Fan-Powered Series

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Fan-Powered Series

Service Model Number Description

Digit 1, 2—Unit Type
VS VariTrane fan-powered series

Digit 3—Reheat
C Cooling Only
E Electric Heat
W Hot Water Heat

Digit 4—Development Sequence
F Sixth

Digit 5, 6—Primary Air Valve
04 4" inlet (225 max cfm)
05 5" inlet (350 max cfm)
06 6" inlet (500 max cfm)
08 8" inlet (900 max cfm)
10 10" inlet (1400 max cfm)
12 12" inlet (2000 max cfm)
14 14" inlet (3000 max cfm)
16 16" inlet (4000 max cfm)

Digit 7, 8—Secondary Air Valve
00 N/A

Digit 9—Fan
P 02SQ fan (700 nominal cfm)
Q 03SQ fan (1200 nominal cfm)
R 04SQ fan (1550 nominal cfm)
S 05SQ fan (1900 nominal cfm)
T 06SQ fan (2600 nominal cfm)
U 07SQ fan (3000 nominal cfm)

Fan Note: See fan curves for specific airflows

Digit 10, 11—Design Sequence
A0 Design Sequence (Factory assigned)

Digit 12, 13, 14, 15—Controls
ENON No controls, field-installed DDC or analog
ENCL ENON with control enclosure
PNON No controls, field-installed pneumatic
DD00 Trane elec actuator only
DD01 DDC – cooling only
DD02 DDC – N.C. on/off water control
DD03 DDC – prop hot water control
DD04 DDC – on/off electric heat control
DD05 DDC – pulse-width modulation electric heat control
DD07 DDC N.O. on/off hot water control
DD11 LonTalk DDC Controller—Cooling only
DD12 LonTalk DDC Controller w/ N.C. on/off hot water control
DD13 LonTalk DDC Controller w/ proportional hot water control
DD14 LonTalk DDC Controller–on/off electric heat control
DD15 LonTalk DDC Controller w/ pulse-width modulation electric heat control
DD17 LonTalk DDC Controller w/ N.O. on/off hot water control
AT08 FM Automated Logic ZN341v+
AT10 FM Automated Logic ZN141v+
FM00 FM customer actuator & control
FM01 FM Trane actuator w/ customer-supplied controller
HNY2 FM Honeywell W7751H
INV3 FM Invensys MNL-V2R
PWR1 FM Siemens 540-100 w/ GDE131.1 actuator
PWR2 FM Siemens 540-103 w/ GDE131.1 actuator
PW12 FM Siemens 550-065
PW13 FM Siemens 550-067
VMA2 FM Johnson VMA-1420
EI71 Analog fan-powered series with optional on/off reheat
PN00 PN – N.O. Trane pneumatic actuator, R.A. stat
PN51 PN – N.O. PVR, duct pressure switch, R.A. stat
PN52 PN – N.O. PVR, dual pressure main, R.A. stat

Notes:
N.C. = *Normally-closed*
N.O. = *Normally-opened*
DA Stat = *Direct-acting pneumatic t-stat (by others)*
RA Stat = *Reverse-acting pneumatic t-stat (by others)*
PN = *Pneumatic*
FM = *Factory installation of customer-supplied controller*
PVR = *Pneumatic Volume Regulator*

Digit 16—Insulation
A 1/2" Matte-faced
B 1" Matte-faced
C 1/2" Foil-faced
D 1" Foil-faced
F 1" Double-wall
G 3/8" Closed-cell

Digit 17—Motor Type
D PSC Motor
E High-efficiency motor (ECM)

Digit 18—Motor Voltage
1 115/60/1
2 277/60/1
3 347/60/1
4 208/60/1
5 230/50/1

Digit 19—Outlet Connection
1 Flanged
2 Slip & Drive

Digit 20—Attenuator
0 None
W With

Digit 21—Water Coil
0 None
3 1-Row–Discharge installed, LH
4 1-Row–Discharge installed, RH
5 2-Row–Discharge installed, LH
6 2-Row–Discharge installed, RH

Digit 22—Electrical Connections
L Left
R Right
W Narrow Corridor LH, Hi-Volt Inlet Facing
X Narrow Corridor RH, Hi-Volt Inlet Facing
Y Narrow Corridor LH, Hi-Volt Discharge Facing
X Narrow Corridor RH, Hi-Volt, Discharge Facing

Water Coil and Electrical Connections Note: Airflow hitting you in the face.

Digit 23—Transformer
0 N/A (provided as standard)

Digit 24—Disconnect Switch
0 None
W With

Note: VSCF, VSWF – Toggle Disconnect VSEF – Door Interlocking Power Disconnect

Digit 25—Power Fuse
0 None
W With

Digit 26—Electric Heat Voltage
0 None
A 208/60/1
B 208/60/3
C 240/60/1
D 277/60/1
E 480/60/1
F 480/60/3
G 347/60/1
H 575/60/3
J 380/50/3
K 120/60/1

Digit 27, 28, 29—Electric Heat kW
000 None
050 0.5 kW
010 1.0 kW
015 1.5 kW
240 24.0 kW

Digit 30—Electric Heat Stages
0 None
1 1 Stage
2 2 Stages Equal
3 3 Stages Equal

Digit 31—Contactors
0 None
1 24-volt magnetic
2 24-volt mercury
3 PE with magnetic
4 PE with mercury

Digit 32—Airflow Switch
0 None
W With

Fan-Powered Series Selection Procedure

This section describes the elements and process required to properly select series fan-powered VAV terminals, and includes a specific example. The selection procedure is iterative in nature, which makes computer selection desirable.

Selection of fan-powered VAV terminals involves four elements:

- Air valve selection
- Heating coil selection
- Fan size and speed selection
- Acoustics

NOTE: Use the same procedures for selecting Low-Height Series Fan-Powered Units as used for selecting Series Fan-Powered Units.

Air Valve Selection

Provided in the Performance Data—Air Pressure Requirements section of the catalog is the unit air pressure drop at varying airflows. To select an air valve, determine the airflow required at design cooling. Next, select an air valve diameter that will allow proper airflow modulation, (a velocity of 1600 – 2000 FPM is recommended). Keep in mind that **modulation below 300 FPM is not recommended**. Proper selection requires defining the minimum valve airflow (in either heating or cooling) and maintaining at least 300 FPM through the air valve. The minimum is typically set based on ventilation requirements. If zone ventilation does not come through the VAV unit, a minumum valve position can also be zero.

Heating Coil Selection

Supply Air Temperature
The first step required when selecting a heating coil is to determine the heating supply air temperature to the space, calculated using the heat transfer equation. Air temperature difference is defined as the heating supply air temperature to the space minus the winter room design temperature. The zone design heat loss rate is denoted by the letter Q. Supply air temperature to the space equals the leaving air temperature (LAT) for the terminal unit.

Coil Leaving Air Temperature
Once the terminal unit LAT is determined, the heating requirements for the coil can be calculated. Electric and hot water coil LAT equals the LAT for the unit because, in each case, the coil is located on the unit discharge.

Coil Entering Air Temperature
Unit heat is mounted on the discharge of the unit. Therefore, electric and hot water coil EAT equals the temperature of blended primary air and plenum air.

Capacity Requirement
Once both coil EAT and LAT are determined, the heat transfer (Q) for the coil must be calculated using the heat transfer equation. For electric heat units, the Q value must be converted from Btu to kW for heater selection. The required kW should be compared to availability charts in the performance data section for the unit selected. For hot water heat units, reference the capacity charts in the performance data section for the required heat transfer Q and airflow to pick the appropriate coil.

Fan Size and Motor Selection

Fan Airflow
Fan airflow is equal to the unit design flow in both heating and cooling modes.

Fan External Static Pressure
Fan external static pressure is the total resistance experienced by the fan, which may include downstream ductwork and diffusers, heating coils, and sound attenuators. As total airflow varies, so will static pressure, making calculation of external static pressure dependent on unit type.

With series fan-powered terminal units, all airflow passes through the fan. External static pressure requirements are the sum of the individual component pressure requirements at the design airflow of the unit.

Fan Motor Type
The fan motor type that will be used for the unit will need to be known before fan selection can begin. The ECM motor offers more efficient operation than the standard single-speed PSC motor and will use different fan curves. Because series fans operate in both heating and cooling mode, payback is typically 2–3 years for the premium ECM option.

Refer to the Features and Benefits section to determine which motor is more appropriate for the unit

Selection
Once fan airflow and external static pressure is determined, reference the fan curves in the performance data section. Cross plot both airflow and external static pressure on each applicable graph. If selecting with an ECM motor, make sure you use the ECM fan curves. If the point is in between the high and low limits of the graph, that fan will work.

It is common to identify more than one fan that can meet the design requirements. Typically selection begins with the smallest fan available to meet capacity. If this selection does not meet acoustical requirements, upsizing the fan and operating it at a slower speed can be done for quieter operation.

Acoustics

Air Valve Generated Noise
To determine the noise generated by the air valve, two pieces of information are required; design airflow and design air pressure drop. The design air pressure drop is determined by taking the difference between design inlet and static pressure (the valve's most over-pressurized condition) and external static pressure at design cooling flow. This represents a worst-case operating condition for the valve. In summary, fan + 100% valve radiated sound is the dominant acoustical impact on the series VAV system.

Fan Generated Noise
To determine fan noise levels, fan airflow, external static pressure and speed information is required.

Evaluation Elements
Air valve and fan are evaluated together because they have simultaneous operation.

Access the appropriate acoustics table(s) of the catalog and determine the sound power and NC prediction for both the discharge and radiated paths. It is important to understand that discharge air noise is generally not a concern with fan-powered terminals. **Radiated noise from the unit casing typically dictates the noise level of the space (radiated fan + 100% valve).**

If the entire unit or any element of it is generating noise in excess of the Noise Criteria requirements, the size of the appropriate portion of the terminal should be increased. Because the selection procedure is iterative, care should be taken by the designer to confirm that the change in selection does not affect other elements of the unit or system design.

Selection Example—
Series With Hot Water Heat and ECM

Air Valve Selection
Required Information:

Design cooling airflow	1000 cfm
Minimum ventilation airflow	200 cfm
Maximum unit APD	0.40 in. wg

A 10" air valve is selected.

Check–is minimum airflow above 300 FPM?

Answer–Yes. Minimum cfm allowable = 165 cfm. (See General Data—Valve/ Controller Guidelines pp FPS 8).

The 03SQ fan will be used in this instance. By interpolating, you can choose a 10" air valve with wide-open air pressure drop of 0.32 in. wg.

Heating Coil Selection
Required Information:

Zone design heat loss	30000 Btu
Design heating airflow	1000 cfm
Winter room design temp.	68°F
Coil entering water temp.	180°F
Minimum primary airflow	200 cfm
Plenum temperature	70°F
Primary air temperature	55°F
Coil flow rate:	2 gpm

Heat Transfer Equation (Btu)
Q = 1.085 x Cfm x ΔTemperature

For the heating zone, the temperature difference is the zone supply air temperature (SAT) minus the winter room design temperature.

30000 Btu = 1.085 x 1000 x (SAT-68°F)

SAT = 96°F

Because the hot water coil is on the unit discharge of a series fan-powered unit, the unit supply air temperature is equal to the coil LAT. Coil entering air temperature (EAT) is a mix of plenum air and the minimum primary airflow.

1000 cfm x Coil EAT =
200 cfm x 55°F +
(1000 cfm - 200 cfm) x 70°F

Coil EAT = 67°F

For the heating coil, the temperature difference is the calculated coil LAT minus the coil EAT (Plenum Air Temperature).

Coil Q = 1.085 x 1000 x (96-70) =
31,465 Btu

On a series unit the hot water coil is located on the discharge, so the total heating airflow, 1000 cfm, passes through the coil.

Coil Performance Table
Selection:
Performance:
Size 03SQ fan, 1-row coil at 2 gpm = 32.23 MBh
1-row Coil at 2 gpm= 0.83 ft WPD

Fan Selection
Required Information:

Fan airflow:	1000 cfm
Downstream static pressure at design airflow:	0.25 in. wg

A size 03SQ fan can operate at up to 1150 cfm with a 1-row coil or 1100 with a 2-row coil and 0.25" downstream static pressure. Inlet and coil selections should be verified with TOPSS electronic selections.

If an attenuator is required, use the attenuator air pressure drop tables to define additional fan static pressure.

Acoustics
Required Information:

Design inlet static press:	0.75 in. wg
NC criteria (general office space):	NC-40

The selection is a VSWF Series Fan-Powered Terminal Unit, 10" primary, series fan size 03SQ, with a 1-row hot water coil.

Determine the casing radiated noise level because it typically dictates the sound level (NC) of the space. With a series unit, the air valve and fan operate simultaneously, so the chart for air valve and fan sound data must be consulted.

The acoustics value of a size 10" air valve with a size 03SQ fan has the following tabulated results:

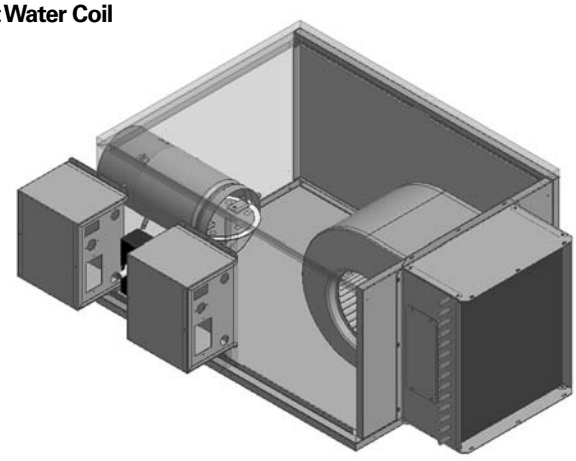
Octave Band	2	3	4	5	6	7	NC
Sound Power	70	65	63	61	59	59	38

The predicted NC level for design conditions is NC-38.

Note: Make sure the water coil acoustical impact is considered. For this example, the appurtenance effect adds one (1) NC to fan-only radiated sound. Because this does not set NC for this selection, it can be overlooked. The addition of an attenuator (see same appurtenance effect tables reduces the NC four (4) points, resulting in a final selection NC = 30 (if required).

Caution: Do not overlook the water coil impact on acoustics. A good rule of thumb is that it will add 1 to 2 NC to "fan only" radiated sound for most applications.

Series Fan-Powered Unit with Hot Water Coil



Computer Selection

The advent of personal computers has served to automate many processes that were previously repetitive and time-consuming. One of those tasks is the proper scheduling, sizing, and selection of VAV terminal units. Trane has developed a computer program to perform these tasks. The software is called the Trane Official Product Selection System (TOPSS).

The TOPSS program will take the input specifications and output the properly sized VariTrane VAV terminal unit along with the specific performance for that size unit.

The program has several required fields, denoted by red shading in the TOPSS screen, and many other optional fields to meet the criteria you have. Required values include maximum and minimum airflows, control type, and model. If selecting models with reheat, you will be required to enter information to make that selection also. The user is given the option to look at all the information for one selection on one screen or as a schedule with the other VAV units on the job.

The user can select single-duct, dual-duct, and fan-powered VAV boxes with the program, as well as most other Trane products, allowing you to select all your Trane equipment with one software program.

The program will also calculate sound power data for the selected terminal unit. The user can enter a maximum individual sound level for each octave band or a maximum NC value. The program will calculate acoustical data subject to default or user supplied sound attenuation data.

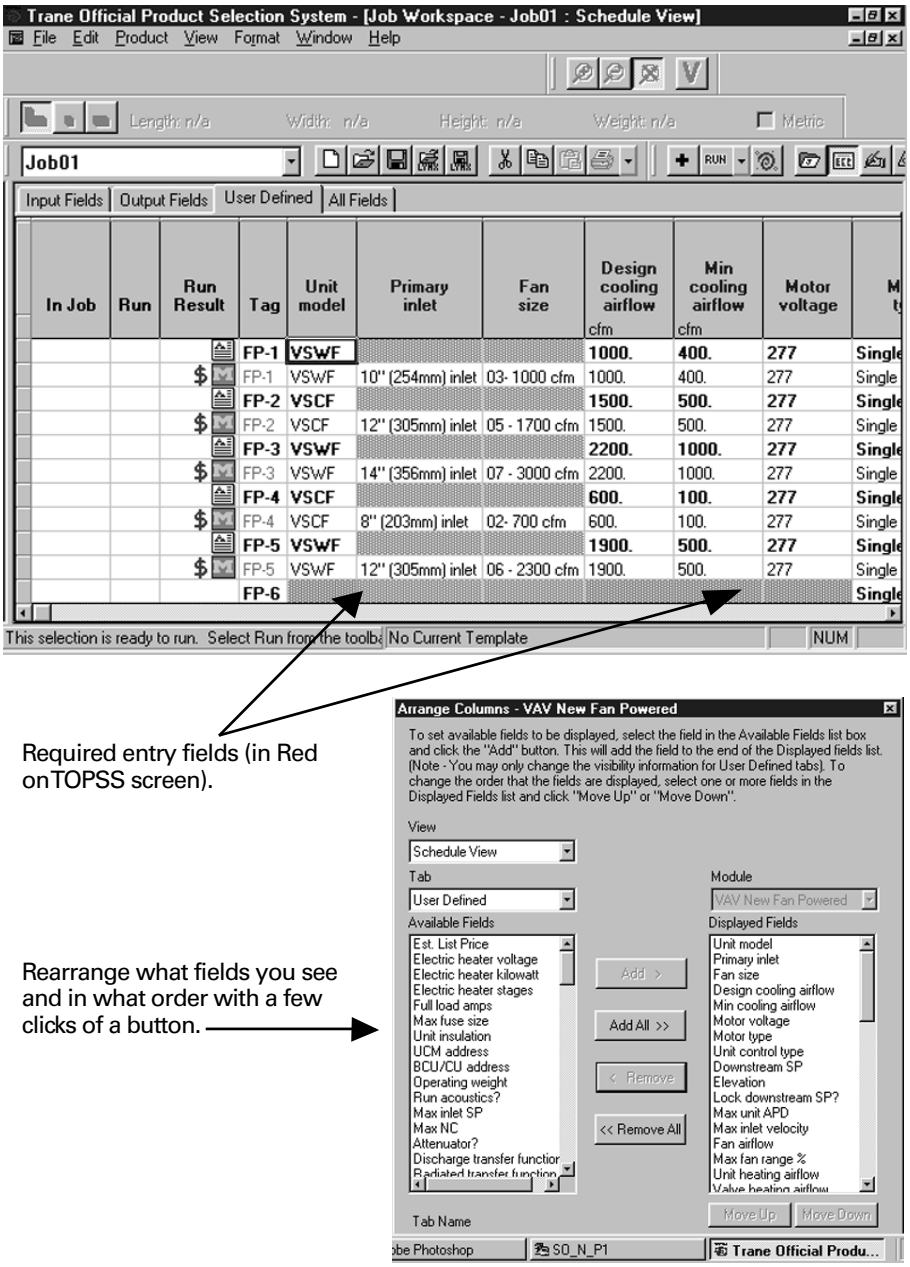
Schedule View

The program has many time-saving features such as:

- Copy/Paste from spreadsheets like Microsoft® Excel
- Easily arranged fields to match your schedule
- Time-saving templates to store default settings

The user can also export the Schedule View to Excel to modify and put into a CAD drawing as a schedule.

Specific details regarding the program, its operation, and how to obtain a copy of it are available from your local Trane sales office.



Required entry fields (in Red on TOPSS screen).

Rearrange what fields you see and in what order with a few clicks of a button.

Primary Airflow Control Factory Settings – I-P

Control Type	Air Valve Size (in.)	Maximum Valve Cfm	Maximum Controller Cfm	Minimum Controller Cfm	Constant Volume Cfm
Direct Digital Control/ UCM	4	225	25–225	0, 25–225	25–225
	5	350	40–350	0, 40–350	40–350
	6	500	60–500	0, 60–500	60–500
	8	900	105–900	0, 105–900	105–900
	10	1400	165–1400	0, 165–1400	165–1400
	12	2000	240–2000	0, 240–2000	240–2000
	14	3000	320–3000	0, 320–3000	320–3000
	16	4000	420–4000	0, 420–4000	420–4000
Pneumatic with Volume Regulator	4	225	38–225	0, 38–225	38–225
	5	350	63–350	0, 63–350	63–350
	6	500	73–500	0, 73–500	73–500
	8	900	134–900	0, 134–900	134–900
	10	1400	215–1400	0, 215–1400	215–1400
	12	2000	300–2000	0, 300–2000	300–2000
	14	2885	408–2887	0, 408–2887	408–2887
	16	3785	536–3789	0, 536–3789	536–3789
Analog Electronic	4	225	52–225	0, 52–225	52–225
	5	350	82–350	0, 82–350	82–350
	6	500	120–500	0, 120–500	120–500
	8	900	210–900	0, 210–900	210–900
	10	1400	328–1400	0, 328–1400	328–1400
	12	2000	470–2000	0, 470–2000	470–2000
	14	3000	640–3000	0, 640–3000	640–3000
	16	4000	840–4000	0, 840–4000	840–4000

Primary Airflow Control Factory Settings – SI

Control Type	Air Valve Size (in.)	Maximum Valve L/s	Maximum Controller L/s	Minimum Controller L/s	Constant Volume L/s
Direct Digital Control/ UCM	4	106	12–106	0, 12–106	12–106
	5	165	19–165	0, 19–165	19–165
	6	236	28–236	0, 28–236	28–236
	8	425	50–425	0, 50–425	50–425
	10	661	77–661	0, 77–661	77–661
	12	944	111–944	0, 111–944	111–944
	14	1416	151–1416	0, 151–1416	151–1416
	16	1888	198–1888	0, 198–1888	198–1888
Pneumatic with Volume Regulator	4	106	18–106	0, 18–106	18–106
	5	165	30–165	0, 30–165	30–165
	6	236	35–236	0, 35–236	35–236
	8	425	63–425	0, 63–425	63–425
	10	661	102–661	0, 102–661	102–661
	12	944	141–944	0, 141–944	141–944
	14	1362	193–1363	0, 193–1363	193–1363
	16	1787	253–1788	0, 253–1788	253–1788
Analog Electronic	4	106	25–106	0, 25–106	25–106
	5	165	39–165	0, 39–165	39–165
	6	236	57–236	0, 57–236	57–236
	8	425	100–425	0, 100–425	100–425
	10	661	156–661	0, 156–661	156–661
	12	944	222–944	0, 222–944	222–944
	14	1416	303–1416	0, 303–1416	303–1416
	16	1888	397–1888	0, 397–1888	397–1888

Note: Maximum airflow must be greater than or equal to minimum airflow.

Unit Air Pressure Drop – in. wg (I-P)

Fan/Inlet Size	Airflow Cfm	Unit
2SQ–04	200	0.03
	225	0.03
2SQ–05	200	0.03
	250	0.04
	300	0.06
	350	0.09
2SQ–06	200	0.03
	300	0.06
	400	0.12
	500	0.19
2SQ–08	200	0.01
	400	0.05
	550	0.10
	700	0.16
2SQ–10	200	0.01
	400	0.02
	550	0.06
	700	0.11
03SQ–06	250	0.10
	300	0.15
	400	0.34
	500	0.45
03SQ–08	250	0.05
	500	0.16
	700	0.31
	900	0.49
03SQ–10	250	0.03
	550	0.11
	850	0.24
	1200	0.44
03SQ–12	250	0.01
	550	0.07
	850	0.16
	1200	0.32
04SQ–06	330	0.16
	400	0.29
	450	0.35
	500	0.48
04SQ–08	330	0.04
	500	0.12
	700	0.25
	900	0.44
04SQ–10	330	0.02
	700	0.12
	1050	0.29
	1400	0.54
04SQ–12	330	0.02
	750	0.11
	1150	0.28
	1550	0.51
04SQ–14	330	0.02
	750	0.11
	1150	0.26
	1550	0.48

Fan/Inlet Size	Airflow Cfm	Unit
05SQ–10	400	0.01
	750	0.08
	1100	0.22
	1400	0.39
05SQ–12	400	0.01
	900	0.09
	1400	0.28
	1900	0.58
05SQ–14	400	0.01
	900	0.09
	1400	0.26
	1900	0.53
6SQ–10	700	0.01
	950	0.03
	1200	0.12
	1400	0.22
6SQ–12	700	0.01
	1150	0.01
	1600	0.12
	2000	0.27
6SQ–14	700	0.01
	1350	0.04
	2000	0.19
	2600	0.41
6SQ–16	700	0.01
	1350	0.04
	2000	0.19
	2600	0.41
7SQ–10	850	0.01
	1000	0.05
	1200	0.12
	1400	0.22
7SQ–12	850	0.01
	1200	0.02
	1600	0.12
	2000	0.27
7SQ–14	850	0.01
	1550	0.07
	2250	0.27
	3000	0.59
7SQ–16	850	0.01
	1550	0.07
	2250	0.27
	3000	0.59

Note: Unit pressure drops do not include hot water coil or attenuator pressure drops.

Coil Air Pressure Drop – in. wg (I-P)

Fan Size	Airflow Cfm	1-Row HW (in. wg)	2-Row HW (in. wg)
02SQ	200	0.01	0.03
	300	0.02	0.05
	400	0.04	0.08
	500	0.06	0.11
	600	0.08	0.15
03SQ	250	0.01	0.02
04SQ	500	0.02	0.05
	750	0.05	0.10
	1000	0.08	0.15
	1250	0.12	0.22
	1500	0.16	0.30
05SQ	400	0.01	0.03
	700	0.04	0.08
	1000	0.07	0.13
	1250	0.10	0.19
	1500	0.14	0.26
	1750	0.19	0.34
06SQ	600	0.02	0.04
07SQ	1000	0.04	0.08
	1500	0.08	0.15
	2000	0.13	0.23
	2500	0.19	0.34
	3000	0.27	0.47

Note: HW Coil Only pressure drops do not include unit pressure drop.

Attenuator Air Pressure Drop (I-P)

Fan Size	Plenum Cfm	Attenuator
02SQ	50	0.00
	150	0.00
	350	0.02
	550	0.05
	750	0.10
	950	0.16
03SQ	50	0.00
	250	0.00
	500	0.02
	750	0.06
	1000	0.13
	1200	0.21
04SQ	50	0.00
	300	0.02
	600	0.07
	900	0.14
	1200	0.24
	1500	0.35
05SQ	50	0.00
	300	0.01
	650	0.05
	1000	0.14
	1300	0.28
	1650	0.52
06SQ	50	0.00
	500	0.00
	900	0.02
	1300	0.07
	1700	0.17
	2100	0.36
07SQ	50	0.00
	800	0.01
	1200	0.05
	1600	0.14
	2000	0.30
	2400	0.58

Note: Plenum cfm = (Fan cfm) – (Min. valve cfm)

Unit Air Pressure Drop – Pa (SI)

Fan/Inlet Size	Airflow L/s	Unit
2SQ–04	94	7
	106	9
2SQ–05	94	7
	118	11
	142	16
	165	22
2SQ–06	94	7
	142	16
	189	29
	236	46
2SQ–08	94	2
	189	12
	260	24
	330	39
2SQ–10	94	2
	189	5
	260	14
	330	28
03SQ–06	118	25
	142	38
	189	85
	236	112
03SQ–08	118	12
	236	41
	330	76
	425	123
03SQ–10	118	8
	260	28
	401	59
	566	110
03SQ–12	118	4
	260	17
	401	40
	566	79
04SQ–06	156	40
	189	73
	212	88
	236	119
04SQ–08	156	10
	236	29
	330	63
	425	109
04SQ–10	156	5
	330	30
	495	73
	661	135
04SQ–12	156	5
	354	28
	543	69
	731	127
04SQ–14	156	5
	354	27
	543	65
	731	120

Fan/Inlet Size	Airflow L/s	Unit
05SQ–10	189	1
	354	20
	519	55
	661	98
05SQ–12	189	2
	425	23
	661	71
	897	144
05SQ–14	189	2
	425	21
	661	65
	897	131
6SQ–10	330	2
	448	8
	566	31
	661	55
6SQ–12	330	2
	543	3
	755	31
	944	68
6SQ–14	330	2
	637	9
	944	47
	1227	101
6SQ–16	330	2
	637	9
	944	47
	1227	101
7SQ–10	401	2
	472	12
	566	
	661	55
7SQ–12	401	2
	566	5
	755	31
	944	68
7SQ–14	401	2
	731	18
	1062	67
	1416	147
7SQ–16	401	2
	731	18
	1062	67
	1416	147

Note: Unit pressure drops do not include hot water coil or attenuator pressure drops.

Coil Air Pressure Drop – Pa (SI)

Fan Size	Airflow L/s	1-Row HW (Pa)	2-Row HW (Pa)
02SQ	250	3	7
	400	6	12
	500	10	19
	600	14	28
	700	20	38
03SQ	118	2	5
04SQ	236	6	13
	354	12	24
	472	19	38
	590	29	55
	708	40	75
05SQ	189	4	8
	330	9	19
	472	17	33
	590	25	48
	708	35	65
	826	47	85
06SQ	850	4	9
07SQ	1300	9	19
	1700	19	36
	2150	31	58
	2550	47	85
	3000	66	117

Note: HW Coil Only pressure drops do not include unit pressure drop.

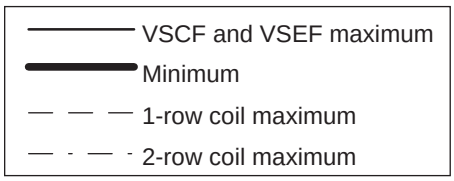
Attenuator Air Pressure Drop (SI)

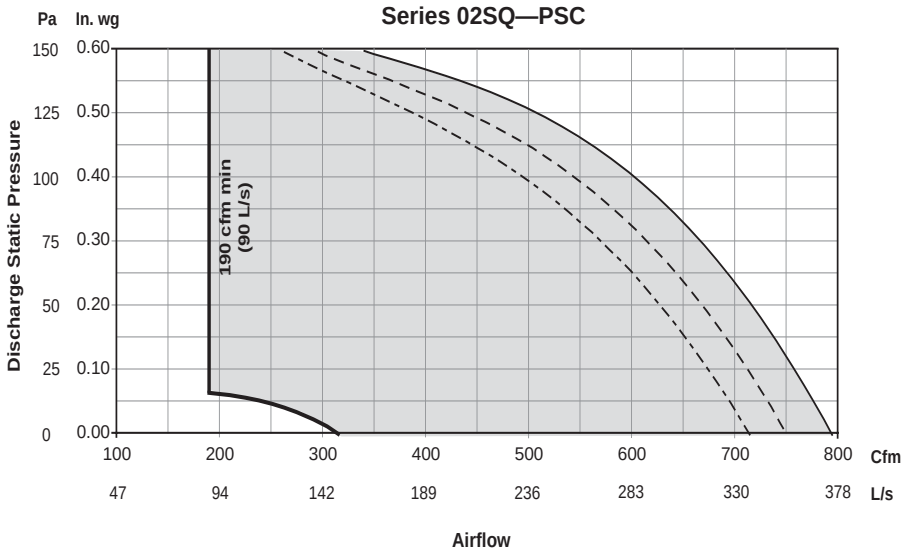
Fan Size	Plenum L/s	Attenuator
02SQ	24	0
	71	1
	165	4
	260	12
	354	24
	448	40
03SQ	24	0
	118	1
	236	5
	354	15
	472	32
	566	52
04SQ	24	0
	142	5
	283	18
	425	36
	566	59
	708	88
05SQ	24	0
	142	2
	307	12
	472	36
	613	70
	779	129
06SQ	24	0
	236	1
	425	4
	613	16
	802	42
	991	90
07SQ	24	0
	378	3
	566	12
	755	34
	944	75
	1133	144

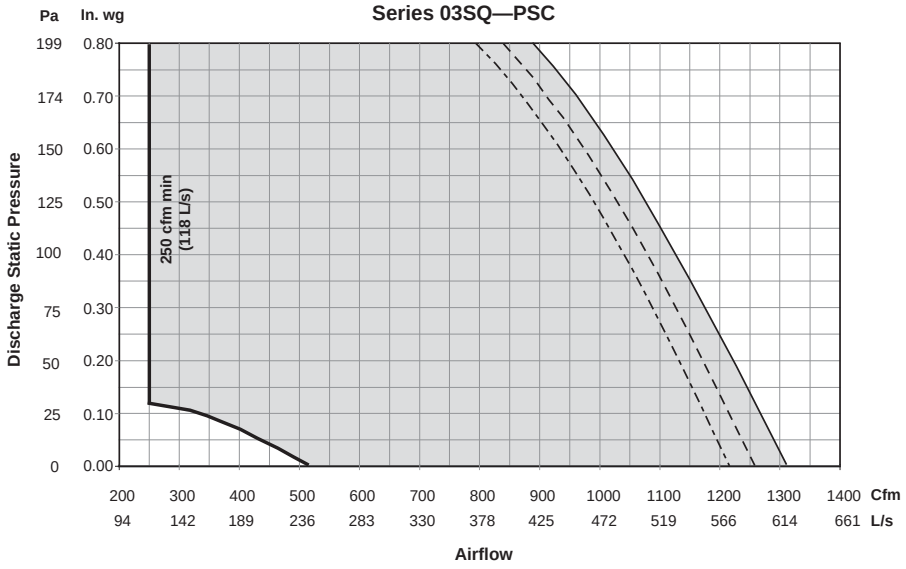
Note: Plenum cfm = (Fan cfm) – (Min. valve cfm)

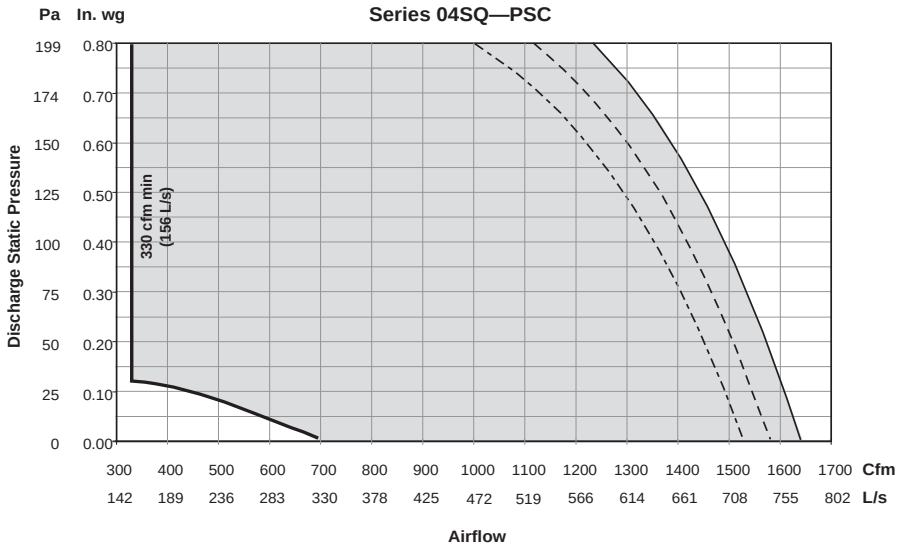
Notes:

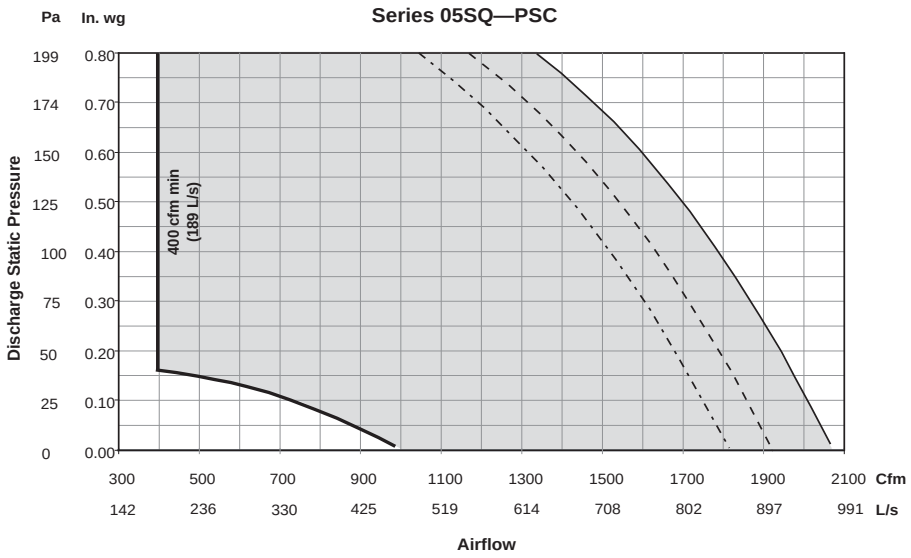
1. When attenuator is required, add inlet attenuator pressure to discharge static pressure for final fan performance.

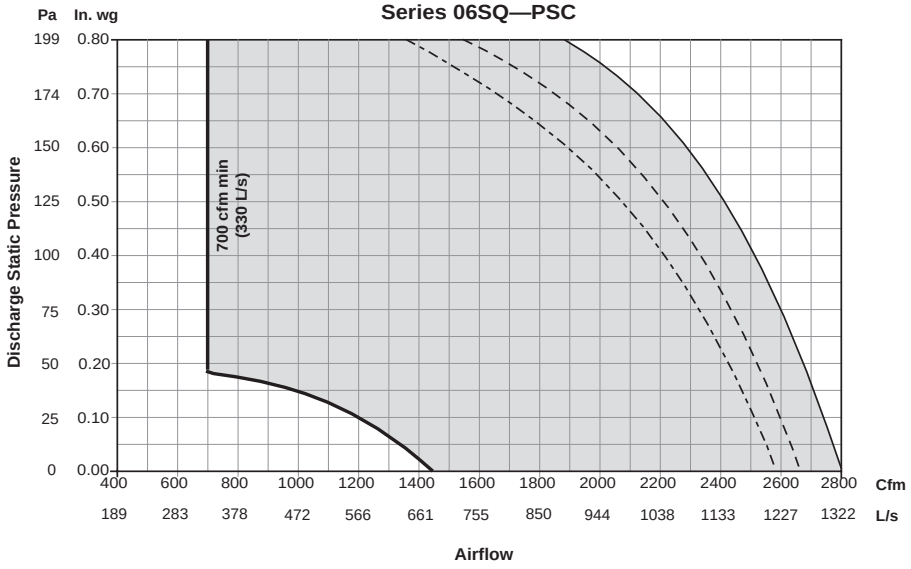


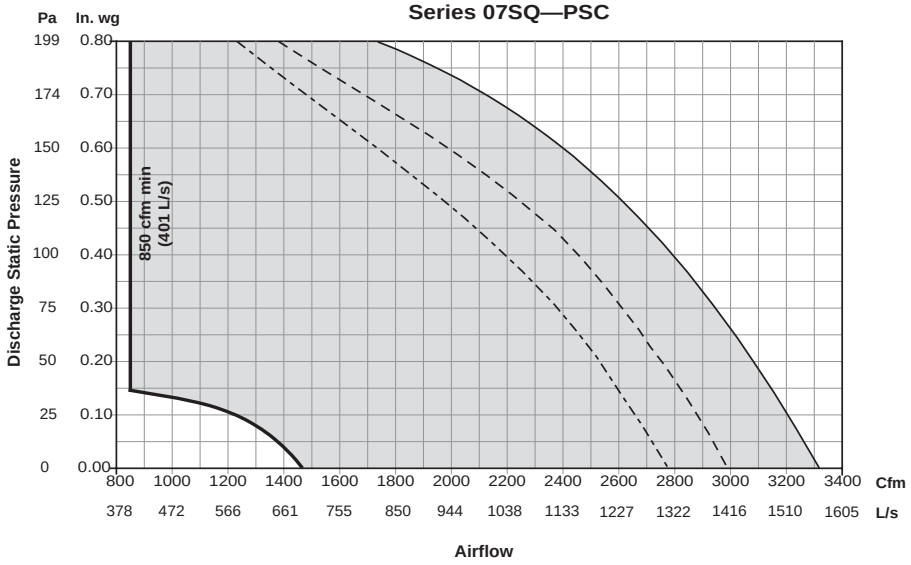












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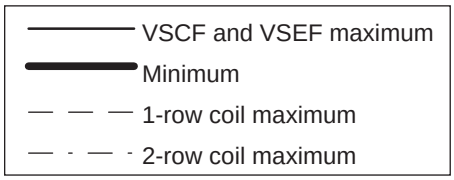
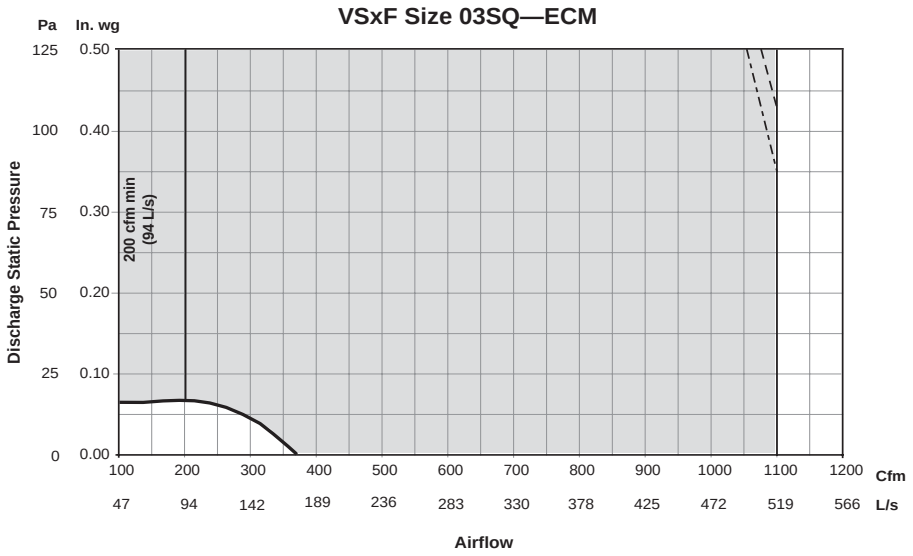
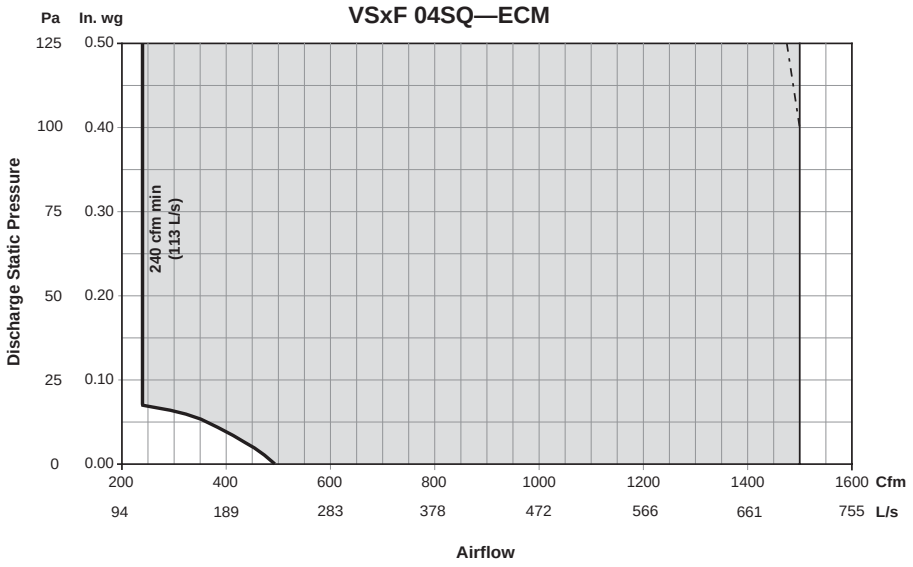


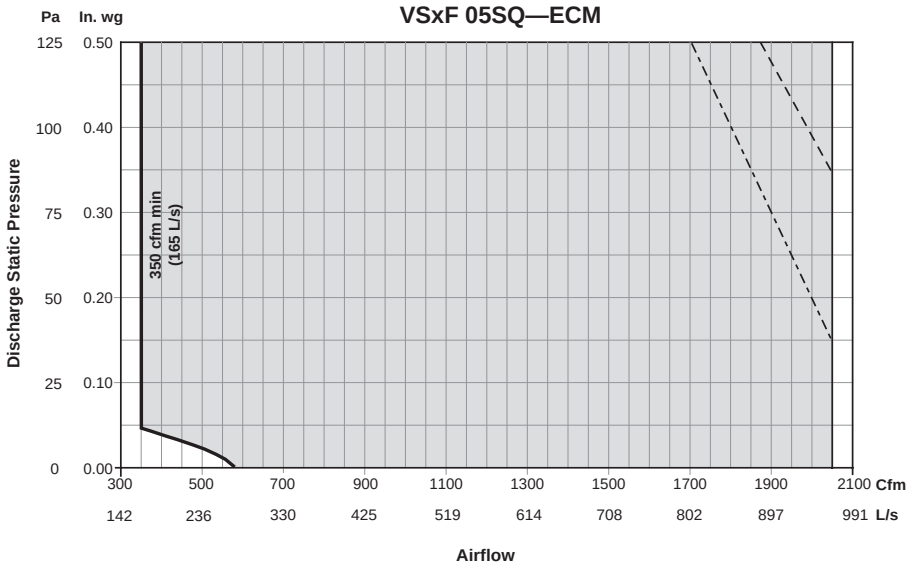
Notes:

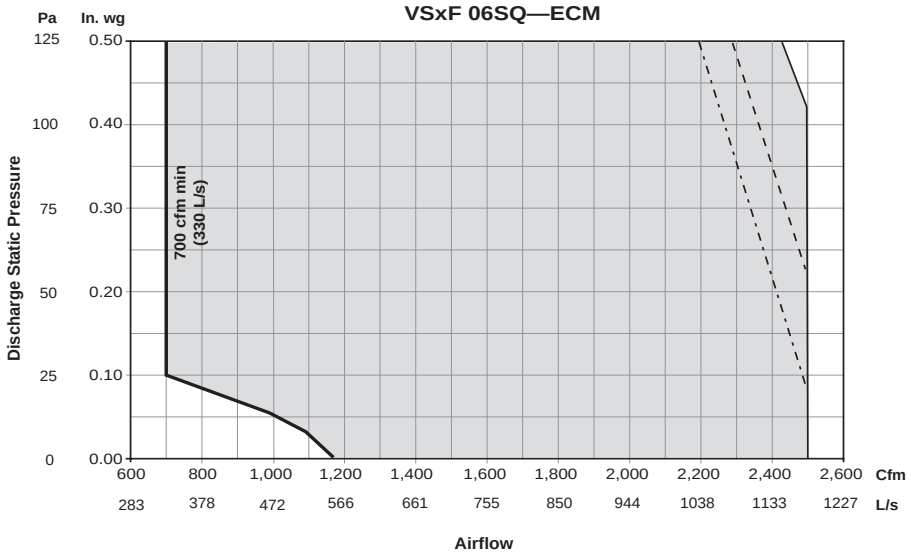
1. ECMs (Electrically Commutated Motors) are ideal for systems seeking maximum motor efficiency.
2. When attenuator is required, add inlet attenuator pressure to discharge static pressure for final fan performance.

VSCF and VSEF maximum
Minimum
1-row coil maximum
2-row coil maximum









Notes:

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VSCF and VSEF maximum
Minimum
1-row coil maximum
2-row coil maximum

Fan Size 02SQ (I-P)

Rows	Gpm	Water Pressure Drop (ft)	Airflow (Cfm) 150	200	250	300	350	400	450	500	550	600	700
1-Row Capacity MBH	0.50	0.20	8.00	8.84	9.53	10.13	10.63	11.06	11.44	11.78	12.09	12.37	12.87
	1.0	0.51	9.38	10.62	11.64	12.52	13.31	14.02	14.67	15.29	15.87	16.40	17.38
	2.0	1.77	10.26	11.79	13.08	14.23	15.27	16.22	17.11	17.95	18.74	19.48	20.87
	3.0	3.69	10.59	12.24	13.65	14.91	16.06	17.12	18.12	19.07	19.97	20.82	22.42
	4.0	6.23	10.77	12.48	13.96	15.28	16.49	17.62	18.68	19.69	20.65	21.57	23.30
	5.0	9.37	10.88	12.64	14.15	15.51	16.76	17.93	19.04	20.08	21.09	22.05	23.86
2-Row Capacity MBH	1.0	0.97	12.78	15.46	17.65	19.48	21.03	22.30	23.50	24.54	25.47	26.28	27.66
	2.0	3.29	13.73	17.01	19.83	22.30	24.48	26.40	28.14	29.70	31.11	32.40	34.67
	3.0	6.77	14.07	17.56	20.63	23.36	25.80	28.00	30.00	31.81	33.48	35.02	37.75
	4.0	11.35	14.24	17.85	21.05	23.92	26.51	28.80	31.00	32.96	34.78	36.45	39.46
	5.0	16.96	14.34	18.02	21.31	24.26	26.94	29.30	31.62	33.69	35.59	37.36	40.60

Fan Sizes 03SQ 04SQ (I-P)

Rows	Gpm	Water Pressure Drop (ft)	Airflow (Cfm) 200	300	400	550	700	850	1000	1150	1300	1450	1600
1-Row Capacity MBH	1.0	0.23	13.93	16.44	18.25	20.42	22.13	23.51	24.66	25.64	26.50	27.26	27.94
	2.0	0.83	15.85	19.34	22.00	25.21	27.86	30.15	32.23	34.13	35.85	37.42	38.86
	3.0	1.78	16.56	20.46	23.50	27.23	30.38	33.16	35.66	37.94	40.05	42.04	43.93
	4.0	3.05	16.95	21.07	24.32	28.36	31.82	34.89	37.69	40.26	42.66	44.90	47.02
	5.0	4.65	17.19	21.46	24.85	29.09	32.75	36.02	39.02	41.80	44.40	46.84	49.15
	6.0	6.57	17.35	21.72	25.21	29.60	33.40	36.82	39.96	42.89	45.64	48.23	50.69
	7.0	8.81	17.47	21.92	25.48	29.98	33.89	37.41	40.67	43.71	46.57	49.28	51.85
	8.0	11.35	17.56	22.07	25.69	30.27	34.26	37.88	41.22	44.34	47.29	50.09	52.76
	9.0	14.22	17.63	22.19	25.85	30.50	34.56	38.24	41.66	44.86	47.88	50.75	53.50
	10.0	17.38	17.69	22.29	25.98	30.69	34.80	38.55	42.02	45.27	48.36	51.29	54.10
2-Row Capacity MBH	1.0	0.37	17.39	22.50	26.21	30.28	33.12	35.15	36.67	37.84	38.78	39.55	40.19
	2.0	1.28	19.15	26.05	31.69	38.39	43.59	47.74	51.22	54.16	56.63	58.72	60.53
	3.0	2.67	19.72	27.27	33.68	41.62	48.07	53.41	57.90	61.75	65.08	68.04	70.71
	4.0	4.52	20.01	27.90	34.71	43.36	50.54	56.60	61.81	66.32	70.29	73.80	76.93
	5.0	6.81	20.18	28.28	35.35	44.44	52.10	58.65	64.33	69.31	73.73	77.67	81.21
	6.0	9.54	20.30	28.53	35.78	45.18	53.17	60.07	66.10	71.42	76.16	80.42	84.28
	7.0	12.70	20.38	28.72	36.10	45.72	53.96	61.12	67.40	72.99	77.98	82.49	86.58
	8.0	16.27	20.44	28.86	36.33	46.13	54.56	61.92	68.41	74.20	79.39	84.09	88.37

Fan Size 05SQ (I-P)

Rows	Gpm	Water Pressure Drop (ft)	Airflow (Cfm) 350	500	650	800	1000	1200	1400	1600	1800	2000	2150
1-Row Capacity MBH	1.0	0.34	19.37	22.01	24.10	25.70	27.39	28.75	29.89	30.85	31.69	32.43	32.93
	2.0	1.19	23.15	27.09	30.20	32.82	35.90	38.64	41.02	43.14	45.05	46.78	47.97
	3.0	2.49	24.62	29.17	32.86	36.04	39.74	43.00	45.95	48.75	51.30	53.65	55.30
	4.0	4.22	25.42	30.34	34.37	37.88	42.01	45.70	49.06	52.15	55.02	57.77	59.72
	5.0	6.37	25.93	31.08	35.34	39.07	43.50	47.48	51.13	54.52	57.67	60.64	62.75
	6.0	8.93	26.28	31.60	36.02	39.91	44.55	48.75	52.62	56.21	59.59	62.77	65.04
	7.0	11.90	26.53	31.98	36.52	40.53	45.33	49.70	53.73	57.49	61.03	64.38	66.78
	8.0	15.26	26.73	32.27	36.91	41.01	45.94	50.44	54.60	58.49	62.16	65.65	68.15
2-Row Capacity MBH	1.0	0.37	25.86	30.96	34.59	37.09	39.42	41.05	42.25	43.17	43.91	44.50	44.88
	2.0	1.29	30.45	38.61	44.96	50.03	55.50	59.89	63.37	66.20	68.54	70.51	71.79
	3.0	2.69	32.03	41.49	49.24	55.70	62.78	68.57	73.42	77.68	81.31	84.43	86.51
	4.0	4.54	32.83	42.99	51.54	58.82	67.01	73.85	79.65	84.66	89.01	92.96	95.64
	5.0	6.85	33.31	43.92	52.97	60.80	69.72	77.28	83.79	89.46	94.44	98.87	101.9
	6.0	9.59	33.63	44.54	53.95	62.15	71.60	79.69	86.72	92.88	98.35	103.2	106.6
	7.0	12.75	33.87	45.00	54.66	63.14	72.98	81.47	88.89	95.45	101.3	106.5	110.1
	8.0	16.34	34.04	45.34	55.20	63.90	74.04	82.85	90.58	97.43	103.6	109.1	112.9

Fan Size 06SQ & 07SQ (I-P)

Rows	Gpm	Water Pressure Drop (ft)	Airflow (Cfm) 700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700
1-Row Capacity MBH	0.5	0.17	17.88	18.66	19.25	19.72	20.11	20.43	20.70	20.94	21.15	21.33	21.50
	1.0	0.46	25.98	28.14	29.84	31.25	32.45	33.49	34.41	35.22	35.94	36.59	37.18
	2.0	1.33	31.86	35.31	38.44	41.17	43.58	45.74	47.70	49.48	51.12	52.64	54.04
	3.0	2.74	34.59	38.74	42.37	45.62	48.66	51.49	54.10	56.51	58.76	60.86	62.84
	4.0	4.60	36.12	40.69	44.74	48.41	51.78	54.90	57.84	60.67	63.33	65.83	68.20
	5.0	6.89	37.10	41.96	46.29	50.24	53.89	57.30	60.49	63.51	66.36	69.15	71.81
	6.0	9.60	37.78	42.85	47.38	51.54	55.40	59.01	62.41	65.64	68.71	71.63	74.42
2-Row Capacity MBH	1.0	0.88	36.93	40.07	42.19	43.71	44.85	45.73	46.44	47.01	47.49	47.89	48.23
	2.0	2.48	47.65	54.00	59.22	63.33	66.63	69.34	71.60	73.52	75.17	76.60	77.85
	3.0	5.05	52.24	60.42	67.05	72.54	77.30	81.42	84.96	88.02	90.71	93.08	95.20
	4.0	8.41	54.71	63.97	71.67	78.18	83.77	88.62	92.93	96.84	100.30	103.40	106.20
	5.0	12.51	56.24	66.21	74.63	81.85	88.12	93.61	98.48	102.80	106.70	110.40	113.70
	6.0	17.30	57.29	67.75	76.69	84.42	91.18	97.16	102.50	107.30	111.60	115.60	119.20

Water Coil Notes (I-P)

1. Fouling Factor = 0.00025
2. The following equations may be used in calculating Leaving Air Temperature (LAT) and Water Temperature Difference (WTD).

$$LAT = EAT + \left(\frac{MBH \times 921.7}{Cfm} \right) \qquad WTD = EWT - LWT = \left(\frac{2 \times MBH}{Gpm} \right)$$

3. Capacity based on 70°F entering air temperature and 180°F entering water temperature. Refer to correction factors for different entering conditions.

Temperature Correction Factors for Water Pressure Drop (ft)

Average Water Temperature	200	190	180	170	160	150	140	130	120	110
Correction Factor	0.970	0.985	1.000	1.020	1.030	1.050	1.080	1.100	1.130	1.150

Temperature Correction Factors for Coil Capacity (MBH)

Entering Water Minus Entering Air	40	50	60	70	80	90	100	110	120	130
Correction Factor	0.355	0.446	0.537	0.629	0.722	0.814	0.907	1.000	1.093	1.187

Fan Size 02SQ. (SI)

Rows	L/s	Water Pressure Drop (kPa)	Airflow (L/s) 71	94	118	142	165	189	212	236	260	283	330
1-Row Capacity MBH	0.03	0.60	2.34	2.59	2.79	2.97	3.12	3.24	3.35	3.45	3.54	3.63	3.77
	0.06	1.52	2.75	3.11	3.41	3.67	3.90	4.11	4.30	4.48	4.65	4.81	5.09
	0.13	5.28	3.01	3.46	3.83	4.17	4.48	4.75	5.01	5.26	5.49	5.71	6.12
	0.19	11.01	3.10	3.59	4.00	4.37	4.71	5.02	5.31	5.59	5.85	6.10	6.57
	0.25	18.59	3.16	3.66	4.09	4.48	4.83	5.16	5.48	5.77	6.05	6.32	6.83
	0.32	27.95	3.19	3.70	4.15	4.55	4.91	5.26	5.58	5.89	6.18	6.46	6.99
2-Row Capacity MBH	0.06	2.89	3.75	4.53	5.17	5.71	6.16	6.54	6.89	7.19	7.47	7.70	8.11
	0.13	9.81	4.02	4.99	5.81	6.54	7.18	7.74	8.25	8.71	9.12	9.50	10.16
	0.19	20.20	4.12	5.15	6.05	6.85	7.56	8.21	8.79	9.32	9.81	10.26	11.06
	0.25	33.86	4.17	5.23	6.17	7.01	7.77	8.44	9.09	9.66	10.19	10.68	11.57
	0.32	50.60	4.20	5.28	6.25	7.11	7.90	8.59	9.27	9.87	10.43	10.95	11.89

Fan Sizes 03SQ. 04SQ.(SI)

Rows	L/s	Water Pressure Drop (kPa)	Airflow (L/s) 94	142	189	260	330	401	472	543	613	684	755
1-Row Capacity kW	0.06	0.69	4.08	4.82	5.35	5.99	6.49	6.89	7.23	7.52	7.77	7.99	8.19
	0.13	2.48	4.65	5.67	6.45	7.39	8.17	8.84	9.45	10.00	10.51	10.97	11.39
	0.19	5.30	4.85	6.00	6.89	7.98	8.90	9.72	10.45	11.12	11.74	12.32	12.88
	0.25	9.10	4.97	6.18	7.13	8.31	9.33	10.23	11.05	11.80	12.50	13.16	13.78
	0.32	13.87	5.04	6.29	7.28	8.53	9.60	10.56	11.44	12.25	13.01	13.73	14.41
	0.38	19.60	5.09	6.37	7.39	8.68	9.79	10.79	11.71	12.57	13.38	14.14	14.86
	0.44	26.27	5.12	6.42	7.47	8.79	9.93	10.96	11.92	12.81	13.65	14.44	15.20
	0.50	33.87	5.15	6.47	7.53	8.87	10.04	11.10	12.08	13.00	13.86	14.68	15.46
	0.57	42.41	5.17	6.50	7.58	8.94	10.13	11.21	12.21	13.15	14.03	14.87	15.68
	0.63	51.86	5.18	6.53	7.61	9.00	10.20	11.30	12.32	13.27	14.17	15.03	15.86
2-Row Capacity kW	0.06	1.11	5.10	6.59	7.68	8.88	9.71	10.30	10.75	11.09	11.37	11.59	11.78
	0.13	3.82	5.61	7.64	9.29	11.25	12.78	13.99	15.01	15.87	16.60	17.21	17.74
	0.19	7.97	5.78	7.99	9.87	12.20	14.09	15.65	16.97	18.10	19.07	19.94	20.73
	0.25	13.48	5.86	8.18	10.17	12.71	14.81	16.59	18.12	19.44	20.60	21.63	22.55
	0.32	20.33	5.91	8.29	10.36	13.03	15.27	17.19	18.86	20.31	21.61	22.77	23.80
	0.38	28.46	5.95	8.36	10.49	13.24	15.58	17.61	19.37	20.93	22.32	23.57	24.70
	0.44	37.87	5.97	8.42	10.58	13.40	15.82	17.91	19.75	21.39	22.86	24.18	25.38
	0.50	48.54	5.99	8.46	10.65	13.52	15.99	18.15	20.05	21.75	23.27	24.65	25.90

Fan Size 05SQ.(SI)

Rows	L/s	Water Pressure Drop (kPa)	Airflow (L/s) 165	236	307	378	472	566	661	755	849	944	1015
1-Row Capacity kW	0.06	1.02	5.68	6.45	7.06	7.53	8.03	8.43	8.76	9.04	9.29	9.51	9.65
	0.13	3.55	6.79	7.94	8.85	9.62	10.52	11.33	12.02	12.64	13.20	13.71	14.06
	0.19	7.42	7.22	8.55	9.63	10.56	11.65	12.60	13.47	14.29	15.04	15.72	16.21
	0.25	12.59	7.45	8.89	10.07	11.10	12.31	13.39	14.38	15.29	16.13	16.93	17.50
	0.32	19.00	7.60	9.11	10.36	11.45	12.75	13.92	14.99	15.98	16.90	17.77	18.39
	0.38	26.64	7.70	9.26	10.56	11.70	13.06	14.29	15.42	16.48	17.47	18.40	19.06
	0.44	35.49	7.78	9.37	10.70	11.88	13.29	14.57	15.75	16.85	17.89	18.87	19.57
	0.50	45.53	7.83	9.46	10.82	12.02	13.47	14.78	16.00	17.14	18.22	19.24	19.97
2-Row Capacity kW	0.06	1.12	7.58	9.07	10.14	10.87	11.55	12.03	12.38	12.65	12.87	13.04	13.15
	0.13	3.85	8.92	11.32	13.18	14.66	16.27	17.55	18.57	19.40	20.09	20.67	21.04
	0.19	8.02	9.39	12.16	14.43	16.33	18.40	20.10	21.52	22.77	23.83	24.75	25.36
	0.25	13.56	9.62	12.60	15.11	17.24	19.64	21.65	23.35	24.81	26.09	27.25	28.03
	0.32	20.43	9.76	12.87	15.53	17.82	20.43	22.65	24.56	26.22	27.68	28.98	29.87
	0.38	28.60	9.86	13.05	15.81	18.22	20.99	23.36	25.42	27.22	28.83	30.25	31.24
	0.44	38.04	9.93	13.19	16.02	18.51	21.39	23.88	26.05	27.98	29.69	31.22	32.27
	0.50	48.74	9.98	13.29	16.18	18.73	21.70	24.28	26.55	28.56	30.37	31.98	33.09

Fan Sizes 06SQ. & 07SQ. (SI)

Rows	L/s	Water Pressure Drop (kPa)	Airflow (L/s) 330	425	519	613	708	802	897	991	1085	1180	1274
1-Row Capacity MBH	0.03	0.51	5.24	5.47	5.64	5.78	5.89	5.99	6.07	6.14	6.20	6.25	6.30
	0.06	1.37	7.61	8.25	8.75	9.16	9.51	9.82	10.09	10.32	10.53	10.72	10.90
	0.13	3.97	9.34	10.35	11.27	12.07	12.77	13.41	13.98	14.50	14.98	15.43	15.84
	0.19	8.17	10.14	11.35	12.42	13.37	14.26	15.09	15.86	16.56	17.22	17.84	18.42
	0.25	13.72	10.59	11.93	13.11	14.19	15.18	16.09	16.95	17.78	18.56	19.29	19.99
	0.32	20.55	10.87	12.30	13.57	14.73	15.80	16.79	17.73	18.61	19.45	20.27	21.05
	0.38	28.64	11.07	12.56	13.89	15.11	16.24	17.30	18.29	19.24	20.14	20.99	21.81
2-Row Capacity MBH	0.06	2.63	10.82	11.74	12.37	12.81	13.15	13.40	13.61	13.78	13.92	14.04	14.14
	0.13	7.40	13.97	15.83	17.36	18.56	19.53	20.32	20.99	21.55	22.03	22.45	22.82
	0.19	15.07	15.31	17.71	19.65	21.26	22.66	23.86	24.90	25.80	26.59	27.28	27.90
	0.25	25.09	16.04	18.75	21.01	22.91	24.55	25.97	27.24	28.38	29.40	30.31	31.13
	0.32	37.32	16.48	19.41	21.87	23.99	25.83	27.44	28.86	30.13	31.27	32.36	33.33
	0.38	51.61	16.79	19.86	22.48	24.74	26.72	28.48	30.04	31.45	32.71	33.88	34.94

Water Coil Notes (SI)

1. Fouling Factor = 0.00025
2. The following equations may be used in calculating Leaving Air Temperature (LAT) and Water Temperature Difference (WTD).

$$LAT = EAT + \left(\frac{kW \times 0.83}{L/s}\right) \qquad WTD = EWT - LWT = \left(\frac{kW}{(4.19)L/s}\right)$$

3. Capacity based on 21°C entering air temperature and 82°C entering water temperature. Refer to correction factors for different entering conditions.

Temperature Correction Factors for Water Pressure Drop (kPa)

Average Water Temperature	93	88	82	77	71	66	60	54	49	43
Correction Factor	0.970	0.985	1.000	1.020	1.030	1.050	1.080	1.100	1.130	1.150

Temperature Correction Factors for Coil Capacity (kW)

Entering Water Minus Entering Air	22	27	33	38	44	50	55	61	67	72
Correction Factor	0.355	0.446	0.537	0.629	0.722	0.814	0.907	1.000	1.093	1.187

VSEF—Electric Coil kW Guidelines – Minimum to Maximum (PSC Motor Units)

Fan Size	Stages	Single-Phase Voltage						Three-Phase Voltage		
		120V	208V	240V	277V	347V	480V	208V	480V	600V
02SQ	1	0.5–5.0	0.5–7.0	0.5–7.0	0.5–7.0	0.5–7.0	1.0–7.0	0.5–7.0	1.0–7.0	1.5–7.0
	2	0.5–5.0	0.5–7.0	0.5–7.0	1.0–7.0	1.0–7.0	1.5–7.0	1.0–7.0	3.5–7.0	—
	3*	1.0–5.0	1.0–7.0	1.0–7.0	1.0–7.0	1.5–7.0	2.0–7.0	1.5–7.0	5.5–6.0	—
03SQ	1	0.5–5.0	0.5–9.0	0.5–10.0	0.5–12.0	0.5–14.0	1.0–13.0	0.5–14.0	1.0–14.0	1.5–14.0
	2	0.5–5.0	0.5–9.0	0.5–10.0	1.0–12.0	1.0–14.0	1.5–13.0	1.0–14.0	3.5–14.0	—
	3*	1.0–5.0	1.0–9.0	1.0–10.0	1.0–12.0	1.5–14.0	2.0–12.0	1.5–14.0	5.5–9.0	—
04SQ	1	0.5–4.5	0.5–8.0	0.5–10.0	0.5–12.0	0.5–16.0	0.5–18.0	0.5–15.0	1.0–18.0	1.5–18.0
	2	0.5–4.5	0.5–8.0	0.5–10.0	1.0–12.0	1.0–16.0	1.0–18.0	1.0–15.0	2.5–18.0	4.0–17.0
	3*	1.0–4.5	1.0–8.0	1.0–10.0	1.0–12.0	1.5–16.0	1.5–18.0	1.5–15.0	4.0–18.0	6.0–16.0
05SQ	1	0.5–4.5	0.5–8.0	0.5–9.0	0.5–12.0	0.5–15.0	0.5–20.0	0.5–14.0	1.0–22.0	1.5–22.0
	2	0.5–4.5	0.5–8.0	0.5–9.0	1.0–12.0	1.0–15.0	1.0–20.0	1.0–14.0	2.5–20.0	4.0–20.0
	3*	1.0–4.5	1.0–8.0	1.0–9.0	1.0–12.0	1.5–15.0	1.5–20.0	1.5–14.0	4.0–18.0	6.0–16.0
06SQ	1	—	0.5–9.0	—	0.5–12.0	0.5–15.0	0.5–22.0	0.5–15.0	1.0–22.0	1.5–22.0
	2	—	0.5–9.0	—	1.0–12.0	1.0–15.0	1.0–22.0	1.0–15.0	2.0–22.0	3.0–22.0
	3*	—	1.0–9.0	—	1.0–12.0	1.5–15.0	1.5–20.0	1.5–15.0	3.0–20.0	4.5–18.0
07SQ	1	—	0.5–8.0	—	0.5–11.0	0.5–15.0	0.5–24.0	0.5–14.0	1.0–24.0	1.5–24.0
	2	—	0.5–8.0	—	1.0–11.0	1.0–15.0	1.0–24.0	1.0–14.0	2.0–24.0	3.0–24.0
	3*	—	1.0–8.0	—	1.0–11.0	1.5–15.0	1.5–20.0	1.5–14.0	3.0–20.0	4.5–18.0

*Three stages of electric heat available only with pneumatic controls.

VSEF—Electric Coil kW Guidelines – Minimum to Maximum (ECM Units)

Fan Size	Stages	Single-Phase Voltage						Three-Phase Voltage		
		120V	208V	240V	277V	347V	480V	208V	480V	600V
03SQ	1	0.5–4.5	0.5–8.0	0.5–10.0	0.5–12.0	—	1.0–13.0	0.5–14.0	1.0–14.0	—
	2	0.5–4.5	0.5–8.0	0.5–10.0	1.0–12.0	—	1.5–13.0	1.0–14.0	3.5–14.0	—
	3	1.0–4.5	1.0–8.0	1.0–10.0	1.0–12.0	—	2.0–12.0	1.5–14.0	5.5–9.0	—
04SQ	1	0.5–4.5	0.5–8.0	0.5–9.0	0.5–12.0	—	0.5–18.0	0.5–14.0	1.0–18.0	—
	2	0.5–4.5	0.5–8.0	0.5–9.0	1.0–12.0	—	1.0–18.0	1.0–14.0	2.5–18.0	—
	3	1.0–4.5	1.0–8.0	1.0–9.0	1.0–12.0	—	1.5–18.0	1.5–14.0	4.0–18.0	—
05SQ	1	0.5–4.0	0.5–7.0	0.5–8.0	0.5–11.0	—	0.5–18.0	0.5–12.0	1.0–22.0	—
	2	0.5–4.0	0.5–7.0	0.5–8.0	1.0–11.0	—	1.0–18.0	1.0–12.0	2.5–20.0	—
	3	1.0–4.0	1.0–7.0	1.0–8.0	1.0–11.0	—	1.5–18.0	1.5–12.0	4.0–18.0	—
06SQ	1	0.5–4.0	0.5–7.0	0.5–8.0	0.5–11.0	—	0.5–22.0	0.5–12.0	1.0–22.0	—
	2	0.5–4.0	0.5–7.0	0.5–8.0	1.0–11.0	—	1.0–22.0	1.0–12.0	2.0–22.0	—
	3	1.0–4.0	1.0–7.0	1.0–8.0	1.0–11.0	—	1.5–20.0	1.5–12.0	3.0–20.0	—

Notes:
1. Coils available with electric, 24-VAC magnetic or contactors, load carrying P.E. switches, and P.E. switches with magnetic or mercury contactors.
2. Available kW increments are by 0.5 from 0.5 kW to 8.0 kW, by 1.0 kW from 9.0 to 17.0 kW, and by 2.0 kW from 18.0 to 24.0 kW.
3. Each stage will be equal in kW output.
4. All heaters contain an auto reset thermal cutout and a manual reset cutout.
5. The current amp draw for the heater elements is calculated by the formula below.
6. Recommended coil temperature rise = 20°–30°F (-7°—1°C). Maximum temperature rise = 55°F (12°C).
7. Heaters should not operate at cfms below the namplate minimum.
8. Only two stages of electric reheat available with Trane controls (ECM only).

Fan Electrical Performance (PSC)

Maximum Fan Motor Amperage (FLA)

Fan Size	HP	115 VAC	208 VAC	277 VAC
02SQ	1/8	1.6	—	0.7
03SQ	1/3	4.3	—	1.6
04SQ	1/3	5.5	—	2.0
05SQ	1/2	6.7	—	2.4
06SQ	1/2	—	4.6	3.8
07SQ	1	—	6.6	4.7

Notes:
1. Electric Heat Units—Units with fan sizes 02SQ to 05SQ and a primary voltage of 208/60/1, 208/60/3 or 0/60/1 use 115/60/1 VAC fan motors. Fan sizes 06SQ and 07SQ in these same voltages, have 208/60/1 VAC fan motors.
2. Electric Heat Units—Units with primary voltage of 277/60/1, 480/60/1 or 480/60/3 use 277 VAC fan motors.
3. Electric Heat Units—Units with primary voltage of 347/60/1 or 575/60/3 use 347 VAC fan motors.
4. With 380/50/3 and 230/50/1 use 230/50 motors.

Fan Electrical Performance (ECM)

Maximum Fan Motor Amperage (FLA)

Fan Size	HP	120 VAC	277 VAC
03SQ	1/3	4.5	2.4
04SQ	½	6.5	3.5
05SQ	1	10.1	5.4
06SQ	1	9.5	5.1

Notes:
1. Acceptable selections are any point within the shaded area. The ECM will operate on a vertical performance line using the solid state speed controller provided.
2. The ECM motor provides constant volume with changing static pressure conditions. Therefore, the fan curves for the ECM are different compared to fan curves with PSC motors.
3. By using an ECM motor, less fan sizes are used because of the wider turn-down ratios.

Formulas

Minimum Circuit Ampacity (MCA) Equation

- MCA = 1.25 x (Σmotor amps + heater amps)
  Here motor amps is the sum of all motor current draws if more than one is used in the unit.

Maximum Overcurrent Protection (MOP) Equation

- MOP = (2.25 x motor 1amps) + motor2 amps + heater amps
  motor1 amps = current draw of largest motor
  motor2 amps = sum of current draw of all other motors used in units

General Sizing Rules:

- If MOP = 15, then fuse size = 15
- If MOP = 19, then fuse size = 15 with one exception. If heater amps x 1.25 > 15, then fuse size = 20.
- If MOP ≤ MCA, then choose next fuse size greater than MCA.
- Control fusing not applicable.
- Standard Fuse Sizes: 15, 20, 25, 30, 35, 40, 45, 50, and 60.

Example:

A model VSEF, electric reheat unit size 10-0517 has 480/3 phase, 12 kW electric reheat with 2 stages and 277-Volt motor.

For MOP of fan-powered unit:

12 kW - 480/3 heater $\frac{12 \times 1000}{480 \times 1.73}$ = 14.45 amps

MCA = (2.4 + 14.45) x 1.25 = 21.06, MOP = (2.25 x 2.4) + 14.45 = 19.9.

Since MOP ≤ MCA, then MOP = 25.

For total current draw of unit:

12 kW—480/3 heater $\frac{12 \times 1000}{480 \times 1.73}$ = 14.45
Two heat outputs (2 stages) @0.5 amps max each = 1.00
Motor amps: 277 V (Fan size 0517) = 2.4
18.35 amps max

Useful formulas:

$kW = \frac{Cfm \times ATD}{3145}$

$kW = 1214 \times L/s \times ATD$

$3\phi amps = \frac{kW \times 1000}{Primary\ Voltage \times \sqrt{3}}$

$1\phi amps = \frac{kW \times 1000}{Primary\ Voltage}$

$ATD = \frac{kW \times 3145}{Cfm}$

$ATD = \frac{kW}{1214 \times L/s}$

Minimum Unit Electric Heat Cfm Guidelines (PSC)

Unit kW	Cfm 02SQ	03SQ	04SQ	05SQ	06SQ	07SQ
0.5	191	260	315	400	700	850
1	191	260	315	400	700	850
1.5	191	260	315	400	700	850
2	191	260	315	400	700	850
2.5	191	260	315	400	700	850
3	214	260	315	400	700	850
3.5	236	260	315	400	700	850
4	259	260	315	400	700	850
4.5	282	260	315	400	700	850
5	304	290	315	400	700	850
5.5	327	315	315	400	700	850
6	350	350	350	400	700	850
6.5	372	375	375	400	700	850
7	395	400	400	400	700	850
7.5	—	430	430	430	700	850
8	—	460	460	460	700	850
9	—	515	515	515	700	850
10	—	575	575	575	700	850
11	—	630	630	630	713	850
12	—	690	690	690	792	902
13	—	745	745	745	872	954
14	—	810	810	810	951	1006
15	—	—	860	860	1031	1057
16	—	—	920	920	1110	1109
17	—	—	973	973	1190	1161
18	—	—	1030	1030	1269	1213
20	—	—	—	1150	1428	1317
22	—	—	—	1260	1587	1420
24	—	—	—	—	—	1524

Minimum Unit Electric Heat L/s Guidelines (PSC)

Unit kW	L/s 02SQ	03SQ	04SQ	05SQ	06SQ	07SQ
0.5	90	123	149	189	330	401
1	90	123	149	189	330	401
1.5	90	123	149	189	330	401
2	90	123	149	189	330	401
2.5	90	123	149	189	330	401
3	101	123	149	189	330	401
3.5	112	123	149	189	330	401
4	122	123	149	189	330	401
4.5	133	123	149	189	330	401
5	144	137	149	189	330	401
5.5	154	149	149	189	330	401
6	165	165	165	189	330	401
6.5	176	177	177	189	330	401
7	186	189	189	189	330	401
7.5	—	203	203	203	330	401
8	—	217	217	217	330	401
9	—	243	243	243	330	401
10	—	271	271	271	330	401
11	—	297	297	297	336	401
12	—	326	326	326	374	426
13	—	352	352	352	411	450
14	—	382	382	382	449	475
15	—	—	406	406	486	499
16	—	—	434	434	524	524
17	—	—	459	459	562	548
18	—	—	486	486	599	572
20	—	—	—	543	674	621
22	—	—	—	595	749	670
24	—	—	—	—	—	719

Minimum Unit Electric Heat Cfm Guidelines (ECM)

Unit	Cfm			
kW	03SQ	04SQ	05SQ	06SQ
0.5	260	315	400	943
1	260	315	400	943
1.5	260	315	400	943
2	260	315	400	943
2.5	260	315	400	943
3	260	315	400	943
3.5	260	315	400	943
4	260	315	400	943
4.5	260	315	400	943
5	290	315	400	943
5.5	315	315	400	943
6	350	350	400	943
6.5	375	375	400	943
7	400	400	400	943
7.5	430	430	430	943
8	460	460	460	943
9	515	515	515	943
10	575	575	575	975
11	630	630	630	1006
12	690	690	690	1038
13	745	745	745	1069
14	810	810	810	1101
15	—	860	860	1133
16	—	920	920	1164
17	—	973	973	1196
18	—	1030	1030	1228
20	—	—	1150	1291
22	—	—	1260	1354

Minimum Unit Electric Heat L/s Guidelines (ECM)

Unit	L/s			
kW	03SQ	04SQ	05SQ	06SQ
0.5	123	149	189	445
1	123	149	189	445
1.5	123	149	189	445
2	123	149	189	445
2.5	123	149	189	445
3	123	149	189	445
3.5	123	149	189	445
4	123	149	189	445
4.5	123	149	189	445
5	137	149	189	445
5.5	149	149	189	445
6	165	165	189	445
6.5	177	177	189	445
7	189	189	189	445
7.5	203	203	203	445
8	217	217	217	445
9	243	243	243	445
10	271	271	271	460
11	297	297	297	475
12	326	326	326	490
13	352	352	352	505
14	382	382	382	520
15	—	406	406	535
16	—	434	434	549
17	—	459	459	564
18	—	486	486	579
20	—	—	543	609
22	—	—	595	639

Discharge Sound Power (dB)

Fan and 100% Primary

Fan Size	Inlet Size	Cfm	L/s	Discharge Sound Power (dB)																							
				0.5" ΔPs						1.0" ΔPs						2.0" ΔPs						3.0" ΔPs					
				2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
02SQ	10	200	94	65	53	53	52	49	45	66	59	55	54	52	51	68	68	65	62	59	55	68	62	62	61	59	59
		300	142	65	54	54	52	49	46	66	59	56	54	52	52	68	67	64	61	58	56	69	65	65	63	60	60
		500	236	65	55	55	52	49	47	66	59	57	54	52	53	68	66	63	60	57	59	70	72	72	67	63	63
		600	283	66	58	58	55	52	50	68	61	59	56	54	55	69	65	63	60	58	59	70	70	68	64	61	62
		700	330	67	60	60	57	55	53	69	62	60	58	56	56	69	64	62	59	58	58	70	67	63	61	59	60
03SQ	10	250	118	53	48	47	43	38	34	53	49	48	43	39	34	54	51	48	44	40	36	55	52	48	45	41	39
		480	227	57	52	52	49	45	43	58	54	53	49	46	43	59	56	53	49	46	44	60	58	53	50	47	45
		720	340	62	57	58	55	53	52	64	59	59	56	54	52	64	62	58	55	53	52	66	64	59	55	53	52
		960	453	67	62	63	61	59	59	68	63	63	62	59	59	70	66	64	62	60	60	70	67	64	62	60	59
		1200	566	72	66	67	66	64	65	73	67	67	66	64	64	75	70	68	67	65	65	75	71	68	68	65	65
04SQ	12	330	156	54	51	49	45	39	34	55	52	49	45	40	35	58	56	50	46	40	38	59	58	51	46	42	40
		620	293	58	54	54	51	46	43	59	56	54	51	47	44	63	61	55	52	47	46	64	63	55	52	48	47
		930	439	62	58	59	57	54	53	64	60	59	57	55	53	68	66	60	58	55	54	69	68	60	58	55	54
		1250	590	68	63	64	63	60	60	70	65	65	64	61	61	72	68	65	65	62	62	74	71	66	65	63	62
		1550	732	73	68	68	68	66	66	73	69	68	69	66	66	76	71	69	70	67	67	77	74	70	70	68	67
05SQ	12	400	189	53	51	52	46	40	38	54	52	52	47	41	39	56	53	52	47	42	40	57	55	53	48	43	41
		760	359	58	57	58	54	49	48	59	57	57	54	49	48	62	59	57	53	49	48	63	61	58	54	50	48
		1140	538	64	63	64	62	59	58	64	62	63	61	58	57	68	65	63	60	57	56	70	68	64	61	58	56
		1500	708	70	68	69	68	65	64	70	68	69	67	65	64	72	69	69	68	65	64	74	71	69	68	65	64
		1900	897	74	73	73	74	71	71	75	73	73	74	71	70	76	73	73	73	70	70	76	74	73	73	70	70
06SQ	16	700	330	54	52	53	49	46	41	67	58	55	52	51	50	72	70	65	62	56	56	75	70	69	65	60	58
		1200	566	60	58	58	55	52	48	69	62	60	57	55	54	74	71	67	64	60	60	77	74	71	67	64	62
		1600	755	66	62	62	59	56	54	71	66	64	61	59	58	76	73	69	66	62	62	79	76	73	69	66	64
		2100	991	72	68	67	65	62	61	74	70	69	66	63	62	78	75	72	69	66	66	81	79	75	72	70	68
		2500	1180	74	71	69	67	65	64	76	73	71	69	66	65	80	77	74	71	69	68	83	81	77	74	72	70
07SQ	16	850	401	59	57	51	53	47	51	63	59	53	54	47	52	66	62	56	56	52	58	72	68	62	59	54	63
		1400	661	62	60	59	56	52	53	66	62	61	57	55	57	71	67	64	59	57	61	74	71	67	62	59	63
		1900	897	66	65	65	61	58	57	70	66	66	61	59	60	74	70	68	63	61	63	77	74	70	65	63	64
		2500	1180	71	70	71	67	65	63	73	71	71	67	65	65	76	73	73	67	66	67	80	76	73	69	67	67
		3000	1416	74	74	75	71	69	68	76	74	75	71	69	69	78	76	76	71	70	70	82	78	76	72	70	70

1. All data are measured in accordance with Industry Standard ARI 880-98.
2. All sound power levels, dB re: 10^{-12} Watts.
3. Where ΔPs is inlet static pressure minus discharge static pressure.

Radiated Sound Power (dB)

Fan and 100% Primary

Fan Size	Inlet Size	Cfm	L/s	Radiated Sound Power (dB) 0.5" ΔPs 2	3	4	5	6	7	1.0" ΔPs 2	3	4	5	6	7	2.0" ΔPs 2	3	4	5	6	7	3.0" ΔPs 2	3	4	5	6	7
02SQ	10	200	94	65	53	53	52	49	45	66	59	55	54	52	51	68	68	65	62	59	55	68	62	62	61	59	59
		300	142	65	54	54	52	49	46	66	59	56	54	52	52	68	67	64	61	58	56	69	65	65	63	60	60
		500	236	65	55	55	52	49	47	66	59	57	54	52	53	68	66	63	60	57	59	70	72	72	67	63	63
		600	283	66	58	58	54	52	50	68	60	58	56	54	54	69	66	63	60	58	60	71	72	70	66	62	63
		700	330	67	60	60	57	55	53	69	62	60	58	56	56	70	67	63	61	59	60	72	71	68	66	62	63
03SQ	10	250	118	53	49	47	44	40	35	56	51	49	47	44	42	58	54	53	52	49	48	59	56	56	55	52	52
		480	227	58	54	52	49	45	42	61	56	53	51	48	48	63	59	57	55	52	53	65	62	60	58	55	56
		720	340	63	59	57	54	51	50	66	61	58	55	53	54	69	65	61	58	56	59	71	68	64	61	58	61
		960	453	68	63	61	59	57	57	71	65	63	60	58	59	73	69	65	62	59	62	74	71	68	64	61	63
		1200	566	72	67	65	63	61	62	75	69	66	64	62	63	77	72	68	66	63	65	78	74	70	67	64	66
04SQ	12	330	156	56	51	49	44	41	37	58	54	52	47	46	47	62	58	56	53	51	53	64	60	59	57	54	56
		620	293	60	55	54	49	46	44	62	58	55	51	50	51	67	63	60	56	54	57	69	65	63	60	57	60
		930	439	64	60	59	54	52	51	67	62	59	55	54	56	73	68	64	59	58	62	74	71	67	63	60	65
		1250	590	69	65	63	59	58	57	72	66	64	60	59	60	76	71	66	62	61	65	78	74	69	65	63	67
		1550	732	74	69	67	65	63	63	76	71	68	65	64	64	79	73	69	66	65	67	80	76	72	68	66	68
05SQ	12	400	189	57	54	50	45	44	40	60	56	53	49	50	50	63	60	57	53	52	55	65	62	60	57	54	57
		760	359	61	58	55	51	50	47	64	60	57	53	54	54	68	64	60	56	55	59	70	67	64	60	57	61
		1140	538	65	63	60	57	56	54	68	65	61	58	58	58	73	69	64	60	59	63	75	73	68	63	61	65
		1500	708	69	67	65	63	62	60	72	69	65	63	62	62	76	72	68	64	63	65	78	75	70	66	65	67
		1900	897	74	72	69	68	67	66	76	73	70	69	67	67	79	75	71	68	67	68	81	77	72	69	68	69
06SQ	16	700	330	54	52	53	49	46	41	67	58	55	52	51	50	72	70	65	62	56	56	75	70	69	65	60	58
		1200	566	60	58	58	55	52	48	69	62	60	57	55	54	74	71	67	64	60	60	77	74	71	67	64	62
		1600	755	66	62	62	59	56	54	71	66	64	61	59	58	76	73	69	66	62	62	79	76	73	69	66	64
		2100	991	72	68	67	65	62	61	74	70	68	66	63	62	78	74	72	69	66	66	81	79	75	72	70	68
		2500	1180	74	71	69	67	65	64	76	73	70	69	66	65	80	76	74	71	69	68	83	81	77	74	72	70
07SQ	16	850	401	59	57	51	53	47	51	63	59	53	54	47	52	66	62	56	56	52	58	72	68	62	59	54	63
		1400	661	62	60	59	56	52	53	66	62	61	57	55	57	71	67	64	59	57	61	74	71	67	62	59	63
		1900	897	66	65	65	61	58	57	70	66	66	61	59	60	74	70	68	63	61	63	77	74	70	65	63	64
		2500	1180	71	70	71	67	65	63	73	71	71	67	65	65	76	73	73	67	66	67	80	76	73	69	67	67
		3000	1416	74	74	75	71	69	68	76	74	75	71	69	69	78	76	76	71	70	70	82	78	76	72	70	70

1. All data are measured in accordance with Industry Standard ARI 880-98.
2. All sound power levels, dB re: 10^{-12} Watts.
3. Where ΔPs is inlet static pressure minus discharge static pressure.

Fan Only Sound Power (dB)

Fan Size	Outlet Static (in. wg)	Cfm	L/s	Discharge Sound Power (dB) Octave Bands 2	3	4	5	6	7	Radiated Sound Power (dB) Octave Bands 2	3	4	5	6	7
02SQ		200	94	58	51	51	46	41	33	56	49	47	43	36	28
	0.25	300	142	59	50	50	47	42	34	57	48	48	44	39	32
	(63 Pa)	500	236	64	56	55	54	50	47	61	56	54	50	47	43
		600	283	67	59	58	57	53	52	64	59	57	53	50	48
		700	330	70	62	60	60	56	55	66	62	60	56	53	51
03SQ		250	118	53	49	48	45	40	34	52	49	47	43	37	28
	0.25	480	227	56	51	54	49	45	41	55	52	51	47	42	39
	(63 Pa)	720	340	60	55	58	54	52	51	60	57	56	53	50	49
		960	453	67	61	63	61	59	58	67	63	61	59	56	56
		1200	566	72	66	67	67	64	64	73	67	65	63	61	62
04SQ		330	156	54	50	48	45	40	34	56	51	48	42	37	30
	0.25	620	293	57	53	53	51	47	44	59	54	53	47	44	40
	(63 Pa)	930	439	62	58	59	58	54	53	63	58	58	53	51	49
		1250	590	70	65	65	65	62	61	69	64	63	59	58	56
		1550	732	74	70	68	69	66	66	75	69	66	64	63	62
05SQ		400	189	55	53	52	48	42	39	54	52	51	44	40	33
	0.25	760	359	59	56	56	54	50	48	58	56	53	49	47	43
	(63 Pa)	1140	538	65	62	64	62	59	58	63	62	60	57	55	52
		1500	708	70	68	69	68	65	65	69	67	64	62	60	59
		1900	897	75	72	73	73	70	70	73	71	68	67	66	65
06SQ		700	330	54	55	52	50	44	39	58	55	52	47	41	34
	0.25	1200	566	56	57	57	55	51	49	60	58	58	51	47	44
	(63 Pa)	1600	755	61	61	62	61	57	56	63	62	62	57	53	51
		2100	991	66	66	67	67	64	64	68	67	66	62	60	59
		2500	1180	70	70	71	71	69	69	72	71	69	66	64	63
07SQ		850	401	54	60	53	50	45	41	55	56	52	48	41	36
	0.25	1400	661	60	66	59	56	54	54	59	62	58	54	50	48
	(63 Pa)	1900	897	65	68	65	62	60	61	63	64	64	60	56	55
		2500	1180	70	73	72	69	67	68	69	69	70	66	64	62
		3000	1416	73	75	76	73	71	72	71	72	72	70	68	67

Sound Noise Criteria (NC)
Fan and 100% Primary

Fan Size	Inlet Size	Cfm	L/s	Discharge NC Level (ΔPs) Fan Only	0.5" (127 Pa)	1.0" (254 Pa)	2.0" (508 Pa)	3.0" (762 Pa)	Radiated NC Level (ΔPs) Fan Only	0.5" (127 Pa)	1.0" (254 Pa)	2.0" (508 Pa)	3.0" (762 Pa)
02SQ	10	200	94	—	17	19	27	23	21/19	29/25	30/26	40/36	37/29
	10	300	142	—	17	19	26	24	22/20	29/25	31/26	39/35	40/32
	10	500	236	16	17	19	25	32	29/25	30/25	32/26	38/34	48/40
	10	600	283	20	19	21	24	30	32/29	33/26	33/29	38/34	46/40
	10	700	330	24	20	22	22	26	35/ *	35/ *	35/ *	38/ *	44/ *
03SQ	10	250	118	—	—	—	—	—	21/—	21/—	23/16	27/19	31/21
	10	480	227	—	—	—	—	—	25/17	26/19	27/22	32/25	35/29
	10	720	340	15	16	16	19	21	31/24	32/25	33/29	36/32	39/36
	10	960	453	22	23	23	24	25	36/32	36/31	38/35	40/37	44/39
	10	1250	590	27	28	27	29	30	40/ *	40/ *	41/ *	44/ *	46/ *
04SQ	12	330	156	—	—	—	—	—	22/19	23/16	26/19	31/24	34/26
	12	620	293	—	—	—	17	20	27/22	29/21	30/24	35/30	38/32
	12	930	439	17	17	17	24	26	33/27	34/26	34/30	39/37	42/39
	12	1250	590	25	24	25	26	30	38/35	38/32	39/36	42/41	46/44
	12	1550	732	29	29	29	30	34	41/ *	42/ *	44/ *	46/ *	49/ *
05SQ	12	400	189	—	—	—	—	—	25/17	24/19	27/21	32/26	35/29
	12	760	359	—	—	—	15	17	27/22	30/24	32/26	35/31	39/35
	12	1140	538	22	22	21	22	26	35/30	35/30	36/32	40/37	45/41
	12	1500	708	28	27	27	27	30	39/36	40/35	40/37	44/41	47/44
	12	1900	897	33	34	33	33	34	44/ *	45/ *	46/ *	47/ *	50/ *
06SQ	16	700	330	—	—	17	29	29	26/24	27/19	31/ *	41/39	45/42
	16	1200	566	—	—	20	30	34	33/26	33/24	35/ *	42/41	47/45
	16	1600	755	20	19	24	32	36	37/31	37/31	39/37	45/44	49/47
	16	2100	991	27	26	29	35	39	41/37	42/39	44/41	48/46	52/50
	16	2500	1180	32	30	32	37	41	45/ *	45/ *	46/ *	50/ *	55/ *
07SQ	16	850	401	16	15	16	22	27	26/24	26/22	29/27	32/31	39/ *
	16	1400	661	24	17	21	25	30	33/31	34/26	36/31	39/37	42/41
	16	1900	897	26	22	24	29	34	39/34	40/32	41/36	44/41	46/45
	16	2250	1062	30	26	27	31	36	44/37	44/36	45/36	47/39	48/42
	16	2500	1180	32	29	30	32	36	46/ *	47/ *	47/ *	49/ *	49/ *

*Not Applicable
1. "—" represents NC levels below NC 15.
2. NC Values are calculated using modeling assumptions based on ARI 885-98-02 Addendum.
3. Where ΔPs is inlet static pressure minus discharge static pressure.

ARI 885-98 DISCHARGE TRANSFER FUNCTION ASSUMPTIONS:

	Octave Band 2	3	4	5	6	7
Small Box (<300 Cfm)	-24	-28	-39	-53	-59	-40
Medium Box (300–700 Cfm)	-27	-29	-40	-51	-53	-39
Large Box (>700 Cfm)	-29	-30	-41	-51	-52	-39

Note: Subtract from terminal unit sound power to determine discharge sound pressure in the space.

ARI 885-98 RADIATED TRANSFER FUNCTION ASSUMPTIONS:

	Octave Band 2	3	4	5	6	7
Type 2- Mineral Fiber Insulation	-18	-19	-20	-26	-31	-36
Total dB reduction	-18	-19	-20	-26	-31	-36

Note: Subtract from terminal unit sound power to determine radiated sound pressure in the space.

Radiated Sound Power (dB)

Fan and 100% Primary

ARI Conditions

Fan Size	Inlet Size	Fan Cfm	Fan L/s	Prim. Cfm	Prim. L/s	1.5" Inlet Pressure (381 Pa) 2	3	4	5	6	7
02SQ	4	690	326	150	71	67	62	60	57	54	53
	5			250	118	67	63	60	58	55	54
	6			400	189	73	67	63	60	57	59
	8			690	326	70	67	64	60	59	59
	10			690	326	69	64	61	59	57	58
03SQ	6	1100	519	400	189	72	67	65	62	60	60
	8			700	330	73	68	64	63	60	63
	10			1100	519	74	69	66	63	61	63
	12			1100	519	74	68	65	62	60	62
04SQ	6	1500	708	400	189	74	70	67	64	63	63
	8			700	330	74	71	68	66	64	64
	10			1100	519	75	71	68	65	64	66
	12			1500	708	77	71	68	65	64	65
	14			1500	708	74	70	67	65	63	65
05SQ	10	1900	897	1100	519	75	72	69	68	67	67
	12			1600	755	76	73	70	68	67	67
	14			1900	897	75	72	69	68	66	67
06SQ	10	2500	1180	1100	519	76	70	69	66	64	65
	12			1600	755	78	75	72	68	66	66
	14			2100	991	78	75	72	69	67	67
	16			2500	1180	78	75	72	70	68	67
07SQ	10	2800	1321	1100	519	77	73	73	69	67	68
	12			1600	755	77	73	74	71	68	67
	14			2100	991	77	74	74	70	68	67
	16			2800	1321	76	74	74	69	68	68

Note: Oversizing primary valves to achieve lower sound levels will increase the minimum operable cfm. This will increase energy consumption at minimum airflows when local reheat is energized. See "Valve/Controller Airflow Guidelines".

Discharge Sound Power (dB)

Fan Only

ARI Conditions

Fan Size	Inlet Size	Cfm	L/s	1.5" Inlet Pressure (381 Pa) 2	3	4	5	6	7
02SQ	5, 6, 8, 10	690	326	70	62	60	59	56	55
03SQ	8, 10	1100	519	70	64	65	64	62	62
04SQ	8, 10, 12	1500	708	73	69	68	68	65	65
05SQ	10, 12	1900	897	75	72	73	73	70	70
06SQ	10, 12, 14, 16	2500	1180	70	70	71	71	69	69
07SQ	10, 12, 14, 16	2800	1321	72	74	74	72	69	70

Radiated Sound Power (dB)

Fan Only

ARI Conditions

Fan Size	Inlet Size	Cfm	L/s	1.5" Inlet Pressure (381 Pa) 2	3	4	5	6	7
02SQ	5,6, 8, 10	690	326	66	61	59	56	53	51
03SQ	8, 10	1100	519	70	65	64	61	59	60
04SQ	8, 10, 12	1500	708	74	68	66	63	62	61
05SQ	10, 12	1900	897	73	71	68	67	66	65
06SQ	10, 12, 14, 16	2500	1180	72	71	69	66	64	63
07SQ	10, 12, 14, 16	2800	1321	70	71	71	68	66	65

Notes:

1. All data are measured in accordance with current Industry Standard ARI 880, version 1998.
2. All sound power levels, dB re: 10^{-12} watts.

Series Inlet Attenuator Appurtenance Effects

Fan	Discharge Sound Effect* (dB) 2	3	4	5	6	7	Radiated Sound Effect* dB) 2	3	4	5	6	7
Matte-faced and foil-faced insulation, solid double-wall**												
02SQ	2	2	2	3	3	2	-3	-3	-9	-10	-12	-17
03SQ, 04SQ, 05SQ	2	2	2	3	3	2	-1	-3	-10	-14	-17	-20
06SQ, 07SQ	2	2	2	3	3	2	1	-3	-8	-9	-8	-10
Closed-cell insulation												
02SQ	2	2	2	3	3	2	1	-2	-5	-4	-6	-6
03SQ, 04SQ, 05SQ	2	2	2	3	3	2	1	-2	-5	-4	-6	-6
06SQ, 07SQ	2	2	2	3	3	2	1	-2	-5	-4	-6	-6

* Add to sound power, a negative effect represents a sound reduction, a positive effect represents a sound increase.

** Note – Attenuators on double-wall units contain foil-faced insulation.

Series Cabinet Lining Appurtenance Effects

Fan	Discharge Sound Effect* (dB) 2	3	4	5	6	7	Radiated Sound Effect* (dB) 2	3	4	5	6	7
Solid double-wall												
02SQ	0	0	0	0	0	0	0	0	0	2	3	3
03SQ, 04SQ, 05SQ	0	0	0	0	0	0	0	0	1	2	3	4
06SQ, 07SQ	0	0	0	0	0	0	1	3	2	5	8	8
Closed-cell insulation												
02SQ	0	0	0	0	0	0	-1	-1	0	1	1	2
03SQ, 04SQ, 05SQ	0	0	0	0	0	0	1	1	2	2	2	2
06SQ, 07SQ	0	0	0	0	0	0	1	5	3	4	6	6

* Add to sound power, a negative effect represents a sound reduction, a positive effect represents a sound increase.

Series Heating Coil Appurtenance Effects

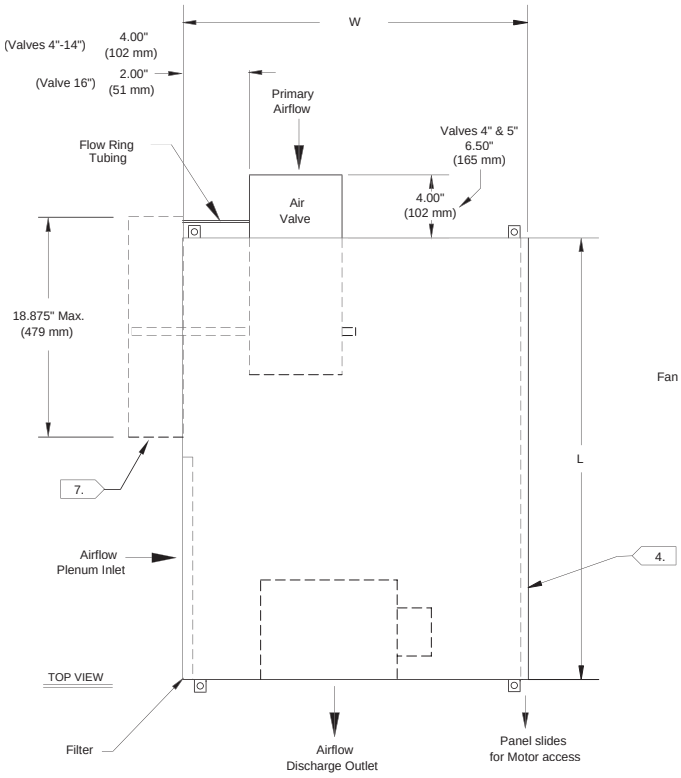
Fan	Discharge Sound Effect* (dB) 2	3	4	5	6	7	Radiated Sound Effect* (dB)** 2	3	4	5	6	7
Hot Water Coil												
02SQ	1	2	2	1	2	2	2	2	2	2	2	2
03SQ, 04SQ, 05SQ	1	3	1	2	2	1	0	2	1	2	2	2
06SQ, 07SQ	2	6	4	4	4	3	6	5	2	2	2	3
Electric Heat												
02SQ	-4	-1	0	0	1	0	-1	0	-1	0	0	0
03SQ, 04SQ, 05SQ	2	1	2	1	-1	-1	0	1	1	1	1	1
06SQ, 07SQ	4	4	2	2	3	1	2	3	3	4	3	2

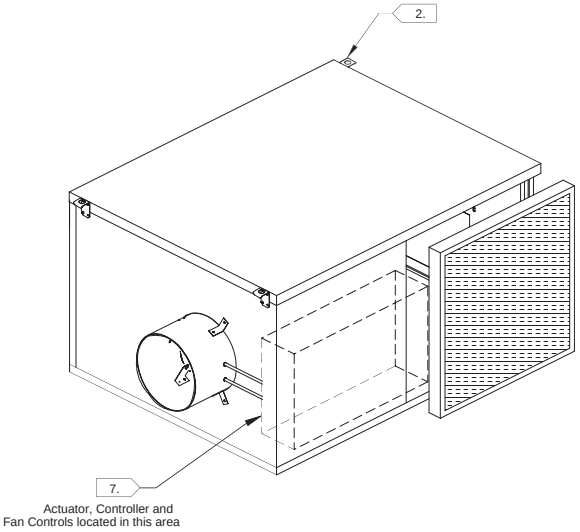
* Add to sound power, a negative effect represents a sound reduction, a positive effect represents a sound increase.

** Radiated effect applies to “fan only” sound only. Do not apply to fan + valve sound.

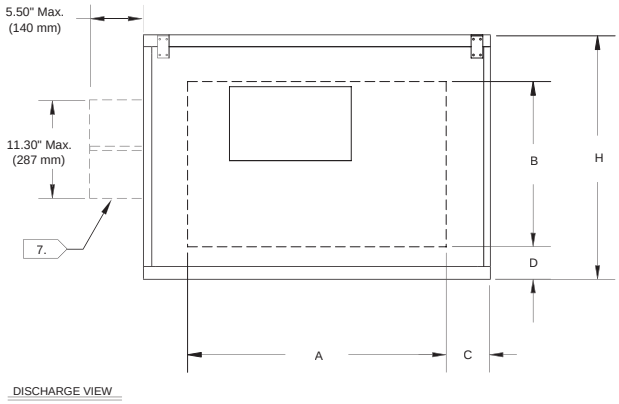
SERIES COOLING ONLY (VSCF) WITHOUT ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	Unit Wt Lbs (kg)
02SO	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356								86 (39)
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)		100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	117 (53)
07SO	10, 12, 14, 16	254, 305, 356, 406								125 (57)





Fan Size	Filter Size
02SO	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SQ 04SQ 05SO	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SO 07SO	20" x 20" x 1" (508 mm x 508 mm x 25 mm)

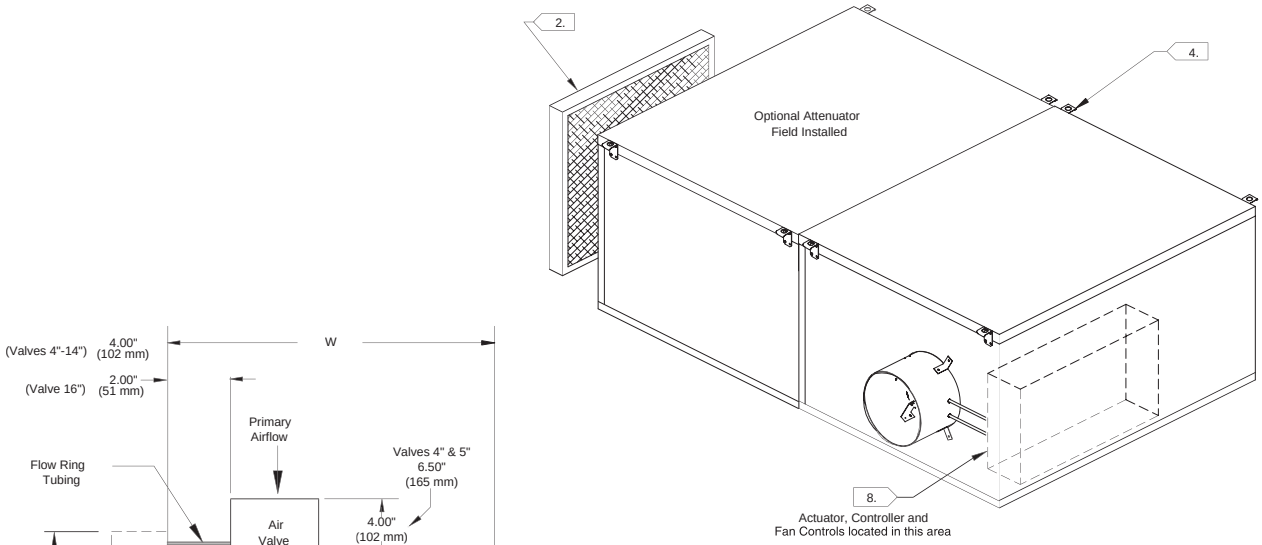


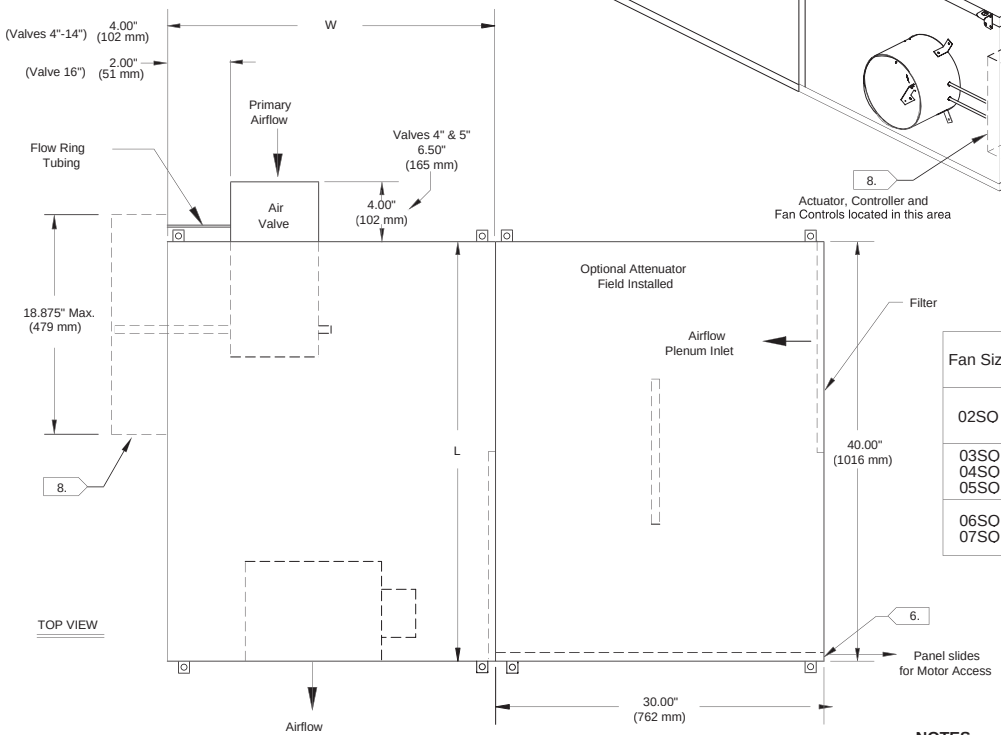
NOTES:

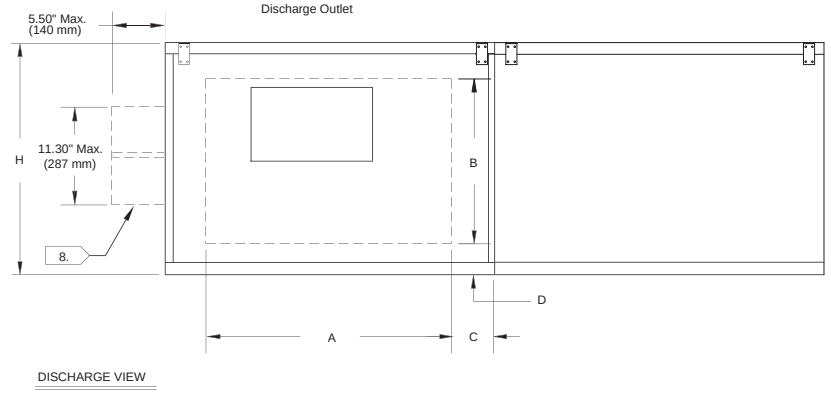
1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. See Installation Documents for exact hanger bracket location.
3. Air valve centered between top and bottom panel.
4. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
5. Attenuator option not available with this unit layout.
6. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/mirror image optional.)
7. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control types selected. See "Enclosure Details" for specific layout.

SERIES COOLING ONLY (VSCF) WITH OPTIONAL ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	Unit Wt Lbs (kg)
02SO	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	78 (35)
03SO	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356								86 (39)
05SO	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)		100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	117 (53)
07SO	10, 12, 14, 16	254, 305, 356, 406								125 (57)







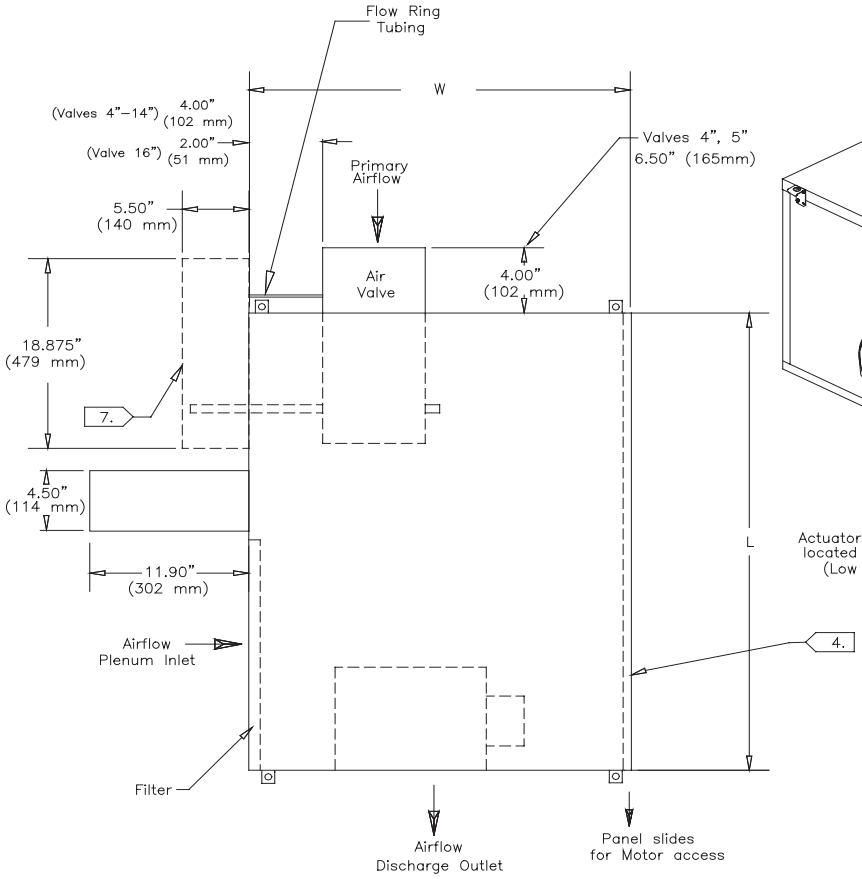
Fan Size	Filter Size	Atten Wt Lbs (kg)
02SO	14" x 14" x 1" (356 mm x 356 mm x 25 mm)	46 (21)
03SO 04SO 05SO	16" x 20" x 1" (406 mm x 508 mm x 25 mm)	48 (22)
06SO 07SO	20" x 20" x 1" (508 mm x 508 mm x 25 mm)	54 (25)

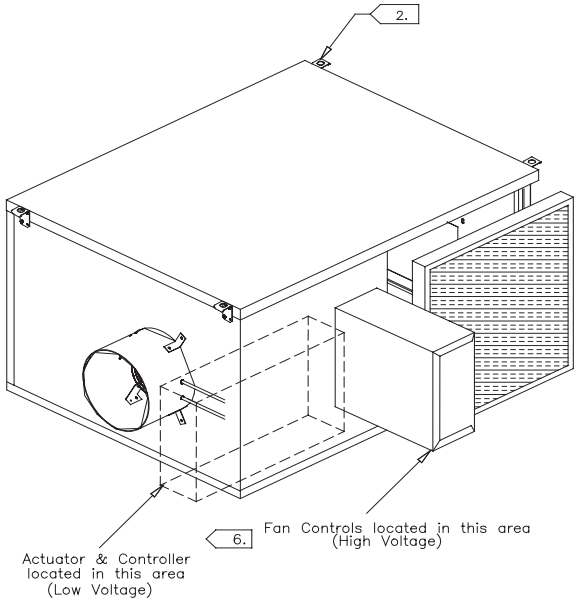
NOTES:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. Filter location with optional Attenuator.
3. Attenuator-factory assembled, field installed.
4. See Installation Documents for exact hanger bracket location.
5. Air valve centered between top and bottom panel.
6. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
7. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/ mirror image optional.)
8. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

NARROW CORRIDOR DESIGN SERIES COOLING (VSCF) WITHOUT ATTENUATOR

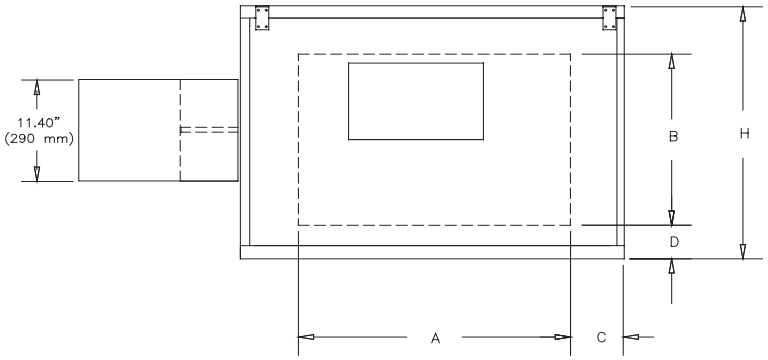
FAN SIZE	INLET SIZE AVAILABILITY NOMINAL ø (INCHES)	INLET SIZE AVAILABILITY NOMINAL ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	Unit Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356								86 (39)
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)		100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	117 (53)
07SQ	10, 12, 14, 16	254, 305, 356, 406								125 (57)





Fan Size	Filter Size
02SQ	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SQ 04SQ 05SQ	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SQ 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)

TOP VIEW



DISCHARGE VIEW

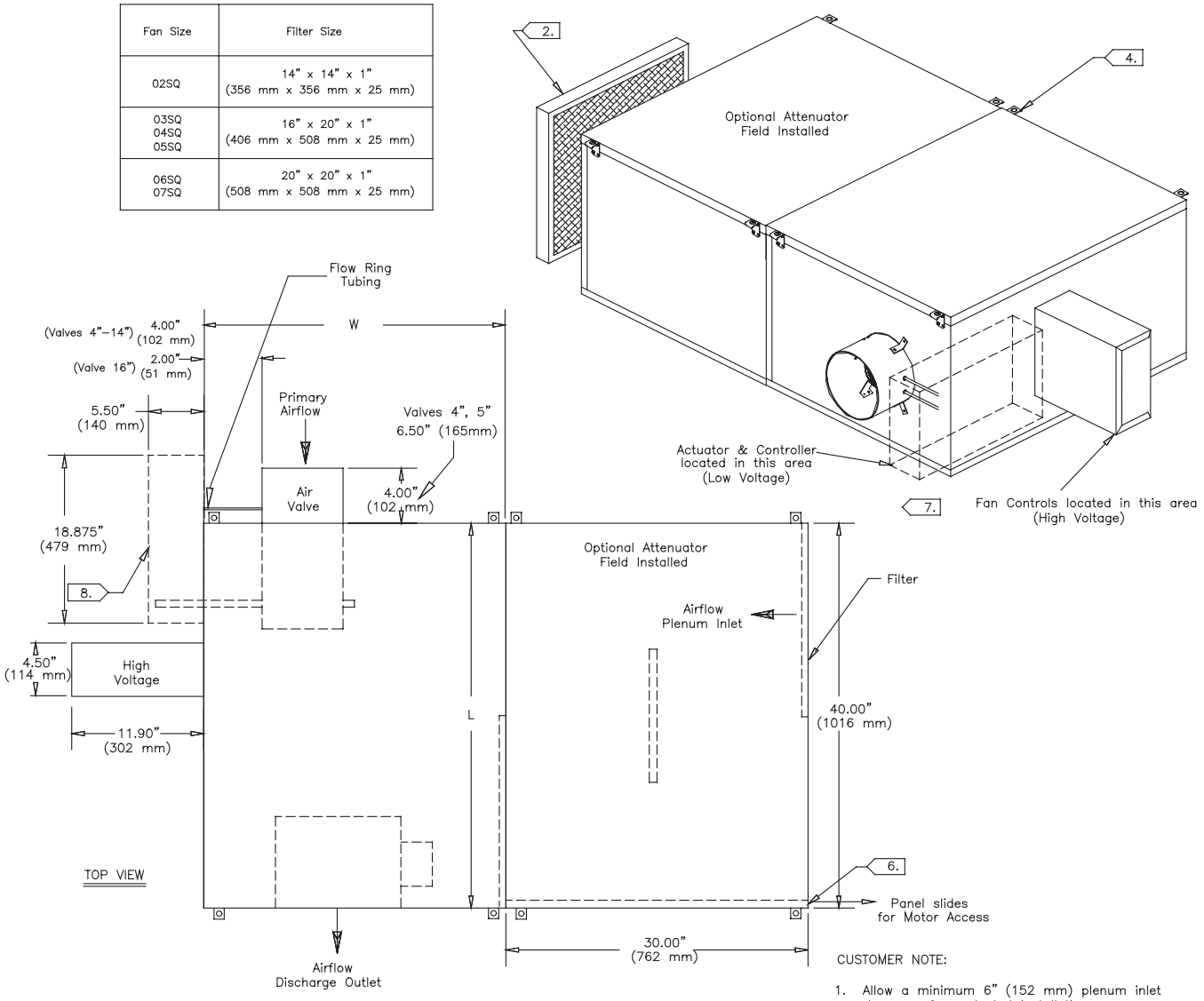
CUSTOMER NOTE:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. See Installation Documents for exact hanger bracket location
3. Air valve centered between top and bottom panel.
4. For Motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
5. Attenuator option not available with this unit layout.
6. All high & low voltage controls have same–side NEC jumpback clearance.(unit shown w/left hand high & low voltage box connections [high voltage inlet facing]. Right hand connections available.)
7. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

NARROW CORRIDOR DESIGN SERIES COOLING ONLY (VSCF) W/OPTIONAL ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL ø (INCHES)	INLET SIZE AVAILABILITY NOMINAL ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	Unit Wt Lbs (kg)	Atten Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (360 mm)	5.00" (127 mm)	.65" (17 mm)	78 (35)	46 (21)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	85 (39)	48 (22)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356	↓	↓	↓	↓	↓	↓	↓	86 (39)	↓
05SQ	10, 12, 14	254, 305, 356	↓	30.00" (762 mm)	↓	24.00" (610 mm)	↓	3.00" (76 mm)	↓	100 (45)	↓
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)	↓	↓	↓	18.00" (462 mm)	↓	1.66" (42 mm)	117 (53)	54 (25)
07SQ	10, 12, 14, 16	254, 305, 356, 406	↓	↓	↓	↓	↓	↓	↓	125 (57)	↓

Fan Size	Filter Size
02SQ	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SQ 04SQ 05SQ	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SQ 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)

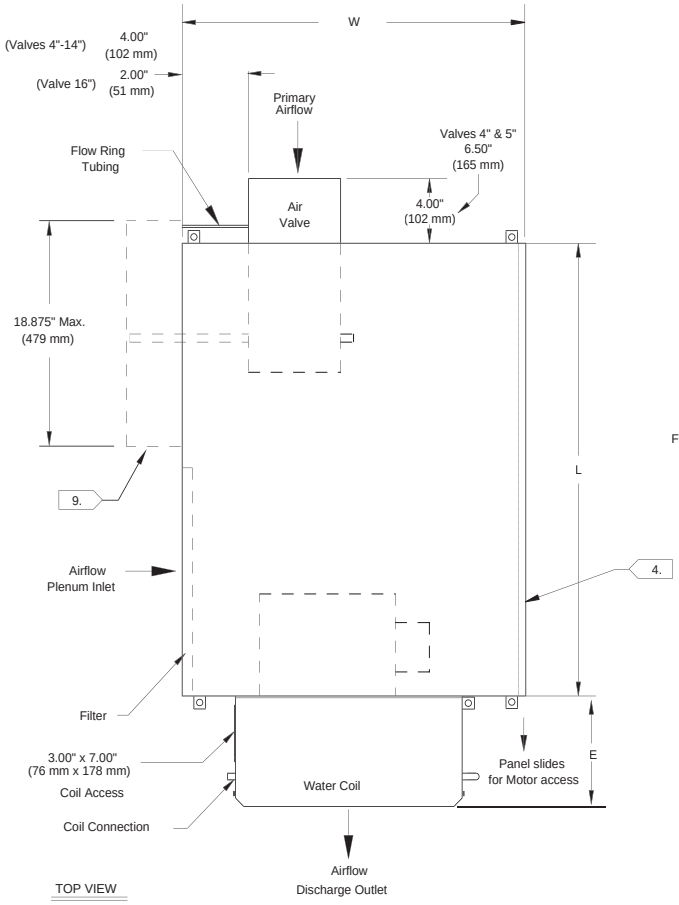


CUSTOMER NOTE:

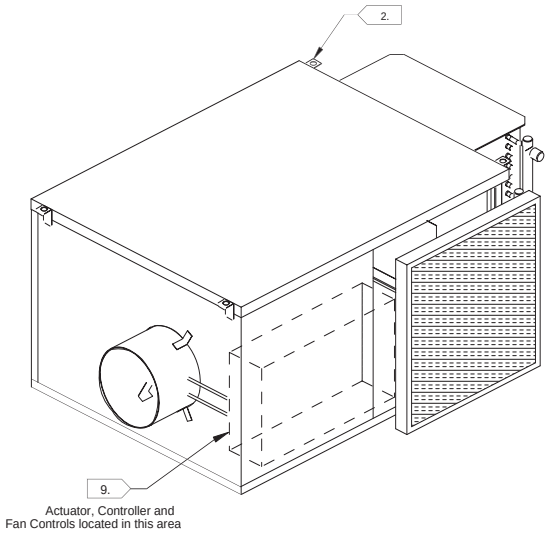
1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. Filter location with optional Attenuator.
3. Attenuator–factory assembled, field installed.
4. See Installation Documents for exact hanger bracket location.
5. Air valve centered between top and bottom panel.
6. For Motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
7. All high & low voltage controls have same–side NEC jumpback clearance. (unit shown w/left hand high & low voltage box connections [high voltage inlet facing]. Right hand connections available.)
8. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

SERIES HOT WATER (VSWF) WITHOUT ATTENUATOR

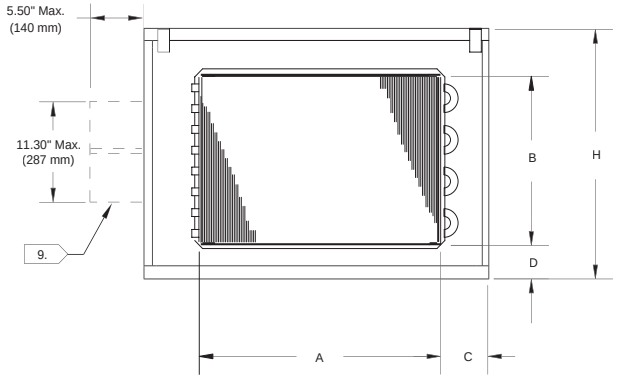
FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	6.75" (171 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	10.75" (273 mm)	85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356									86 (39)
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)			100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	6.75" (171 mm)	117 (53)
07SQ	10, 12, 14, 16	254, 305, 356, 406									125 (57)



TOP VIEW



Fan Size	Filter Size
02SO	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SO 04SO 05SO	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SO 07SO	20" x 20" x 1" (508 mm x 508 mm x 25 mm)



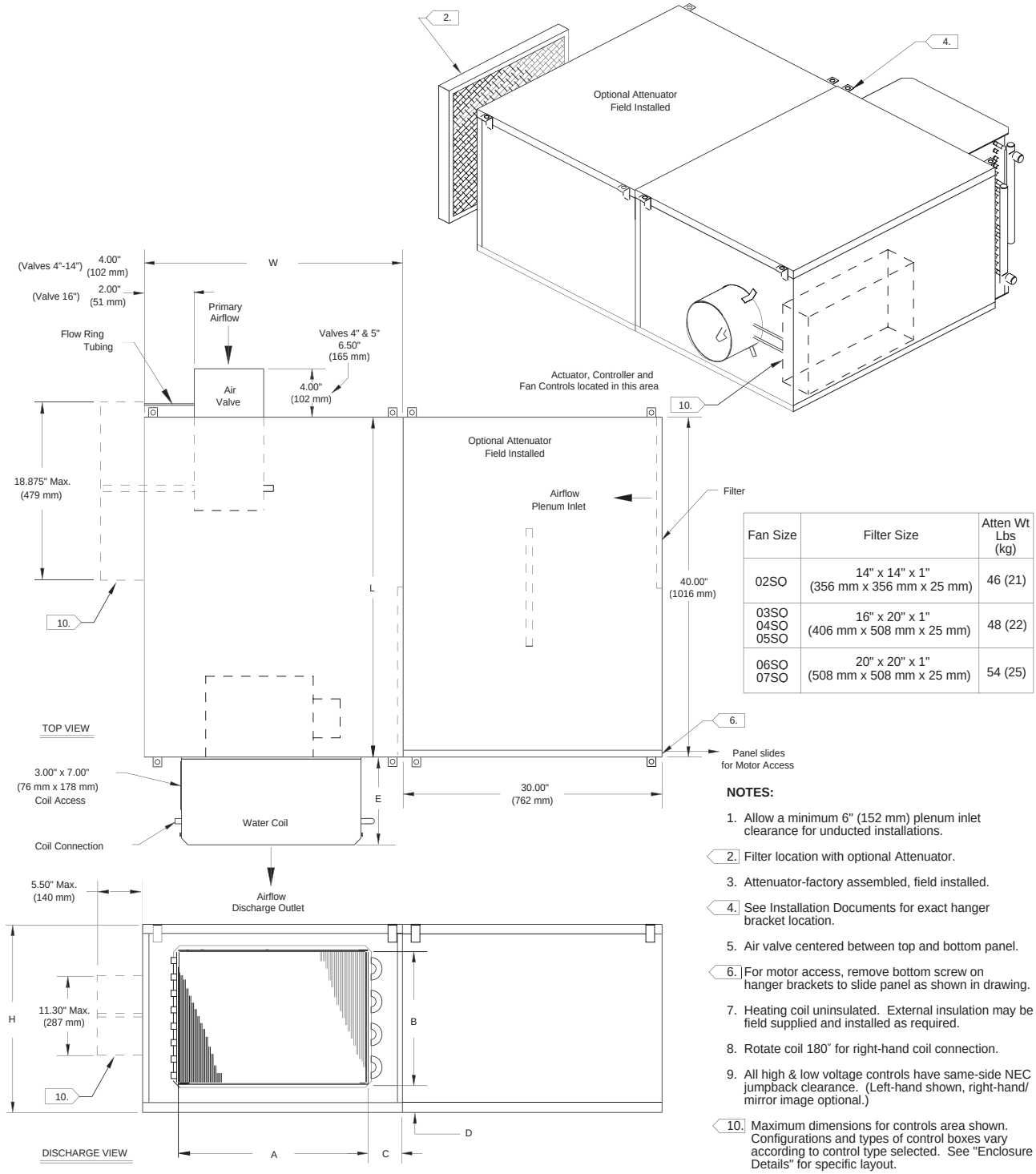
DISCHARGE VIEW

NOTES:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. See Installation Documents for exact hanger bracket location.
3. Air valve centered between top and bottom panel.
4. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
5. Attenuator option not available with this unit layout.
6. Heating coil uninsulated. External insulation may be field-supplied and installed as required.
7. Rotate coil 180˚ for right-hand coil connection.
8. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/mirror image optional.)
9. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control types selected. See "Enclosure Details" for specific layout.

SERIES HOT WATER (VSWF) WITH OPTIONAL ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)	Attn Wt Lbs (kg)
02SO	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	6.75" (171 mm)	78 (35)	46 (21)
03SO	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	10.75" (273 mm)	85 (39)	48 (22)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356									86 (39)	
05SO	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)			100 (45)	
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	6.75" (171 mm)	117 (53)	54 (25)
07SO	10, 12, 14, 16	254, 305, 356, 406									125 (57)	



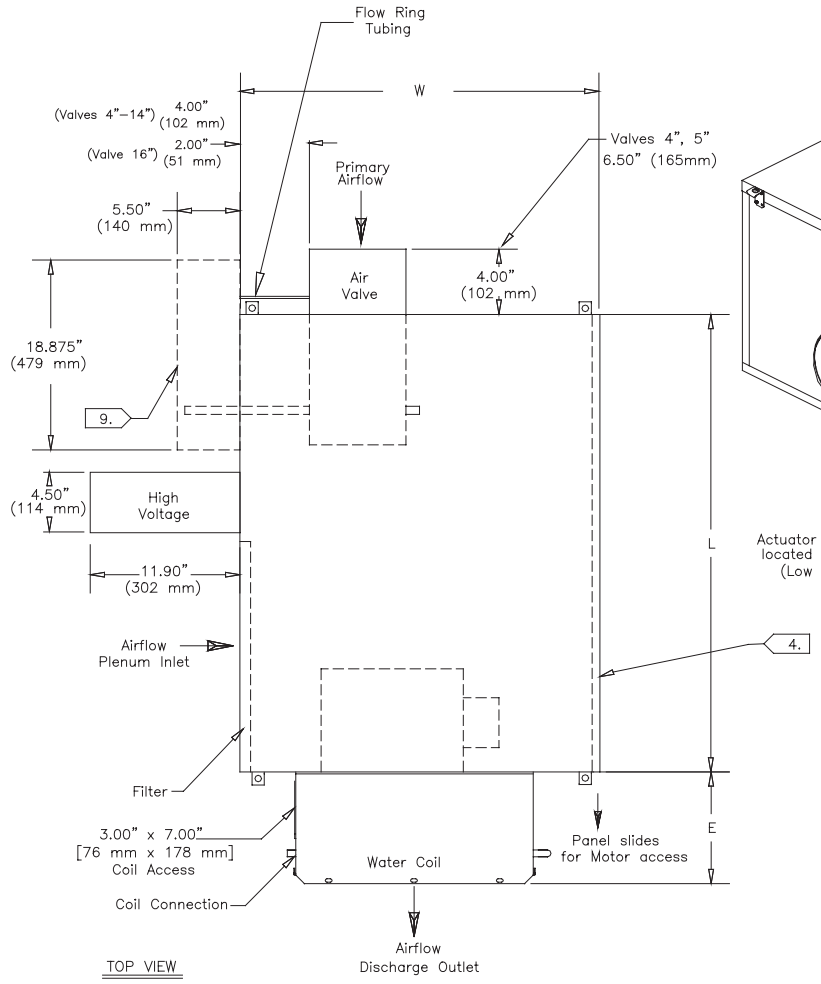
Fan Size	Filter Size	Atten Wt Lbs (kg)
02SO	14" x 14" x 1" (356 mm x 356 mm x 25 mm)	46 (21)
03SO 04SO 05SO	16" x 20" x 1" (406 mm x 508 mm x 25 mm)	48 (22)
06SO 07SO	20" x 20" x 1" (508 mm x 508 mm x 25 mm)	54 (25)

NOTES:

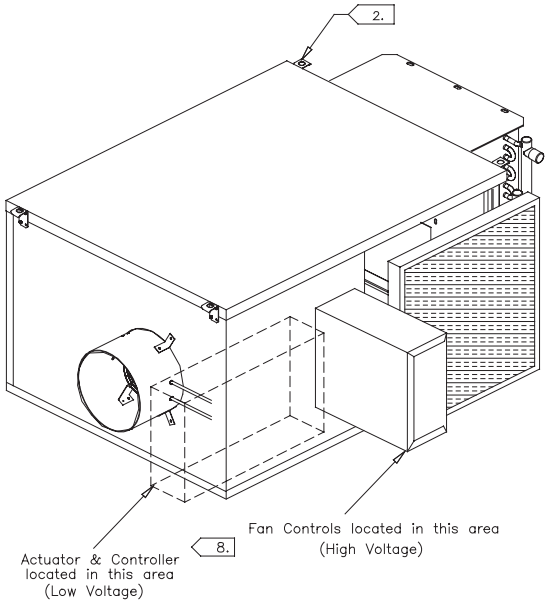
1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. Filter location with optional Attenuator.
3. Attenuator-factory assembled, field installed.
4. See Installation Documents for exact hanger bracket location.
5. Air valve centered between top and bottom panel.
6. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
7. Heating coil uninsulated. External insulation may be field supplied and installed as required.
8. Rotate coil 180˚ for right-hand coil connection.
9. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/ mirror image optional.)
10. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

NARROW CORRIDOR DESIGN SERIES HOT WATER (VSWF) WITHOUT ATTENUATOR

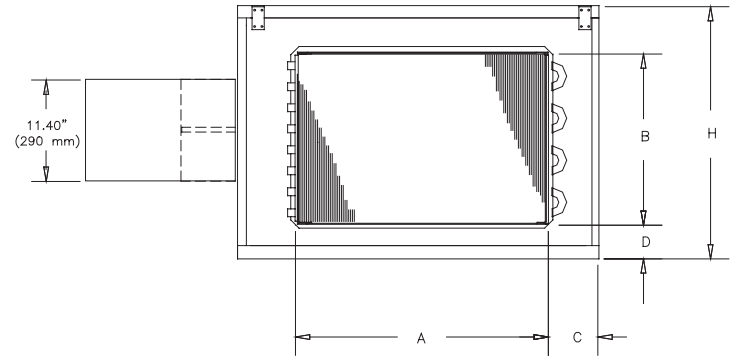
FAN SIZE	INLET SIZE AVAILABILITY NOMINAL ø (INCHES)	INLET SIZE AVAILABILITY NOMINAL ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	6.75" (171 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	10.75" (273 mm)	85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356									86 (39)
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)			100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	6.75" (171 mm)	117 (53)
07SQ	10, 12, 14, 16	254, 305, 356, 406									125 (57)



TOP VIEW



Fan Size	Filter Size
02SQ	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SQ 04SQ 05SQ	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SQ 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)



DISCHARGE VIEW

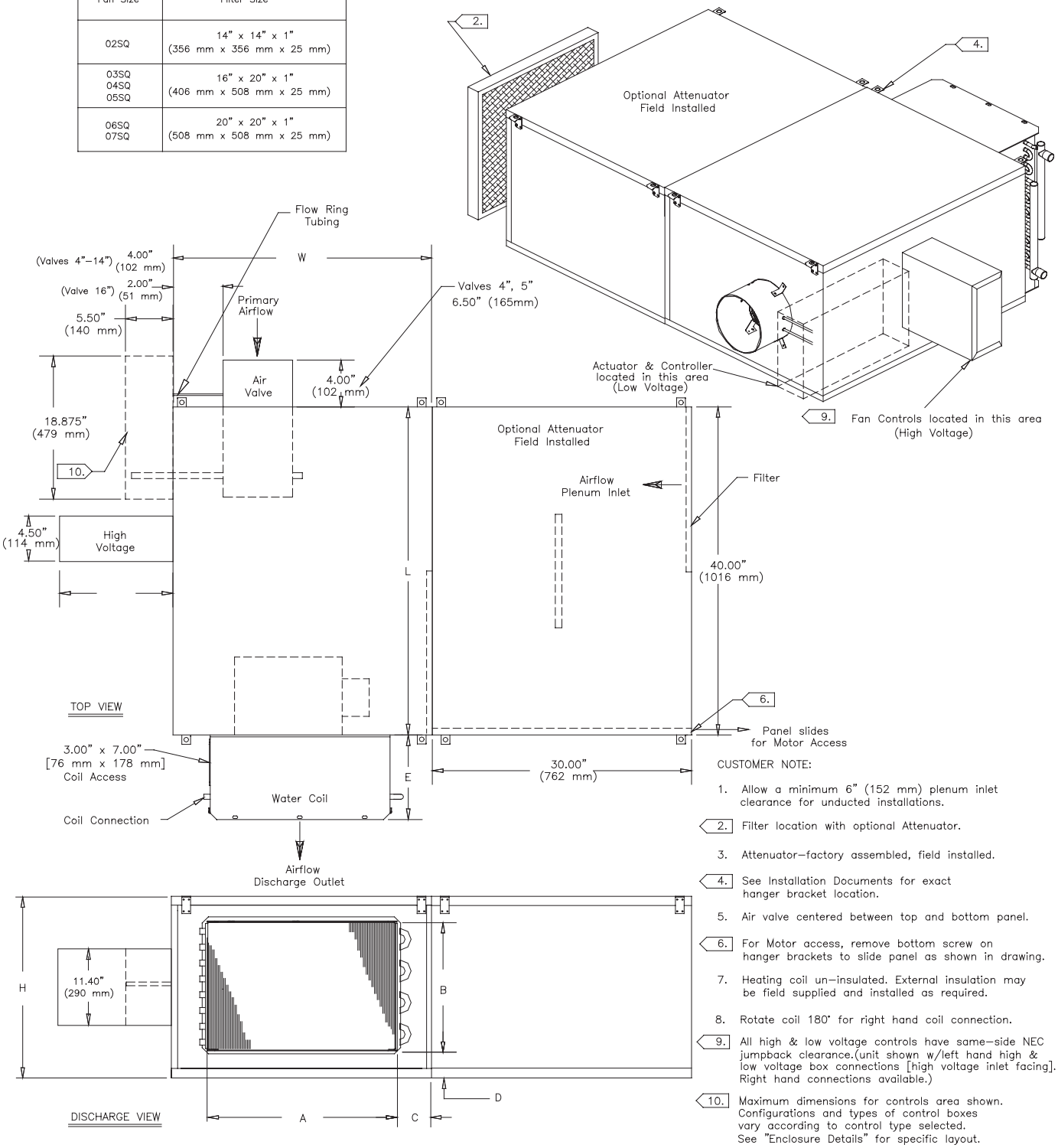
CUSTOMER NOTE:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. See Installation Documents for exact hanger bracket location.
3. Air valve centered between top and bottom panel.
4. For Motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
5. Attenuator option not available with this unit layout.
6. Heating coil un–insulated. External insulation may be field supplied and installed as required.
7. Rotate coil 180° for right hand coil connection.
8. All high & low voltage controls have same–side NEC jumpback clearance. (unit shown w/left hand high & low voltage box connections [high voltage inlet facing]. Right hand connections available.)
9. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected.

NARROW CORRIDOR DESIGN SERIES HOT WATER (VSWF) W/OPTIONAL ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL ø (INCHES)	INLET SIZE AVAILABILITY NOMINAL ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)	Atten Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	14.00" (356 mm)	5.00" (127 mm)	.65" (17 mm)	6.75" (171 mm)	78 (35)	46 (21)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	19.00" (483 mm)	16.00" (406 mm)	2.50" (64 mm)	.75" (19 mm)	10.75" (273 mm)	85 (39)	48 (22)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356									86 (39)	
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)		24.00" (610 mm)		3.00" (76 mm)			100 (45)	
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)				18.00" (457 mm)		1.66" (42 mm)	6.75" (171 mm)	117 (53)	54 (25)
07SQ	10, 12, 14, 16	254, 305, 356, 406									125 (57)	

Fan Size	Filter Size
02SQ	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SQ 04SQ 05SQ	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SQ 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)

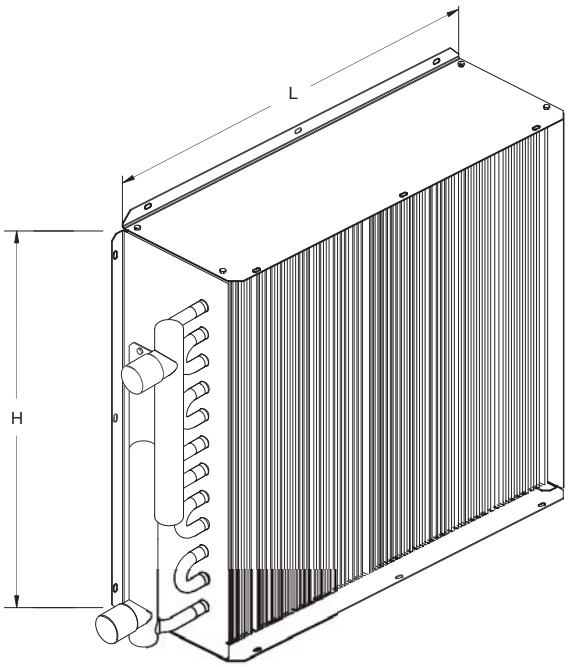


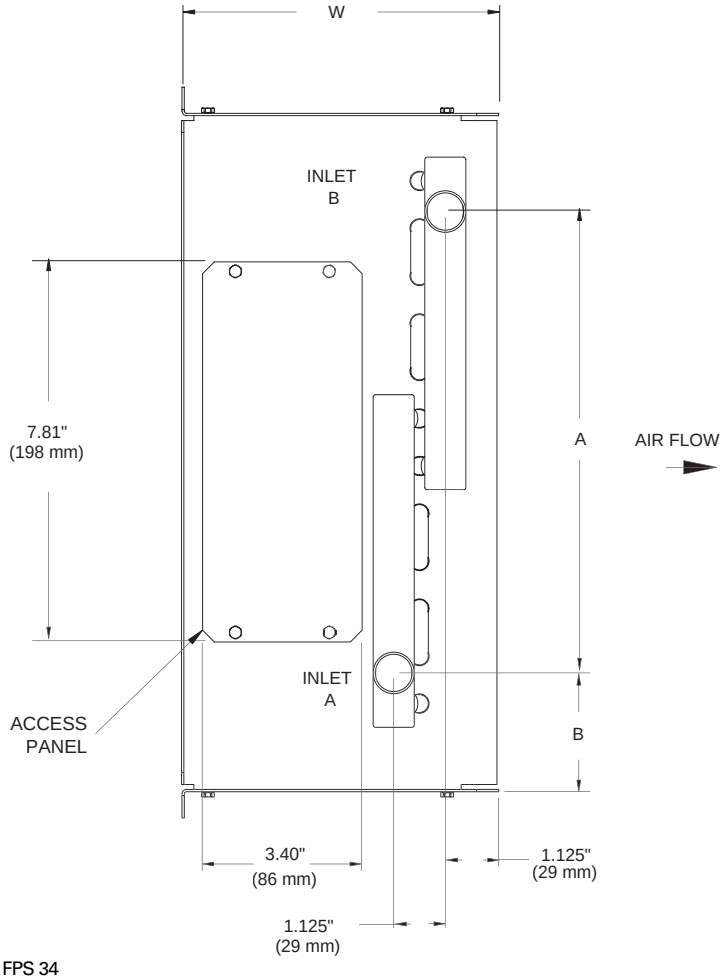
CUSTOMER NOTE:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. Filter location with optional Attenuator.
3. Attenuator–factory assembled, field installed.
4. See Installation Documents for exact hanger bracket location.
5. Air valve centered between top and bottom panel.
6. For Motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
7. Heating coil un–insulated. External insulation may be field supplied and installed as required.
8. Rotate coil 180° for right hand coil connection.
9. All high & low voltage controls have same–side NEC jumpback clearance.(unit shown w/left hand high & low voltage box connections [high voltage inlet facing]. Right hand connections available.)
10. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

COIL INFORMATION FOR SERIES 1-ROW COIL

FAN SIZE	COIL CONNECTION	A	B	L	H	W
02SO	.875" (22 mm) O.D.	9.75" (248 mm)	2.00" (51 mm)	12.20" (310 mm)	14.00" (356 mm)	6.75" (171 mm)
03SO		13.75" (349 mm)		19.00" (533 mm)	16.00" (406 mm)	10.75" (273 mm)
04SQ						
05SQ				24.00" (610 mm)		
06SO		15.75" (400 mm)	1.00" (25 mm)		18.00" (457 mm)	6.75" (171 mm)
07SQ						





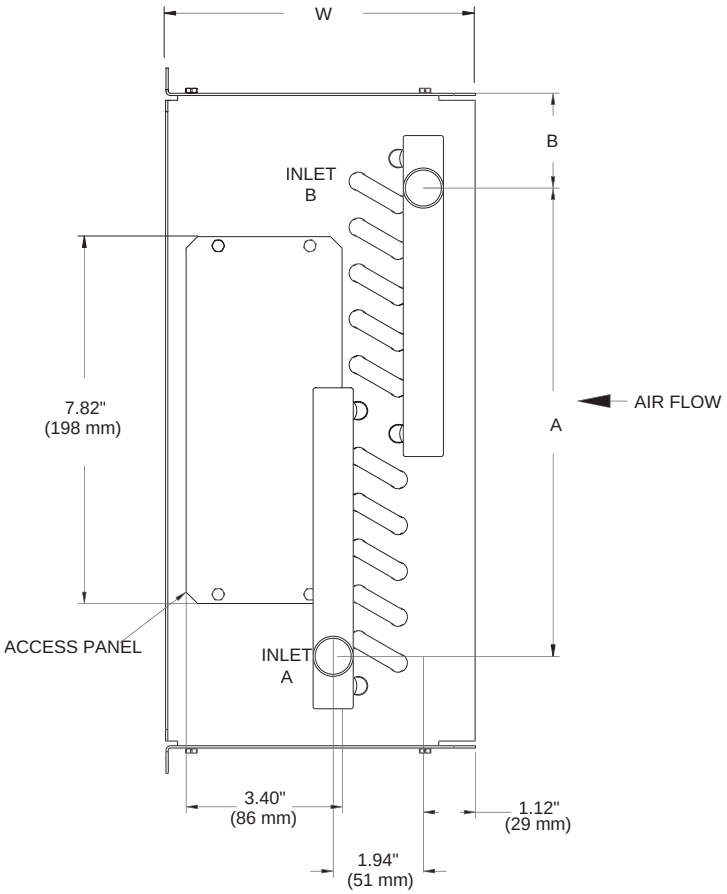
FAN SIZE	INTERNAL VOLUME GAL (IN)	OPERATING WEIGHT LBS (KG)
02SQ	0.10 (.38)	7.8 (3.5)
03SO 04SQ	0.21 (.79)	22.9 (10.4)
05SQ	0.26 (.98)	27.2 (12.3)
06SQ 07SO	0.26 (.98)	16.8 (7.6)

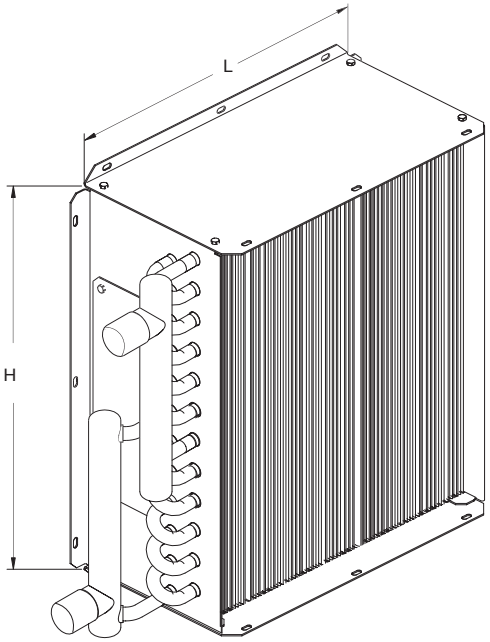
NOTES:

1. Location of coil connections is determined by facing air stream. L.H. Coil connections shown, R.H. opposite.
2. Coil furnished with stub sweat connections.
3. Coils can be field rotated for opposite connections. Note: Water inlet is always the bottom connection.
4. Access Panel is standard.
5. Flanged Coil shown, Slip and Drive available.

COIL INFORMATION FOR SERIES 2-ROW COIL

FAN SIZE	COIL CONNECTION	A	B	L	H	W
02SQ	.875" (22 mm) O.D.	10.25" (260 mm)	2.00" (51 mm)	12.20" (310 mm)	14.00" (356 mm)	6.75" (171 mm)
03SQ		13.75" (349 mm)		19.00" (533 mm)	16.00" (406 mm)	10.75" (273 mm)
04SO						
05SO				24.00" (610 mm)		
06SO		15.75" (400 mm)	1.00" (25 mm)		18.00" (457 mm)	6.75" (171 mm)
07SO						





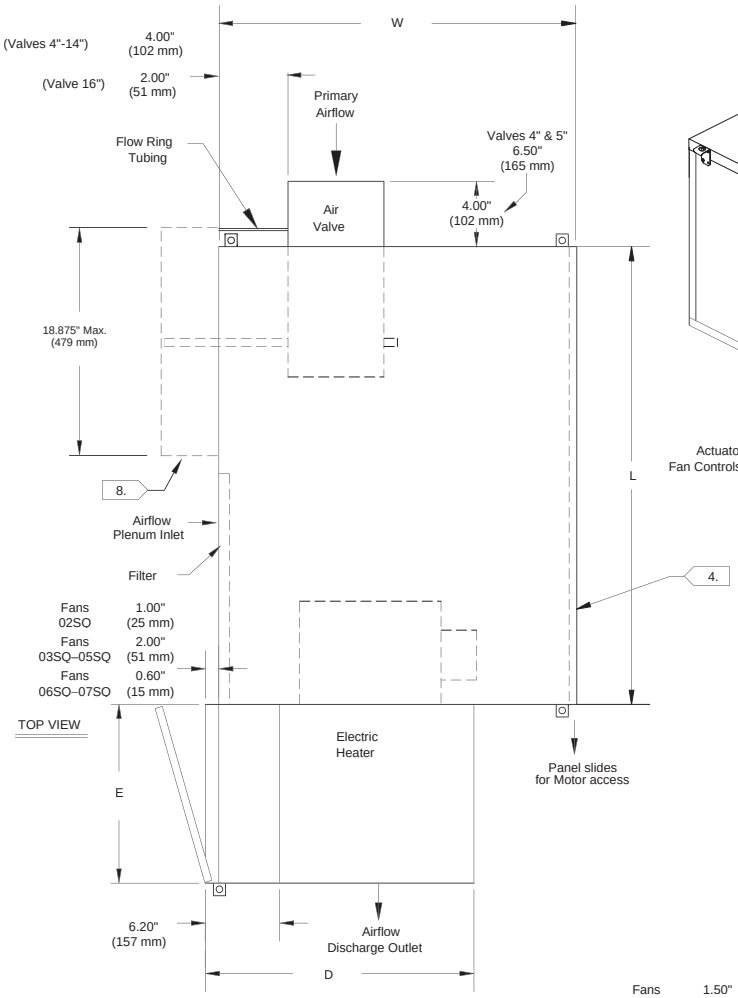
FAN SIZE	INTERNAL VOLUME GAL (L)		OPERATING WEIGHT LBS (KG)	
02SO	0.17	(.64)	7.8	(3.5)
03SO 04SQ	0.37	(1.40)	22.9	(10.4)
05SO	0.46	(1.74)	31.2	(14.2)
06SO 07SQ	0.46	(1.74)	23.7	(10.8)

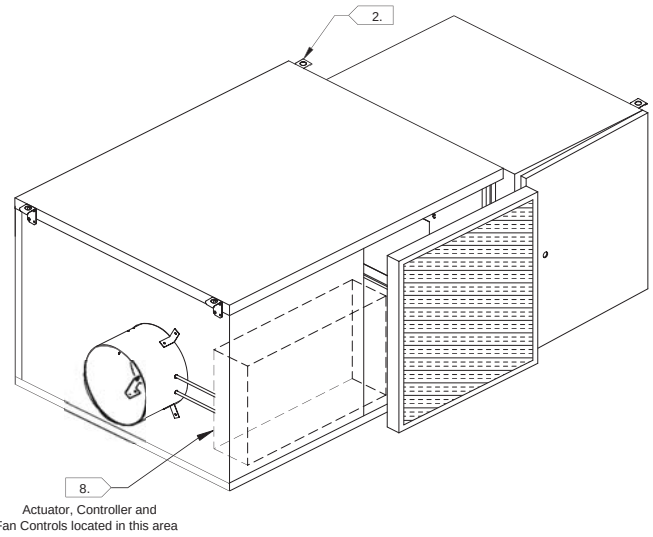
NOTES:

1. Location of coil connections is determined by facing air stream. L.H. coil connections shown, R.H. opposite.
2. Coil furnished with stub sweat connections.
3. Coils can be field-rotated for opposite connections. Note: Water inlet is always the bottom connection.
4. Access panel is standard.
5. Flanged coil shown. Slip and Drive available.

SERIES ELECTRIC (VSEF) WITHOUT ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)
02SQ	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	10.00" (254 mm)	5.00" (127 mm)	18.00" (457 mm)	18.50" (470 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)		12.00" (305 mm)	4.00" (102 mm)			85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356				16.00" (406 mm)		4.00" (102 mm)	22.00" (559 mm)		86 (39)
05SQ	10, 12, 14	254, 305, 356		30.00" (762 mm)				10.00" (254 mm)			100 (45)
06SQ	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)			19.00" (483 mm)	14.00" (356 mm)	5.50" (140 mm)	25.00" (635 mm)	17.00" (432 mm)	117 (53)
07SQ	10, 12, 14, 16	254, 305, 356, 406									125 (57)





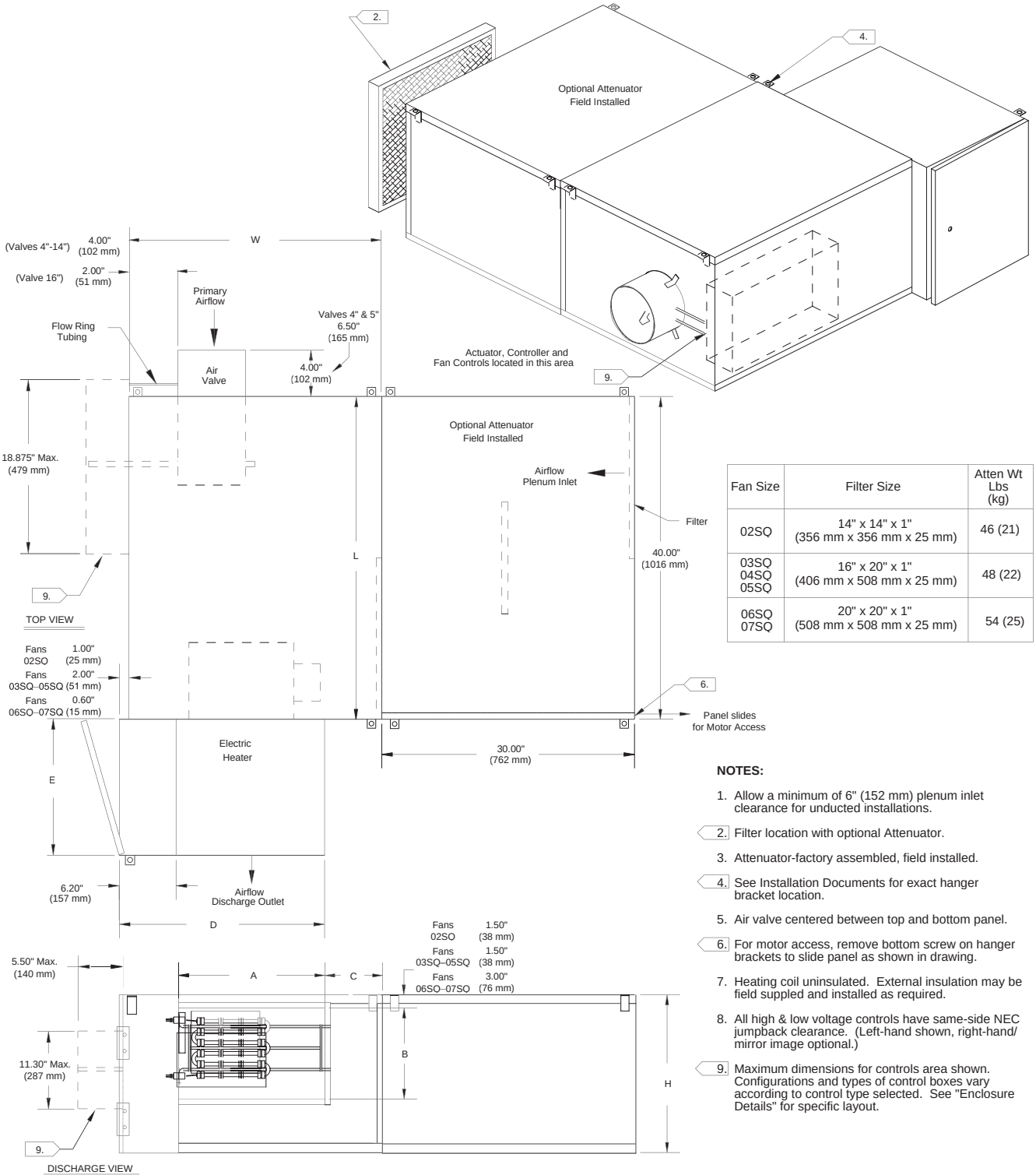
Fan Size	Filter Size
02SO	14" x 14" x 1" (356 mm x 356 mm x 25 mm)
03SO 04SQ 05SO	16" x 20" x 1" (406 mm x 508 mm x 25 mm)
06SO 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)

NOTES:

1. Allow a minimum 6" (152 mm) plenum inlet clearance for unducted installations.
2. See Installation Documents for exact hanger bracket location.
3. Air valve centered between top and bottom panel.
4. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
5. Attenuator option not available with this unit layout.
6. Heating coil uninsulated. External insulation may be field-supplied and installed as required.
7. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/mirror image optional.)
8. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control types selected. See "Enclosure Details" for specific layout.

SERIES ELECTRIC (VSEF) WITH OPTIONAL ATTENUATOR

FAN SIZE	INLET SIZE AVAILABILITY NOMINAL Ø INCHES	INLET SIZE AVAILABILITY NOMINAL Ø (mm)	H	W	L	DISCHARGE DIMENSIONS A	DISCHARGE DIMENSIONS B	C	D	E	Unit Wt Lbs (kg)
02SO	4, 5, 6, 8, 10	104, 127, 152, 203, 254	15.50" (394 mm)	22.00" (559 mm)	34.00" (864 mm)	12.00" (305 mm)	10.00" (254 mm)	5.00" (127 mm)	18.00" (457 mm)	18.50" (470 mm)	78 (35)
03SQ	6, 8, 10, 12	152, 203, 254, 305	17.50" (445 mm)	24.00" (610 mm)	40.00" (1016 mm)	↓	12.00" (305 mm)	4.00" (102 mm)			85 (39)
04SQ	6, 8, 10, 12, 14	152, 203, 254, 305, 356		↓		16.00" (406 mm)		↓	↓	↓	86 (39)
05SQ	10, 12, 14	254, 305, 356	↓	30.00" (762 mm)	↓	↓	↓	10.00" (254 mm)	22.00" (559 mm)	↓	100 (45)
06SO	10, 12, 14, 16	254, 305, 356, 406	21.50" (546 mm)	↓	↓	19.00" (483 mm)	14.00" (356 mm)	5.50" (140 mm)	25.00" (635 mm)	17.00" (432 mm)	117 (53)
07SO	10, 12, 14, 16	254, 305, 356, 406	↓	↓	↓	↓	↓	↓	↓	↓	125 (57)



Fan Size	Filter Size	Atten Wt Lbs (kg)
02SQ	14" x 14" x 1" (356 mm x 356 mm x 25 mm)	46 (21)
03SQ 04SQ 05SQ	16" x 20" x 1" (406 mm x 508 mm x 25 mm)	48 (22)
06SQ 07SQ	20" x 20" x 1" (508 mm x 508 mm x 25 mm)	54 (25)

NOTES:

1. Allow a minimum of 6" (152 mm) plenum inlet clearance for unducted installations.
2. Filter location with optional Attenuator.
3. Attenuator-factory assembled, field installed.
4. See Installation Documents for exact hanger bracket location.
5. Air valve centered between top and bottom panel.
6. For motor access, remove bottom screw on hanger brackets to slide panel as shown in drawing.
7. Heating coil uninsulated. External insulation may be field suppled and installed as required.
8. All high & low voltage controls have same-side NEC jumpback clearance. (Left-hand shown, right-hand/ mirror image optional.)
9. Maximum dimensions for controls area shown. Configurations and types of control boxes vary according to control type selected. See "Enclosure Details" for specific layout.

MODELS VSCF, VSWF, and VSEF Series fan-powered terminal units.

VSCF – Cooling Only

VSWF – With Hot Water Coil

VSEF – With Electric Coil

CASING
22-gage galvanized steel. Hanger brackets, side access, and filter which is on the plenum inlet are provided as standard.

AGENCY LISTING
The unit is UL and Canadian UL Listed as a room air terminal unit. Control # 9N65.

ARI 880 Certified.

INSULATION

1/2" (12.7 mm) Matte-faced Insulation—The interior surface of the unit casing is acoustically and thermally lined with ½-inch, 1.5 lb/ft³ (12.7 mm, 24.0 kg/m³) composite density glass fiber with a high-density facing. The insulation R-Value is 1.9. The insulation is UL listed and meets NFPA-90A and UL 181 standards. There are no exposed edges of insulation (complete metal encapsulation).

1" (25.4 mm) Matte-faced Insulation—The interior surface of the unit casing is acoustically and thermally lined with 1-inch, 1.0 lb/ft³ (25.4 mm, 16.0 kg/m³) composite density glass fiber with a high-density facing. The insulation R-Value is 3.85 The insulation is UL listed and meets NFPA-90A and UL 181 standards. There are no exposed edges of insulation (complete metal encapsulation).

1/2" (12.7 mm) Foil-faced Insulation—The interior surface of the unit casing is acoustically and thermally lined with ½-inch, 1.5 lb/ft³ (12.7 mm, 24.0 kg/m³) density glass fiber with foil facing. The insulation R-Value is 2.1. The insulation is UL listed and meets NFPA-90A and UL 181 standards as well as bacteriological standard ASTM C 665. There are no exposed edges of insulation (complete metal encapsulation).

1" (25.4 mm) Foil-faced Insulation—The interior surface of the unit casing is acoustically and thermally lined with 1-inch, 1.5 lb/ft³ (25.4 mm, 24.0 kg/m³) density glass fiber with foil facing. The insulation

Fan–Inlet Combinations:

	VSXF					
Inlet	**02SQ**	**03SQ**	**04SQ**	**05SQ**	**06SQ**	**07SQ**
4"	X					
5"	X					
6"	X	X	X			
8"	X	X	X			
10"	X	X	X	X	X	X
12"		X	X	X	X	X
14"			X	X	X	X
16"					X	X

R-Value is 4.1. The insulation is UL listed and meets NFPA-90A and UL 181 standards as well as bacteriological standard ASTM C 665. There are no exposed edges of insulation (complete metal encapsulation).

1" (25.4 mm) Double-wall Insulation—The interior surface of the unit casing is acoustically and thermally lined with a 1-inch, 1.0 lb./ft³ (25.4 mm, 16.0 kg/m³) composite density glass fiber with high-density facing. The insulation R-value is 3.8. The insulation is UL listed and meets NFPA-90A and UL 181 standards. The insulation is covered by an interior liner made of 26-gage galvanized steel. All wire penetrations are covered by grommets. There are no exposed edges of insulation (complete metal encapsulation).

3/8" (9.5 mm) Closed-cell Insulation—The interior surface of the unit casing is acoustically and thermally lined with 3/8-inch, 4.4 lb/ft³ (9.5 mm, 70.0 kg/m³) closed-cell insulation. The insulation is UL listed and meets NFPA-90A and UL 181 standards. The insulation has an R-Value of 1.4. There are no exposed edges of insulation (complete metal encapsulation).

PRIMARY AIR VALVE

Air Valve Round—The primary air inlet connection is an 18-gage galvanized steel cylinder sized to fit standard round duct. A multiple-point, averaging flow sensing ring is provided with balancing taps for measuring +/-5% of unit cataloged airflow. An airflow-versus- pressure differential calibration chart is provided. The damper blade is constructed of a closed-cell foam seal that is mechanically locked between two 22-gage galvanized steel disks. The damper blade assembly is connected to a cast zinc shaft supported by self-lubricating bearings. The shaft is cast with a damper position indicator. The valve assembly includes a mechanical stop to prevent over-stroking. At 4.0 in. wg, air valve leakage does not exceed 1% of cataloged airflow.

ATTENUATOR
The attenuator is 22-gage galvanized steel with an internal acoustical liner. Attenuators have been tested in accordance with ARI 880 standards.

FAN MOTOR
PSC—Single-speed, direct-drive, permanent split capacitor type. Thermal overload protection provided. Motors will be designed specifically for use with an open SCR. Motors will be single-speed with standard SCR for speed control. Motors will accommodate anti-backward rotation at start up. Motor and fan assembly is isolated from terminal unit.

ECM—Electrically Commutated Motor is designed for high-efficient operation with over 70% efficiency throughout the operating range.

FAN SPEED CONTROL

Variable Speed Control Switch (SCR)—The SCR speed control device is provided as standard and allows the operator infinite fan speed adjustment.

TRANSFORMER
The 50-VA transformer is factory-installed in the fan control box to provide 24 VAC for controls.

DISCONNECT SWITCH
A toggle disconnect is provided as standard and allows the operator to turn the unit on or off by toggling to the appropriate setting. This switch breaks both legs of power to the fan and the electronic controls (if applicable).

OUTLET CONNECTION

Flanged Connection—A rectangular opening on the unit discharge to accept a 90° flanged ductwork connection.

FILTER
A 1" (25 mm) filter is provided on the plenum inlet and attaches to the unit with a filter frame.

ACCESS PANEL
Internal access is provided through side panel.

HOT WATER COIL

Series Water Coils—factory-installed on the fan discharge. The coil has 1-row with 144 aluminum-plated fins per foot (.305 m) and, if needed, 2-row with 144 aluminum-plated fins per foot (.305 m). Full fin collars provided for accurate fin spacing and maximum fin-tube contact. The 3/8" (9.5 mm) OD seamless copper tubes are mechanically expanded into the fin collars. Coils are proof tested at 450 psig (3102 kPa) and leak tested at 300 psig (2068 kPa) air pressure under water. Coil connections are brazed. Gasketed access panels, which are standard, are attached with screws.

ELECTRIC HEAT COIL
The electric heater is factory-provided and -installed, UL recognized resistance open-type heater. It also contains a disc-type automatic pilot duty thermal primary cutout, and manual reset load carrying thermal secondary device. Heater element material is nickel-chromium. The heater terminal box is provided with 7/8" (22 mm) knockouts for customer power supply. Terminal connections are plated steel with ceramic insulators. Heater control access is on the discharge side of the unit. All fan-powered units with electric reheat are single-point power connections.

ELECTRIC HEAT OPTIONS

Magnetic Contactor—An optional electric heater 24-volt contactor for use with direct digital control (DDC) or analog electronic controls.

Mercury Contactor—An optional electric heater 24-volt contactor for use with direct digital control (DDC) or analog electronic controls.

P.E. Switch with Magnetic Contactor—This optional switch and magnetic contactor is for use with pneumatic controls.

P.E. Switch with Mercury Contactor—This optional switch optional and mercury contactor is for use with pneumatic controls.

Airflow Switch—An optional air pressure device designed to disable the heater when the system fan is off.

Power Fuse—If a power fuse is chosen with a unit containing electric heat, then a safety fuse is located in the electric heater's line of power to prevent power surge damage to the electric heater.

Any electric heat unit with a calculated MCA greater than or equal to 30 will have a fuse provided.

Disconnect Switch—An optional factory-provided door interlocking disconnect switch on the heater control panel disengages primary voltage to the terminal.

UNIT CONTROLS SEQUENCE OF OPERATION
The controller will start and run the fan continuously during the occupied mode and intermittently during the unoccupied mode. Upon a further call for heat, any hot water or electric heat associated with the unit is enabled.

DIRECT DIGITAL CONTROLS

DDC Actuator—Trane 3-wire, 24-VAC, floating-point control actuator with linkage release button. Torque is 35 in-lb minimum and is non-spring return with a 90-second drive time. Travel is terminated by end stops at fully opened and closed positions. An integral magnetic clutch eliminates motor stall.

Direct Digital Controller—The microprocessor based terminal unit controller provides accurate, pressure-independent control through the use of a proportional integral control algorithm and direct digital control technology. The controller, named the Unit Control Module (UCM), monitors zone temperature setpoints, zone temperature and its rate of change, and valve airflow using a differential pressure signal from the pressure transducer. Additionally, the controller can monitor either supply duct air temperature or CO_2 concentration via appropriate sensors. The controller is provided in an enclosure with 7/8" (22 mm) knockouts for remote control wiring. A Trane UCM zone sensor is required.

DDC Zone Sensor—The UCM controller senses zone temperature through a sensing element located in the zone sensor. In addition to the sensing element, zone sensor options may include an externally-adjustable setpoint, communications jack for use with a portable edit device, and an override button to change the individual controller from unoccupied to occupied mode. The override button has a cancel feature that will return the system to unoccupied. Wired zone sensors utilize a thermistor to vary the voltage output in response to changes in the zone temperature. Wiring to the UCM controller must be 18- to 22-awg. twisted pair wiring. The setpoint adjustment range is 50–88°F (10–31°C). Depending upon the features available in the model of sensor selected, the zone sensor may require from a 2-wire to a 5-wire connection. Wireless zone sensors report the same zone information as wired zone sensors, but do so using radio transmitter technology. Therefore with wireless, wiring from the zone sensor to the UCM is unnecessary.

Digital Display Zone Sensor with Liquid Crystal Display (LCD)—The digital display zone sensor contains a sensing element, which sends a signal to the UCM. A Liquid Crystal Display (LCD) displays setpoint or space temperature. Sensor buttons allow the user to adjust setpoints, and allow space temperature readings to be turned on or off. The digital display zone sensor also includes a communication jack for use with a portable edit device, and an override button to change the UCM from unoccupied to occupied. The override button has a cancel feature, which returns the system to unoccupied mode.

Trane LonTalk—The controller is designed to send and receive data using SCC LonTalk profile. Current unit status conditions and setpoints may be monitored and/or edited from any of several LonTalk-compatible system-level controllers.

ANALOG ELECTRONIC CONTROLS

Analog Actuator—A Trane 3- wire, 24-VAC, floating-point control actuator with linkage release button. Torque is 35 in-lb minimum and is non-spring return with a 90-second drive time. Travel is terminated by end stops at fully-opened and -closed positions. An integral magnetic clutch eliminates motor stall.

Analog Electronic Controller—The controller consists of a circuit board that offers basic VAV unit operation and additional override functions and operates using 24 VAC power. The controller uses a capacitive type pressure transducer to maintain consistent air delivery regardless of system pressure changes. The enclosure has 7/8" (22 mm) knockouts for remote control wiring. A Trane electronic zone sensor is required.

Analog Electronic Thermostat—This single-temperature, wall-mounted electronic device utilizes a thermistor to vary the voltage output in response to changes in the zone temperature. Connections to the VAV unit circuit board are made using standard three-conductor thermostat wire. The setpoint adjustment range is 63–85°F (17–29°C). The sensor is available in two models. One model has a concealed, internally-adjustable setpoint. The other model has an externally-adjustable setpoint.

PNEUMATIC CONTROLS

Normally Open Actuator—Pneumatic 3 to 8 psig (20 to 55 kPa) spring-range pneumatic actuator.

3011 Pneumatic Volume Regulator (PVR)—The regulator is a thermostat reset velocity controller, which provides consistent air delivery within 5% of cataloged flow down to 18% of unit cataloged cfm, independent of changes in system static pressure. Factory-calibrated, field-adjustable setpoints for minimum and maximum flows. Average total unit bleed rate, excluding thermostat, is 28.8 scim at 20 psig (7.87 ml/min at 138 kPa) supply.

UNIT OPTIONS

Power Fuse (VSCF, VSWF)—Optional fuse is factory-installed in the primary voltage hot leg.

Hot Water Valves

Two-Position Valve—The valve is a field-adaptable, 2-way or 3-way configuration and ships with a cap to be field-installed when configured as a 2-way valve. All connections are National Pipe Thread (NPT). The valve body is forged brass with a stainless steel stem and spring. Upon demand, the motor strokes the valve. When the actuator drive stops, a spring returns the valve to its fail-safe position.

Flow Capacity – 1.17 Cv
Overall Diameter – ½" NPT
Close-off Pressure – 30 psi (207 kPa)

Flow Capacity – 3.0 Cv
Overall Diameter – 3/4" NPT
Close-off Pressure – 14.5 psi (100 kPa)

Flow Capacity – 6.4 Cv
Overall Diameter – 1" NPT
Close-off Pressure – 9 psi (62 kPa)

Maximum Operating Fluid Temperature – 203°F (95°C)

Maximum System Pressure – 300 psi (2067 kPa).

Maximum Static Pressure – 300 psi (2067 kPa)

Electrical Rating – 7 VA at 24 VAC, 6.5 Watts, 50/60 Hz

8 feet (2.44 m) of plenum rated wire lead is provided with each valve.

Proportional Water Valve—The valve is a field-adaptable, 2-way or 3-way configuration and ships with a cap over the bottom port. This configures the valve for 2-way operation. For 3-way operation, remove the cap. The valve is linear equal percentage design. The intended fluid is water or water and glycol (50% maximum glycol). The actuator is a synchronous motor drive. The valve is driven to a predetermined position by the UCM controller using a proportional plus integral control algorithm. If power is removed, the valve stays in its last position. The actuator is rated for plenum applications under UL 94-5V and UL 873 standards.

Pressure and Temperature Ratings – The valve is designed and tested in full compliance with ANSI B16.15 Class 250 pressure/temperature ratings, ANSI B16.104 Class IV control shutoff leakage, and ISA S75.11 flow characteristic standards.

Flow Capacity – 0.7 Cv, 2.2 Cv, 3.8 Cv, and 6.6 Cv

Overall Diameter – ½" NPT, ¾" NPT (6.6 Cv)

Maximum Allowable Pressure – 300 psi (2068kPa)

Maximum Operating Fluid Temperature – 200°F (93°C)

Maximum Close-off Pressure – 55 psi (379 kPa)

Electrical Rating – 6VA at 24 VAC.

10 feet (3.05 m) of plenum rated 22-gage wire for connection. Terminations are #6 stabs.