

Data sheet

High pressure sight glass (PS = 52 bar) Types SGP N, SGP I and SGP X



Sight glasses are used to indicate:

1. The condition of the refrigerant in the liquid line of the plant.
2. The flow in the oil return line from the oil separator.
3. The moisture content in the refrigerant.

The SGP X are mainly used to indicate the condition of the refrigerant as well as the liquid level in the receiver or the oil level in the compressor.

The SGP N and SGP I are equipped with sensitive indicators that reflect a colour, depending on the moisture content in the refrigerant.

Features

Type SGP X (without indicator)

- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Indicates liquid level in receiver
- Indicates oil level in compressor
- Flare-/solder connection or socket type

Type SGP I (with I type indicator)

- For HCFC and HC refrigerants
- Indicates too high moisture content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Flare-/solder connection or socket type

Type SGP N (with N type indicator)







- For HCFC, HFC, HC and R744 refrigerants
- Indicates too high moisture content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Flare-/solder connection or socket type

Technical data

Ambient temperature
-50 °C – 80 °C

Max. working pressure
PS/MWP = 52 bar

Available types

 Solder version  Flare version	SGP X Without moisture indicator	 Socket	SGP RX Socket type without moisture indicator
 Solder version  Flare version	SGP I For HCFC and HC SGP N For HCFC, HFC, HC and R744 (CO ₂)	 Socket	SGP RI For Refrigerant with mineral oil e.g. HCFC SGP RN For non-flammable HFC

Choice of sight glass

Before choosing a sight glass with moisture indicator, the following should be considered:

- type of refrigerant
- water solubility of refrigerant
- the level on which a danger signal is required.

Be aware that polyester oil for refrigerants like, e.g. R134a, R404A, R407C react with water in a hydrolysis generating acid and alcohol.

The recommended levels of moisture content are usually between 30 and 75 ppm, where hermetic compressors only tolerate very low moisture content, while semi-hermetic and other compressors normally tolerate higher moisture contents in the refrigerant.

The color on the sight glass indicator depends on the moisture content of the refrigerant.

The values under “green/dry” are to be considered as perfect condition meaning full protection against harmful effects from moisture. In other words, the filter drier is working perfectly.

If the green color starts to fade, the color change has begun and the indicator should therefore be watched more carefully. If the color changes to yellow it is a clear signal, that the capacity of the filter drier is exceeded and should be replaced as soon as possible.

SGP I for HCFC and HC

	Moisture content ppm = parts per million					
	SGP I / SGP RI					
	25 °C			43 °C		
	Green/dry	Intermed. color	Yellow/wet	Green/dry	Intermed. color	Yellow/wet
R22	< 150	150 – 300	>300	< 250	250 – 500	> 500
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

SGP N for HCFC, HFC, HC and R744 (CO₂)

	Moisture content ppm = parts per million					
	SGP N / SGP RN					
	25 °C			43 °C		
	Green/dry	Intermed. color	Yellow/wet	Green/dry	Intermed. color	Yellow/wet
R22	< 30	30 – 120	> 120	< 50	50 – 200	> 200
R32	< 70	70 – 300	> 300	<120	120 - 500	>500
R134a	< 30	30 – 100	> 100	< 45	45 – 170	>170
R404A	< 20	20 – 70	> 70	< 25	25 – 100	>100
R407C	< 30	30 – 140	> 140	< 60	60 – 225	>225
R507	< 15	15 – 60	> 60	< 30	30 – 110	>110
R410A	< 66	66 – 266	> 266	< 135	135 – 540	> 540
R1270	< 16	16 – 62	> 62	< 29	29 – 115	>115

Note: For moisture values of other refrigerants, like R744, pls contact Danfoss.

Ordering

Without Indicator

Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants

	Type	Version	Connection [in.]	Connection [mm]	Code no.
	SGP 10 X	Flare ext. x ext.	$\frac{3}{8} \times \frac{3}{8}$	10 x 10	014L0080
	SGP 12s X SGP 16s X	ODF x ODF solder	$\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$	16 x 16	014L0086 014L0087

I type indicator for HCFC and HC

Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants

	SGP 6 I SGP 10 I SGP 12 I SGP 16 I SGP 19 I	Flare ext. x ext.	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014L0007 014L0008 014L0009 014L0024 014L0028
	SGP 6 I SGP 10 I SGP 12 I SGP 16 I SGP 19 I	Flare int. x ext. 1)	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014L0021 014L0022 014L0025 014L0026 014L0043
	SGP 6s I SGP 10s I SGP 12s I SGP 16s I SGP 19s I SGP 22s I	ODF x ODF solder	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{7}{8} \times \frac{7}{8}$	16 x 16 19 x 19 22 x 22	014L0034 014L0035 014L0036 014L0044 014L0047 014L0039
	SGP 6s I SGP 10s I SGP 12s I SGP 18s I	ODF x ODF solder	-	6 x 6 10 x 10 12 x 12 18 x 18	014L0040 014L0041 014L0042 014L0045
	SGP 6s I SGP 10s I SGP 12s I SGP 16s I SGP 22s I	ODF x ODM solder	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{7}{8} \times \frac{7}{8}$	16 x 16 22 x 22	014L0125 014L0126 014L0127 014L0128 014L0130

N type indicator for HCFC, HFC, HC and R744 (CO₂)

Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants


	SGP 6 N SGP 10 N SGP 12 N SGP 16 N SGP 19 N	Flare ext. x ext.	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014L0161 014L0162 014L0163 014L0165 014L0166
	SGP 6 N SGP 10 N SGP 12 N SGP 16 N SGP 19 N	Flare int. x ext. 1)	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{4} \times \frac{3}{4}$	6 x 6 10 x 10 12 x 12 16 x 16 19 x 19	014L0171 014L0172 014L0173 014L0174 014L0175
	SGP 6s N SGP 10s N SGP 12s N SGP 16s N SGP 19s N SGP 22s N SGP 22s N ²⁾	ODF x ODF solder	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{3}{8} \times \frac{3}{8}$ $\frac{7}{8} \times \frac{7}{8}$ $1\frac{1}{8} \times 1\frac{1}{8}$	16 x 16 19 x 19 22 x 22	014L0181 014L0182 014L0183 014L0184 014L0185 014L0186 014L0187
	SGP 6s N SGP 10s N SGP 12s N SGP 18s N	ODF x ODF solder	-	6 x 6 10 x 10 12 x 12 18 x 18	014L0191 014L0192 014L0193 014L0195
	SGP 6s N SGP 10s N SGP 12s N SGP 16s N SGP 22s N	ODF x ODM solder	$\frac{1}{4} \times \frac{1}{4}$ $\frac{3}{4} \times \frac{3}{4}$ $\frac{1}{2} \times \frac{1}{2}$ $\frac{5}{8} \times \frac{5}{8}$ $\frac{7}{8} \times \frac{7}{8}$	16 x 16 22 x 22	014L0201 014L0202 014L0203 014L0204 014L0206




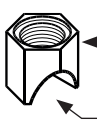

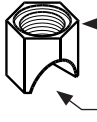
1) Can be screwed directly into the filter drier.

2) Oversize connections.

Ordering (continued)

Socket type

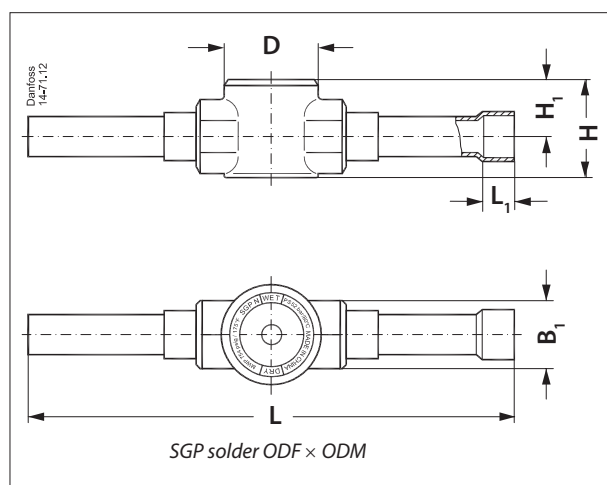
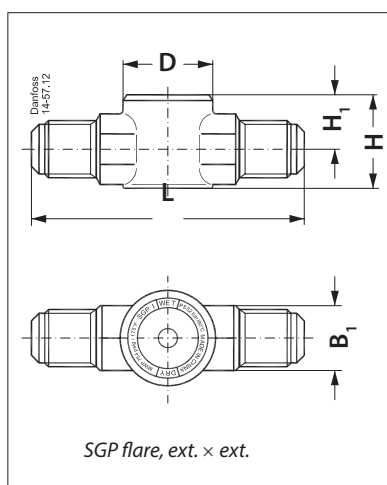
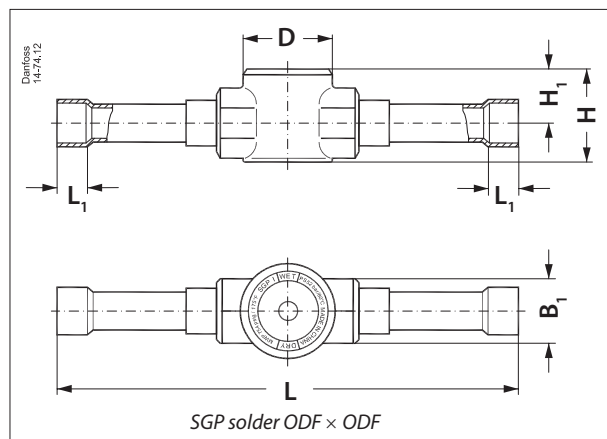
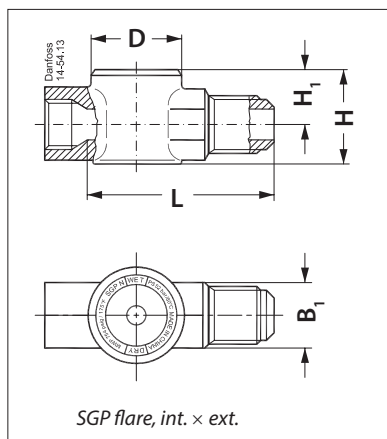
 Only solder versions, connection size from 6s to 22s, are allowed for flammable refrigerants

	Type	Version	Connection		Code no.
			1	2	
	SGP 3/4 RX SGP 3/4 RX SGP 1/2 RX	Pipe thread NPT NPT	G 3/4 A ¹⁾ 3/4 -14 NPT ²⁾ 1/2 -14 NPT ²⁾	-	014L0004 014L0005 014L0002
	SGP 1/2 RI SGP 24 RI	NPT M thread	1/2 - 14 NPT ²⁾ M24 x 1	-	014L0131 014L1154
	SGP 1/2 RN SGP 24 RN	NPT M thread	1/2 - 14 NPT ²⁾ M24 x 1	-	014L0006 014L1155
	SGS SGS SGS SGS SGS SGS SGS	Tube fitting Tube fitting Tube fitting Tube fitting Tube fitting Tube fitting Tube fitting	M24 x 1 M24 x 1 M24 x 1 M24 x 1 M24 x 1 M24 x 1 M24 x 1	7/8 1 1/8 1 3/8 1 5/8 2 1/8 3 1/8 4 1/8	014-1059 014-1056 014-1057 014-1058 014-1067 014-1068 014-1069
	SGP 20 RN	M thread	M20 x 1.5	-	014L1603
	SGS	Tube fitting	M20 x 1.5	3 1/8	014-1072

¹⁾ ISO 228-1

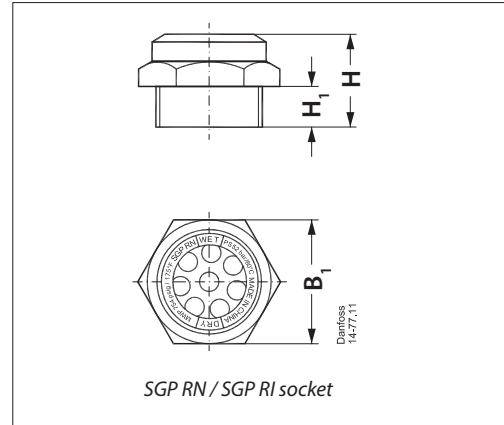
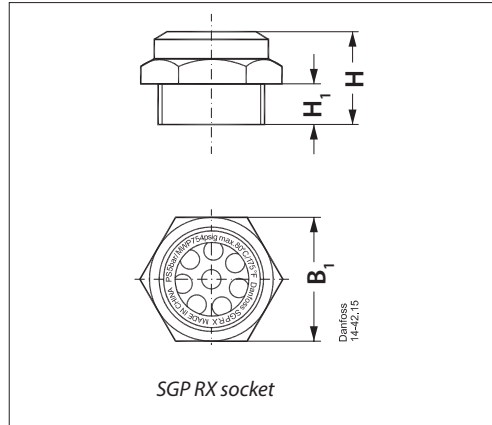
²⁾ ANSI/ASME B1.20.1

Dimensions [mm] and weights [kg]



Type	Version	L	L ₁	H	H ₁	B ₁	øD	Net weight
SGP 6 N, SGP 6 I	Flare ext. x ext.	67	-	25	15	14	27	0.1
SGP 10 N, SGP 10 I		82	-	29	17	19	32	0.2
SGP 12 N, SGP 12 I		88	-	31	19	22	32	0.3
SGP 16 N, SGP 16 I		104	-	38	22	27	37	0.4
SGP 19 N, SGP 19 I		110	-	42	23	32	37	0.6
SGP 6 N, SGP 6 I	Flare int. x ext.	46	-	25	15	16	27	0.1
SGP 10 N, SGP 10 I		57	-	29	17	22	32	0.2
SGP 12 N, SGP 12 I		59	-	31	19	24	32	0.2
SGP 16 N, SGP 16 I		71	-	38	22	27	37	0.4
SGP 19 N, SGP 19 I		75	-	42	23	32	37	0.5
SGP 6s N, SGP 6s I	Solder ODF x ODF	101	7	24	15	14	27	0.1
SGP 10s N, SGP 10s I		119	9	24	15	14	27	0.1
SGP 12s N, SGP 12s I		146	10	29	17	19	32	0.2
SGP 16s N, SGP 16s I		146	12	31	19	22	32	0.2
SGP 18s N, SGP 18s I		173	14	38	22	27	32	0.3
SGP 19s N, SGP 19s I		173	14	38	22	27	32	0.3
SGP 22s N, SGP 22s I		173	17	39	23	27	32	0.3
SGP 22s N, SGP 22s I oversized		173	22	39	23	27	32	0.3
SGP 6s N, SGP 6s I		Solder ODF x ODM	101	7	24	15	14	27
SGP 10s N, SGP 10s I	119		9	24	15	14	27	0.1
SGP 12s N, SGP 12s I	146		10	29	17	19	32	0.2
SGP 16s N, SGP 16s I	146		12	31	19	22	32	0.2
SGP 22s N, SGP 22s I	173		17	39	23	27	32	0.3

Dimensions [mm] and weights [kg]



Type	Version	L	L ₁	H	H ₁	B ₁	øD	Net weight
SGP ½ RX	Socket, NPT	-	-	31	18	27	-	0.1
SGP ¾ RX	Socket, G 3/4	-	-	24	10	32	-	0.1
SGP ¾ RX	Socket, NPT	-	-	32	18	32	-	0.1
SGP ½ RN, SGP ½ RI	Socket, NPT	-	-	31	18	27	-	0.1
SGP RI, M24*1	Socket, Metric	-	-	29	15	32	-	0.1