Bard®
SINCE 1914
Climate Control Solutions

THE WALL-MOUNT™ "QUIET CLIMATE" HEAT PUMPS

Models: S31H to S61H Up to 10.5 EER
Heating Capacities: 28,000 to 52,000 BTUH
Cooling Capacities: 28,400 to 55,000 BTUH

GREEN REFRIGERANT R-410A

The Bard Wall-Mount Heat Pump is a self-contained energy efficient heating and cooling system, which is designed to offer maximum indoor comfort at a minimal cost without using valuable indoor floor space or outside ground space. This unit is the ideal product for versatile applications such as: new construction, modular offices, school modernization, telecommunication structures, portable structures or correctional facilities. Factory or field installed accessories are available to meet specific job requirements.

Engineered Features

Aluminum Finned Copper Coils:
Grooved tubing and enhanced louvered fin for maximum heat transfer and energy efficiency.

Twin Blowers:
Move air quietly. Most models feature multispeed blower motors providing airflow adjustment for high and low static operation. Motor overload protection is standard on all models.

ECM Indoor Blower Motor:
Features a variable speed motor providing super-high efficiency, low sound levels and soft-start capabilities. The motor is self-adjusting to provide the proper airflow rate for the staged capacity, and for higher static pressure in ducted installations without user adjustment or wiring changes. Standard 2-speed PSC motor is used on Model S31H.

Heat Pump Compressor:
Scroll Compressors are standard on all 1½ to 5 ton models. Eliminates need for crankcase heater.

Phase Rotation Monitor:
Standard on all 3 phase scroll compressors. Protects against reverse rotation if power supply is not properly connected.

R-410A Refrigerant:
Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements.

Liquid Line Filter Drier:
Standard on all units. Protects system against moisture.

Galvanized 20 Gauge Zinc Coated Steel Cabinet:
Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on, beige textured enamel, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03.

Foil Faced Insulation:
Standard on all units.

Electrical Components:
Are easily accessible for routine inspection and maintenance through a right side, service panel opening. Features a lockable, hinged access cover to the circuit breaker or toggle disconnect switch.

Electric Heat Strips:
Features an automatic limit and thermal cut-off safety control. Heater packages are factory or field installed for all 1½ through 5 ton models. Features easy slide-in field assembly with various BTUH outputs.

Condenser Fan and Motor Shroud Assembly:
Slide out for easy access.

Filter Service Door:
Separate service door provides easy access for filter change.

One Inch, Disposable Air Filters:
Are standard equipment. Optional one inch washable filters available and filter racks permit the addition of 2" pleated filter. Factory or field installed.

Solid State Electronic Heat Pump Control:
Provides efficient 30, 60 or 90 minute defrost cycle. A thermistor sensor, speed up terminal for service and 10 minute defrost override are standard on the electronic heat pump control.

High & Low Pressure Switches are Auto-Reset:
Standard on all units. Built-in lockout circuit resets from the room thermostat. Provides commercial quality protection to the compressor.

Five Minute Compressor Time Delay:
Short cycle protection is standard. Built into the heat pump control.

Emergency Heat Circuit:
Permits continuous operation of the system.

Barometric Fresh Air Damper:
Standard on all units. Allows up to 25% outside fresh air.

Built-in Circuit Breakers:
Standard on all electric heat versions of single and three phase (230/208 volt) equipment. Toggle disconnects are standard on all electric heat versions of three phase (460 volt) equipment.

Slope Top:
Standard feature for water run-off.

Full Length Mounting Brackets:
Built into cabinet for improved appearance and easy installation. **NOTE:** Bottom mounting bracket included to assist in installation.

Top Rain Flashing:
Standard feature on all models.

Ventilation System Packages

Six ventilation options are available.
See Page 3 for details on these options.

AHRI CERTIFIED™ www.ahridirectory.org
Single Package Vertical HP
AHRI Standard 390

- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2013.
- Certified to ANSI/ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995/CSA 22.2 No. 236-05, Fourth Edition.
- Commercial Product - Not intended for Residential application.

C ETL LISTED US Intertek

INTERTEK ISO 9001:2008

Form No. S3416-416
Supersedes S3416-1015

Capacity and Efficiency Ratings

MODELS	S31H1	S38H1	S43H1	S49H1	S61H1
Cooling BTUH ①	28,400	36,000	41,500	46,000	55,000
EER ②	10.00	10.30	10.50	10.00	10.40
High Temp Heating (47F) BTUH ①	28,000	35,000	39,000	45,000	52,000
COP ②	3.00	3.20	3.20	3.00	3.00
Low Temp Heating (17F) BTUH ①	17,000	21,000	23,000	26,000	30,000
COP ②	2.00	2.10	2.10	2.00	2.00

① Capacity is certified in accordance with ANSI/ARI Standard 390-2003.
② EER = Energy Efficiency Ratio, COP = Coefficient of Performance and are certified in accordance with ANSI/ARI Standard 390-2003. All ratings based on fresh air intake being 100% closed (no outside air introduction).

Specifications 2 through 3 Ton

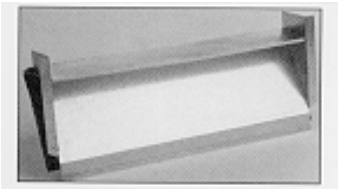
MODELS	S31H1-A	S31H1-B	S31H1-C	S38H1-A	S38H1-B	S38H1-C
Electrical Rating – 60 Hz	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253	197-253	414-506	197-253	197-253	414-506
Compressor--Circuit A						
Voltage	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	14.5/17.5	9.1/11.0	5.2	14.0/15.1	10.4/11.2	5.1
Branch Circuit Selection Current	17.5	11.0	5.2	18.0	13.3	6.0
Lock Rotor Amps	77/77	71/71	38	112/112	88/88	44
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser						
Fan Motor--HP--RPM-SPD	1/5-1050-1	1/5-1050-1	1/5-1050-1	1/3-825-2	1/3-825-2	1/3-825-2
Fan Motor--Amps	1.5	1.5	.8	2.5	2.5	1.1
Fan--DIA/CFM	20"-1900	20"-1900	20"-1900	24"-2900	24"-2900	24"-2900
Blower Motor & Evap.						
Blower Motor--HP-RPM-SPD	1/5-850-2	1/5-850-2	1/5-850-2	1/2 Var.	1/2 Var.	1/2 Var.
Blower Motor--Amps	1.4	1.4	.65	4.5	4.5	4.5
FM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	800 - .10	800 - .10	800 - .10	1100 - .15	1100 - .15	1100 - .15
Filter Sizes (inches) STD.	16 x 30 x 1	16 x 30 x 1	16 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1
Basic Unit Weight-LBS.	365	365	365	515	515	515
Barometric Fresh Air Damper-Lbs	4.0	4.0	4.0	4.0	4.0	4.0
Blank-Off Plate-Lbs	1.0	1.0	1.0	1.0	1.0	1.0
Motorized Fresh Air Damper-Lbs	7.0	7.0	7.0	7.0	7.0	7.0
Commercial Room Ventilator-Lbs	31.0	31.0	31.0	37.5	37.5	37.5
Economizer-Lbs	48.0	48.0	48.0	45.5	45.5	45.5
Energy Recovery Ventilator-Lbs	60.0	60.0	60.0	76.5	76.5	76.5

Specifications 3½ through 5 Ton

MODELS	S43H1-A	S43H1-B	S43H1-C	S49H1-A	S49H1-B	S49H1-C	S61H1-A	S61H1-B	S61H1-C
Electrical Rating – 60 Hz	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253	197-253	414-506	197-253	197-253	414-506	197-253	197-253	414-506
Compressor--Circuit A									
Voltage	230/208	230/208	460	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	17.2/19.5	11.8/13.4	6.0	20.8/23.0	14.1/15.6	6.8	22.9/26.3	13.6/15.6	7.8
Branch Circuit Selection Current	19.9	13.6	6.1	23.0	15.6	6.8	26.3	15.7	7.8
Lock Rotor Amps	109/109	83/83	41	135/135	98/98	55	134/134	110/110	52
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser									
Fan Motor--HP--RPM-SPD	1/3-825-2	1/3-825-2	1/3-825-1	1/3-825-2	1/3-825-2	1/3-825-1	1/3-825-2	1/3-825-2	1/3-825-1
Fan Motor--Amps	2.5	2.5	1.1	2.5	2.5	1.1	2.5	2.5	1.1
Fan--DIA/CFM	24"-2900	24"-2900	24"-2900	24"-2900	24"-29000	24"-2900	24"-2900	24"-2900	24"-2900
Blower Motor & Evap.									
Blower Motor--HP-RPM-SPD	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.	3/4 Var.
Blower Motor--Amps	4.5	4.5	4.5	4.8	4.8	4.8	4.8	4.8	4.8
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1250 - .15	1250 - .15	1250 - .15	1400 - .20	1400 - .20	1400 - .20	1450 - .20	1450 - .20	1450 - .20
Filter Sizes (inches) STD.	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1	20 x 30 x 1
Shipping Weight-LBS.	515	515	515	515	515	515	555	555	555
Barometric Fresh Air Damper-Lbs	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Blank-Off Plate-Lbs	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Motorized Fresh Air Damper-Lbs	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Commercial Room Ventilator-Lbs	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
Economizer-Lbs	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5
Energy Recovery Ventilator	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5

Ventilation System Packages

Bard Wall-Mounts are designed to provide optional ventilation packages to meet all of your ventilation and indoor air quality requirements. All units are equipped with a barometric fresh air damper as the standard ventilation package. All ventilation packages can be built-in at the factory, or field-installed at a later date.



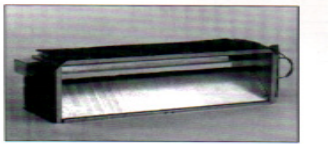
Barometric Fresh Air Damper

BAROMETRIC FRESH AIR DAMPER - BFAD — STANDARD

The barometric fresh air damper is a standard feature on all models. It is installed on the inside of the service door and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required.

BLANK OFF PLATE - BOP — OPTIONAL

A blank off plate is installed on the inside of the service door. It covers the air inlet openings, which restricts any outside air from entering the unit. The blank off plate should be utilized in applications where outside air is not required to be mixed with the conditioned air.



Motorized Fresh Air Damper

MOTORIZED FRESH AIR DAMPER - MFAD — OPTIONAL

The motorized fresh air damper is internally mounted behind the service door and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The two position damper can be fully open or closed. The damper blade is powered open by a 24VAC motor with spring return on power loss. The damper can be controlled by indoor blower operation or can be field connected to be managed based on building occupancy.

NOTE: The above vent systems are intake only without built-in exhaust capability. Building will likely require separate field installed barometric relief or mechanical exhaust elsewhere within the conditioned space. Balancing dampers in the return air grille may be required to achieve specified amount of outdoor air intake.

Commercial Room Ventilator

COMMERCIAL ROOM VENTILATOR - CRV — OPTIONAL

The built-in commercial room ventilator is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit, to be introduced through the air inlet openings. It includes a built-in exhaust air damper.

The commercial room ventilator (CRV) is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability through the CRV. The damper can be easily adjusted to control the amount of fresh air supplied into the building. The CRV can be controlled by indoor blower operation or field controlled based on room occupancy. The CRVS is power open - spring return on power loss, and CRVP is power open and power close. Complies with ANSI/ASHRAE Standard 62.1 “Ventilation for Acceptable Indoor Air Quality”.

Two Models Available: CRVS - spring return on power loss or deactivation
CRVP - power return (will not close on power loss)

Economizer

ECONOMIZER – ECONWM-Series — OPTIONAL

The built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. The economizer is designed to provide “free cooling” when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This in turn provides lower operating costs, while extending the life of the compressor.

- ECONWMT Equipment Building versions have extended 11" air intake hood to deliver up to 100% of cooling rated airflow.
- ECONWMS Standard versions have 3" air intake hood to deliver up to 75% of cooling rated airflow.

Standard Features:

- Fully modulating
- Honeywell Direct Drive Hi-Torque Actuator
- No linkage required
- Simple single blade design
- Positive shut-off with non-stick gaskets
- Electronic DB and/or Enthalpy sensors depending upon version
- Honeywell JADE electronic economizer module with precision settings and diagnostics
- DB or Enthalpy economizer versions available

Energy Recovery Ventilator

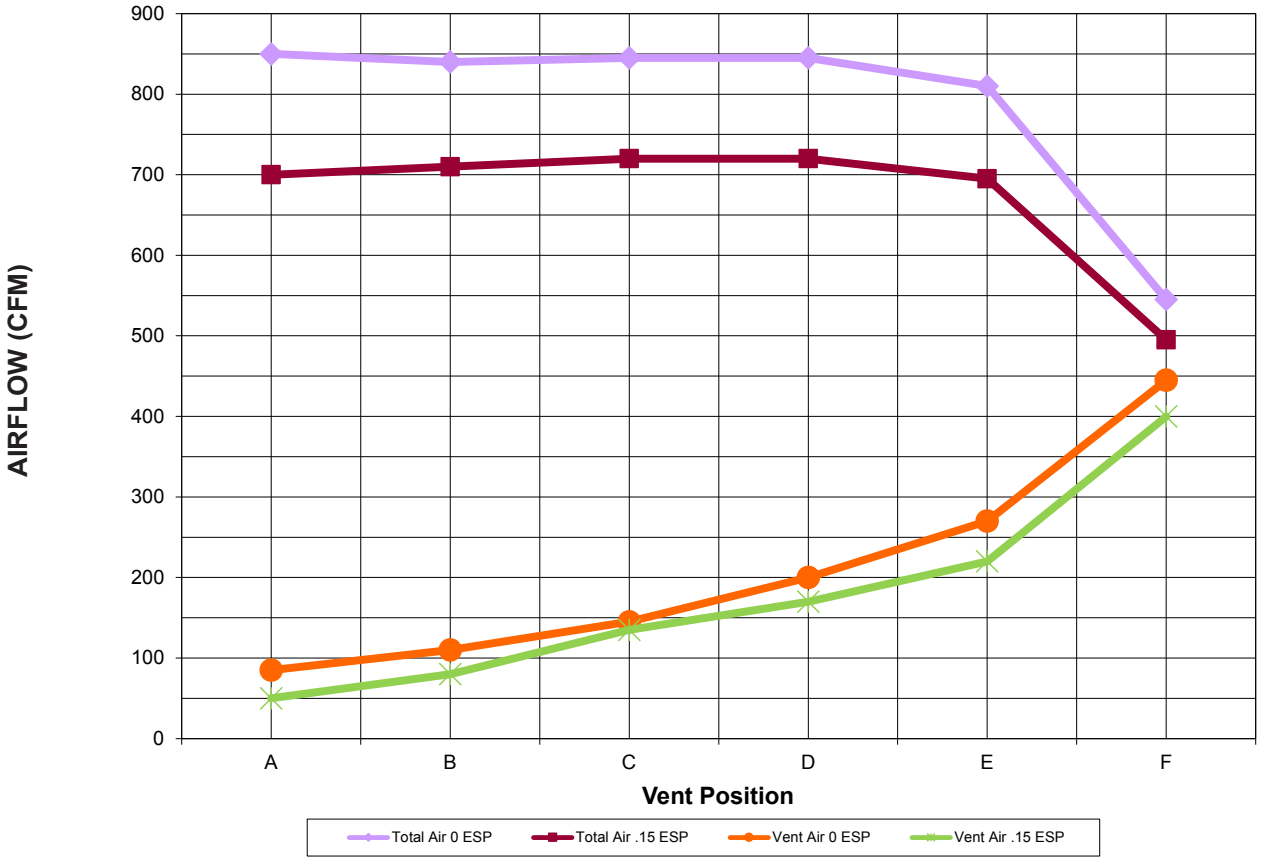
WALL-MOUNT ENERGY RECOVERY VENTILATOR - WERV — OPTIONAL

The wall-mount energy recovery ventilator (WERV) is a highly innovative approach to meeting indoor air quality ventilation requirements as established by ANSI/ASHRAE Standard 62.1. The WERV allows from 200 to 450 CFM (depending upon model) of fresh air and exhaust through the unit while maintaining superior indoor comfort and humidity levels. In most cases this can be accomplished without increasing equipment sizing or operating costs. Heat transfer efficiency is up to 67% during summer and 75% during winter conditions.

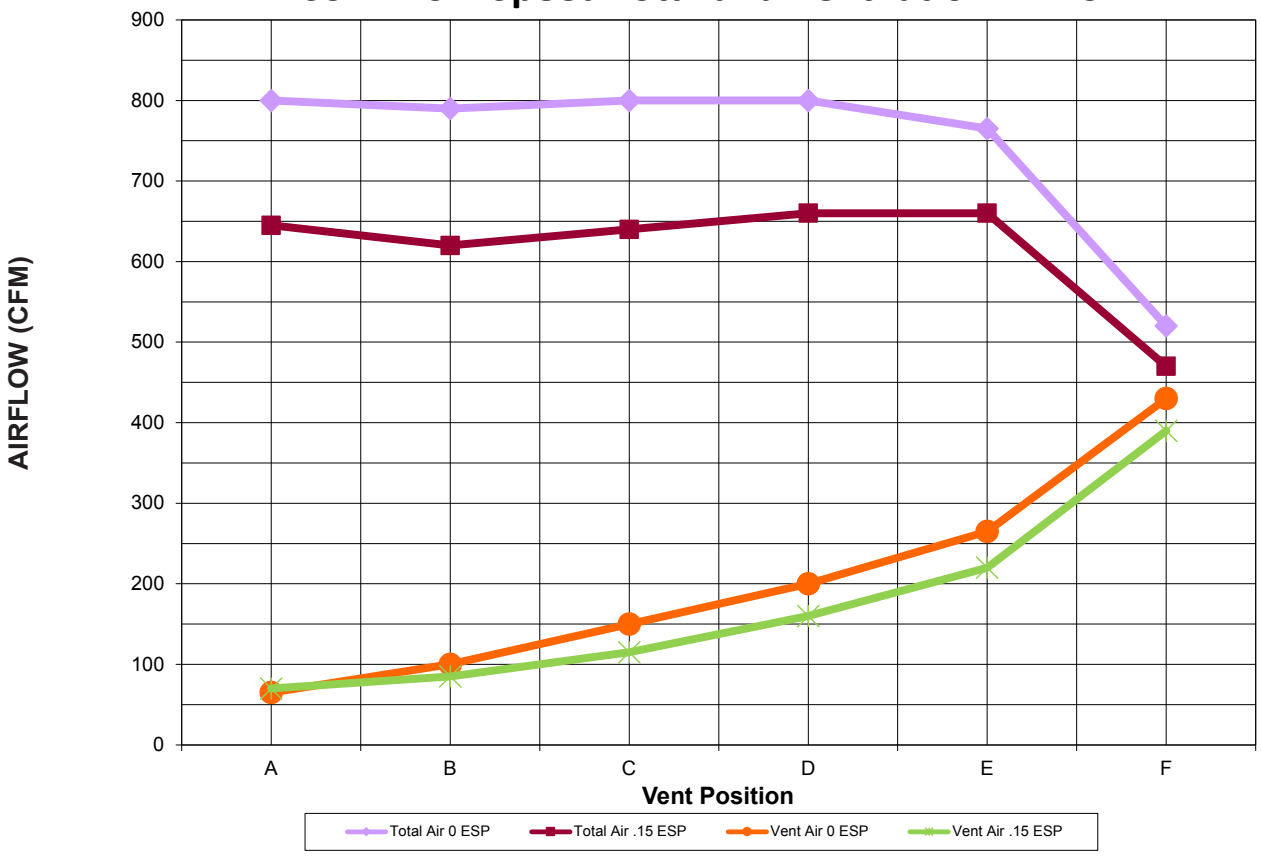
The WERV consists of a unique “rotary energy recovery cassette” that provides effective sensible and latent heat transfer capabilities during summer and winter conditions. Various control schemes are addressed including limiting ventilation during building occupancy only.

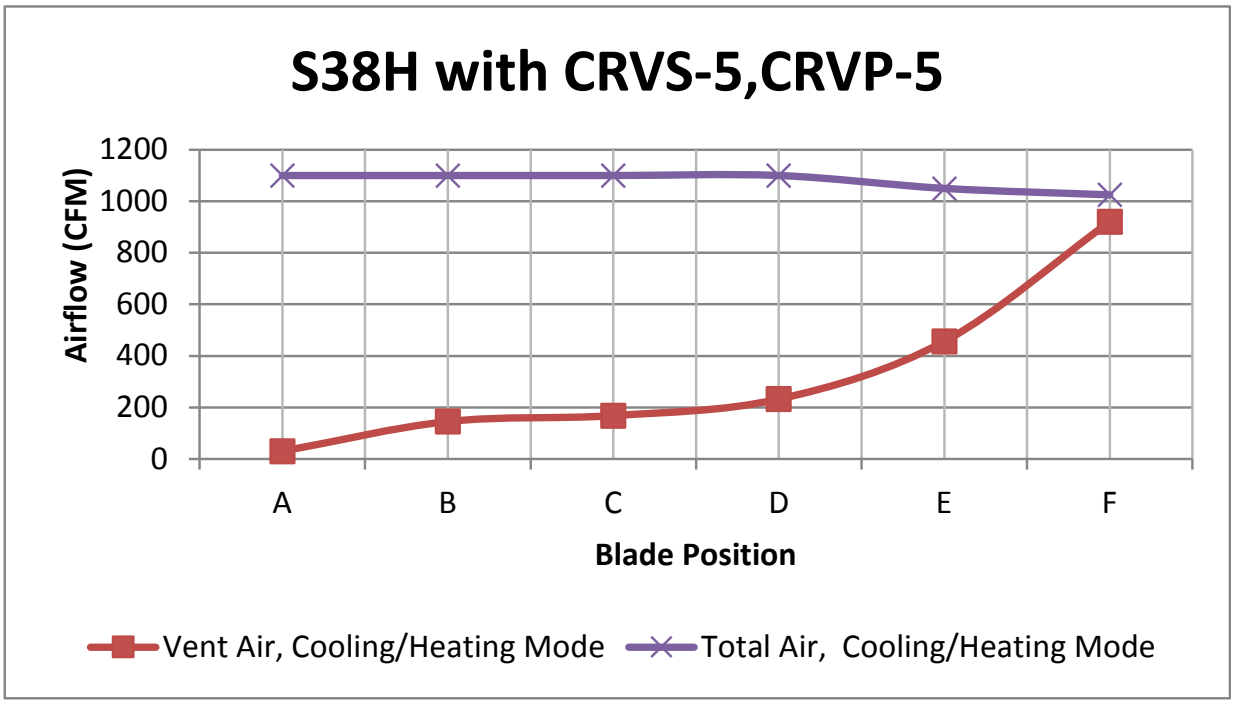
The WERV is designed to be internally mounted behind the service door in the WA, WH or WL model wall-mount units. It can be built-in at the factory or field installed as an option. WERV-*3C and WERV-*5C can be independently adjusted for intake and exhaust rates.

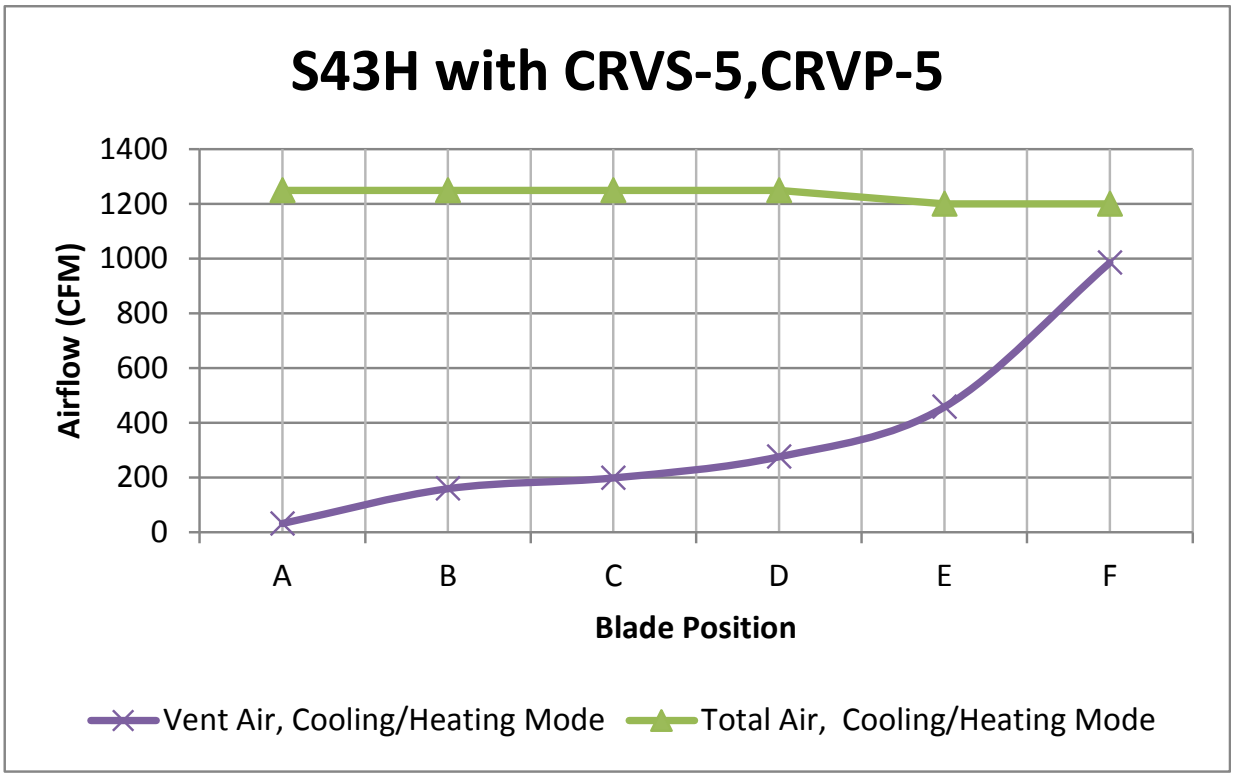
S31H High Speed Total and Ventilation Airflow

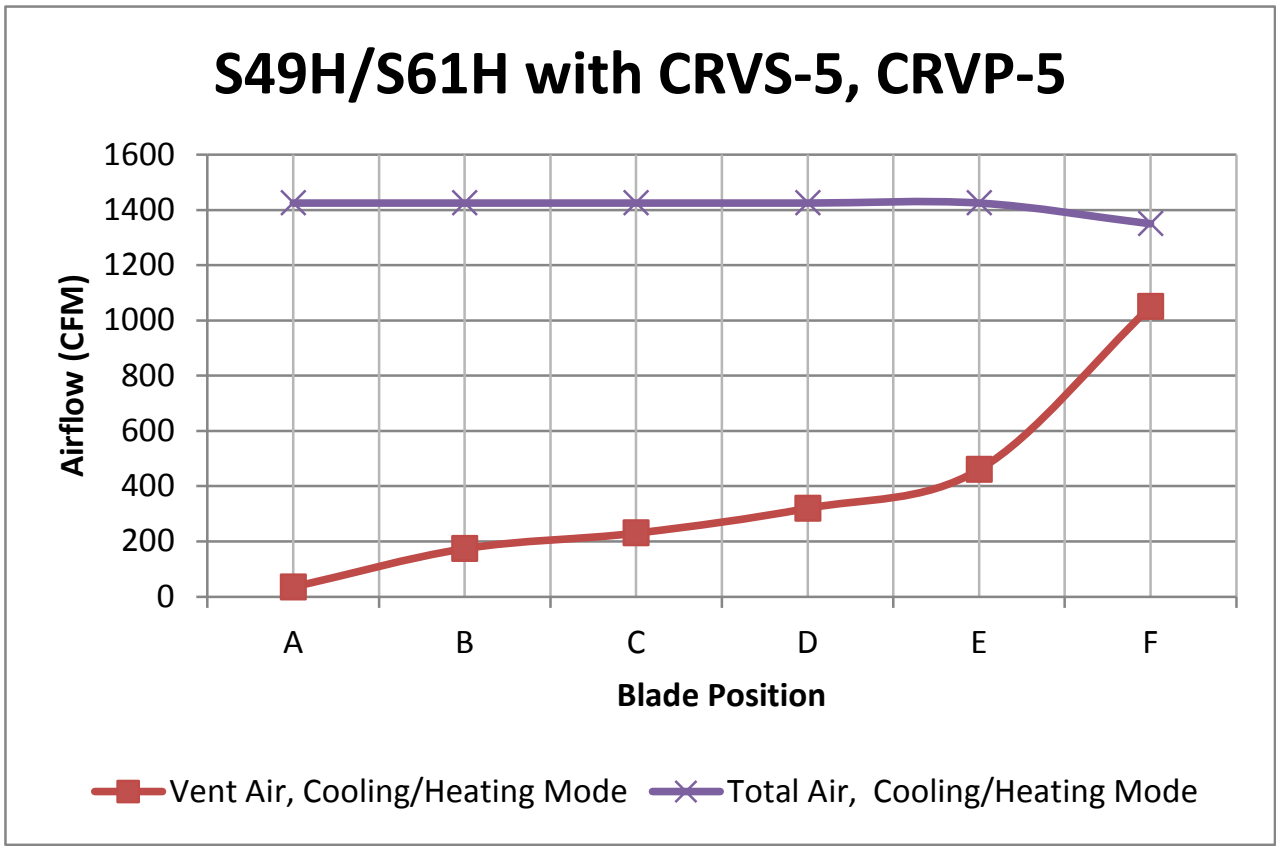


S31H Low Speed Total and Ventilation Airflow




S38H with CRVS-5,CRVP-5
Airflow (CFM)
1200
1000
800
600
400
200
0
A
B
C
D
E
F
Blade Position
Vent Air, Cooling/Heating Mode
Total Air, Cooling/Heating Mode


S43H with CRVS-5,CRVP-5
Airflow (CFM)
1400
1200
1000
800
600
400
200
0
A
B
C
D
E
F
Blade Position
Vent Air, Cooling/Heating Mode
Total Air, Cooling/Heating Mode


S49H/S61H with CRVS-5, CRVP-5
Airflow (CFM)
1600
1400
1200
1000
800
600
400
200
0
A
B
C
D
E
F
Blade Position
Vent Air, Cooling/Heating Mode
Total Air, Cooling/Heating Mode

Performance and Application Data - WERV-*3C (S31H1)

SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE -- 400 CFM 63% EFFICIENCY						VENTILATION RATE -- 325 CFM 64% EFFICIENCY						VENTILATION RATE -- 250 CFM 65% EFFICIENCY					
DB/WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	19080	12960	6120	12020	8164	3855	15502	10530	4972	9921	6739	3182	11925	8100	3825	7751	5265	2486
	70	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
	65	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
100	80	28080	10800	17280	17690	6804	10886	22815	8775	14040	14601	5616	8985	17550	6750	10800	11407	4387	7019
	75	19080	10800	8280	12020	6804	5216	15502	8775	6727	9921	5616	4305	11925	6750	5175	7751	4387	3363
	70	10980	10800	180	6717	6804	113	8921	8775	146	5709	5616	93	6862	6750	112	4460	4387	73
	65	10800	10800	0	6804	6804	0	8775	8775	0	5616	5616	0	6750	6750	0	4387	4387	0
	60	10800	10800	0	6804	6804	0	8775	8775	0	5616	5616	0	6750	6750	0	4387	4387	0
95	80	28080	8640	19440	17690	5443	12247	22815	7020	15795	14601	4492	10108	17550	5400	12150	11407	3510	7897
	75	19080	8640	10440	12020	5443	6577	15502	7020	8482	9921	4492	5428	11925	5400	6525	7751	3510	4241
	70	10980	8640	2340	6917	5443	1474	8921	7020	1901	5709	4492	1216	6862	5400	1462	4460	3510	950
	65	8640	8640	0	5443	5443	0	7020	7020	0	4492	4492	0	5400	5400	0	3510	3510	0
	60	8640	8640	0	5443	5443	0	7020	7020	0	4492	4492	0	5400	5400	0	3510	3510	0
90	80	28080	6480	21600	17690	4082	13608	22815	5265	17550	14601	3369	11232	17550	4050	13500	11407	2632	8774
	75	19080	6480	12600	12020	4082	7938	15502	5265	10237	9921	3369	6552	11925	4050	7875	7751	2632	5118
	70	10980	6480	4500	6917	4082	2835	8921	5265	3656	5709	3369	2340	6862	4050	2812	4460	2632	1828
	65	6480	6480	0	4082	4082	0	5265	5265	0	3369	3369	0	4050	4050	0	2632	2632	0
	60	6480	6480	0	4082	4082	0	5265	5265	0	3369	3369	0	4050	4050	0	2632	2632	0
85	80	28080	4320	23760	17690	2721	14968	22815	3510	19305	14601	2246	12355	17550	2700	14850	11407	1755	9652
	75	19080	4320	14760	12020	2721	9298	15502	3510	11992	9921	2246	7675	11925	2700	9225	7751	1755	5996
	70	10980	4320	6660	6917	2721	4195	8921	3510	5411	5709	2246	3463	6862	2700	4162	4460	1755	2705
	65	4320	4320	0	2721	2721	0	3510	3510	0	2246	2246	0	2700	2700	0	1755	1755	0
	60	4320	4320	0	2721	2721	0	3510	3510	0	2246	2246	0	2700	2700	0	1755	1755	0
80	75	19080	2160	16920	12020	1360	10659	15502	1755	13747	9921	1123	8798	11925	1350	10575	7751	877	6873
	70	10980	2160	8820	6917	1360	5556	8921	1755	7166	5709	1123	4586	6862	1350	5512	4460	877	3583
	65	3780	2160	1620	2381	1360	1020	3071	1755	1316	1965	1123	842	2362	1350	1012	1535	877	658
	60	2160	2160	0	1360	1360	0	1755	1755	0	1123	1123	0	1350	1350	0	877	877	0
75	70	10980	0	10980	6917	0	6917	8921	0	8921	5709	0	5709	6862	0	6862	4460	0	4460
	65	3780	0	3780	2381	0	2380	3071	0	3071	1965	0	1965	2362	0	2362	1535	0	1535
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERV-*3C WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	400 CFM 75% EFF.		325 CFM 76% EFF.		250 CFM 77% EFF.	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2160	1620	1755	1333	1350	1039
60	4320	3240	3510	2667	2700	2079
55	6480	4860	5265	4001	4050	3118
50	8640	6480	7020	5335	5400	4158
45	10800	8100	8775	6669	6750	5197
40	12960	9720	10530	8002	8100	6237
35	15120	11340	12285	9336	9450	7276
30	17280	12960	14040	10670	10800	8316
25	19440	14580	15795	12004	12150	9355
20	21600	16200	17550	13338	13500	10395
15	23760	17820	19305	14671	14850	11434

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

Performance and Application Data - WERV-*5C (S38H1, S43H1, S49H1 & S61H1)

SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE -- 450 CFM						VENTILATION RATE -- 375 CFM						VENTILATION RATE -- 300 CFM					
DB/WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
	75	21465	14580	6884	13952	9477	4475	17887	12150	5737	11805	8018	3786	14310	9720	4590	9587	6512	3075
105	70	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	65	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	80	31590	12150	19440	20533	7897	12635	26325	10125	16200	17374	6682	10692	21060	8100	12960	14110	5427	8683
	75	21465	12150	9314	13952	7897	6054	17887	10125	7762	11805	6682	5123	14310	8100	6210	9587	5427	4160
100	70	12352	12150	202	8029	7897	131	10293	10125	168	6793	6682	111	8235	8100	135	5517	5427	90
	65	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	60	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	80	31590	9720	21870	20533	6318	14215	26325	8100	18225	17374	5345	12028	21060	6480	14580	14110	4341	9768
	75	21465	9720	11744	13952	6318	7634	17887	8100	9787	11805	5345	6459	14310	6480	7830	9587	4341	5246
95	70	12352	9720	2632	8029	6318	1711	10293	8100	2193	6793	5345	1447	8235	6480	1755	5517	4341	1175
	65	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	60	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	80	31590	7290	24300	20533	4738	15794	26325	6075	20250	17374	4009	13365	21060	4860	16200	14110	3256	10854
	75	21465	7290	14175	13952	4738	9213	17887	6075	11812	11805	4009	7796	14310	4860	9450	9587	3256	6331
90	70	12352	7290	5062	8029	4738	3290	10293	6075	4218	6793	4009	2784	8235	4860	3375	5517	3256	2261
	65	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	80	31590	4860	26730	20533	3159	17374	26325	4050	22275	17374	2672	14701	21060	3240	17820	14110	2170	11939
	75	21465	4860	16605	13952	3159	10793	17887	4050	13837	11805	2672	9132	14310	3240	11070	9587	2170	7416
85	70	12352	4860	7492	8029	3159	4870	10293	4050	6243	6793	2672	4120	8235	3240	4995	5517	2170	3346
	65	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	60	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	75	21465	2430	19035	13952	1579	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70	12352	2430	9922	8029	1579	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
80	65	4252	2430	1822	2764	1579	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60	2430	2430	0	1579	1579	0	2025	2025	0	1336	1336	0	1620	1620	0	1085	1085	0
	70	12352	0	12352	8029	0	8029	10293	0	10293	6793	0	6793	8235	0	8235	5517	0	5517
75	65	4252	0	4252	2764	0	2764	3543	0	3543	2338	0	2338	2835	0	2835	1899	0	1899
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERV-*5C WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	450 CFM		375 CFM		300 CFM	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2430	1944	2025	1640	1620	1328
60	4860	3888	4050	3280	3240	2656
55	7290	5832	6075	4920	4860	3985
50	9720	7776	8100	6561	6480	5313
45	12150	9720	10125	8201	8100	6642
40	14580	11664	12150	9841	9720	7970
35	17010	13608	14175	11481	11340	9298
30	19440	15552	16200	13122	12960	10627
25	21870	17496	18225	14762	14580	11955
20	24300	19440	20250	16402	16200	13284
15	26730	21384	22275	18042	17820	14612

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

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Electrical Specifications

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Multiple Circuit											
			① Minimum Circuit Ampacity	② Maximum External Fuse or Ckt. Brkr.	③ Field Power Wire Size	③ Ground Wire	① Minimum Circuit Ampacity			② Maximum External Fuse or Ckt. Breaker			③ Field Power Wire Size			③ Ground Wire Size		
							Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C
S31H1-A00, A0Z	230/208-1	1	27	35	8	10												
A04		1	48	50	8	10												
④ A08		1	48	50	8	10												
S31H1-B00, B0Z	230/208-3	1	19	25	10	10												
B06		1	37	40	8	10												
S31H1-C00, C0Z	460-3	1	10	15	14	14												
C06		1	19	20	12	12												
S38H1-A00, A0Z	230/208-1	1	32	45	8	10												
A05		1	58	60	6	10												
A08		1 or 2	74	80	4	8	32	42		45	45		8	8		10	10	
A10		1 or 2	84	90	4	8	32	52		45	60		8	6		10	10	
⑤ A15		1 or 2	87	90	3	8	35	52		45	60		8	6		10	10	
S38H1-B00, B0Z	230/208-3	1	26	35	8	10												
B06		1	44	50	8	10												
B09		1	53	60	6	10												
⑥ B15		1	54	60	6	10												
S38H1-C0Z	460-3	1	14	15	14	14												
C06		1	23	25	10	10												
C09		1	27	30	10	10												
⑥ C15		1	28	30	10	10												
S43H1-A00, A0Z	230/208-1	1	34	50	8	10												
A04		1	55	60	6	10												
A05		1 or 2	60	70	6	8	34	26		50	30		8	10		10	10	
A08		1 or 2	76	80	4	8	34	42		50	45		8	8		10	10	
A10		1 or 2	86	90	3	8	34	52		50	60		8	6		10	10	
⑤ A15		1 or 2	87	90	3	8	35	52		50	60		8	6		10	10	
S43H1-B00, B0Z	230/208-3	1	27	35	8	10												
B06		1	45	50	8	10												
B09		1	54	60	6	10												
⑥ B15		1	54	60	6	10												
S43H1-C0Z	460-3	1	14	20	12	12												
C06		1	23	25	10	10												
C09		1	27	30	10	10												
⑥ C15		1	28	30	10	10												
S49H1-A00, A0Z	230/208-1	1	39	50	8	10												
A05		1 or 2	65	70	6	8	39	26		50	30		8	10		10	10	
A08		1 or 2	80	90	4	8	39	42		50	45		8	8		10	10	
A10		1 or 2	91	100	3	8	39	52		50	60		8	6		10	10	
⑤ A15		1 or 2	91	100	3	8	39	52		50	60		8	6		10	10	
S49H1-B00, B0Z	230/208-3	1	29	40	8	10												
B06		1	47	50	8	10												
B09		1	57	60	6	10												
⑥ B15		1	57	60	6	10												
S49H1-C0Z	460-3	1	15	20	12	12												
C06		1	24	25	10	10												
C09		1	28	30	10	10												
⑥ C15		1	28	30	10	10												
S61H1-A00, A0Z	230/208-1	1	43	60	8	10												
A05		1 or 2	69	80	4	8	43	26		60	30		8	10		10	10	
A10		1 or 2	95	100	3	8	43	52		60	60		8	6		10	10	
⑤ A15		1 or 2	95	100	3	8	43	52		60	60		8	6		10	10	
⑤ A20		1 or 3	113	125	2	6	43	52	26	60	60	30	6	6	10	10	10	10
S61H1-B00, B0Z	230/208-3	1	30	40	8	10												
B09		1	57	60	6	10												
⑥ B15		1	57	60	6	10												
S61H1-C0Z	460-3	1	16	20	12	12												
C09		1	29	30	10	10												
⑥ C15		1	29	30	10	10												

① These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical Code (latest version), Article 310 for power conductor sizing.

Caution: When more than one field power circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than three (3) conductors are in a raceway.

② Maximum size of the time delay fuse or circuit breaker for protection of field wiring conductors.

③ Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.

④ Maximum KW that can operate with the heat pump on is 4KW. Full heat available during Emergency Heat Mode.

⑤ Maximum KW that can operate with the heat pump on is 10KW. Full heat available during Emergency Heat Mode.

⑥ Maximum KW that can operate with the heat pump on is 9KW. Full heat available during Emergency Heat Mode.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses & conductor wires in accordance with the National Electrical Code & all local codes.

Electrical Specifications — Dehumidification Models

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Multiple Circuit											
			① Minimum Circuit Ampacity	② Maximum External Fuse or Ckt. Brkr.	③ Field Power Wire Size	③ Ground Wire	① Minimum Circuit Ampacity			② Maximum External Fuse or Ckt. Breaker			③ Field Power Wire Size			③ Ground Wire Size		
							Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C
S31H1DA00, DA0Z	230/208-1	1	27	35	8	10												
DA04		1	48	50	8	10												
④ DA08		1	48	50	8	10												
S31H1DB00, DB0Z	230/208-3	1	19	25	10	10												
DB06		1	37	40	8	10												
S31H1DC00, DC0Z	460-3	1	10	15	14	14												
DC06		1	19	20	12	12												
S38H1DA00, DA0Z	230/208-1	1	34	45	8	10												
DA05		1	59	60	6	10												
DA08		1 or 2	75	80	4	8	34	42		45	45		8	8		10	10	
DA10		1 or 2	85	90	4	8	34	52		45	60		8	6		10	10	
⑤ DA15		1 or 2	87	90	3	8	35	52		45	60		8	6		10	10	
S38H1DB00, DB0Z	230/208-3	1	26	35	8	10												
DB06		1	44	50	8	10												
DB09		1	54	60	6	10												
⑥ DB15		1	54	60	6	10												
S38H1DC0Z	460-3	1	14	15	14	14												
C06		1	23	25	10	10												
C09		1	28	30	10	10												
⑥ C15		1	28	30	10	10												
S43H1DA00, DA0Z	230/208-1	1	34	50	8	10												
DA04		1	55	60	6	10												
DA05		1 or 2	60	70	6	8	34	26		50	30		8	10		10	10	
DA08		1 or 2	76	80	4	8	34	42		50	45		8	8		10	10	
DA10		1 or 2	86	90	3	8	34	52		50	60		8	6		10	10	
⑤ DA15		1 or 2	87	90	3	8	35	52		50	60		8	6		10	10	
S43H1DB00, DB0Z	230/208-3	1	27	35	8	10												
DB06		1	45	50	8	10												
DB09		1	54	60	6	10												
⑥ DB15		1	54	60	6	10												
S43H1DC0Z	460-3	1	14	20	12	12												
DC06		1	23	25	10	10												
DC09		1	27	30	10	10												
⑥ DC15		1	28	30	10	10												
S49H1DA00, DA0Z	230/208-1	1	39	50	8	10												
DA05		1 or 2	65	70	6	8	39	26		50	30		8	10		10	10	
DA08		1 or 2	80	90	4	8	39	42		50	45		8	8		10	10	
DA10		1 or 2	91	100	3	8	39	52		50	60		8	6		10	10	
⑤ DA15		1 or 2	91	100	3	8	39	52		50	60		8	6		10	10	
S49H1DB00, DB0Z	230/208-3	1	29	40	8	10												
DB06		1	47	50	8	10												
DB09		1	57	60	6	10												
⑥ DB15		1	57	60	6	10												
S49H1DC0Z	460-3	1	15	20	12	12												
DC06		1	24	25	10	10												
DC09		1	28	30	10	10												
⑥ DC15		1	28	30	10	10												
S61H1DA00, DA0Z	230/208-1	1	44	60	8	10												
DA05		1 or 2	70	80	4	8	44	26		60	30		8	10		10	10	
DA10		1 or 2	96	100	3	8	44	52		60	60		8	6		10	10	
⑤ DA15		1 or 2	96	100	3	8	44	52		60	60		8	6		10	10	
⑤ DA20		1 or 3	113	125	2	6	44	52	26	60	60	30	6	6	10	10	10	10
S61H1DB00, DB0Z	230/208-3	1	30	40	8	10												
DB09		1	57	60	6	10												
⑥ DB15		1	57	60	6	10												
S61H1DC0Z	460-3	1	16	20	12	12												
DC09		1	30	30	10	10												
⑥ DC15		1	30	30	10	10												

① These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical Code (latest version), Article 310 for power conductor sizing.

Caution: When more than one field power circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than three (3) conductors are in a raceway.

② Maximum size of the time delay fuse or circuit breaker for protection of field wiring conductors.

③ Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.

④ Maximum KW that can operate with the heat pump on is 4KW. Full heat available during Emergency Heat Mode.

⑤ Maximum KW that can operate with the heat pump on is 10KW. Full heat available during Emergency Heat Mode.

⑥ Maximum KW that can operate with the heat pump on is 9KW. Full heat available during Emergency Heat Mode.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses & conductor wires in accordance with the National Electrical Code & all local codes.

Indoor Blower Performance CFM at 230 or 460 Volts

ESP in Inches Water Column	S31H1	
	High Speed Dry/Wet Coil	Low Speed Dry/Wet Coil
0.0	1050/1000	950/900
0.1	900/850	840/800
0.2	750/700	700/650

- Above data is with 1" standard disposable or 1" washable filter
- For optional 2" pleated filter - reduce ESP by 0.08 in.
- Reconnect to next lower speed for free blow (non-ducted) installation.

Indoor Blower Performance - CFM (0.00" — 0.50" H_20) ①

Model	Rated ESP	① Max ESP	② Blower Only	③ Cooling	③ Electric Heat
S38H1	.15	.50	1100	1100	1100
S43H1	.15	.50	1250	1250	1250
S49H1	.20	.50	1400	1400	1400
S61H1	.20	.50	1450	1450	1450

NOTE: *These units are equipped with a variable speed (ECM) indoor motor that automatically adjusts itself to maintain approximately the same rate of indoor airflow in both heating & cooling, dry & wet coil conditions and at both 230/208 or 460 volts.*

① Maximum ESP (inches WC) shown is with 2" thick disposable filter.
② Blower only CFM is the total air being circulated during continuous fan mode.
③ CFM output on Cooling or Electric Heat.

Electric Heat Table - Refer to Electrical Specifications for Availability by Unit Model

Nominal KW	At 240V ①				At 208V ①				At 480V ②			At 460V ②		
	KW	1-Ph Amps	3-Ph Amps	Btuh	KW	1-Ph Amps	3-Ph Amps	Btuh	KW	3-Ph Amps	Btuh	KW	3-Ph Amps	Btuh
4.0	4.0	16.7		13,652	3.00	14.4		10,239						
5.0	5.0	20.8		17,065	3.75	18.0		12,799						
6.0	6.0		14.4	20,478	4.50		12.5	15,359	6.0	7.2	20,478	5.52	6.9	18,840
8.0	8.0	33.3		27,304	6.00	28.8		20,478						
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099
20.0	20.0	83.3		68,260	15.00	72.1		51,195						

① These electric heaters are available in 230/208V units only.
② These electric heaters are available in 480V units only.

Heater Packages - Field Installed for Standard & Dehumidification Models

- Designed for adding Electric Heat to 0 KW Units
- Circuit Breaker Standard on 230/208V Models
- ETL US & Canada Listed
- Toggle Disconnect Standard on 460V Models

Heat Pump Models	-A00 Models 230/208-1		-B00 Models 230/208-3		-C00 Models 460-3	
	Heater Model #	KW	Heater Model #	KW	Heater Model #	KW
S31H1	EHSH31-A04B EHSH31-A08B	4 8	EHSH31-B06B	6	EHSH31-C06	6
S38H1	EHS03H-A05B EHS03H-A08B EHS03H-A10B EHS03H-A15B	5 8 10 15	EHS05H-B06B EHS03H-B09B EHS03H-B15B	6 9 15	EHS05H-C06 EHS03H-C09 EHS03H-C15	6 9 15
S43H1	EHS04H-A04B EHS04H-A05B EHS04H-A08B EHS04H-A10B EHS04H-A15B	4 5 8 10 15	EHS05H-B06B EHS05H-B09B EHS05H-B15B	6 9 15	EHS05H-C06 EHS05H-C09 EHS05H-C15	6 9 15
S49H1	EHS04H-A05B EHS04H-A08B EHS04H-A10B EHS04H-A15B	5 8 10 15	EHS05H-B06B EHS05H-B09B EHS05H-B15B	6 9 15	EHS05H-C06 EHS05H-C09 EHS05H-C15	6 9 15
S61H1	EHS05H-A05B EHS05H-A10B EHS05H-A15B EHS05H-A20B	5 10 15 20	EHS05H-B09B EHS05H-B15B	9 15	EHS05H-C09 EHS05H-C15	9 15

Cooling Application Data - Outdoor Temperature °F ①

Model	Return Air (DB/WB) ②	Cooling Capacity	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
S31H1	75/62	Total Cooling	29,700	28,400	27,100	26,000	24,800	23,700	22,600	21,600	20,600
		Sensible Cooling	21,400	20,800	20,400	19,900	19,400	18,900	18,400	17,800	17,300
	80/67	Total Cooling	31,700	30,900	30,100	29,300	28,400	27,600	26,600	25,700	24,700
		Sensible Cooling	20,700	20,400	20,200	19,900	19,500	19,200	18,800	18,400	18,000
	85/72	Total Cooling	37,800	36,200	34,600	33,100	31,600	30,200	28,700	27,400	26,000
		Sensible Cooling	21,200	20,700	20,300	19,800	19,200	18,600	17,900	17,300	16,600
S38H1	75/62	Total Cooling	37,800	36,100	34,500	32,900	31,400	30,000	28,500	27,200	25,900
		Sensible Cooling	30,500	29,700	29,000	28,200	27,600	26,900	26,300	25,800	25,200
	80/67	Total Cooling	40,300	39,300	38,300	37,200	36,000	34,900	33,600	32,400	31,100
		Sensible Cooling	29,600	29,100	28,700	28,200	27,800	27,400	27,000	26,600	26,200
	85/72	Total Cooling	48,000	46,000	44,000	42,000	40,000	38,200	36,300	34,500	32,700
		Sensible Cooling	30,300	29,600	28,900	28,000	27,300	26,500	25,800	25,000	24,200
S43H1	75/62	Total Cooling	42,500	41,200	39,700	38,100	36,200	34,200	31,900	29,400	26,900
		Sensible Cooling	32,800	32,700	32,200	31,700	30,900	30,100	29,100	28,000	26,600
	80/67	Total Cooling	45,300	44,900	44,100	43,000	41,500	39,800	37,600	35,100	32,300
		Sensible Cooling	31,800	32,000	31,900	31,700	31,200	30,600	29,800	28,900	27,700
	85/72	Total Cooling	54,000	52,500	50,700	48,600	46,100	43,600	40,600	37,400	34,000
		Sensible Cooling	32,600	32,500	32,100	31,500	30,600	29,600	28,400	27,100	25,500
S49H1	75/62	Total Cooling	47,100	45,400	43,700	41,700	39,600	37,500	35,200	32,800	30,300
		Sensible Cooling	37,300	36,600	35,900	35,000	34,100	33,000	32,000	30,900	29,700
	80/67	Total Cooling	50,300	49,500	48,500	47,100	46,000	43,700	41,500	39,100	36,400
		Sensible Cooling	36,200	35,900	35,500	35,000	34,400	33,600	32,800	31,900	30,900
	85/72	Total Cooling	59,900	57,900	55,700	53,200	50,600	47,800	44,800	41,600	38,300
		Sensible Cooling	37,100	36,500	35,700	34,800	33,800	32,500	31,300	29,900	28,500
S61H1	75/62	Total Cooling	57,300	54,800	52,400	50,200	47,900	45,800	43,700	41,700	39,700
		Sensible Cooling	41,600	40,600	39,600	38,600	37,600	36,500	35,400	34,300	33,100
	80/67	Total Cooling	61,200	59,700	58,200	56,700	55,000	53,300	51,600	49,700	47,800
		Sensible Cooling	40,300	39,800	39,200	38,600	37,900	37,100	36,300	35,400	34,400
	85/72	Total Cooling	72,900	69,800	66,800	64,000	61,100	58,300	55,600	52,900	50,200
		Sensible Cooling	41,300	40,400	39,400	38,400	37,200	35,900	34,600	33,200	31,700

① Below 65°F, unit requires a factory or field installed low ambient control.
② Return air temperature °F.

Capacity Multiplier Factors			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05

Heating Application Rating & Outdoor Temperature °F*

MODEL		0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°F
S31H1	BTUH	7,700	9,800	12,000	14,200	16,200	18,200	20,200	22,200	24,600	27,100	29,300	31,500	33,700
	WATTS	2390	2440	2480	2530	2550	2560	2580	2590	2690	2780	2850	2900	2940
	COP	0.95	1.18	1.42	1.65	1.87	2.09	2.30	2.52	2.68	2.86	3.02	3.19	3.36
S38H1	BTUH	13,100	15,400	17,800	20,100	21,700	22,800	24,000	25,100	29,200	33,400	36,400	38,800	41,100
	WATTS	2660	2710	2760	2810	2850	2870	2900	2920	3010	3100	3170	3220	3270
	COP	1.45	1.67	1.89	2.10	2.24	2.33	2.43	2.52	2.85	3.16	3.37	3.54	3.69
S43H1	BTUH	14,000	16,600	19,300	22,000	23,700	24,900	26,000	27,100	32,100	37,100	40,600	43,300	46,000
	WATTS	2870	2920	2980	3030	3070	3080	3100	3120	3230	3340	3420	3470	3530
	COP	1.43	1.67	1.90	2.13	2.27	2.37	2.46	2.55	2.92	3.26	3.48	3.66	3.82
S49H1	BTUH	15,300	18,400	21,600	24,800	27,600	30,100	32,700	35,200	39,300	43,400	46,900	50,100	53,300
	WATTS	3490	3590	3680	3780	3860	3930	4000	4070	4210	4350	4460	4560	4660
	COP	1.29	1.51	1.72	1.93	2.10	2.25	2.40	2.54	2.74	2.93	3.09	3.22	3.36
S61H1	BTUH	17,600	21,200	24,900	28,600	30,700	31,700	32,700	33,700	41,400	49,000	54,200	57,900	61,600
	WATTS	3900	4010	4120	4230	4290	4320	4340	4360	4610	4860	5020	5130	5250
	COP	1.33	1.55	1.78	1.99	2.10	2.16	2.21	2.27	2.64	2.96	3.17	3.31	3.44

* 70°F DB indoor return air at rated CFM includes defrost operation below 45°.

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Clearances Required for Service Access and Adequate Condenser Airflow

MODELS	LEFT SIDE	RIGHT SIDE
All Models	20"	20"

Minimum Clearances Required to Combustible Materials

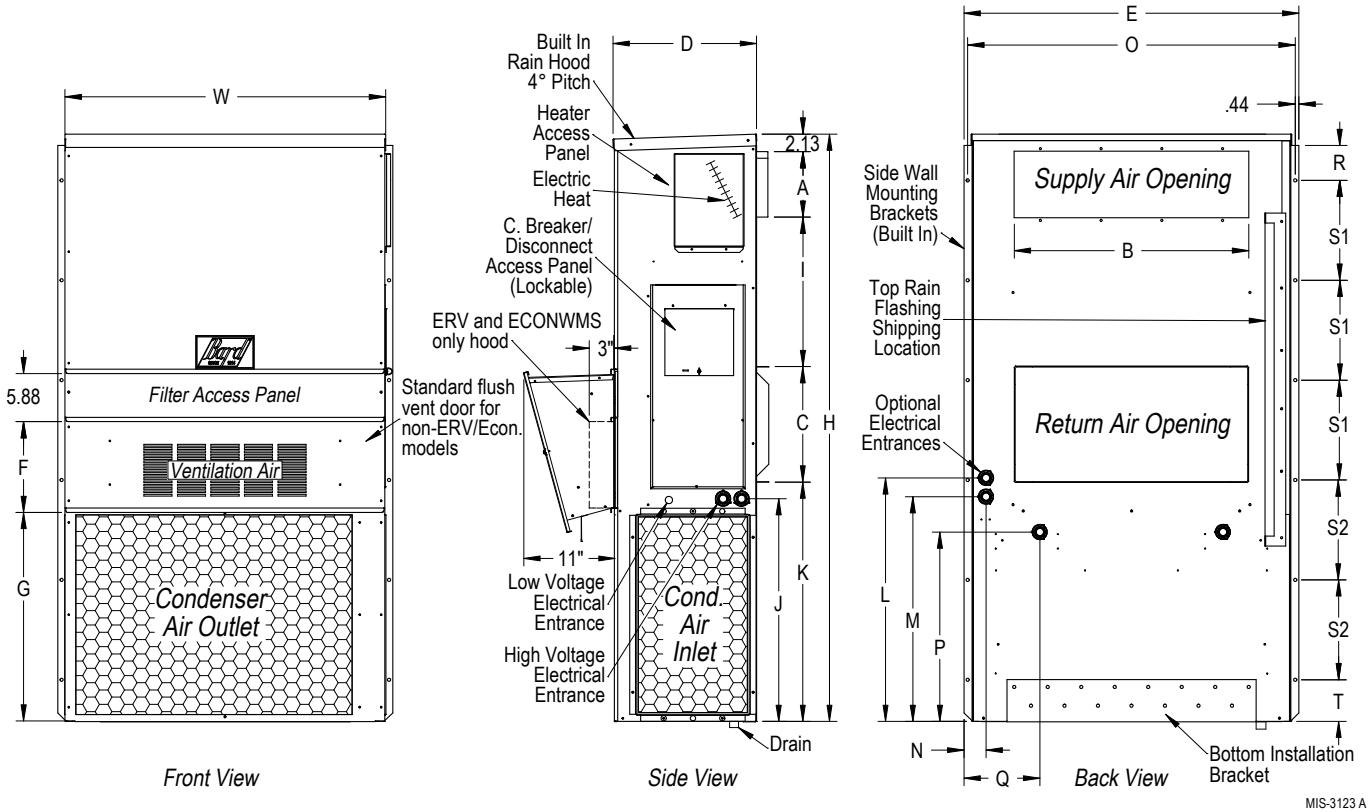
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
All Models	1/4"	0"

① Refer to the Installation Manual for more detailed information.

Dimensions of Basic Unit for Architectural and Installation Requirements (Nominal)

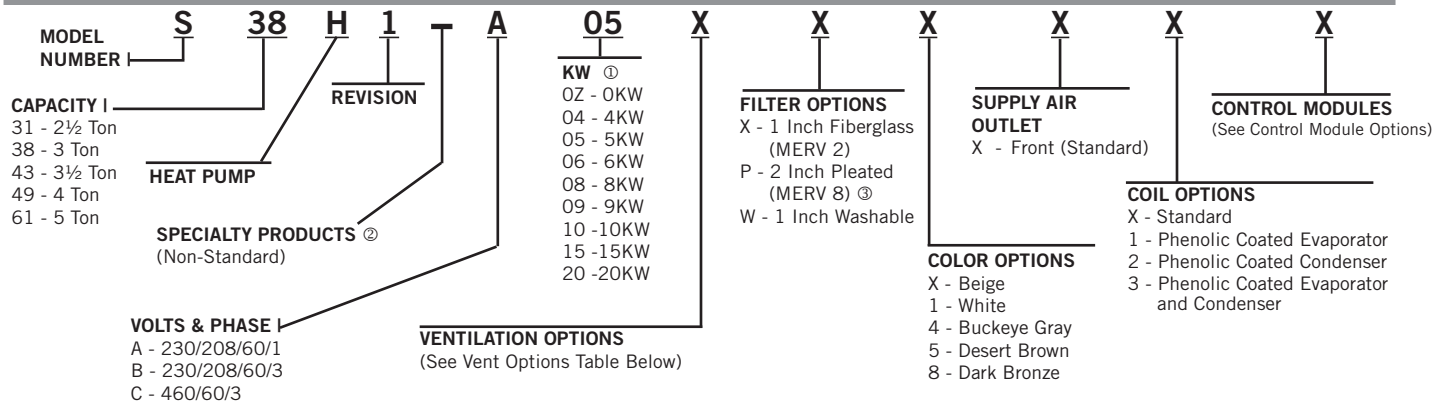
MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN																	
				A	B	C	B	E	F	G	I	J	K	L	M	N	O	P	Q	R	S1	S2	T
S31H1	38.200	17.125	70.563	7.88	27.88	13.88	27.88	40.00	18.50	25.75	17.93	26.75	28.75	29.25	27.00	2.75	39.13	22.75	9.14	4.19	12.00	12.00	5.00
S38H1 S43H1 S49H1	42.075	22.432	84.875	9.88	29.88	15.88	29.88	43.88	19.10	31.66	30.00	32.68	26.94	34.69	32.43	3.37	43.00	23.88	10.00	1.44	16.00	16.00	1.88
S61H1	42.075	22.432	94.875	9.88	29.88	15.88	29.88	43.88	19.10	41.66	30.00	42.68	36.94	44.69	42.43	3.37	43.00	33.88	10.00	1.44	16.00	21.00	1.88

All dimensions are in inches. Dimensional drawings are not to scale.



MIS-3123 A

Heat Pump Wall-Mount Model Nomenclature



① For 0 KW and circuit breakers (230/208 volt) or toggle disconnect (460V) applications, insert 0Z in the KW field of the model number. See Pages 10 & 11.
② Insert "D" for dehumidification with hot gas reheat. Reference Form 7960-593 for complete details.
③ Not available for S26H or S31H Models.

Ventilation Options

Models	S31H1		S38H1, S43H1, S49H1, S61H1	
Description	Factory Installed Code No.	Field Installed Part No.	Factory Installed Code No.	Field Installed Part No.
Barometric Fresh Air Damper - No Exhaust ① - Standard	X	BFAD-3	X	BFAD-5
Blank-Off Plate	B	BOP-3	B	BOP-5
Motorized Fresh Air Damper - No Exhaust ①	M	MFAD-3	M	MFAD-5
Commercial Ventilator - Spring Return w/Exhaust	V	CRVS-3	V	CRVS-5
Commercial Ventilator - Power Return w/Exhaust	P	CRVP-3	P	CRVP-5
Economizer - Standard - Enthalpy ④	S	ECONWMS-E3B ②	S	ECONWMS-E5B ②
Economizer - Equipment Bldg., Enthalpy ⑤	W	ECONWMT-E3B ②	W	ECONWMT-E5B ②
Economizer - Equipment Bldg., DB Temp ⑤	T	ECONWMT-T3B ②	T	ECONWMT-T5B ②
Energy Recovery Ventilator - 230 Volt ③	R	ERVF-A3 ①	R	ERVF-A5 ①
Energy Recovery Ventilator - 460 Volt ③	R	ERVF-C3 ①	R	ERVF-C5 ①
Door Kit for ERVF (Required)	N/A	WMDK3- ③	N/A	WMDK5- ③

① Intake and exhaust can be independently adjusted.
② Insert color to match unit ("X" = Beige; "4" = Buckeye Gray; etc.)
③ WMDK Door Kit must be ordered in addition to ERVF Assembly and color matched to unit ("X" = Beige; "4" = Buckeye Gray; etc.)
④ Partial Full Flow (75% of Rated Cooling CFM). All ECONWMS versions have 3" deep intake hood.
⑤ Full Flow (100% of Rated Cooling CFM). All ECONWMT versions have 11" deep intake hood.

Heat Pump Control Modules

Low Pressure Control ①	High Pressure Control ①	Low Ambient Control and Relay ②	Start Kit ③	Start Kit ④	Outdoor Thermostat ⑤	Factory Installed Code	Field Installed Part
STD	STD					X	N/A
STD	STD	● 230V				E	CMH-20
STD	STD	● 460V				E	CMH-21
STD	STD				●	Q	CMH-14A
STD	STD	● ⑥			●	R	- - -
STD	STD		●			Field Installed	CMC-15 ③
STD	STD			●		Field Installed	SK111 ✳
STD	STD			●		Field Installed	SK116 ✳

STD = Standard Equipment
① The high & low pressure controls are auto reset. Operating circuit includes a lockout feature and is resettable from the wall thermostat. All low pressure controls use a timed bypass circuit to prevent nuisance tripping during low temperature start-up.
② The low ambient control includes an 8201-008 (fan relay) and permits cooling operation down to 0°F.
③ PTCR start kit can be used with all -A single phase models. Increases starting torque 2-3x. Not used for -B or -C three phase models. Do not use if SK111 is used.
④ Start capacitor and potential relay start kit can be used with all -A single phase models. Increases starting torque 9x. Not used for -B or -C three phase models. Do not use if CMC-15 is used.
⑤ The outdoor thermostat is adjustable from 0°F to 50°F. It is suitable for use as a compressor cut-off thermostat. Not available on dehumidification models. Use outdoor sensor input to electronic thermostat.
⑥ Applies to both 230V and 460V models.

NOTE: Standard heat pump control board has a 5-minute compressor anti-short cycle timer.
✳ SK111 = All Models except S49H1-A.
✳ SK116 = S49H1-A only.

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Climate Control Solutions
Bard Manufacturing Company, Inc.
Bryan, Ohio 43506
www.bardhvac.com

Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No. S3416 April, 2016
Supersedes: S3416-1015