Data sheet

Sight Glass for low pressure refrigerants Type SG

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 SG and SGR 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 SGI/N and SGRI/N are equipped with sensitive indicators that reflects a colour, depending on the moisture content in the refrigerant.

Features

Type SG / SGR

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

Type SGI / SGRI

- Refrigerants where lubrication is by mineral oil e.g. HCFC
- Indicates too high water content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Flare/solder connection or socket type

Type SGN / SGRN

- For Non- flammable HFC refrigerants
- Indicates too high water content in the refrigeration system
- Indicates lack of subcooling
- Indicates refrigerant deficiency
- Flare/solder connection or socket type

Available types

SG: Without moisture indicator		SGR: Socket type without moisture indicator
 Solder version	 Flare version	 Socket

SGI: For mineral oil e.g. HCFC	SGN: With Non- flammable HFC moisture indicator	SGRI: Saddle sight glass for mineral oil e.g. HCFC	SGRN: Saddle sight glass with Non- flammable HFC moisture indicator
 Solder version	 Flare version	 Socket	 Saddle

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 Non- flammable HFC refrigerants, 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.

Technical data

Ambient temperature
-50 – 80 °C / -58 – 75 °F

Max. working pressure
PS / MWP = 35 bar / 508 psig

SGI / SGRI for mineral oil e.g. HCFC refrigerants

	Moisture content ppm = parts per million					
	SGI / SGRI					
	25 °C			43 °C		
	Green/ dry	Intermed. color	Yellow/ wet	Green/ dry	Intermed. color	Yellow/ wet
Mineral oil e.g. R22	< 150	150 – 300	> 300	< 250	250 – 500	> 500

SGN / SGRN for HCFC and Non- flammable HFC refrigerants

	Moisture content ppm = parts per million					
	SGN / SGRN					
	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
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

⚠ **Note:**
For moisture values of other refrigerants, please contact Danfoss.

Ordering

Monitor

	Type	Version	Connection [in.]	Connection [mm]	Code no.
	**SG 12**	ODF × ODF solder	1/2 × 1/2	16 × 16	**014-0086**
	SG 16	ODF × ODF solder	5/8 × 5/8	16 × 16	**014-0087**

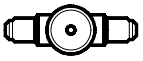
HCFC

	Type	Version	Connection [in.]	Connection [mm]	Code no.
	**SGI 6**	Flare ext. × ext.	1/4 × 1/4	6 × 6	**014-0007**
	SGI 10		3/8 × 3/8	10 × 10	**014-0008**
	SGI 12		1/2 × 1/2	12 × 12	**014-0075**
	SGI 16		5/8 × 5/8	16 × 16	**014-0024**
	SGI 19		3/4 × 3/4	19 × 19	**014-0028**
	**SGI 6**	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	**014-0021**
	SGI 10		3/8 × 3/8	10 × 10	**014-0022**
	SGI 12		1/2 × 1/2	12 × 12	**014-0025**
	SGI 16		5/8 × 5/8	16 × 16	**014-0026**
	SGI 19		3/4 × 3/4	19 × 19	**014-0043**
	**SGI 6s**	ODF × ODF solder	1/4 × 1/4	—	**014-0034**
	SGI 10s		3/8 × 3/8	—	**014-0035**
	SGI 12s		1/2 × 1/2	—	**014-0036**
	SGI 16s		5/8 × 5/8	16 × 16	**014-0044**
	SGI 19s		3/4 × 3/4	19 × 19	**014-0047**
	SGI 22s		7/8 × 7/8	22 × 22	**014-0039**
	SGI 6s	ODF × ODF solder	—	6 × 6	**014-0040**
	SGI 10s		—	10 × 10	**014-0041**
	SGI 12s		—	12 × 12	**014-0042**
	SGI 18s		—	18 × 18	**014-0045**
	**SGI 6s**	ODF × ODM solder	1/4 × 1/4	—	**014-0125**
	SGI 10s		3/8 × 3/8	—	**014-0126**
	SGI 12s		1/2 × 1/2	—	**014-0127**
	SGI 16s		5/8 × 5/8	16 × 16	**014-0128**
	SGI 22s		7/8 × 7/8	22 × 22	**014-0130**

[1] Can be screwed directly into the filter drier.

Ordering
(continued)

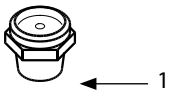
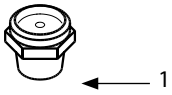
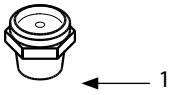
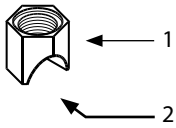
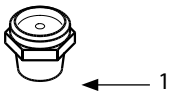
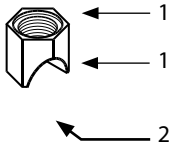
HCFC and Non- flammable HFC

	Type	Version	Connection [in.]	Connection [mm]	Code no.
	**SGN 6**	Flare ext. × ext.	1/4 × 1/4	6 × 6	**014-0161**
	SGN 10		3/8 × 3/8	10 × 10	**014-0162**
	SGN 12		1/2 × 1/2	12 × 12	**014-0163**
	SGN 16		5/8 × 5/8	16 × 16	**014-0165**
	SGN 19		3/4 × 3/4	19 × 19	**014-0166**
	**SGN 6**	Flare int. × ext. [1]	1/4 × 1/4	6 × 6	**014-0171**
	SGN 10		3/8 × 3/8	10 × 10	**014-0172**
	SGN 12		1/2 × 1/2	12 × 12	**014-0173**
	SGN 16		5/8 × 5/8	16 × 16	**014-0174**
	SGN 19		3/4 × 3/4	19 × 19	**014-0175**
	**SGN 6s**	ODF × ODF solder	1/4 × 1/4	—	**014-0181**
	SGN 10s		3/8 × 3/8	—	**014-0182**
	SGN 12s		1/2 × 1/2	—	**014-0183**
	SGN 16s		5/8 × 5/8	16 × 16	**014-0184**
	SGN 19s		3/4 × 3/4	19 × 19	**014-0185**
	SGN 22s		7/8 × 7/8	22 × 22	**014-0186**
	SGN 22s		1 1/8 × 1 1/8	—	**014-0187**
	SGN 6s	ODF × ODF solder	—	6 × 6	**014-0191**
	SGN 10s		—	10 × 10	**014-0192**
	SGN 12s		—	12 × 12	**014-0193**
	SGN 18s		—	18 × 18	**014-0195**
	**SGN 6s**	ODF × ODM solder	1/4 × 1/4	—	**014-0201**
	SGN 10s		3/8 × 3/8	—	**014-0202**
	SGN 12s		1/2 × 1/2	—	**014-0203**
	SGN 16s		5/8 × 5/8	16 × 16	**014-0204**
	SGN 22s		7/8 × 7/8	22 × 22	**014-0206**

[1] Can be screwed directly into the filter drier.

Ordering
(continued)

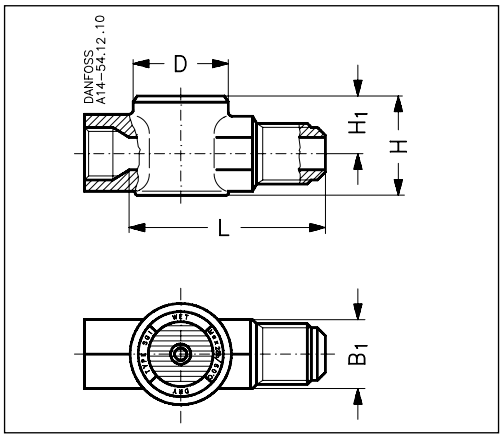
Socket type

	Type	Version	Connection		Code no.
			1	2	
	**SGR 3/4**	Pipe thread	G 3/4 A [1]	—	**014-0004**
	SGR 3/4	NPT	3/4 – 14 NPT [2]	—	**014-0005**
	SGR 1/2	NPT	1/2 – 14 NPT [2]	—	**014-0002**
	**SGRI**	SGRI	1/2 – 14 NPT [2]	—	**014-0131**
	SGRI	SGRI for saddle	M24 × 1	—	**014-1154**
	**SGRN**	SGRN	1/2 – 14 NPT [2]	—	**014-0006**
	SGRN	SGRN for saddle	M24 × 1	—	**014-1155**
	**SGS**	Tube fitting	M24 × 1	7/8	**014-1059**
	SGS	Tube fitting	M24 × 1	1 1/8	**014-1056**
	SGS	Tube fitting	M24 × 1	1 3/8	**014-1057**
	SGS	Tube fitting	M24 × 1	1 5/8	**014-1058**
	SGS	Tube fitting	M24 × 1	2 1/8	**014-1067**
	SGS	Tube fitting	M24 × 1	3 1/8	**014-1068**
	**SGRN**	SGRN for saddle	M20 × 1.5	—	**014-1603**
	**Sight glass saddle**	Tube fitting	M20 × 1.5	3 1/8	**014-1072**

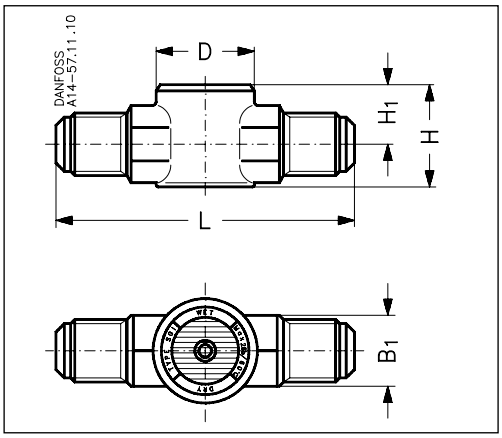
[1] ISO 228/1
[2] ANSI/ASME B1.20.1

Dimensions [mm] and weights [kg]

SGI / SGN flare, int. × ext.

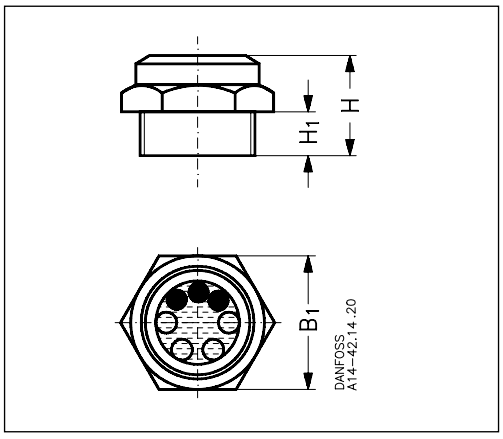


SGI / SGN flare, ext. × ext.

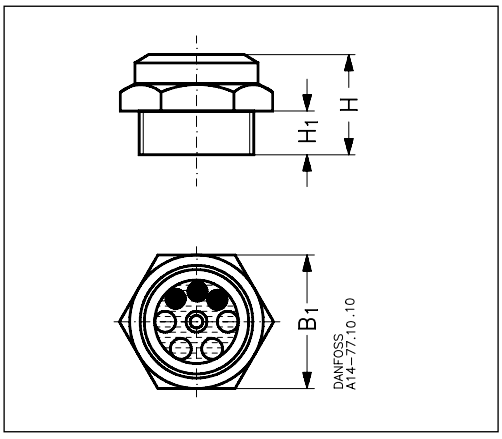


Type	Version	L	H	H_1	B_1	øD	Net weight
SGI / SGN 6	Flare ext. × ext.	67	24	14	14	27	0.1
SGI / SGN 10		82	28	16	19	32	0.2
SGI / SGN 12		88	30	18	22	32	0.3
SGI / SGN 16		104	37	21	27	37	0.4
SGI / SGN 19		110	41	22	32	37	0.5
SGI / SGN 6	Flare int. × ext.	46	24	14	16	27	0.1
SGI / SGN 10		57	30	18	22	32	0.2
SGI / SGN 12		59	30	18	24	32	0.3
SGI / SGN 16		71	37	21	27	37	0.4
SGI / SGN 19		75	41	22	32	37	0.5

SGR



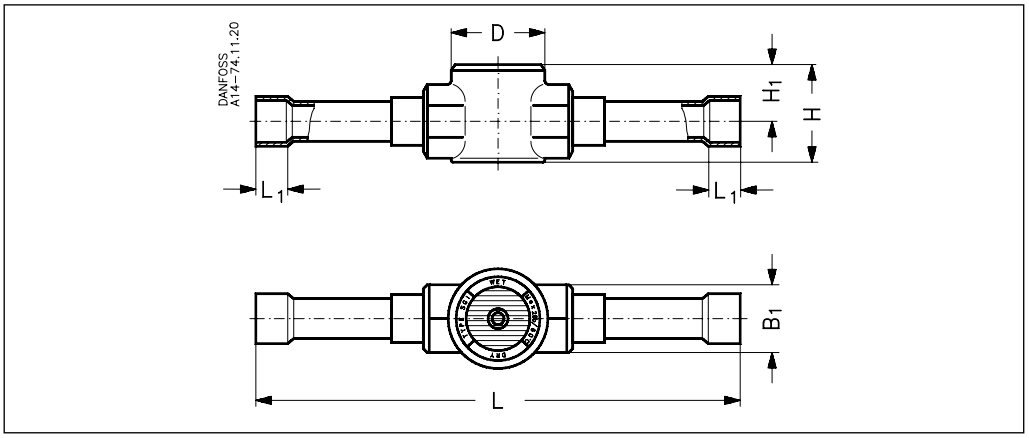
SCRI / SGRN



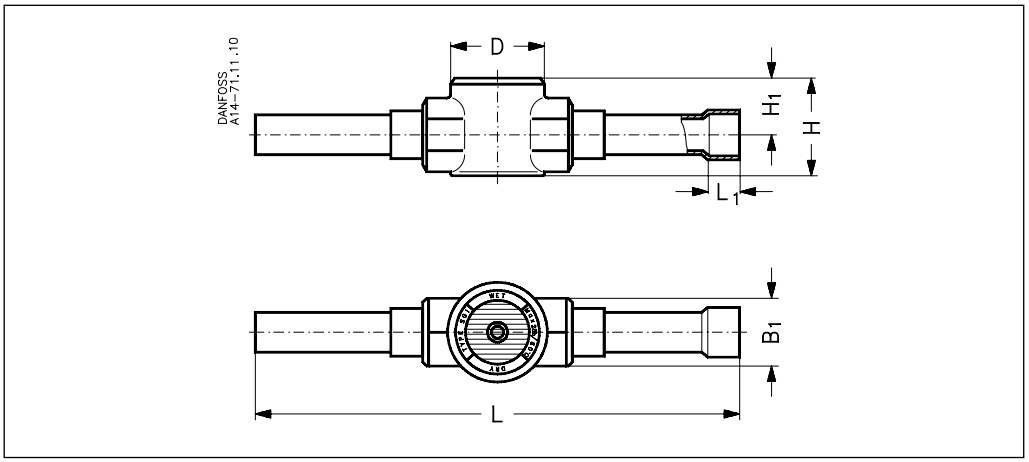
Type	Version	H	H_1	B_1	Net weight
SGR $^1/_2$	NPT	30	18	27	0.1
SGR $^3/_4$	Pipe thread	23	10	32	0.1
SGR $^3/_4$	NPT	31	18	32	0.1
SGRN $^1/_2$	NPT	30	18	27	0.1

Dimensions [mm] and weights [kg]
(continued)

SGI / SGN solder ODF × ODF



SGI / SGN solder ODF × ODM



Type	Version	L	L_1	H	H_1	B_1	øD	Net weight
SGI / SGN 6s	ODF × ODF solder	101	7	24	14	14	27	0.1
SGI / SGN 10s		119	9	24	14	14	27	0.1
SGI / SGN 12s		146	10	28	16	19	27	0.2
SGI / SGN 16s		146	12	30	18	22	27	0.2
SGI / SGN 18s		173	14	37	21	27	37	0.3
SGI / SGN 22s		173	17	37	21	27	27	0.3
SGI / SGN 22s		173	22	37	21	27	27	0.3
SGI / SGN 6s	ODF × ODM solder	101	7	24	14	14	27	0.1
SGI / SGN 10s		119	9	24	14	14	27	0.1
SGI / SGN 12s		146	10	28	16	19	27	0.2
SGI / SGN 16s		146	12	30	18	22	27	0.2