



**"A leading worldwide supplier of high efficiency filters for a variety of industries and applications."**

## GMS-GUARDIAN MEMBRANE SEPARATORS

Many sample systems require zero liquid entrainment, and demand the sample not to be altered. A porous PTFE membrane, supported by a sintered stainless steel disc is at the heart of this unit. As a wet sample enters, the membrane only allows gas or vapor molecules to pass through while all liquids are stopped. Our series of membrane filters are uniquely designed to allow the operator quick and easy membrane service while providing high performance filtration. The body contains an integral mounting bracket along with the inlet, outlet, drain, and bypass connections. The threaded cap is user friendly with knurls and flats for optimum infield serviceability. No connections are broken to service the membrane disc.

Our second generation of GMS105 products also features an "Atomizer Plate" which spins the gas flow dropping much of the liquid mass out before contact is even made with the membrane. This rotation assists in keeping the membrane particle free too. We have further reduced the internal volume to minimize the sample lag time.

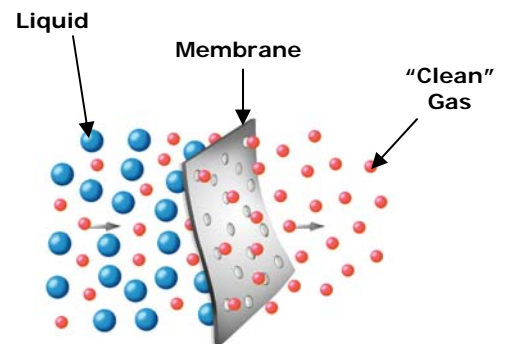
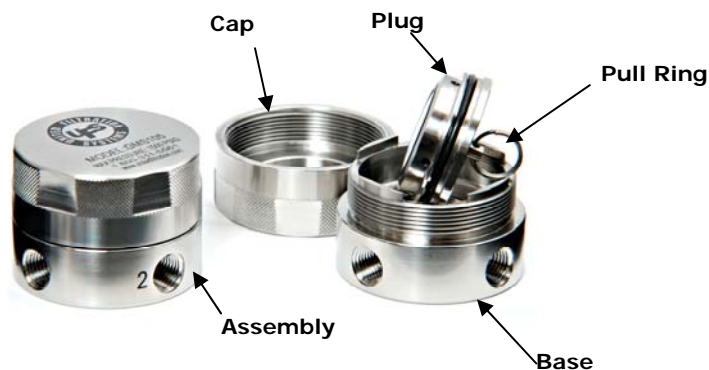


### Features:

- Integral Porting And Mounting Bracket
- 316L Stainless Steel Standard: NACE MR-01-75 Compliant
- Up To 70 LPM Flow (2.5 SCFM)
- 1500 PSIG Maximum Pressure Rating On All Stainless Steel Units
- PTFE Assemblies Available
- Oleophobic And Hydrophobic Membranes Available

### Applications:

- Protect On-Line Analyzers
- CNG Sampling Systems
- Moisture Barrier On Critical Monitoring Probes
- Sample Conditioning



New "Pull Ring" to easily remove the plug & service the membrane.

# GMS-GUARDIAN MEMBRANE SEPARATORS

## TECHNICAL INFORMATION ON STANDARD MEMBRANE MODELS

<b>Stainless Steel Model</b>	<b>GMS050</b>	<b>GMS100</b>	<b>GMS105-1/8"</b>	<b>GMS105-1/4"</b>
<b>Replaces Model</b>	<b>SM015.111</b>	<b>SM100.221</b>	<b>SM105.111</b>	<b>SM105.221</b>
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"
Drain & Gauge Port (NPT)	1/8"	1/4"	1/8"	1/4"
Maximum Pressure (psig)	1500	1500	1500	1500
Maximum Temperature (°F)	300	300	300	300
Internal Volume (cc) In Sample Chamber-Behind Membrane	1.5	3	3.96	3.96
Weight of Housing (lbs)	0.5	1.5	2.0	2.0
Principle Dimensions: (inch)				
Center of Port to Back	0.28	0.39	0.39	0.39
Body Diameter	1.50	1.97	2.48	2.48
Body Depth	1.26	2.05	1.89	1.89
Space Required to Remove Cap	0.90	0.90	0.87	0.87
Membrane Code (1)	MT.19.□	MT.33.□	MT.33.□	MT.33.□
Materials Of Construction: (2)				
Head, Bowl & Internals	316LSS	316LSS	316LSS	316LSS
Seals (Standard)	Viton	Viton	Viton	Viton
Accessories:				
Buna-N Seal Set	BNGMS050	BNGMS100	BNGMS105	BNGMS105
EPDM Seal Set	GEGMS050	GEGMS100	GEGMS105	GEGMS105
Kalrez Seal Set	KZGMS050	KZGMS100	KZGMS105	KZGMS105
<b>Viton Seal Set</b> <b>Standard</b>	<b>GVGMS050</b>	<b>GVGMS100</b>	<b>GVGMS105</b>	<b>GVGMS105</b>
Mounting Bracket	MBGMS050	MBGMS100	MBGMS105	MBGMS105
<b>PTFE Model</b>	<b>N/A</b>	<b>N/A</b>	<b>GMS105P-1/8"</b>	<b>GMS105P-1/4"</b>
Maximum Pressure: 100 PSIG				

Notes: (1) Replace the "□" with the flow required. i.e. MT.19.M1, MT.33.M2H  
(2) Material abbreviations: 316L=316L Stainless Steel

# GMS-GUARDIAN MEMBRANE SEPARATORS

Guardian Membranes are also offered with integral coalescing pre-filters. A 50C grade element is mounted before the membrane to remove most liquids and solids, thus providing longer membrane life. This integral package minimizes dead volume, panel space, and leak points. The combo units accept the same membrane kits as our standard Guardian units. Part numbers are specified at the bottom of the attached chart.

Our Model GMS170 takes the built-in coalescing filter one step further by inverting the complete assembly and making it easy to service by eliminating the need to break port connections. Here too we reduced internal volume for better conditioning results.

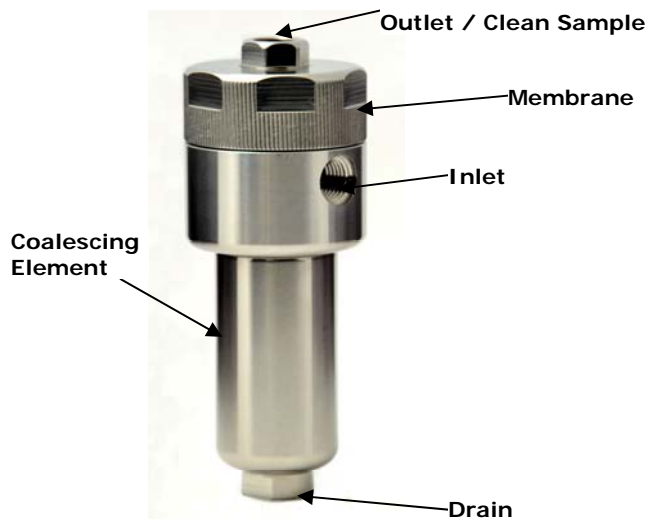


**GMS170**

## TECHNICAL INFORMATION ON MEMBRANES WITH COALESCING FILTER

<b>Stainless Steel Model</b>	<b>GMS120</b>	<b>GMS122</b>	<b>GMS170</b>
<b>Replaces Model</b>	<b>SM125.111</b>	<b>SM125.221</b>	<b>N/A</b>
Port Size (NPT)	1/8"	1/4"	1/4"
Drain & Gauge Port (NPT)	1/8"	1/4"	1/4"
Maximum Pressure (psig)	1500	1500	2000
Maximum Temperature (°F)	300	300	300
Internal Volume (cc) In Sample Chamber - Behind Membrane	0.118	0.118	3
Weight of Housing (lbs)	2.0	2.0	1.5
Principle Dimensions: (inch)			
Body Diameter	2.00	2.00	2.13
Overall Length	5.08	5.08	3.19
Space Required to Coalescing Element	2.52	2.52	1.61
Coalescing Element	12-57-50C	12-57-50C	25-27-50C
Membrane Code (1)	MT.33.□/50C	MT.33.□/50C	MT.33.□/50C-170
Materials Of Construction: (2)			
Head, Bowl & Internals	316LSS	316LSS	316LSS
Seals (Standard)	Viton	Viton	Viton
Accessories:			
Buna-N Seal Set	BNGMS120	BNGMS120	BNGMS170
EPDM Seal Set	GEGMS120	GEGMS120	GEGMS170
Kalrez Seal Set	KZGMS120	KZGMS120	KZGMS170
<b>Viton Seal Set Standard</b>	<b>GVGMS120</b>	<b>GVGMS120</b>	<b>GVGMS170</b>
Mounting Bracket	MBGMS120	MBGMS120	MBGMS170

Notes: (1) Replace the "□" with the flow required. i.e. MT.33.M1H/50C, MT.33.M2/50C  
 (2) Material abbreviations: 316L=316L Stainless Steel



The GMS120/122 series utilizes the traditional T-type design, with a coalescing pre-filter built into the assembly, and the membrane mounted on top with a vertical exit point, which assists in keeping it clean.

# GMS-GUARDIAN MEMBRANE SEPARATORS

A GMS205 / GMS 130 series is also offered which mimics the design features of the smaller GMS105 / GMS120 series. These units are meant for systems with higher flow rates (70 LPM) and dirtier streams. The larger membrane and coalescing filter obviously will provide longer service life based upon their physical size. However, these larger units should only be used where the smaller GMS105 series cannot handle the flow.

## TECHNICAL INFORMATION ON STANDARD MEMBRANE MODELS

<b>Stainless Steel Housing Model</b>	<b>GMS205-1/4"</b>	<b>GMS205-1/2"</b>
<b>Replaces Model</b>	<b>SM205.221</b>	<b>SM205.441</b>
Port Size (NPT)	1/4"	1/2"
Drain & Gauge Port (NPT)	1/4"	1/2"
Maximum Pressure (psig)	1500	1500
Maximum Temperature (°F)	300	300
Internal Volume (cc) In Sample Chamber – Behind Membrane	19.69	19.69
Weight of Housing (lbs)	7.0	7.0
Principle Dimensions: (inch)		
Center of Port to Back	0.60	0.60
Body Diameter	3.94	3.94
Body Depth (with knob)	3.03	3.03
Space Required to Remove Cap	1.30	1.30
Membrane Code (1)	MT.61.□	MT.61.□
Materials Of Construction:		
Head, Bowl & Internals	316L Stainless Steel	316L Stainless Steel
Seals (Standard)	Viton	Viton
Accessories:		
Buna-N Seal Set	BNGMS205	BNGMS205
EPDM Seal Set	GEGMS205	GEGMS205
Kalrez Seal Set	KZGMS205	KZGMS205
<b>Viton Seal Set</b> <b>Standard</b>	<b>GVGMS205</b>	<b>GVGMS205</b>
Mounting Bracket	MBGMS205	MBGMS205
<b>PTFE Model</b>	<b>GMS205P-1/4"</b>	<b>GMS205P-1/2"</b>
Maximum Pressure: 100 PSIG		

Notes: (1) Replace the "□" with the flow required. i.e. MT.61.M1H, MT.61.M2

## TECHNICAL INFORMATION ON MEMBRANES WITH COALESCING FILTER

<b>Stainless Steel Model</b>	<b>GMS130</b>	<b>GMS132</b>
<b>Replaces Model</b>	<b>SM225.221</b>	<b>SM225.441</b>
Port Size (NPT)	1/4"	1/2"
Drain & Gauge Port (NPT)	1/4"	1/2"
Maximum Pressure (psig)	1500	1500
Maximum Temperature (°F)	300	300
Internal Volume (cc) In Sample Chamber – Behind Membrane	2.2	2.2
Weight of Housing (lbs)	9.0	9.0
Principle Dimensions: (Inch)		
Body Diameter	2.95	2.95
Overall Length	6.75	6.75
Space Required to Coalescing Element	3.95	3.95
Coalescing Element	25-64-50C	25-64-50C
Membrane Code (1)	MT.61.□/50C	MT.61.□/50C
Materials Of Construction: (2)		
Head, Bowl & Internals	316L Stainless Steel	316L Stainless Steel
Seals (Standard)	Viton	Viton
Accessories:		
Buna-N Seal Set	BNGMS130	BNGMS130
EPDM Seal Set	GEGMS130	GEGMS130
Kalrez Seal Set	KZGMS130	KZGMS130
<b>Viton Seal Set</b> <b>Standard</b>	<b>GVGMS130</b>	<b>GVGMS130</b>
Mounting Bracket	N/A	N/A

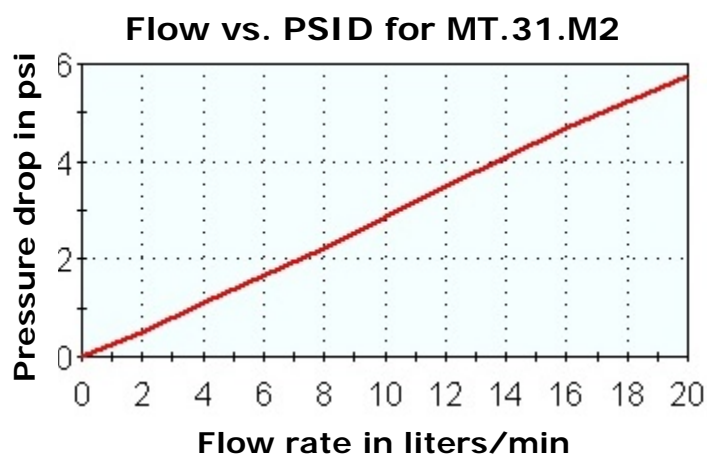
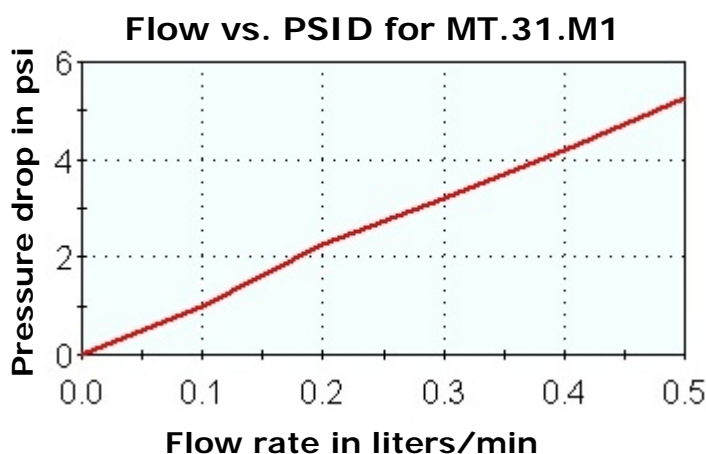
Notes: (1) Replace the "□" with the flow required. i.e. MT.33.M1H/50C, MT.33.M2/50C

# GMS-GUARDIAN MEMBRANE SEPARATORS

The porous membranes are produced from pure PTFE; they are extremely inert and have very low absorption levels. There are two standard grades available for use in low to high flow applications. The M1 (0.1 micron) is a low flow type membrane suitable for most liquids and the M2 (0.8 micron) is a high flow type recommended for higher surface tension liquids.

Our **Oleophobic** membranes designated by the "H" suffix (i.e. MT.33.M2H) have an extra thin layer which repels hydrocarbons and will block both water and hydrocarbons. They exhibit the same flow rate characteristics as our standard membranes.

	MT.33.M1	MT.33.M1H	MT.33.M2	MT.33.M2H
Membrane Type	Low Flow	Low Flow	High Flow	High Flow
Material	PTFE	PTFE	PTFE	PTFE
Diameter (mm)	33	33	33	33
Thickness (µm)	150	152	150	152
Maximum Temperature (°F)	212	212	212	212
Recommended Flow Rate (LPM)	0.35	0.35	10	10
Membrane Micron Size	0.1	0.1	0.8	0.8



	MT.61.M1	MT.61.M1H	MT.61.M2	MT.61.M2H
Membrane Type	Low Flow	Low Flow	High Flow	High Flow
Material	PTFE	PTFE	PTFE	PTFE
Diameter (mm)	61	61	61	61
Thickness (µm)	150	152	150	152
Maximum Temperature (°F)	212	212	212	212
Recommended Flow Rate (LPM)	1.0	1.0	70	70
Membrane Micron Size	0.1	0.1	0.8	0.8

