

Sight glass, type MLI

Introduction



The MLI sight glass is 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 MLI is equipped with a sensitive indicator that reflects a colour, depending on the moisture content in the refrigerant.

Features

- MLI are moisture indicators suitable for use with liquid halocarbon refrigerants e.g. R404a, R134a or R22.
 - MLI can be used for refrigerants within the temperature range +80/–40°C (+176/–40°F) to maximum operating pressure of 25 bar.
 - MLI are available with weld or solder connections.
 - MLI 100 can, when the indicator element has been removed, alternatively be used as a normal sight glass for all refrigerants inclusive R717 (ammonia).
- Note:** MLI Sight glasses sizes 32 and 40 are not PED approved and cannot be used in PED areas.

Design

Housing

The MLI housing is made of special, cold resistant steel approved for low temperature applications.

Connections

- Welding DIN (2448), DN 20 to 40
- Welding ANSI (B 36.10 Schedule 80), DN 20 to 40
- Soldering ANSI (B 16.22)

Installation

For further information refer to installation instruction for MLI

Technical data

- Max. operating pressure is 25 bar.
- The MLI 20-40 are designed for:
Strength test: 50 bar g (725 psig).
Leakage test: 25 bar g (362 psig).

The moisture liquid indicators are designed as sight glasses with an integral moisture indicator element.

The indicator element is a filter paper impregnated with a chemical salt, which is sensitive to moisture. The indicator element will

change color upon detection of moisture within the system. The color change is reversible.

New systems or systems where the drier has been replaced may cause the element to change color almost immediately. However, it is recommended that the plant is allowed to operate for at least 12 hours to allow the system to reach equilibrium before deciding if the drier should be changed.

The drying of the system should be continued until the indicator element stays dark green.

Moisture content

MLI for CFC and HCFC refrigerants

	Moisture content ppm = parts per million					
	MLI 100					
	25°C			43°C		
	Green/dry	Intermediate color	Yellow/wet	Green/dry	Intermediate color	Yellow/wet
R22	< 30	30 - 90	> 90	< 45	45 - 130	> 130

MLI for HFC and HCFC refrigerants

	Moisture content ppm = parts per million					
	MLI 200					
	25°C			43°C		
	Green/dry	Intermediate color	Yellow/wet	Green/dry	Intermediate color	Yellow/wet
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

Material specification

No.	Part	Material	DIN/EN	ISO	ASTM
1	Housing	Steel	TTSt 35N 17173	TW6 2604/3	Grade 1 A 333, A 334 A350 LF2*
2	Indicator MLI 100 Indicator MLI 200	steel/glass brass/glass			
3	O-ring	Rubber			
4	Adapter	Steel			

* - alternative material

Connections

Welding DIN (2448)

	mm	inch	OD / ID Ø mm	OD / ID Ø inch
20	20	¾"	26.9 / 22.3	1.059 / 0.878
25	25	1"	33.7 / 28.5	1.327 / 1.122
32	32	1 ¼"	42.4 / 37.2	1.669 / 1.465
40	40	1 ½"	48.3 / 43.1	1.902 / 1.697

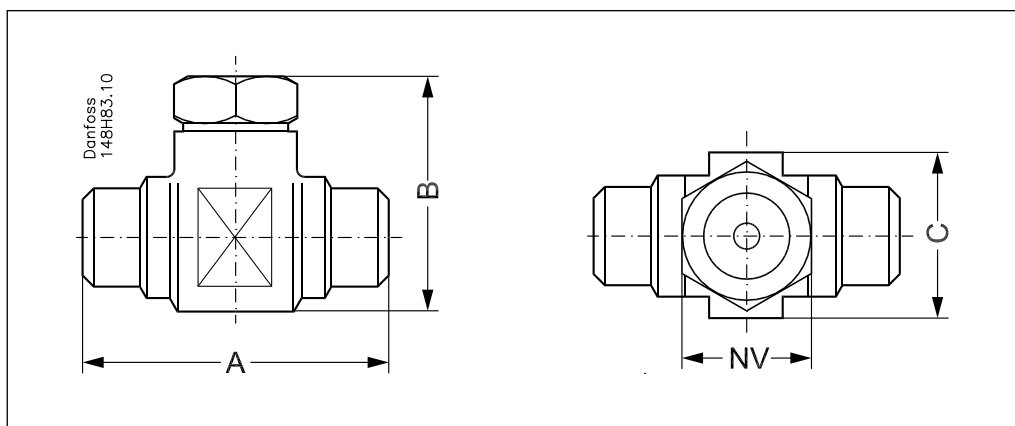
Welding ANSI (B 36.10 Schedule 80)

	mm	inch	OD / ID Ø mm	OD / ID Ø inch
20	20	¾"	26.9 / 18.9	1.059 / 0.744
25	25	1"	33.7 / 24.5	1.327 / 0.965
32	32	1 ¼"	42.4 / 32.6	1.669 / 1.283
40	40	1 ½"	48.3 / 38.1	1.902 / 1.500

Soldering (ANSI B 16.22)

	mm	inch	ID Ø mm	L mm	ID Ø inch	L inch
22	22	7/8"	22.30	19	0.878	0.75
27	27	1 1/8"	28.65	23	1.128	0.91
32	32	1 3/8"	35.00	25	1.378	0.98
40	40	1 5/8"	41.35	28	1.628	1.10

Dimensions



Size	Connection	A		B		C		NV		Weight	
		mm	in.	mm	in.	mm	in.	mm	in.	kg	lb
DN 20	D / A	85	3.35	45	1.77	46	1.81	35	1.38	0.6	1.32
DN 25	D / A										
DN 22	SA										
DN 27	SA										
DN 32	D / A / SA	110	4.33	50	1.97	60	2.36	35	1.38	1.0	2.20
DN 40	D / A / SA										

D = Welding DIN (2448)
A = Welding ANSI (B 36.10 Schedule 80)
SA = Soldering (ANSI B 16.22)

Ordering

DIN weld connection/ANSI solder connection						ANSI connection			
Size welding		Size solder		Type	Code no.	mm	inch	Type	Code no.
mm	inch	mm	inch						
20	¾"	22	7/8"	MLI 20 D 100	2511+019	20	¾"	MLI 20 A 100	2511+088
25	1"	27	1 1/8"	MLI 25 D 100	2511+020	25	1"	MLI 25 A 100	2511+089
32	1 ¼"	32	1 3/8"	MLI 32 D 100	2511+021	32	1 ¼"	MLI 32 A 100	2511+090
40	1 ½"	40	1 5/8"	MLI 40 D 100	2511+022	40	1 ½"	MLI 40 A 100	2511+091
20	¾"	22	7/8"	MLI 20 D 200	2511+093	20	¾"	MLI 20 A 200	2511+097
25	1"	27	1 1/8"	MLI 25 D 200	2511+094	25	1"	MLI 25 A 200	2511+098
32	1 ¼"	32	1 3/8"	MLI 32 D 200	2511+095	32	1 ¼"	MLI 32 A 200	2511+099
40	1 ½"	40	1 5/8"	MLI 40 D 200	2511+096	40	1 ½"	MLI 40 A 200	2511+100

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