Advent Balanced Pressure Foam Systems

Description

The Advent Balanced Pressure Foam Systems are designed for use with WILLIAMS FIRE & HAZARD CONTROL® (WILLIAMS) THUNDERSTORM®, T-STORM®, and Class A foam concentrates for emergency response to both Class A and Class B fire hazards. With proper calibration, the Advent system may also be used to proportion many other commercially available AFFF, AR-AFFF, and protein foam concentrates.

The Advent system utilizes a positive displacement pump for foam concentrate delivery. The pressure is regulated via the foam concentrate by-pass flow which is returned to the suction side of the pump. A foam-to-water heat exchanger (shell and tube type) keeps the foam cool in the event of a prolonged deadhead pump operation.

Each water discharge dedicated for foam operation is equipped with a ratio flow controller, a modified venturi foam proportioner that accurately meters pressurized foam concentrate into the firefighting water stream. Firefighting water flows through the modified venturi, creating an area of lower pressure referred to as the metering pressure drop, which is directly related to the velocity of the water flowing through the venturi.

Foam concentrate is pumped from the tank and discharged to each ratio flow controller through metering valves, which control the percentage of foam discharged into the system (up to 6%). The foam solution is produced by opening the metering valve at a ratio flow controller/discharge connection to the desired percentage rate and simultaneously combining with water from the water discharge connections. Metering valves also function as a concentrate shutoff.

The Advent system is available in standard capacities of 12 gpm (45 Lpm), 30 gpm (114 Lpm), 60 gpm (227 Lpm), and 120 gpm (454 Lpm) foam concentrate flows. The Advent 12 system is available as a 230 VAC, 3 HP electric or chassis transmission PTO driven configuration. The electric driver version is suitable if all PTO openings are being utilized for other applications or foam system operation independent of chassis engine speed is desired. Advent 30, 60, 120, and all optional flow capacity systems are available as PTO driven only.

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Features

- Multiple foam injection points
- Simultaneous variable proportioning rates
- Capable of operation with Class A or B foam concentrates
- No additional load on the chassis electrical system (less than 1 amp at 12 VDC)
- Automatic pressure control
- Manual by-pass capability
- All mechanical components
- Common manifolding not required
- Variable foam concentrate flow rates from 12 gpm to 120 gpm (45 Lpm to 454 Lpm)
- Broad range of solution flow rates from 40 gpm to 5,000 gpm (151 Lpm to 18,927 Lpm)

Available options include:

- Tank-to-pump and tank-fill controls
- A/B tank selector and flush control
- Pneumatic tank control kit
- Pneumatic A/B change-over kit
- Single or dual tank controls (sold separately)
- Individual discharge metering valves (sold separately with discharge ratio controller kits)

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 | Form No. WM-2018154-00

Dimensional Information

Standard Advent Foam System Sizing and Capacities

System Rating gpm (Lpm)	Pump Ports Size FNPT - in.	Suction Plumbing Size in.	Discharge Plumbing Size in.	Relief Valve Size in.	Tank Suction Valves* in.		Tank Fill Valves* in.		Flush Valve Size in.	By-Pass Valve Size in.	PCV Model Number	PCV Port Size in.	Intake Valve Size in.	Discharge Valve Size in.	Solution Capacity at (150) 250 Discharge Pressure			
					A	B	A	B							0.25% gpm (Lpm)	0.5% gpm (Lpm)	1% gpm (Lpm)	3% gpm (Lpm)
12 (45)	1	1 1/2	1	3/4	1	1 1/2	1/2	1/2	3/8	1	25	1 1/2	1	3/4	4,800 (18,170)	2,400 (9,085)	1,200 (4,542)	400 (1,514)
30 (114)	1 1/2	2	1 1/2	1	1 1/2	2	1/2	3/4	1/2	1 1/2	25	1 1/2	1 1/2	1 1/2	12,000 (45,425)	6,000 (22,712)	3,000 (11,356)	1,000 (3,785)
60 (227)	1 1/2	2	1 1/2	1 1/2	1 1/2	2	3/4	1	3/4	1 1/2	75	2	2	1 1/2	24,000 (90,850)	12,000 (45,425)	6,000 (22,712)	2,000 (7,571)
120 (454)	2	2 1/2	2	1 1/2	2	2 1/2	1	1 1/2	1	2	100	2	2 1/2	2	48,000 (181,700)	24,000 (90,850)	12,000 (45,425)	4,000 (15,142)

*Single tank system Tank Suction / Tank Fill valves default to "B" sizes.

Advent Foam System Ratio Controller Capacities and Component Sizing

Ratio Controller Size in.	Foam Concentrate Port Size NPT - in.	Foam C/V and Supply Plumbing in.	Metering Valve Port Size in.	Metering Valve Body Size	Includes Pressure Relief By-Pass	RC Flow Range gpm (Lpm)		NFPA 1901 Discharge Flow Rating gpm (Lpm)
						Low	High	
2	1	1	1	Small	No	40 (151)	200 (757)	125** (473)
2 1/2	1	1	1	Small	No	95 (360)	500 (1,893)	250 (946)
3	1 1/4	1 1/2	1 1/2	Small	No	125 (473)	700 (2,650)	375 (1,420)
4	1 1/2	1 1/2	1 1/2	Small	No	250 (946)	1,250 (4,732)	625 (2,366)
5	2	2	2	Big	Yes	350 (1,325)	1,750 (6,624)	1,000 (3,785)
6	2	2	2	Big	Yes	500 (1,893)	2,500 (9,464)	1,440 (5,451)
6	2	2	2	Big	Yes	600 (2,271)	3,000 (11,356)	1,440 (5,451)
8	2 1/2	2 1/2	n/a*	n/a*	n/a*	1,000 (3,785)	5,000 (18,927)	n/a***

*Standard metering for 8 in. ratio controllers is accomplished with a 2 in. NPT ported control valve and 2 in. orifice tube for each of two proportioning rates.

**NFPA 1906.

***No NFPA listing for 8 in. discharges.

Ordering Information

Contact WILLIAMS customer service at Johnson Controls with specific application requirements for custom configuration as well as additional information.

Advent System Part Number

Model	Base Unit	Single Tank Control	Dual Tank Control
Advent 12 (PTO) /12 VDC	11691	11701	11706
Advent 12 (PTO) /24 VDC	11692		
Advent 12E (230 VDC)/12 VDC	11693		
Advent 12E (230 VDC)/24 VDC	11694		
Advent 30/12 VDC	11695	11703	11708
Advent 30/24 VDC	11696		
Advent 60/12 VDC	11697	11704	11709
Advent 60/24 VDC	11698		
Advent 120/12 VDC	11699	11705	11710
Advent 120/24 VDC	11700		

Advent Ratio Controller Kits

Part No.	Description
11711	Advent RC kit, 2 in.
11712	Advent RC kit, 2 1/2 in.
11713	Advent RC kit, 3 in.
11714	Advent RC kit, 4 in.
11715	Advent RC kit, 5 in.
11716	Advent RC kit, 6 in.

Note: Complete Advent Systems consist of base unit, choice of either single or dual tank controls, and required size(s)/quantity of ratio controller kits.

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