surface level. In this type of gauge with larger volume of the liquid chamber the bubbling will be reduced. This type is also applicable for highly dense and viscous liquid, as the body is made of seamless pipe.

Our large chamber reflex level gauges are classified in 4 different types (SRLG-1, 2, 3 & 4) according to the process conditions which are max. working pressure and temperature.

SRLG-1 / SRLG-2

OPTIONS:

- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

SRLG-3 / SRLG-4

Specifications:

- **material**: CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- **visible length**: 90...3510 mm
- **max. no. of sections**: 10 sections
- **vessel connection**: \(\frac{3}{4}''\) or 1” flanged ANSI 150...2500#
  
  [900#...2500#: special type]
- **gauge body & gauge valve connection**: not rotatable & 360° rotatable
- **shell test pressure**: 1,5 times max. working pressure.

For other specifications, please let us have your request.
The SRLG is designed and manufactured for easy and accurate reading the liquid level of highly foamy liquids. The gauge has a relatively spacious internal area where foamy liquid is held from forming foams. It provides rather more accurate level observations.

### Section for types: SRLG-1 & 2 / SRLG-3 & 4

<table>
<thead>
<tr>
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**Pressure-Temperature rating for the different types:**

![Carbon Steel Pressure-Temperature Rating](image1)

![Stainless Steel Pressure-Temperature Rating](image2)
**General description (SRNG / SRLNG series)**

If a conventional level gauge is used for extremely low temperature applications, it becomes difficult to observe the level of liquid as the gauge front tends to freeze. To get rid of this problem, the acrylic non-frosting plate window is mounted in the front of the gauge as below and you will be able to observe the level easily far better. Our non-frosting reflex level gauges are classified into 2 types with 4 models each (SRNG-1, 2, 3, 4 & SRLNG 1, 2, 3, 4) according to the process conditions. Depending on the working temperature conditions, the height of the non-frosting plate window may be selected from 75 to 250 mm.

**OPTIONS:**
- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

**Specifications:**
- material : LTCS, stainless steel
- visible length : 90...3510 mm
- max. no. of sections : 10 sections
- vessel connection : ¾” or 1” flanged ANSI 150...2500#
- gauge body & gauge valve connection : not rotatable & 360° rotatable
- shell test pressure : 1,5 times max. working pressure.

For other specifications, please let us have your request.
Section for types: SRNG-1 & 2 / SRLG-3 & 4 / SRLNG-1 & 2 / SRLNG-3 & 4

SRNG-1 / SRNG-2

Since these types are used at a temperature below the freezing point, gauge valve and drain valve are used with long bonnet to prevent chilblains on your hands.

<table>
<thead>
<tr>
<th>No.</th>
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<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Gauge Body</td>
<td>LTCS, SS</td>
<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
</tr>
<tr>
<td>G2</td>
<td>Sealing Gasket</td>
<td>Graphite</td>
<td>G7</td>
<td>Nuts</td>
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<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G9</td>
<td>Non-Frosting</td>
<td>Acrylic</td>
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<tr>
<td>G5</td>
<td>Gauge Cover</td>
<td>LTCS, SS</td>
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<td></td>
<td></td>
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</tbody>
</table>

Temperature rating and dimensions of non-frosting plates:

<table>
<thead>
<tr>
<th>Temperature °C</th>
<th>Materials</th>
<th>Acrylic Height mm</th>
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</thead>
<tbody>
<tr>
<td>0…-20</td>
<td>LTCS</td>
<td>75</td>
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<tr>
<td>-21…-45</td>
<td>LTCS</td>
<td>100</td>
</tr>
<tr>
<td>-46…-100</td>
<td>304SS</td>
<td>150</td>
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<tr>
<td>-101…-160</td>
<td>316SS</td>
<td>200</td>
</tr>
<tr>
<td>-161…-200</td>
<td>316LSS</td>
<td>250</td>
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</table>
**General description (SRJG / SRLJG series)**

This type is usually called a jacket type. This gauge is used to read the level of high congealable or ebullient liquids. The principle is to inflow a steam for congealable liquids and a cold water for enbullient liquids through the inside of the jacket to ensure accurate and reliable level observation.

Our jacket reflex level gauges are classified into 2 types and 4 models each (SRJG-1/-2/-3/-4 & SRLJG-1/-2/-3/-4) according to the process conditions which are max. working pressure and temperature.

**OPTIONS:**

- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

**Specifications:**

- **material**: CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- **visible length**: 90…3510 mm
- **max. no. of sections**: 10 sections
- **vessel connection**: ¾” or 1” flanged ANSI 150…2500#
- **gauge body & gauge valve connection**: not rotatable & 360° rotatable
- **shell test pressure**: 1,5 times max. working pressure.

**For other specifications, please let us have your request.**

This type is used for observing the fluid by changing it into state of liquid after heating or cooling it through jacket according to fluid’s features. Our standard is that the inlet of the jacket for steam or cold water is ½” NPT(M). Others are available on request.
Section for types: SRJG-1 & 2 / SRJG-3 & 4

<table>
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<tr>
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<td>CS, SS</td>
<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
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<tr>
<td>G2</td>
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<td>Graphite</td>
<td>G7</td>
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<td>G8</td>
<td>Stud-Bolts</td>
<td>A193 Gr.B7</td>
</tr>
<tr>
<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G9</td>
<td>Jacket Pipe</td>
<td>CS or SS</td>
</tr>
<tr>
<td>G5</td>
<td>Gauge Cover</td>
<td>CS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
General description (SRZG series)

The most advantage of this type is that it has no invisible sections (dead band). Our standard overlapped section is 10 mm as minimum and the gauge is so designed that supporting brackets as illustrated on next page can be equipped to protect a long multiple connected gauge from distortion of fall down. The scale plate to mount alongside the gauge may be available on request by customers to observe the liquid level more accurately.

SRZG-1 / SRZG-2

**OPTIONS:**

- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

SRZG-3 / SRZG-4

**Specifications:**

- material : CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- visible length : Max. 6050 mm
- max. no. of sections : 20 sections
- vessel connection : ¾” or 1” flanged ANSI 150…2500#
- gauge body & gauge valve connection : not rotatable & 360° rotatable
- shell test pressure : 1,5 times max. working pressure.

For other specifications, please let us have your request.
**Section for types: SRZG-1 & 2**

- Details of the Bracket dimension will be indicated on the drawing for submittal and may be changed on request by customers.
- As shown on the left, this is our standard and you can connect the supporting form our supporting bracket to vessel.
- Bracket fro supporting is built on this mode for 7 gauges (=7 sections) and over as standard.
- Assembly – Dismantling of the body is easy.

<table>
<thead>
<tr>
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<tbody>
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<tr>
<td>G2</td>
<td>Sealing Gasket</td>
<td>Graphite</td>
<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
</tr>
<tr>
<td>G3</td>
<td>Reflex Glass</td>
<td>Borosilicate</td>
<td>G7</td>
<td>Nuts</td>
<td>A194 Gr.2H</td>
</tr>
<tr>
<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G8</td>
<td>U-Bolts</td>
<td>A193 Gr.B7</td>
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</table>
### Section for types: SRZG-3 & 4

<table>
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<td>G8</td>
<td>U-Bolts</td>
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</tbody>
</table>

### Pressure-Temperature rating for the different types:

![Pressure-Temperature rating graphs](image)
Solid drawing & dimensions

Overlapped Visible Portion: 10 mm as Minimum [Standard]

Visible Length (V.L)
Center to Center (C to C)

<table>
<thead>
<tr>
<th>No. of gauge sections</th>
<th>Glass no. 7 c to c [mm]</th>
<th>Glass no. 7 VL [mm]</th>
<th>Glass no. 8 c to c [mm]</th>
<th>Glass no. 8 VL [mm]</th>
<th>Glass no. 9 c to c [mm]</th>
<th>Glass no. 9 VL [mm]</th>
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</thead>
<tbody>
<tr>
<td>2 gauges</td>
<td>800</td>
<td>500</td>
<td>880</td>
<td>580</td>
<td>920</td>
<td>620</td>
</tr>
<tr>
<td>3 gauges</td>
<td>1040</td>
<td>740</td>
<td>1160</td>
<td>860</td>
<td>1220</td>
<td>920</td>
</tr>
<tr>
<td>4 gauges</td>
<td>1290</td>
<td>990</td>
<td>1450</td>
<td>1150</td>
<td>1520</td>
<td>1220</td>
</tr>
<tr>
<td>5 gauges</td>
<td>1530</td>
<td>1230</td>
<td>1720</td>
<td>1420</td>
<td>1820</td>
<td>1520</td>
</tr>
<tr>
<td>6 gauges</td>
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<td>1470</td>
<td>2000</td>
<td>1700</td>
<td>2120</td>
<td>1820</td>
</tr>
<tr>
<td>7 gauges</td>
<td>2000</td>
<td>1700</td>
<td>2300</td>
<td>2000</td>
<td>2420</td>
<td>2120</td>
</tr>
<tr>
<td>8 gauges</td>
<td>2250</td>
<td>1950</td>
<td>2550</td>
<td>2250</td>
<td>2720</td>
<td>2420</td>
</tr>
<tr>
<td>9 gauges</td>
<td>2500</td>
<td>2200</td>
<td>2850</td>
<td>2550</td>
<td>3020</td>
<td>2720</td>
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<tr>
<td>10 gauges</td>
<td>2750</td>
<td>2450</td>
<td>3100</td>
<td>2800</td>
<td>3300</td>
<td>3000</td>
</tr>
<tr>
<td>11 gauges</td>
<td>3000</td>
<td>2700</td>
<td>3400</td>
<td>3100</td>
<td>3600</td>
<td>3300</td>
</tr>
<tr>
<td>12 gauges</td>
<td>3200</td>
<td>2900</td>
<td>3700</td>
<td>3400</td>
<td>3900</td>
<td>3600</td>
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<td>13 gauges</td>
<td>3450</td>
<td>3150</td>
<td>3950</td>
<td>3650</td>
<td>4200</td>
<td>3900</td>
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<tr>
<td>14 gauges</td>
<td>3700</td>
<td>3400</td>
<td>4250</td>
<td>3950</td>
<td>4500</td>
<td>4200</td>
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<td>3650</td>
<td>4550</td>
<td>4250</td>
<td>4800</td>
<td>4500</td>
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<td>4200</td>
<td>3900</td>
<td>4800</td>
<td>4500</td>
<td>5100</td>
<td>4800</td>
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<tr>
<td>17 gauges</td>
<td>4400</td>
<td>4100</td>
<td>5100</td>
<td>4800</td>
<td>5400</td>
<td>5100</td>
</tr>
<tr>
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<td>4650</td>
<td>4350</td>
<td>5400</td>
<td>5100</td>
<td>5700</td>
<td>5400</td>
</tr>
<tr>
<td>19 gauges</td>
<td>4900</td>
<td>4600</td>
<td>5650</td>
<td>5350</td>
<td>6000</td>
<td>5700</td>
</tr>
<tr>
<td>20 gauges</td>
<td>5100</td>
<td>4800</td>
<td>5900</td>
<td>5600</td>
<td>6300</td>
<td>6000</td>
</tr>
</tbody>
</table>

Visible + 300 mm = c to c
**General description (SRG-LD / SRLG-LD series)**

More severe demands may often be required on liquid level gauges in terms of resistance to corrosion, and this is accomplished by lining or coating all wetted parts. The most important aspect of this process is the preparation of the metal substrate. Our lined reflex level gauges are classified in two types (SRG-1LD & SRLG-1LD) according to the fluid’s properties.

<table>
<thead>
<tr>
<th>Options:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• scale plate (units: cm, liter)</td>
</tr>
<tr>
<td>• bracket (c to c &gt; 3000 mm)</td>
</tr>
</tbody>
</table>

**Specifications:**

- **material**: CS, stainless steel
- **visible length**: 90…3510 mm
- **max. no. of sections**: 10 sections
- **vessel connection**: ¾” or 2” flanged ANSI 150…300#
- **shell test pressure**: 1,5 times max. working pressure.

For other specifications, please let us have your request.
## Section for types: SRG-1LD & SRLG-1LD

<table>
<thead>
<tr>
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<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
</tr>
<tr>
<td>G2</td>
<td>Sealing Gasket</td>
<td>Rubber, PTFE</td>
<td>G7</td>
<td>Nuts</td>
<td>A194 Gr.2H</td>
</tr>
<tr>
<td>G3</td>
<td>Reflex Glass</td>
<td>Borosilicate</td>
<td>G8</td>
<td>Bolts</td>
<td>A193 Gr.B7</td>
</tr>
<tr>
<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G9</td>
<td>Lining</td>
<td>Hard rubber, PTFE</td>
</tr>
<tr>
<td>G5</td>
<td>Gauge Cover</td>
<td>CS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
General description (SRG-BC series)

This gauge is used with a special reflex type gauge glass which has wider V-shaped refractive groove and red coating on the outside of the glass. It provides a clear observation of liquid level because of made refracting red colour on th V-groove for steam or beyond portion of the level and it’s colour of fluid itself for liquid portions. Our Bi-colour reflex level gauges are classified into 2 types (SRG-1BC & SRG-2BC) according to process conditions which are max. working pressure and temperature.

SRG-1BC

OPTIONS:

- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

SRG-2BC

Specifications:

- material : CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- visible length : 90..3510 mm
- max. no. of sections : 10 sections
- vessel connection : ¾” or 1” flanged ANSI 150…600#
- gauge body & gauge valve connection : not rotatable & 360° rotatable
- shell test pressure : 1,5 times max. working pressure.

For other specifications, please let us have your request.
### Section for types: SRG-1BC & SRG-2BC

<table>
<thead>
<tr>
<th>No.</th>
<th>Part</th>
<th>Material</th>
<th>No.</th>
<th>Part</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Gauge Body</td>
<td>CS, SS</td>
<td>G5</td>
<td>Gauge Cover</td>
<td>CS</td>
</tr>
<tr>
<td>G2</td>
<td>Sealing Gasket</td>
<td>Graphite</td>
<td>G6</td>
<td>Washer</td>
<td>SWRH-62B</td>
</tr>
<tr>
<td>G3</td>
<td>Reflex Glass</td>
<td>Borosilicate</td>
<td>G7</td>
<td>Nuts</td>
<td>A194 Gr.2H</td>
</tr>
<tr>
<td>G4</td>
<td>Cushion Gasket</td>
<td>Non-Asbestos</td>
<td>G8</td>
<td>U-Bolts</td>
<td>A193 Gr.B7</td>
</tr>
</tbody>
</table>
General description (SRG-IL series)

The features and principles are the same as for the basic reflex level gauges except for the fact that the illuminator is mounted to the reflex level gauge. Reflex level gauges with illuminator are useful for observing the fluid level in a dim place or at night by using an explosion-proof and weather-proof. The illuminator can be mounted on all types of reflex level gauges.

SRG-IL

OPTIONS:

- Scale plate (units: cm, liter)
- Vent (needle valve, gate valve, globe valve, nipple & cap)
- Drain (needle valve, gate valve, globe valve, nipple & cap)
- Bracket (c to c > 3000 mm)
- Gauge valve (Hand wheel with chain / Arm lever)

SRLG-IL

Specifications:

- material: CS, LTCS, stainless steel, A182F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20 etc.
- visible length: 90..3510 mm
- max. no. of sections: 10 sections
- vessel connection: ¾” or 1” flanged ANSI 150...600#
- gauge body & gauge valve connection: not rotatable & 360° rotatable
- shell test pressure: 1,5 times max. working pressure.

For other specifications, please let us have your request.
Section for type: SRG-IL

<table>
<thead>
<tr>
<th>No.</th>
<th>Part</th>
<th>No.</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>6</td>
<td>Glass cover</td>
</tr>
<tr>
<td>2</td>
<td>Bulb housing</td>
<td>7</td>
<td>Front cover</td>
</tr>
<tr>
<td>3</td>
<td>Bulb</td>
<td>8</td>
<td>Bulb cover</td>
</tr>
<tr>
<td>4</td>
<td>Glass plate</td>
<td>9</td>
<td>Bracket</td>
</tr>
<tr>
<td>5</td>
<td>Reflector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conduit Connection Dimension**

<table>
<thead>
<tr>
<th>Size [PT/NPT]</th>
<th>Outside diam. [mm]</th>
<th>Thread per inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>½&quot;</td>
<td>21,34</td>
<td>14</td>
</tr>
<tr>
<td>¾&quot;</td>
<td>26,67</td>
<td>14</td>
</tr>
<tr>
<td>1&quot;</td>
<td>33,40</td>
<td>11 ½</td>
</tr>
</tbody>
</table>

**Electricity:**

- **Standard:**
  - Voltage : AC 110...220V, 50 Hz, 60Hz
  - Bulb light : 30...100 W
  - Explosion proof : Ex d IIB + H2 T5
  - others : Division 1+2; Cl. I: Gr. B, C, D
             Division 1+2, Cl II, Gr. E, F, G
             Division 1+2, Cl III, type 4 at FM approved
             Division 1+2; Cl. I: Gr. B, C, D
             Division 1+2, Cl II, Gr. E, F, G
             Division 1+2, Cl III, type 4 at CSA certified Ex d

The Certificate of CENELEC is available on EEExd IIB+H2 T4, IP66
The Certificate of U.L: is available on Cl. I, Gr. C and D, Temp Code T4A; Division 1
The Certificate of U.L: is available on Cl. I, Gr. B, Temp Code T2A; Division 2
General description (SRG-1SM series)

The Marine gauge is used for observing the fluid of oil tank for ship and it's light weight rather than typical level gauge for land.

OPTIONS:
- scale plate: units: cm, liter

Main applications:
- Fuel and water tanks on diesel locomotives
- Marine water tanks
- Vehicle fuelling installations
- Liquid chemical, industrial & agricultural storage tanks for low pressure.

Specifications:
- material: Stainless steel & Bronze
- visible length: 90..3510 mm
- max. no. of sections: 10 sections
- vessel connection: ¾” or 1” flanged ANSI 150#
- gauge body & gauge valve connection: not rotatable & 360° rotatable
- shell test pressure: 1,5 times max. working pressure.

For other specifications, please let us have your request.
Besides the products covered by this brochure, Intra-Automation GmbH also manufactures other high-quality and high precision instruments for industrial measurement tasks. For more information, please contact us (contact details on the backside of this brochure).

**Flow Measurement**

- Itabar®-Flow-Sensors
- IntraSonic IS200 Ultrasonic Flow Meters

**Level Measurement**

- ITA-mag. level gauges
- MAGLINK level indicators

**Other measurement tasks:**

- DigiFlow Flow and Level Computers
- IntraCont digital Controllers
- IntraDigit digital indicators
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