

LOW FLOW METER

FEATURES

Wallace & Tiernan Products Purge Meters are low-flow variable area meters which incorporate several improvements in basic design. They feature an unusually rigid, corrosion resistant stainless steel frame and a positive, easily controlled tube lock. Low Flow Meters are specifically designed for low flow applications in research and industry. For higher capacities, write for TI 520.100 describing the Glass Tube Varea-Meter. For high temperature, high pressure, or hazardous fluid metering, write for publication TI 520.205 on the Metal-tube Varea-Meter® or 520.215 on the TFE-lined and PVC-tube Varea-Meters®.



STRUCTURALLY STRONG FRAME

The side frames are heavy, channel-form stainless steel sections welded to stainless end fittings turned from bar stock. This produces a rigid unit which resists pipe strains and protects tube alignment.

CHOICE OF CORROSION-RESISTANT MATERIALS

The frame is made of 302 stainless steel; the end fittings, 316 stainless. The metering-tube retainer is Kynar vinylidene fluoride resin with 316 stainless optional. O-rings come in a choice of Buna N or Viton with EPR

(ethylene propylene rubber) optional. Valve trim (seat and stem) is 316 stainless.

POSITIVE TUBE LOCK AND A TUBE SHIELD

A knurled tube-locking nut, external to the flow, positions the tube retainer and locks the tube firmly in place. Tube removal is quick and easy. O-rings seal the tube at both ends. A clear plastic shield covers the tube. It has tabs which snap into slots in the frame.

VERSATILE FLOW CONTROLLER

A W&T Flow Controller keeps flow constant regardless of pressure variations. It comes in brass or 316

stainless steel, in inlet or outlet configurations and high or low capacities. Replaceable seat adapters make for easy capacity changes. Straight-through design means the controller can be threaded directly into the meter body, eliminating pipe nipples and static piping.

SELECTION PROCEDURE

Determine the capacity range, temperature and pressure capability, materials of construction, and options required for each meter. See Technical Data Section for pressure and temperature limits.

Note: For fluids with SP.GR. other than 1.0 or viscosity other than 1.0 CSS consult your local U.S. Filter Wallace & Tiernan Products Varea-Meter® Distributor.

TABLE A - ORDERING NUMBERS FOR BASIC METER ARRANGEMENTS				
CAPACITY	FUNCTION		316 STAINLESS END FITTINGS	
			BUNA N O-RINGS	VITON O-RINGS
EXTRA LOW 1.9 ccm H ₂ O or 130 sccm air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE		NOT AVAILABLE	
LOW 2.7 GPH H ₂ O or 14.0 scfh air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE	VALVE TRIM	316 SS	316 SS
		WITH KNOB	22	32
		WITH SLOT	26	36
HIGH 40 GPH H ₂ O or 115 scfh air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE	VALVE TRIM	316 SS	316 SS
		WITH KNOB	24	34
		WITH SLOT	28	38

TABLE B - ORDERING NUMBERS FOR TUBES, SCALES AND FLOATS - WATER

TABLE C - ORDERING NUMBERS FOR TUBES, SCALES AND FLOATS - AIR

CAPACITY	MAXIMUM CAPACITY AND SCALE UNITS	TUBE, SCALE AND FLOAT NUMBER	FLOAT MATERIAL
LOW CAPACITY	0.875 ccm 0-100%	- C026	316 ss
	1.9 ccm 0-100%	- C036	Tantalum
	7.0 ccm 0-100%	B046 C046	Black Glass
	0.5 gph 32 ccm 0-100%	A056 B056 C056	316 ss
HIGH CAPACITY	66 ccm 0-100%	B066 C066	Black Glass
	2.7 gph 170 ccm 0-100%	A076 B076 C076	316 ss
	8.4 gph 540 ccm 0-100%	A086 B086 C086	316 ss
	15.0 gph 960 ccm 0-100%	A096 B096 C096	316 ss
HIGH CAPACITY	26.0 gph 1650 ccm 0-100%	A106 B106 C106	316 ss
	40.0 gph 2600 ccm 0-100%	A116 B116 C116	Tantalum

CAPACITY	MAXIMUM CAPACITY AND SCALE UNITS	TUBE, SCALE AND FLOAT NUMBER	FLOAT MATERIAL
LOW CAPACITY	80 sccm 0-100%	- D026	316 ss
	130 sccm 0-100%	- D036	Tantalum
	1.2 scfh 0-100%	E046 D046	Black Glass
	2.7 scfh 0-100%	A056 D056	316 ss
HIGH CAPACITY	7.0 scfh 0-100%	E066 D066	Black Glass
	14.0 scfh 0-100%	E076 D076	316 ss
	21.0 scfh 0-100%	E086 D086	Black Glass
	40.0 scfh 0-100%	E096 D096	316 ss
HIGH CAPACITY	60.0 scfh 0-100%	E106 D106	316 ss
	115.0 scfh 0-100%	E116 D116	316 ss

Note: For special calibrations of low and high capacity meters, the first digit of the tube, float and scale code is an L for liquid service and a G for gas service.

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

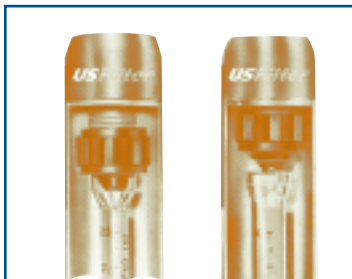
Features Continued

INTEGRAL BACKCHECK

An anti-backflow device is built into the discharge. It consists of a 316 stainless steel poppet with a Buna N or Viton O-ring seal. This allows easy maintenance on tube and float.

HIGH INTERCHANGEABILITY

All parts, except tubes, frames, and plastic shields, are interchangeable regardless of scale length. Tubes have same size O-rings at each end. The tubes for all capacities fit one frame size. This and the one-piece frame make for design simplicity with simplified maintenance and spare parts stocking.



CHOICE OF ARRANGEMENTS AND OPERATING POSITION

Low Flow Meters can be supplied with: an integral flow control valve with a screwdriver-slot stem or a knob for adjustment; a factory-connected flow controller to maintain flows constant; and a plastic bezel for flush panel mounting. The meter can be inverted and its tube reversed to change the control valve from the inlet to the discharge.

VERSATILE CONTROL VALVE

The optional control valve has a common stem with high- or low-capacity seats; all are 316 stainless. An O-ring in the seat makes it easy to change. The valve gives smooth adjustment and a fine degree of control.



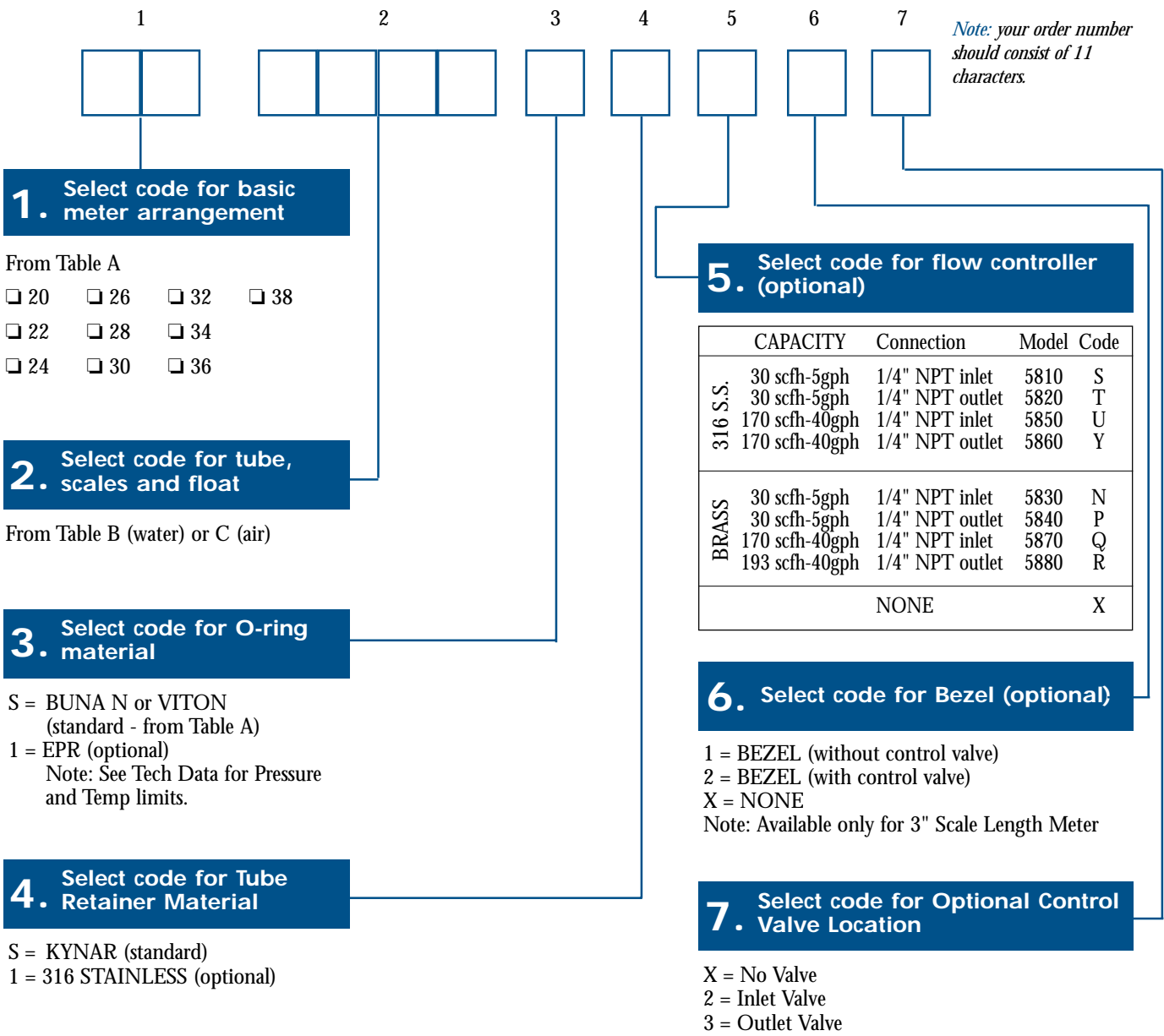
ORDERING PROCEDURE

EXAMPLE

To order a low capacity meter with control valve with knob, 316 stainless trim and Buna N O-rings, specify 22. To order a tube with a capacity of 32 ccm

water and scale units in ccm add B056. Add S for standard O-ring material. Add S for standard Kynar tube retainer. Add X for no flow controller, 2 for bezel to accommodate meter with control

valve, and 2 for control valve at meter inlet. Thus the complete ordering number is: **22B056 SSX22**.



TECHNICAL DATA

Accuracy

2% of full scale, can be calibrated to an optional 1%.

Operating Range

10 to 1.

Pipe Connections

1/4-inch female NPT at meter inlet and outlet, at control valve inlet, and at flow controller inlet; horizontal in and horizontal out.

Mounting

In-line; wall through mounting holes in the back of the frame; flush panel with optional bezel.

Scales

Scale length is 6 inches, standard calibrations as shown in tables 2 and 3.

Pressure and Temperature Limits

(Temperature and pressure are interdependent but the following limits must not be exceeded under any conditions.)

TUBE RETAINER	O-RINGS	PRESS. (Psig)	TEMP. (F)
Kynar	Buna N	200	200
Kynar	Viton	200	200
316 SS	Viton	250	250
Kynar	EPR	200	200
316 SS	EPR	250	250

Write for TI 500.001, which is a detailed listing of this meter's compatibility with a wide range of fluids.

Special Calibration

Excluding extra low capacities. Scales calibrated in other than the standard units in Tables B and C are available at extra cost. Calibration for fluids with viscosity other than 1 centistoke is also available at extra cost.

Materials of Construction

FRAME	302 stainless
END FITTINGS	316 stainless
TUBE	Borosilicate glass
FLOAT	See Tables B and C
O-RINGS	Buna N or Viton with EPR (ethylene propylene rubber) optional - consult factory for other materials
TUBE RETAINER	Kynar, 316 stainless (optional)
LOCK NUT	Kynar
FLOW INSERT	Kynar (Used with high capacity air meters only.)
CHECK VALVE	316 stainless
POPPET	
CHECK VALVE	Buna N or Viton
O-RINGS	
TUBE SHIELD	Polycarbonate
VALVE STEM	316 stainless
VALVE SEAT	316 stainless
STEM ADAPTER	316 stainless
STEM RETAINER	316 stainless
PIPE PLUG	316 stainless

Shipping Weights

Meter only, 1 lb. Meter with control valve, 2 lb. Panel mounting bezel, 3 lb.

FLOW CONTROLLERS

Meters with control valves and W&T Flow Controllers are designed to give reliable flow control, regardless of pressure changes. For liquid service, specify inlet type from Table 5. For gas service with varying upstream and constant downstream pressures, specify inlet type. For gas service with constant upstream and varying downstream pressures, specify outlet type. Meters with flow controllers are tested and shipped assembled. (Write for TI 570.100)



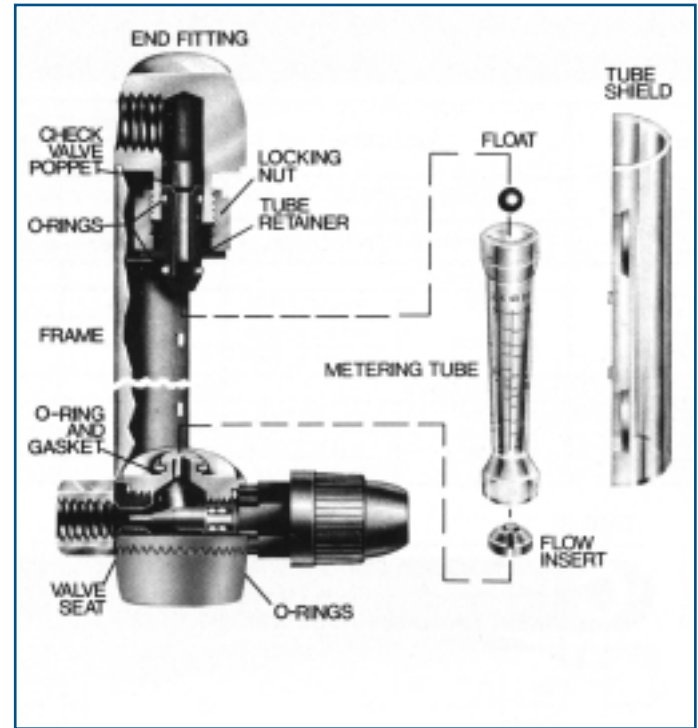
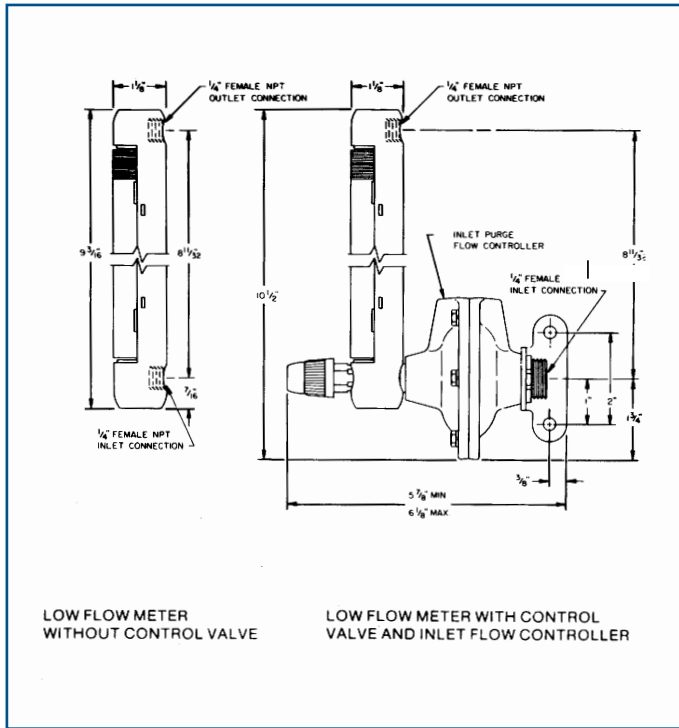
FLOW CONTROLLER

TECHNICAL DATA

	High Cap.	Low Cap.
maximum capacity-gas	110 SCFH	30 SCFH
maximum capacity-liquid	40 GPH	5 GPH
maximum temperature	200°F - Brass (Black Paint Finish) with Buna-N Diaphragm, 250°F - 316 Stainless Steel with TFE Diaphragm	
Maximum Inlet Pressure	250 psi	250 psi
Maximum Pressure Drop	8 psi	8 psi
Connection Inlet/Outlet	1/4" NPT	1/4" NPT

LOW FLOW METER

DIMENSIONS



ACCESSORIES

FLUSH PANEL MOUNTING

Plastic bezels for flush mounting are available at nominal cost. They are easy to keep clean and the meter is readily accessible.

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Literature # TI 510.150 UA 9/00
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