coalescer

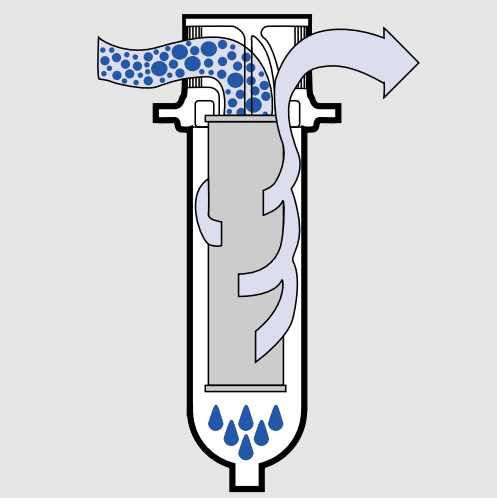
Small Flow Gas Coalescing Assembly

Description

Small Flow Gas (SFG) Coalescing Assemblies are rugged, inexpensive, high efficiency assemblies that eliminate problems caused by oil, water, and dirt in air or gas.

Performance Specifications

- Removal of 99.99% of all aerosols 0.3 microns and larger. Typical downstream aerosol concentrations are less than 0.003 ppm.
- Patented surface treatment that prevents liquids from wetting the coalescer media allowing for higher gas flow capacity and lowered fouling tendency and differential pressure.
- Consistent performance using thin fibers and fixed pore construction optimized for efficient coalescing.
- Long service life due to pleated media structure and surface treatment.
- Low energy losses with typical saturated pressure drop of 1.2 psid (82.7 mbard).
- Wide range of compatibility for use with process gases, compressor oils, hydrocarbon condensates, and water.



Inside to Out Flow Pattern of SFG Coalescer Assembly

SFG Coalescer Features

Positive Seal: Standard seal material is Nitrile (H13) available as either an internal o-ring or flat gasket depending on coalescer size.

Outer Drainage Layer: Drainage of coalesced liquid and protection from re-entrainment is provided by a polymeric outer drainage layer. This ensures consistent, high efficiency performance.

Metal Support Core: Axial strength and protection against liquid slugs are provided by a perforated inner support core constructed of 304 stainless steel.

Outer Cage: Media support during operation is provided by a 304 stainless steel outer support cage.

Primary Coalescer: Coalescing is achieved by use of a high area pleated glass fiber medium that is surrounded by a non-woven polymeric support and drainage layers. A patented surface treatment is used that enhances coalescer performance and lowers fouling tendency and pressure drop.

End Caps: 304 stainless steel end caps are used to improve cartridge strength and prevent contaminant bypass.

Key Benefits

- Protects process analyzers
- Safeguards instrument air operated equipment and systems
- Prevents orifice plugging in pneumatic controllers
- Improves accuracy of gas measurements in the field or plant
- Decreases freeze-out and corrosion problems
- Reduces fouling in small gas-driven engines
- Provides reproducible high-quality gas for all operations using produced gas

SFG Coalescer Element Specifications

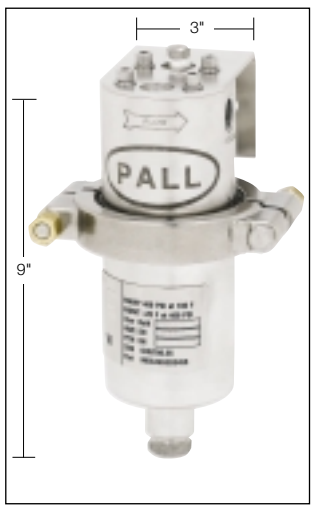
Coalescer Part Number[1]	PFS4463ZMH13	PFS1001ZMH13
Coalescing Efficiency at 0.3 µm	99.99%	99.99%
Rated Flow Air @ 100 psig (6.9 bard) and 100°F (38°C)	60 scfm (8.3 acfm)	200 scfm (27.6 acfm)
Effective Coalescer Area	0.84 ft² (0.078 m²)	2.2 ft² (0.204 m²)
Clean Saturated Pressure Drop	0.53 psid (36.54 mbard)	1.5 psid (103.4 mbard)
Maximum Temperature (water present)	140°F (60°C)	140°F (60°C)
Maximum Temperature (no water)	250°F (121°C)	250° F (121°C)
Maximum Differential Pressure[2]	50 psid (3.4 bard)	50 psid (3.4 bard)
Dimensions:	2¼ in O.D. x 5¼ in (57.2 mm O.D. x 133.4 mm)	2¾ in O.D. x 9¾ in (69.9 mm O.D. x 247.7 mm)
Sealing Mechanism	Single open-ended with internal o-ring	Double open-ended with gaskets / tie rod

[1] Standard seal material is Nitrile (H13). Fluorocarbon Elastomer (H) and Ethylene Propylene (J) are also available for optimum fluid compatibility.
[2] A change out differential pressure of 15 psid is recommended to ensure efficient operation.

MDS4463GN80MFH13

6" min for bowl removal

MDS4463G3455



7" min for bowl removal

CCL4001LG160H13

10" min for bowl removal

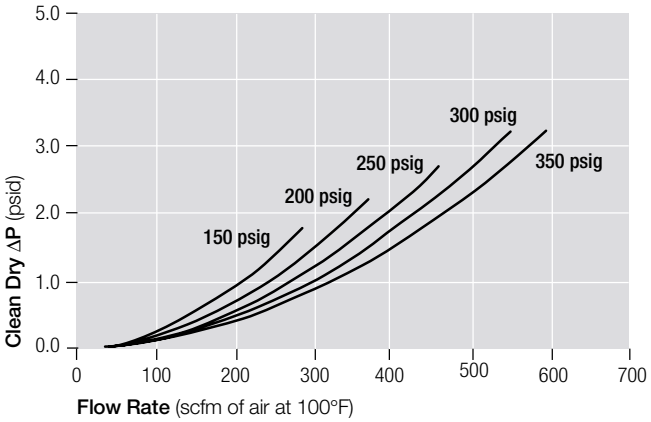
MEN9001G240H

9" min for bowl removal

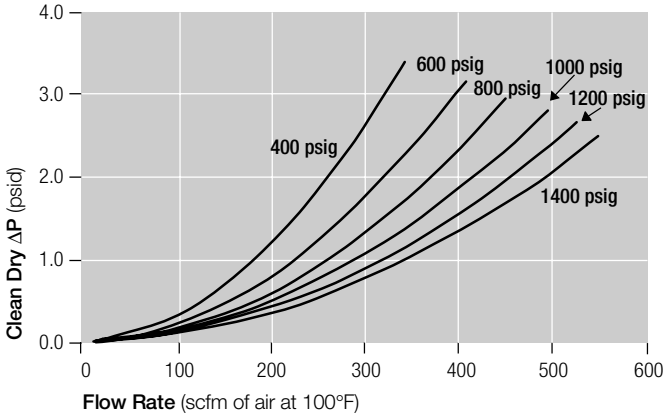
SFG Coalescer Housing Specifications

SFG Housing Part Number	Housing Material of Construction	Replacement Cartridge	Design Pressure (psi/bar)	Number of Cartridges	Weight (lb/kg) Dry	Weight (lb/kg) Wet	Connection & Drain Sizes (NPT) (in/mm)
MDS4463GN80MFH13	316 SS	PFS4463ZMH13	150/10.3	1	3.6/1.7	5.7/2.6	0.5/12.7
MDS4463G3455	316 SS	PFS4463ZMH13	400/27.6	1	15.0/6.8	22.0/10.0	0.5/12.7
CCL4001LG160H13	316 SS	PFS1001ZMH13	400/27.6	1	7.0/3.2	13.0/5.9	1.0/25.4
MEN9001G240H	Nickel Plated Carbon Steel	PFS1001ZMH13	4000/275.8	1	26.0/11.8	32.0/14.5	1.5/38.1

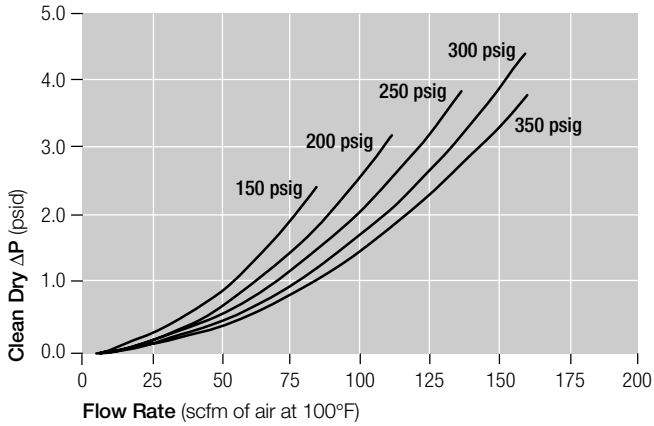
Pall Small Flow Gas Housing Assembly
P/N CCL4001G160H13



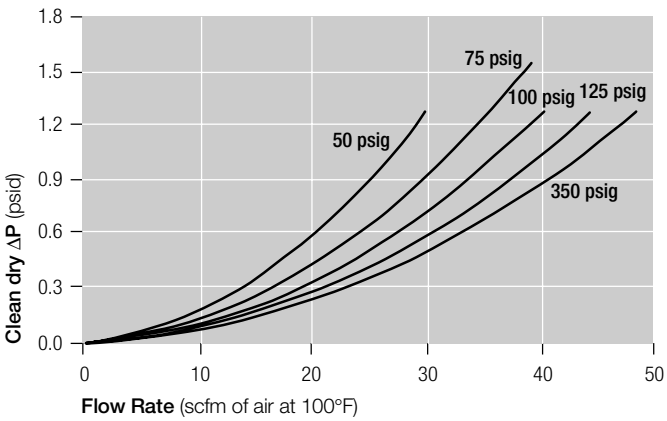
Pall Small Flow Gas Housing Assembly
P/N MEN9001G240H



Pall Small Flow Gas Housing Assembly
P/N MDS4463G3455



Pall Small Flow Gas Housing Assembly
P/N MDS4463GN8MFH13



To calculate the pressure drop for other process conditions use the following equation:

$$\Delta P = K_H Q_A^2 \rho + K_C Q_A \mu$$

where :
- ΔP: pressure drop in psid
- K_H: housing pressure drop constant
- Q_A: actual flow rate in acfm
- ρ: gas density at operating conditions in lb/ft^3
- K_C: coalescer pressure drop constant
- μ: gas viscosity at operating conditions in cP

Coalescer Assembly P/N	K_H	K_C
CCL4001G160H13	0.00267	0.2703
MEN9001G240H	0.00973	0.2703
MDS4463G3455	0.04346	0.6864
MDS4463GN8MFH13	0.07000	0.6864

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