# IN-LINE BALANCED PRESSURE PROPORTIONERS MODELS IBP, IBP-M

Data/Specifications

## FEATURES

- Six standard sizes to handle wide range of flows with minimum friction loss
- Spool valve design ensures accurate pressure regulation and rapid response to changes in flow demand
- Brass foam concentrate piping with stainless steel trim accessories standard for use in marine applications and other corrosive environments
- Compatible with all ANSUL® foam concentrates
- Nameplates for valve edentification
- Choice of unpainted brass or standard red paint finish

### APPLICATION

ANSUL in-line balanced pressure proportioners are used with an atmospheric foam concentrate tank and a positive displacement foam concentrate pump. In-line balanced pressure proportioners are designed to accurately control the flow of a foam liquid concentrate into a water stream over a wide range of flow rates and pressures. These devices can be used with all types of foam concentrates. Advantages of the in-line balanced pressure proportioner include the following:

- Multiple proportioning devices from a single pressurized foam concentrate supply.
- Foam concentrate can be proportioned near the discharge devices while the foam concentrate storage tank and pump are placed in a remote location.
- Water supply pressure may vary at proportioners under simultaneous operation without affecting foam solution concentration.
- Capability of combining various sizes of in-line balanced pressure proportioners to best suit the flow requirements of each hazard area.

### DESCRIPTION

The in-line balanced pressure proportioning system functions by maintaining an equal pressure in the foam concentrate and water inlets to the proportioner. This balancing ability allows the proportioner to be used over a wide range of flows and pressures. The system will also respond quickly and accurately to changes in the water inlet pressures and flow rates.

The system utilizes a positive displacement foam pump to pressurize foam concentrate within the supply manifold. A pressure control valve, located in the return line to the foam concentrate storage tank, is set to maintain a regulated pressure in the supply manifold that is higher than the pressure in the water supply line. The foam concentrate that is not required by the proportioner is returned to the atmospheric storage tank through the pressure control valve. The spool valve senses the foam concentrate pressure and automatically adjusts to balance it with the water pressure. A duplex pressure gauge provides a reading of the foam concentrate and water pressures. The foam concentrate then enters the proportioner, where a built-in orifice regulates the flow of pressurized foam concentrate entering the water stream.

The units are available in six standard sizes to supply proportioners ranging from 2 to 8 in. with flow rated from 30 to 5,500 gpm (114 to 20820 Lpm) as listed under the System Information Table. Each unit consists of a foam proportioner; pressure balancing spool valve; duplex gauge; various control, drain, and check valves; interconnecting brass pipe and fittings; stainless steel braid flexible pressure sensing hoses; and valve identification nameplates. The IBP-M models are also provided with a manual foam balancing valve. The in-line balanced pressure proportioner is factory pressure tested after being assembled.

### APPROVALS

The ANSUL in-line balanced pressure proportioners assemblies are both Underwriters Laboratories listed and Factory Mutual approved with ANSULITE® 3% AFFF, ANSULITE 3x3, and ANSULITE 6% ARC Foam Concentrates.

### SPECIFICATIONS

The in-line balanced pressure proportioner assembly shall contain all necessary components including foam proportioner; pressure balancing spool valve; duplex gauge; control, drain and check valves; interconnecting brass pipe and valve identification nameplates.

Balancing shall be accomplished through the use of a spool-type pressure balancing valve. This valve shall sense foam concentrate and water inlet pressures at the outer ends of a dumbbell-shaped piston and shall react to pressure changes by covering or uncovering the foam supply port to the proportioner. The balancing valve shall be of 83600 brass construction with a phosphor-bronze piston and Buna-N rubber O-rings and seals. The in-line balanced pressure proportioner shall be completely pressure tested by the manufacturer.

Interconnecting foam concentrate piping shall be of brass construction. Pressure sensing hoses shall be Teflon with stainless braid cover and permanently attached brass couplings. Valve nameplates shall be provided and shall specify valve function and normal operating position. The "foam concentrate" ball valve shall have a ring pin and chain for securing the ball valve in the operating position.

### SYSTEM INFORMATION TABLE

	Model IBP-2/IBP-2M	Model IBP-2 1/2/IBP-2 1/2M	Model IBP-3/IPB-3M	Model IBP-4/IBP-4M	Model IBP-6/IBP-6M	Model IBP-8/IBP-8M
Proportioner Size	2 in	2 1/2 in	3 in	4 in	6 in	8 in
Nominal Flow Range gpm	30-300	35-400	70-800	200-1600	300-3400	500-5500
Nominal Flow Range (Lpm)	(114-1136)	(132-1514)	(265-3028)	(757-6057)	(1136-12870)	(1892-20819)

In-line balanced pressure proportioner systems will proportion slightly higher concentrations at the low end of the nominal flow range.

### **IN-LINE BALANCED PRESSURE PROPORTIONERS (MODELS IBP-2 TO IBP-8)**

	Model IBP-2		Model IBP-2 1/2		Model IBP-3		Model IBP-4		Model IBP-6		Model IBP-8	
	in	(cm)	in	(cm)	in	(cm)	in	(cm)	in	(cm)	in	(cm)
Dimension A	-		_		17	(43)	18 1/2	(47)	18 1/4	(46)	22 1/2	(57)
Dimension B	16	(41)	16	(41)	_		_		-		_	
Dimension C	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	20	(51)
Dimension D	9	(23)	9	(23)	9 3/4	(25)	10 1/2	(27)	12	(31)	14	(36)
Dimension E	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	2 3/16	(6)
Dimension F	1 NPT	. ,	1 NPT		1 NPT		1 1/2 NPT		1 1/2 NPT		2 NPT	
Dimension G	2 NPT		2 1/2 NPT		3*		4*		6*		8*	





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### IN-LINE BALANCED PRESSURE PROPORTIONERS WITH MANUAL FOAM BALANCING VALVE (MODELS IBP-2M TO IBP-8M)

	Model IBP-2M		Model IBP-2 1/2M		Model IBP-3M		Model IBP-4M		Model IBP-6M		Model IBP-8M	
	in	(cm)	in	(cm)	in	(cm)	in	(cm)	in	(cm)	in	(cm)
Dimension A	_		_		25 1/2	(65)	28 1/2	(72)	28	(71)	32 3/8	(82)
Dimension B	24 1/2	(62)	24 1/2	(62)	-		-		-		_	
Dimension C	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	16 3/4	(43)	20	(51)
Dimension D	15 5/8	(40)	15 5/8	(40)	16 3/8	(42)	18	(46)	19 1/2	(50)	22 1/2	(57)
Dimension E	9	(23)	9	(23)	9 3/4	(25)	10 1/2	(27)	12	(31)	14	(36)
Dimension F	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	1 3/4	(4)	2 3/16	(6)
Dimension G	1 NPT	. ,	1 NPT		1 NPT		1 1/2 NPT		1 1/2 NPT		2 NPT	
Dimension H	2 NPT		2 1/2 NPT		3*		4*		6*		8*	



\*Between flange proportioner is standard. Upon request, proportioners can also be supplied in flanged style.

NOTE: Ansul in-line balanced pressure proportioners require a minimum of 5 pipe diameters of straight, unobstructed water inlet supply pipe.

#### **ORDERING INFORMATION** Part No. Approximate Part No. Standard Shipping Weight Unpainted Red Paint Description lb (kg) 73700 73701 Model IBP-2 In-line 45 (20.4)proportioner assembly 73702 73703 Model IBP-2 1/2 In-line 45 (20.4)proportioner assembly 73704 73705 Model IBP-3 In-line 50 (22.7)proportioner assembly 73706 73707 Model IBP-4 In-line 65 (29.5)proportioner assembly 73708 73709 Model IBP-6 In-line 80 (36.3)proportioner assembly 73710 73711 Model IBP-8 In-line 135 (61.2)proportioner assembly 73712 73713 Model IBP-2M In-line 60 (27.2)proportioner assembly Model IBP-2 1/2M In-line 73714 73715 60 (27.2)proportioner assembly 73716 73717 Model IBP-3M In-line 65 (29.5)proportioner assembly Model IBP-4M In-line 73718 73719 90 (40.8) proportioner assembly Model IBP-6M In-line 73720 73721 105 (47.6)proportioner assembly 73722 73723 Model IBP-8M In-line 170 (77.1)proportioner assembly

### IN-LINE BALANCED PRESSURE PROPORTIONER



### TYPICAL IN-LINE BALANCED PRESSURE PROPORTIONING SYSTEM



## FRICTION LOSS CURVES (THROUGH PROPORTIONER)



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