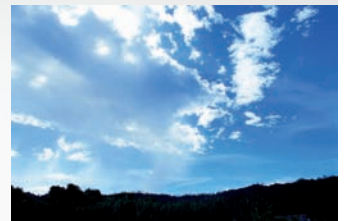




ACPS-CP Series 50Hz

Air Cooled Self-Contained Units

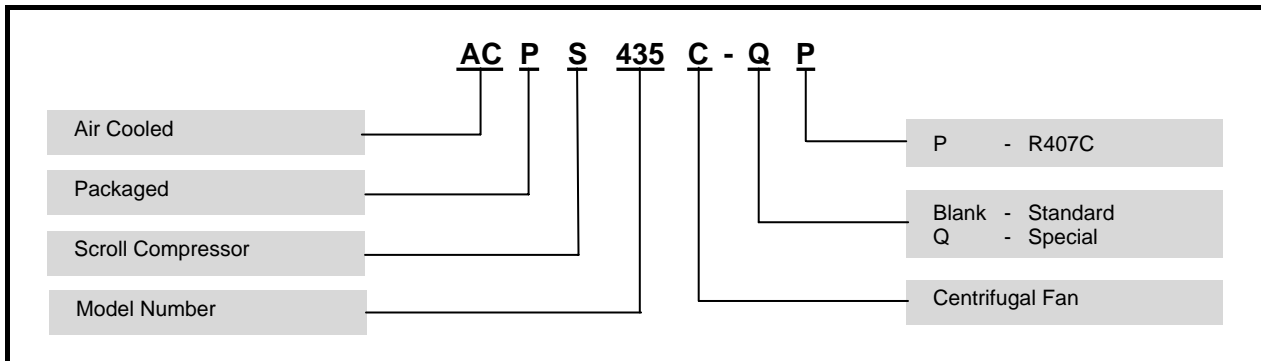
Cooling Capacity : 59 to 380 MBH (17 to 111 kW)



DUNHAM-BUSH[®]

Products that perform...By people who care

NOMENCLATURE



MECHANICAL SPECIFICATIONS

GENERAL DESCRIPTION

The compact, rugged and reliable ACPS-CP, propeller type air cooled packaged unit, is designed to meet the owners, consultants and contractors requirement of efficient, quiet and dependable performance. The wide range of cooling capacity satisfy most requirement for offices, industrial buildings, supermarkets, shops etc. These units are factory assembled, leak tested, evacuated, dehydrated, precharged with correct amount of refrigerant, tested run in factory and ready for installation.

SCROLL COMPRESSOR(S)

The scroll compressor(s) is a new concept of innovative design. This scroll compressor with a high EER, low sound power level, best sound quality and high reliability meets the application requirement and user expectation globally. The high efficiency is realised by a controlled orbit with floating seals and advanced scroll geometry. The reliability is realised by the no-contact scroll design and 100% motor cooled by suction gas. A check valve is located directly above the fixed scroll discharge port. This prevents the compressor from running backwards after the power has been switched off (i.e. no rattling and no shut-down noise). The motor is fitted with a thermostat which protects the compressor if malfunction occurs.

CONDENSER COIL(S)

Each coil consists of staggered rows of 3/8" [9.5mm] OD inner ridged copper tubes,

mechanically expanded into die-formed corrugated aluminum fins. Each coil is provided with integral subcooling circuit to maximize system efficiency. Coils are leak and pressure tested to 450 psig [31 bar].

EVAPORATOR COIL(S)

Each coil consists of staggered rows of copper tubes mechanically expanded into die-formed corrugated aluminum fins. The direct expansion coil(s) has one or multiple independent refrigerant circuits each with its own thermo-expansion valve. The thermo-expansion valve promotes efficient cooling and control of superheat. Each coil is leak tested and pressure tested to 450 psig [31 bar].

EVAPORATOR, CONDENSER BLOWER AND MOTOR

Centrifugal blower(s) is mounted on a rigid shaft in heavy duty pillow block self-aligning ball bearings. Complete blower(s) and drive assembly are resiliently isolated from unit casing. Evaporator blower motor and V-belt pulley drive assembly can be factory fitted to handle the desired cfm and static pressure for all models.

REFRIGERANT CIRCUIT(S)

Each independent refrigerant circuit is constructed of copper pipings with brazed connections; joining compressor, condenser coil, filter drier, sight glass, thermo-expansion valve, distributor and evaporator cooling coil in a completely sealed loop. The refrigerant circuit is factory leak tested, dehydrated, evacuated and charged with refrigerant.

MECHANICAL SPECIFICATIONS

SAFETY CONTROLS

High pressure and low pressure cut-outs to guard against compressor damage due to high discharge head pressure and system leakage respectively.

CASING

All steel parts are coated with epoxy-acrylic Electro-Deposition (ED) paint which gives excellent finishing, weatherability and corrosion resistance. Before ED coating, the part undergoes a complete pretreatment process which involves degreasing, phosphating and rinsing with demineralized water. It increases the paint adhesion effect and rust preventing effect to obtain high quality paint film. ED painting is the best painting system which can even coat the inaccessible places like the edges, joints or interior surface of hollow sections. The evaporator section is insulated with 1/2" [13mm] thick x 1 1/2 lb per cu. ft [24 kg per cu meter]. mat faced linacoustic fiberglass, tightly fitted with gasket on rigid frame, to guard against leaks of conditioned air.

FILTERS

1" [25mm] thick washable panel filters.

OPTIONAL STARTER PANEL AND ACCESSORIES

- 1.) Power panel - Factory wired starters for compressor(s), blower fan motor and condenser fan motor(s), with selectable accessories such as indicating lights, incoming isolator voltage monitor and etc. Starters for compressors can be direct on line or autotransformer type. Anti-recycling timer will be provided to prevent compressor short cycling. (Auto-transformer starter is for remote installation while DOL starters is mounted in the units.)
- 2.) Single stage or multiple stage thermostat for staging of single or multiple compressors operation for capacity modulation.
- 3.) For installation near the sea or in chemically corrosive atmosphere, unit can be provided with either copper fin coils, tinned copper fin coils, or hydrophilic pre-coated aluminum fins.
- 4.) Hot Water Heating Coils - Coils are constructed of 1/2" [13mm] OD seamless copper tubes mechanically expanded into die-formed corrugated aluminum fins. Factory fit between blower and coil sections.
- 5.) Electric Reheaters - Consists of finned tubes electric heaters, mounted down-stream of cooling coils and factory wired with necessary controls.
- 6.) Liquid, discharge or suction stop valves for each compressor.
- 7.) Suction accumulator can be provided for each compressor for application where there is a strong possibility of liquid flood-back to compressor.
- 8.) Suction and discharge pressure gauges.
- 9.) Hot gas by pass can be provided for application where the suction pressure gets very low and there is a possibility that the coil might freeze.
- 10.) Variable frequency drive for condenser fan for low ambient application. Controlled by the head pressure valve.
- 11.) VAV Systems - All models can be factory packaged with inlet guide vanes control for blower fan(s), damper actuators and linkages, suction accumulators, suction pressure regulator, specially circuited evaporator coils for variable-air-volume applications.
- 12.) Double-Skinned Casing - All models can be provided with double-skinned casing, with sandwiched fibreglass insulation and internal GI liner (perforated or non-perforated) for improved sound attenuation.



PHYSICAL SPECIFICATIONS

Model ACPS	68CP	81CP	95CP	108CP	125CP	145CP	160CP	190CP
COMPRESSOR								
Qty	1	1	1	1	1	1	1	1
Power Supply	400V - 3 - 50HZ							
MRA Each	-	1x15.0	1x15.6	1x16.8	1x19.6	1x22.3	1x25.6	1x30.0
LRA Each	1x45.0	1x101.0	1x95.0	1x111.0	1x118.0	1x118.0	1x167.0	1x198.0
NRA Each	1x9.3	1x10.5	1x12.5	1x13.7	1x15.8	1x17.6	1x19.1	1x23.7
CONDENSER SECTION								
(Qty) Dia. x Width inches	(1) 12x12	(1) 12x15	(1) 12x12	(1) 15x15	(1) 15x15	(1) 15x15	(2) 15x11	(2) 15x11
Air Flow cfm [m³/hr]	3800 [6457]	4100 [6967]	4900 [8326]	5400 [9176]	6400 [10875]	6400 [10875]	8000 [13594]	8400 [14273]
Motor HP	2.0	3.0	4.0	3.0	4.0	4.0	4.0	5.0
CONDENSER COIL								
Face Area ft²[m²]	6.1 [0.6]	6.9 [0.6]	7.9 [0.7]	10.4 [1.0]	11.8 [1.1]	11.8 [1.1]	15.1 [1.4]	15.1 [1.4]
Rows / FPI	4/14	4/14	4/14	4/14	4/14	5/14	4/14	5/14
EVAPORATOR SECTION								
Blower (Qty) Dia. x Width Inches[mm]	(1) 10x10 [254x254]	(1) 10x10 [254x254]	(1) 12x12 [305x305]	(1) 12x12 [305x305]	(1) 12x12 [305x305]	(1) 12x12 [305x305]	(1) 15x15 [225x225]	(1) 15x15 [225x225]
Motor Max HP	2.0	2.0	2.0	4.0	4.0	4.0	4.0	5.5
Air Flow Min- Max cfm[m³/hr]	1600-2800 [2719-4758]	1600-2800 [2719-4758]	2000-3700 [3398-6287]	2200-4000 [3738-6797]	3100-4300 [5268-7307]	3100-4300 [5268-7307]	2700-5000 [4588-8496]	2800-5200 [4758-8836]
EVAPORATOR COIL								
Rows / FPI	3/12	3/13	3/12	3/12	3/12	4/12	3/12	4/12
Nom. Face Area ft²[m²]	5.0 [0.5]	5.0 [0.5]	6.7 [0.6]	7.3 [0.7]	7.9 [0.7]	7.9 [0.7]	9.3 [0.9]	9.3 [0.9]
FILTERS								
(Qty.) Size inches[mm]	(2) 20x20x1 [508x508x25]	(2) 20x20x1 [508x508x25]	(2) 20x20x1 [508x508x25]	(2) 25x25x1 [635x635x25]	(2) 25x25x1 [635x635x25]	(2) 25x25x1 [635x635x25]	(2) 25x25x1 [635x635x25]	(2) 25x25x1 [635x635x25]
REFRIGERANT CHARGE								
(Qty.) Per Compressor lbs[kg]	(1) 8.3 [3.8]	(1) 9.9 [4.5]	(1) 12.3 [5.6]	(1) 13.2 [6.0]	(1) 17.6 [8.0]	(1) 16.0 [7.3]	(1) 23.8 [10.8]	(1) 25.3 [11.5]
GENERAL								
Approx Operating Weight lbs[kg]	590 [268]	630 [286]	770 [349]	920 [417]	1060 [481]	1100 [499]	1240 [563]	1600 [726]

- Notes: 1.) Condenser fan motor hp selected based on external static pressure of not exceeding 0.6"wg [0.15kPa]. For ESP above 0.6"wg [0.15kPa]. Refer to nearest Dunham-Bush sales office for condenser fan performance curves.
2.) Minimum - maximum voltage is 360V to 440V.
3.) LRA - Locked Rotor Amp.
4.) NRA - Nominal Running Amp.
5.) MRA- Maximum Running Amp.



PHYSICAL SPECIFICATIONS

Model ACPS		220CP	250CP	290CP	320CP	380CP	435CP
COMPRESSOR							
Qty		2	2	2	2	2	3
Power Supply		400V - 3 - 50HZ					
MRA Each		2x16.8	2x19.6	2x22.3	2x25.6	2x30.0	3x22.3
LRA Each		2X111.0	2x118.0	2x118.0	2x167.0	2x198.0	3x118.0
NRA Each		2x13.7	2x15.8	2x17.6	2x19.1	2x23.7	3x17.6
CONDENSER SECTION							
(Qty) Dia. x Width	inches	(2) 15x15	(2) 15x15	(2) 18x13	(2) 18x18	(2) FDA500	(2) FDA500
Air Flow	cfm [m³/hr]	10200 [17332]	11000 [18691]	13000 [22090]	14500 [24638]	17000 [28886]	18000 [30586]
Motor	HP	5.5	7.5	7.5	7.5	7.5	10.0
CONDENSER COIL							
Face Area	ft²[m²]	17.8 [1.7]	20.3 [1.9]	22.2 [2.1]	27.8 [2.6]	36.1 [3.4]	36.1 [3.4]
Rows / FPI		5/14	5/14	5/14	5/14	5/14	6/14
EVAPORATOR SECTION							
Blower	(Qty) Dia. x Width Inches[mm]	(1) 15x15 [381x381]	(2) 15x11 [381x279]	(2) 15x11 [381x279]	(2) 15x11 [381x279]	(2) 15x11 [381x279]	(2) 15x15 [381x381]
Motor	Max HP	5.5	7.5	10.0	10.0	15.0	15.0
Air Flow	Min- Max cfm[m³/hr]	3500-6400 [5947-10875]	4000-7300 [6797-12404]	5400-10000 [9176-16992]	5400-10000 [9176-16992]	6400-11800 [10875-20051]	7000-12800 [11894-21750]
EVAPORATOR COIL							
Rows / FPI		4/12	4/12	3/12	4/12	4/12	4/12
Nom. Face Area	ft²[m²]	11.7 [1.1]	13.2 [1.2]	18.0 [1.7]	18.0 [1.7]	21.4 [2.0]	23.3 [2.2]
FILTERS							
(Qty.)Size	inches[mm]	(1) 25x16x1 [635x406x25] (1) 25x20x1 [635x508x25] (1) 25x25x1 [635x635x25]	(2) 25x16x1 [635x406x25] (2) 25x20x1 [635x508x25]	(4) 16x16x1 [406x406x25] (4) 25x16x1 [635x406x25]	(4) 16x16x1 [406x406x25] (4) 25x16x1 [635x406x25]	(1) 16x16x1 [406x406x25] (1) 16x20x1 [406x508x25] (3) 25x16x1 [635x406x25] (3) 25x20x1 [635x508x25]	(4) 16x20x1 [406x508x25] (1) 16x25x1 [406x635x25] (4) 20x20x1 [508x508x25] (1) 20x25x1 [508x635x25]
REFRIGERANT CHARGE							
(Qty.) Per Compressor	lbs[kg]	(2)13.2 [6.0]	(2)17.6 [8.0]	(2)16.0 [7.3]	(2)23.8 [10.8]	(2)25.3 [11.5]	(3)16.0 [7.3]
GENERAL							
Approx Operating Weight	lbs[kg]	1750 [794]	1930 [875]	2100 [953]	2800 [1270]	3200 [1452]	3800 [1724]

- Notes: 1.) Condenser fan motor hp selected based on external static pressure of not exceeding 0.6"wg [0.15kPa]. For ESP above 0.6"wg [0.15kPa]. Refer to nearest Dunham-Bush sales office for condenser fan performance curves.
 2.) Minimum - maximum voltage is 360V to 440V.
 3.) LRA - Locked Rotor Amp.
 4.) NRA - Nominal Running Amp.
 5.) MRA- Maximum Running Amp.



SYSTEM COOLING CAPACITY

PERFORMANCE DATA

R407C

Unit Model	Standard Capacity MBH	Air On Evap.		Air Temperature On Condenser Coil - °F								
		cfm	WB Temp. °F	75			95			115		
				Total MBH ¹	Sens MBH ²	kW ³	Total MBH ¹	Sens MBH ²	kW ³	Total MBH ¹	Sens MBH ²	kW ³
ACPS 68CP	59.2	2000	72	66.6	36.3	4.2	62.9	34.5	4.5	59.2	31.3	4.7
			67	63.6	48.8	4.1	59.2	45.5	4.4	56.1	43.2	4.6
			62	57.9	57.9	3.9	54.3	54.3	4.3	51.1	51.1	4.5
			57	51.2	51.2	3.9	47.5	47.5	4.3	44.9	44.9	4.5
ACPS 81CP	74.0	2400	72	83.2	45.4	5.1	78.5	43.1	5.5	73.9	39.0	5.8
			67	79.4	60.9	5.0	74.0	56.9	5.4	69.9	53.9	5.7
			62	72.4	72.4	4.8	67.7	67.7	5.3	63.8	63.8	5.5
			57	64.0	64.0	4.8	59.3	59.3	5.2	56.2	56.2	5.5
ACPS 95CP	83.8	2600	72	94.4	52.1	5.9	88.8	49.1	6.3	83.8	46.3	6.6
			67	90.1	69.4	5.7	83.8	64.7	6.2	79.4	61.4	6.5
			62	82.2	82.2	5.7	76.9	76.9	6.1	72.4	72.4	6.4
			57	72.6	72.6	5.5	67.3	67.3	6.0	63.7	63.7	6.3
ACPS 108CP	97.6	3200	72	109.8	60.6	6.9	103.5	57.1	7.3	97.5	53.9	7.7
			67	104.8	80.7	6.7	97.6	75.3	7.2	92.4	71.4	7.6
			62	95.6	95.6	6.6	89.5	89.5	7.1	84.2	84.2	7.5
			57	84.4	84.4	6.4	78.4	78.4	7.1	74.1	74.1	7.4
ACPS 125CP	109.8	3500	72	122.6	68.0	7.5	116.4	64.0	8.0	108.8	60.3	8.4
			67	117.0	90.0	7.3	109.8	83.9	8.0	103.2	79.4	8.4
			62	106.7	106.7	7.2	100.6	100.6	7.8	94.1	94.1	8.2
			57	94.3	94.3	7.1	88.0	88.0	7.7	82.7	82.7	8.1
ACPS 145CP	127.2	4000	72	142.1	70.5	8.5	130.0	66.3	9.1	126.1	62.5	9.6
			67	135.6	93.3	8.3	127.2	87.0	9.1	119.4	82.2	9.6
			62	123.6	112.0	8.2	116.5	104.8	8.9	109.0	98.9	9.3
			57	109.2	99.0	8.1	102.0	91.9	8.8	95.7	87.0	9.2
ACPS 160CP	146.4	4600	72	165.1	97.4	10.4	155.5	91.8	11.1	146.4	86.4	11.6
			67	157.5	132.4	9.9	146.4	119.3	11.0	138.8	117.0	11.5
			62	143.8	143.8	9.8	134.5	134.5	10.8	126.7	126.7	11.2
			57	126.9	126.9	9.7	117.5	117.5	10.6	111.3	111.3	11.1
ACPS 190CP	165.9	4800	72	187.0	93.1	11.8	176.0	96.8	12.6	165.8	91.4	13.2
			67	178.4	136.1	11.5	165.9	126.8	12.4	157.3	120.2	13.0
			62	162.7	162.7	11.3	152.2	152.2	12.2	143.5	143.5	12.8
			57	143.8	143.8	11.1	133.2	133.2	12.0	126.1	126.1	12.7
ACPS 220CP	195.2	5400	72	221.0	132.7	13.7	208.0	125.2	14.5	195.0	117.2	15.4
			67	207.2	177.7	13.6	195.2	167.5	14.4	183.1	157.2	15.4
			62	191.5	191.5	13.4	181.3	181.3	14.3	169.4	169.4	15.3
			57	173.7	173.7	13.3	163.7	163.7	14.2	148.1	148.1	15.1
ACPS 250CP	219.6	6400	72	245.2	133.8	15.3	230.9	126.1	16.3	217.6	118.9	17.0
			67	234.0	176.2	14.8	219.6	165.8	16.2	206.3	157.3	16.9
			62	213.5	208.6	14.6	199.7	199.7	15.8	188.2	188.2	16.6
			57	188.6	188.6	14.4	174.7	174.7	15.6	165.4	165.4	16.4
ACPS 290CP	253.8	7500	72	283.3	147.1	17.8	266.5	138.4	18.9	250.0	130.1	20.1
			67	265.6	189.2	17.7	253.8	178.4	18.7	234.9	167.5	20.0
			62	245.1	228.4	17.4	232.5	216.6	18.7	217.1	202.3	19.9
			57	222.7	222.7	17.3	209.8	209.8	18.5	192.6	192.6	19.7
ACPS 320CP	292.8	8000	72	331.6	171.0	20.7	312.1	161.2	22.0	292.5	151.3	23.3
			67	310.9	218.6	20.6	292.8	206.0	21.8	274.8	193.6	23.2
			62	287.2	262.3	20.2	272.0	239.7	21.6	245.1	232.7	23.1
			57	260.6	260.6	20.1	245.5	245.5	21.5	222.1	222.1	22.9
ACPS 380CP	341.6	9200	72	384.4	206.2	24.2	361.8	194.3	25.6	341.0	183.3	27.2
			67	366.6	272.6	24.0	341.6	254.1	25.5	323.1	240.9	27.1
			62	334.3	330.5	23.6	313.0	309.7	25.3	294.9	292.2	26.9
			57	295.5	295.5	23.4	273.7	273.7	25.1	259.1	259.1	26.7
ACPS 435CP	380.6	11500	72	426.8	208.0	27.5	403.5	197.7	29.2	380.3	179.5	31.1
			67	407.7	279.1	27.3	380.6	260.9	29.2	361.2	247.8	30.9
			62	373.4	337.2	26.8	350.2	313.7	28.8	327.0	298.0	30.8
			57	327.7	327.7	26.7	304.5	304.5	28.5	289.0	289.0	30.5

Notes : 1.) Ratings are gross capacities - for net capacities, deduct evaporator blower motor heat.
 2.) At 80°F [26.6°C] air on evaporator.
 3.) Compressor kW input.

EVAPORATOR BLOWER PERFORMANCE

AVAILABLE EXTERNAL STATIC PRESSURE - IWG - FOR ACCESSORIES AND DUCT SYSTEM STATIC RESISTANCE (ALLOWANCE MADE FOR WET COIL AND FILTERS)

RPM	cfm										Fan Model
	SP	BHP	SP	BHP	SP	BHP	SP	BHP	SP	BHP	
ACPS 68CP											
cfm	1600		1800		2000		2200		2400		Single 10 x 10
800	0.43	0.39	0.39	0.46	0.32	0.52	0.24	0.62	0.13	0.70	
900	0.63	0.47	0.61	0.55	0.55	0.63	0.49	0.72	0.40	0.82	
1000	0.85	0.56	0.83	0.64	0.80	0.75	0.74	0.86	0.67	0.97	
1100	1.08	0.67	1.07	0.78	1.05	0.88	1.01	0.99	0.96	1.13	
ACPS 81CP											
cfm	2000		2200		2400		2600		2800		Single 10 x 10
1000	0.77	0.75	0.70	0.86	0.63	0.97	0.55	1.07	0.42	1.22	
1100	1.02	0.88	0.97	0.99	0.92	1.13	0.84	1.26	0.75	1.39	
1200	1.28	1.03	1.25	1.15	1.20	1.29	1.14	1.45	1.06	1.61	
1300	1.56	1.18	1.53	1.33	1.51	1.49	1.46	1.65	-	-	
ACPS 95CP											
cfm	2400		2600		2800		3000		3200		Single 12 x 12
700	0.42	0.59	0.40	0.67	0.36	0.74	0.32	0.83	0.26	0.91	
800	0.64	0.74	0.63	0.83	0.61	0.91	0.58	1.01	0.55	1.11	
900	0.87	0.90	0.87	1.02	0.86	1.11	0.85	1.22	0.82	1.33	
1000	1.12	1.10	1.12	1.21	1.12	1.33	1.12	1.45	1.11	1.60	
ACPS 108CP											
cfm	2800		3000		3200		3400		3600		Single 12 x 12
800	0.62	0.91	0.59	1.01	0.56	1.11	0.51	1.22	0.44	1.33	
900	0.87	1.11	0.86	1.22	0.83	1.33	0.81	1.45	0.76	1.58	
1000	1.13	1.33	1.13	1.45	1.12	1.60	1.11	1.72	1.07	1.85	
1100	1.41	1.57	1.41	1.70	1.41	1.86	1.41	2.01	1.40	2.18	
ACPS 125CP											
cfm	3100		3300		3500		3700		3900		Single 12 x 12
900	0.89	1.26	0.87	1.39	0.84	1.51	0.80	1.65	0.75	1.80	
1000	1.17	1.51	1.16	1.65	1.15	1.78	1.13	1.93	1.09	2.08	
1100	1.46	1.80	1.46	1.93	1.46	2.09	1.45	2.24	1.44	2.43	
1200	1.77	2.08	1.77	2.24	1.78	2.43	1.79	2.60	1.78	2.80	
ACPS 145CP											
cfm	3500		3700		3900		4100		4300		Single 12 x 12
900	0.92	1.51	0.89	1.65	0.85	1.80	0.79	1.92	1.11	2.09	
1000	1.23	1.78	1.22	1.93	1.19	2.08	1.16	2.25	1.11	2.43	
1100	1.54	2.09	1.54	2.24	1.54	2.43	1.52	2.60	1.49	2.79	
1200	1.86	2.43	1.88	2.60	1.88	2.80	1.88	2.96	1.87	3.19	
ACPS 160CP											
cfm	4000		4400		4600		4800		5000		Single 15 x 15
650	0.47	1.14	0.39	1.33	0.31	1.43	0.22	1.54	0.09	1.65	
750	0.76	1.42	0.75	1.62	0.71	1.74	0.68	1.86	0.62	2.00	
850	1.05	1.76	1.06	1.98	1.04	2.10	1.04	2.24	1.02	2.37	
950	1.38	2.16	1.39	2.41	1.37	2.53	1.38	2.67	1.38	2.84	

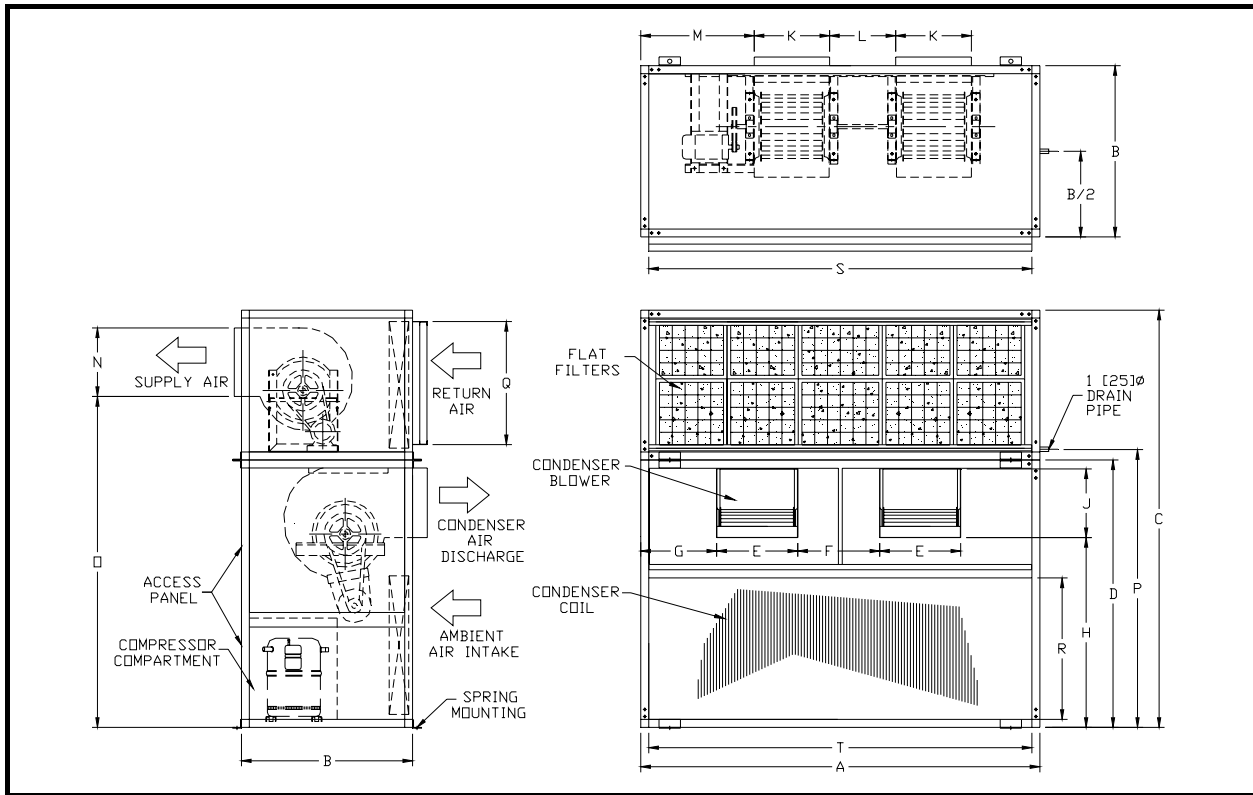
EVAPORATOR BLOWER PERFORMANCE

AVAILABLE EXTERNAL STATIC PRESSURE - IWG - FOR ACCESSORIES AND DUCT SYSTEM STATIC RESISTANCE (ALLOWANCE MADE FOR WET COIL AND FILTERS)

RPM	cfm										Fan Model
	SP	BHP	SP	BHP	SP	BHP	SP	BHP	SP	BHP	
ACPS 190CP											
cfm	4000		4400		4800		5000		5200		Single 15 x 15
700	0.55	1.27	0.50	1.47	0.37	1.70	0.28	1.82	0.17	1.94	
800	0.83	1.55	0.83	1.80	0.77	2.02	0.73	2.18	0.69	2.32	
900	1.14	1.96	1.14	2.18	1.11	2.45	1.10	2.59	1.08	2.75	
1000	1.48	2.35	1.48	2.64	1.45	2.92	1.45	3.06	1.45	3.24	
ACPS 220CP											
cfm	4600		5000		5400		5800		6200		Single 15 x 15
800	1.00	1.92	0.96	2.18	0.86	2.47	0.68	2.79	0.40	3.12	
900	1.33	2.32	1.33	2.59	1.32	2.90	1.24	3.24	1.10	3.62	
1000	1.66	2.77	1.68	3.06	1.70	3.42	1.68	3.78	1.64	4.21	
1100	2.05	3.32	2.06	3.66	2.08	3.99	2.09	4.40	-	-	
ACPS 250CP											
cfm	5600		6000		6400		6800		7200		Twin 15 x 11
600	0.26	1.46	0.22	1.61	0.16	1.77	0.08	1.94	-	-	
700	0.53	1.89	0.50	2.06	0.47	2.27	0.43	2.47	0.37	2.67	
800	0.84	2.43	0.81	2.59	0.78	2.83	0.75	3.06	0.71	3.31	
900	1.18	3.00	1.15	3.26	1.12	3.49	1.10	3.71	1.06	4.01	
ACPS 290CP											
cfm	6500		7000		7500		8000		8500		Twin 15 x 11
700	0.75	2.31	0.73	2.55	0.68	2.83	0.60	3.12	0.48	3.45	
800	1.07	2.88	1.06	3.18	1.04	3.50	1.02	3.79	0.97	4.17	
900	1.41	3.55	1.41	3.87	1.40	4.21	1.40	4.64	1.38	5.03	
1000	1.79	4.33	1.79	4.71	1.79	5.05	1.79	5.51	1.78	5.95	
ACPS 320CP											
cfm	7200		7600		8000		8400		8800		Twin 15 x 11
700	0.63	2.67	0.59	2.88	0.49	3.12	0.39	3.38	0.28	3.63	
800	0.97	3.31	0.95	3.55	0.91	3.79	0.87	4.09	0.81	4.38	
900	1.32	4.01	1.32	4.30	1.29	4.64	1.28	4.95	1.25	5.28	
1000	1.71	4.87	1.70	5.13	1.68	5.86	1.68	5.86	1.67	6.29	
ACPS 380CP											
cfm	7600		8400		9200		10000		10800		Twin 15 x 11
800	0.99	3.55	0.92	4.09	0.78	4.72	0.54	5.36	0.14	6.03	
900	1.36	4.30	1.33	4.95	1.27	5.60	1.15	6.35	0.90	7.18	
1000	1.74	5.13	1.73	5.86	1.71	6.64	1.66	7.43	1.53	8.31	
1100	2.17	6.19	2.16	6.90	2.15	7.73	-	-	-	-	
ACPS 435CP											
cfm	9200		10400		11500		12400		13200		Twin 15 x 15
800	1.04	4.12	0.97	4.97	0.78	5.90	0.48	6.70	0.16	7.51	
900	1.36	4.95	1.37	5.90	1.32	6.92	1.19	7.82	0.97	8.69	
1000	1.71	6.01	1.74	6.98	1.75	8.04	1.72	9.05	1.62	10.00	
1100	2.09	7.14	2.12	8.24	2.16	9.38	2.17	10.40	2.16	11.33	

DIMENSIONAL DATA

DUNHAM-BUSH CENTRIFUGAL CONDENSER FAN PACKAGE AIR-CONDITIONER FOR DUCTED CONDENSER AIR DISCHARGE

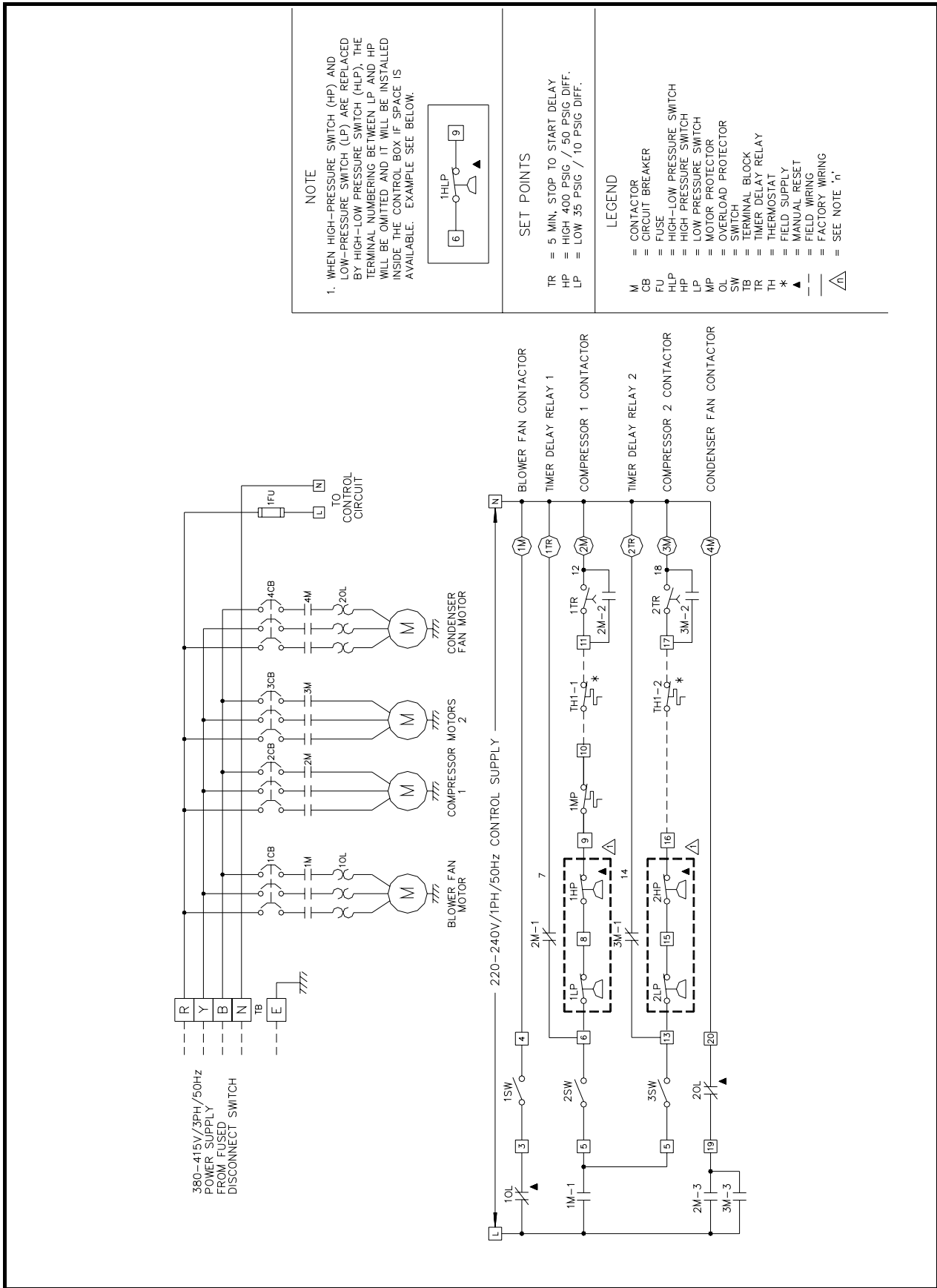


DIMENSION - inches [mm]

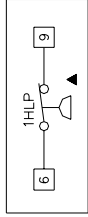
Model ACPS	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
68CP	47 [1194]	38 [965]	77 [1956]	50 [1270]	16 [406]	-	15 1/2 [394]	35 [889]	11 1/2 [292]	13 [330]	-	17 [432]	11 1/2 [292]	57 [1448]	52 [1321]	20 1/2 [521]	26 [660]	41 [1041]	43 [1092]
81CP	47 [1194]	38 [965]	77 [1956]	50 [1270]	16 [406]	-	14 [356]	37 [940]	13 1/2 [343]	13 [330]	-	17 [432]	11 1/2 [292]	57 [1448]	52 [1321]	20 1/2 [521]	26 [660]	41 [1041]	43 [1092]
95CP	58 [1473]	38 [965]	81 [2057]	54 [1372]	16 [406]	-	19 1/2 [495]	35 [889]	13 1/2 [343]	16 [406]	-	21 [533]	13 1/2 [343]	65 [1651]	56 [1422]	20 1/2 [521]	30 [762]	41 [1041]	54 [1372]
108CP	58 [1473]	38 [965]	81 [2057]	54 [1372]	19 [483]	-	19 1/2 [495]	35 [889]	16 [406]	16 [406]	-	21 [533]	13 1/2 [343]	65 [1651]	56 [1422]	25 1/2 [648]	30 [762]	51 [1295]	54 [1372]
125CP	58 [1473]	38 [965]	89 [2261]	58 [1473]	19 [483]	-	19 1/2 [495]	39 [991]	16 [406]	16 [406]	-	21 [533]	13 1/2 [343]	71 [1803]	60 [1524]	25 1/2 [648]	34 [864]	51 [1295]	54 [1372]
145CP	58 [1473]	38 [965]	89 [2261]	58 [1473]	19 [483]	-	19 1/2 [495]	39 [991]	16 [406]	16 [406]	-	21 [533]	13 1/2 [343]	71 [1803]	60 [1524]	25 1/2 [648]	34 [864]	51 [1295]	54 [1372]
160CP	72 1/2 [1842]	41 1/2 [1054]	89 [2261]	58 [1473]	15 [381]	11 5/8 [295]	15 [381]	39 [991]	16 [406]	19 [483]	-	27 [686]	16 [406]	69 [1753]	60 [1524]	25 1/2 [648]	34 [864]	51 [1295]	68 [1727]
190CP	72 1/2 [1842]	41 1/2 [1054]	89 [2261]	58 [1473]	15 [381]	11 5/8 [295]	15 [381]	39 [991]	16 [406]	19 [483]	-	27 [686]	16 [406]	69 [1753]	60 [1524]	25 1/2 [648]	34 [864]	51 [1295]	68 [1727]
220CP	72 1/2 [1842]	41 1/2 [1054]	95 [2413]	64 [1626]	19 [483]	15 1/8 [384]	10 [254]	45 [1143]	16 [406]	19 [483]	-	27 [686]	16 [406]	75 [1905]	66 [1676]	25 1/2 [648]	40 [1016]	62 [1575]	68 [1727]
250CP	81 1/2 [2070]	41 1/2 [1054]	95 [2413]	64 [1626]	19 [483]	15 1/8 [384]	15 [381]	45 [1143]	16 [406]	15 [381]	11 5/8 [295]	21 [533]	16 [406]	75 [1905]	66 [1676]	25 1/2 [648]	40 [1016]	71 5/8 [1819]	77 [1956]
290CP	87 1/2 [2223]	45 1/2 [1156]	105 [2667]	66 [1676]	17 1/2 [445]	13 1/2 [343]	16 [406]	44 [1118]	19 [483]	15 [381]	11 5/8 [295]	25 [635]	16 [406]	85 [2159]	68 [1727]	32 1/2 [826]	40 [1016]	82 [2083]	83 [2108]
320CP	87 1/2 [2223]	45 1/2 [1156]	115 [2921]	76 [1930]	22 [559]	18 [457]	13 [330]	54 [1372]	19 [483]	15 [381]	11 5/8 [295]	25 [635]	16 [406]	95 [2413]	78 [1981]	32 1/2 [826]	50 [1270]	82 [2083]	83 [2108]
380CP	116 [2946]	48 [1219]	125 [3175]	83 [2108]	25 1/8 [638]	19 11/16 [500]	23 [584]	55 [1397]	25 1/8 [638]	15 [381]	11 5/8 [295]	36 [914]	16 [406]	100 [2540]	85 [2159]	36 1/2 [927]	50 [1270]	92 [2337]	111 [2819]
435CP	116 [2946]	48 [1219]	125 [3175]	83 [2108]	25 1/8 [638]	19 11/16 [500]	23 [584]	55 [1397]	25 1/8 [638]	19 [483]	15 1/8 [384]	36 [914]	16 [406]	100 [2540]	85 [2159]	36 1/2 [927]	50 [1270]	106 [2692]	111 [2819]

- Notes:
- 1.) ACPS 68CP to 145CP - one evaporator blower and one condenser blower.
 - 2.) ACPS 160CP and 220CP - one evaporator blower and two condenser blowers.
 - 3.) ACPS 250CP and above - two evaporator blowers and two condenser blowers.
 - 4.) Unit will be delivered in one section unless specified. For split condensing section, piping have to be connected at site.

TYPICAL WIRING SCHEMATIC



NOTE
 1. WHEN HIGH-PRESSURE SWITCH (HP) AND LOW-PRESSURE SWITCH (LP) ARE REPLACED BY HIGH-LOW PRESSURE SWITCH (HLP), THE TERMINAL NUMBERING BETWEEN LP AND HP WILL BE OMITTED AND IT WILL BE INSTALLED INSIDE THE CONTROL BOX IF SPACE IS AVAILABLE. EXAMPLE SEE BELOW.



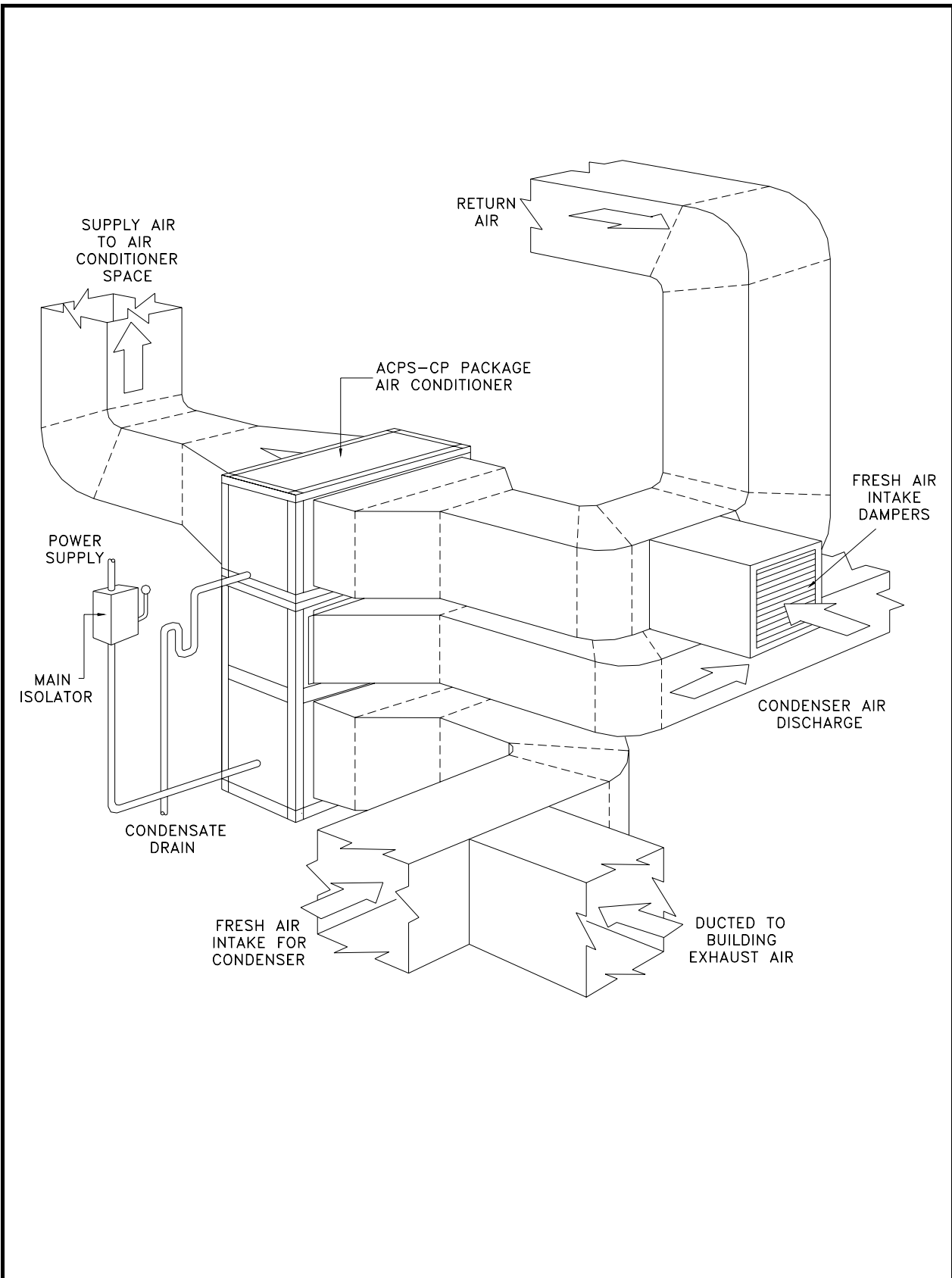
SET POINTS

- TR = 5 MIN. STOP TO START DELAY
- HP = HIGH 400 PSIG / 50 PSIG DIFF.
- LP = LOW 35 PSIG / 10 PSIG DIFF.

LEGEND

- M = CONTACTOR
- CB = CIRCUIT BREAKER
- FU = FUSE
- HLP = HIGH-LOW PRESSURE SWITCH
- HP = HIGH PRESSURE SWITCH
- LP = LOW PRESSURE SWITCH
- MP = MOTOR PROTECTOR
- OL = OVERLOAD PROTECTOR
- SW = SWITCH
- TB = TERMINAL BLOCK
- TR = TIMER DELAY RELAY
- TH = THERMOSTAT
- FS = FIELD SUPPLY
- MR = MANUAL RESET
- FW = FIELD WIRING
- FN = SEE NOTE 'n'

TYPICAL INSTALLATION WITH AIR DUCTS





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