

DIRECT-VIEW FLOWMETER

Series 55-100



CAPACITY WATER: 0.5 TO 130 GPM

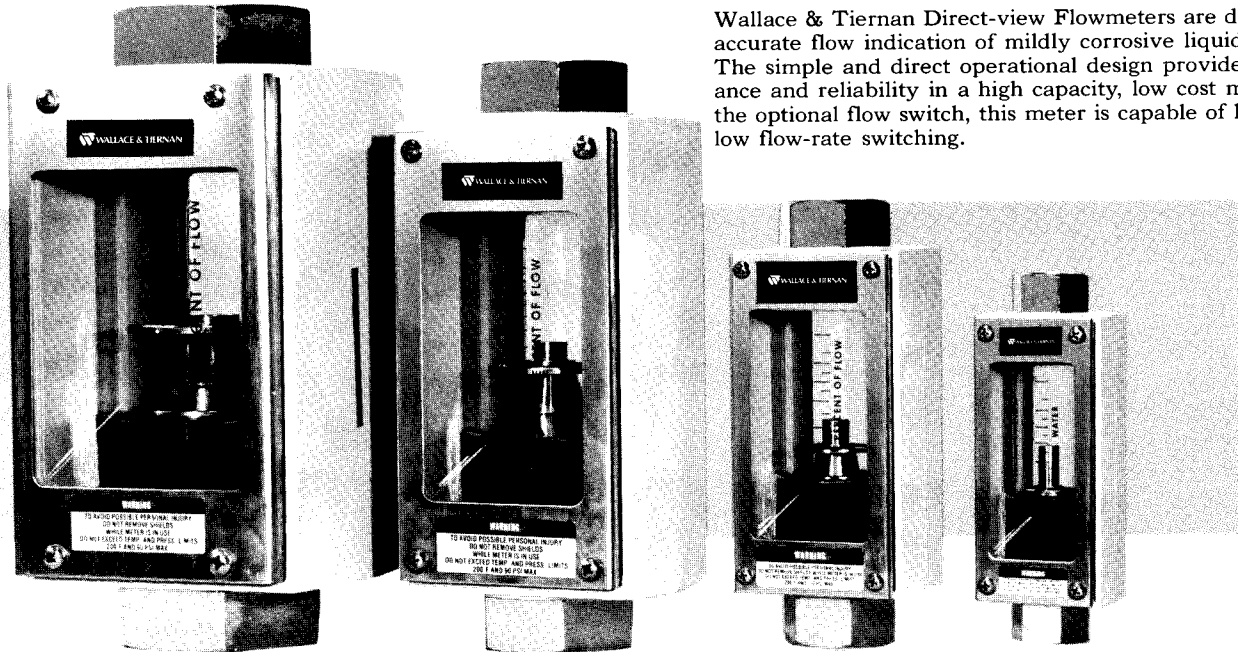
AIR: 1.2 TO 150 SCFM

**LOW COST, 5% ACCURACY FLOWMETERS FOR INDICATION
AND FLOW SWITCHING WITH MOST LIQUIDS AND GASES**

TEMPERATURE AND PRESSURE LIMITS: 200F and 200 psi max.

See Operating Limits in Selection Procedure, Page 3.

FEATURES



Wallace & Tiernan Direct-view Flowmeters are designed for accurate flow indication of mildly corrosive liquids or gases. The simple and direct operational design provides performance and reliability in a high capacity, low cost meter. With the optional flow switch, this meter is capable of high and/or low flow-rate switching.

LOW COST

- The plug-and-orifice design, overall simplicity, and minimum parts add up to an economical meter.

HIGHER CAPACITIES

- Size for size, W&T Direct-View Flowmeters give higher capacities: The plug-and-orifice concept yields capacities often double that of other designs.

FLOW SWITCH

- This compact option gives reliable high and/or low flow switching. It contains a powerful rotating magnet which responds linearly to float position, gives a dependable magnetic coupling. The switch is mounted on the side of the frame opposite the scale. Available factory installed or clamp-on for easy field conversion. Available in a general purpose and a UL listed hazardous location arrangement.

GLASS TUBE HELPS READABILITY

- Readout is direct and clear, even with opaque fluids (the float guide readout actually touches the inside of the tube).

RELIABLE GAS MEASUREMENT

- A special polypropylene float gives high stability. Readings steady out quickly. The lightweight float minimizes violent reactions to flow surges, especially at start-up.

ENGINEERED FOR EASY MAINTENANCE

- The tube and float can be removed without tools and without disturbing the piping. The meter is designed for easy surface- or flush-panel mounting. Front and rear tube shields of tough, clear polycarbonate are standard. The high parts interchangeability extends the versatile capabilities of these meters. Easy breakdown and reassembly simplifies servicing.

DESIGN AND OPERATION

The frame is cast aluminum with a special corrosion-resistant finish. 316-stainless or brass female-thread end fittings are permanently staked. Other parts: 316 stainless or brass orifice brushings; borosilicate glass tube; knurled plastic tube retaining nut; front and rear polycarbonate tube shields; 3 same-size O-rings; and a self-guiding float. The float has a tapered body, a circular guide, and an encapsulated weight. The weight is replaced by an alnico magnet for flow switching.

Unlike tapered-tube rotameters, the tapered float varies the metering area. As flow rate increases, the float rises to a level of dynamic equilibrium (where float weight equals fluid force). Here the float indicates flow rate on the scale. Due to its taper, the float demonstrates a decreasing cross-sectional support area as it rises. This requires greater force (increased flow rate) to act upon the diminishing area and carry the float to a new equilibrium position—a new reading of flow rate.

SELECTION PROCEDURE

Determine the capacity range, temperature and pressure capability, materials of construction, and options required for each meter. (See Table A for pressure and temperature limits.)

NOTE: For fluids with SP. GR. other than 1.0 or viscosity other than viscosity ceiling in Table A consult your local W & T Distributor.

TABLE

PIPE CONN. NPT	SCALE LENGTH	CAPACITY					OPERATING LIMITS*		CAPACITY CODES		
		WATER GPM	PRESS DROP IN. H ₂ O	AIR SCFM AT STP	PRESS DROP IN. H ₂ O	VISCOSITY CEILING CSS	TEMP	PRESS	WATER 140F or LESS	WATER OVER 140F	AIR
1/2"	2"	0.5	23	1.2	9	3	200F	200 psi	32	02	01
		1.0	24	2.4	10	3			34	04	03
		2.4	30	6.5	13	4			36	06	05
		5.0	46	10.0	17	5			38	08	07
1"	2 1/2"	—	—	12	9	—	200F	150 psi	—	—	09
		12	35	24	11	10			42	12	11
		24	52	40	16	10			44	14	13
1 1/2"	3 1/2"	34	54	—	—	21	200F	90 psi	46	16	—
		75	85	76	15	18			48	18	17
2"	4"	130	100	150	18	65	200F	90 psi	52	22	21

*WARNING: Pressure and temperature limits must not be exceeded under any conditions

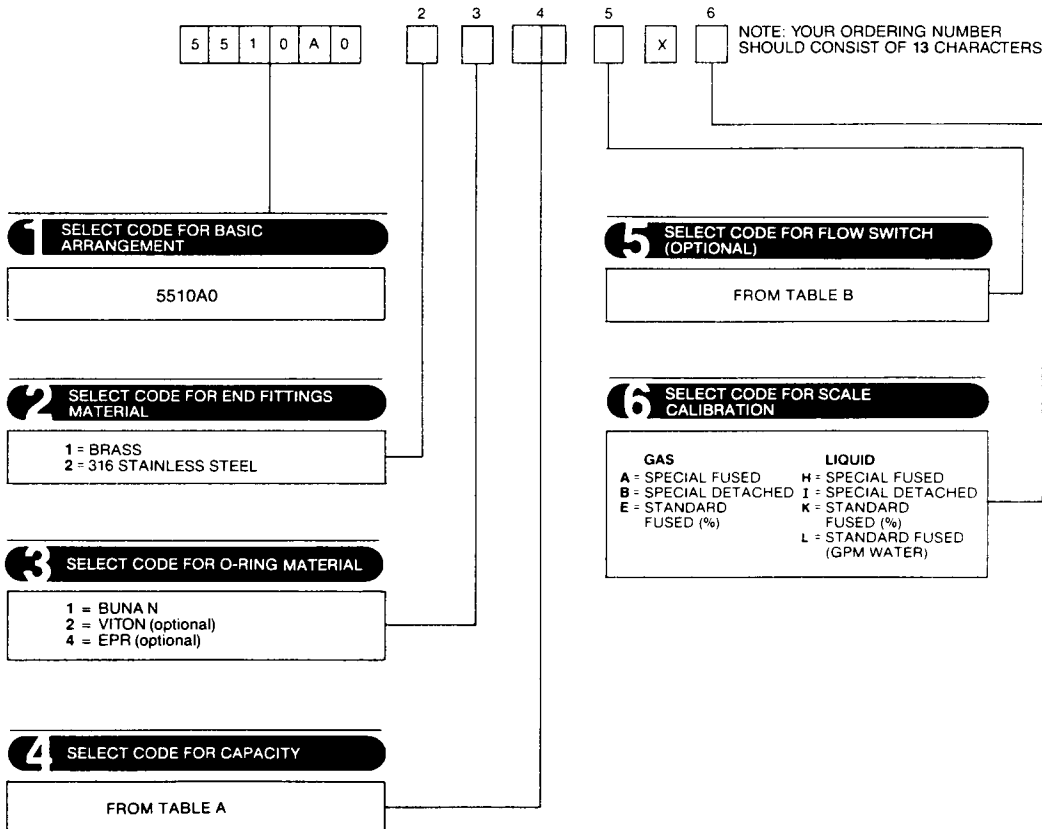
WARNING: Do Not Use Glass-Tube Meters for fluids which are toxic, hazardous or attack glass.

TABLE

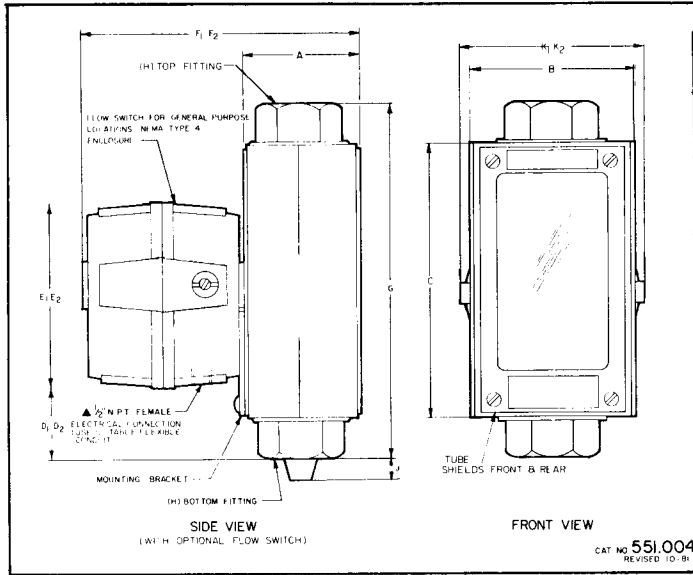
B ORDERING NUMBERS FOR FLOW SWITCH (OPTIONAL)	
X	= None
A	= G.P. 1 Switch
B	= G.P. 2 Switch
C	= G.P. 1 Switch 1 Relay
D	= G.P. 2 Switches 2 Relays
G	= Haz. 1 Switch 1 Relay
H	= Haz. 2 Switches 2 Relays

Ordering Procedure

Example: To order a 1/2" flowmeter with 316 stainless steel fittings, Viton O-rings, a capacity of 6.5 scfm air, standard scale, and a general purpose flow switch with 2 switches and 2 relays, specify:
5510A0 2 2 05 D X E



TECHNICAL DATA



TUBE SIZE	A	B	C	D ₁
1/2"	2- 1/8"	2-15/32"	5- 7/16"	1"
1"	2- 7/8"	3- 3/16"	6-15/32"	1- 9/32"
1-1/2"	4-1/16"	4-15/16"	8-15/16"	1- 9/16"
2"	5-3/8"	6- 3/16"	9-27/32"	1- 3/4"

D ₂	E ₁	E ₂	F ₁	F ₂	G	H	J	K ₁	K ₂
1- 5/8"	5"	4"	6-5/8"	6-1/8"	6-15/16"	1/2" NPT		5-1/2"	4- 1/2"
1- 7/8"	5"	4"	7-3/8"	6-7/8"	8- 5/16"	1" NPT	5/16"	5-1/2"	4- 1/2"
2- 3/16"	5"	4"	8-9/16"	8-1/16"	10-15/16"	1-1/2" NPT	1"	5-1/2"	4-15/16"
2- 3/8"	5"	4"	9-7/8"	9-3/8"	12- 1/4"	2" NPT	1-3/8"	6-3/16"	6- 3/16"

D₁, E₁, & F₁ = HAZARDOUS LOCATION FLOW SWITCH
 D₂, E₂, & F₂ = GENERAL PURPOSE FLOW SWITCH
 ▲ 1/2" NPT (HAZARDOUS LOCATION)
 1/2" NPT (GENERAL PURPOSE)

OPTIONAL FLOW SWITCH

This compact option gives reliable high and/or low flow switching. The W&T Flow Switch contains a powerful rotating magnet which responds linearly to float position. Its switches are long life, hermetically sealed reed types. Almost frictionless rotation of the switch magnet and its powerful bond with the float magnet give a dependable magnetic coupling. Even under sudden flow surges switching remains reliable. The switch is available in a UL listed, hazardous location arrangement (Series 5500) and a general purpose arrangement (Series 5600).

Easily added in the field with the meter in the line.

No extension rod, no interference with vertical piping.

Can set switches to open or close on increasing or decreasing flow without removing cover.

A screwdriver adjustment sets each switch independently over 0 to 100% of the flow range.

*As defined in Article 500, NEC.

TECHNICAL DATA

repeatability
0.6% of full scale.

electrical ratings

Series 5600 General Purpose (NEMA-4) Enclosure: one or two switches rated 250 mA at 48 volts dc or 120 volts ac resistive or 50 mA at 48 volts dc or 120 volts ac inductive; one or two single-pole, double-throw relays rated 10 amperes at 28 volts dc or 120 volts ac; coil supply 120 volts ac, 50/60 Hz.

Series 5500 Hazardous Location: one or two single-pole, double-throw relays rated 10 amperes at 120 volts ac; coil supply 120 volts ac, 50/60 Hz. UL listed for Class I, Division 1 & 2 Groups C and D or Class II, Division 1 & 2 Group E, F and G.

temperature limits

Ambient, -20 to 120 F.

actuating time

Reed switch opens in one millisecond.

enclosures

Heavy cast aluminum with corrosion-resistant vinyl melamine finish.

Progressive changes in design may be made without prior announcement.

U.S. FILTER
WALLACE & TIERNAN

1901 West Garden Road
 Vineland, NJ 08360

856.507.9000 phone
 856.507.4125 fax

Taking care of the world's water.

Printed in USA

TECHNICAL DATA

accuracy

5% of full scale.

range

10 to 1.

scales

Standard: For liquids, gpm and percent fused on tube; for gas, fused-on percent only.

Special: Other calibration units at extra cost. Scales are fused on tubes or detached. Detached scales are engraved on aluminum.

materials of construction

Frame, cast aluminum; tube, borosilicate glass; tube shields, polycarbonate with or without stainless steel frames; end fittings and orifice bushing, brass or 316 stainless steel; knurled retaining nut, high-temperature-resistant plastic; O-rings, Buna N standard with Viton or EPR optional; float for liquids, 316 stainless with 301 stainless steel guide or brass with beryllium cooper guide; float for gas, polypropylene with 301 stainless steel guide. The tube, orifice bushing, end fittings, O-rings, and float are the wetted parts.

Write for catalog no. 523.010, which is a detailed listing of meter compatibility with a wide range of fluids.

over viscosity ceiling

For liquids, special calibration is required where the liquid's viscosity exceeds the viscosity ceilings listed in table 4.

finish

Special corrosion-resistant baked-on vinyl melamine.

shipping weights

METER SIZE	1/2"	1"	1 1/2"	2"
Meter only	4.5 lb	9 lb	20 lb	35 lb
with general purpose flow switch	7.5 lb	12 lb	23 lb	38 lb
with hazardous location flow switch	8.5 lb	13 lb	24 lb	39 lb