PRODUCT PROFILE

FRIEDRICH
1883

VRP®

Variable Refrigerant Packaged Heat Pump

Innovative | Intelligent | Inverter

A single packaged climate control solution offering the efficiencies and benefits of multiple complex HVAC systems without the complications associated with them.

VRP® Delivers

- Best In Class Cooling Performance
- Super Efficient Heating
- True Humidity Control
- Conditioned Fresh Air
- Low Ambient Control

LOW GWP Refrigerant

One or more of the following patents may apply:
10408504
10436457
10488083
10731899

Additional patents pending

AHRI CERTIFIED www.ahridirectory.org Unitary Small HP AHRI Standard 210/240

PRECISION INVERTER™

FreshAire™

ETL LISTED c US Intertek

THE EXPERTS IN ROOM AIR CONDITIONING

Introduction

The Friedrich VRP® is a variable capacity system that utilizes Precision Inverter® technology to provide optimal space conditions. While each VRP unit has a nominal capacity of 7,000, 12,000, 24,000, or 36,000 Btus, every unit has the ability to adjust Btu output based on the actual room load. This equates to:

- Greater in-room dehumidification from longer compressor run time
- Lower energy costs by consuming less power
- Greater occupant comfort due to smaller swings in room temperature and humidity

The VRP accomplishes this by constantly monitoring various system and environmental inputs to vary the output of the unit.

The ability to vary compressor and blower speeds and the use of reheat coil enables the VRP to provide optimal comfort. With up to 18 SEER2 and 7.6 HSPF2, the VRP provides a highly efficient solution. Further, the Precision Inverter technology allows the heat pump to operate at ambient conditions as low as 0˚ F reducing the use of strip heat. This results in significant savings in operational costs.

An optional integrated FreshAire™ system delivers conditioned fresh air into the space. The fresh air is filtered through a MERV 8 filter and is then conditioned through the unit's primary DX coils backed by a reheat coil that augments the unit's dehumidification capability. This integrated fresh air solution provides the ability to potentially downsize or eliminate additional make up air and humidity control equipment.

Friedrich's wall controller is the main interface between conditioned space and the unit. The controller has seven back-lit segment displays that indicate the system mode (cool, heat, fan only), fan speed (low, high or auto), set point (°F or °C) or alternatively room temperature (°F or °C).

The controller has an integrated temperature and humidity sensor that sends room status to the main control unit (MCU) to determine operating modes and speeds of various components.

The wall controller also contains a motion sensor that wakes the wall controller from a sleep mode when not in use. This energy saving feature eliminates annoying glow from the controller and the need to turn on lights at night to operate it.

The unitary packaged design means easier installation or replacement. Because the VRP is a packaged unit, it is installed as a completely assembled refrigeration system. Unlike VRF or chilled water systems that require on-site wiring, piping and sealing of individual components, VRP units are assembled, charged and run tested under strict quality control guidelines in Friedrich's North American factory. Additionally, there is no need to locate the cooling tower or condensing units on the ground or rooftops where green spaces can exist instead.

In sum, The Friedrich VRP offers a significant value to all parties involved in the design and construction of a new building. Because of the simpler and more straightforward nature of the packaged design, and the ability to potentially downsize or eliminate additional make up air and humidity control equipment, the VRP reduces much of the headache and complexity facing the design engineer. Because the VRP is easy to install, with no complicated floor-to-floor piping and wiring involved, the contractor can be confident of a high-quality installation and get on and off the job more quickly. And finally, the owner gets the efficiency and performance of larger, more complex and costly equipment, with a lower overall installed cost; and he/she virtually eliminates the potential safety and service issues associated with systems that rely on thousands of feet of refrigerant or water piping running throughout the building, including occupied spaces.

NOTE: For full installation information and methods, please review the Installation & Operations Manuals

Key Features

Best In Class Performance

- Precision Inverter® variable speed compressors deliver efficiencies up to **18.0 SEER2**
- Can operate at up to 120% of rated capacity to reach set point quickly
- Low-ambient heat pump operation to 0˚ F
- Upto **7.6 HSPF2**

Superior Efficiency

- Meets **Energy Star 6.0** Requirements*
- **NEEP cc-ASHP Listed**
- **AHRI Certified**
- Significant energy savings over resistive heating and may qualify for utility rebates

True Humidity Control

- Sophisticated humidity control system with on-board sensors and humidistats
- Ability to adjust compressor speed enhances dehumidification
- **Hot Gas Re-heat coil** helps maintain desired humidity without compromising room temperature.

Conditioned Fresh Air

- Optional FreshAire™ system brings in up to 130 CFM of conditioned, **MERV 8**-filtered outside air
- Helps building owners conforms to **ASHRAE 62.1/2** IAQ building codes
- Reduce much of the cost and complexity associated with dedicated outside air systems

A Commitment to Quality Since 1883

Founded in 1883, Friedrich has manufactured room air conditioners since 1952. Friedrich is a leading manufacturer of air conditioners and other home environment products. Constructed of the highest quality components, Friedrich products are built to exacting standards and are among the quietest, most highly featured and most energy-efficient available. If you demand the best, it has to be a Friedrich.

*Certification with Energy Star is pending.

Nomenclature

V	R	P	2	4	K	2	5	S	S	B	S	C	- A

Series

Variable Refrigerant Packaged Heat Pump

Nominal Capacity (Btu /Hr.)

07 = 3,800 - 10,000 Operating range

12 = 5,400 - 16,000 Operating range

24 = 14,500 - 28,000 Operating range

36 = 21,400 - 38,400 Operating range

Voltage

K = 230/208 V (All VRP)

R = 265 V (VRP07/12/24)

Heater watts

00 = 0.0 kW (VRP07/36)

25 = 2.5 kW (VRP07/12)

34 = 3.4 kW (VRP07/12/24)

50 = 5.0 KW (VRP12/24)

75 = 7.5 kW (VRP24)

10 = 10.0 kW (VRP24/36)

15 = 15.0 kW (VRP36)

Plenum and louver configuration

A= Only for VRP12 units

B= For VRP24 (can also be used for VRP12 units)

C = Only for VRP36

D = Only for VRP07

Low Ambient

S = Standard

L = Base pan heat

Reheat

S= Standard; R= Reheat

Outdoor Air/ Ventilation S= Standard unit. No FreshAire™

F= Single Module FreshAire System 35 CFM (VRP07,12, 24)/85 CFM (VRP36)

D= Dual Module FreshAire System 70 CFM (VRP12, 24)/130 CFM (VRP36)

Marketing Revision

C - A2L Version R32

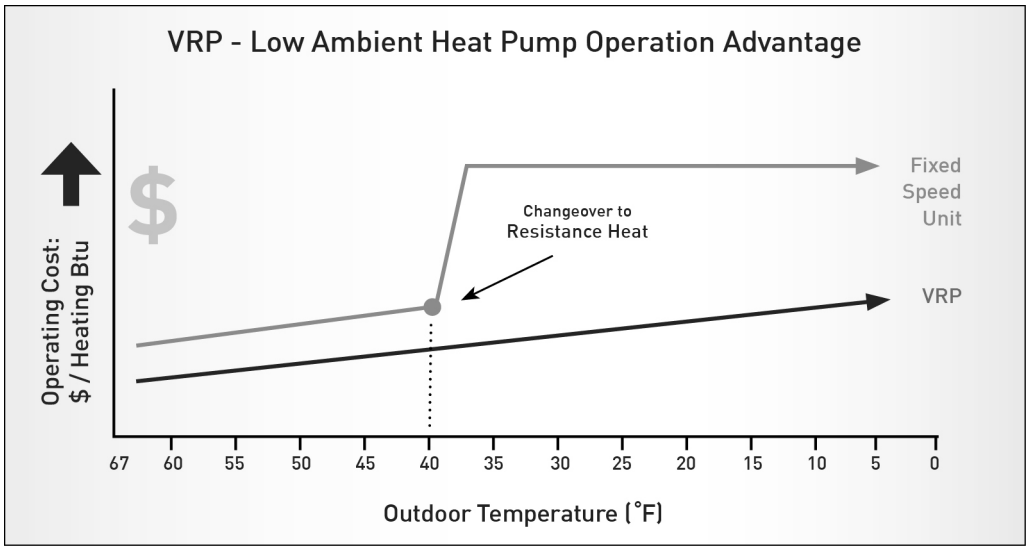
Engineering Revision

Model	VRP07K/VRP07R		VRP12K/VRP12R		VRP24K/VRP24R		VRP36K
Cooling Performance Data (Cooling Standards: 95°F DB/75°F WB outdoor, 80°F DB/67°F WB indoor)							
Voltage	230/208	265	230/208	265	230/208	265	230/208
Cooling Btu (Rated)	7,000		11,500		23,400		35,600
Cooling Btu (Min. - Max.)*	3,800 - 10,000		5,400 - 16,000		14,500 - 28,000		21,400 - 38,400
Outdoor Operating Range (°F)	55 - 115		55 - 115		55 - 115		55 - 115
Power (W)	636		1,000		2,166		3,390
SEER2	16.5		18.0		17.5		17.0
EER2	11.0		11.5		10.8		10.5
Sensible Heat Ratio	0.83		0.8		0.75		0.72
Cooling Amps	2.97	2.75	4.3	3.74	9	7.95	14.8
Heat Pump Performance Data							
Heating Btu (Rated @ 47° F)	7,000		11,500		22,000		33,000
Heating Btu (@ 17° F)	4,300		6,200		13,000		20,800
Heating Btu (Min. - Max.)	2,800 - 9,000		4,000 - 14,000		12,000 - 26,000		9,000 - 33,000
Heat Pump Outdoor Operating Range (°F)	0 - 70		0 - 70		0 - 70		0 - 70
COP (Rated @ 47° F)	3.2		3.4		3.4		3.3
HSPF2	7.2		7.6		7.6	7.4	7.8
Heating Power (W)	641		991		1,896		2,930
Heating Amps	2.9	2.69	4.3	3.48	9.0	7.7	12.8

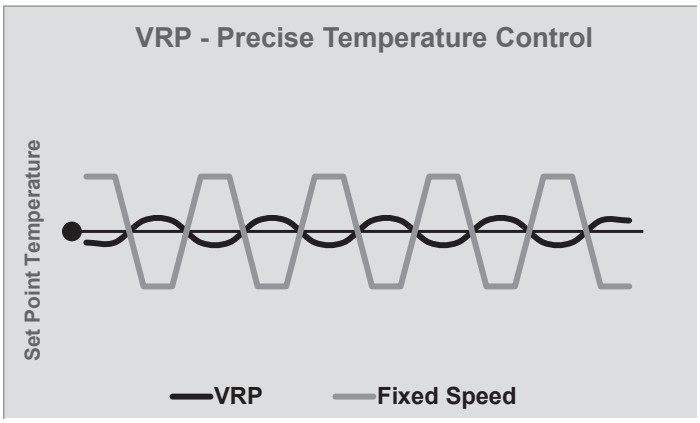
*Units must be appropriately sized/selected based on accurate building /room load requirements and the rated capacity of the equipment.
Due to continuing research in technology, specifications are subject to change without notice.

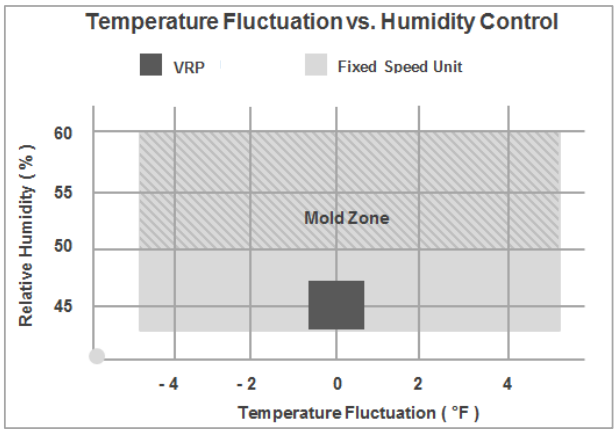
VRP® Variable Speed System vs. Fixed-speed System

Low Ambient Heat Pump Performance: Variable speed technology enables VRP units to supply continuous hot air in heat pump mode even at low outdoor ambient temperatures. This reduces strip heat usage resulting in exceptional savings with VRP units when compared with traditional fixed-speed units which need to switch to strip heat at much higher ambient temperatures.



Precise Temperature & Humidity Control: VRP units not only help keep the air at the preferred temperature, but can more effectively remove moisture from the air. VRP units run longer cycles at lower pressures, helping to cool the air more evenly. The combination of variable speed compressor & blower motor and reheat coil in VRP units provide optimal comfort to the occupants. On the other hand, traditional fixed-speed systems tend to cool the air too fast without proper moisture removal increasing the risk of mold and other airborne problems.





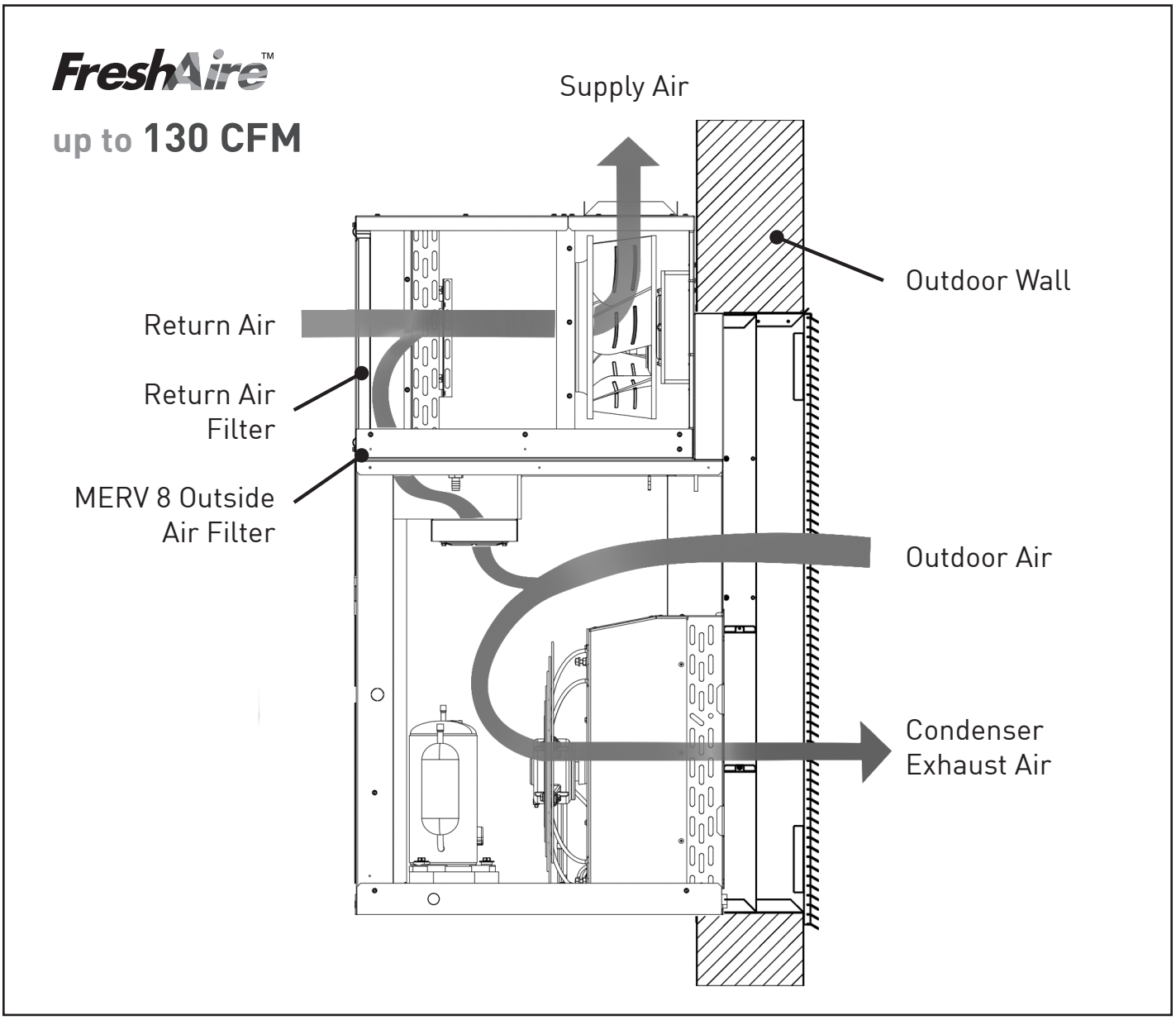
FreshAire™ Conditioned Fresh Air

Helps Buildings Comply With ASHRAE 62.1 & 62.2

FreshAire, is a dedicated fresh air system that brings in up to 130 CFM of outdoor air into the VRP® unit. The FreshAire system can provide between 35 and 130 CFM (depending on model) of fresh outside air into the unit. The outdoor air passes through dedicated 6"x 6"x1" MERV 8 filter(s) that are easily replaceable from the front of the unit.

This outdoor air is mixed with the return air inside the unit prior to the main evaporator coils, reheat coil and heater. Because of the variable speed of both the compressor and evaporator fan, the VRP can increase or decrease the unit's capacity to cool, heat or dehumidify the total supply air. The system uses a proprietary algorithm to measure the dew point of the leaving air.
As the system nears the room set point, the system will throttle back both the compressor and the supply air volume in order to maximize the dwell time on the indoor coil to maximize dehumidification.

(Single speed systems cycle on and off, providing less dehumidification capacity and run time as well as encounter condensate re-evaporation when cycled off.)



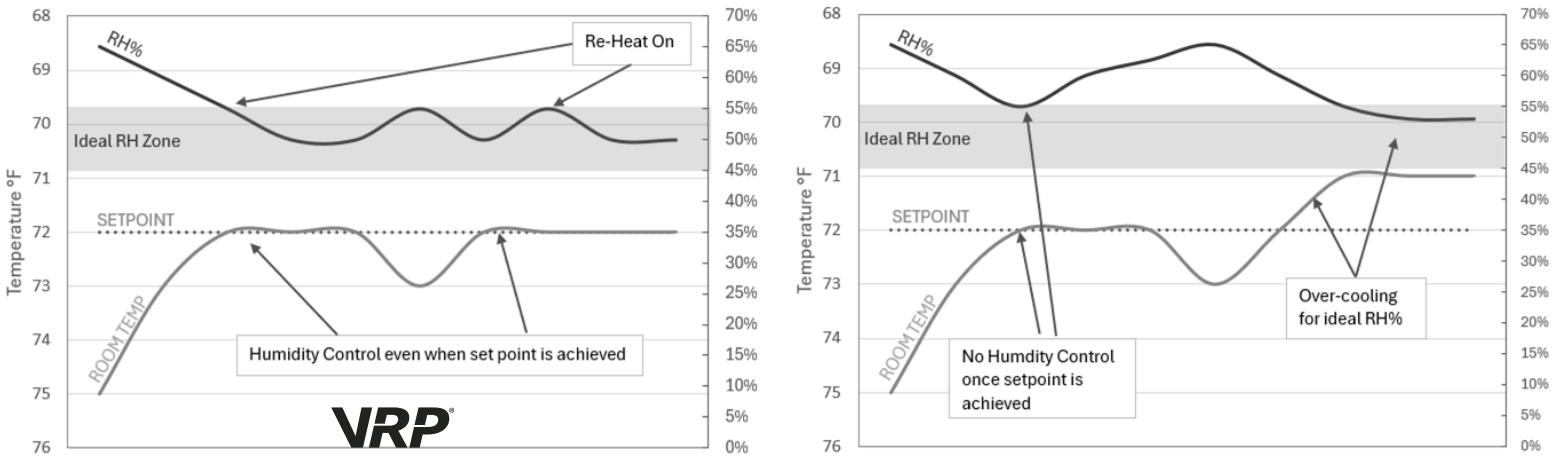
Reheat Coil - Augments VRP's Dehumidification Capability

Temperature differences are not the only source of discomfort in a living space. Humidity also plays a big role—especially in climates that tend to be both hot and humid. The air conditioning industry's focus on humidity issues has elevated the importance of dehumidification. Air conditioning units operate in environments with varying indoor humidity levels. Therefore, the system should be able to adequately respond to the humidity changes by removing sufficient amounts of moisture in order to keep the conditioned space within the comfort zone.

Anytime the compressor is running in air conditioning mode, it will also be pulling humidity out of the space. Fixed-speed systems shut off after the desired set temperature is reached (i.e. when the sensible load is met). VRP® units run much longer at lower capacity and energy consumption than traditional systems. Humidity levels are reduced to more comfortable levels. The dehumidification capability of VRP units is enhanced through the use of a reheat coil that provides superior flexibility in satisfying a wide range of latent and sensible capacity demands. The reheat coil is placed behind the evaporator coil.

At relatively high ambient temperatures, both sensible and latent components of the system capacity are required to satisfy increased cooling and dehumidification demands. The VRP wall controller and other sensors in the unit combine to continuously monitor the space RH levels and when there is demand for extra dehumidification , the refrigerant exiting the condenser is rerouted to the reheat coil located behind the evaporator on the way to the indoor air stream supplied to the conditioned space.

Thus, cooled and dehumidified air exiting the evaporator coil is reheated to desirable comfort levels for the space.



Advanced Humidity Control in VRP vs. Traditional Systems

Air Flow Data

Condenser CFM & External Static Pressure

VRP® is designed to mount through an exterior wall through a Friedrich wall plenum with an external louver. Building design and applications may require different configurations of this external connection for aesthetic/architectural reasons. These different configurations may include custom louvers, plenums or special ducted returns. The following are guidelines for the design of these custom external configurations.

Condenser External Static Pressure			
Model	Design		Maximum
	CFM	ESP ("WC)	ESP ("WC)
VRP07	550	0.02	0.08
VRP12	700	0.03	0.1
VRP24	1150	0.017	0.11
VRP36	2030	0.03	0.20

CAUTION: If the Friedrich designed plenum and louver combinations are not used, the louver/duct design must be evaluated to insure the total pressure drop does not exceed the maximum allowable limits.

Sound Data (Prior Series)

Sound Data				
Model	Sound Power (dBA)		Transmission Class	
	Indoor	Outdoor	STC	OITC
VRP07**A	61.1	63.6	22	14
VRP12**A	56.9	65.8	27	17
VRP24**A	65.7	77.0	27	17
VRP36**A	68.0	79.4	25	18

NOTE: THIS TESTING RESULTS ARE FROM THE PRIOR SERIES. Testing performed by 3rd party lab. The above values representative of an installation of the unit into an exterior wall through a wall-sleeve without a finished closet. VRP is typically installed in a finished closet. Friedrich reccomends that closet wall construction include finished walls on both the interior and exterior sides for optimal sound attenuation.

Electrical Data

VRP Model	Electric Heater Size	Voltage	Electric Heater Watts	Electric Heating Btu	Total Electric Heating Amps	ID Blower Amps	OD Blower Amps	MCA	MOP / MOCP
VRP07K	0 kW	230	0	0	0	0.16	0.42	8.5	15
	0kW	208	0	0	0	0.23	0.49		
	2.5 kW	230	2500	8530	11	0.16	0.42	14.4	15
	2.5 kW	208	2044	6980	10	0.23	0.49		
	3.4 kW	230	3400	11600	15	0.16	0.42	19.2	20
	3.4 kW	208	3021	10302	14	0.23	0.49		
VRP07R	0 kW	265	0	0	0	0.16	0.42	8.5	15
	2.5 kW		2500	8525	9.2	0.16	0.42	12	15
	3.4 kW		3400	11594	12	0.16	0.42	15.7	20
VRP12K	2.5 kW	230	2500	8525	10.6	0.52	0.40	14.7	15
	2.5 kW	208	2261	7710	9.6	0.57	0.47		
	3.4 kW	230	3340	11389	14.5	0.52	0.40	19.5	20
	3.4 kW	208	3021	10302	13.1	0.57	0.47		
	5.0 kW	230	4940	16845	21.5	0.52	0.40	28.3	30
	5.0 kW	208	4467	15232	19.4	0.57	0.47		
VRP12R	2.5 kW	265	2500	8525	9.2	0.6	0.4	13	15
	3.4 kW		3400	11594	12.8	0.6	0.4	17.1	20
	5.0 kW		4800	16368	18.1	0.6	0.4	23.7	25
VRP24K	3.4 kW	230	3340	11389	14.5	1.13	1.10	24.3	25
	3.4 kW	208	3021	10302	13.1	1.16	1.19		
	5.0 kW	230	5000	17050	21.7	1.13	1.10	29.9	30
	5.0 kW	208	4522	15420	19.6	1.16	1.19		
	7.5 kW	230	7500	25575	32.6	1.13	1.10	43.5	45
	7.5 kW	208	6783	23130	29.5	1.16	1.19		
	10.0 kW	230	9800	33418	42.6	1.13	1.10	56	60
	10.0 kW	208	8863	30223	38.5	1.16	1.19		
VRP24R	3.4 kW	265	3400	11594	12.8	0.95	1	19.6	25
	5.0 kW		5000	17050	18.86	0.95	1	25.1	30
	7.5 kW		7500	25575	28.3	0.95	1	36.9	40
	10.0 kW		10000	34100	37.7	0.95	1	48.7	50
VRP36K	0.0 kW	230	0	0	0	1.09	1.34	22	30
	0.0 kW	208	0	0	0	1.09	1.34		
	10.0 kW	230	8820	30090	39.4	1.09	1.34	49.9	50
	10.0 kW	208	7210	24600	35.9	1.09	1.34		
	15.0 kW	230	8820/4410	45120	39.4/19.2	1.09	1.34	49.9/24.0	50/25
	15.0 kW	208	7210/3610	36900	35.9/17.4	1.09	1.34		

Due to continuing research in technology, specifications are subject to change without notice

MCA = Minimum Circuit Ampacity

MOP / MOCP = Maximum Overcurrent Protection / Breaker Size

Minimum Circuit Amps (MCA) and MOCP values in the above table are calculated in accordance with The NEC. Article 440

VRP36K15 requires a dual electrical service (50A + 25A)

Extended Capacity Charts - Cooling

VRP07		Indoor Temperature														
		70 °F DB / 60 °F WB			75°F DB / 63 °F WB			80 °F DB / 67 °F WB			85 °F DB / 71 °F WB			90 °F DB / 73 °F WB		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	65	7160	410	1.8	7640	405	1.8	8295	400	1.7	9025	395	1.7	9410	390	1.7
	70	6960	445	1.9	7420	445	1.9	8085	440	1.9	8800	435	1.9	9200	430	1.9
	75	6755	480	2.1	7215	480	2.1	7880	480	2.1	8580	475	2.1	8955	475	2.1
	80	6555	520	2.3	7000	520	2.3	7655	520	2.3	8335	520	2.3	8705	515	2.2
	85	6355	555	2.4	6800	555	2.4	7440	560	2.4	8095	560	2.4	8465	560	2.4
	90	6160	590	2.6	6595	595	2.6	7220	595	2.6	7880	600	2.6	8215	600	2.6
	95	5950	625	2.7	6380	630	2.7	7000	635	2.8	7650	640	2.8	7965	640	2.8
	100	5745	665	2.9	6165	670	2.9	6775	675	2.9	7410	680	3.0	7720	685	3.0
	105	5560	700	3.0	5950	705	3.1	6545	715	3.1	7180	725	3.2	7460	725	3.2
	110	5345	735	3.2	5730	745	3.2	6315	755	3.3	6940	765	3.3	7200	770	3.3
	115	5140	775	3.4	5520	780	3.4	6080	795	3.5	6690	805	3.5	6975	810	3.5

VRP12		Indoor Temperature														
		70 °F DB / 60 °F WB			75°F DB / 63 °F WB			80 °F DB / 67 °F WB			85 °F DB / 71 °F WB			90 °F DB / 73 °F WB		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	65	11445	735	3.2	12070	730	3.2	12980	720	3.1	13925	710	3.1	14430	705	3.1
	70	11230	780	3.4	11850	775	3.4	12740	770	3.3	13665	760	3.3	14175	755	3.3
	75	11015	820	3.6	11625	820	3.6	12500	815	3.5	13405	810	3.5	13900	805	3.5
	80	10800	860	3.7	11405	860	3.7	12265	855	3.7	13150	850	3.7	13640	850	3.7
	85	10570	905	3.9	11175	905	3.9	12015	905	3.9	12885	900	3.9	13355	900	3.9
	90	10330	945	4.1	10940	950	4.1	11760	950	4.1	12610	950	4.1	13070	950	4.1
	95	10105	990	4.3	10700	995	4.3	11500	1000	4.3	12330	1005	4.4	12785	1005	4.4
	100	9870	1035	4.5	10450	1040	4.5	11235	1050	4.6	12040	1055	4.6	12495	1055	4.6
	105	9630	1080	4.7	10205	1085	4.7	10965	1095	4.8	11750	1105	4.8	12195	1110	4.8
	110	9390	1125	4.9	9945	1135	4.9	10675	1145	5.0	11445	1155	5.0	11895	1160	5.0
	115	9135	1170	5.1	9680	1180	5.1	10390	1195	5.2	11140	1205	5.2	11580	1210	5.3

Values reflect performance at a locked compressor frequency.
Actual capacity will be higher and/or match the building load within the allowed operating range of the equipment.

Extended Capacity Charts - Cooling

VRP24		Indoor Temperature														
		70 °F DB / 60 °F WB			75°F DB / 63 °F WB			80 °F DB / 67 °F WB			85 °F DB / 71 °F WB			90 °F DB / 73 °F WB		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	65	23655	1515	6.6	24815	1515	6.6	26485	1515	6.6	28255	1520	6.6	29190	1520	6.6
	70	23195	1610	7.0	24330	1615	7.0	25985	1620	7.0	27845	1630	7.1	28590	1630	7.1
	75	22740	1710	7.4	23840	1715	7.5	25520	1725	7.5	27235	1740	7.6	28135	1745	7.6
	80	22285	1810	7.9	23440	1820	7.9	25005	1835	8.0	26705	1850	8.0	27605	1860	8.1
	85	21825	1910	8.3	22940	1925	8.4	24535	1945	8.5	26205	1965	8.5	27080	1975	8.6
	90	21390	2015	8.8	22425	2035	8.8	23985	2055	8.9	25615	2080	9.0	26510	2095	9.1
	95	20885	2120	9.2	21920	2140	9.3	23400	2165	9.4	24975	2195	9.5	25850	2210	9.6
	100	20320	2230	9.7	21400	2250	9.8	22765	2280	9.9	24345	2310	10.0	25275	2325	10.1
	105	19760	2340	10.2	20790	2360	10.3	22175	2390	10.4	23605	2425	10.5	24575	2440	10.6
	110	19155	2445	10.6	20250	2475	10.8	21505	2505	10.9	22945	2540	11.0	23910	2560	11.1
	115	18550	2555	11.1	19620	2585	11.2	20870	2620	11.4	22160	2650	11.5	23150	2675	11.6

VRP36		Indoor Temperature														
		70 °F DB / 60 °F WB			75°F DB / 63 °F WB			80 °F DB / 67 °F WB			85 °F DB / 71 °F WB			90 °F DB / 73 °F WB		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	65	35440	2370	10.3	37385	2370	10.3	40150	2375	10.3	43065	2375	10.3	44495	2370	10.3
	70	34810	2515	10.9	36770	2525	11.0	39530	2540	11.0	42360	2540	11.0	43775	2540	11.0
	75	34195	2665	11.6	36120	2685	11.7	38800	2700	11.7	41650	2715	11.8	42995	2715	11.8
	80	33550	2825	12.3	35435	2845	12.4	38145	2870	12.5	40850	2890	12.6	42165	2895	12.6
	85	32860	2985	13.0	34710	3010	13.1	37330	3040	13.2	40020	3065	13.3	41325	3075	13.4
	90	32170	3145	13.7	33950	3175	13.8	36495	3215	14.0	39110	3245	14.1	40510	3255	14.2
	95	31380	3310	14.4	33155	3350	14.6	35600	3390	14.7	38170	3425	14.9	39445	3440	15.0
	100	30575	3480	15.1	32290	3520	15.3	34655	3570	15.5	37165	3610	15.7	38405	3625	15.8
	105	29735	3655	15.9	31400	3695	16.1	33705	3750	16.3	36095	3795	16.5	37320	3815	16.6
	110	28835	3830	16.7	30455	3875	16.8	32715	3930	17.1	35000	3980	17.3	36185	4000	17.4
	115	27890	4005	17.4	29450	4055	17.6	31610	4115	17.9	33860	4170	18.1	35015	4190	18.2

Values reflect performance at a locked compressor frequency.

Actual capacity will be different and/or match the building load within the allowed operating range of the equipment.

Extended Capacity Charts - Heating

VRP07		Indoor Temperature °F DB								
		60			70			80		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	17	4280	500	2.2	4005	555	2.4	3765	610	2.7
	27	5285	530	2.3	5005	590	2.6	4750	645	2.8
	37	6290	555	2.4	6000	620	2.7	5740	680	3.0
	47	7295	575	2.5	7000	640	2.8	6725	705	3.1
	57	8300	590	2.6	8000	660	2.9	7715	725	3.2
	67	9300	595	2.6	8995	670	2.9	8705	740	3.2

VRP12		Indoor Temperature °F DB								
		60			70			80		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	17	7340	850	3.7	7130	910	4.0	6960	970	4.2
	27	8845	870	3.8	8585	940	4.1	8350	1010	4.4
	37	10350	890	3.9	10045	970	4.2	9740	1050	4.6
	47	11855	905	3.9	11500	990	4.3	11130	1080	4.7
	57	13360	915	4.0	12955	1010	4.4	12520	1105	4.8
	67	14865	915	4.0	14415	1020	4.4	13910	1130	4.9

VRP24		Indoor Temperature (°F DB)								
		60			70			80		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	17	14045	1590	6.9	13735	1720	7.5	13595	1860	8.1
	27	16785	1680	7.3	16490	1830	8.0	16320	2000	8.7
	37	19525	1755	7.6	19245	1930	8.4	19045	2125	9.2
	47	22265	1815	7.9	22000	2015	8.8	21765	2230	9.7
	57	25005	1860	8.1	24755	2085	9.1	24490	2315	10.1
	67	27745	1895	8.2	27510	2135	9.3	27215	2385	10.4

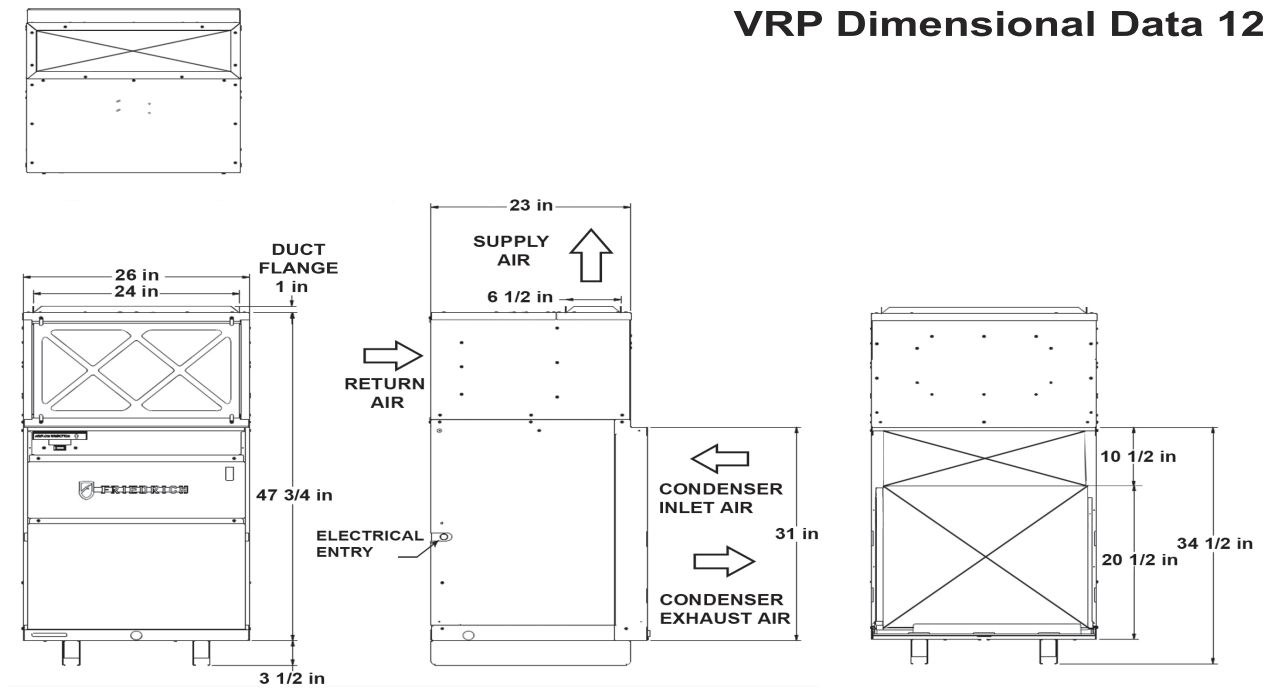
VRP36		Indoor Temperature (°F DB)								
		60			70			80		
		Capacity	Power	Amps	Capacity	Power	Amps	Capacity	Power	Amps
Outdoor Temperature (°F DB)	17	20810	2055	8.9	20060	2225	9.7	19300	2415	10.5
	27	25325	2260	9.8	24375	2475	10.8	23405	2710	11.8
	37	29835	2455	10.7	28685	2710	11.8	27505	2985	13.0
	47	34350	2640	11.5	33000	2930	12.7	31610	3235	14.1
	57	38860	2825	12.3	37315	3135	13.6	35715	3460	15.0
	67	43375	3000	13.0	41625	3325	14.5	39820	3665	15.9

Values reflect performance at a locked compressor frequency.

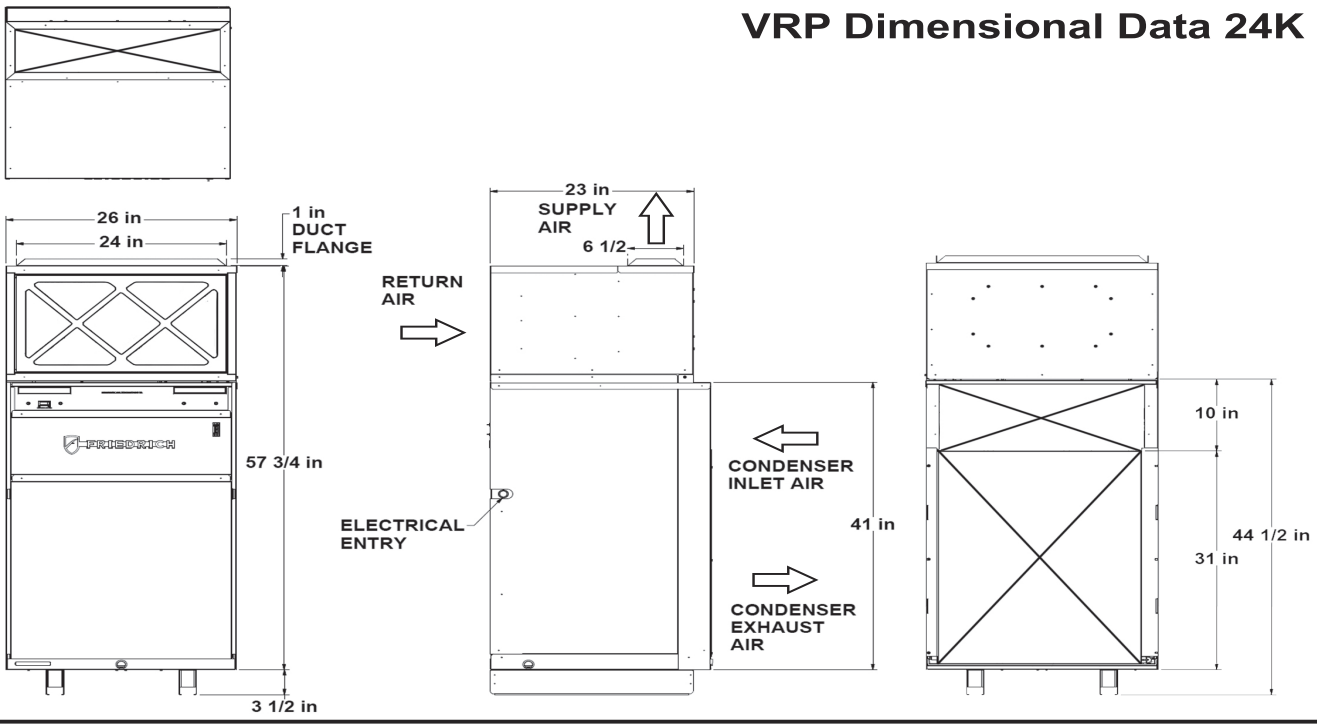
Actual capacity will be different and/or match the building load within the allowed operating range of the equipment.

Unit Dimensional Data

VRP Dimensional Data 12K

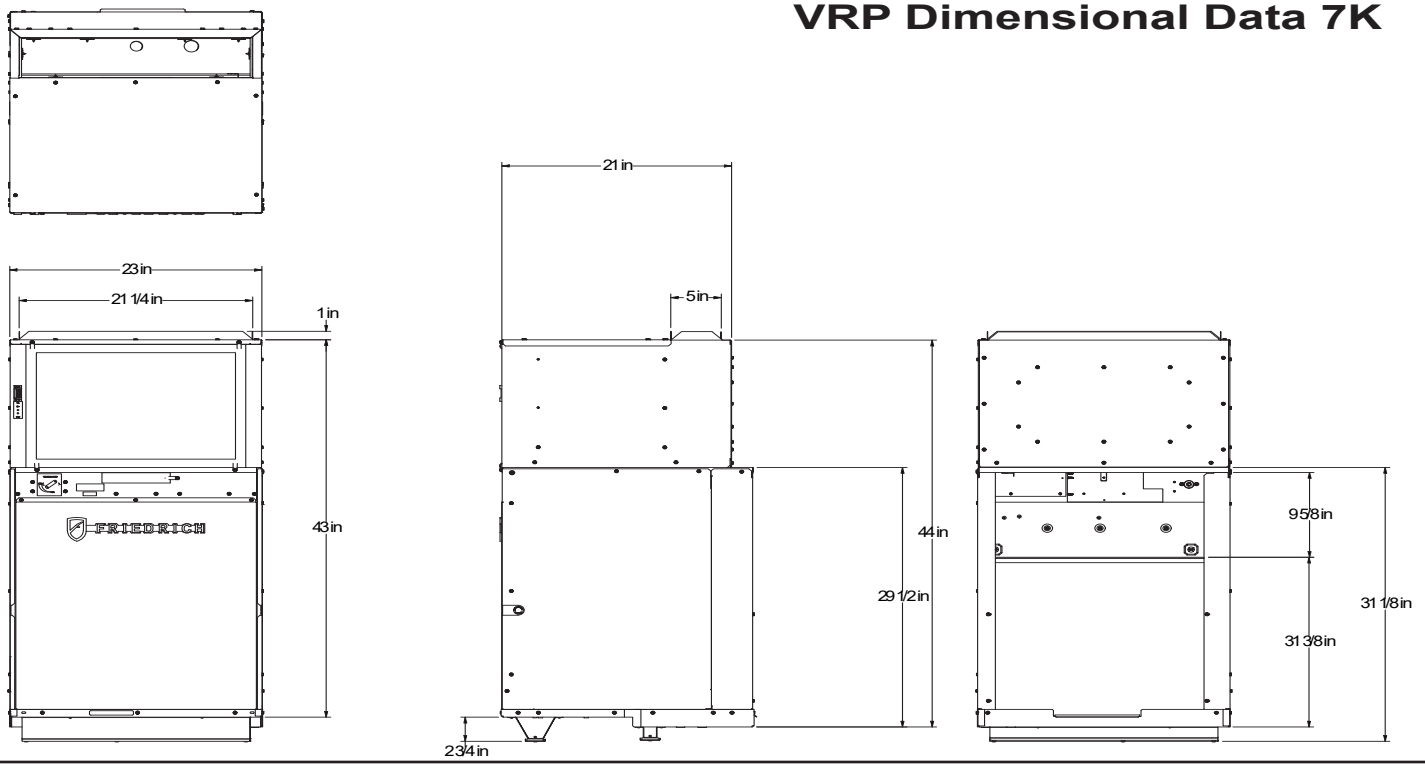


VRP Dimensional Data 24K

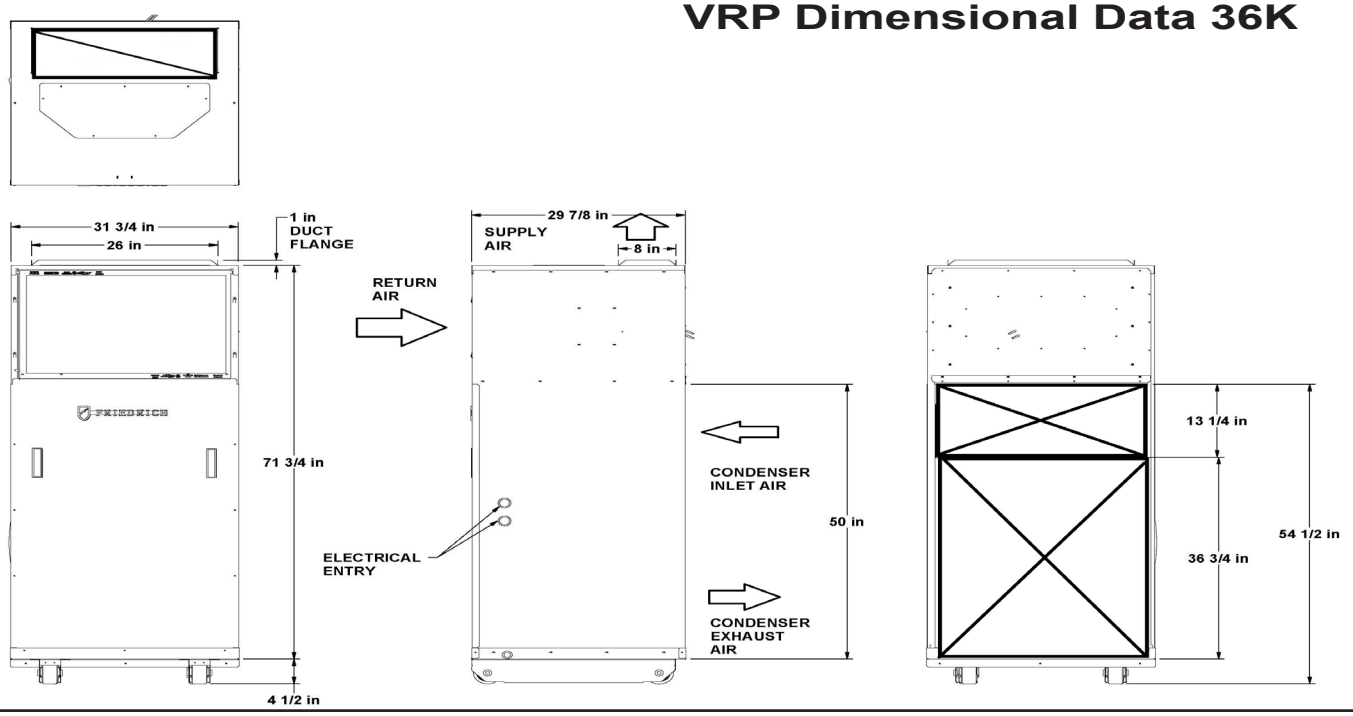


Unit Dimensional Data

VRP Dimensional Data 7K



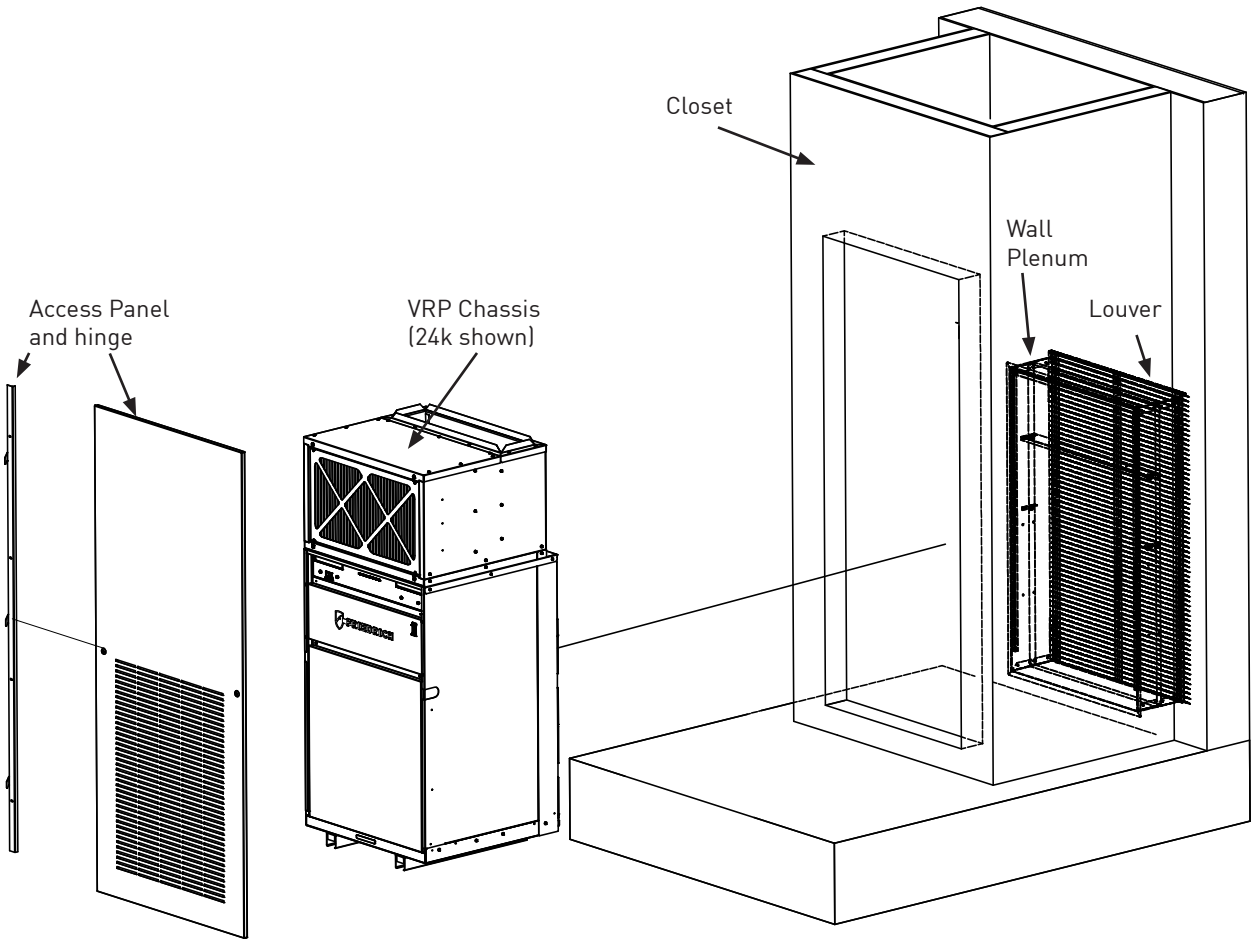
VRP Dimensional Data 36K



Model	VRP07K/R	VRP12K/R	VRP24K/R	VRP36K
Dimensions (W x D x H)	22 15/16" x 22 13/16" x 44 15/16"	26 1/8" x 25 1/8" x 52"	26 1/8" x 25 1/8" x 62"	31 3/4" x 29 7/8" x 77 1/4"
Shipping Dimensions (W x D x H)	25" x 25" x 48 1/4"	28 1/8" x 27 3/8" x 54 1/2"	28 1/8" x 27 3/8" x 64 1/2"	34" x 35" x 81"

Closet Exploded View

Typical Closet



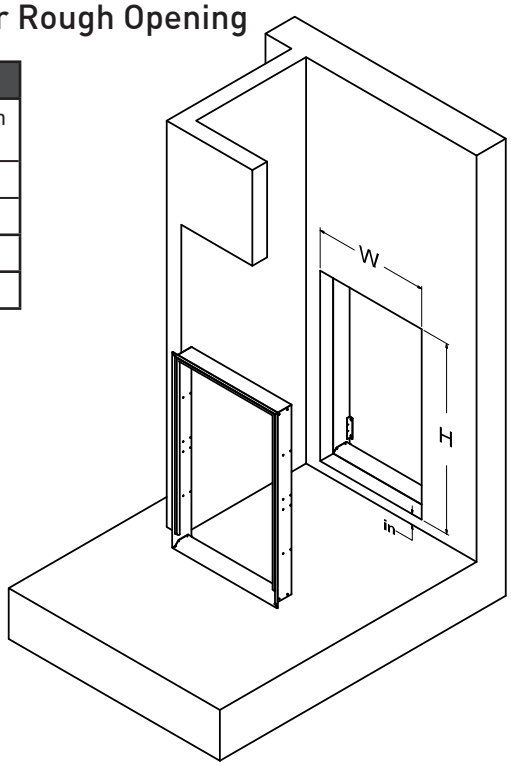
NOTE: For orientation and closet dimension information, please review the Installation & Operations Manuals.

Wall Opening Dimensions

Exterior Rough Opening

EXTERIOR WALL OPENING DIMENSIONS			
Unit	W	H	Height from floor/platform to rough opening
VRP07	24 5/8"	30 7/8”	3/4”
VRP12	28 1/8"	32 1/4”	3”
VRP24*	28 1/8”	42 1/4”	3”
VRP36	32 1/4”	52 1/2”	2 7/8”

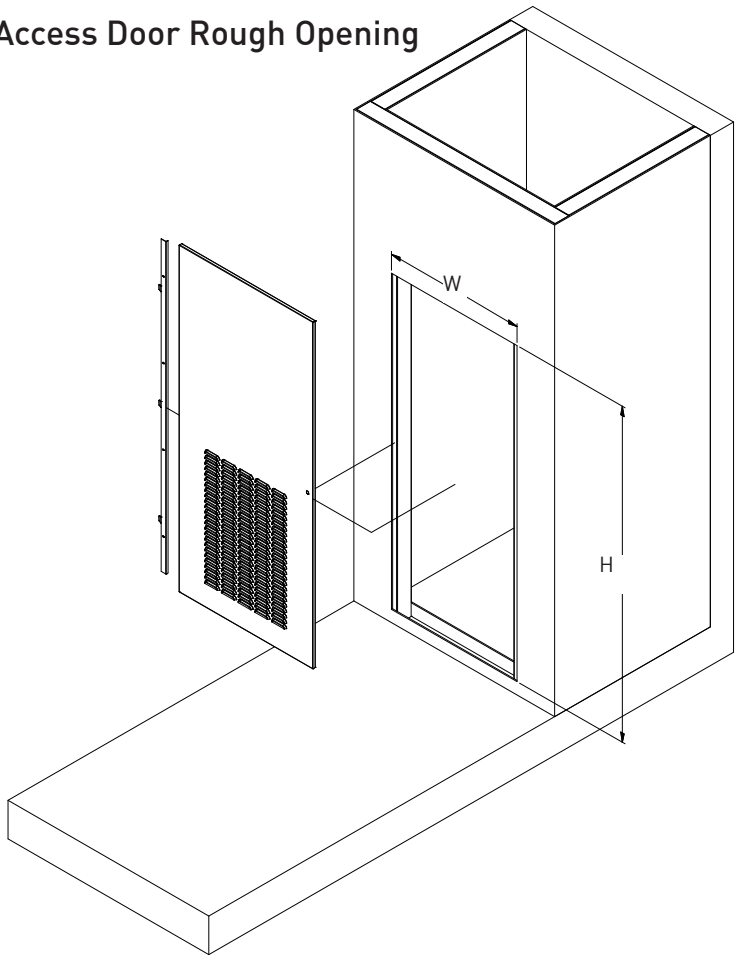
* Also applicable for 12K unit if VRPXALB / VRPXSCB Louver and VRPXWPB-8 / VRPXWPB-14 plenum are selected to be used with 12K unit. (Hint: Your unit model name should have letter ‘**B**’ as the 11th digit. Example: VRP12K34SS**B**S)



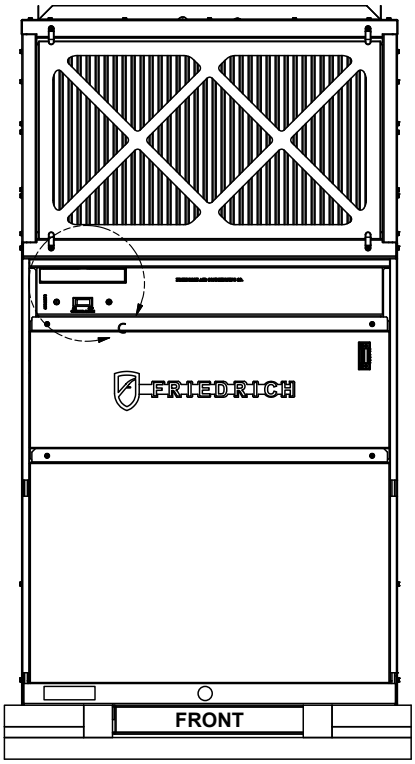
Access Door Rough Opening

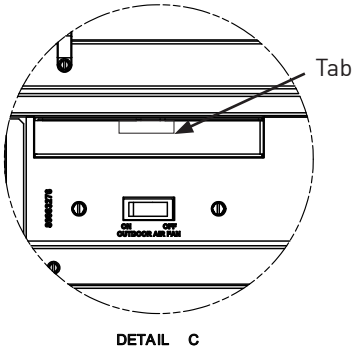
INTERIOR WALL OPENING DIMENSIONS		
Unit	W	H
VRP07	27"	55 3/4”
VRP12	30"	69 3/4”
VRP24	30"	69 3/4”
VRP36	36”	84”

NOTE: Due to its size, VRP36 should be installed in a closet using a louvered or solid 3 foot standard closet door.



FreshAire™ System Set-Up and Operation



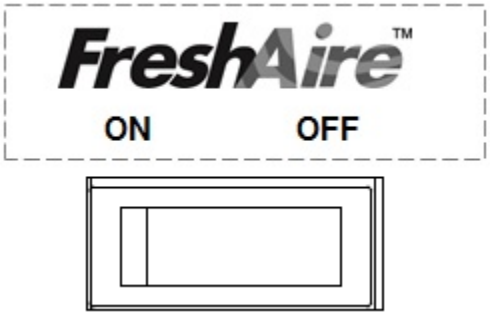


If equipped with the FreshAire™ System, the unit will come with a FreshAire Filter and Blank Off Plate.

Blank Off Plate must be removed before use.

To remove the Blank Off Plate, simply pull the attached tab shown in Detail A. Blank Off Plate can be discarded or retained for future use.

To engage the FreshAire™ System, flip the switch into the ON position.



VRP Wall Controller Options

Friedrich offers two types of control options for VRP units:

- Standard Wall Controller (Wired), VRPXWCT4
  No occupancy sensor.
- Energy Management Wall Controller with an Occupancy Sensor
  - Wired, VRPXEMRTA/B4
  - Wireless, VRPXEMWRTA/B4

NOTE: VRPXEM(W)RT2, VRPXEM(W)RT3 and VRPXWCT will not be compatible with the new R32 VRPs. VRPXEM(W)RTA/B4 or VRPXWCT4 is an required accessory for the R32 VRP.
NOTE: EMOCT/EMRAF will not be compatible with R32 VRPs. EMOCT4/EMRAF4 will be reuired for Networking

VRPXWCT4

- Wired Only
- Auto Changeover
- Quick and easy Installation

VRPXEMRTA4 / VRPXEMWRTA4 - White
VRPXEMRTB4 / VRPXEMWRTB4 - Black

- Real time motion and thermal occupancy sensor
- Wired or wireless installation
- 5 energy savings presets
- Online management

Please check the Instruction and Operational manual of the VRPX*4 Wall Controller for detailed installation. All units are equipped with a RJ-45 connection in front to be able to connect to a wired or wireless thermostat.

VRP units are only compatible with Friedrich VRPX*4 controller.

Installation Accessories and Descriptions

Louvers

Accessory	Description	Compatible Model(s)
VPAL2	Architectural louver - 30˚ Blade angle	VRP07
VPSC2	Architectural louver - 30˚ Blade angle - Custom color (Special order)	VRP07
VRPXALA	Architectural louver - 30˚ Blade angle	VRP12
VRPXSCA	Architectural louver - 30˚ Blade angle - Custom color (Special order)	VRP12
VRPXALB	Architectural louver - 30˚ Blade angle	VRP12 & VRP24
VRPXSCB	Architectural louver - 30˚ Blade angle - Custom color (Special order)	VRP12 & VRP24
VRPXALC	Architectural louver - 30˚ Blade angle	VRP36
VRPXSCC	Architectural louver - 30˚ Blade angle - Custom color (Special order)	VRP36

42˚ blade angle louvers available by special order.

Wall Plenums

Accessory	Description	Compatible Model(s)
VPAWP1-8	Vert-I-Pak/VRP floating chassis, telescoping wall plenum - 4”-8” wall depth	VRP07
VPAWP1-14	Vert-I-Pak/VRP floating chassis, telescoping wall plenum - 8”-14” wall depth	VRP07
VRPXWPA-8	VRP floating chassis, telescoping wall plenum - 4”-8” wall depth	VRP12
VRPXWPA-14	VRP floating chassis, telescoping wall plenum - 8”-14” wall depth	VRP12
VRPXWPB-8	VRP floating chassis, telescoping wall plenum - 4”-8” wall depth	VRP12 & VRP24
VRPXWPB-14	VRP floating chassis, telescoping wall plenum - 8”-14” wall depth	VRP12 & VRP24
VRPXWPC-8	VRP telescoping wall plenum - 4”-8” wall depth	VRP36
VRPXWPC-14	VRP telescoping wall plenum - 8”-14” wall depth	VRP36

Access Panels

Accessory	Description	Compatible Model(s)
VPRG4	Vert-I-Pak/VRP louvered access panel - left in-swing	VRP07
VPRG4R	Vert-I-Pak/VRP louvered access panel - right in-swing	VRP07
VRPXAP1	VRP louvered access panel (left and right in-swing)	VRP07, VRP12, VRP24
VRPXAPPR1	VRP hanging perimeter return access panel	VRP07, VRP12, VRP24

Pre-primed (paintable) panels available by special order

Miscellaneous

Accessory	Description	Compatible Model(s)
VPDP2	VRP07 auxiliary drain pan (Required)	VRP07
VRPXFK-2	Filter bracket kit for 2” deep filters (up to MERV 13) - includes gasket	VRP07, VRP12, VRP24, VRP36
VPFKU	Telescoping filter bracket kit for 2” - 4” deep filters (up to MERV 13) - includes gasket	VRP07, VRP12, VRP24, VRP36

Installation Accessories and Descriptions

Wall Controllers and Accessories

Accessory	Description	Compatible Model(s)
VRPXWCT4	Wired standard VRP wall controller	VRP07, VRP12, VRP24, VRP36
VRPXEMRTA/B4	Wired energy management wall controller	
VRPXEMWRTA/B4	Wireless (to the unit) energy management controller	
EMOCT4	Energy management online connection kit	
EMRAF4	Energy management online remote access fee	
EMROS4	Energy management wired remote occupancy sensor	
EMRTS4	Energy management remote temperature sensor	
EMRDS4	Energy management door switch	
EMCWP4	Energy management J-box wall-plate	
EMRWOS4	Energy management wireless remote occupancy sensor	

HVAC Engineering Specification

Performance: Units shall have the following minimum specifications.

VRP® Packaged Heat pumps

General Construction

- Factory assembled, piped, wired and fully charged with R32.
- Units shall be tested in accordance to AHRI Standard 210/240.
- Units shall be ETL listed and carry the ETL Label.
- All Units shall be factory run tested.
- Basic unit dimensions see unit dimension drawings.
- Unit designed to be inserted into a factory supplied wall plenum 2 3/8".
- Factory supplied plenum shall allow for a wall 4 ½" to 14" wall thickness. (Shipped separately)
- Wall plenum will be adjustable to allow for a tight installation.
- Unit shall be capable of left, right or straight in installations into a mechanical closet without field modifications.
- Unit shall be secured to the architectural louver by means of a two-part, weather-resistant wall plenum.
- Unit will be separated from the wall plenum with a gasket joint such that there is no metal to metal contact.
- Constructed of minimum 20 gauge steel.
- ¼ inch Closed Cell Flexible Elastomeric Foam Insulation in the evaporator section and Glass Fiber insulation in the condenser section for sound and thermal efficiency
- Unit shall be powder coated for durability.
- Plenum shall be black in color to minimize visibility from the exterior of the building.
- Plenum shipped with a protective weatherboard for use prior to final installation of unit and louver.
- Material of construction in the condenser section to minimize rust marks on the outside of the building.

Architectural Louvers

- Shipped separately.
- Fabricated from extruded anodized aluminum.
- Horizontal blade louvers in 30° blade angle (42° optional).

Refrigeration System

- Hermetically sealed.
- DC Inverter variable speed compressor.
- Compressor shall increase and decrease in 1Hz steps for maximum efficiency.
- Compressor shall operate between 20Hz and 75Hz for variable capacity operation.
- External "rubber in shear" vibration isolators.
- Coils copper tubes and aluminum fins.
- Electrically controlled expansion device.
- Condenser fan will use a Slinger Ring design to improve efficiency and aid in removal of condensate.
- Primary removal of condensate will consist of ¾" FPT on three sides for ease of installation.
- Secondary overflow to the outside of the building will be provided in the event of a condense overflow from a clogged primary drain.
- Suction line insulation.

Air Handling Section

- ECM fan motor.
- Backward Inclined style fan wheel.
- Vertical airflow.
- Unit will be provided with a rectangular started collar as shown on the general arrangement drawings.

For adaption to rigid or flexible ducting.

Fans

- Polymeric fan, fan shroud.

FreshAire™ (Optional)

- Unit will have the capability to provide 35-130 CFM of conditioned fresh air (based on model) to the space continuously.
- Auxiliary fans will ensure positive ventilation.
- FreshAire can be enabled/disabled electrically using an on/off switch.
- The outdoor air will be filtered through MERV8 filters.

Controls

- Unit controlled with the Manufacturer supplied wall-mounted control.
- In the event of wall control failure, unit will operate autonomously to factory default settings.
- Unit will modulate compressor capacity and fan speed to optimally match the space load.
- Wall control will measure space humidity and temperature, and then configure the unit to maintain space temperature and humidity.
- Unit shall be permanently wired with a quick disconnect supplied by the installing contractor.
- Emergency heat override switch is provided to enable the resistance strip heaters in case of heat pump failure.
- Unit will be provided with diagnostic tools for service.

Corrosion Protection

- Corrosion resistant coatings.
- Outside coil has Diamonblue Advanced Corrosion Protection® consisting of hydrophilic-coated fins.

Access Panel

Warranty

- 1 year parts.
- 5 years on the sealed refrigeration system; including compressor, indoor and outdoor coils, and tubing.

Notes

PRODUCT PROFILE

VRP®

Variable Refrigerant Packaged Heat Pump

Innovative | Intelligent | Inverter

FRIEDRICH

Friedrich Air Conditioning Co. | 10001 Reunion Place, Suite 500 | San Antonio, TX 78216 | 877.599.5665 | www.friedrich.com