

Horizontal Unit Heaters – Submittal

HSD-11



Dimensional Data

Steam and Hotwater Coil

CAPACITIES 18 THRU 360 (HEADER TYPE)

CAP	A	B	C	D	E	F	G*	H*	J	K	L	M	N	NO. OF LOUVERS	NOM. FAN DIAM.	APPROX. SHIP WT.
18	14 ⁵ / ₈	7 ⁵ / ₁₆	15	7 ¹ / ₂	6 ¹ / ₈	2 ¹⁵ / ₁₆	3 ¹ / ₄	9 ³ / ₈	12 ¹ / ₄	9 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₄	12 ⁷ / ₈	4	9	26
24	14 ⁵ / ₈	7 ⁵ / ₁₆	18	9	6 ¹ / ₈	2 ¹⁵ / ₁₆	3 ¹ / ₄	9 ³ / ₈	12 ¹ / ₄	12 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₄	12 ⁷ / ₈	5	10	30
48	17 ¹ / ₈	8 ⁹ / ₁₆	20 ¹ / ₂	10 ¹ / ₄	5 ⁷ / ₈	2 ¹⁵ / ₁₆	5 ¹ / ₁₆	11 ⁷ / ₁₆	14 ³ / ₄	15	1 ¹ / ₄	1 ³ / ₄	15 ³ / ₈	6	12	41
60	17 ¹ / ₈	8 ⁹ / ₁₆	20 ¹ / ₂	10 ¹ / ₄	5 ⁷ / ₈	2 ¹⁵ / ₁₆	5 ¹ / ₁₆	10 ¹⁵ / ₁₆	14 ³ / ₄	15	1 ¹ / ₄	1 ³ / ₄	15 ³ / ₈	6	12	41
72	18 ³ / ₈	9 ³ / ₁₆	21 ³ / ₄	10 ⁷ / ₈	6	2 ¹⁵ / ₁₆	5 ¹ / ₁₆	11 ¹ / ₁₆	16	16 ¹ / ₄	1 ¹ / ₄	1 ³ / ₄	16 ⁵ / ₈	7	14	44
84	20 ⁷ / ₈	10 ⁹ / ₁₆	24 ¹ / ₄	12 ¹ / ₈	6 ¹ / ₈	2 ¹⁵ / ₁₆	5 ¹¹ / ₁₆	11 ¹³ / ₁₆	18 ¹ / ₂	18 ³ / ₄	1 ¹ / ₄	1 ³ / ₄	19 ¹ / ₈	8	14	47
96	19 ⁵ / ₈	9 ¹³ / ₁₆	24	12	6 ⁵ / ₁₆	3 ³ / ₁₆	7 ¹ / ₂	13 ¹³ / ₁₆	17 ¹ / ₄	17 ¹ / ₂	1 ¹ / ₂	1 ³ / ₄	17 ⁷ / ₈	8	16	49
108	20 ⁷ / ₈	10 ⁷ / ₁₆	25 ¹ / ₄	12 ⁵ / ₈	6 ⁵ / ₁₆	3 ³ / ₁₆	6 ¹¹ / ₁₆	13	18 ¹ / ₂	18 ³ / ₄	1 ¹ / ₂	1 ³ / ₄	19 ¹ / ₈	8	18	59
132	23 ³ / ₈	11 ¹¹ / ₁₆	27 ³ / ₄	13 ⁷ / ₈	6 ⁵ / ₁₆	3 ³ / ₁₆	7 ⁵ / ₈	14	21	21 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	21 ⁵ / ₈	9	18	74
144	23 ³ / ₈	11 ¹¹ / ₁₆	27 ³ / ₄	13 ⁷ / ₈	6 ⁵ / ₁₆	3 ³ / ₁₆	7 ¹ / ₁₆	13 ³ / ₄	21	21 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	21 ⁵ / ₈	9	18	74
180	24 ⁵ / ₈	12 ⁵ / ₁₆	29	14 ¹ / ₂	6 ⁵ / ₈	3 ³ / ₁₆	7 ⁷ / ₁₆	13 ³ / ₄	22 ¹ / ₄	22 ¹ / ₂	1 ¹ / ₂	1 ³ / ₄	22 ⁷ / ₈	9	18	90
204	24 ⁵ / ₈	12 ⁵ / ₁₆	29	14 ¹ / ₂	6 ⁵ / ₈	3 ³ / ₁₆	7 ⁷ / ₁₆	13 ³ / ₄	22 ¹ / ₄	22 ¹ / ₂	1 ¹ / ₂	1 ³ / ₄	22 ⁷ / ₈	9	18	90
240	27 ⁷ / ₈	13 ¹⁵ / ₁₆	30 ¹ / ₄	15 ¹ / ₈	8 ¹ / ₈	3 ³ / ₁₆	5 ⁷ / ₈	14	25 ¹ / ₂	23 ³ / ₄	2	1 ³ / ₄	26 ¹ / ₈	10	20	125
280	27 ⁷ / ₈	13 ¹⁵ / ₁₆	30 ¹ / ₄	15 ¹ / ₈	8 ¹ / ₈	3 ³ / ₁₆	9 ⁵ / ₈	17 ³ / ₄	25 ¹ / ₂	23 ³ / ₄	2	1 ³ / ₄	26 ¹ / ₈	10	20	118
300	33 ³ / ₈	16 ¹¹ / ₁₆	37 ³ / ₄	18 ⁷ / ₈	9	3 ³ / ₁₆	9 ⁵ / ₈	18 ⁵ / ₈	31	31 ¹ / ₄	2	1 ³ / ₄	31 ⁵ / ₈	13	24	154
360	33 ³ / ₈	16 ¹¹ / ₁₆	37 ³ / ₄	18 ⁷ / ₈	9	3 ³ / ₁₆	9 ⁵ / ₈	18 ⁵ / ₈	31	31 ¹ / ₄	2	1 ³ / ₄	31 ⁵ / ₈	13	24	154

* APPLIES TO STANDARD MOTOR WITH STANDARD FAN GUARD. WHEN OPTIONAL MOTORS OR OSHA FAN GUARDS ARE REQUESTED, DIMENSIONS WILL CHANGE ACCORDING TO THE SUBSTITUTIONS MADE.

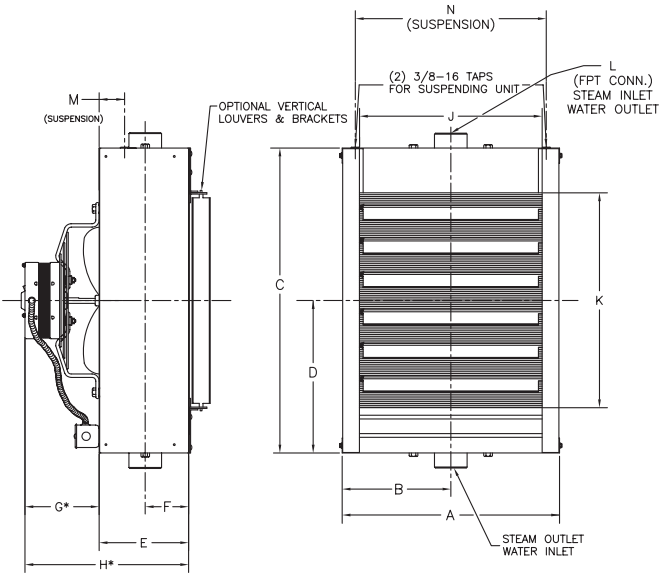
- NOTES: 1. OSHA guard standard on models 18 thru 48 (dimensions shown in table).
 2. Standard motor and standard guard shown in both tables.
 3. Optional OSHA guards available for all units with standard 1 phase motors.
 4. All 3 phase and explosion proof motors are shelf mounted.

Serpentine Hotwater Coil

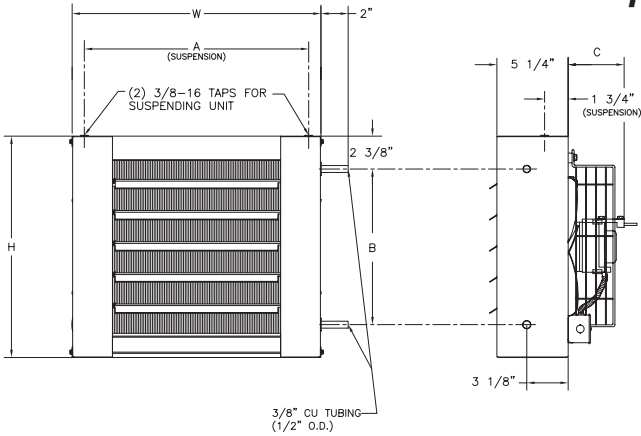
CAPACITIES 108A THRU 136A

CAP	H	W	A	B	C	NO. LOUVERS	NOM. FAN DIAM.	APPROX. SHIP WT.
108A	16	18	16 ⁷ / ₃₂	11 ¹ / ₄	4 ¹ / ₄	5	9	22
118A	16	18	16 ⁷ / ₃₂	11 ¹ / ₄	4 ¹ / ₄	5	10	24
125A	16	18	16 ⁷ / ₃₂	11 ¹ / ₄	4 ¹ / ₄	5	10	25
136A*	18 ¹ / ₂	20 ¹ / ₂	18 ²³ / ₃₂	13 ³ / ₄	5 ¹¹ / ₁₆	6	12	31

* Dimension "C" is to back of motor, not motor conduit connector as shown.
 NOTE: OSHA type fan guard standard on models 108A thru 136A.



D6333B



D6332C



PROJECT:
 LOCATION:
 ARCHITECT:
 ENGINEER:
 CONTRACTOR:
 PO NUMBER:
 DATE:

Hot Water Performance Data

CAP	Output BTU/HR*	GPM	Final Air °F	Pressure Drop FT./H ₂ O	Motor HP	RPM	Nominal CFM	Outlet FPM	Nom. Amps @ 115VAC†	Sound Rating
108A	8,090	.80	91	.80	16 Watt	1550	245	250	.80	II
	6,800		90			1350	210	215	.80	I
118A	18,400	1.9	94	2.2	16 Watt	1550	500	500	.80	II
	15,650		96			1350	420	420	.80	I
125A	24,800	2.5	102	2.2	25 Watt	1550	580	590	1.2	II
	21,230		106			1350	460	450	1.2	I
136A	35,900	3.6	99	3.0	1/20	1000	850	550	1.4	II
	32,300		100			900	750	480	1.4	I
18	13,050	1.3	95	.005	16 Watt	1550	395	395	.80	II
	11,725		99			1350	350	350	.80	I
24	17,400	1.8	96	.014	16 Watt	1550	450	450	.80	II
	15,600		98			1350	380	380	.80	I
36	26,100	2.7	103	.09	25 Watt	1550	550	550	1.2	II
	23,500		103			1350	480	480	1.2	I
48	34,800	3.5	103	.12	1/20	1000	750	550	1.4	II
	31,300		111			900	630	460	1.4	I
60	43,600	4.4	105	.17	1/20	1000	900	650	1.4	II
	39,200		112			900	700	510	1.4	I
72	52,300	5.3	104	.23	1/20	1000	1100	800	1.4	II
	47,000		106			900	950	700	1.4	I
84	61,000	6.1	100	.24	1/12	1000	1400	900	2.2	III
	54,900		106			900	1100	750	2.2	II
96	69,700	7.0	106	.29	1/12	1000	1400	930	2.2	III
	62,700		113			900	1100	800	2.2	II
108	78,400	7.9	100	.36	1/12	1000	1800	1000	2.2	III
	70,500		103			900	1500	900	2.2	II
120	87,100	8.8	102	.39	1/3	1140	1900	900	4.5	III
	80,000		—			—	—	—	—	—
132	95,800	9.6	104	.41	1/3	1140	2000	950	4.5	IV
	88,000		—			—	—	—	—	—
144	104,000	10.4	104	.43	1/3	1140	2200	1000	4.5	IV
	96,000		—			—	—	—	—	—
156	113,000	11.3	100	.53	1/3	1140	2600	1150	4.5	IV
	104,000		—			—	—	—	—	—
180	118,000	11.8	110	.60	1/3	1140	2200	800	4.5	III
	108,000		—			—	—	—	—	—
204	148,100	14.9	107	.79	1/3	1140	2900	1000	4.5	IV
	138,000		—			—	—	—	—	—
240	174,000	17.4	106	1.06	1/3	1140	3500	900	4.5	IV
	164,000		—			—	—	—	—	—
280	209,100	21.0	106	1.33	1/2	1100	4200	980	5.4	IV
	199,000		—			—	—	—	—	—
300	230,000	23.0	102	2.1	1/2	1100	5000	700	5.4	IV
	220,000		—			—	—	—	—	—
360	261,300	26.2	103	2.1	1/2	1100	5500	1000	5.4	IV
	251,000		—			—	—	—	—	—

Performance based on 200° EWT, 60° E.A.T., 20° TD.

* For the lower output, an optional Speed Controller must be ordered.

† Stated AMP is full load (FLA). AMP draw varies by motor manufacturer ± .2 AMPS.

Steam Performance Data

CAP	Output BTU/HR*	Cond. lbs./hr.	Sq. Ft. E.D.R.	Final Air °F	Motor HP	RPM	Nominal CFM	Outlet FPM	Nom. Amps @ 115VAC†	Nom. Fan Diam. (Inches)
18	18,000	18.0	75	102	16 Watt	1550	395	395	.80	9
	16,200	16.2	68	105		1350	330	330	.80	9
24	24,000	24.5	100	109	16 Watt	1550	450	450	.80	10
	21,600	22.0	90	112		1350	380	380	.80	10
36	36,000	37.0	150	119	25 Watt	1550	550	550	1.2	10
	32,400	33.0	135	120		1350	480	480	1.2	10
48	48,000	49.0	200	119	1/20	1000	750	550	1.4	12
	43,200	44.0	180	123		900	630	460	1.4	12
60	60,000	61.0	250	121	1/20	1000	900	650	1.4	12
	54,000	55.0	225	131		900	700	510	1.4	12
72	72,000	73.0	300	120	1/20	1000	1100	800	1.4	14
	64,800	66.0	270	123		900	950	700	1.4	14
84	84,000	85.0	350	115	1/12	1000	1400	900	2.2	14
	75,600	76.0	315	123		900	1100	750	2.2	14
96	96,000	97.0	400	123	1/12	1000	1400	930	2.2	16
	86,400	88.0	360	132		900	1100	800	2.2	16
108	108,000	110.0	450	115	1/12	1000	1800	1000	2.2	16
	97,200	98.0	405	120		900	1500	900	2.2	16
120	120,000	122.0	500	118	1/3	1140	1900	900	4.5	18
	—	—	—	—		—	—	—	—	—
132	132,000	134.0	550	121	1/3	1140	2000	950	4.5	18
	—	—	—	—		—	—	—	—	—
144	144,000	146.0	600	120	1/3	1140	2200	1000	4.5	18
	—	—	—	—		—	—	—	—	—
156	156,000	160.0	650	115	1/3	1140	2600	1150	4.5	18
	—	—	—	—		—	—	—	—	—
180	180,000	190.0	770	135	1/3	1140	2200	800	4.5	18
	—	—	—	—		—	—	—	—	—
204	204,000	208.0	850	124	1/3	1140	2900	1000	4.5	18
	—	—	—	—		—	—	—	—	—
240	240,000	244.0	1000	123	1/3	1140	3500	900	4.5	20
	—	—	—	—		—	—	—	—	—
280	280,000	280.0	1100	121	1/2	1100	4200	980	5.4	20
	—	—	—	—		—	—	—	—	—
300	300,000	310.0	1250	117	1/2	1100	5000	700	5.4	24
	—	—	—	—		—	—	—	—	—
360	360,000	366.0	1500	120	1/2	1100	5500	1000	5.4	24
	—	—	—	—		—	—	—	—	—

Performance based on 2# steam pressure at heater with air entering @ 60° F.

Maximum working pressure 150 PSI, 366° F

* For the lower output, an optional Speed Controller must be ordered.

† Stated AMP is full load (FLA). AMP draw varies by motor manufacturer ± .2 AMPS.

Steam and Hotwater Coil Specifications

GENERAL

Furnish and install where indicated or scheduled on plans, horizontal steam/hot water unit heaters. Unit shall be equipped as specified herein. All units shall be installed in a neat and workmanlike manner in accordance with this specification and the manufacturer's installation instructions.

CASING

Casings shall be 20 gauge die-formed steel. Casing substrates shall be prepared for finishing with a hot wash, iron phosphatizing, clear rinse, chromic acid rinse and oven drying. Paint finish shall be lead-free, chromate free, alkyd melamine resin base and applied with an electrostatic two-pass system. Finish shall be baked at 350°F.

COIL MODELS 18 - 360

Coil elements and headers shall be of heavy wall drawn seamless copper tubing. Element tubes shall be brazed into extruded header junctions. Pipe connection saddles shall be of cast bronze. Aluminum fins shall have drawn collars to assure permanent bond with expanded element tubes and exact spacing. All Element Assemblies are submersion tested at factory at 200 P.S.I., and are rated at 150 pounds of saturated steam pressure at 366°F, under maximum load conditions. We recommend operating pressure of 75 P.S.I. at 320°F for long life.

MOTORS

Motors shall be totally enclosed fan cooled, resilient mounted with class "B" windings. All motors shall be designed for horizontal mounting. Motors under 1/3 H.P. are totally enclosed, frame mounted, 115/1/60 with thermal overload protection and permanently lubricated sleeve bearings with optional solid state speed controller available. 1/3 H.P. (115/1/60) motors are open frame construction, with thermal overload protection and ball bearings. 1/3 H.P. at (230V) and all 1/2 H.P. motors are open frame construction, with thermal overload protection and ball bearings. 1/3 and 1/2 H.P. motors are available in single and 3 phase in open frame construction or explosion-proof housings, all the above are available as options.

EXPLOSION PROOF MOTORS

An enclosed motor whose enclosure is designed and constructed to withstand an explosion of a specified gas or vapor which may occur within the motor and to prevent the ignition of this gas or vapor surrounding the machine.

Sterling motors comply with the National Electrical Code classification as follows:

- Class I, Group D; all sizes
- Class II, Group F; all sizes
- Class II, Group G; all sizes
- Division I & II Installations
- T-code (T3B)

Explosion proof equipment is not generally available for Class I, Group A and B and it is necessary to isolate motors from the hazardous area. All explosion proof motors are shelf mounted.

FANS

Fans shall be of aluminum blade, hub type designed and balanced to assure maximum air delivery, low motor horsepower requirements and quiet operation. Blades are spark proof.

FAN GUARDS

Fan guards shall be welded steel, zinc plated or painted. OSHA fan guard standard on models HS-18 thru HS-48.

AIR DEFLECTION LOUVERS

Units shall be equipped with horizontal, individually adjustable louvers. Vertical louvers for four-way air control shall be available as an optional extra.

Serpentine Coil Specifications

GENERAL

Furnish and install, where indicated or scheduled on plans, horizontal hot water unit heaters. Unit shall be equipped as specified herein. All units shall be installed in a neat and workmanlike manner in accordance with this specification and the manufacturer's installation instructions.

CASING

Casings shall be 20 gauge die-formed steel. Casing substrates shall be prepared for finishing with a hot alkaline wash, hot & cold water rinses, iron phosphatizing, chromic acid rinse and oven drying. Paint finish shall be lead-free, chromate free, polyester melamine base and applied with a roller coat application. Finish shall be baked at 790° F for 40 seconds to obtain a 400°-435° F Peak Metal Temperature.

COIL MODELS HS108A - HS136A

Coil is a serpentine design with seamless copper tubing. Aluminum fins shall have drawn collars to assure permanent bond with expanded tubes. Tubing connection shall be 3/8" copper tubing, type "M" (.500 O.D.). Coils shall be factory tested at 200 P.S.I.

MOTORS

Motors shall be totally enclosed fan cooled, resilient mounted with class "B" windings. All motors shall be designed for horizontal mounting.

FANS

Fans shall be of aluminum blade type, designed and balanced to assure maximum air delivery, low motor horsepower requirements and quiet operation.

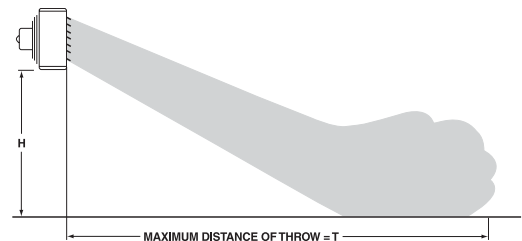
OSHA FAN GUARDS

OSHA fan guards shall be welded steel, zinc plated or painted. OSHA fan guard standard on 108A thru 136A.

AIR DEFLECTION LOUVERS

Units shall be equipped with horizontal, individually adjustable louvers.

Mounting Heights and Throws



CAP	MAXIMUM MOUNTING HT.	APPROX. MAX. THROW	CAP	MAXIMUM MOUNTING HT.	APPROX. MAX. THROW
108A	8	20	108	11	40
118A	8	25	120	12	40
125A	9	29	132	13	54
136A	9	29	144	13	55
18	8	20	156	13	55
24	8	24	180	13	53
36	9	28	204	13	55
48	9	30	240	14	57
60	10	30	280	14	57
72	10	29	300	15	58
84	10	30	360	15	60
96	11	38			

The following table is based on 60° entering air and either 2 lb. steam or 200° T.D. The data is based on the higher speed CFM throughout and velocity. Care should be exercised in locating adjacent unit heaters and allowance should be made for obstructions in the air pattern and conflicting air currents from other air moving devices.

Horizontal Unit Heaters

Motor Characteristics

TOTALLY ENCLOSED MOTOR TYPE

CAP	AMP	MCA	HP	RPM
115/1/60				
18, 24, 108A, 118A	0.8	1	16W*	1550
136A	1.4	1.8	1/20*	1000
36, 125A	1.2	1.5	25W*	1550
48, 60, 72	1.4	1.8	1/20*	1000
84, 96, 108	2.2	2.8	1/12*	1000
120, 132, 144, 156, 180, 204, 240	4.5	5.6	1/3	1140
280, 300, 360	5.4	6.8	1/2	1100
230/1/60				
18, 24, 108A, 118A	0.4	0.5	16W	1550
136A	1.4	1.8	1/20†	1000
36, 125A	0.6	0.8	25W	1550
48, 60, 72	1.4	1.8	1/20†	1000
84, 96, 108	2.2	2.8	1/12†	1000
120, 132, 144, 156, 180, 204, 240	4.5	5.6	1/3†	1140
280, 300, 360	5.4	6.8	1/2†	1100
208-230/460/3/60				
48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 180, 204, 240, 280, 300, 360	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140

*Optional variable speed switch is available.

**These motors are without thermal overload protection

NOTE 1: All motors are constant speed and operate at top speed as indicated in motor data. Models 18 through 108, including 108A, 118A, 125A and 136A can be run at reduced speed with addition of optional variable speed switch. This switch is factory-calibrated for low and high speed ratings, with intermediate speeds infinitely controllable. Models 120 through 360 operate at constant speed as indicated in motor data. All 1/4 H.P. motors are P.S.C.

NOTE 2: Motors under 1/3 H.P. are totally enclosed, frame mounted, 115/1/60 with thermal overload protection and permanently lubricated sleeve bearings with optional speed controller available. 1/3 H.P. (115/1/60) motors are open frame constant speed with thermal over-load protection and ball bearings. 1/3 H.P. (230V) and 1/2 H.P. (230V) motors are open frame constant speed with thermal overload protection and ball bearings.

EXPLOSION PROOF WITH THERMAL OVERLOAD MOTOR TYPE

CAP	AMP	MCA	HP	RPM
115/1/60				
48, 60, 72, 84, 96, 108, 120, 132	3.7	4.6	1/6	1140
144, 156, 180, 204	5.4	6.8	1/4	1140
240, 280, 300	7.4	9.3	1/3***	1140
360	9.6	12.0	1/2***	1140
230/1/60				
48, 60, 72, 84, 96, 108, 120, 132	3.7	4.6	1/6†	1140
144, 156, 180, 204	5.4	6.8	1/4†	1140
240, 280, 300	3.7	4.7	1/3***	1140
360	4.8	6.10	1/2***	1140
230/460/3/60				
144, 156, 180, 204, 240, 280, 300, 360	2.2/1.1	2.8/1.4	1/3	1140

***These motors are 115/230 volts.

†230/1/60 unit has 115/1/60 motor supplied with field installed stepdown transformer.

NOTE 3: 1/3 and 1/2 H.P. motors are available as 230V single and 3 phase in open frame and explosion-proof housings, all available as options. 1/3 and 1/2 H.P. motors operate at single speed only.

NOTE 4: Stated AMP draw is Full Load Amp (FLA). AMP draw varies by motor manufacturer ± .2 AMPS. Verify FLA per unit motor data plate.

CAUTION: Select appropriate AMP and MCA for the multiple voltage motors. For example, the AMP and MCA for Models 360 with a 460 volt Totally Enclosed motor is 1.3 and 1.6 respectively.