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Flow Control

# 8598A Direct Reading Oil Flow Meters for Distillate Fuel Oils

Bulletin 8598A

May 2000

## OPERATING PRINCIPLE

The 8598A/H In-line Flow Meter is a variable area type flow meter, using a sharp-edged annular orifice, formed between the piston and the tapered metering cone. The piston assembly, containing a permanent ring magnet, is held in a no flow position, at the base of the cone, by a calibrated retention spring.

Flow through the meter creates a pressure differential across the piston orifice, moving the piston against the retaining spring. Piston movement and orifice area are proportional to the rate of flow. Therefore, the greater the rate of flow, the further the piston moves along the tapered metering cone.

Externally, the flow indicator ring encircling the rugged flow meter body is magnetically coupled to the high flux density magnet, mounted in the piston assembly. The orange line on the indicator ring is simply read against the pre-calibrated scale, mounted on the inner surface of the transparent Lexan dust guard.

Model 8598H is made from SST and has a higher pressure rating.

## OPERATES IN ANY POSITION

The 8598A/H In-line Flow Meter is simple (and less costly) to install. It can be installed directly into horizontal or vertical lines, or, with an optional inverted flow scale; this flow meter can monitor flow in a downward (i.e. gravity-feed) line.

## ACCURACY WITHIN ±4%

The 8598A/H In-line Flow Meter maintains an indication accuracy within ±4% of full scale, with repeatability within 1%, in any mounting orientation (horizontal, vertical, or inverted), while monitoring in-line fluids or gases with viscosity and specific gravity similar to factory-calibration fluid.


## DIRECT READING

The linear movement of the flow indicator ring (traversing the outer surface of the flow meter body) provides a quick direct visual reading, against the vertically graduated flow scale (mounted on the inner surface of the transparent dust cover), eliminating the need for further calculations or corrections.

The standard flow scale, for fluids, is calibrated in gpm and litres per minute at 1.0 specific gravity for water and water-based fluids, or at 0.876 specific gravity for oil and petroleum-based fluids.

## SPECIFICATIONS

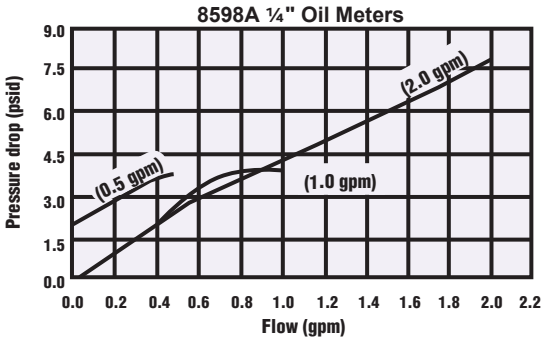
| | 8598A | 8598H |
|---|---|---|
| **Material:** | | |
| **Body** | Anodized Aluminum | 316 SST |
| **Cone and Piston** (except $^1/_2$" series-Celcon Cone) | Aluminum | 316 SST |
| **Magnets** | Teflon-coated Alnico | Teflon-coated Alnico |
| **Springs** | Stainless Steel | Stainless Steel |
| **Seals** | Buna-N | Viton |
| **Pressure Rating** | 3000 psi | 5000 psi |
| **Temperature Rating** (except $^1/_2$" series-180 F) | 240 F | 240 F |
| **Pressure Drop** | See charts (back side) | |
| **Flow Scale** at 0.876 specific gravity at 67-68 SSU, at 110 F. | Calibrated in graduated gpm and litres per minute | |

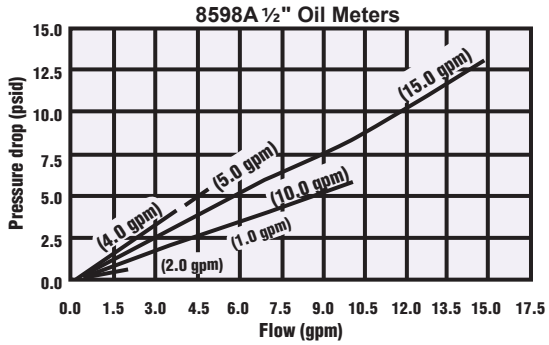
## 8598A

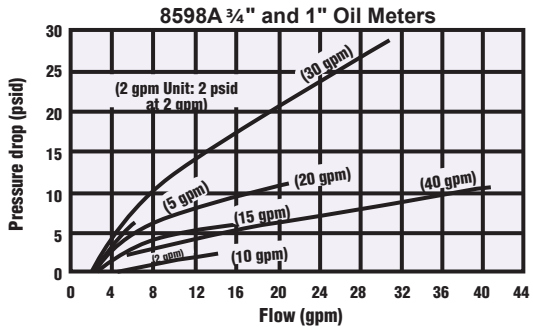
| Designation | Capacity in gpm |
|---|---|
| **8598A-03-5** | 0.05 - 0.50 |
| **8598A-03-10** | 0.10 - 1.0 |
| **8598A-03-20** | 0.20 - 2.0 |
| **8598A-01-10** | 0.10 - 1.0 |
| **8598A-01-20** | 0.20 - 2.0 |
| **8598A-01-50** | 0.50 - 5.0 |
| **8598A-0-20** | 0.10 - 2.0 |
| **8598A-0-50** | 0.50 - 5.0 |
| **8598A-0-100** | 1.0 - 10.0 |
| **8598A-1-20** | 0.10 - 2.0 |
| **8598A-1-50** | 0.50 - 5.0 |
| **8598A-1-100** | 1.0 - 10.0 |

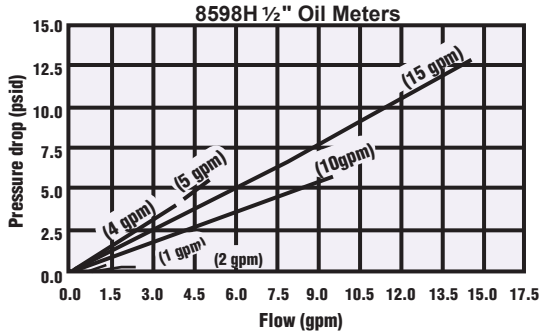
## 8598H

| Designation | Capacity in gpm |
|---|---|
| **8598H-01-20** | 0.2 - 2.0 |
| **8598H-01-50** | 0.5 - 5.0 |




## ORDERING INFORMATION

**8598A - 01 - 10**

- **8598A** — Product No.
- **01** — Pipe size
- **10** — Capacity

**8598H - 01 - 20**

- **8598H** — Product No.
- **01** — Pipe size
- **20** — Capacity

Fives North American Combustion, Inc. - 4455 East 71st Street - Cleveland, OH 44105 USA - Phone 216.271.6000
Fax 216.641.7852 - email: fna.sales@fivesgroup.com - www.fivesgroup.com/fivesna