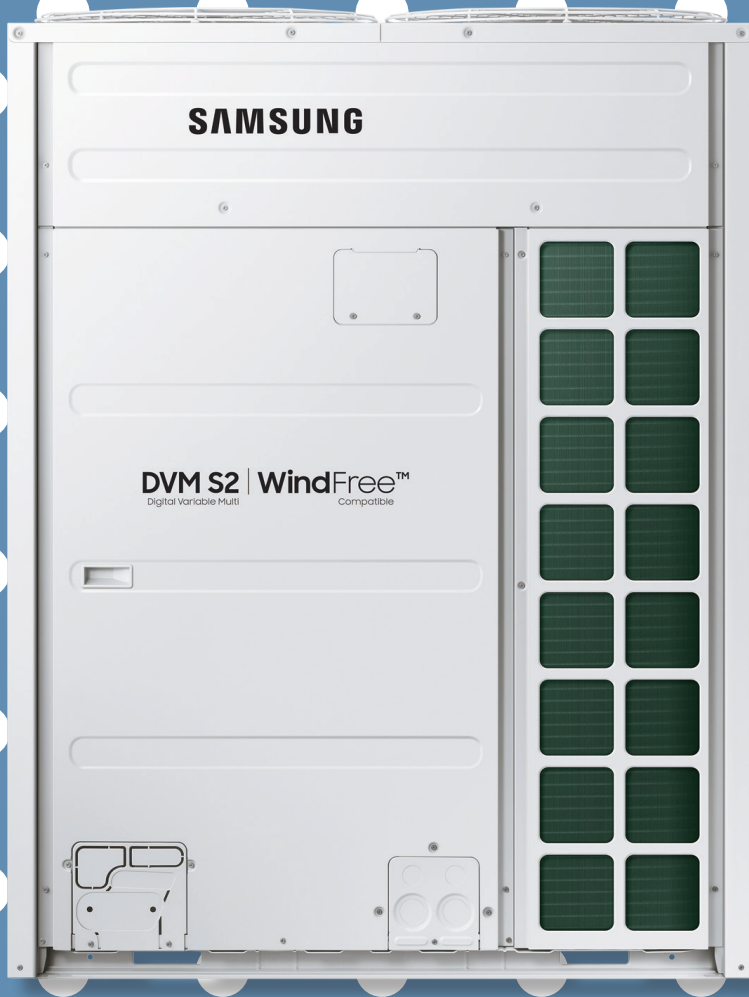


SAMSUNG



DVM S2 VRF Solutions

DVM S2 | WindFree™
Digital Variable Multi Compatible



What is VRF?

Glad you asked.

Variable Refrigerant Flow (VRF) systems consist of outdoor units connected to multiple indoor units via refrigerant piping to provide cooling and heating to individual zones. The outdoor units can modulate capacity based on the requirements of the individual zones, thus saving energy by not always running at 100% capacity and improving occupant comfort by maintaining temperature as needed in each individual zone.

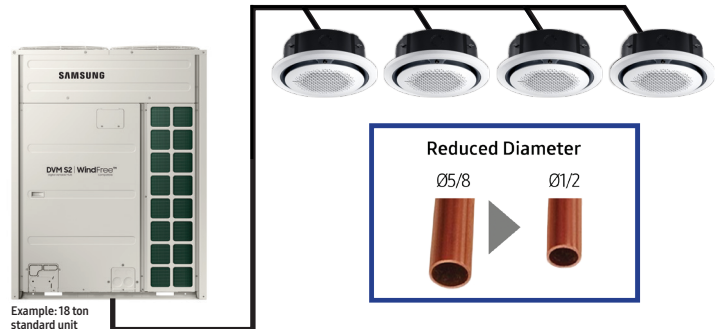
With design flexibility, premium comfort, and superior performance, Samsung DVM S2 VRF systems offer just the right solution for any application.

Design Flexibility.

Refrigerant Volume Reduction

High performance sub-cooling control allows reduction of main liquid pipe diameter from the outdoor unit to the first HR MCU or Y-joint to reduce overall system charge by an average of over 30%. Accordingly, the installation site can reduce not only the cost of refrigerant, but also the cost of piping and insulation. Conditions apply.

Outdoor Capacity (tons)	Liquid Pipe				Difference per Foot
	Standard Diameter (in.)	Additional Refrigerant	Reduced Diameter (in.)	Additional Refrigerant	
6	3/8	0.645 oz./foot	N/A	N/A	
8					
10					
12	1/2	1.344 oz./foot	3/8	0.645 oz./foot	52%
14	5/8	1.935 oz./foot	1/2	1.344 oz./foot	31%
16					
18					
20					



Wide Variety of Indoor Unit Options

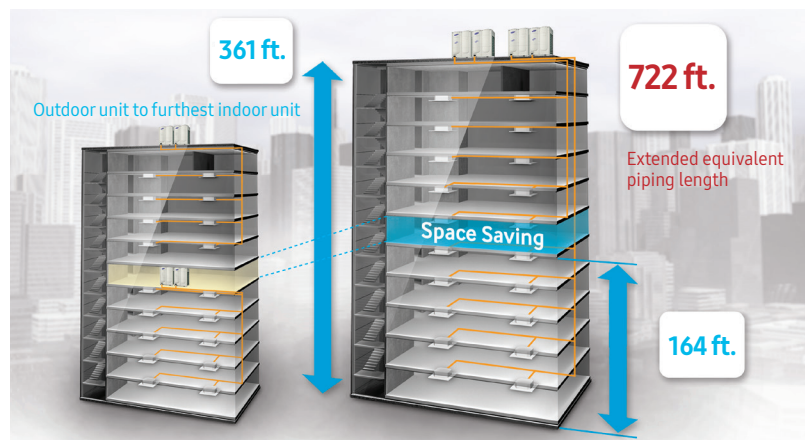
Samsung's indoor units employ innovative technologies, like WindFree™* Cooling technology, to optimize comfort in any environment. With over 10 types of indoor units, ranging from 5,000 to 96,000 Btu/h, there are solutions for almost any application.

Extended Piping Length

DVM S2 systems offer installation options with extended equivalent piping length up to 722 ft. between the outdoor unit and furthest indoor unit, vertical separation up to 361 ft., and 164 ft.¹ between the highest and lowest indoor units. Conditions apply.

Removable EEPROM

DVM S2 systems are equipped with a removable EEPROM at the main PCB to store data. This allows for replacement of the control PCB without losing startup information, system settings, and other field programmed data. This allows for ease of startup, commissioning, and product registration.



Control Integration Options

A number of control options are available to fit a variety of project needs, from simple local controllers to full central control options. This grants the capability to integrate into any Building Management System (BMS) through BACnet, LonWorks, or ModBus.

*The WindFree™ unit delivers an air current that is under 0.15 m/s while in WindFree™ mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).

¹Applies to heat pump models. Heat recovery models provide 131 ft. between the highest and lowest indoor units.

Comfort.

Ultimate Zoning Solution

Samsung DVM S2 systems allow for precise temperature control in multiple zones, providing comfort to a wide range of occupants. Heat Recovery systems add the capability to heat and cool separate zones simultaneously making it a superior choice.

Quiet Operation

Samsung systems are meticulously designed with the user in mind, and minimizing sound levels is a key design aspect that Samsung engineers focus on.

WindFree™* Cooling Technology

WindFree™* Cooling technology maintains the desired temperature and eliminates cold drafts by delivering air through micro holes on the unit's louver(s) and fascia panel when the louver(s) are closed, producing a dispersed and gentle flow of air defined as "still air."

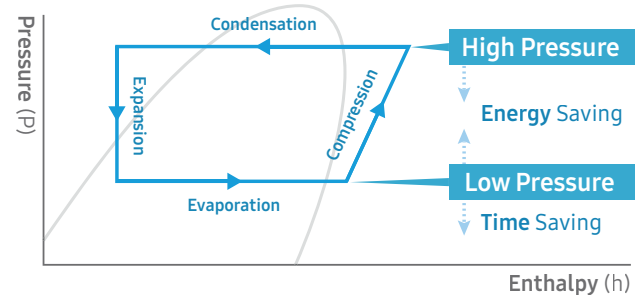
Performance.

Active Artificial Intelligence (AI) Technology

DVM S2 systems feature Artificial Intelligence (AI) with Deep Neural Network algorithms³ to optimize system operation with high and low pressure control, defrost cycle activation and operation, and low refrigerant monitoring. The new AI technology allows the equipment to operate at exact target pressures and temperatures based on the application to save energy.

AI High and Low Pressure Control

Learns the recent cooling operation pattern¹ so that the memory cycle status can help reach a targeted low pressure to create the cooling environment desired by the user. To control high pressure, the system automatically recognizes the installed system pipe length and vertical separation and adjusts the target high pressure and reduces unnecessary high pressure, thereby reducing the energy used by the compressor by up to 15%¹.



AI Low Refrigerant Monitoring

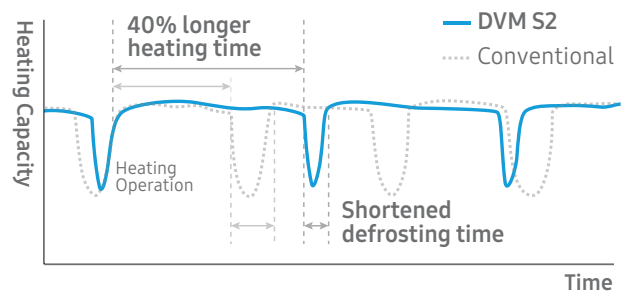
Uses data from various sensors embedded in indoor and outdoor units to determine the amount of refrigerant required to maintain the system and ensure the best performance². The system also monitors refrigerant volume in real time during cooling operation and displays a warning code for checkup on the outdoor unit PCB and on central controls (conditions apply).

AI Defrost

Learns and trends fan motor current to detect ice formation on the condenser coil during heating operation. This also detects temperature in order to increase heating operation duration between defrost cycles to reduce overall defrost cycle duration.

Improved Compressor Design

Advanced flash injection technology provides increased heating performance in low ambient conditions and expanded frequency range for improved efficiency and performance. In addition, 13% larger scroll displacement provides the same capacity at lower RPMs compared to previous models.



Low Ambient Heating

With the ability to produce high heating capacity at -22°F (-30°C), Samsung's DVM S2 systems are a smart solution for commercial buildings in areas that experience low outdoor ambient temperature.

Low Ambient Cooling

Compatible with both heat pump and heat recovery models, Low Ambient Cooling Kits provide 100% cooling capacity down to -13°F (-25°C). Advanced integrated logic allows for louver positioning based on outdoor unit high pressure, outdoor ambient temperature, compressor compression ratio, and operating mode.

¹Conditions apply. Refer to technical documents for more information.

²Requires an initial dedicated refrigerant check function during commissioning.

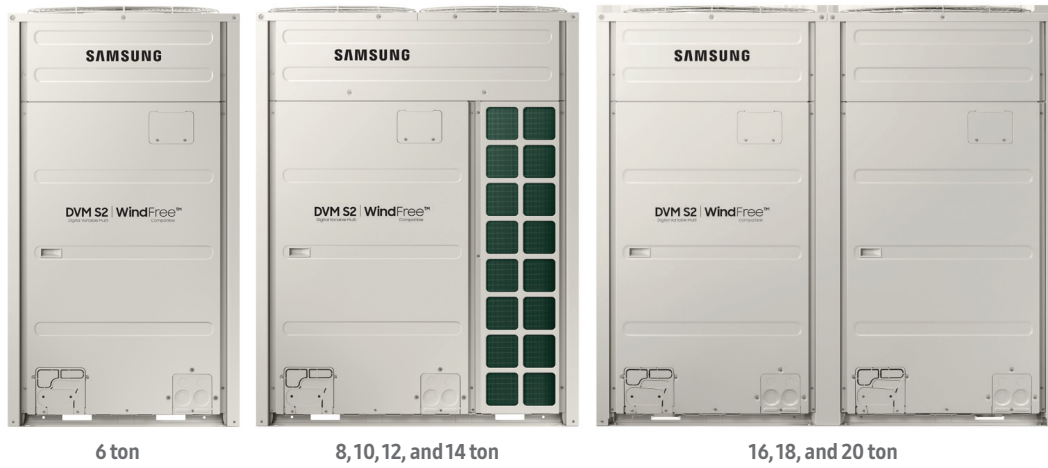
³Machine learning technology built on artificial neural networks (ANN) to enable computers to learn on their own using multiple data points.

The WindFree™ unit delivers an air current that is under 0.15 m/s while in WindFree™* mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).

Outdoor Units

DVM S2

DVM S2 is the latest generation of Samsung VRF systems boasting industry leading efficiencies and heating and cooling performance.



Features

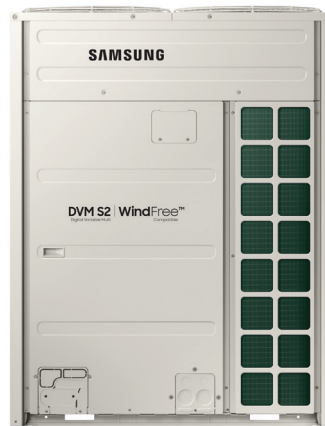
- Available in heat pump and heat recovery
- 208-230V / 60Hz / 3 Ø or 460V / 60Hz / 3 Ø
- 6, 8, 10, 12, 14, 16, 18 and 20 ton modules
- Connect up to 3 outdoor units for system capacities up to 40 tons
- Connect up to 64 indoor units
- Wide operating range from 122°F (50°C) ambient to as low as -22°F (-30°C)
- Design diversity ratio of 50 - 184%**
- Simplified chassis design and integral inverter check function

**The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50-130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio, and connected indoor unit models. DVM Pro 2 design software supports designing over 130% based on system design. Refer to supporting engineering documents for full details.



DVM S2 Max Heat®

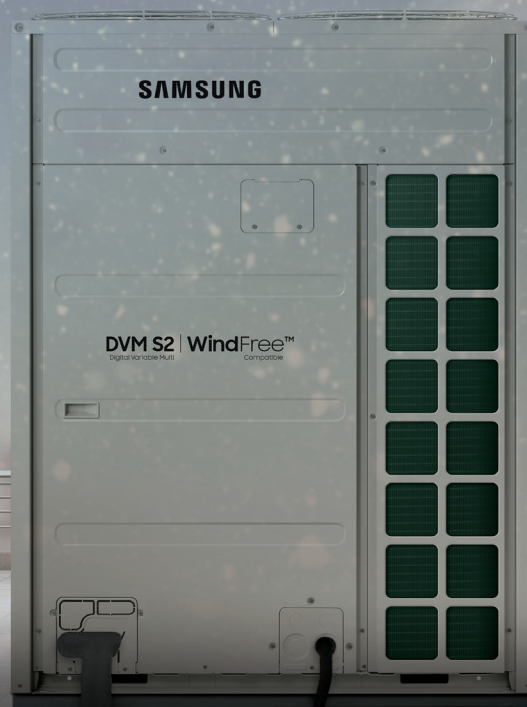
DVM S2 Max Heat® can provide 100% heating capacity at -13°F (-25°C) with high heating performance at -22°F (-30°C), providing comfort and reliability for applications in extreme climate conditions.



6, 8 and 10 ton

Features

- Available in heat pump and heat recovery
- 208-230V / 60Hz / 3 Ø or 460V / 60Hz / 3 Ø
- 6, 8 and 10 ton modules
- Connect up to 3 outdoor units for system capacities up to 30 tons
- Connect up to 62 indoor units
- Wide operating range from 122°F (50°C) ambient to as low as -22°F (-30°C)
- 100% heating capacity at -13°F (-25°C)
- Simplified chassis design and integral inverter check function



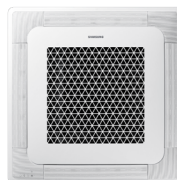
Indoor Units



360 Cassette
9K-48K



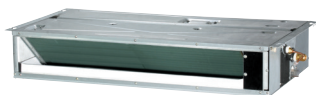
WindFree™* 4-Way Cassette
6K-48K



WindFree™*
Mini 4-Way Cassette
5K-20K



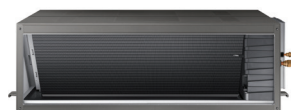
WindFree™* 1-Way Cassette
5K-24K



Slim Duct
7K-30K



HSP Duct
(High Static Pressure)
54K-96K



OAP Duct
(Outside Air Processing)
72K-96K



Duct S
(Medium/High Static Pressure)
6K-48K



WindFree™* 2.0
5K-28K



Max
32K



Ceiling/Wall Convertible
18K-24K



Big Ceiling
36K-48K



Floor Standing
(concealed type)
6K-24K



Floor Standing
(exposed type)
6K-24K



Multi-Position Air Handler
12K-72K

The WindFree™ unit delivers an air current that is under 0.15 m/s while in WindFree™* mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers). Capacities shown in Btu/h

Controls

Wi-Fi Adapter

Features:

- Control up to 16 indoor units with a single Wi-Fi Adapter, or connect up to 4 for control of up to 64 indoor units
- Monitor and control: mode, set temperature, fan speed, louver position, filter reminder (push notification), and error status
- F1/F2 (system) or R1/R2 (central control layer) connection to control units on a single system or on multiple systems
- 7 day scheduling for a single unit or multiple indoor units
- Basic daily, weekly, or monthly energy consumption monitoring (for supported models only)
- Connects with the Samsung SmartThings App†
- Multi-tenant control function allows tenants to control and monitor indoor units that are in their space only when a single system serves multiple suites. (Up to 4 suites, each suite requires a separate adapter.)



MIM-H05UN

Individual Control

There are many different ways to control a Samsung system. For applications where a wireless controller is not acceptable (i.e. public facilities), two wired controllers, Touchscreen and Advanced, are available to purchase as an option. Based on desired level of control and user interface preference, Samsung offers a variety of controls options suitable for any application. Additionally, a Thermostat Adapter can be applied to control an indoor unit with a 24VAC thermostat.



Wireless Remote Controller¹
AR-EH04U



Touchscreen Wired Controller
MWR-SH11UN



Advanced Wired Controller
MWR-WG00UN



24VAC Thermostat Adapter
MIM-A60UN



Intesis™ AC Interfaces

Central Controls

Samsung's Data Management Server (DMS) lets you monitor and control your on-site air conditioning needs remotely. It's the easiest and most convenient way to manage a large number of air conditioning units at once.

DMS 2.5:

- 24-hour standalone web-server
- No special software required
- All management functions integrated
- Advanced heat pump auto changeover setting option
- Customizable programmable logic for intelligent control
- DMS 2.5 + BACnet and LonWorks available
- BACnet and LonWorks gateways will wire and setup the same as DMS 2.5
- DMS 2.5 + BACnet supports 256 indoor devices on up to 80 complete systems
- DMS 2.5 + LonWorks supports 128 indoor devices on up to 80 complete systems



DMS 2.5
MIM-D01AUN

Additional control options available. Please refer to www.samsunghvac.com for all control options, features, and specification.

†Available for download on the Google™ Play store and App Store®. A network connection is required. Samsung application account is necessary.

¹360 Cassette models require the AR-KH03U wireless controller.

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