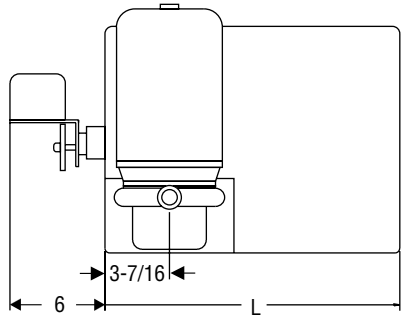
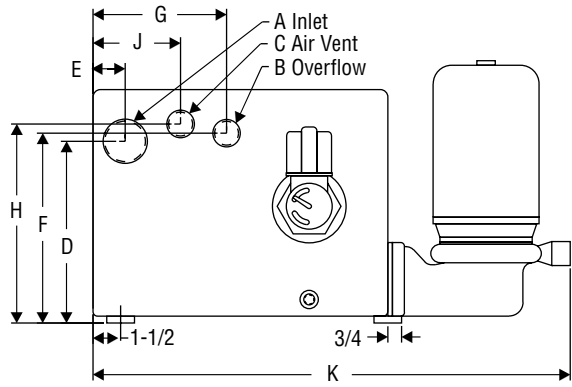




Armstrong® FPC & FPS Series Electric Condensate Pumps

Condensate Recovery Equipment



Features

- Available with cast iron or steel condensate receivers
- Drip-proof enclosures on motors
- Choice of simplex and duplex units
- 3500 RPM motors provide low inertia for intermittent operation
- Float switches with stainless steel float and rod provide optimum levels in the receiver for pump operation
- Factory wired for 115 volt, can be field wired for 230V/1/60 operation
- Adapter flanges available to connect a new pump to an existing manufacturer's condensate receiver
- Bronze impellers are cast one-piece construction trimmed and balanced to design capacities
- Available accessories:
 - Inlet suction strainer
 - Discharge pressure gauges
 - Discharge check valve and gate valve
 - Magnetic starter
 - Thermometer
 - Water gauge glass with shut-off valves and protective rod guards

The Armstrong FPC (cast iron) and FPS (steel) electric condensate pumps are offered as packaged units, pre-assembled, wired and factory tested.

Quality components such as the cast bronze impellers, dependable float switches and heavy wall receivers provide smooth, trouble-free operation. All major components are easily accessible for quick and simple maintenance.

Duplex units are offered to assure longer service life, system overload protection and back-up capability.

For pre-assembled packaged electric condensate pumps, contact your local Armstrong Representative.

For a fully detailed certified drawing, refer to list below.
FPC-112 CDF #1008 FPC-118/218 CDF #1009
FPC-115/218 CDF #1011 FPC-130/230 CDF #1010

Specifications—Cast Iron Receiver Condensate Pumps								
Model No.		Pump GPM	Standard Motor Voltage*	Maximum Pump Discharge, psig	Pump Discharge Nozzle Size	Pump HP	Receiver Size Gallons	sq ft EDR
Simplex	Duplex							
FPC-112	—	12	115V/1Ph 3500 RPM	20	3/4"	1/3	10	8,000
FPC-115	—	15					15	10,000
FPC-118	FPC-218	18					25	12,000
FPC-130	FPC-230	30			1"	3/4	37	20,000

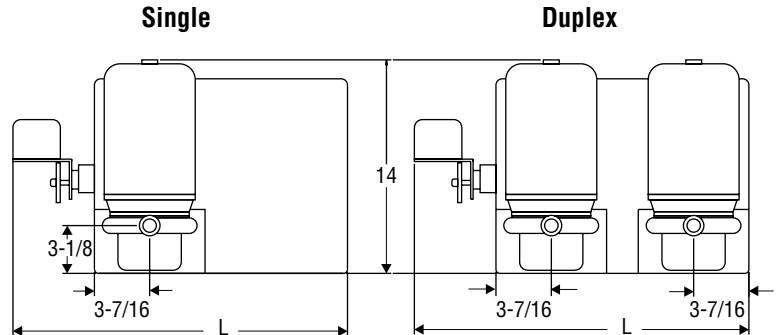
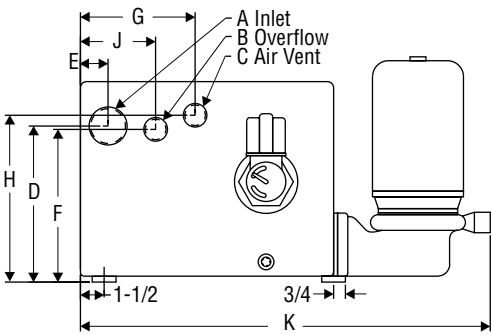
*Can be field wired to 230V/1Ph/50Hz
 Additional units for larger capacities and higher pressures available upon request—consult factory.

Dimensions—Cast Iron Receiver Condensate Pumps													
Receiver Size Gallons	Receiver Size (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (in)	K (in)	L (in)	Drain (in)
10	16 x 13-1/2 x 12-5/16	2	1-1/4	1-1/4	9-7/8	1-3/4	10-5/16	7-1/4	10-13/16	4-3/4	25	13-1/2	1/2
15	16 x 19 x 12-5/16	2	1-1/4	1-1/4	9-7/8	1-3/4	10-5/16	7-1/4	10-13/16	4-3/4	25	19	1/2
25	19 x 24-1/2 x 13-1/2	2	1-1/4	1-1/4	10-1/4	1-3/4	11-1/4	5-1/4	12	8-1/4	28	24-1/2	1/2
37	20 x 28 x 17-1/4	3	1-1/2	1-1/2	14-1/4	2-11/16	15-1/4	6-3/16	16	8-11/16	29	28	1/2

Additional units for larger capacities and higher pressures available upon request—consult factory.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

FPC & FPS Series Electric Condensate Pumps



Sizing Condensate Pumps

Step 1—Determine the condensing rate of the system:

Where: C = Condensing Rate in lb/hr
 F_1 = Conversion to GPM = 500
 F_2 = Conversion to EDR = .0005

Formula: $C \div F_1 = \text{GPM}$
 $\text{GPM} \div F_2 = \text{sq. ft. EDR}$

Example: $2000 \text{ lb/hr} \div 500 = 4 \text{ GPM}$
 $4 \text{ GPM} \div 0.0005 = 8,000 \text{ sq. ft. EDR}$

Step 2—Apply a 3:1 safety factor by multiplying by 3

Example: $4 \text{ GPM} \times \text{safety factor of } 3 = 12 \text{ GPM}$
 Select a pump with a 12 GPM rating with a sq. ft. EDR of 8,000

Step 3—Determine system back pressure

The total back pressure is determined by vertical lift, system pressure on the discharge side of the pump, plus frictional loss through pipe, valves and fittings.

Vertical lift, 2.31 ft. = 1 psig + system pressure (psig) + frictional loss (psig) = total system back pressure.

Select a pump that has a maximum discharge pressure greater than the total system back pressure calculated for the system.

Special Notes:

- Floor mounted condensate receivers have a maximum operating temperature rating of 200°F. Higher temperature applications will require that the receiver be elevated to achieve proper net positive suction head (NPSH).
- Duplex units are typically sized for system redundancy, using a mechanical alternator for less wear on each pump.
- For systems that require vacuum pumps, control panels, high performance motors and special condensate receivers, consult the factory for engineering and pricing assistance.
- Condensate receivers are typically sized for one to three minutes of storage capacity.
- The condensate receiver that is mounted to the pump must always remain vented to the atmosphere.

NPSH is critical to the proper operation of an electric condensate pump. NPSH is the measure of how close the suction passage of the pump is to boiling. NPSH can be calculated by the following formula: $NPSH = H_s + H_p - H_v - H_f$

Where:

H_s = static head of the liquid at the pump suction
 H_v = vapor pressure of the liquid at the pump suction

H_p = absolute pressure above the static head of the liquid
 H_f = friction loss in the suction piping

For a fully detailed certified drawing, refer to list below.

FPS-112 CDF #1006 FPS-118/218 CDF #1007
 FPS-115/215 CDF #1007 FPS-130/230 CDF #1007

Condensate Recovery Equipment

Specifications—Steel Receiver Condensate Pumps

Model No.		Pump GPM	Standard Motor Voltage*	Maximum Pump Discharge psig	Pump Discharge Nozzle Size	Pump HP	Receiver Size Gallons	sq ft EDR
Simplex	Duplex							
FPS-112	—	12	115V/1Ph 3,500 RPM	20	3/4"	1/3	7-1/2	8,000
FPS-115	—	15					15	10,000
FPS-118	FPS-218	18					21	12,000
FPS-130	FPS-230	30					35	20,000

*Can be field wired to 230V/1Ph/50 Hz

Dimensions—Steel Receiver Condensate Pumps

Receiver Size Gallons	Receiver Size (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (in)	K (in)	L (in)	Drain (in)
7-1/2	12-1/4 x 12-1/4 x 12-1/4	2	1-1/4	1-1/4	10-1/8	1-3/4	9-15/16	4-3/4	10-5/8	7-1/4	23-1/8	20	1/2
15	16 x 16 x 13	2	1-1/4	1-1/4	10-7/8	1-3/4	10-11/16	4-3/4	11-3/8	7-1/4	26-7/8	24	1/2
21	18-1/4 x 18-1/4 x 15-1/4	2	1-1/4	1-1/4	13-3/8	1-3/4	13-3/16	4-3/4	13-7/8	7-1/4	20-1/8	26	1/2
35	20-1/4 x 20-1/4 x 20-1/4	3	1-1/2	1-1/2	17-1/2	2-7/8	17	7-1/8	18	10-1/8	31-1/8	28	1/2

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.