# Armor-Flo™

3400

VA3400.1

## General Purpose Flowmeter

Measure liquid, gas or steam flow rates in horizontal or vertical pipelines. Armor-Flo™ meters handle fluids that cannot be measured with the See-Flo® due to clarity, pressure or compatibility with wetted materials.

The wedge shape of the meter body housing provides the Armor-Flo™ with the same self-cleaning characteristics as the See-Flo.® PTFE encapsulated cobalt magnets are used to couple the flow isolated indicator with the vane. These features emphasize simplicity and reduce maintenance.

### Features

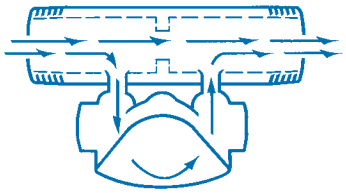
- ❍ Instantaneous rate measurement.
- ❍ Measure opaque fluids.
- ❍ More exotic materials of construction.
- ❍ Use in horizontal or vertical piping systems.
- ❍ Individually calibrated for fluid and operating conditions.
- ❍ User selectable 10:1 turndown flow ranges. (See “Meter Rangeability Sizing Tables”)
- ❍ User selectable units of measure-including dual units of measure.
- ❍ No floats to get stuck, tubes to break or dynamic seals to leak.
- ❍ Low pressure loss.
- ❍ Simple design with few parts for long service life.

### Principle of Operation

Armor-Flo™ meters are variable area flow rate meters (“rotameter”). The Armor-Flo™ body housing has a variable internal volume which enlarges from the inlet to the outlet.


The primary sensor is a tempered alloy vane with one end affixed to the apex of the meter housing. As the flow rate changes, the vane is flexed in direct proportion. A PTFE encapsulated magnet links the vane with the pointer in a large indicator housing for easy viewing.

The ½", ¾" and 1" connections typically have female threaded ends. Sizes 1¼” through 12” utilize an integral bypass housing permitting larger connection sizes in the format of a spool with a consistant 12" end to end dimension.



In addition, it permits a wide variety of connection types which include threaded, flanged, grooved ends and tri-clamp.

### Applications

- ❍ Water
- ❍ Liquids with viscosity up to 300 cSt.
- ❍ Air and other gases
- ❍ Vacuum service
- ❍ Steam

### Specifications

| | |
|---|---|
| **Accuracy:** | ±2% full scale |
| **Repeatability:** | ±1% full scale |
| **Scales:** | Direct reading |
| Resolution: | Maximum-30 division/Minimum-15 divisions |
| **Rangeability:** | 10 to 1 turndown |
| **Materials of Construction:** | |
| Housing: | Aluminum, brass, 70/30 copper/nickel, 316 stainless steel, Hastelloy® C-22 |
| Shunt: | As housing or carbon steel |
| Window: | Tempered glass or polycarbonate |
| Vane: | Cobalt/chromium/nickel alloy or Hastelloy® C-22 with PTFE encapsulated magnet |
| “O” rings: | buna-n, ethylene propylene, Viton® or perfluoroelastomer |
| **Piping Connections:** | |
| | ½" to 1" NPT Female |
| | 1¼" to 4" NPT Male |
| | 1½" to 3" Tri-clamp |
| | 1¼" to 6" Grooved |
| | 1¼" to 6" Beveled |
| | ½" to 12" 150# /300# RF/FF ANSI Flanges (carbon stl) |
| | ½" to 12" 150# RF ANSI Flanges (stainless stl) |
| | ½" to 6" 150# RF ANSI Flanges (aluminum) |
| | ½" to 6" 150# FF ANSI Flanges (brass) |

ERDCO®

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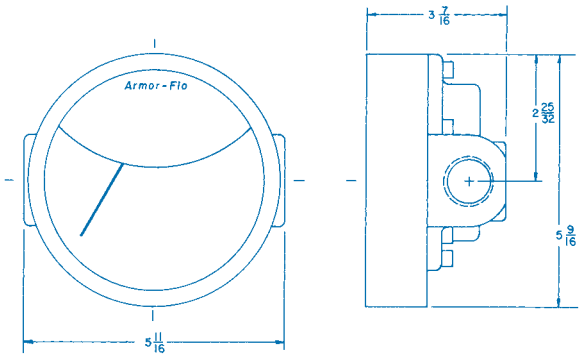
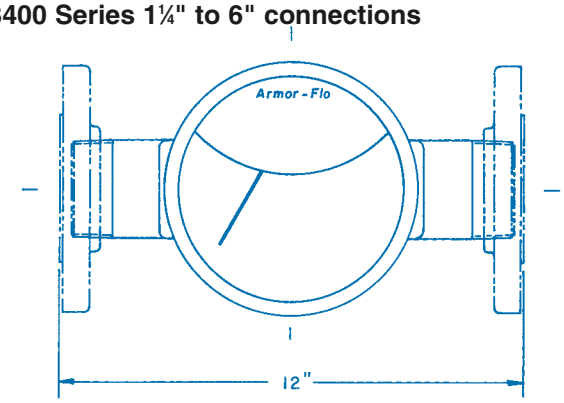
## General Purpose Flowmeter

### 3400 Series ½",¾", & 1" connections




### 3400 Series 1¼" to 6" connections




15 to 25 mm DIN 2999/BS21/ISO R7
Female threaded
15 to 150 mm DIN PN 10 Flanges
(316 stainless stl & carbon stl)

**Pressure Limits:** 1 Housing (aluminum)
0, 1 or 5 Shunt-200 psig (13.8 bar)
2 Housing (brass)
0 Shunt-400 psig (27.6 bar)
2 or 5 Shunt-200 psig (13.8 bar)
6 Housing (316 stainless stl)
0 Shunt-400 psig (27.6 bar)
5 or 6 Shunt-200 psig (13.8 bar)
7 or 8 Shunt-400 psig (27.6 bar)
8 Housing (high pressure 316 stainless stl)
0 Shunt-1000 psig (69 bar)
9 Housing (Hastelloy® C-22)
0 Shunt-400 psig (27.6 bar)

**Temperature Limits:**
-23 to 121°C (-10 to 250°F)
with buna-n o-ring
-23 to 204°C (-10 to 400°F)
with Viton®, ethylene
propylene or
perfluoroelastomer o-ring



**Model Number System**

The example 3461-12F5-11 describes a 3400 Armor-Flo™ meter with a stainless steel body/carbon steel shunt for left to right flow, glass window and EPM O-Ring. Connections are 3" 150# raised face carbon steel flanges.

| **34** Series | **6** Housing Material | **1** – Flow Direction | **12** Size | **F** Type | **5** – Shunt Material | **1** Window | **1** O-Ring |
|---|---|---|---|---|---|---|---|
| **34**-3400 | **1**-Aluminum | **1**-L to R | **02**-½" (15mm) | **T**-NPT End | **0**-None | **1** Glass | **1** EPM |
| | **2**-Brass | **2**-R to L | **03**-¾" (20mm) | **F**-Flange 150#RF | **1**-Aluminum | **2** Polycarbonate | **2** Viton® |
| | **6**-Stainless Stl | **3**-Up | **04**-1" (25mm) | **G**-Grooved | **2**-Brass | **3** Max Flow Indicator | **3** Buna-N |
| | **8**-Stainless Stl 1000 psig (½"-1" NPT) | **4**-Down | **05**-1¼" (32mm) | **H**-Flange 150#FF | **5**-Carbon Stl | | **4** Perfluoroelastomer |
| | **9**-Hastelloy® C-22 (1, 3 & 4 Directions Only) | | **06**-1½" (40mm) | **J**-Flange 300#RF | **6**-Stainless Stl | | |
| | | | **08**-2" (50mm) | **K**-Flange 300#FF | **7**-Carbon Stl 400 psig | | |
| | | | **10**-2½" (65mm) | **L**-Flange DIN PN16 | **8**-Stainless Stl 400 psig | | |
| | | | **12**-3" (80mm) | **M**-BSPT End | | | |
| | | | **16**-4" (100mm) | **N**-BSPT Back | | | |
| | | | **20**-5" (125mm) | **P**-Flange 600#RF | | | |
| | | | **24**-6" (150mm) | **R**-NPT Back | | | |
| | | | *__32__-8" | **S**-Tri-Clamp | | | |
| | | | *__40__-10" | **W**-Socket (½"-1") | | | |
| | | | *__48__-12" | **X**-Beveled | | | |

*gas applications only

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