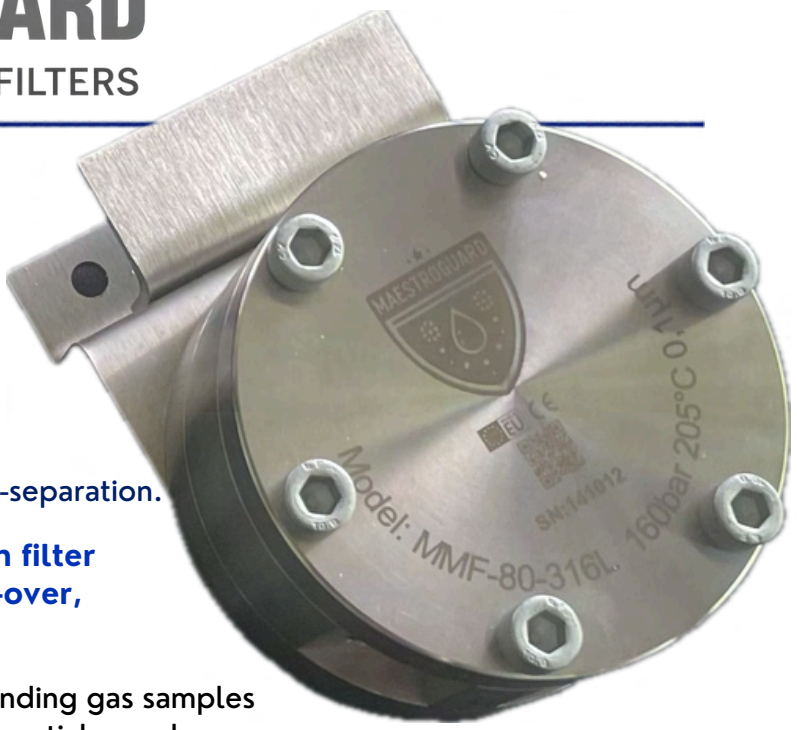
MAESTROGUARD®

ANALYZER PROTECTION FILTERS



MMF-80

ADVANCED WET-SAMPLE PROTECTION

High-bypass membrane separator with inertial pre-separation.

A high-performance stainless-steel protection filter for demanding gas samples with liquid carry-over, aerosols and particles.

The MaestroGuard® MMF-80 is designed for demanding gas samples with liquid carry-over, aerosols and particles. Tangential sample entry creates an internal vortex that pre-separates bulk liquids and heavier particles before the two parallel membrane stages. The protected gas phase passes through the membranes to the analyzer, while separated liquids and contamination are continuously removed through the bypass outlet.

THE PROBLEM:

LIQUID CARRY-OVER
Condensate, aerosols & droplets

AEROSOLS & PARTICLES
Wet sample contamination

ANALYZER RISK
Drift, fouling & false alarms

DOWNTIME
Service calls & operating cost

THE SOLUTION: MAESTROGUARD'S MMF-80

2x

A high-bypass membrane separator with inertial pre-separation. Tangential flow creates a powerful swirl that helps remove liquids before the sample reaches the absolute PTFE membrane. Continuous bypass flow carries separated liquids and contamination away.

INERTIAL PRE-SEPARATION
Tangential inlet creates an internal swirl for removing bulk liquids and heavy particles.

ABSOLUTE MEMBRANE
0.1 µm absolute 100% PTFE membrane allows the protected gas phase to pass while blocking entrained liquids.

SELF-CLEANING BYPASS
Continuous bypass flow removes separated liquids and contamination.

MAXIMUM SAMPLE PROTECTION FOR WET GAS ANALYSIS.

HIGH BYPASS.
Designed for demanding wet-sample service.

0.1 µm

0.1 ABSOLUTE.
Absolute PTFE membrane barrier.

160 BAR

160 BAR READY.
Pressure rating up to 160 bar.

316L

316L STAINLESS.
Robust stainless-steel construction.

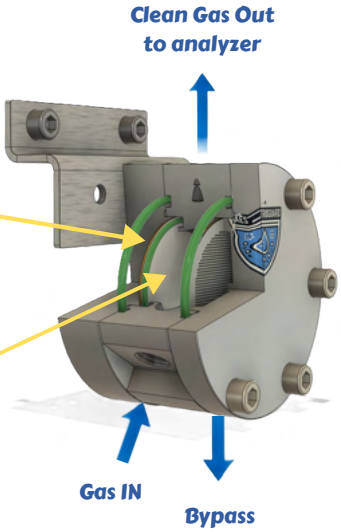
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MMF-80 – TECHNICAL OVERVIEW

High-bypass. Liquid carry-over protection. Inertial pre-separation.

HOW IT WORKS

The MMF-80 features two 0.1 µm absolute 100% PTFE membrane stages, positioned left and right of a central inertial swirl chamber. Contaminated sample gas enters tangentially, where the swirl pre-separates liquids and heavier contamination. Clean gas passes through both membrane stages, is collected internally, and exits to the analyzer, while separated liquids are continuously removed through the bypass outlet.



Only the protected gas fraction passes through the 0.1 µm absolute PTFE membrane and continues to the analyzer.

WHY MMF-80?

- Tangential inertial pre-separation before the membrane
- Continuous bypass removal of separated liquids
- 0.1 µm absolute – 100% PTFE membrane blocks liquids while allowing clean gas to flow through
- High bypass capacity for wet sample service
- Up to 160 bar operating pressure
- Low downstream dead volume

TECHNICAL SPECIFICATIONS

Housing Material	Stainless steel 316L (1.4404)
Filter Element	MaestroGuard® membrane
Filtration Rating:	0.1 µm absolute
Max Operating Pressure	Up to 160 bar
Temperature Range	—200°C to 260°C (depending on seal)
Flow Rate*	180 L/h air @ 100 mbar, customizable (Bypass flow: 1–8 Nl/min typical)
Internal Volume	< 24 ml total, < 5 ml downstream
Connections	NPT female
Seal Materials	FKM, FFKM, PTFE, FEP
Compliance	EN 10204 3.1, CE, ATEX, PED 2014/68/EU, ISO 11114-4, ISO 15156 / NACE MR0175



* Higher flow rates can be achieved by using a membrane with a larger pore size.

ORDERING INFORMATION

- **MMF-80-316L-160-FKM-V1** 160 bar, O-ring FKM
- **MMF-80-316L-160-FFKM-V1** 160 bar, O-ring FFKM
- **MMF-80-316L-160-PTFE-V1** 160 bar, O-ring PTFE
- Option: MBMMF-80-S5 — mounting bracket in 316L
- Service kits available for FKM, FFKM and PTFE versions

TYPICAL USES

- Hydrogen and electrolyzer applications
- Natural gas and custody transfer
- Refinery and petrochem ical gas analysis
- Moisture and dew point analysis
- Process gas conditioning
- OEM analyzer cabinets and skids

SUPERIOR WET-SAMPLE PROTECTION THROUGH INERTIAL PRE-SEPARATION AND ABSOLUTE MEMBRANE FILTRATION.

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