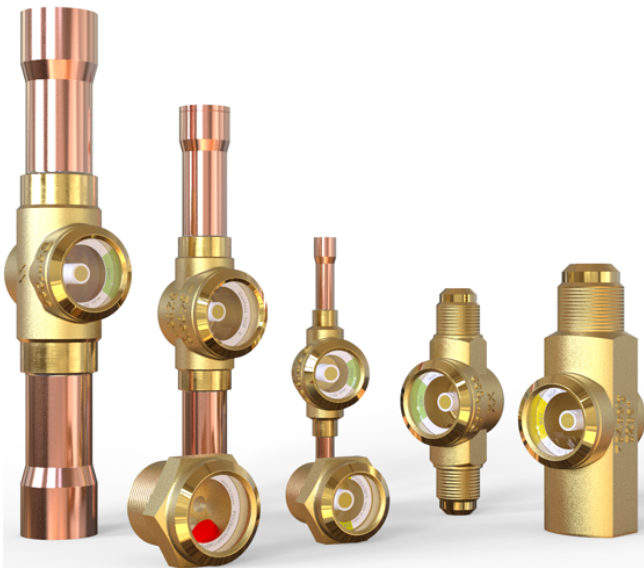


## Data Sheet

Sight glass  
Type **SG** and **SGP**

Refrigeration system protectors



Danfoss sight glasses, type SG/SGP, are installed after the filter drier in liquid line of refrigerating systems and in the compressor by using socket type, in order to observe property changes of the refrigerant (liquid/vapor) and to indicate the moisture level by colors.

**Features:**

- Available with flare, solder and socket connections, with and without moisture indicators.
- Large viewing window for better visibility
- High precision color indicator
- Provides accurate identification of system conditions
- Easy to indicate liquid and oil level by float ball of socket type
- Good corrosion resistance by 2000 hours salt spray for brass material according to ASTM B117 requirement
- UL approval, conforms to Pressure Equipment Directive 2014/68/EU

## Functions

The moisture indicators consist of a sensitive element that changes colour, from green to yellow, according to the moisture content PPM in the system.

The values under “green/dry” are to be considered as perfect condition meaning full protection against harmful effects from moisture.

If the green color starts to fade, the moisture content is reaching a critical level.

If the color changes to yellow it is a clear signal, that the capacity of the filter driers is exceeded and should be replaced as soon as possible.

If the operating conditions of the system are normal, the refrigerant fluid appears liquid through the glass of the indicator. The presence of bubbles indicates that lack of subcooling and the refrigerant deficiency.

At start-up, the colour of the sensitive element may be yellow, due to exposure to air humidity or due to moisture in the circuit. When the moisture of the refrigerant is returned to acceptable levels by the filter drier, the indicator colour turns green again. This is evidence that equilibrium has been re-established. If the yellow colour persists, measures must be taken to eliminate moisture. Only when the sensitive element turns green again, is there evidence that measures adopted were effective.

## Applications

Danfoss sight glasses, type SG/SGP:

- Can be installed in the liquid line between the filter drier and the expansion valve to monitor the condition and moisture content of the refrigerant(with indicator type).
- Can be installed in the oil return line to monitor the oil status (without indicator type).
- Can be installed in the receiver to monitor the refrigerant liquid level (socket type).
- Can be installed in the compressor/oil separator to monitor the oil level (socket type without indicator).

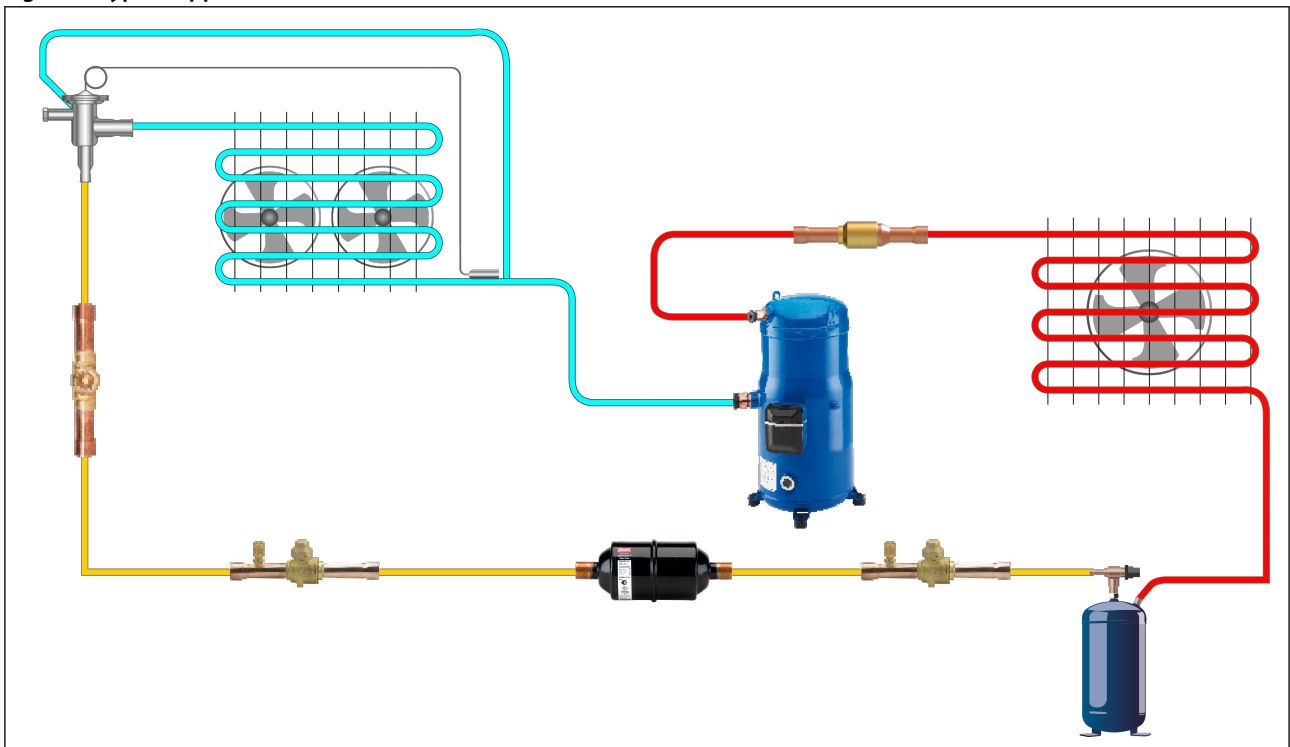
**NOTE:**

When storing, transporting or installing the Sight Glass, avoid the chemical indicator to get in contact with non-refrigerant medium or fluid (like water, oil, ect.)

Typical applications for SG/SGP are:

- Cold room
- Chiller
- Heat pump
- Transport refrigeration

Figure 1: Typical applications for SG/SGP



**Media**

**Table 1: Media specification**

| Valve type | Max. working pressure | Indicator type | Refrigerants  | Approval         |
|------------|-----------------------|----------------|---|------------------|
|            | (PS/MWP)              |                |   |                  |
| SG         | 35 bar / 500 psig     | N type         | R134a, R22, R32, R404A, R407A, R407C, R407F, R407H, R448A, R449A, R450A, R452A, R452B, R454B, R454C, R455A, R463A, R507, R513A, R515B, R1233zd(E), R1234ze(E), R1234yf, R1270                                 | PED(Art.4.3)     |
| SGP        | 52 bar / 754 psig     | I type         | R290, R600, R600a   | UL, PED(Art.4.3) |
|            |                       | N type         | R134a, R22, R32, R404A, R407A, R407C, R407F, R407H, R410A, R448A, R449A, R450A, R452A, R452B, R454B, R454C, R455A, R463A, R507, R513A, R515B, R1233zd(E), R1234ze(E), R1234yf, R1270, R744 (CO <sub>2</sub> ) |                  |

Refrigerant oil: Mineral oils and ester oils

**NOTE:**

- For a complete list of approved refrigerants, visit [store.danfoss.com](http://store.danfoss.com) and search for individual code numbers, where refrigerants are listed as part of product details.
- Flare/Face seal/socket connections are only approved for A1 and A2L refrigerants. This product is approved for R290, R32, R452B, R454B, R454C, R455A, R600, R600a, R1234ze(E), R1234yf, R1270 by ignition source assessment in accordance to standard EN ISO 80079-36.
- SG/SGP with indicator is not suitable for oil line application. For detailed information please contact Danfoss.
- Socket type can be used with refrigerant R744 (CO<sub>2</sub>) except for the version with float ball.
- Socket type can be used with refrigerant R1233zd(E) except for the version with gasket.
- For the Max. media temperature which is above 55 °C /131 °F for socket type with float ball, please consult Danfoss.

For the application use with R744 as part of a secondary loop or cascade:

1. The design pressure of the refrigerant containing component is not less than the design pressure of the associated components.
2. The component is not provided with any pressure relief or pressure regulating relief valve and that a sufficient number of valves having capacity deemed adequate shall be field-installed on the refrigeration system.
3. When the refrigeration system is de-energized, venting of R744 may occur through the pressure regulating relief valves, and may need to be recharged, but the valve should not be defeated or bypassed.
4. A sufficient number of pressure relief and pressure regulating valves may need to be provided based upon system capacity and located such that no stop valve is provided between the relief valve and the parts or section of the system being protected.

**Product specification**

**Technical data**

**Table 2: Technical data for SG/SGP**

| Technical data   | SG  | SGP               |
|--|---|-------------------|
| Max. working pressure                                    | 35 bar / 500 psig                                 | 52 bar / 754 psig |
| Media temperature range                                  | -50 – 80 °C / -58 – 175 °F                        |                   |
| Environmental transport/storage temperature and humidity | -40 – 65 °C / -40 – 150 °F. Air humidity: RH≤95%. |                   |

**Table 3: I type indicator for R290, R600, R600a**

| Refrigerant | Moisture content ppm = parts per million |                 |              |                                  |                 |              |
|-------------|--|-----------------|--------------|----------------------------------|-----------------|--------------|
|             | I type indicator                         |                 |              |                                  |                 |              |
|             | Media temperature 25 °C / 77 °F          |                 |              | Media temperature 43 °C / 109 °F |                 |              |
|             | Green / dry                              | Intermed. color | Yellow / wet | Green / dry                      | Intermed. color | Yellow / wet |
| R290        | < 25                                     | 25 – 50         | > 50         | < 50                             | 50 – 100        | > 100        |
| R600        | < 10                                     | 10 – 20         | > 20         | < 28                             | 28 – 55         | > 55         |
| R600a       | < 11                                     | 11 – 22         | > 22         | < 30                             | 30 – 60         | > 60         |

**Table 4: N type indicator for R134a, R22, R32, R404A, R407A, R407C, R407F, R407H, R410A, R448A, R449A, R450A, R452A, R452B, R454B, R454C, R455A, R463A, R507, R513A, R515B, R1233zd(E), R1234ze(E), R1234yf, R1270, R744 (CO<sub>2</sub>)**

| Refrigerant             | Moisture content ppm = parts per million |                 |              |                                  |                 |              |
|-------------------------|--|-----------------|--------------|----------------------------------|-----------------|--------------|
|                         | N type indicator                         |                 |              |                                  |                 |              |
|                         | Media temperature 25 °C / 77 °F          |                 |              | Media temperature 43 °C / 109 °F |                 |              |
|                         | Green / dry                              | Intermed. color | Yellow / wet | Green / dry                      | Intermed. color | Yellow / wet |
| R134a                   | < 30                                     | 30 – 100        | > 100        | < 45                             | 45 – 170        | > 170        |
| R22                     | < 30                                     | 30 – 120        | > 120        | < 50                             | 50 – 200        | > 200        |
| R32                     | < 64                                     | 64 – 289        | > 289        | < 116                            | 116 – 459       | > 459        |
| R404A                   | < 20                                     | 20 – 70         | > 70         | < 25                             | 25 – 100        | > 100        |
| R407A                   | < 29                                     | 29 – 115        | > 115        | < 48                             | 48 – 192        | > 192        |
| R407C                   | < 30                                     | 30 – 140        | > 140        | < 60                             | 60 – 225        | > 225        |
| R407F                   | < 30                                     | 30 – 168        | > 168        | < 60                             | 60 – 240        | > 240        |
| R407H                   | < 35                                     | 35-180          | > 180        | < 60                             | 60-365          | > 365        |
| R410A                   | < 66                                     | 66 – 266        | > 266        | < 135                            | 135 – 540       | > 540        |
| R448A                   | < 28                                     | 28 – 110        | > 110        | < 70                             | 70 – 227        | > 227        |
| R449A                   | < 29                                     | 29 – 105        | > 105        | < 53                             | 53 – 200        | > 200        |
| R450A                   | < 23                                     | 23 – 148        | > 148        | < 46                             | 46 – 245        | > 245        |
| R452A                   | < 20                                     | 20 – 79         | > 79         | < 30                             | 30 – 143        | > 143        |
| R452B                   | < 70                                     | 70 – 260        | > 260        | < 144                            | 144 – 260       | > 260        |
| R454B                   | < 29                                     | 29 – 161        | > 161        | < 58                             | 58 – 250        | > 250        |
| R454C                   | < 25                                     | 25-115          | > 115        | < 30                             | 30-190          | > 190        |
| R455A                   | < 20                                     | 20-95           | > 95         | < 25                             | 25-145          | > 145        |
| R463A                   | < 55                                     | 55-280          | > 280        | < 95                             | 95-435          | > 435        |
| R507                    | < 15                                     | 15 – 60         | > 60         | < 30                             | 30 – 110        | > 110        |
| R513A                   | < 22                                     | 22 – 75         | > 75         | < 22                             | 22 – 123        | > 123        |
| R515B                   | < 20                                     | 20-95           | > 95         | < 20                             | 20-140          | > 140        |
| R1233zd(E)              | < 18                                     | 18-90           | > 90         | < 20                             | 20-150          | > 150        |
| R1234ze(E)              | < 26                                     | 26 – 132        | > 132        | < 28                             | 28 – 165        | > 165        |
| R1234yf                 | < 20                                     | 20-43           | > 43         | < 20                             | 20-63           | > 63         |
| R1270                   | < 16                                     | 16 – 62         | > 62         | < 29                             | 29 – 115        | > 115        |
| R744 (CO <sub>2</sub> ) | < 80                                     | 80 – 195        | > 195        | -                                | -               | -            |

**NOTE:**

The indicator moisture content PPM is presented in the table for different refrigerants. The moisture content level varies with operating fluid temperature. For the PPM of other refrigerants and other media temperature, please contact Danfoss.

## REACH requirements

All Danfoss products fulfill the requirements in REACH.

One of the obligations in REACH is to inform customers about presence of Candidate list substances if any, we hereby inform you about one substance on the candidate list:

A moisture indicator in a sight glass contains a paper which is impregnated with Cobalt Dichloride (CAS no: 7646-79-9) in a concentration above 0.1% w/w. If the valve has been damaged or dismantled:

- Avoid skin contact with the paper
- Do not inhale the dust from the paper
- The paper must be disposed as hazardous waste

## Identification

Relevant product data is available on the product and box label. An example of a box label and product label are shown, including an explanation of the content.

Figure 2: Box label (example)



Figure 3: Product label (example)

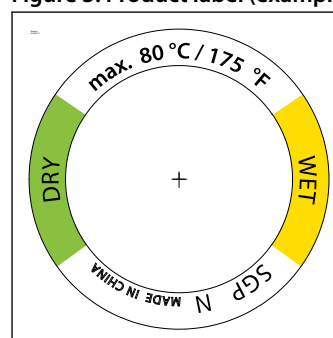


Table 5: Label explanation

| Position                 | Inscription   | Explanation  |
|--------------------------|---|--|
| Box label                | Sight glass   | Product name   |
| Box label                | SGP 10s N   | Product type   |
| Box label                | 014L0182  | Code number for ordering   |
| Box label                | ODF 3/8 in  | Connection size and type   |
| Box label                | PS 52 bar/MWP 754 psig                                    | Max. working pressure in bar and psig  |
| Box label                | BE5020E   | Code for production place and time<br>(BE = Wuqing, week 50, year 2020, weekday E =Friday) |
| Box label; Product label | MADE IN CHINA   | Manufacturing site acc. to EN standards  |
| Box label                | EAN code  | Barcode for individual code no. identification according to EAN standard                   |
| Box label                | Additional information: Relevant approval authority logos |  |
| Product label            | Max. 80 °C/175 °F   | Max. media temperature   |
| Product label            | WET/DRY   | The colour of indicator: Yellow for wet; Green for dry                                     |

## Design and materials

Figure 4: Solder type

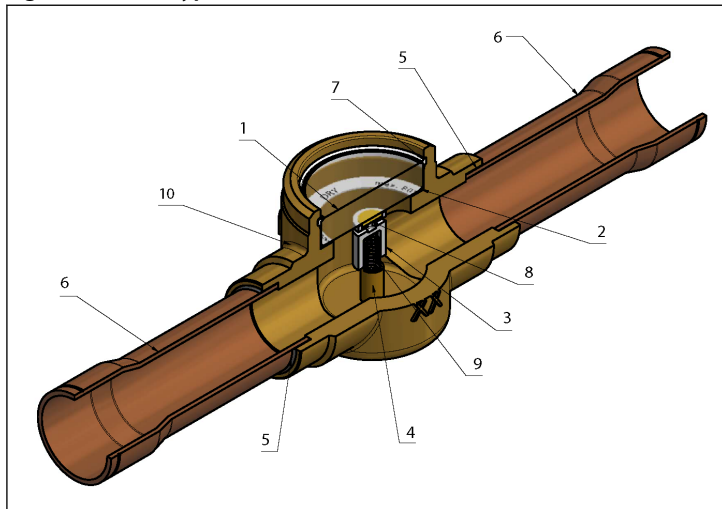


Figure 5: Socket type

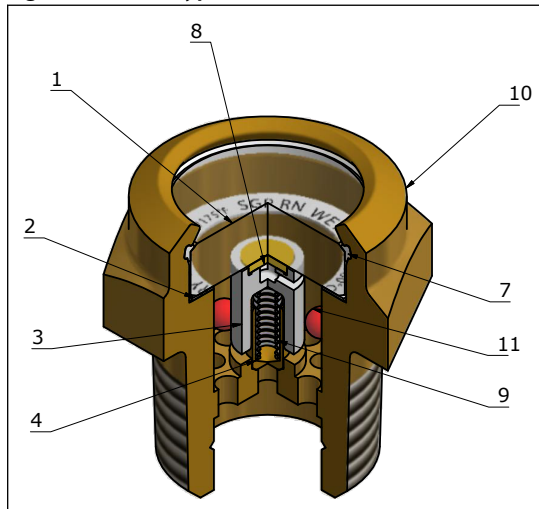


Table 6: Design and materials for SG/SGP

| Position | Description       | Material        |
|----------|-------------------|-----------------|
| 1        | Glass             | Glass           |
| 2        | Label             | Paper           |
| 3        | Indicator fixture | Plastic         |
| 4        | Spring guide      | Brass           |
| 5        | Solder ring       | Ag alloy        |
| 6        | Connection tube   | Copper          |
| 7        | Teflon ring       | PTFE            |
| 8        | Indicator paper   | Paper           |
| 9        | Spring            | Stainless steel |
| 10       | Valve body        | Brass           |
| 11       | Float ball        | Plastic         |

Table 7: Design and materials for Indicator type

| Indicator type | Label | Indicator fixture    |
|----------------|-------|----------------------|
| I type         |       | <p>Green fixture</p> |
| N type         |       | <p>White fixture</p> |

## Dimensions and weights

We have chosen to show dimensions of the major versions.

## Sight glass, type SG and SGP

You will find downloadable dimension drawings for individual code numbers on Danfoss store as part of the Visuals tab for individual code numbers.

Weights also differ depending on the design of the individual code numbers. Weights are available as part of the technical data for individual code numbers on [store.danfoss.com](https://store.danfoss.com).

Figure 6: Flare, ext. x ext.

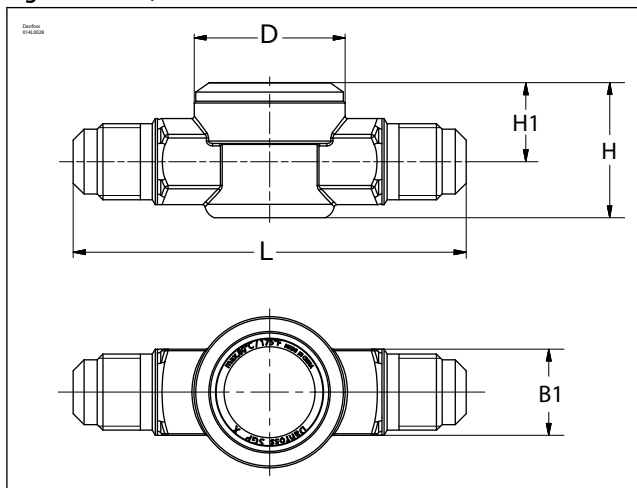


Figure 7: Flare, int. x ext.

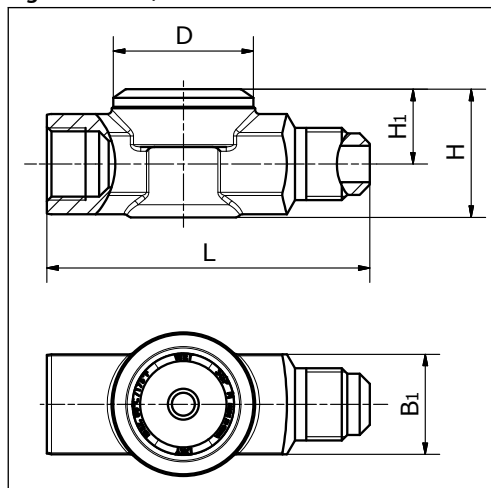


Table 8: Dimensions and weights for flare connection

| Type               | Connection type   | SAE Flare | Flare Thread    | L    | H    | H1   | B1   | øD | Net weight |
|--------------------|-------------------|-----------|-----------------|------|------|------|------|----|------------|
|                    |                   | [in.]     |                 | [mm] | [mm] | [mm] | [mm] |    |            |
| SGN 6              | Flare ext.x ext.  | 1/4       | 7/16-20UNF-2A   | 67   | 23   | 14   | 13   | 27 | 0.1        |
| SGN 10             |                   | 3/8       | 5/8-18UNF-2A    | 82   | 27   | 15   | 18   | 32 | 0.2        |
| SGN 12             |                   | 1/2       | 3/4-16UNF-2A    | 88   | 29   | 17   | 21   | 32 | 0.3        |
| SGN 16             |                   | 5/8       | 7/8-14UNF-2A    | 104  | 36   | 21   | 27   | 32 | 0.4        |
| SGN 19             |                   | 3/4       | 1 1/16-14UNS-2A | 110  | 42   | 23   | 32   | 32 | 0.5        |
| SGP 6 N            |                   | 1/4       | 7/16-20UNF-2A   | 67   | 24   | 15   | 13   | 27 | 0.1        |
| SGP 10 N, SGP 10 X |                   | 3/8       | 5/8-18UNF-2A    | 82   | 28   | 17   | 18   | 32 | 0.2        |
| SGP 12 N           |                   | 1/2       | 3/4-16UNF-2A    | 88   | 30   | 19   | 21   | 32 | 0.3        |
| SGP 16 N           |                   | 5/8       | 7/8-14UNF-2A    | 104  | 37   | 22   | 25   | 32 | 0.4        |
| SGP 19 N           |                   | 3/4       | 1 1/16-14UNS-2A | 110  | 42   | 23   | 32   | 32 | 0.6        |
| SGN 6              | Flare int. x ext. | 1/4       | 7/16-20UNF-2A   | 57   | 23   | 14   | 16   | 27 | 0.1        |
| SGN 10             |                   | 3/8       | 5/8-18UNF-2A    | 71   | 30   | 17   | 22   | 32 | 0.2        |
| SGN 12             |                   | 1/2       | 3/4-16UNF-2A    | 75   | 30   | 17   | 24   | 32 | 0.3        |
| SGN 16             |                   | 5/8       | 7/8-14UNF-2A    | 90   | 36   | 21   | 27   | 32 | 0.4        |
| SGN 19             |                   | 3/4       | 1 1/16-14UNS-2A | 98   | 42   | 23   | 32   | 32 | 0.5        |
| SGP 6 N            |                   | 1/4       | 7/16-20UNF-2A   | 57   | 24   | 15   | 16   | 27 | 0.1        |
| SGP 10 N           |                   | 3/8       | 5/8-18UNF-2A    | 71   | 28   | 17   | 22   | 32 | 0.2        |
| SGP 12 N           |                   | 1/2       | 3/4-16UNF-2A    | 75   | 31   | 19   | 24   | 32 | 0.2        |
| SGP 16 N           |                   | 5/8       | 7/8-14UNF-2A    | 90   | 37   | 22   | 27   | 32 | 0.4        |
| SGP 19 N           |                   | 3/4       | 1 1/16-14UNS-2A | 98   | 42   | 23   | 32   | 32 | 0.5        |



## Sight glass, type SG and SGP

Figure 8: Solder ODF × ODF

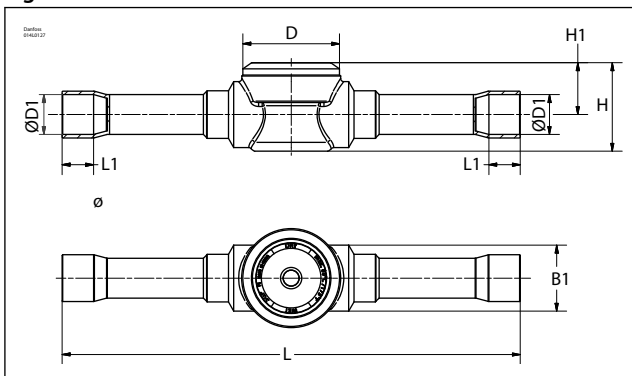


Figure 9: Solder ODF × ODM

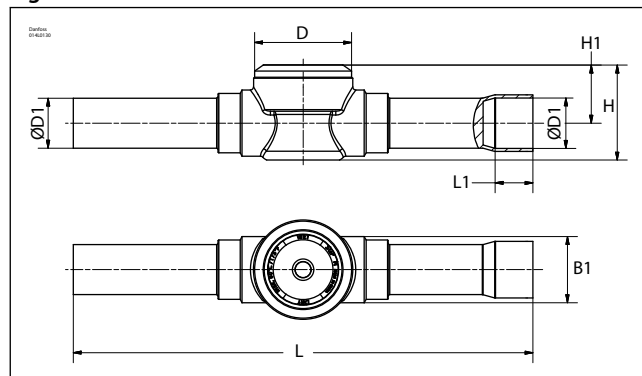


Table 9: Dimensions and weights for solder connection

| Type                            | Connection type  | Connection Size |      | [øD1] |      | [øD1] tolerance                        | L   | L1 | H  | H1 | B1 | øD  | Net weight |
|---------------------------------|------------------|-----------------|------|-------|------|--|-----|----|----|----|----|-----|------------|
|                                 |                  | [in.]           | [mm] | [mm]  | [mm] |  |     |    |    |    |    |     |            |
| SGN 6s                          | Solder ODF × ODF | 1/4             | 6    | 6.35  | 6    | +0.065/+0.155                          | 101 | 7  | 23 | 14 | 15 | 27  | 0.1        |
| SGN 10s, SG 10s                 |                  | 3/8             | 10   | 9.53  | 10   |  | 119 | 9  | 23 | 14 | 15 | 27  | 0.1        |
| SGN 12s                         |                  | 1/2             | 12   | 12.7  | 12   |  | 146 | 10 | 27 | 15 | 21 | 27  | 0.2        |
| SGN 16s                         |                  | 5/8             | 16   | 15.88 | 16   |  | 146 | 12 | 29 | 17 | 21 | 27  | 0.2        |
| SGN 18s                         |                  | —               | 18   | —     | 18   |  | 173 | 14 | 36 | 21 | 28 | 32  | 0.3        |
| SGN 19s                         |                  | 3/4             | 19   | 19.05 | 19   |  | 173 | 14 | 36 | 21 | 28 | 32  | 0.3        |
| SGN 22s                         |                  | 7/8             | 22   | 22.22 | 22   | 173                                    | 17  | 36 | 21 | 28 | 27 | 0.3 |            |
| SGN 22s <sup>(1)</sup>          |                  | 1 1/8           | —    | 28.58 | —    | 173                                    | 22  | 36 | 21 | 28 | 27 | 0.3 |            |
| SGP 6s N, SGP 6s I              |                  | 1/4             | 6    | 6.35  | 6    | +0.065/+0.155                          | 101 | 7  | 24 | 15 | 14 | 27  | 0.1        |
| SGP 10s N, SGP 10s I            |                  | 3/8             | 10   | 9.53  | 10   |  | 119 | 8  | 24 | 15 | 14 | 27  | 0.1        |
| SGP 12s N, SGP 12s I, SGP 12s X |                  | 1/2             | 12   | 12.7  | 12   |  | 146 | 10 | 28 | 17 | 21 | 32  | 0.2        |
| SGP 16s N, SGP 16s I, SGP 16s X |                  | 5/8             | 16   | 15.88 | 16   |  | 146 | 12 | 30 | 19 | 21 | 32  | 0.2        |
| SGP 18s N, SGP 18s I            |                  | —               | 18   | —     | 18   |  | 173 | 14 | 37 | 22 | 28 | 32  | 0.3        |
| SGP 19s N, SGP 19s I            |                  | 3/4             | 19   | 19.05 | 19   |  | 173 | 14 | 37 | 22 | 28 | 32  | 0.3        |
| SGP 22s N, SGP 22s I, SGP 22s X |                  | 7/8             | 22   | 22.22 | 22   | +0.075/+0.185                          | 173 | 17 | 37 | 22 | 28 | 32  | 0.3        |
| SGP 22s N <sup>(1)</sup>        |                  | 1 1/8           | —    | 28.58 | —    |  | 173 | 22 | 37 | 22 | 28 | 32  | 0.3        |
| SGN 6s                          | Solder ODF × ODM | 1/4             | —    | 6.35  | —    | ODF: +0.065/+0.155<br>ODM: -0.05/+0.05 | 101 | 7  | 23 | 14 | 15 | 27  | 0.1        |
| SGN 10s                         |                  | 3/8             | —    | 9.53  | —    |  | 119 | 9  | 23 | 14 | 15 | 27  | 0.1        |
| SGN 12s                         |                  | 1/2             | —    | 12.7  | —    |  | 146 | 10 | 27 | 15 | 21 | 27  | 0.2        |
| SGN 16s                         |                  | 5/8             | 16   | 15.88 | 16   | ODF: +0.06/+0.13<br>ODM: -0.08/+0.08   | 146 | 12 | 29 | 17 | 21 | 27  | 0.2        |
| SGN 22s                         |                  | 7/8             | 22   | 22.22 | 22   |  | 173 | 17 | 36 | 21 | 28 | 27  | 0.3        |
| SGP 6s N                        |                  | 1/4             | —    | 6.35  | —    | ODF: +0.065/+0.155<br>ODM: -0.05/+0.05 | 101 | 7  | 24 | 15 | 14 | 27  | 0.1        |
| SGP 10s N                       |                  | 3/8             | 10   | 9.53  | 10   |  | 119 | 8  | 24 | 15 | 14 | 27  | 0.1        |
| SGP 12s N                       |                  | 1/2             | —    | 12.7  | —    |  | 146 | 10 | 28 | 17 | 21 | 32  | 0.2        |
| SGP 16s N                       |                  | 5/8             | 16   | 15.88 | 16   | ODF: +0.06/+0.13<br>ODM: -0.08/+0.08   | 146 | 12 | 30 | 19 | 21 | 32  | 0.2        |
| SGP 22s N                       |                  | 7/8             | 22   | 22.22 | 22   |  | 173 | 17 | 37 | 22 | 28 | 32  | 0.3        |

<sup>(1)</sup> Oversize connection

## Sight glass, type SG and SGP

Figure 10: Socket

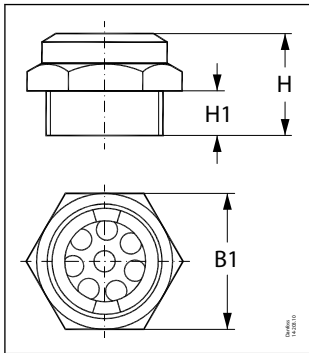


Table 10: Dimensions and weights for socket

| Type                                 | Connection type | Connection   | H    | H1   | B1   | Weight | Code no.                         |
|--------------------------------------|-----------------|--------------|------|------|------|--------|----------------------------------|
|                                      |                 |              | [mm] | [mm] | [mm] | [kg]   |                                  |
| SGR                                  | G thread        | G 1/2 in.    | 21   | 12   | 27   | 0.05   | 014-0276                         |
| SGR / SGRN                           |                 |              | 31   | 19   | 32   | 0.08   | 014-1179<br>014-0180             |
| SGRN                                 |                 |              | 21   | 9    | 27   | 0.05   | 014-1070                         |
| SGP 1/2 RN                           |                 | G 3/4 in.    | 33   | 19   | 32   | 0.08   | 014L0180                         |
| SGR                                  |                 |              | 23   | 10   | 32   | 0.08   | 014-0004                         |
| SGP 3/4 RX                           |                 |              |      | 24   | 10   | 32     | 0.07                             |
| SGR / SGRN                           | NPT             | 1/2 - 14 NPT | 30   | 18   | 27   | 0.06   | 014-0002<br>014-0006             |
| SGP 1/2 RX / SGP 1/2 RN / SGP 1/2 RI |                 |              | 31   | 18   | 27   | 0.07   | 014L0002<br>014L0131<br>014L0006 |
| SGR                                  |                 | 3/4 - 14 NPT | 31   | 18   | 32   | 0.08   | 014-0005                         |
| SGP 3/4 RX                           |                 |              | 32   | 18   | 32   | 0.09   | 014L0005                         |
| SGP 20 RN                            | M thread        | M20 x 1.5    | 26   | 13   | 27   | 0.06   | 014L1601                         |
| SGR / SGRN                           |                 | M24 x 1      | 28   | 15   | 32   | 0.07   | 014-1066<br>014-1155             |
| SGP 24 RX / SGP 24 RN / SGP 24 RI    |                 |              | 29   | 15   | 32   | 0.08   | 014L1066<br>014L1154<br>014L1155 |

## Connections

SG/SGP can be provided with flare, solder ODF/ODF or ODF/ODM and socket version in a wide variety of connection sizes. Solder versions are with extended ends copper connections. For details on availability, see Ordering section

Table 11: Connection types

| Type   | Indicator          | Flare ext. x ext. | Flare ext. x int. | Face Seal ext. x int. | Solder ODF x ODF | Solder ODF x ODM | Socket |
|--------|--------------------|-------------------|-------------------|-----------------------|------------------|------------------|--------|
| SG/SGP | Without Indicator  |                   |                   |                       |                  |                  |        |
|        | N/I type indicator |                   |                   |                       |                  |                  |        |

## Sight glass, type SG and SGP

Table 12: Connections

| Type | Indicator         | Flare ext. x ext.   | Flare ext. x int.   | Face Seal ext. x int. | Solder ODF x ODF   | Solder ODF x ODM   | Socket  |
|------|-------------------|---|---|-----------------------|--|--|---|
| SG   | Without Indicator | -   | -   | -                     | 3/8 in. x 3/8 in.  | -  | G 1/2 in.<br>G 3/4 in.<br>1/2 – 14 NPT<br>3/4 – 14 NPT<br>M24 x 1 |
|      | N type indicator  | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in. | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in. | 3/8 in. x 3/8 in.     | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in.<br>7/8 in. x 7/8 in.<br>1 1/8 in. x 1 1/8 in.<br>6 mm x 6 mm<br>10 mm x 10 mm<br>12 mm x 12 mm<br>16 mm x 16 mm<br>18 mm x 18 mm<br>19 mm x 19 mm<br>22 mm x 22 mm | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>7/8 in. x 7/8 in.<br>16 mm x 16 mm<br>22 mm x 22 mm                  | G 1/2 in.<br>1/2 – 14 NPT<br>M24 x 1                              |
| SGP  | Without Indicator | 3/8 in. x 3/8 in.   | -   | -                     | 1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>7/8 in. x 7/8 in.<br>16 mm x 16 mm   | -  | G 3/4 in.<br>1/2 – 14 NPT<br>3/4 – 14 NPT<br>M24 x 1              |
|      | I type indicator  | -   | -   | -                     | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in.<br>7/8 in. x 7/8 in.<br>6 mm x 6 mm<br>10 mm x 10 mm<br>12 mm x 12 mm<br>16 mm x 16 mm<br>18 mm x 18 mm<br>19 mm x 19 mm<br>22 mm x 22 mm                          | -  | -   |
|      | N type indicator  | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in. | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in. | 3/8 in. x 3/8 in.     | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>3/4 in. x 3/4 in.<br>7/8 in. x 7/8 in.<br>1 1/8 in. x 1 1/8 in.<br>6 mm x 6 mm<br>10 mm x 10 mm<br>12 mm x 12 mm<br>16 mm x 16 mm<br>18 mm x 18 mm<br>19 mm x 19 mm<br>22 mm x 22 mm | 1/4 in. x 1/4 in.<br>3/8 in. x 3/8 in.<br>1/2 in. x 1/2 in.<br>5/8 in. x 5/8 in.<br>7/8 in. x 7/8 in.<br>10 mm x 10 mm<br>16 mm x 16 mm<br>22 mm x 22 mm | G 1/2 in.<br>1/2 – 14 NPT<br>M20 x 1.5<br>M24 x 1                 |

## Ordering

SG/SGP code numbers described in this data sheet are standard code numbers, i.e. made to stock.

Besides code numbers made to stock SG/SGP is also made to order. Make to order options include:


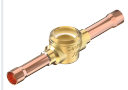
- Mechanical connection type
- Mechanical connection size
- New refrigerant

Multipack contains several items, individually packed, so that customers can purchase 1 item and receive all relevant documentation.

Industrial pack contains several items that are not individually packed. Industrial packs cannot be broken down, and will only contain documentation on pack level, not on item level.

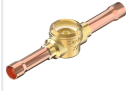
### Flare version and Solder version

**Table 13: Without indicator**


| Type   | Connection type   | Connection |      | Max. working pressure: PS/MWP | Multi pack              |           | Industrial pack |           |
|--|-------------------|------------|------|-------------------------------|-------------------------|-----------|-----------------|-----------|
|  |                   | [in.]      | [mm] |                               | Code no.                | Qty/ pack | Code no.        | Qty/ pack |
|  SGP 10 X | Flare ext. x ext. | 3/8        | -    | 52 bar / 754 psig             | 014L0080                | 25        | -               | -         |
|  SG 10s | Solder ODF x ODF  | 3/8        | -    | 35 bar / 500 psig             | 014-0037 <sup>(1)</sup> | 25        | -               | -         |
| SGP 12s X  |                   | 1/2        | -    | 52 bar / 754 psig             | 014L0086                | 28        | -               | -         |
| SGP 16s X  |                   | 5/8        | 16   |                               | 014L0087                | 28        | -               | -         |
| SGP 22s X  |                   | 7/8        | -    |                               | 014L1207                | 28        | -               | -         |

<sup>(1)</sup> Not UL approved



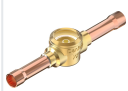

**Table 14: With I type indicator**

| Type  | Connection type | Connection |      | Max. working pressure: PS/MWP | Multi pack |           | Industrial pack |           |
|---|-----------------|------------|------|-------------------------------|------------|-----------|-----------------|-----------|
|   |                 | [in.]      | [mm] |                               | Code no.   | Qty/ pack | Code no.        | Qty/ pack |
|  | SGP 6s I        | 1/4        | -    | 52 bar / 754 psig             | 014L0034   | 25        | -               | -         |
|   |                 | -          | 6    |                               | 014L0040   | 25        | -               | -         |
|   | SGP 10s I       | 3/8        | -    |                               | 014L0035   | 25        | -               | -         |
|   |                 | -          | 10   |                               | 014L0041   | 25        | -               | -         |
|   | SGP 12s I       | 1/2        | -    |                               | 014L0036   | 28        | -               | -         |
|   |                 | -          | 12   |                               | 014L0042   | 28        | -               | -         |
|   | SGP 16s I       | 5/8        | 16   |                               | 014L0044   | 28        | -               | -         |
|   | SGP 18s I       | -          | 18   |                               | 014L0045   | 28        | -               | -         |
|   | SGP 19s I       | 3/4        | 19   |                               | 014L0047   | 28        | -               | -         |
|   | SGP 22s I       | 7/8        | 22   |                               | 014L0039   | 28        | -               | -         |

**Table 15: With N type indicator**

| Type  | Connection type   | Connection |      | Max. working pressure: PS/MWP | Multi pack              |           | Industrial pack         |           |   |
|---|-------------------|------------|------|-------------------------------|-------------------------|-----------|-------------------------|-----------|---|
|   |                   | [in.]      | [mm] |                               | Code no.                | Qty/ pack | Code no.                | Qty/ pack |   |
|  | Flare ext. x ext. | 1/4        | -    | 35 bar / 500 psig             | 014-0161 <sup>(1)</sup> | 25        | 014-1131 <sup>(1)</sup> | 70        |   |
|   |                   | 3/8        | -    |                               | 014-0162 <sup>(1)</sup> | 25        | -                       | -         |   |
|   |                   | 1/2        | -    |                               | 014-0163 <sup>(1)</sup> | 25        | -                       | -         |   |
|   |                   | 5/8        | -    |                               | 014-0165 <sup>(1)</sup> | 36        | -                       | -         |   |
|   |                   | 3/4        | -    |                               | 014-0166 <sup>(1)</sup> | 36        | -                       | -         |   |
|   |                   | SGP 6 N    | 1/4  | -                             | 52 bar / 754 psig       | 014L0161  | 25                      | -         | - |
|   |                   | SGP 10 N   | 3/8  | -                             |                         | 014L0162  | 25                      | -         | - |
|   |                   | SGP 12 N   | 1/2  | -                             |                         | 014L0163  | 25                      | -         | - |
|   |                   | SGP 16 N   | 5/8  | -                             |                         | 014L0165  | 36                      | -         | - |
|   |                   | SGP 19 N   | 3/4  | -                             |                         | 014L0166  | 36                      | -         | - |

## Sight glass, type SG and SGP

| Type  |                        | Connection type       | Connection |      | Max. working pressure: PS/MWP | Multi pack              |           | Industrial pack         |           |
|---|------------------------|-----------------------|------------|------|-------------------------------|-------------------------|-----------|-------------------------|-----------|
|   |                        |                       | [in.]      | [mm] |                               | Code no.                | Qty/ pack | Code no.                | Qty/ pack |
|    | SGN 6                  | Flare ext. x int.     | 1/4        | -    | 35 bar / 500 psig             | 014-0171 <sup>(1)</sup> | 24        | -                       | -         |
|   | SGN 10                 |                       | 3/8        | -    |                               | 014-0172 <sup>(1)</sup> | 24        | 014-0124 <sup>(1)</sup> | 70        |
|   | SGN 12                 |                       | 1/2        | -    |                               | 014-0173 <sup>(1)</sup> | 24        | -                       | -         |
|   | SGN 16                 |                       | 5/8        | -    |                               | 014-0174 <sup>(1)</sup> | 36        | -                       | -         |
|   | SGN 19                 |                       | 3/4        | -    |                               | 014-0175 <sup>(1)</sup> | 36        | -                       | -         |
|   | SGP 6 N                |                       | 1/4        | -    | 52 bar / 754 psig             | 014L0171                | 24        | -                       | -         |
|   | SGP 10 N               |                       | 3/8        | -    |                               | 014L0172                | 24        | 014L0124                | 70        |
|   | SGP 12 N               |                       | 1/2        | -    |                               | 014L0173                | 24        | 014L1128                | 70        |
|   | SGP 16 N               |                       | 5/8        | -    |                               | 014L0174                | 36        | -                       | -         |
|   | SGP 19 N               |                       | 3/4        | -    |                               | 014L0175                | 36        | -                       | -         |
|    | SGN 10                 | Face Seal ext. x int. | 3/8        | -    | 35 bar / 500 psig             | -                       | -         | 014-1123 <sup>(1)</sup> | 70        |
|   | SGP 10 N               |                       | 3/8        | -    | 52 bar / 754 psig             | -                       | -         | 014L1123                | 70        |
|  | SGN 6s                 | Solder ODF x ODF      | 1/4        | -    | 35 bar / 500 psig             | 014-0181 <sup>(1)</sup> | 25        | 014-0148 <sup>(1)</sup> | 82        |
|   |                        |                       | -          | 6    |                               | 014-0191 <sup>(1)</sup> | 25        | 014-1020 <sup>(1)</sup> | 82        |
|   | SGN 10s                |                       | 3/8        | -    |                               | 014-0182 <sup>(1)</sup> | 25        | 014-0246 <sup>(1)</sup> | 82        |
|   |                        |                       | -          | 10   |                               | 014-0192 <sup>(1)</sup> | 25        | 014-0190 <sup>(1)</sup> | 54        |
|   | SGN 12s                |                       | 1/2        | -    |                               | 014-0183 <sup>(1)</sup> | 28        | 014-0117 <sup>(1)</sup> | 20        |
|   |                        |                       | -          | 12   |                               | 014-0193 <sup>(1)</sup> | 28        | 014-1130 <sup>(1)</sup> | 20        |
|   | SGN 16s                |                       | 5/8        | 16   |                               | 014-0184 <sup>(1)</sup> | 28        | 014-0199 <sup>(1)</sup> | 54        |
|   | SGN 18s                |                       | -          | 18   |                               | 014-0195 <sup>(1)</sup> | 28        | -                       | -         |
|   | SGN 19s                |                       | 3/4        | 19   |                               | 014-0185 <sup>(1)</sup> | 28        | -                       | -         |
|   | SGN 22s                |                       | 7/8        | 22   |                               | 014-0186 <sup>(1)</sup> | 28        | 014-0200 <sup>(1)</sup> | 54        |
|   | SGN 22s <sup>(2)</sup> |                       | 1 1/8      | -    | 014-0187 <sup>(1)</sup>       | 28                      | -         | -                       |           |
|   | SGP 6s N               |                       | 1/4        | -    | 014L0181                      | 25                      | 014L0148  | 82                      |           |
|   |                        |                       | -          | 6    | 014L0191                      | 25                      | 014L1020  | 82                      |           |
|   | SGP 10s N              |                       | 3/8        | -    | 014L0182                      | 25                      | 014L0246  | 82                      |           |
|   |                        |                       | -          | 10   | 014L0192                      | 25                      | 014L0190  | 54                      |           |
|   | SGP 12s N              |                       | 1/2        | -    | 014L0183                      | 28                      | 014L0117  | 20                      |           |
|   |                        |                       | -          | 12   | 014L0193                      | 28                      | 014L1130  | 20                      |           |
|   | SGP 16s N              |                       | 5/8        | 16   | 014L0184                      | 28                      | 014L0199  | 54                      |           |
|   | SGP 18s N              |                       | -          | 18   | 014L0195                      | 28                      | 014L1095  | 54                      |           |
|   | SGP 19s N              |                       | 3/4        | 19   | 014L0185                      | 28                      | -         | -                       |           |
| SGP 22s N   | 7/8                    | 22                    | 014L0186   | 28   | 014L0200                      | 54                      |           |                         |           |
| SGP 22s N <sup>(2)</sup>  | 1 1/8                  | -                     | 014L0187   | 28   | -                             | -                       |           |                         |           |
|  | SGN 6s                 | Solder ODF x ODM      | 1/4        | -    | 35 bar / 500 psig             | 014-0201 <sup>(1)</sup> | 25        | -                       | -         |
|   | SGN 10s                |                       | 3/8        | -    |                               | 014-0202 <sup>(1)</sup> | 25        | -                       | -         |
|   | SGN 12s                |                       | 1/2        | -    |                               | 014-0203 <sup>(1)</sup> | 28        | -                       | -         |
|   | SGN 16s                |                       | 5/8        | 16   |                               | 014-0204 <sup>(1)</sup> | 28        | -                       | -         |
|   | SGN 22s                |                       | 7/8        | 22   |                               | 014-0206 <sup>(1)</sup> | 28        | -                       | -         |
|   | SGP 6s N               |                       | 1/4        | -    | 014L0201                      | 25                      | -         | -                       |           |
|   |                        |                       | 3/8        | -    | 014L0202                      | 25                      | -         | -                       |           |
|   | SGP 10s N              |                       | -          | 10   | -                             | -                       | -         | 014L1099                | 82        |
|   |                        |                       | 1/2        | -    | 014L0203                      | 28                      | 014L1203  | 20                      |           |
|   | SGP 16s N              |                       | 5/8        | 16   | 014L0204                      | 28                      | 014L1204  | 54                      |           |
| SGP 22s N   | 7/8                    | 22                    | 014L0206   | 28   | 014L1206                      | 54                      |           |                         |           |

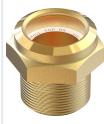
<sup>(1)</sup> Not UL approved

<sup>(2)</sup> Oversize connection

## Sight glass, type SG and SGP

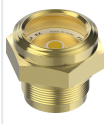
### Socket version

Table 16: Without indicator

| Valve type  | Indicator  | Connection type | Connection | Max. working pressure: PS/MWP | Float ball [pc]   | With gasket       | Multi pack |                         | Industrial pack |           |     |          |    |
|---|------------|-----------------|------------|-------------------------------|-------------------|-------------------|------------|-------------------------|-----------------|-----------|-----|----------|----|
|   |            |                 |            |                               |                   |                   | Code no.   | Qty/ pack               | Code no.        | Qty/ pack |     |          |    |
|  | SGR        | No              | G thread   | G 1/2 in.                     | 35 bar / 500 psig | 3                 | No         | -                       | -               | 014-1179  | 170 |          |    |
|   |            |                 |            | G 3/4 in.                     |                   | 1                 | No         | 014-0004 <sup>(1)</sup> | 19              | -         | -   |          |    |
|   |            |                 | NPT        | 1/2 – 14 NPT                  |                   | 3                 | No         | 014-0002                | 19              | -         | -   |          |    |
|   |            |                 |            | 3/4 – 14 NPT                  |                   | 1                 | No         | 014-0005 <sup>(1)</sup> | 19              | -         | -   |          |    |
|   |            |                 | M thread   | M24 x 1                       |                   | -                 | Yes        | -                       | -               | 014-1066  | 80  |          |    |
|   |            |                 | SGP 1/2 RX | NPT                           |                   | 1/2 – 14 NPT      | 3          | No                      | 014L0002        | 19        | -   | -        |    |
|   | SGP 3/4 RX | No              | M thread   | G thread                      | G 3/4 in.         | 52 bar / 754 psig | 1          | No                      | 014L0004        | 19        | -   | -        |    |
|   |            |                 |            | NPT                           | 3/4 – 14 NPT      |                   | 1          | No                      | 014L0005        | 19        | -   | -        |    |
|   |            |                 |            | SGP 24 RX                     | M thread          |                   | M24 x 1    | -                       | Yes             | -         | -   | 014L1066 | 80 |


<sup>(1)</sup> Not UL approved  
 G thread: ISO 228-1  
 NPT connection: ANSI/ASME B1.20.1

Table 17: With indicator

| Valve type  | Indicator | Connection type | Connection | Max. working pressure: PS/MWP | Float ball [pc]   | With gasket | Multi pack |              | Industrial pack   |           |     |          |          |          |     |
|---|-----------|-----------------|------------|-------------------------------|-------------------|-------------|------------|--------------|-------------------|-----------|-----|----------|----------|----------|-----|
|   |           |                 |            |                               |                   |             | Code no.   | Qty/ pack    | Code no.          | Qty/ pack |     |          |          |          |     |
|  | SGRN      | N type          | G thread   | G 1/2 in.                     | 35 bar / 500 psig | 3           | No         | -            | -                 | 014-0180  | 170 |          |          |          |     |
|   |           |                 |            | G 3/4 in.                     |                   | 3           | No         | -            | -                 | 014-1070  | 170 |          |          |          |     |
|   |           |                 | NPT        | 1/2 – 14 NPT                  |                   | 3           | No         | 014-0006     | 19                | -         | -   |          |          |          |     |
|   |           |                 |            | M thread                      |                   | M24 x 1     | -          | Yes          | 014-1155          | 10        | -   | -        |          |          |     |
|   |           |                 | SGP 1/2 RN | N type                        |                   | M thread    | G thread   | G 1/2 in.    | 52 bar / 754 psig | 3         | No  | -        | -        | 014L0180 | 170 |
|   |           |                 |            |                               |                   |             | NPT        | 1/2 – 14 NPT |                   | 3         | No  | 014L0006 | 19       | -        | -   |
|   | SGP 20 RN | M thread        |            |                               | M20 x 1.5         |             | -          | No           |                   | 014L1601  | 19  | -        | -        |          |     |
|   |           |                 |            |                               |                   |             | SGP 24 RN  | M thread     |                   | M24 x 1   | -   | Yes      | 014L1155 | 10       | -   |

### Saddle

Table 18: Saddle

| Valve type  | Connection type | Connection   | Tube connection [in] | Industrial pack [pcs] | Code no. |          |
|---|-----------------|--------------|----------------------|-----------------------|----------|----------|
|  | SGS             | Tube fitting | M20 x 1.5            | 1 1/8                 | 80       | 014-1071 |
|   |                 |              | M20 x 1.5            | 1 3/8                 | 80       | 014-1074 |
|   |                 |              | M24 x 1              | 7/8                   | 80       | 014-1059 |
|   |                 |              | M24 x 1              | 1 1/8                 | 80       | 014-1056 |
|   |                 |              | M24 x 1              | 1 3/8                 | 80       | 014-1057 |
|   |                 |              | M24 x 1              | 1 5/8                 | 80       | 014-1058 |
|   |                 |              | M24 x 1              | 2 1/8                 | 80       | 014-1067 |

**NOTE:**  
 Only M thread connection type sight glass can match with saddle

**Certificates, declarations, and approvals**

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**Table 19: Certificates, declarations, and approvals**

| File name            | Document type                   | Document topic                | Approval authority |
|----------------------|---------------------------------|-------------------------------|--------------------|
| Д-DK.PA01.B.72124_20 | EAC Declaration                 | PED                           | EAC RU             |
| Д-DK.PA01.B.28915_20 | EAC Declaration                 | PED                           | EAC RU             |
| 033F4001             | Manufacturers Declaration       | PED                           | Danfoss            |
| 033F4006             | Manufacturers Declaration       | China RoHS                    | Danfoss            |
| 033F4010             | Manufacturers Declaration       | RoHS                          | Danfoss            |
| 033F4017             | Manufacturers Declaration       | EN ISO 14903:2017 Level A1/B1 | Danfoss            |
| UL SA6525            | Mechanical - Safety Certificate | UL                            | UL                 |

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