

LB-1PV, LB-1SS

Liquid Stop LB-1PV and LB-1SS

for protecting gas analyzers and gas-phase chromatographs against liquid ingress

Special Features

- Safe protection against liquid ingress
- Reliable separation of liquid ingress
- Also suitable for high pressures
- Available in stainless steel and PVDF
- Easy change of the hydrophobic protective membrane
- With wall-mounting bracket

Application

The M&C Liquid Stops LB-1PV and LB-1SS are suitable for the protection of analyzers against the ingress of liquids from the upstream sample gas conditioning system. This prevents serious damage to the analyzer.

The most practical positioning of the LB-1 is downstream of the sample conditioning unit, directly in front of the flow meter of the analyzer or gas chromatograph.

The membrane replacement is very easy to perform. The optimum positioning of the sealing o-ring always ensures a reliable sealing of both housing sections.

Filter inlet and outlet can be rotated 180° at the wall-mounting bracket so that flexible adaptation to local conditions is possible during installation.

Description

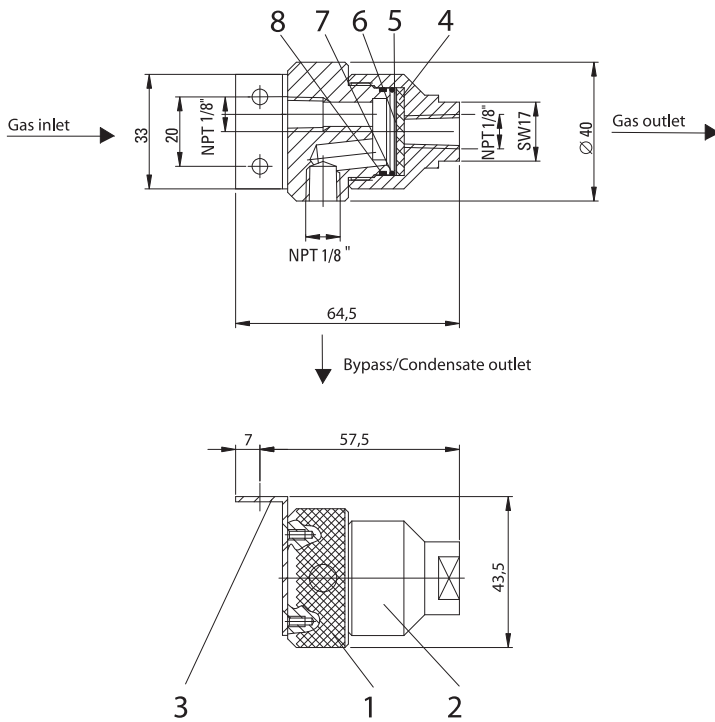
The hydrophobic protective membrane of the M&C liquid stop LB-1... is positioned between the two screwed parts of the housing. It is supported by a porous glass filter frit to ensure form stability.

The pore width of the protective membrane is designed in such a way that gas molecules and vapours can pass through, but liquid molecules are retained.

The gas inlet and outlet are arranged horizontally in the housing. The liquid outlet/bypass points downwards when mounted.

The horizontal flow direction of the gas and the gravity-induced draining of any liquids at the protective membrane prevent the liquid from penetrating to the analyzer.

Possible liquid can be drained by means of the peristaltic pump SR25.2, float steam trap with separator function, e.g. ADS-SS or collecting vessel TG1 (immersion vessel). The LB-1 offers an appropriate connection option for this purpose.



- 1 Upper section of housing
- 2 Lower section of housing
- 3 Holding bracket
- 4 Glass filter frit
- 5 Hydrophobic protective membrane
- 6 Flat ring made of Teflon
- 7 O-ring FKM
- 8 O-ring FKM

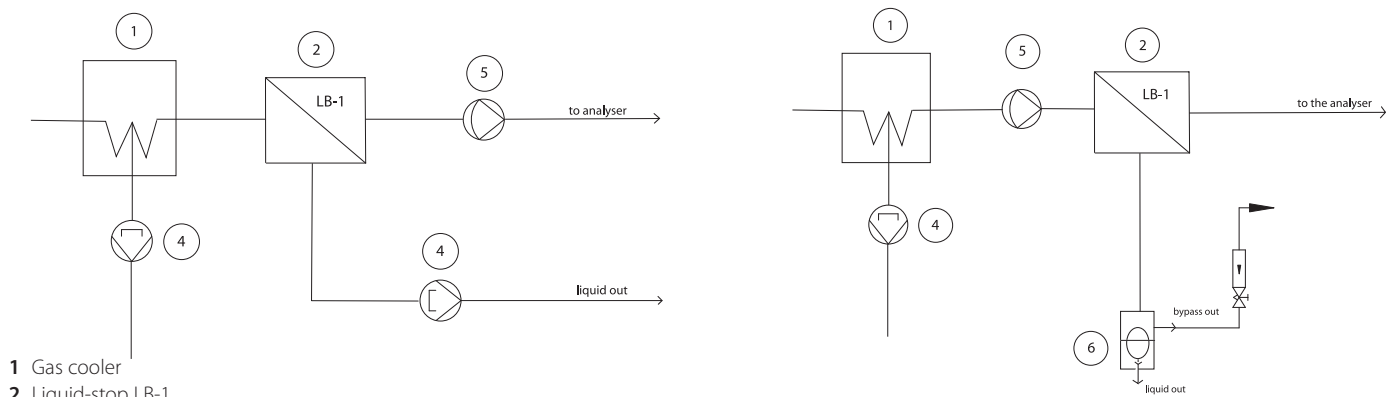
Dimensions in mm

Technical Data

Liquid-stop	LB-1PV	LB-1SS
Part No.	03F4005	03F4000
Gas flow	Max. 200 NI/h	
Gas pressure	0.3 - 2 bar abs. ΔP max. 0.5 bar	0.3 - 10 bar abs. ΔP max. 0.5 bar
Differential pressure with clean protection membrane, medium air, 20 °C [68 °F]	50 100 mbar 100 200 NI/h	
Temperature sample gas	Max. +80 °C [176 °F]	Max. +100 °C [212 °F]
Ambient temperature	0 °C to +60 °C [32 to 140 °F]	
Storage temperature	-25 °C to +80 °C [-13 to 176 °F]	
Stagnant space	4 ml	
Material of gas bearing parts	PVDF, FKM, PTFE, Polyester, glass	SS 316Ti, FKM, PTFE, Polyester, glass
Membrane Characteristic (AATCC 118-1989ASTM)	Oil rating 6	
Sample gas / drain connections	NPT 1/8" i DIN ISO 228/1	
Mounting / weight	Wall mounting / approx. 0.3 kg [0.66 lb]	

Please note: NI/h and NI/min refer to the German standard DIN 1343 and are based on these standard conditions: 0 °C [32 °F], 1013 mbar.

Examples for application



- 1 Gas cooler
- 2 Liquid-stop LB-1
- 4 Liquid drain with peristaltic pump SR25.2
- 5 Gas sample pump
- 6 Separator and automatic liquid drain ADS-SS

Connecting the gas sample line

The connections (3 x 1/8" NPT i) for the sample gas lines are marked on the type plate and in the drawing above. The connections are made using appropriate screw fittings (see also data sheet for screw fittings), which are screwed into the LB-1 using Teflon tape to make them gas-tight.

Changing the protective membrane

If the hydrophobic protective diaphragm is soiled or flooded so that the required flow rate is too low, it is advisable to replace it including the glass frit, PTFE flat ring and Viton® O-ring (spare parts set I, part no. 90F3530).



If the flow is interrupted, the system must be checked immediately!

Ensure absolute cleanliness during installation, as impurities can impair the function of the LB-1 function!

The protective membrane becomes unusable if the surfaces are touched by hand!



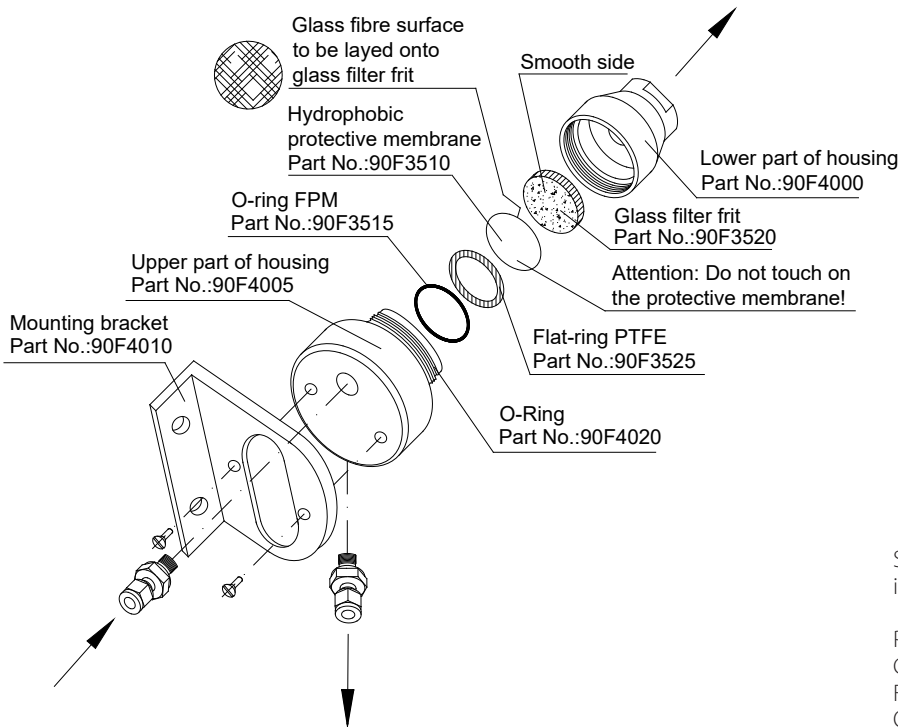
Aggressive condensate possible. Wear safety glasses and protective clothes!

To replace the protective membrane, unscrew the lower part of the liquid stop using an open-end wrench SW17. Then remove the protective membrane, O-rings and glass frit, clean the housing parts and reassemble the LB-1 as shown below.



For proper function, it is necessary to place the protective membrane with the surface with the glass fiber structure on the smooth side of the glass frit!

When replacing the O-ring on the upper part of the LB-1 (part no. 90F4020), it is essential that the O-ring is pulled on, not rolled up. This prevents twisting and therefore leaks.



Spare part set I Part No. 90F4030 including:

Protective membrane Part No. 90F3510
 Glass filter frit Part No. 90F3520
 Flat-ring PTFE Part No. 90F3525
 O-ring FKM Part No. 90F3515
 O-ring FKM Part No. 90F4020

Recommended spare parts

Part No.	Description
90F4020	FKM O-ring for upper part LB-1
90F3515	FKM O-ring for CLF-5, CG-2 und LB-1
90F3525	PTFE flat ring for CLF-5 and LB-1
90F3510	Hydrophobic protective membrane for CLF-5 and LB-1
90F3520	Glass filter frit for CLF-5 and LB-1
90F4030	Spare part set LB-1 consisting of glass filter frit, protective membrane, flat ring PTFE, O-rings FKM