GLASS-TUBE PURGE METER
STAINLESS STEEL FRAME

USFilter/Wallace & Tiernan Products Purge Meters are low-capacity variable area meters that incorporate several improvements in basic design. They feature an unusually rigid, corrosion-resistant, stainless steel frame and a positive, easily controlled tube lock. Purge Meters are specifically designed for such service as the purging of instrument cases and control lines. They are readily adapted to liquid-level indication, sampling, liquid-specific-gravity determination and similar applications.

FEATURES

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 304 stainless steel, and the end fittings are made of 316 stainless steel. 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 Kalrez® and 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.

Versatile Flow Controller
An optional 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.

Integral Backcheck
An anti-backflow device is built into the discharge. It consists of a 316 stainless steel poppet with selected O-ring seal.

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
Purge Meters are available in 1-1/2- and 3-inch scale lengths. They 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 constant flow; and a plastic bezel for flush panel mounting (on the 3-inch size). 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.

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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 Wallace & Tiernan Varea-Meter® Distributor.

TABLE A - ORDERING NUMBERS FOR BASIC METER ARRANGEMENTS

CAPACITY	FUNCTION		316 STAINLESS END FITTINGS	
			BUNA N/KALREZ/EPR	VITON O-RINGS
EXTRA LOW 1.75 ccm H_2O or 145 sccm air maximum	METER ONLY		20	30
	METER WITH CONTROL VALVE		NOT AVAILABLE	
LOW 5 GPH H_2O or 30 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_2O or 110 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, FLOATS AND SCALES - WATER

	MAXIMUM CAPACITY AND SCALE UNITS	1-1/2" SCALE LENGTH	3" SCALE LENGTH	FLOAT MATERIAL
EXTRA LOW CAPACITY	0.32 ccm	-	-	Sapphire
	0-100%	-	C013	
	0.34 ccm	-	-	Sapphire
	0-100%	C021	-	
	0.65 ccm	-	-	316 SS
	0-100%	-	C033	
	0.95 ccm	-	-	316 SS
	0-100%	C041	-	
	1.10 ccm	-	-	Tantalum
	0-100%	-	C053	
	1.75 ccm	-	-	Tantalum
	0-100%	C061	-	
LOW CAPACITY	0.1 gph	-	A073	Black
	6 ccm	-	-	Glass
	0-100%	C071	C073	
	0.5 gph	A081	A083	
	30 ccm	-	B083	316 SS
	0-100%	C081	C083	
	1.0 gph	A091	A093	Black
	60 ccm	B091	B093	Glass
	0-100%	C091	C093	
	3.0 gph	A101	A103	
	180 ccm	B101	B103	316 SS
	0-100%	C101	C103	
	5.0 gph	A111	A113	Black Glass
HIGH CAPACITY	8.0 gph	A121	A123	
	500 ccm	B121	B123	316 SS
	0-100%	C121	C123	
	15.0 gph	A131	A133	
	900 ccm	B131	B133	316 SS
	0-100%	C131	C133	
	25.0 gph	A141	A143	
	1500 ccm	B141	B143	316 SS
	0-100%	C141	C143	
	40.0 gph	A151	A153	
	2500 ccm	-	B153	Tantalum
	0-100%	C151	C153	

TABLE C - ORDERING NUMBERS FOR TUBES AND FLOATS - AIR

	MAXIMUM CAPACITY AND SCALE UNITS	1-1/2" SCALE LENGTH	3" SCALE LENGTH	FLOAT MATERIAL
EXTRA LOW CAPACITY	30 sccm	-	-	Sapphire
	0-100%	-	D013	
	46 sccm	-	-	316 SS
	0-100%	-	D033	
	50 sccm	-	-	Sapphire
	0-100%	D021	-	
	87 sccm	-	-	Tantalum
	0-100%	-	D053	
	105 sccm	-	-	316 SS
	0-100%	D041	-	
	145 sccm	-	-	Tantalum
	0-100%	D061	-	
LOW CAPACITY	1.0 scfh	E071	E073	Black
	0-100%	D071	D073	Glass
	2.5 scfh	E081	E083	316 SS
	0-100%	D081	D083	
	6.0 scfh	E091	E093	Black
	0-100%	D091	D093	Glass
	12.0 scfh	E101	E103	316 SS
	0-100%	D101	D103	
	20.0 scfh	E121	E123	Black
	0-100%	D121	D123	Glass
	30.0 scfh*	E111	E113	Black Glass
HIGH CAPACITY	36.0 scfh	-	E133	316 SS
	0-100%	D131	D133	
	60.0 scfh	E141	E143	Black
	0-100%	D141	D143	Glass
	110 scfh	E151	E153	316 SS
	0-100%	E153	D153	

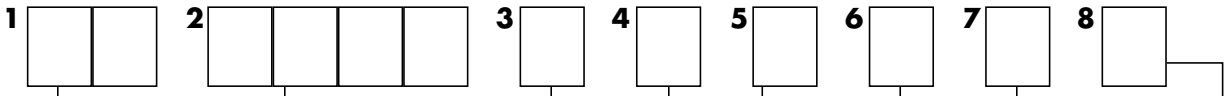
Note: 472 sccm = 1 scfh

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.

ORDERING PROCEDURE

To order a low capacity purge meter and control valve with knob and 316 stainless trim, specify 22. To order a tube with 3-inch scale, capacity of 30 ccm water, and scale units in ccm add B083. Add S for standard O-ring material, add S for standard Kynar tube retainer, add X for no flow controller, add 2 for bezel to accommodate meter with control valve, add 2 for control valve at inlet, add X for no tag. Thus the complete ordering number is: **22BO83 SSX22X.**†



1. SELECT CODE FOR BASIC METER ARRANGEMENT

From Table A:

❑ 20 ❑ 26 ❑ 32 ❑ 38
❑ 22 ❑ 28 ❑ 34
❑ 24 ❑ 30 ❑ 36

2. SELECT CODE FOR TUBE, SCALES AND FLOAT

From Table B (water) or C (air)

3. SELECT CODE FOR O-RING MATERIAL

S = BUNA N or VITON
(standard - from Table A)
1 = EPR (optional)
K = Kalrez® (optional)

4. SELECT CODE FOR TUBE RETAINER MATERIAL

S = KYNAR® (standard)
1 = 316 Stainless Steel (optional)

5. SELECT CODE FOR FLOW CONTROLLER (optional)

	CAPACITY	Connection	Model	Code
316 S.S.	30 scfh-5gph	1/4" NPT inlet	5810	S
	30 scfh-5gph	1/4" NPT outlet	5820	T
	193 scfh-40gph	1/4" NPT inlet	5850	U
	193 scfh-40gph	1/4" NPT outlet	5860	Y
BRASS	30 scfh-5gph	1/4" NPT inlet	5830	N
	30 scfh-5gph	1/4" NPT outlet	5840	P
	193 scfh-40gph	1/4" NPT inlet	5870	Q
	193 scfh-40gph	1/4" NPT outlet	5880	R
		NONE		X

6. SELECT CODE FOR BEZEL (optional)

1 = BEZEL (without control valve)
2 = BEZEL (with control valve)
X = NONE
Note: Available only for 3" Scale Length Meter

7. SELECT CODE FOR OPTIONAL CONTROL VALVE LOCATION

X = No Valve
2 = Inlet Valve
3 = Outlet Valve

8. SELECT CODE FOR OPTIONAL ID TAG

X = NONE
1 = Stainless Steel
2 = Foil

† Note: Your order number should consist of 12 characters.

TECHNICAL DATA

Accuracy

10% of full scale.

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

As indicated in Tables B and C.

Pressure and Temperature Limits

Temperature and pressure are interdependent but these limits must not be exceeded. See TI 500.010 for details on fluid compatability.

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

Special Calibration

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

Materials of Construction

FRAME	304 stainless
TUBE	Borosilicate glass
FLOAT	See Tables B and C
O-RINGS	Buna N or Viton with Kalrez or EPR
TUBE RETAINER	Kynar, 316 stainless*
LOCK NUT	Kynar
FLOW INSERT	Kynar (Used with high capacity air meters only.)
TUBE SHIELD	Polycarbonate
END FITTINGS, CHECK VALVE, PIPE PLUG, POPPET & VALVE TRIM/ADAPTER/RETAINER	316 stainless

Shipping Weights

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

*optional

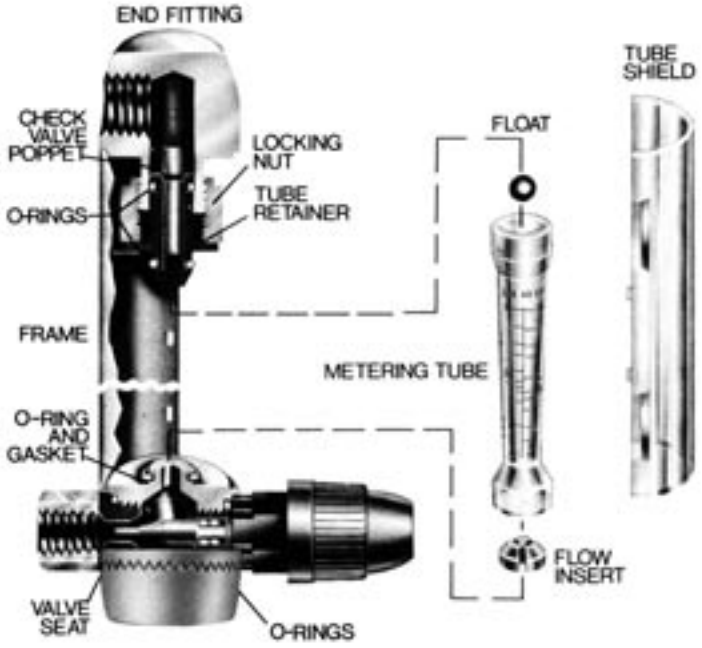
ACCESSORIES

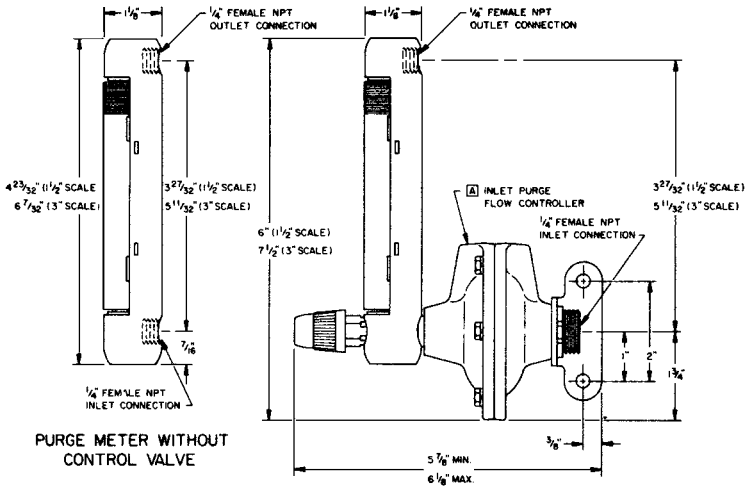
Flow Controllers

Purge 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 Selection 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 valves at the outlet have a ball check instead of a poppet. See TI 570.100 for information.

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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