

The **Carnes** constant volume fan terminal unit provides constant air volume to the space while retaining the advantages of a variable air volume system.

The primary air control assembly operates in the same manner as a standard throttling control valve when cooling loads are high. As cooling loads diminish the integral blower(s) induces warm ceiling plenum air to maintain constant air volume.

Other Features Include:

- Air flow capacities to 2850 CFM.
- Durable 22 gauge galvanized steel casing construction.
- Access panel for internal components.
- Standard inlet sizes and slip and drive discharge connections.
- Forward curved centrifugal type fan assemblies with thermally protected, permanent split capacitor type 115 or 277 volt, single phase, fractional horsepower three speed motors.
- Field adjustable fan air flow damper (between three speeds).
- Fan/motor assemblies are isolated from the casing using rubber isolators to minimize vibration transmission.
- Low leakage primary air damper design.
- Secondary air filter rack.
- Performance data based on test conducted in accordance with ADC/ARI industry standard 880.
- Air flow switch.
- All units are equipped with pressure independent pneumatic or electronic controls.
- Field adjustable P/E switch with pneumatic controls.
- Averaging type velocity sensor and calibration chart for measuring air flow through the primary air damper.
- Insulation is 1" thick, 1½ lb. dual density fiberglass with surface treated to prevent air erosion, UL listed and meets NFPA 90A requirements.
- Optional ETL listing (Models ACFF/ACWF/ACEF).
- Optional fan speed selector switch.
- Optional primary air controls enclosure.
- Optional one or two row hot water coils (Models ACWB/ACWF). Coil is factory attached to the unit discharge.
- Optional one, two or three stage electric reheat coils (Models ACEB/ACEF). Coil is factory attached to unit discharge or shipped separately for field mounting.
- Optional secondary air filters, Class I (re-usable) or Class II (throw away).
- Optional quick release access panel.
- Optional foil coated insulation (Hospital, Laboratory, etc. applications).

Available Modules:

- Basic control unit—Models ACFB/ACFF.
- Basic control unit with hot water coil—Models ACWB/ACWF.
- Basic control unit with or without electric coil—Models ACEB/ACEF.

Sound Data Size 16

Fan Speed	Pri/Sec CFM	Pri. Air ΔP_s	Discharge Sound							Radiated Sound													
			Sound Power db Octave Band							NC	Sound Power db Octave Band							NC					
			2	3	4	5	6	7	2		3	4	5	6	7								
HI	2740/0	.36	78	79	74	73	72	70	63	84	77	69	65	65	63	50	84	77	69	65	65	63	50
		.50	78	79	74	73	72	70	63	84	77	69	65	65	63	50	84	77	69	65	65	63	50
		1.00	80	80	75	74	73	72	64	86	79	70	66	65	64	53	86	79	70	66	65	64	53
		3.00	82	84	78	76	76	74	68	89	84	77	70	69	67	57	89	84	77	70	69	67	57
MED	2320/0	.34	75	74	69	68	66	64	57	80	73	64	61	61	58	45	80	73	64	61	61	58	45
		.50	75	74	69	68	66	64	57	80	73	64	61	61	58	45	80	73	64	61	61	58	45
		1.00	75	75	70	68	67	65	58	82	76	67	62	61	59	48	82	76	67	62	61	59	48
		3.00	79	80	73	72	71	69	64	86	80	74	68	65	63	53	86	80	74	68	65	63	53
LO	1640/0	.17	68	66	62	61	58	55	50	73	65	58	54	52	49	35	73	65	58	54	52	49	35
		.50	68	66	62	61	58	55	50	73	65	58	54	52	49	35	73	65	58	54	52	49	35
		1.00	71	69	64	63	60	58	52	76	69	62	57	55	52	39	76	69	62	57	55	52	39
		3.00	74	74	68	67	64	61	57	81	75	71	64	61	58	47	81	75	71	64	61	58	47
LO	820/820	.50	67	66	63	61	59	56	50	71	62	58	54	53	50	33	71	62	58	54	53	50	33
		1.00	67	66	63	62	59	57	51	72	62	60	55	54	51	35	72	62	60	55	54	51	35
		3.00	68	68	64	64	61	58	53	74	67	63	59	57	54	38	74	67	63	59	57	54	38
		0/1640	—	66	64	61	61	58	55	50	69	61	57	54	53	50	32	69	61	57	54	53	50

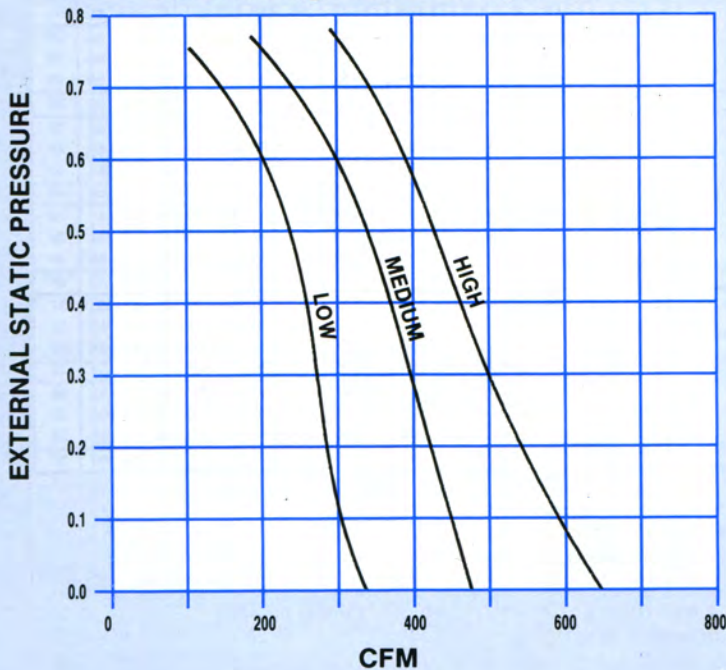
- NOTES:**
1. ΔP_s is static pressure difference from inlet to discharge.
 2. CFM value shown is maximum available based on .25 IWC external static pressure.
 3. External static pressure is pressure due to heating coils and/or downstream ductwork.
 4. Discharge NC level includes 10 db for room absorption.
 5. Radiated NC level is based on sound emanating from the casing with room absorption (10 db) and ceiling plenum absorption and transmission loss (10 db octave bands 2-4, 15 db octave bands 5-7).
 6. First value of primary air ΔP_s at each fan speed is the minimum pressure drop required to deliver CFM shown with primary damper in the wide open position.
 7. Minimum ΔP_s of primary air does not include hot water or electric coils. (Refer to coil sections of this catalog for pressure drop and performance information.)

FAN CURVES — CFM vs External Static Pressure

Models AC 06 & AC 07

1/6 H. P. Motor

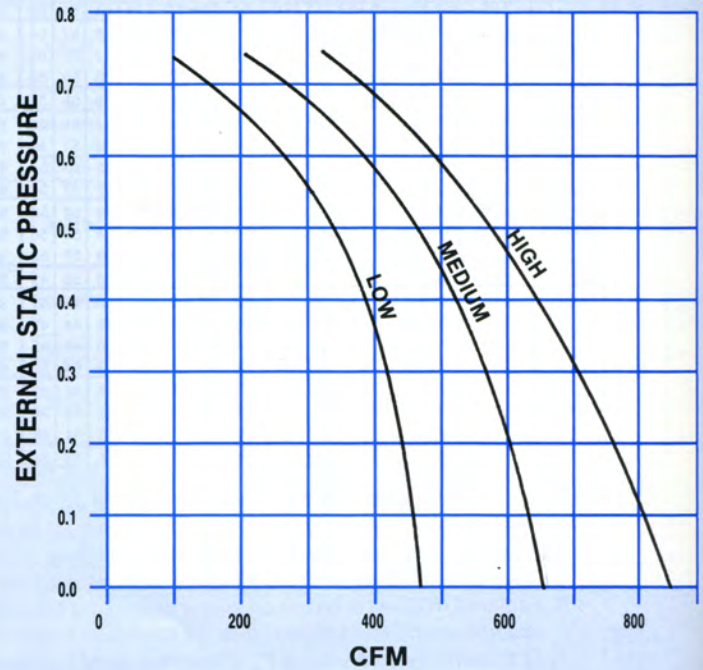
F.L.A.: 2.0A @ 120V 1.0A @ 277V



Models AC 08

1/5 H. P. Motor

F.L.A.: 3.1A @ 120V 1.3A @ 277V

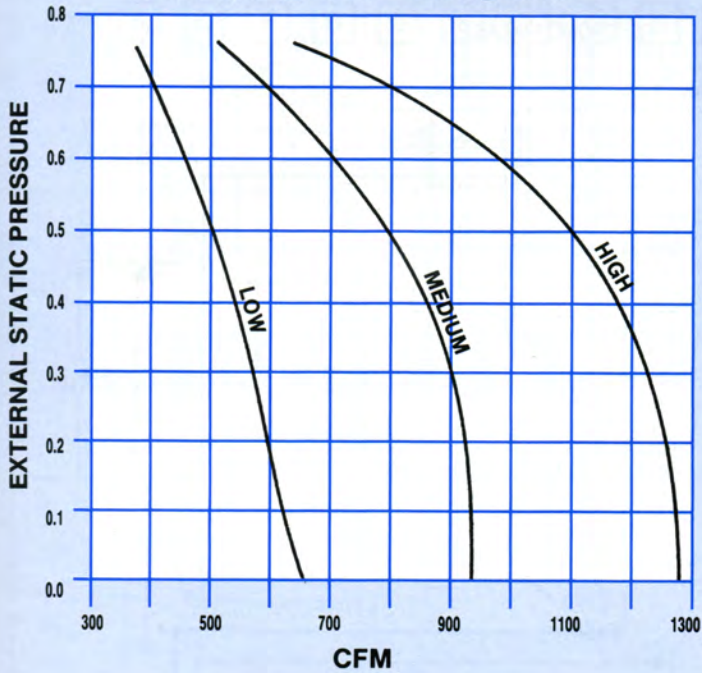


- NOTES:**
1. Pressure drops due to heating coils are treated as external static pressures. (Refer to coil sections of this catalog for additional information.)
 2. F.L.A. = Full Load Amps of motor.

FAN CURVES — CFM vs External Static Pressure

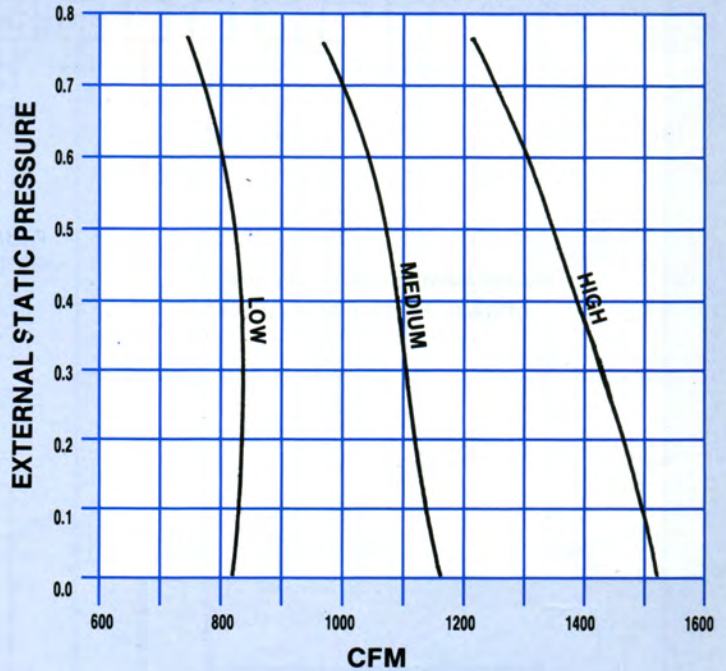
Model AC 10

1/4 H. P. Motor
F.L.A.: 4.9A @ 120V 1.7A @ 277V



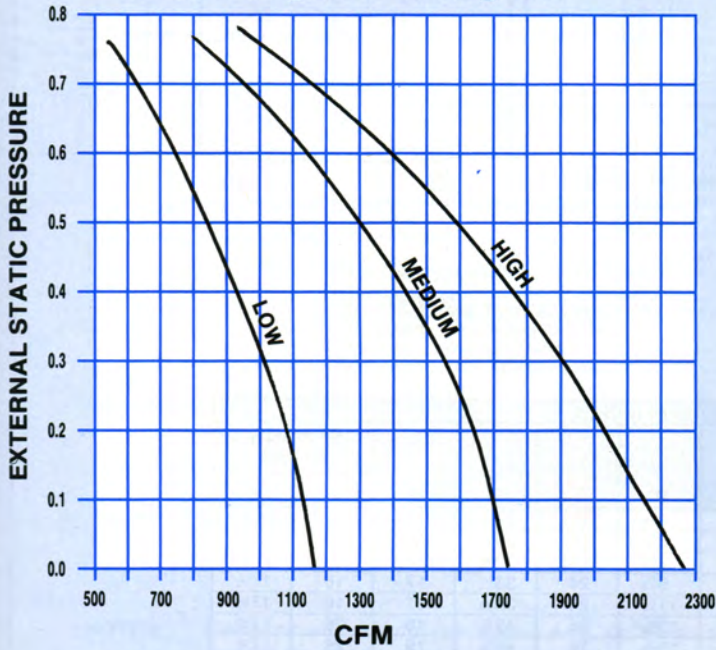
Models AC 12

1/2 H. P. Motor
F.L.A.: 6.6A @ 120V 2.5A @ 277V



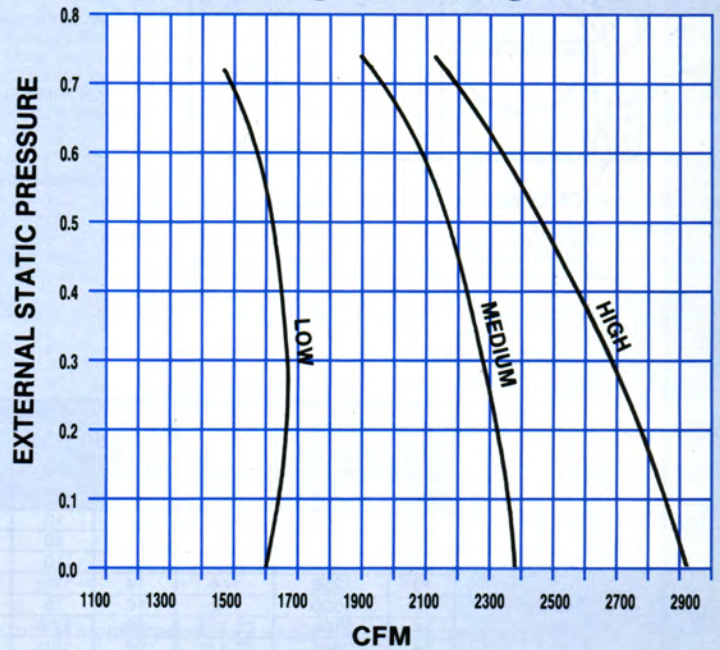
(2) 1/4 H. P. Motors

F.L.A.: 9.8A @ 120V 3.4A @ 277V



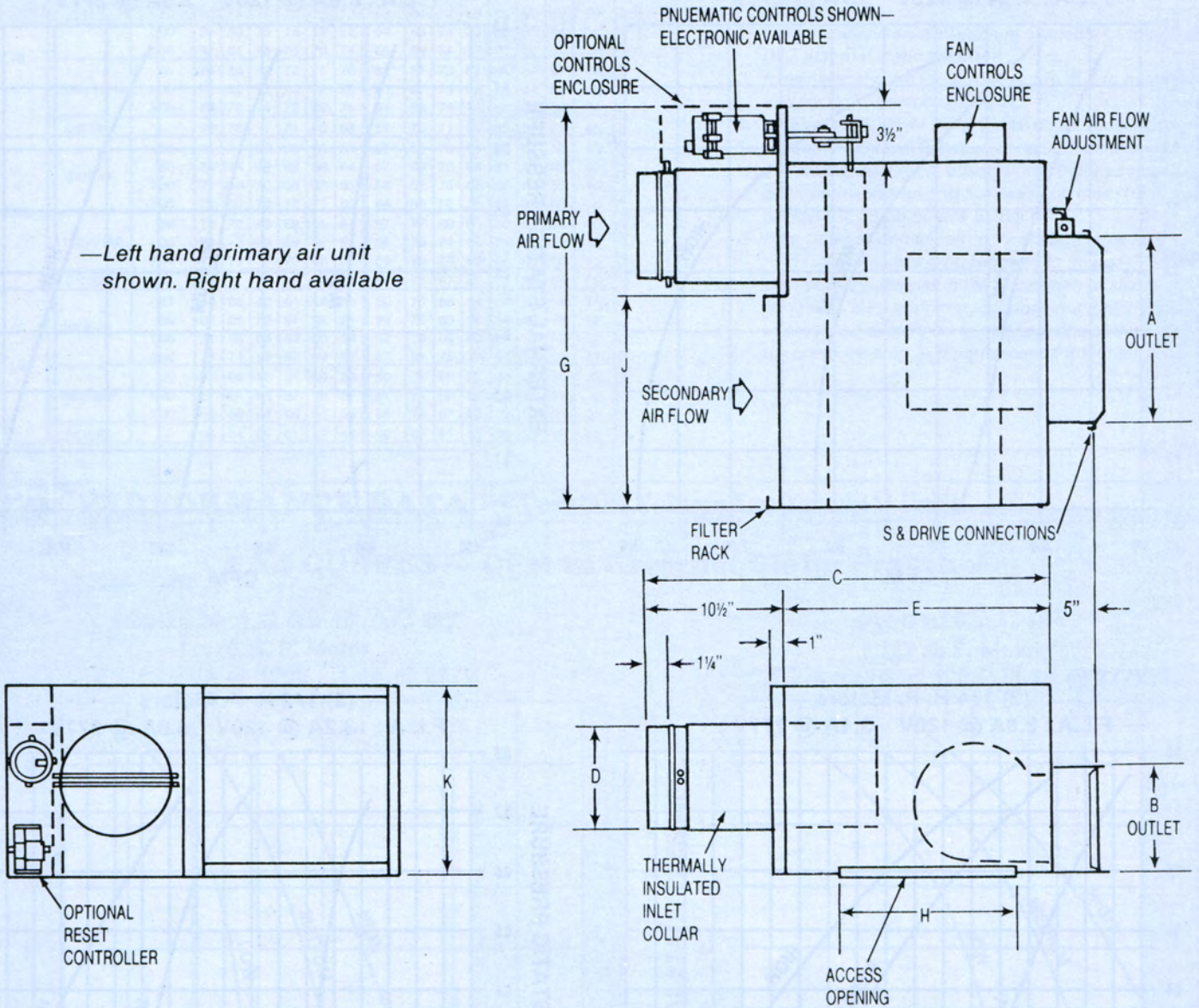
(2) 1/2 H. P. Motors

F.L.A.: 13.2A @ 120V 5.0A @ 277V

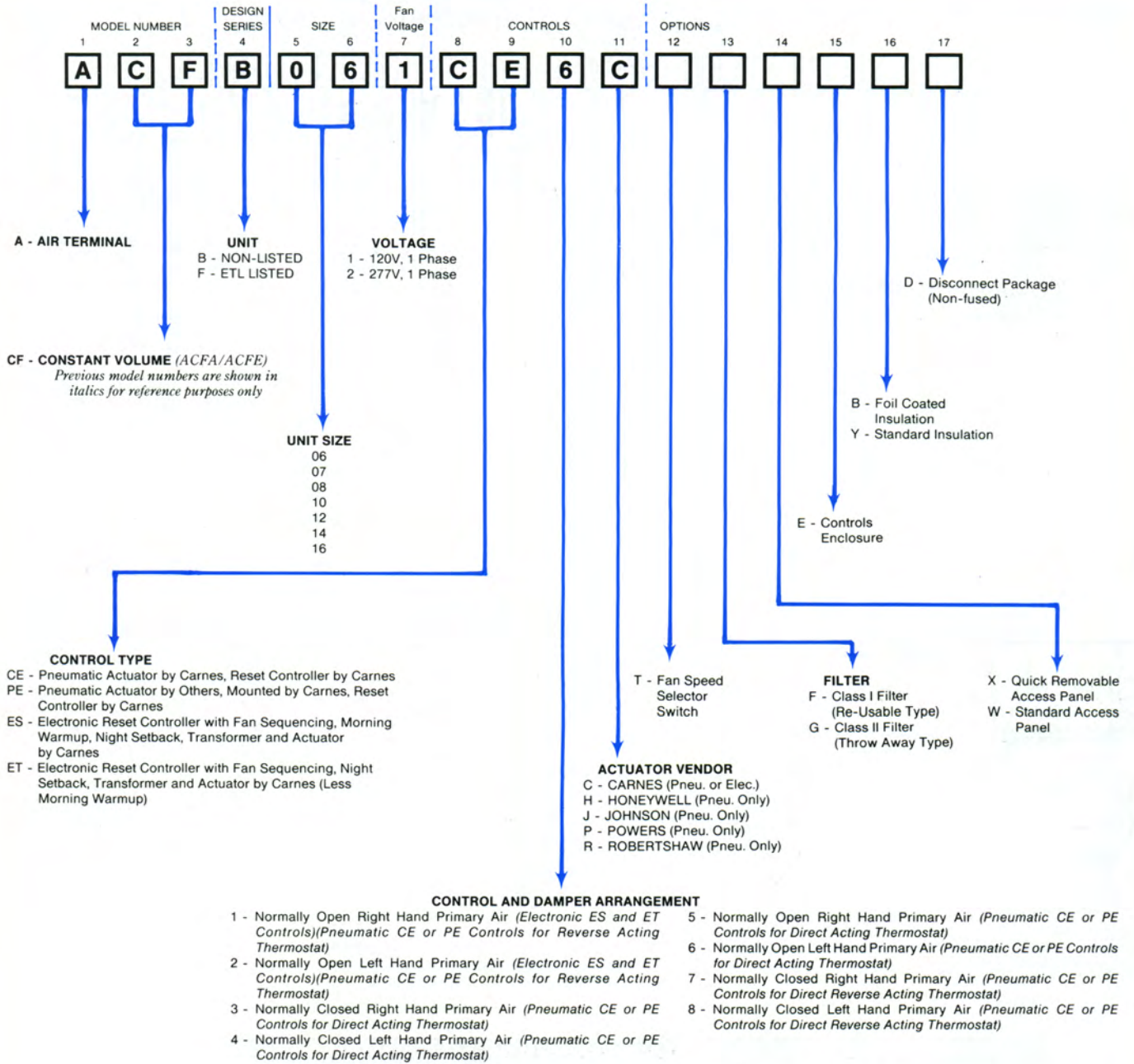


- NOTES:** 1. Pressure drops due to heating coils are treated as external static pressures (Refer to coil sections of this catalog for additional information.)
2. F.L.A. = Full Load Amps of motor.

—Left hand primary air unit shown. Right hand available



DIMENSIONS LISTED IN INCHES											
Unit Size	Nominal CFM @ .10" E.S.P.	Fan H.P.	S & Drive Outlet		C	D	E	G	H	Secondary Air Inlet	
			A	B						J	K
06	580	1/6	14	10	31	5 3/8	20 1/2	29 1/2	13 1/2	12	14
07	580	1/6	14	10	31	6 7/8	20 1/2	29 1/2	13 1/2	12	14
08	800	1/5	14	10	31	7 7/8	20 1/2	29 1/2	13 1/2	12	14
10	1250	1/4	14	12 1/2	34 1/2	9 7/8	24	35 1/2	17	16	17 1/2
12	1500	1/2	16	15	34 1/2	11 7/8	24	35 1/2	17	16	17 1/2
14	2100	(2) 1/4	32	17 1/2	36 1/2	13 3/8	26	49 1/2	19	26	17 1/2
16	2850	(2) 1/2	32	17 1/2	36 1/2	15 3/8	26	49 1/2	19	26	17 1/2



A Carnes thermostat **must be ordered** for compatibility with ES and ET control options.

- NOTES:**
1. Electronic units do not fail "open". A "1" or "2" is used for model identification only. (Refer to controls section of this catalog for additional operating instructions.)
 2. "Hand" is determined by facing the unit in the direction of air flow into the unit from the supply duct.