

## TPW MK3 Wide Range Bladder Tank Proportioner

### Features

- Designed to meet the proportioning requirements of EN 13565-1:2003+A1:2007 Chapter 7 and NFPA 16:2015 Chapter 4
- FM Approved for use with SKUM AFFF 3% UG and SKUM ARC 3x3 UG Foam Concentrates
- Foam proportioning as low as 87 Lpm
- Allows the use of lower cost bladder tank foam-water sprinkler systems
- Less total system hardware and maintenance required with minimal moving parts and no electrical hook-up required

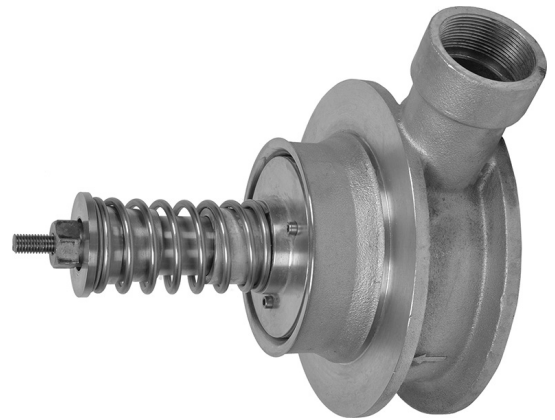
### Application

The SKUM TPW MK3 Wide Range Proportioner is FM Approved for use with SKUM AFFF 3% UG and SKUM ARC 3x3 UG Foam Concentrates. Refer to the Systems Specifications for other SKUM foam concentrates that have been tested for use with this proportioner.

The SKUM TPW MK3 proportioner is designed for use with bladder tank systems only. Refer to the System Specifications for the equivalent lengths the proportioners may be installed from the bladder tank. The normal swing check, concentrate isolation, and hydraulic valve(s) do not have to be included in this equivalent length calculation.

The SKUM TPW MK3 proportioner is designed to proportion and control the mixing of the foam concentrate into a water stream over a wide range of water flow rates and pressures. The proportioners have been tested by the foam concentrate manufacturer and are capable of proportioning at flow rates as low as 87 Lpm to as high as 20,376 Lpm with a maximum working pressure of 16 bar.

NFPA 30:2015 Chapter 16 requires properly proportioned foam solution to be generated with as few as four sprinklers flowing. In many foam-water sprinkler systems, this condition would produce flows considerably less than the minimum design flow of conventional proportioning equipment. Control of the fire may not be established if the installed proportioner is unable to correctly proportion foam across the entire critical flow range. The flow capacity of the SKUM TPW MK3 Wide Range Proportioner allows foam to be proportioned properly across a wide design range for a system.



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Designed with EN 13565 and NFPA 16 in mind, these proportioners are well suited for closed head foam-water sprinkler application where the system flow may start low and increase as more sprinklers open. Other common applications include:

- Tank farm protection systems, as per NFPA 11:2016 using foam chambers or other means of foam delivery, where varied flow rates are encountered in conjunction with requirements for supplementary foam handline(s).
- Closed head foam-water sprinkler systems including warehouse storage, chemical processing, loading racks, and anywhere flammable liquids are used, stored, processed, or transported.

### Approvals and Listings

The SKUM TPW MK3 Wide Range Proportioner is FM Approved for use with SKUM AFFF 3% UG and SKUM ARC 3x3 UG.

**Note:** SKUM TPW MK3 proportioners are only FM Approved when used in conjunction with the specific foam concentrates and equipment shown in the Approval Guide available at [www.ApprovalGuide.com](http://www.ApprovalGuide.com).



### Description

SKUM TPW MK3 wide range proportioning systems function by metering foam concentrate into the water supply line. Upon system actuation, incoming water applies pressure to the concentrate in the bladder, which supplies pressurized concentrate to the proportioning device. The foam-water solution is then piped to the discharge devices in the hazard area.

## Description (Continued)

When installed in a closed head, wet sprinkler system, the proportioner operates as follows:

- With the proportioner properly installed in the sprinkler riser, the water pressure is equal on both sides of the proportioner. As sprinkler heads open in a fire situation, foam concentrate is added into the water stream through a precisely machined metering tube.
- As more sprinkler heads open, the increase in water flow causes the deflector to open more, increasing the orifice size on the metering tube, allowing more foam concentrate into the water stream. This feature gives the proportioner the ability to properly proportion at both extremely low flow rates and at extremely high flow rates.

Each proportioner consists of a cast bronze body, bronze deflector, stainless steel spring, and stainless steel foam metering tube.

The proportioner is available in three standard sizes (6 in., 8 in. and 10 in.) and is designed to fit between two DN150 (6 in.), DN200 (8 in.) or DN250 (10 in.) DIN PN16 (ANSI Class 150) pipe flanges. A minimum of five pipe diameters of straight pipe is necessary upstream and downstream of the proportioner.

## Ordering Information

<u>Part Number</u>	<u>Foam Agent</u>	<u>Approvals</u>
SKUM TPW 6 in. MK3 with 2 in. BSP (F) foam inlet		
124515205A	3% AFFF	FM
124515205C	3x3 AR-AFFF	FM
124515205E	2% HOTFOAM	–
124515205B	1% AFFF	–
124515205F	3% Fluoroprotein	–
SKUM TPW 6 in. MK3 with 2 in. Grooved foam inlet		
124515212A	3% AFFF	FM
124515212C	3x3 AR-AFFF	FM
124515212E	2% HOTFOAM	–
124515212B	1% AFFF	–
124515212F	3% Fluoroprotein	–
SKUM TPW 8 in. MK3 with 2 1/2 in. BSP (F) + 3 in. Grooved foam inlet		
124520206A	3% AFFF	FM
124520206C	3x3 AR-AFFF	FM
124520206E	2% HOTFOAM	–
124520206B	1% AFFF	–
124520206F	3% Fluoroprotein	–
SKUM TPW 10 in. MK3 with 3 in. DIN Flange foam inlet		
124525211A	3% AFFF	FM
124525211C	3x3 AR-AFFF	FM
124525211E	2% HOTFOAM	–
124525211B	1% AFFF	–
124525211F	3% Fluoroprotein	–
SKUM TPW 10 in. MK3 with 3 in. ANSI Flange foam inlet		
124525217A	3% AFFF	FM
124525217C	3x3 AR-AFFF	FM
124525217E	2% HOTFOAM	–
124525217B	1% AFFF	–
124525217F	3% Fluoroprotein	–

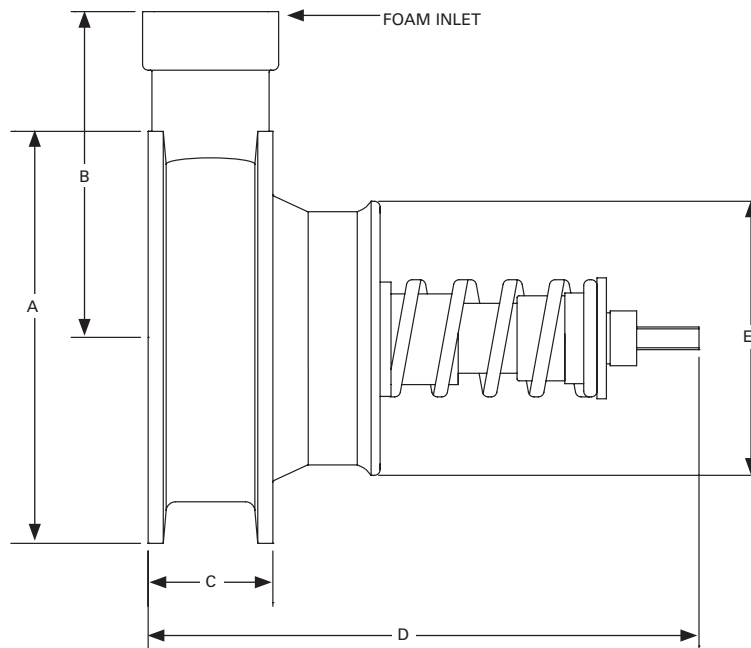
**Note:** The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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## Proportioner Information

Model	Size	Minimum Inlet Pressure		Maximum Inlet Pressure		Upstream Straight Pipe Length		Downstream Straight Pipe Length		Approx Weight	
		bar	(psi)	bar	(psi)	mm	(in.)	mm	(in.)	kg	lb
TPW 6 in.	6 in. DN150	1	(14.5)	16	(232.1)	750	(29.5)	750	(29.5)	13	(28.7)
TPW 8 in.	8 in. DN200	1	(14.5)	16	(232.1)	1,000	(39.4)	1,000	(39.4)	25	(55.1)
TPW 10 in.	10 in. DN250	1	(14.5)	16	(232.1)	1,250	(49.2)	1,250	(49.2)	40	(88.2)

Model	Foam Inlet	A		B		C		D		E	
		mm	(in.)	mm	(in.)	mm	(in.)	mm	(in.)	mm	(in.)
TPW 6 in.	2 in. BSP (F)	218	(8.6)	172	(6.8)	69	(2.7)	281	(11.2)	145	(5.7)
TPW 6 in.	2 in. Groove	218	(8.6)	202	(8.0)	69	(2.7)	281	(11.2)	145	(5.7)
TPW 8 in.	2 1/2 in. BSP(F) and 3 in. Groove	271	(10.7)	246	(9.7)	90.8	(3.6)	326	(12.8)	203	(8.0)
TPW 10 in.	3 in. DIN Flange or 3 in. ANSI Flange	328	(12.9)	264	(10.4)	100	(3.9)	351	(13.8)	250	(9.8)



# System Specifications

Bladder Tank  
(using DN50 pipe except where noted)

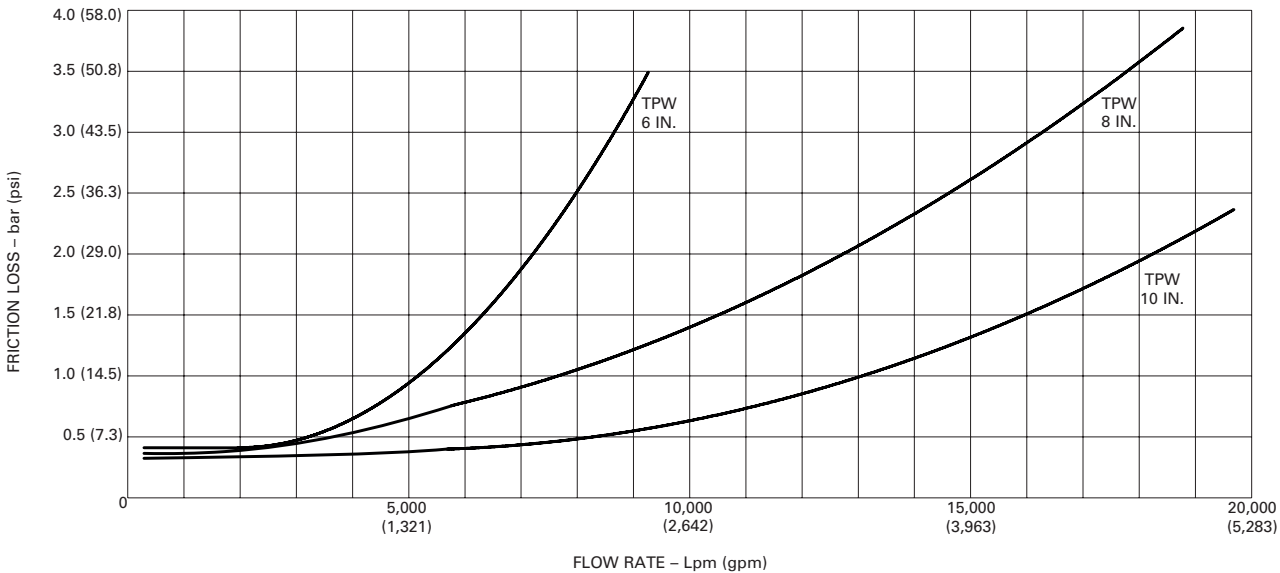
Model	Foam Agent	Minimum Flow		Maximum Flow		Equivalent metres	Equivalent (feet)
		Lpm	(gpm)	Lpm	(gpm)		
TPW 6 in.	SKUM AFFF 3% UG	87*	(23)	11,708*	(3,093)	3.7-10.7	(12-35)
	SKUM ARC 3x3 UG	117*	(31)	11,818*	(3,122)	3.7-10.7	(12-35)
	SKUM 2% HOTFOAM	178	(47)	11,167	(2,950)	3.7-10.7	(12-35)
	SKUM AFFF 1% UG	208	(55)	10,978	(2,900)	3.7-10.7	(12-35)
	SKUM FP3% EG	193	(51)	11,118	(2,937)	3.7-10.7	(12-35)
TPW 8 in.	SKUM AFFF 3% UG	121*	(32)	18,563*	(4,904)	3.7-10.7	(12-35)
	SKUM ARC 3x3 UG	223*	(59)	18,855*	(4,981)	3.7-10.7	(12-35)
	SKUM 2% HOTFOAM	197	(52)	19,135	(5,055)	3.7-10.7	(12-35)
	SKUM AFFF 1% UG	189	(50)	19,457	(5,140)	3.7-10.7	(12-35)
	SKUM FP3% EG	208	(55)	19,218	(5,077)	3.7-10.7	(12-35)
TPW 10 in.	SKUM AFFF 3% UG	189*	(50)	20,119*	(5,315)	3.7-10.7	(12-35)
	SKUM ARC 3x3 UG	295*	(78)	20,376*	(5,383)	5.2-10.7**	(17-35)
	SKUM 2% HOTFOAM	193	(51)	20,252	(5,350)	3.7-10.7	(12-35)
	SKUM AFFF 1% UG	568	(150)	19,949	(5,270)	3.7-10.7	(12-35)
	SKUM FP3% EG	204	(54)	19,684	(5,200)	3.7-10.7	(12-35)

\* FM Approved flow range

**Note:** The SKUM TPW MK3 Wide Range Proportioners have been tested for use with the agents listed above. Results with other agents may vary.

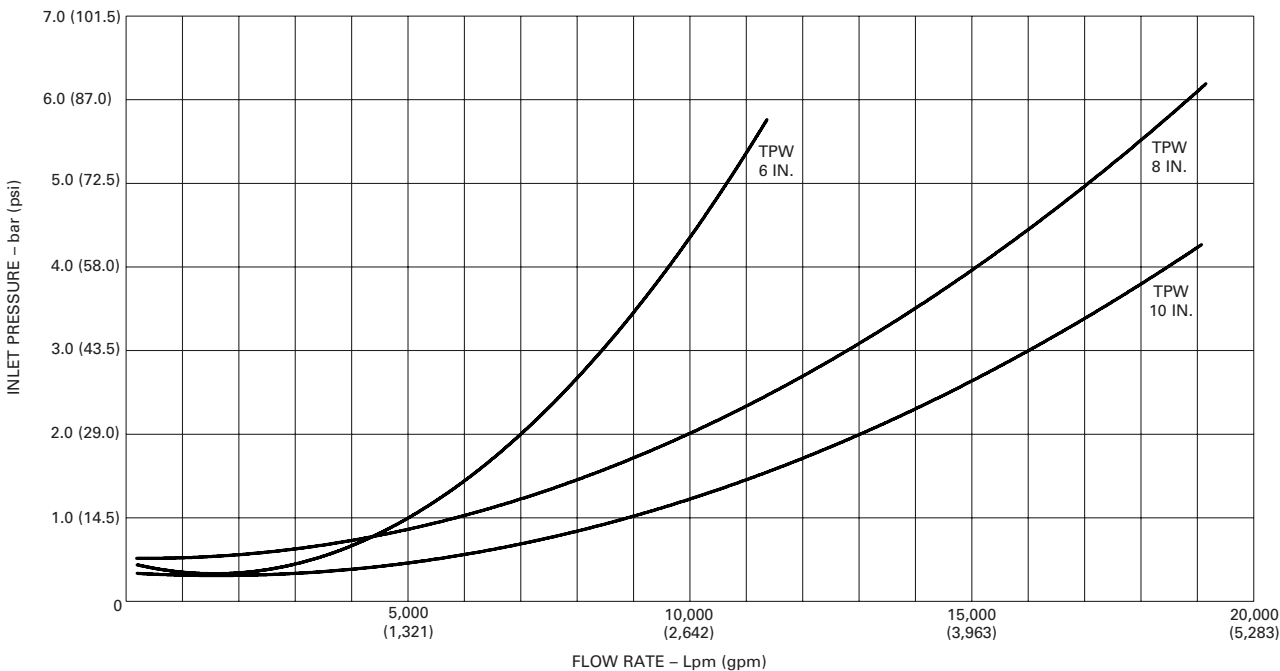
\*\* Using DN65 pipe

## SKUM TPW MK3 Friction Loss



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## SKUM TPW MK3 Minimum Inlet Pressure



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