Between Flange Proportioners (3 in., 4 in., 6 in., and 8 in.)

Description

- Each ANSUL® proportioner consists of a body, inlet nozzle, and metering orifice, all of which are corrosion-resistant brass.
- The proportioner body design includes four sizes to fit between a 3 in., 4 in., 6 in., or 8 in. pipe flange.
- The flow direction arrow and the type and percentage of the designated concentrate are clearly marked on the proportioner body.
- A stainless steel retaining ring secures the inlet nozzle that is internally concealed to prevent removal after installation.
- The metering orifice is sized according to the type and percentage of concentrate used and is also secured with a stainless steel retaining ring.

Application

ANSUL® proportioners are specifically designed to accurately proportion and control the mixing of pressurized ANSUL® foam concentrates into a water stream with minimum pressure loss. ANSUL® proportioners may be UL Listed or FM Approved with various concentrates as indicated under ordering information, and are used with bladder tank proportioning systems. Typical applications include the following examples:

- Flammable liquid storage tanks
- Loading racks
- Aircraft hangars
- Heliports
- Anywhere flammable liquids are used, stored, processed, or transported

Specifications

The proportioner body and inlet nozzle shall be of low zinc (less than 15%) brass. The nozzle and foam orifice retaining rings shall be of stainless steel.

The proportioner maximum working pressure shall be 250 psi (17.2 bar). The proportioner body shall be designed so that it fits between two ANSI 150 lb pipe flanges. Only the recovery section of the proportioner shall protrude into the system water piping. To capture and seal against the flange gaskets, the mating faces shall be machined with 32 grooves per inch (25 mm) for the 4 in., 6 in., and 8 in. models, and 64 grooves per inch (25 mm) for the 3 in. model. The body shall be clearly marked with a flow direction arrow, and the type and percent of foam concentrate that it was designed to proportioner.

Note: The maximum pressure for a standard bladder tank is 175 psi (12.1 bar). When operating above 175 psi (12.1 bar) with a bladder tank, consult Johnson Controls Technical Services for higher pressure bladder tank offerings.

The convergent inlet nozzle shall have a rounded inlet and a smooth machined finish to ensure minimum stream constriction and maximum velocity. It shall be retained by an internally concealed retaining ring that prevents removal after installation.

The foam concentrate metering orifice shall be machined to the correct diameter for the agent. It shall rest on a machined surface to prevent leakage and shall be secured by a removable stainless steel retaining ring.

Approvals and listings

- UL Listed
- FM Approved

UL LISTED

FM APPROVED

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 | Form No. F-8452-18

Johnson Controls

Proportioner dimensions

Figure 1: Proportioner dimensions

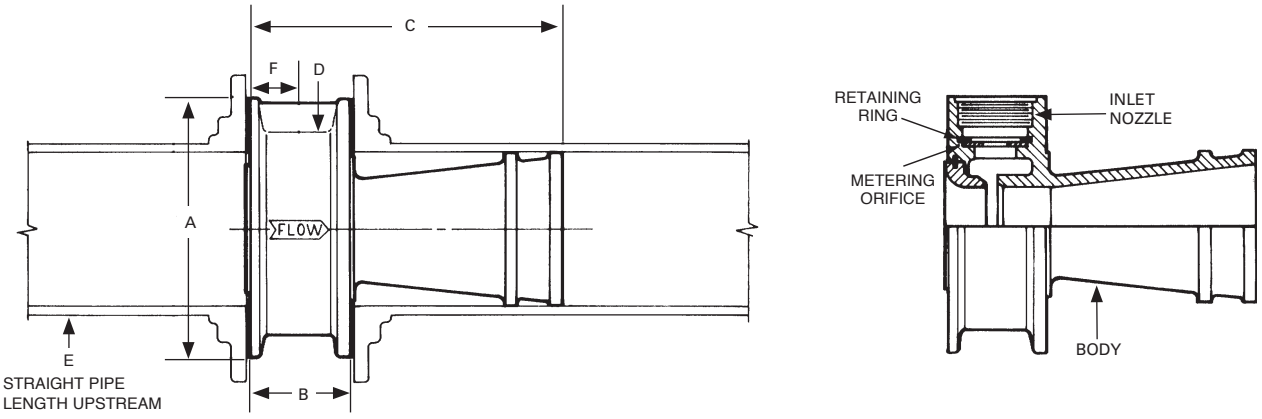


Table 1: Proportioner dimensions

Proportioner size	A		B		C		D	E		F	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	in.	(mm)	in.	(mm)
3 in.	5 1/4	(135)	2 1/2	(64)	6	(152)	1 1/4 NPT	15	(380)	1 1/4	(30)
4 in.	6 3/4	(173)	2 1/5	(65)	8	(203)	1 1/2 NPT	20	(510)	1 1/4	(32)
6 in.	8 5/8	(218)	3 1/4	(83)	12	(305)	2 NPT	30	(760)	1 5/8	(41)
8 in.	11	(279)	3 1/2	(90)	12	(305)	2 1/2 NPT	40	(1200)	1 3/4	(45)

Ordering information

When ordering, specify the information listed in Table 2.

Table 2: Ordering information

Concentrate	Proportioner Part No.			
	3 in.	4 in.	6 in.	8 in.
2% JET-X foam	70817[2]	69369[2]	69387[2]	69407[1]
2 3/4% JET-X foam	70816[1]	69366[1]	69386[1]	69406[1]
1/2% SILV-EX foam	70818	—	—	—
3% non-fluorinated (NFF 3x3 UL201)	453218[1]	454668[1]	454672[1]	454676[1]
3% non-fluorinated (NFF-331)	A16381LHL9[1]	A16381LHLA[1]	A16381LHLB[1]	A16381LHLC[1]
3% non-fluorinated (NFF-332)	A16382UFMU[3]	A16382UG7A[3]	A16382UJ5Y[3]	A16382UJ91[3]
Shipping weight	10 lb (4.5 kg)	20 lb (9.1 kg)	40 lb (18.1 kg)	70 lb (31.8 kg)

1. UL Listed with bladder tanks
2. UL Listed and FM Approved with bladder tanks
3. FM Approved with bladder tanks

Proportioners are only FM Approved when used in conjunction with the specific foam concentrates and equipment shown in the Approval Guide (www.ApprovalGuide.com).

Proportioner flow ranges

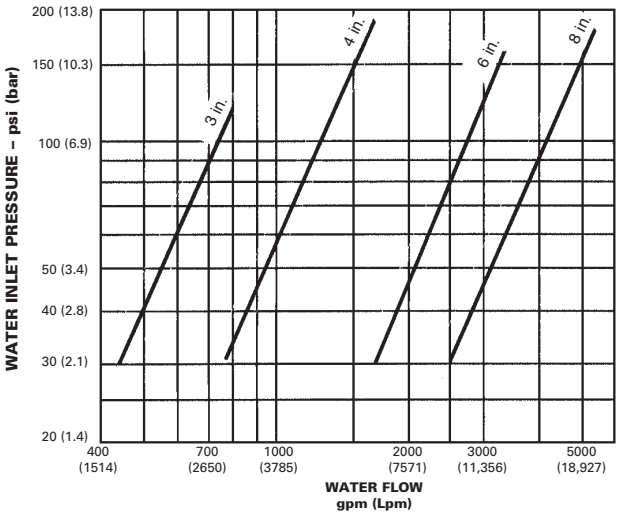
The following table lists the listed flow ranges for each proportioner size.

Table 3: Proportioner flow ranges

Foam concentrate	Approvals and listings	Proportioner flow range – gpm (Lpm)			
		3 in.	4 in.	6 in.	8 in.
2% JET-X	UL	78 to 803 (295 to 3040)	134 to 1542 (507 to 5837)	327 to 3850 (1238 to 14,574)	869 to 5225 (3290 to 19,779)
	FM	76 to 808 (288 to 3059)	188 to 1550 (712 to 5867)	449 to 3505 (1700 to 13,268)	–
2 3/4% JET-X	UL	80 to 772 (303 to 2922)	70 to 1240 (265 to 4694)	342 to 2995 (1295 to 11,337)	556 to 4142 (2105 to 15,679)
	FM	–	–	–	–
1/2% SILV-EX	N/A	70 to 802 (265 to 3036)	–	–	–
3% non-fluorinated (UL201)	UL	185 to 790 (700 to 2990)	391 to 1356 (1480 to 5133)	853 to 3155 (3229 to 11,943)	1600 to 4587 (6057 to 17,364)
	FM	–	–	–	–
3% non-fluorinated (NFF-331)	UL	203 to 773 (768 to 2926)	421 to 1337 (1594 to 5061)	884 to 2894 (3346 to 10,955)	1770 to 4504 (6700 to 17,049)
	FM	–	–	–	–
3% non-fluorinated (NFF-332)	UL	–	–	–	–
	FM	133 to 860 (503 to 3255)	277 to 1560 (1049 to 5905	720 to 2970 (2726 to 11,243)	1580 to 4500 (5981 to 17,034)

Minimum inlet pressure vs. water flow

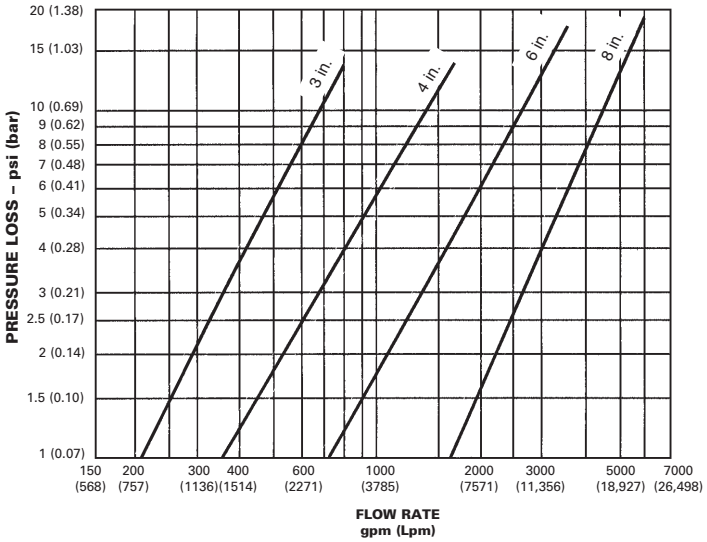
Figure 2: Minimum inlet pressure vs. water flow



Friction loss curves

Note: Consult Johnson Controls Technical Services to determine the proportioner size and the maximum pipe run between the foam tank and the proportioner.

Figure 3: Friction loss curves



Note: While NFF (also known as SFFF) agents may be compatible with existing AFFF and/or NFF hardware, system contamination from fluorinated agents may exist if hardware and piping is not replaced upon conversion to non-fluorinated agents.

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.