



Direct Drive Fluid Coolers

Technical Guide

FN Models



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Nomenclature

F	N	H	S	04	H	2	03
Model	Vintage	Motor	Width	Fans	Tube Diameter	Number of Rows	Coil Slab
F = Fluid Cooler		H = 1140 RPM 1.5 HP	S = Single	01 - 12 Fans	H = 1/2"		
		L = 830 RPM 1.5 HP	D = Double		F = 5/8"		
		Q = 540 RPM 0.5 HP					
		E = VSEC Motor					

Overview

Our engineers have carefully selected and matched components on the FN fluid coolers to provide excellent performance, long service life and a wide range of performance selections. The FN fluid coolers are specifically engineered for outdoor installations.

FN fluid coolers are available in a wide range of sizes. In addition, the FN series feature multiple motor options to provide reduced sound and energy consumption options. Each model is available with several circuit options to ensure the exact fluid cooler for your requirements. FN fluid coolers are designed to reduce the installation and maintenance costs. Each unit is completely assembled and tested at the factory.

FNH, FNL and FNQ Standard Features

- Larkin fluid coils incorporate the latest advancements in coil technology to provide maximum capacity.
- Coils available in 1/2" for high heat transfer or 5/8" tube diameters for low pressure drop applications (see model availability).
- All FN models feature design elements to help eliminate leaks at the tube sheet. All 1/2" models incorporate the Floating Tube coil design.
- All 5/8" models incorporate bushing plates allowing for coil expansion and contraction. Coils feature a 5 yr. warranty against fluid leaks caused by tube contact at end and center coil support sheets.
- Coils are fabricated with corrugated aluminum fins (10 FPI) with staggered copper tubes for optimum heat transfer. All coils are pressure tested prior to shipment.
- Galvanized steel housing for corrosion protection.
- Fully baffled fan sections provide structural strength and prevent fan wind milling in the off cycle.
- Direct drive motors in 1140 (FNH), 830 (FNL) or 540 RPM (FNQ).
- Energy efficient, three phase fan motors with ball bearings and internal overload protection.



ServiceEase™ Motor Mount System



Larkin's Patented QuietEdge™ Fan Blade for Improved Sound Performance

FNH, FNL and FNQ Standard Features (cont.)

- Patented (#7,210,661) ServiceEase motor mount feature allows for ease of motor service and reduces likelihood of damage to the coils during service.
- Statically and dynamically balanced fan blades are aluminum and riveted to coated steel spider and hubs.
- FNL and FNQ series units feature the patented QuietEdge fan blade providing an unprecedented reduction in sound levels.
- Powder coated fan guards for optimum corrosion protection.
- Weatherproof control panel with factory mounted door interrupt disconnect switch.
- UL and UL listed for Canada.
- 2 year warranty on unit.

FNH, FNL and FNQ Available Options

- Alternate coil construction including ProKote™ coated fins, copper fins and epoxy or phenolic coated coils
- Aluminum or painted galvanized steel housing
- Optional coil fin spacing of 8, 12 or 14 FPI
- High temperature motors suitable for 185°F air temperature (FNH series only)
- Totally enclosed fan motors (FNH series only)
- Hinged fan panels for ease of servicing and cleaning
- Side access panels for ease of servicing and cleaning
- Extended condenser legs for increased ground clearance (30", 36" and 42")
- Fused disconnect switch (available for units with a MOPD below 60 A)
- Fan cycling control panel (cycles all fans based on leaving water temperature)
- Motor Contactors [Individual or Paired (double row units only)]
- Motor Fuses [Individual or Paired (double row units only)]
- Motor Circuit Breakers [Individual or Paired (double row units only)]
- Motor Terminal Boards [Individual or Paired (double row units only)]
- Fan control switches
- 24V and 115V control circuits
- Factory mounted and wired control transformer
- Sealtite® wiring from motors to electrical box
- Threaded connections (MPT)
- Flange connections
- Connection manifold (Shipped loose – not available with threaded or flanged connections)
- Unit frame

FNE Standard Features

- VSEC motor, swept fan blade and venturi incorporating integrated variable speed technology. Motor includes inherent locked rotor, under voltage and phase loss protection.
- 3 yr. warranty on motor.
- Larkin fluid coils incorporate the latest advancements in coil technology to provide maximum capacity.
- Coils available in 1/2" for high heat transfer or 5/8" tube diameters for low pressure drop applications (see model availability).
- All FN models feature design elements to help eliminate leaks at the tube sheet. All 1/2" models incorporate the Floating Tube coil design. All 5/8" models incorporate bushing plates allowing for coil expansion and contraction. Coils feature a 5 yr. warranty against fluid leaks caused by tube contact at end and center coil support sheets.
- Coils are fabricated with corrugated aluminum fins (10 FPI) with staggered copper tubes for optimum heat transfer. All coils are pressure tested prior to shipment.
- Aluminum housing for corrosion protection.
- Side access panels for ease of servicing and cleaning.
- Fully baffled fan sections provide structural strength and prevent fan wind milling in the off cycle.
- Weatherproof control panel with factory mounted door interrupt disconnect switch.
- UL and UL listed for Canada.
- 2 year warranty on unit.

FNE Available Options

- Alternate coil construction including ProKote™ coated fins, copper fins and epoxy or phenolic coated coils
- Galvanized or painted galvanized steel housing with access panels
- Optional coil fin spacing of 8, 12 or 14 FPI
- Extended condenser legs for increased ground clearance (30", 36" and 42")
- Fused disconnect switch (available for units with a MOPD below 60 A)
- Fan cycling control panel (based on leaving water temperature)
- Motor Fuses [Individual or Paired (double row units only)]
- Motor Circuit Breakers [Individual or Paired (double row units only)]
- Motor Terminal Boards [Individual or Paired (double row units only)]
- Threaded connections (MPT)
- Flange connections
- Connection manifold (Shipped loose – not available with threaded or flanged connections)
- Unit frame

SPECIFICATIONS

Table 1. Model FNH Specifications 1140 RPM, 1.5 HP, 30" Fan Diameter

	Model	Fan Data			208-230/3/60			460/3/60			575/3/60			Unit KW	Operating Charge (Gal.)	Approx. Net Weight (lbs.)
		Fan Config.	No. of Fans	CFM	FLA	MCA	MOPD	FLA	MCA	MOPD	FLA	MCA	MOPD			
1/2" Diameter Tube																
Single Row Fan Models	FNH-S01-H301	1 x 1	1	9,650	7.0	15.0	25	3.5	15.0	15	2.8	15.0	15	1.9	4.8	345
	FNH-S01-H402	1 x 1	1	9,250	7.0	15.0	25	3.5	15.0	15	2.8	15.0	15	1.9	6.4	380
	FNH-S02-H203	1 x 2	2	19,980	14.0	20.0	35	7.0	15.0	15	5.6	15.0	15	3.8	6.3	610
	FNH-S02-H304	1 x 2	2	19,300	14.0	20.0	35	7.0	15.0	15	5.6	15.0	15	3.8	9.4	650
	FNH-S02-H405	1 x 2	2	18,500	14.0	20.0	35	7.0	15.0	15	5.6	15.0	15	3.8	12.6	710
	FNH-S03-H306	1 x 3	3	28,950	21.0	22.8	40	10.5	15.0	20	8.4	15.0	15	5.8	14.0	960
	FNH-S03-H407	1 x 3	3	27,750	21.0	22.8	40	10.5	15.0	20	8.4	15.0	15	5.8	18.7	1045
	FNH-S04-H308	1 x 4	4	38,600	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	18.7	1265
	FNH-S04-H409	1 x 4	4	37,000	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	24.9	1365
	FNH-S05-H310	1 x 5	5	48,250	35.0	36.8	50	17.5	20.0	25	14.0	15.0	20	9.6	23.3	1585
Double Row Fan Models	FNH-S05-H411	1 x 5	5	46,250	35.0	36.8	50	17.5	20.0	25	14.0	15.0	20	9.6	31.0	1710
	FNH-D04-H212	2 x 2	4	39,960	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	12.6	1280
	FNH-D04-H313	2 x 2	4	38,600	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	18.8	1395
	FNH-D04-H414	2 x 2	4	37,000	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	25.1	1515
	FNH-D06-H315	2 x 3	6	57,900	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	28.1	2075
	FNH-D06-H416	2 x 3	6	55,500	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	37.4	2250
	FNH-D08-H317	2 x 4	8	77,200	56.0	57.8	70	28.0	28.9	35	22.4	23.1	30	15.4	37.3	2740
	FNH-D08-H418	2 x 4	8	74,000	56.0	57.8	70	28.0	28.9	35	22.4	23.1	30	15.4	49.8	2975
	FNH-D10-H319	2 x 5	10	96,500	70.0	71.8	90	35.0	35.9	45	28.0	28.7	35	19.2	46.6	3425
	FNH-D10-H420	2 x 5	10	92,500	70.0	71.8	90	35.0	35.9	45	28.0	28.7	35	19.2	62.0	3730
5/8" Diameter Tube																
Single Row Fan Models	FNH-S03-F301	1 x 3	3	28,950	21.0	22.8	40	10.5	15.0	20	8.4	15.0	15	5.8	22.2	1020
	FNH-S03-F402	1 x 3	3	27,750	21.0	22.8	40	10.5	15.0	20	8.4	15.0	15	5.8	29.5	1125
	FNH-S04-F303	1 x 4	4	38,600	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	29.4	1355
	FNH-S04-F404	1 x 4	4	37,000	28.0	29.8	45	14.0	15.0	20	11.2	15.0	15	7.7	39.3	1480
	FNH-S05-F305	1 x 5	5	48,250	35.0	36.8	50	17.5	20.0	25	14.0	15.0	20	9.6	36.7	1690
	FNH-S05-F406	1 x 5	5	46,250	35.0	36.8	50	17.5	20.0	25	14.0	15.0	20	9.6	49.0	1855
	FNH-S06-F307	1 x 6	6	57,900	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	44.0	2010
	FNH-S06-F408	1 x 6	6	55,500	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	58.7	2230
Double Row Fan Models	FNH-D06-F311	2 x 3	6	57,900	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	44.4	2200
	FNH-D06-F412	2 x 3	6	55,500	42.0	43.8	60	21.0	21.9	30	16.8	20.0	25	11.5	59.0	2420
	FNH-D08-F313	2 x 4	8	77,200	56.0	57.8	70	28.0	28.9	35	22.4	23.1	30	15.4	58.8	2915
	FNH-D08-F414	2 x 4	8	74,000	56.0	57.8	70	28.0	28.9	35	22.4	23.1	30	15.4	78.6	3210
	FNH-D10-F315	2 x 5	10	96,500	70.0	71.8	90	35.0	35.9	45	28.0	28.7	35	19.2	73.4	3645
	FNH-D10-F416	2 x 5	10	92,500	70.0	71.8	90	35.0	35.9	45	28.0	28.7	35	19.2	98.0	4020
	FNH-D12-F317	2 x 6	12	115,800	84.0	85.8	100	42.0	42.9	50	33.6	34.3	40	23.1	88.0	4360
	FNH-D12-F418	2 x 6	12	111,000	84.0	85.8	100	42.0	42.9	50	33.6	34.3	40	23.1	117.4	4790

SPECIFICATIONS

Table 2. Model FNL Specifications 830 RPM, 1.5 HP, 30" Fan Diameter

Model	Fan Data			208-230/3/60			460/3/60			575/3/60			Unit KW	Operating Charge (Gal.)	Approx. Net Weight (lbs.)	
	Fan Config.	No. of Fans	CFM	FLA	MCA	MOPD	FLA	MCA	MOPD	FLA	MCA	MOPD				
1/2" Diameter Tube																
Single Row Fan Models	FNL-S01-H321	1 x 1	1	8,200	6.6	15.0	25	3.3	15.0	15	2.6	15.0	15	1.4	4.8	345
	FNL-S01-H422	1 x 1	1	7,800	6.6	15.0	25	3.3	15.0	15	2.6	15.0	15	1.4	6.4	380
	FNL-S02-H223	1 x 2	2	17,200	13.2	15.0	30	6.6	15.0	15	5.2	15.0	15	2.7	6.3	610
	FNL-S02-H324	1 x 2	2	16,400	13.2	15.0	30	6.6	15.0	15	5.2	15.0	15	2.7	9.4	650
	FNL-S02-H425	1 x 2	2	15,600	13.2	15.0	30	6.6	15.0	15	5.2	15.0	15	2.7	12.6	710
	FNL-S03-H326	1 x 3	3	24,600	19.8	21.5	35	9.9	15.0	15	7.8	15.0	15	4.1	14.0	960
	FNL-S03-H427	1 x 3	3	23,400	19.8	21.5	35	9.9	15.0	15	7.8	15.0	15	4.1	18.7	1045
	FNL-S04-H328	1 x 4	4	32,800	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	18.7	1265
	FNL-S04-H429	1 x 4	4	31,200	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	24.9	1365
	FNL-S05-H330	1 x 5	5	41,000	33.0	34.7	50	16.5	20.0	25	13.0	15.0	20	6.8	23.3	1585
Double Row Fan Models	FNL-S05-H431	1 x 5	5	39,000	33.0	34.7	50	16.5	20.0	25	13.0	15.0	20	6.8	31.0	1710
	FNL-D04-H232	2 x 2	4	34,400	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	12.6	1280
	FNL-D04-H333	2 x 2	4	32,800	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	18.8	1395
	FNL-D04-H434	2 x 2	4	31,200	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	25.1	1515
	FNL-D06-H335	2 x 3	6	49,200	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.1	28.1	2075
	FNL-D06-H436	2 x 3	6	46,800	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.1	37.4	2250
	FNL-D08-H337	2 x 4	8	65,600	52.8	54.5	70	26.4	27.2	35	20.8	21.5	25	10.8	37.3	2740
	FNL-D08-H438	2 x 4	8	62,400	52.8	54.5	70	26.4	27.2	35	20.8	21.5	25	10.8	49.8	2975
	FNL-D10-H339	2 x 5	10	82,000	66.0	67.7	80	33.0	33.8	40	26.0	26.7	30	13.5	46.6	3425
	FNL-D10-H440	2 x 5	10	78,000	66.0	67.7	80	33.0	33.8	40	26.0	26.7	30	13.5	62.0	3730
5/8" Diameter Tube																
Single Row Fan Models	FNL-S03-F321	1 x 3	3	24,600	19.8	21.5	35	9.9	15.0	15	7.8	15.0	15	4.1	22.2	1020
	FNL-S03-F422	1 x 3	3	23,400	19.8	21.5	35	9.9	15.0	15	7.8	15.0	15	4.1	29.5	1125
	FNL-S04-F323	1 x 4	4	32,800	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	29.4	1355
	FNL-S04-F424	1 x 4	4	31,200	26.4	28.1	45	13.2	15.0	20	10.4	15.0	15	5.4	39.3	1480
	FNL-S05-F325	1 x 5	5	41,000	33.0	34.7	50	16.5	20.0	25	13.0	15.0	20	6.8	36.7	1690
	FNL-S05-F426	1 x 5	5	39,000	33.0	34.7	50	16.5	20.0	25	13.0	15.0	20	6.8	49.0	1855
	FNL-S06-F327	1 x 6	6	49,200	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.2	44.0	2010
	FNL-S06-F428	1 x 6	6	46,800	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.2	58.7	2230
Double Row Fan Models	FNL-D06-F331	2 x 3	6	49,200	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.1	44.4	2200
	FNL-D06-F432	2 x 3	6	46,800	39.6	41.3	50	19.8	20.6	25	15.6	20.0	20	8.1	59.0	2420
	FNL-D08-F333	2 x 4	8	65,600	52.8	54.5	70	26.4	27.2	35	20.8	21.5	25	10.8	58.8	2915
	FNL-D08-F434	2 x 4	8	62,400	52.8	54.5	70	26.4	27.2	35	20.8	21.5	25	10.8	78.6	3210
	FNL-D10-F335	2 x 5	10	82,000	66.0	67.7	80	33.0	33.8	40	26.0	26.7	30	13.5	73.4	3645
	FNL-D10-F436	2 x 5	10	78,000	66.0	67.7	80	33.0	33.8	40	26.0	26.7	30	13.5	98.0	4020
	FNL-D12-F337	2 x 6	12	98,400	79.2	80.9	90	39.6	40.4	45	31.2	31.9	35	16.2	88.0	4360
	FNL-D12-F438	2 x 6	12	93,600	79.2	80.9	90	39.6	40.4	45	31.2	31.9	35	16.2	117.4	4790

SPECIFICATIONS

Table 3. Model FNQ Specifications 540 RPM, 0.5 HP, 30" Fan Diameter

	Model	Fan Data			208-230/3/60			460/3/60			Unit KW	Operating Charge (Gal.)	Approx. Net Weight (lbs.)
		Fan Config.	No. of Fans	CFM	FLA	MCA	MOPD	FLA	MCA	MOPD			
Single Row Fan Models	1/2" Diameter Tube												
	FNQ-S01-H341	1 x 1	1	5,375	3.5	15.0	15	1.8	15.0	15	0.4	4.8	345
	FNQ-S01-H442	1 x 1	1	5,200	3.5	15.0	15	1.8	15.0	15	0.4	6.4	380
	FNQ-S02-H243	1 x 2	2	11,150	7.0	15.0	15	3.6	15.0	15	0.9	6.3	610
	FNQ-S02-H344	1 x 2	2	10,750	7.0	15.0	15	3.6	15.0	15	0.9	9.4	650
	FNQ-S02-H445	1 x 2	2	10,400	7.0	15.0	15	3.6	15.0	15	0.9	12.6	710
	FNQ-S03-H346	1 x 3	3	16,125	10.5	15.0	20	5.4	15.0	15	1.3	14.0	960
	FNQ-S03-H447	1 x 3	3	15,600	10.5	15.0	20	5.4	15.0	15	1.3	18.7	1045
	FNQ-S04-H348	1 x 4	4	21,500	14.0	15.0	20	7.2	15.0	15	1.7	18.7	1265
	FNQ-S04-H449	1 x 4	4	20,800	14.0	15.0	20	7.2	15.0	15	1.7	24.9	1365
	FNQ-S05-H350	1 x 5	5	26,875	17.5	20.0	25	9.0	15.0	15	2.2	23.3	1585
Double Row Fan Models	FNQ-S05-H451	1 x 5	5	26,000	17.5	20.0	25	9.0	15.0	15	2.2	31.0	1710
	FNQ-D04-H252	2 x 2	4	22,300	14.0	15.0	20	7.2	15.0	15	1.7	12.6	1280
	FNQ-D04-H353	2 x 2	4	21,500	14.0	15.0	20	7.2	15.0	15	1.7	18.8	1395
	FNQ-D04-H454	2 x 2	4	20,800	14.0	15.0	20	7.2	15.0	15	1.7	25.1	1515
	FNQ-D06-H355	2 x 3	6	32,250	21.0	21.9	30	10.8	15.0	15	2.6	28.1	2075
	FNQ-D06-H456	2 x 3	6	31,200	21.0	21.9	30	10.8	15.0	15	2.6	37.4	2250
	FNQ-D08-H357	2 x 4	8	43,000	28.0	28.9	35	14.4	15.0	20	3.5	37.3	2740
	FNQ-D08-H458	2 x 4	8	41,600	28.0	28.9	35	14.4	15.0	20	3.5	49.8	2975
	FNQ-D10-H359	2 x 5	10	53,750	35.0	35.9	45	18.0	20.0	20	4.4	46.6	3425
Single Row Fan Models	FNQ-D10-H460	2 x 5	10	52,000	35.0	35.9	45	18.0	20.0	20	4.4	62.0	3730
	5/8" Diameter Tube												
	FNQ-S03-F341	1 x 3	3	16,125	10.5	15.0	20	5.4	15.0	15	1.3	22.2	1020
	FNQ-S03-F442	1 x 3	3	15,600	10.5	15.0	20	5.4	15.0	15	1.3	29.5	1125
	FNQ-S04-F343	1 x 4	4	21,500	14.0	15.0	20	7.2	15.0	15	1.7	29.4	1355
	FNQ-S04-F444	1 x 4	4	20,800	14.0	15.0	20	7.2	15.0	15	1.7	39.3	1480
	FNQ-S05-F345	1 x 5	5	26,875	17.5	20.0	25	9.0	15.0	15	2.2	36.7	1690
	FNQ-S05-F446	1 x 5	5	26,000	17.5	20.0	25	9.0	15.0	15	2.2	49.0	1855
	FNQ-S06-F347	1 x 6	6	32,250	21.0	21.9	30	10.8	15.0	15	2.6	44.0	2010
	FNQ-S06-F448	1 x 6	6	31,200	21.0	21.9	30	10.8	15.0	15	2.6	58.7	2230
Double Row Fan Models	FNQ-D06-F351	2 x 3	6	32,250	21.0	21.9	30	10.8	15.0	15	2.6	44.4	2200
	FNQ-D06-F452	2 x 3	6	31,200	21.0	21.9	30	10.8	15.0	15	2.6	59.0	2420
	FNQ-D08-F353	2 x 4	8	43,000	28.0	28.9	35	14.4	15.0	20	3.5	58.8	2915
	FNQ-D08-F454	2 x 4	8	41,600	28.0	28.9	35	14.4	15.0	20	3.5	78.6	3210
	FNQ-D10-F355	2 x 5	10	53,750	35.0	35.9	45	18.0	20.0	20	4.4	73.4	3645
	FNQ-D10-F456	2 x 5	10	52,000	35.0	35.9	45	18.0	20.0	20	4.4	98.0	4020
	FNQ-D12-F357	2 x 6	12	64,500	42.0	42.9	50	21.6	22.1	25	5.2	88.0	4360
	FNQ-D12-F458	2 x 6	12	62,400	42.0	42.9	50	21.6	22.1	25	5.2	117.4	4790

SPECIFICATIONS

Table 4. Model FNE Specifications 2.2 KW, 31.5" Fan Diameter

	Model	Fan Data			208-230/3/60			460/3/60			Unit KW	Operating Charge (Gal.)	Approx. Net Weight (lbs.)
		Fan Config.	No. of Fans	CFM	FLA	MCA	MOPD	FLA	MCA	MOPD			
Single Row Fan Models	1/2" Diameter Tube												
	FNE-S01-H361	1 x 1	1	10,650	7.0	15.0	25	3.5	15.0	15	2.0	4.8	345
	FNE-S01-H462	1 x 1	1	10,000	7.0	15.0	25	3.5	15.0	15	2.0	6.4	380
	FNE-S02-H263	1 x 2	2	22,650	14.0	20.0	35	7.0	15.0	15	4.0	6.3	620
	FNE-S02-H364	1 x 2	2	21,300	14.0	20.0	35	7.0	15.0	15	4.0	9.4	660
	FNE-S02-H465	1 x 2	2	20,000	14.0	20.0	35	7.0	15.0	15	4.0	12.6	720
	FNE-S03-H366	1 x 3	3	31,950	21.0	22.8	40	10.5	15.0	20	6.0	14.0	970
	FNE-S03-H467	1 x 3	3	30,000	21.0	22.8	40	10.5	15.0	20	6.0	18.7	1055
	FNE-S04-H368	1 x 4	4	42,600	28.0	29.8	45	14.0	15.0	20	8.0	18.7	1275
	FNE-S04-H469	1 x 4	4	40,000	28.0	29.8	45	14.0	15.0	20	8.0	24.9	1375
Double Row Fan Models	FNE-S05-H370	1 x 5	5	53,250	35.0	36.8	50	17.5	20.0	25	10.0	23.3	1595
	FNE-S05-H471	1 x 5	5	50,000	35.0	36.8	50	17.5	20.0	25	10.0	31.0	1720
	FNE-D04-H272	2 x 2	4	45,300	28.0	29.8	45	14.0	15.0	20	8.0	12.6	1330
	FNE-D04-H373	2 x 2	4	42,600	28.0	29.8	45	14.0	15.0	20	8.0	18.8	1445
	FNE-D04-H474	2 x 2	4	40,000	28.0	29.8	45	14.0	15.0	20	8.0	25.1	1565
	FNE-D06-H375	2 x 3	6	63,900	42.0	43.8	60	21.0	21.9	30	12.0	28.1	2145
	FNE-D06-H476	2 x 3	6	60,000	42.0	43.8	60	21.0	21.9	30	12.0	37.4	2320
	FNE-D08-H377	2 x 4	8	85,200	56.0	57.8	70	28.0	28.9	35	16.0	37.3	2840
	FNE-D08-H478	2 x 4	8	80,000	56.0	57.8	70	28.0	28.9	35	16.0	49.8	3075
	FNE-D10-H379	2 x 5	10	106,500	70.0	71.8	90	35.0	35.9	45	20.0	46.6	3545
FNE-D10-H480	2 x 5	10	100,000	70.0	71.8	90	35.0	35.9	45	20.0	62.0	3850	
Single Row Fan Models	5/8" Diameter Tube												
	FNE-S03-F361	1 x 3	3	31,950	21.0	22.8	40	10.5	15.0	20	6.0	22.2	1030
	FNE-S03-F462	1 x 3	3	30,000	21.0	22.8	40	10.5	15.0	20	6.0	29.5	1135
	FNE-S04-F363	1 x 4	4	42,600	28.0	29.8	45	14.0	15.0	20	8.0	29.4	1365
	FNE-S04-F464	1 x 4	4	40,000	28.0	29.8	45	14.0	15.0	20	8.0	39.3	1490
	FNE-S05-F365	1 x 5	5	53,250	35.0	36.8	50	17.5	20.0	25	10.0	36.7	1700
	FNE-S05-F466	1 x 5	5	50,000	35.0	36.8	50	17.5	20.0	25	10.0	49.0	1865
	FNE-S06-F367	1 x 6	6	63,900	42.0	43.8	60	21.0	21.9	30	12.0	44.0	2020
	FNE-S06-F468	1 x 6	6	60,000	42.0	43.8	60	21.0	21.9	30	12.0	58.7	2240
	Double Row Fan Models	FNE-D06-F371	2 x 3	6	63,900	42.0	43.8	60	21.0	21.9	30	12.0	44.4
FNE-D06-F472		2 x 3	6	60,000	42.0	43.8	60	21.0	21.9	30	12.0	59.0	2490
FNE-D08-F373		2 x 4	8	85,200	56.0	57.8	70	28.0	28.9	35	16.0	58.8	3015
FNE-D08-F474		2 x 4	8	80,000	56.0	57.8	70	28.0	28.9	35	16.0	78.6	3310
FNE-D10-F375		2 x 5	10	106,500	70.0	71.8	90	35.0	35.9	45	20.0	73.4	3765
FNE-D10-F476		2 x 5	10	100,000	70.0	71.8	90	35.0	35.9	45	20.0	98.0	4140
FNE-D12-F377		2 x 6	12	127,800	84.0	85.8	100	42.0	42.9	50	24.0	88.0	4500
FNE-D12-F478		2 x 6	12	120,000	84.0	85.8	100	42.0	42.9	50	24.0	117.4	4930

Diagram 3. Model FN Dimensions

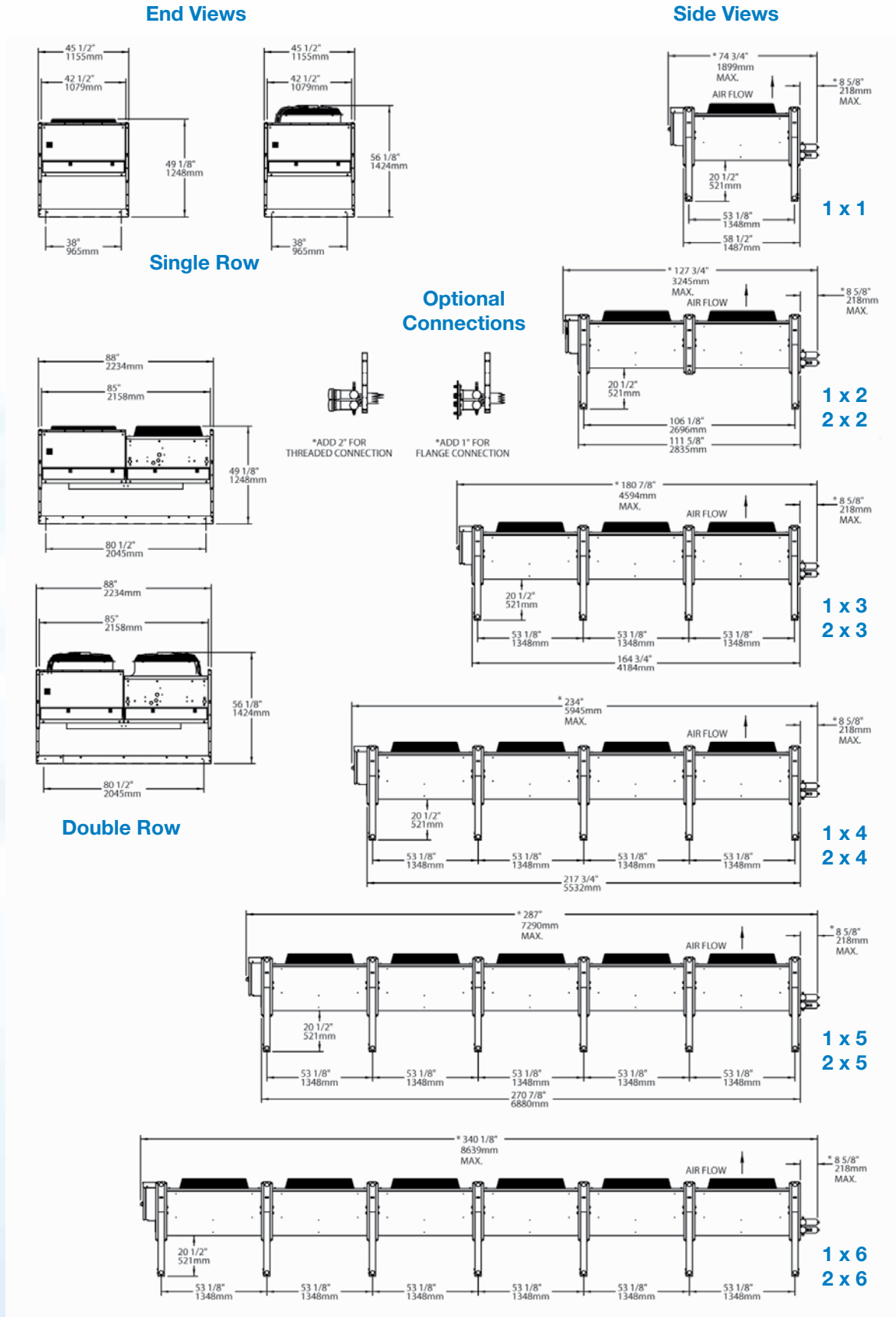
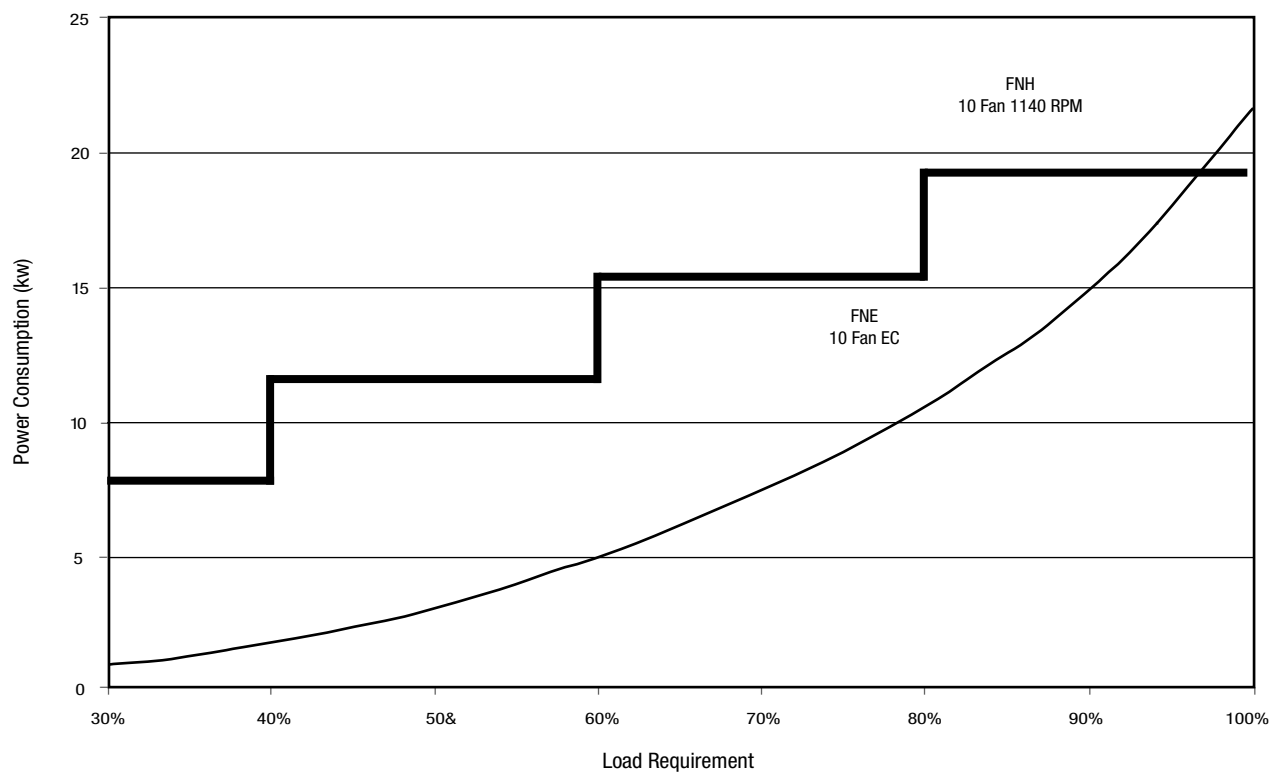


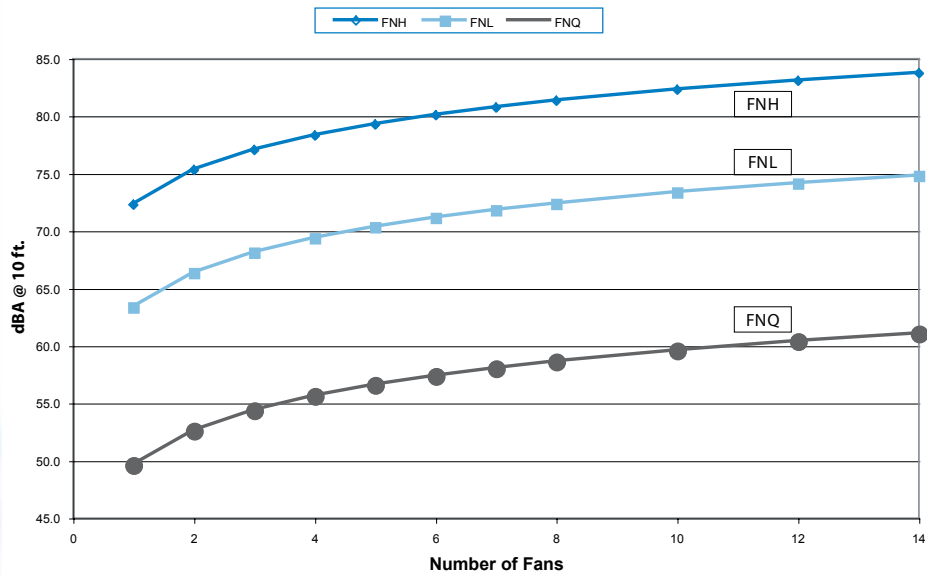
Table 5. Model FN Connection Sizes, based on number of feeds

Single Row Of Fans				Double Row Of Fans			
Feeds	Inlet/Outlet			Feeds	Inlet/Outlet		
	Sweat	Threaded	Flanged		Sweat	Threaded	Flanged
9	2-1/8"	2" MPT	2"	18	2-1/8" x 2	2" MPT x 2	2" x 2
14	2-1/8"	2" MPT	2"	28	2-1/8" x 2	2" MPT x 2	2" x 2
18	2-1/8"	2" MPT	2"	36	2-1/8" x 2	2" MPT x 2	2" x 2
21	2-5/8"	2-1/2" MPT	2-1/2"	42	2-5/8" x 2	2-1/2" MPT x 2	2-1/2" x 2
28	2-5/8"	2-1/2" MPT	2-1/2"	56	2-5/8" x 2	2-1/2" MPT x 2	2-1/2" x 2
42	3-1/8"	3" MPT	3"	84	3-1/8" x 2	3" MPT x 2	3" x 2
55	3-5/8"	---	---	110	3-5/8" x 2	---	---

Power Consumption & Variable Speed Operation FNE vs. FNH

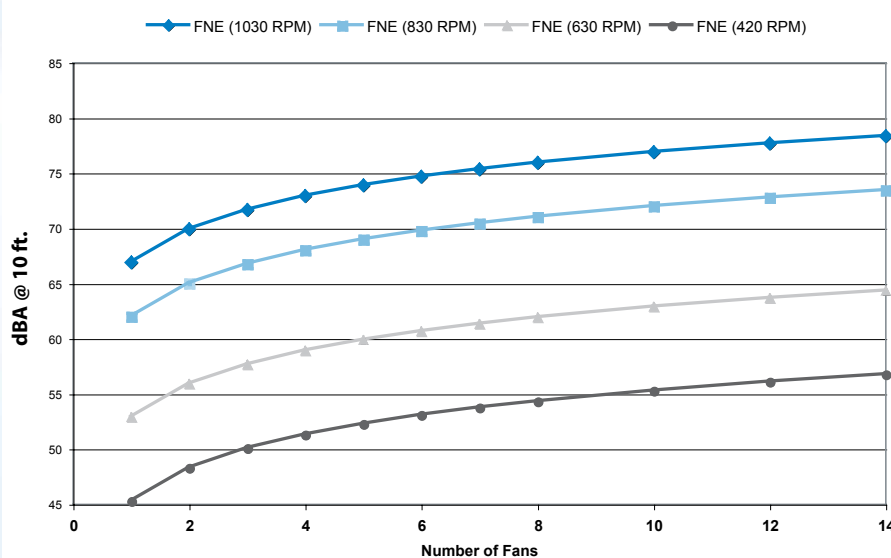


Unit Sound Data (dBA @ 10 ft.)



Fans	FNL	FNL	FNL
1	72.3	63.4	49.6
2	75.3	66.4	52.6
3	77.1	68.1	54.4
4	78.3	69.4	55.6
5	79.3	70.3	56.6
6	80.1	71.1	57.4
8	81.3	72.4	58.6
10	82.3	73.4	59.6
12	83.1	74.1	60.4

EC Sound Data (dBA @ 10 ft.)



Fans	FNE 1030 RPM	FNE 830 RPM	FNE 630 RPM	FNE 420 RPM
1	66.9	62.0	52.9	45.3
2	69.9	65.0	55.9	48.3
3	71.7	66.8	57.7	50.1
4	72.9	68.0	58.9	51.3
5	73.9	69.0	59.9	52.3
6	74.7	69.8	60.7	53.1
8	75.9	71.0	61.9	54.3
10	76.9	72.0	62.9	55.3
12	77.7	72.8	63.7	56.1

FNH, FNL and FNQ Series

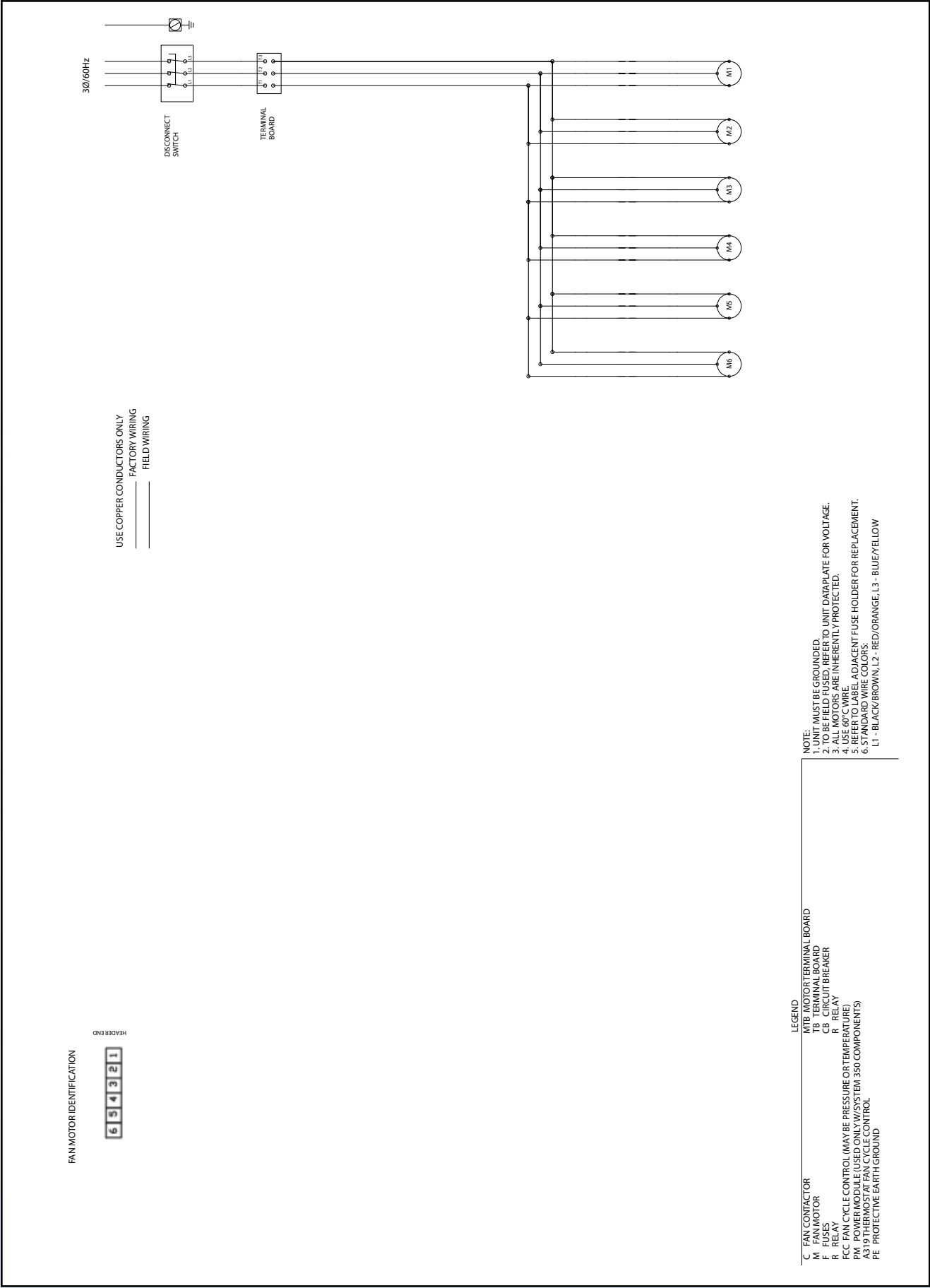
Optional fan cycling control panels are available to cycle fans on leaving fluid temperature.

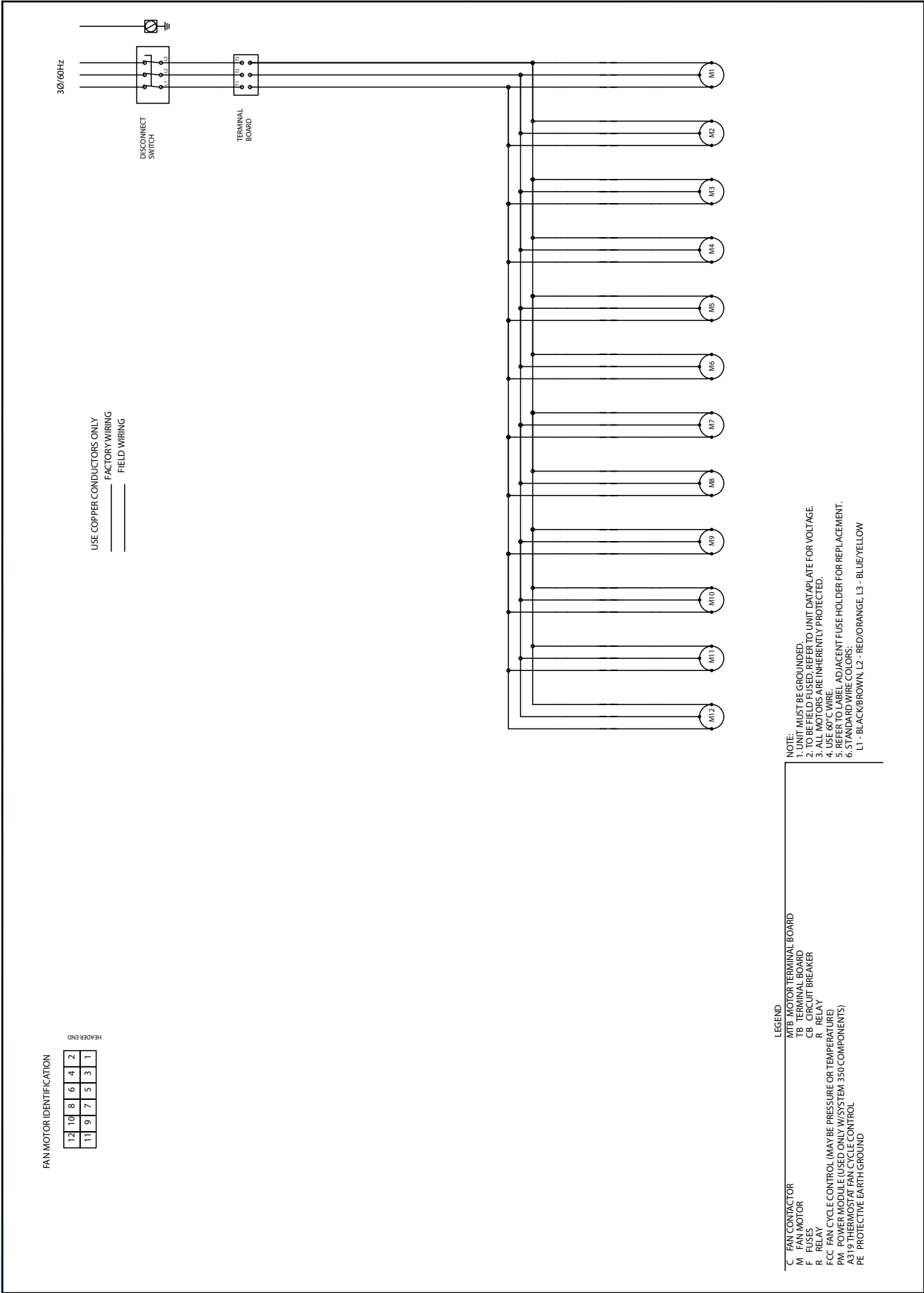
- All fans are cycled with contactors.
- Fluid Coolers with a single row of fans cycle fans separately. Control panel is supplied with one electronic thermostat and contactor per fan.
- Fluid Coolers with two rows of fans cycle fans in pairs. Control panels are available standard with one thermostat and contactor per pair of fans. Optionally, individual fan contactors can be provided instead of paired fan contactors.
- Standard control circuit is 240 volts. Control circuits with 24 or 115 volts are available on request.
- Standard control circuits require an external power supply for powering control circuit (by others).
Optional control circuit transformer is available factory mounted to provide power to the control circuit.
- Custom control panels are available. Please consult your sales representative or account engineer for assistance.

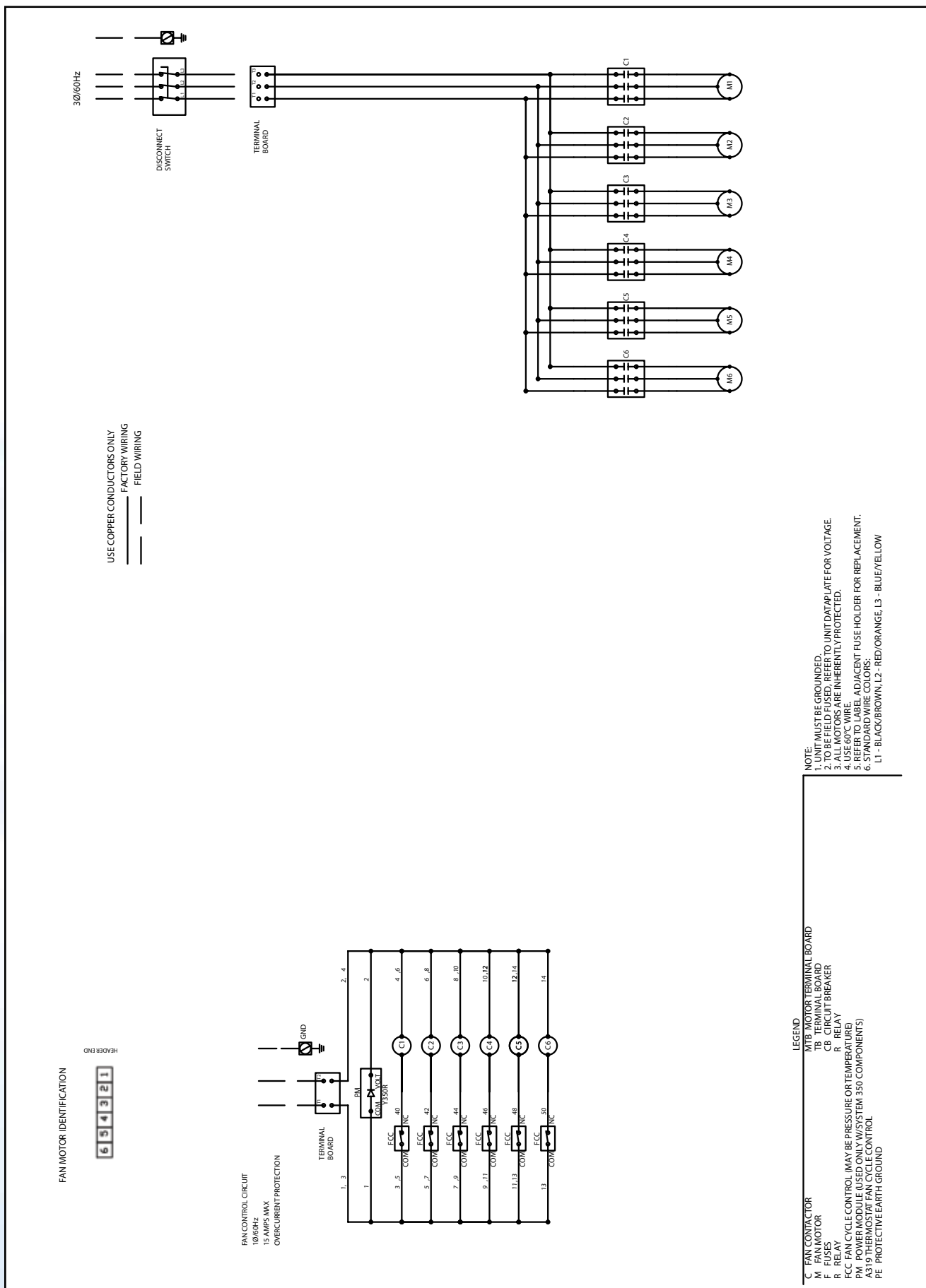
FNE Series

Fan speed control panels are available to vary the fan motor speed.

- Standard units require customer supplied signal for fan speed control. Standard control signal is 0 to 10V DC. Alternate control signal methods are available. Please consult your sales representative or account engineer for assistance.
- Optional fan speed control panel consisting of an electronic thermostat and speed controller is available to supply necessary control signal.
- Custom control panels are available. Please consult your sales representative or account engineer for assistance.



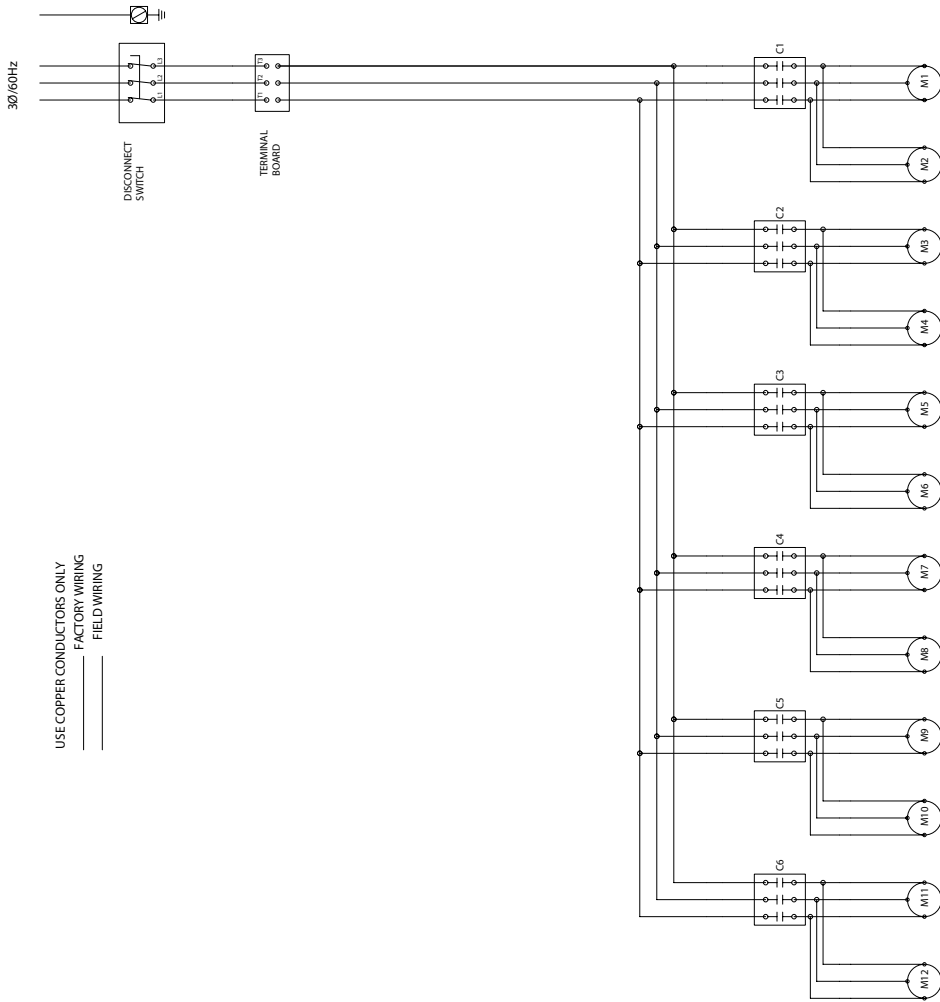
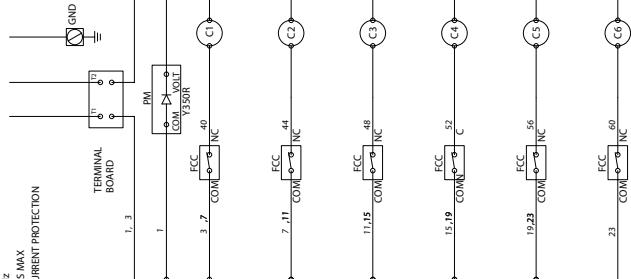




FAN MOTOR IDENTIFICATION

12	10	8	6	4	2
11	9	7	5	3	1

FAN CONTROL CIRCUIT
18/60HZ
15 AMPS MAX
OVERCURRENT PROTECTION



USE COPPER CONDUCTORS ONLY
FACTORY WIRING
FIELD WIRING

LEGEND
C FAN CONTACTOR
M FAN MOTOR
F FUSE
R RELAY
FCC FAN CYCLE CONTROL (MAY BE PRESSURE OR TEMPERATURE)
PM POWER MODULE (USED ONLY W/ SYSTEM 350 COMPONENTS)
A319 THERMOSTAT FAN CYCLE CONTROL
PE PROTECTIVE EARTH GROUND

NOTE:
1. UNIT MUST BE GROUNDED.
2. TO BE FIELD FUSED, REFER TO UNIT DATA PLATE FOR VOLTAGE.
3. ALL MOTORS ARE INHERENTLY PROTECTED.
4. USE 60°C WIRE.
5. REFER TO LABEL ADJACENT FUSE HOLDER FOR REPLACEMENT.
6. STANDARD WIRE COLORS:
L1 - BLACK/BROWN, L2 - RED/ORANGE, L3 - BLUE/YELLOW

FAN MOTOR IDENTIFICATION

12	10	8	6	4	2
11	9	7	5	3	1

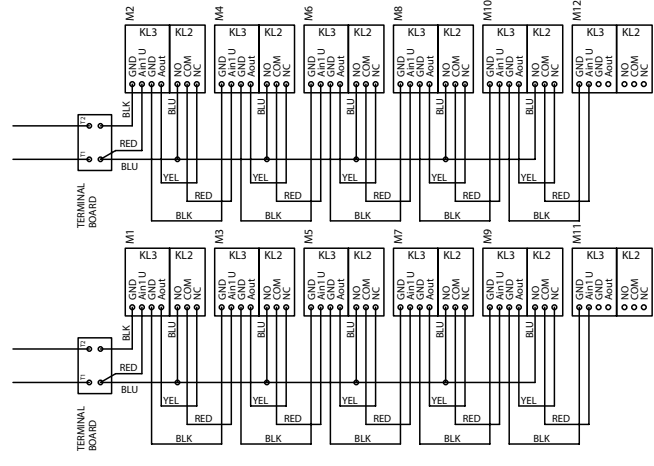
FAN MOTOR SCHEDULE

MOTOR	ACTION	ADDRESS	MOTOR	ACTION	ADDRESS
1	DIRECT	G1, F1	2	DIRECT	G1, F1
3	DIRECT	G1, F1	4	DIRECT	G1, F1
5	DIRECT	G1, F1	6	DIRECT	G1, F1
7	DIRECT	G1, F1	8	DIRECT	G1, F1
9	DIRECT	G1, F1	10	DIRECT	G1, F1
11	DIRECT	G1, F1	12	DIRECT	G1, F1

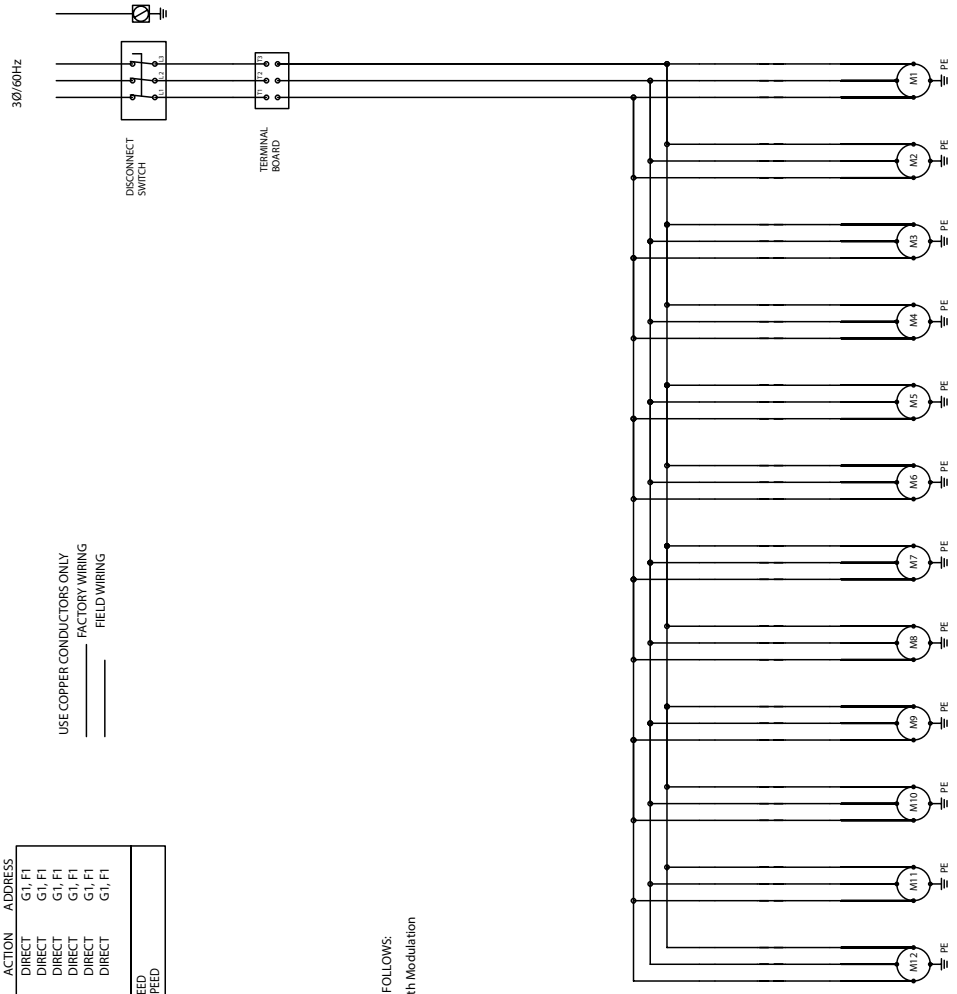
DIRECT ACTION: 0V = MOTOR OFF / 10V = FULL SPEED
REVERSE ACTION: 10V = MOTOR OFF / 0V = FULL SPEED

USE COPPER CONDUCTORS ONLY
____ FACTORY WIRING
____ FIELD WIRING

FAN SPEED CONTROL CIRCUIT
0 TO 10V DC

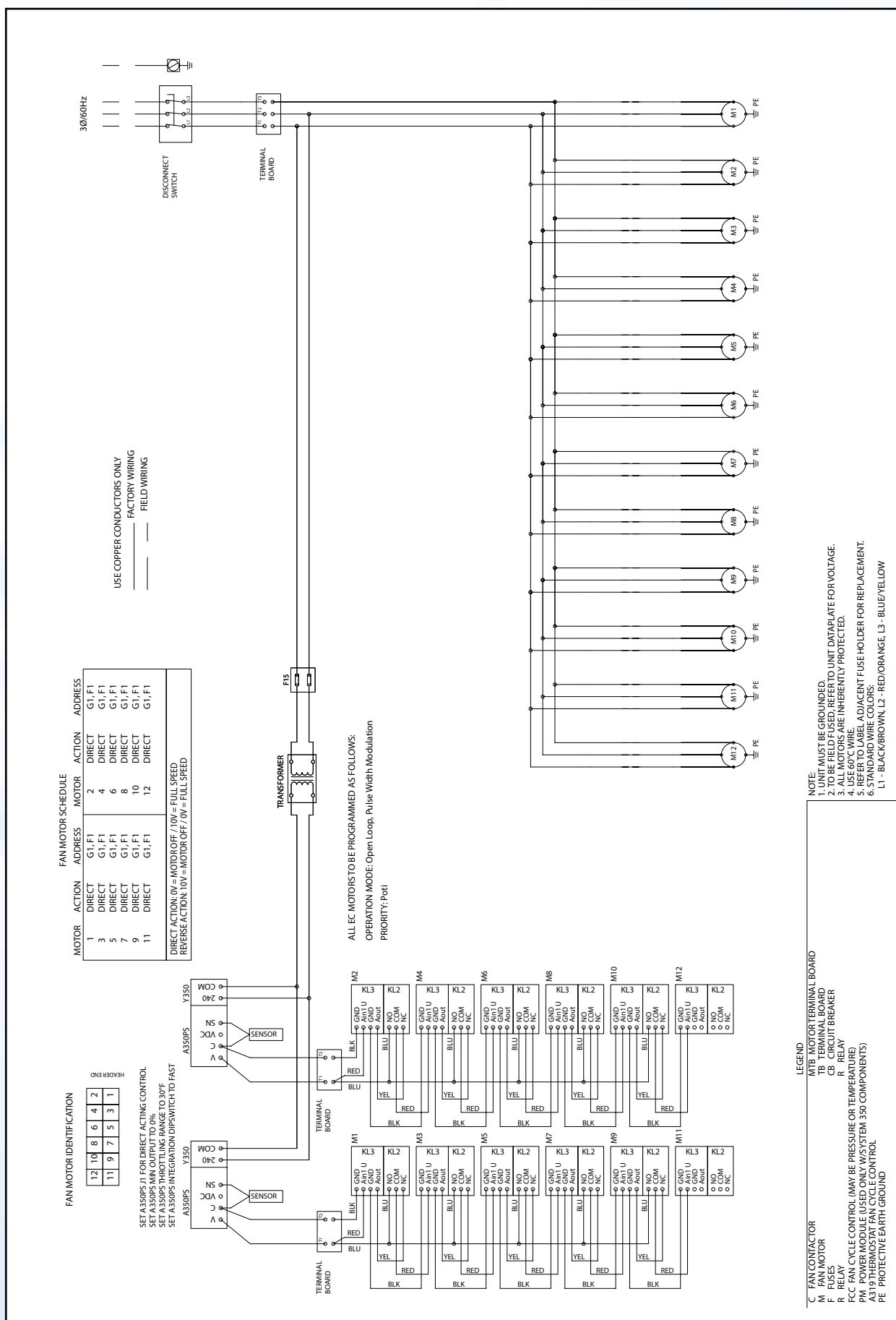


ALL EC MOTORS TO BE PROGRAMMED AS FOLLOWS:
OPERATION MODE: Open Loop, Pulse Width Modulation
PRIORITY: P00



- LEGEND
- C FAN CONTACTOR
 - M FAN MOTOR
 - F FUSES
 - R RELAY
 - ECB ELECTRIC CONTROL BOARD
 - PM POWER MODULE (USE ONLY US SYSTEM 350 COMPONENTS)
 - A319 THERMOSTAT FAN CYCLE CONTROL
 - PE PROTECTIVE EARTH GROUND
- MTB MOTOR TERMINAL BOARD
TB TERMINAL BOARD
CB CIRCUIT BREAKER
R RELAY

- NOTE:
1. UNIT MUST BE GROUNDED.
 2. TO BE FIELD WIRING, REFER TO UNIT DATA PLATE FOR VOLTAGE.
 3. ALL MOTORS ARE INHERENTLY PROTECTED.
 4. USE COPPER WIRE.
 5. REFER TO LABEL ADJACENT FUSE HOLDER FOR REPLACEMENT.
 6. STANDARD WIRE COLORS:
L1 - BLACK/BROWN, L2 - RED/ORANGE, L3 - BLUE/YELLOW





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