Brief Description

Application

Plate and frame heat exchangers consist of a series of high efficiency gasketed embossed plates, arranged alternately and bolted together between end frames, separating cold fluid from hot fluid.

All plate and frame heat exchangers come standard with:

- High efficiency removable and fully cleanable 304 stainless steel gasketed plates
- Heavy-duty epoxy coated frame
- Upright, compact, and a small footprint
- Low pressure drop plate design
- Self-cleaning turbulent flow velocity profile design

Plate & Frame Heat Exchanger Closed Loop System

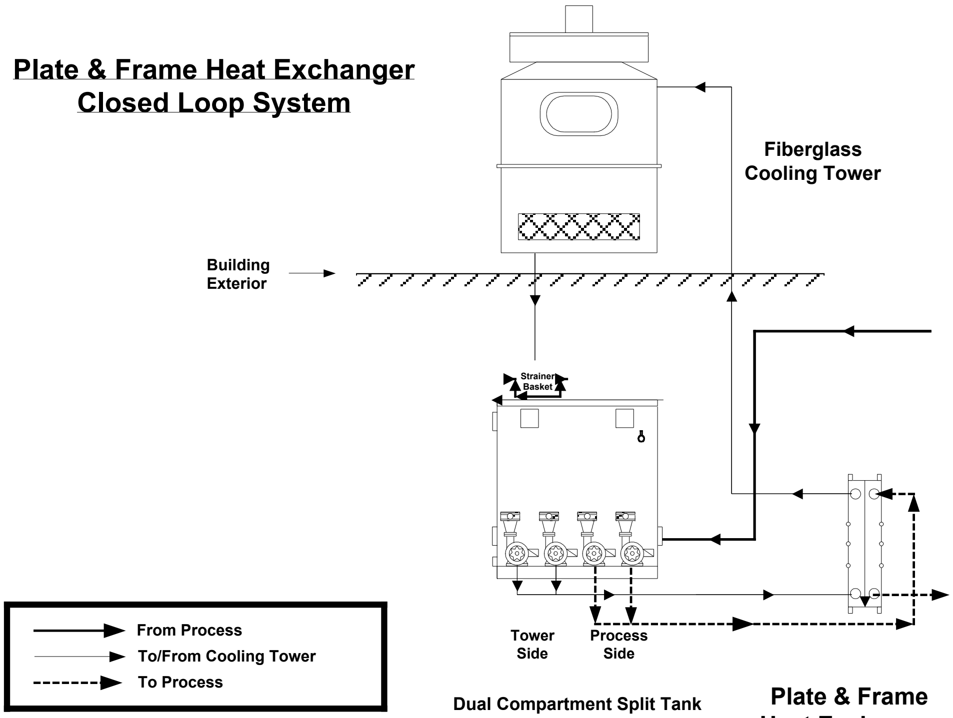
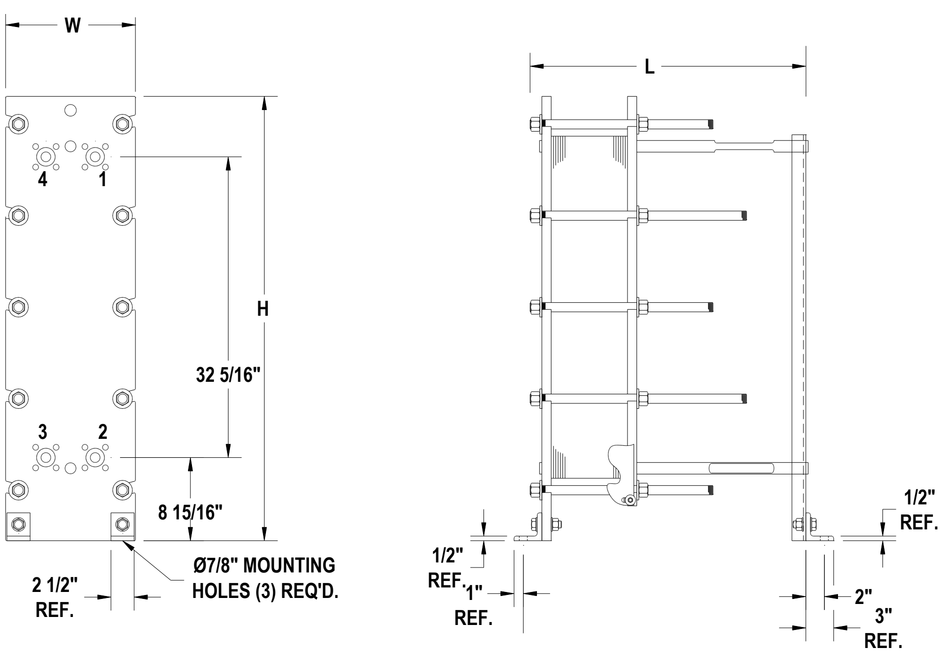
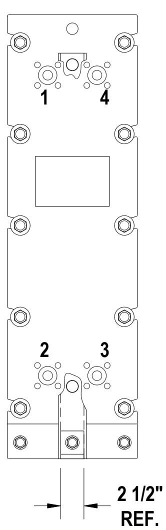


Plate & Frame Heat Exchanger Side View





Specifications

✓ ***denotes availability***

3F Approach • *Process side 98ºF to 88ºF (*37ºC to 31ºC*), tower side 85ºF to 95ºF (*29ºC to 35ºC*)*

Note: Consult factory for other conditions. Flow rate in gpm (*lpm*) for hot **and** cold side fluids **= tons (*Kcal/hr*) x 3**

Model no.	Tower *capacity* tons	*Kcal/hr*	Shroud option availability	Connection size Inches ①	Plate quantity supplied	maximum	Dimensions inches L	W	H	*cm* L	W	H	Weight lbs.	Kg
PF-010-3	10	*37,800*	✓	2	21	43	29	14	48	*74*	*36*	*122*	516	*233*
PF-015-3	15	*56,700*	✓	2	31	43	29	14	48	*74*	*36*	*122*	538	*245*
PF-020-3	20	*75,600*	✓	2	39	43	32	14	48	*81*	*36*	*122*	555	*252*
PF-025-3	25	*94,500*	✓	2	49	65	39	14	48	*99*	*36*	*122*	604	*275*
PF-030-3	30	*113,400*	✓	2	59	65	39	14	48	*99*	*36*	*122*	626	*285*
PF-040-3	40	*151,200*	✓	2	77	110	50	14	48	*127*	*36*	*122*	672	*306*
PF-050-3	50	*189,000*	✓	2	97	110	50	14	48	*127*	*36*	*122*	716	*326*
PF-060-3	60	*226,800*	✓	4	54	97	44	22	62	*112*	*56*	*157*	1,526	*693*
PF-075-3	75	*283,500*	✓	4	67	97	44	22	62	*112*	*56*	*157*	1,589	*722*
PF-100-3	100	*378,000*	✓	4	89	97	44	22	62	*112*	*56*	*157*	1,695	*769*
PF-125-3	125	*472,500*	✓	6	60	109	58	30	85	*147*	*76*	*216*	3,718	*1,688*
PF-150-3	150	*567,000*	✓	6	71	109	58	30	85	*147*	*76*	*216*	3,824	*1,737*
PF-175-3	175	*661,500*	✓	6	82	109	58	30	85	*147*	*76*	*216*	3,929	*1,784*
PF-200-3	200	*756,000*	✓	6	93	109	58	30	85	*147*	*76*	*216*	4,035	*1,832*
PF-250-3	250	*945,000*	✓	6	137	155	64	25	72	*163*	*64*	*183*	2,764	*1,255*
PF-300-3	300	*1,134,000*	✓	6	163	251	88	25	72	*224*	*64*	*183*	2,997	*1,361*
PF-400-3	400	*1,512,000*	✓	6	221	251	88	25	72	*224*	*64*	*183*	3,323	*1,509*
PF-500-3	500	*1,890,000*	✓	6	281	346	112	25	72	*284*	*64*	*183*	4,157	*1,888*
PF-600-3	600	*2,268,000*	✓	8	201	219	93	35	92	*236*	*89*	*234*	6,638	*3,014*

① To convert to *mm*, multiply by **25.4**. ***Customer is responsible to convert to metric.***

5F Approach • *Process side 100ºF to 90ºF (*38ºC to 32ºC*), tower side 85ºF to 95ºF (*29ºC to 35ºC*)*

Note: Consult factory for other conditions. Flow rate in gpm (*lpm*) for hot **and** cold side fluids **= tons (*Kcal/hr*) x 3**

Model no.	Tower *capacity* tons	*Kcal/hr*	Shroud option availability	Connection size Inches ①	Plate quantity supplied	maximum	Dimensions inches L	W	H	*cm* L	W	H	Weight lbs.	Kg
PF-010-5	10	*37,800*	✓	2	15	49	29	14	39	*74*	*36*	*99*	415	*189*
PF-015-5	15	*56,700*	✓	2	21	49	29	14	39	*74*	*36*	*99*	425	*193*
PF-020-5	20	*75,600*	✓	2	49	49	29	14	39	*74*	*36*	*99*	425	*193*
PF-025-5	25	*94,500*	✓	2	49	49	29	14	39	*74*	*36*	*99*	449	*204*
PF-030-5	30	*113,400*	✓	2	41	49	29	14	39	*74*	*36*	*99*	459	*209*
PF-040-5	40	*151,200*	✓	2	53	71	36	14	39	*91*	*36*	*99*	501	*228*
PF-050-5	50	*189,000*	✓	2	67	71	36	14	39	*91*	*36*	*99*	524	*238*
PF-060-5	60	*226,800*	✓	4	55	65	36	14	48	*91*	*36*	*122*	617	*281*
PF-075-5	75	*283,500*	✓	4	43	49	31	21	54	*79*	*53*	*137*	1,135	*516*
PF-100-5	100	*378,000*	✓	4	57	62	39	21	54	*99*	*53*	*137*	1,216	*553*
PF-125-5	125	*472,500*	✓	6	67	97	44	22	62	*112*	*56*	*157*	1,589	*722*
PF-150-5	150	*567,000*	✓	6	87	154	63	21	54	*160*	*53*	*137*	1,383	*628*
PF-175-5	175	*661,500*	✓	6	95	145	44	22	62	*112*	*56*	*157*	1,724	*783*
PF-200-5	200	*756,000*	✓	6	119	154	63	21	54	*160*	*53*	*137*	1,478	*672*
PF-250-5	250	*945,000*	✓	6	149	175	63	21	54	*160*	*53*	*137*	1,567	*712*
PF-300-5	300	*1,134,000*	✓	6	89	155	64	25	72	*163*	*64*	*183*	2,494	*1,133*
PF-400-5	400	*1,512,000*	✓	6	123	155	64	25	72	*163*	*64*	*183*	2,685	*1,219*
PF-500-5	500	*1,890,000*	✓	6	163	251	88	25	72	*224*	*64*	*183*	2,997	*1,361*
PF-600-5	600	*2,268,000*	✓	8	211	251	88	25	72	*224*	*64*	*183*	3,267	*1,484*

① To convert to *mm*, multiply by **25.4**. ***Customer is responsible to convert to metric.***

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Brief Description

Colortronic's Variable Speed Systems control either water pressure, by varying the speed of a pump; or cooling tower water temperature, by varying the speed of a tower fan.

The basic system consists of three components:

- pressure or temperature transmitter
- speed controller
- single variable frequency drive; wall-mount, NEMA 1

An operator enters the pressure or temperature he wants to maintain into the controller. While in operation, the controller monitors the actual pressure or temperature by using a 4-20 ma signal from the transmitter. After comparing the actual condition with the set point, the controller sends a PID-controlled speed signal to the variable frequency drive, telling it to speed up or slow down. The controller does not start and stop the drive, but only tells it how fast to go.

Colortronic variable frequency drive features Hand, Off, and Automatic keys, allowing an operator to set the speed manually, or allow the controller to adjust the speed automatically. Drives are UL, CUL listed and can display motor current, running hours, hp, kW, and other parameters for a total of 25 selections. Each drive comes with manufacturer's startup and an 18-month warranty.

Application Uses

1. Improved process control and machine operation by maintaining tight cooling water supply pressure and tower water temperature.
2. Reduced operating costs by running motors only at the horsepower required. Match electrical input to the cooling system demand.
3. Built in soft start minimizes inrush current to the motor and the mechanical shock of across-the-line hard starts.
4. Eliminates the constant starting and stopping of tower fan motors while providing better temperature control. Instead of the constant hammering of starting and stopping the variable frequency drive puts the motor to sleep until the demand rises.
5. Eliminate water hammer by slowly increasing and decreasing pump speed as demands fluctuate.
6. Controlled shutdown on loss of plant power. Motors will slow to a stop until the drive DC bus has discharged. Upon the return of plant power a controlled acceleration brings the motors back up to speed.
7. Monitor motor performance. Data such as motor current, power (kW or hp), energy (kWh), running hours, and more can be read from the variable frequency drive or sent to a data collection center.
8. Utilize the amount of output required to reduce energy usage and extended life of pumps. Benefit from energy conservation programs which may be offered by local utilities.

Dimensions and Specifications

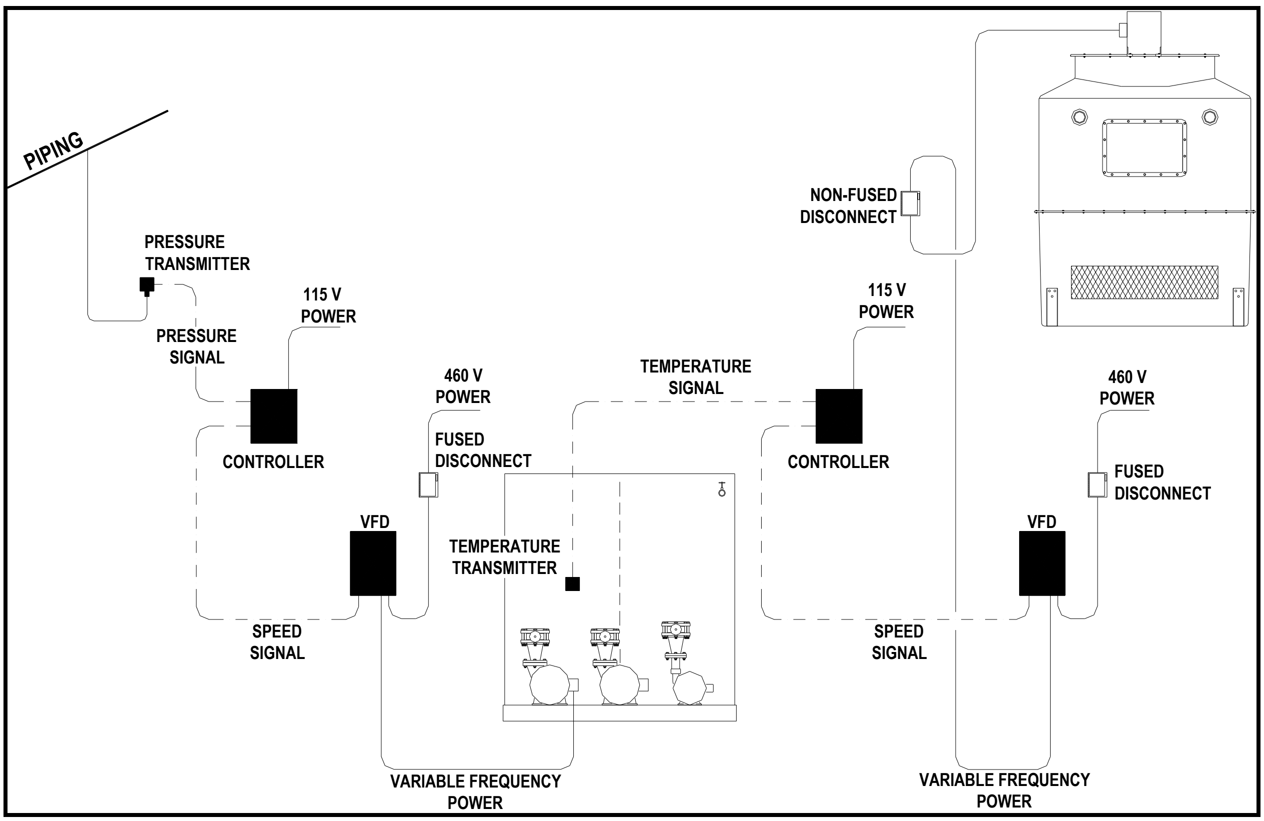
✓ ***denotes availability***

Model number		**hp — 460/3/60 voltage ①**											
		□ 3 hp	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**75**
Variable frequency drives with NEMA 1 enclosure		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dimensions and Specifications													
NEMA 1 dimensions in inches (less disconnect)	Height	15.55”				22.05”			27.56”		31.50”		37.56”
	Width	8.66”				9.53”					12.13”		14.57”
	Depth	6.30”	7.87”			10.24”					11.65”		13.19”
Weight in lbs.		18	23			51			66		106		267

① Contact factory for voltages other than 460/3/60.

Features:

- Disconnect and fuses
- 4-20 ma Transmitters
    - Pressure transmitter
    - Temperature transmitter
- 0-10 VDC Variable speed controllers
    - Variable speed pressure controller
    - Variable speed temperature controller
- Electrical enclosure to house speed controller and other accesseories (not needed if NEMA panel is purchased with pump tank)



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