GMV HR-II

GREE MULTI VARIABLE

DC Inverter Heat Recovery VRF Air Conditioning System

INVERTER

R410A

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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COMPANY PROFILE

No.1 Air Conditioner Manufacturer in The World

GREE Electric Appliances, Inc. of Zhuhai, founded in 1991, is the world's largest air conditioner enterprise integrating R&D, manufacturing, marketing and services.

Through 20 years of development, we have vertically integrated all production value chain, producing key components such as compressor, motor, tooling mold, heat exchanger and capacitor.

Our products are classified into 20 categories, with 400 series, and 7,000 models. Thanks to more than 100 million users' choices, our products have been sold to about 100 countries and regions. We have topped No.1 in both domestic and overseas market since 1995 and 2005.

We have 6 production bases in Zhuhai, Chongqing, and Hefei (China), as well as Brazil, Pakistan and Vietnam, with annual production capacity of 27 million sets of residential air conditioners and 2 million sets of commercial air conditioners.

Gree enjoys a sound reputation for its products quality and performance. In China, we are the only air-conditioner brand ranked as a "World Brand" by the General Administration of Quality Supervision, "Top 100 Chinese Listed Companies", inspection and quarantine. In addition, it has been ranked among the "Top 100 Chinese Listed Companies" by "Fortune" for 8 consecutive years.

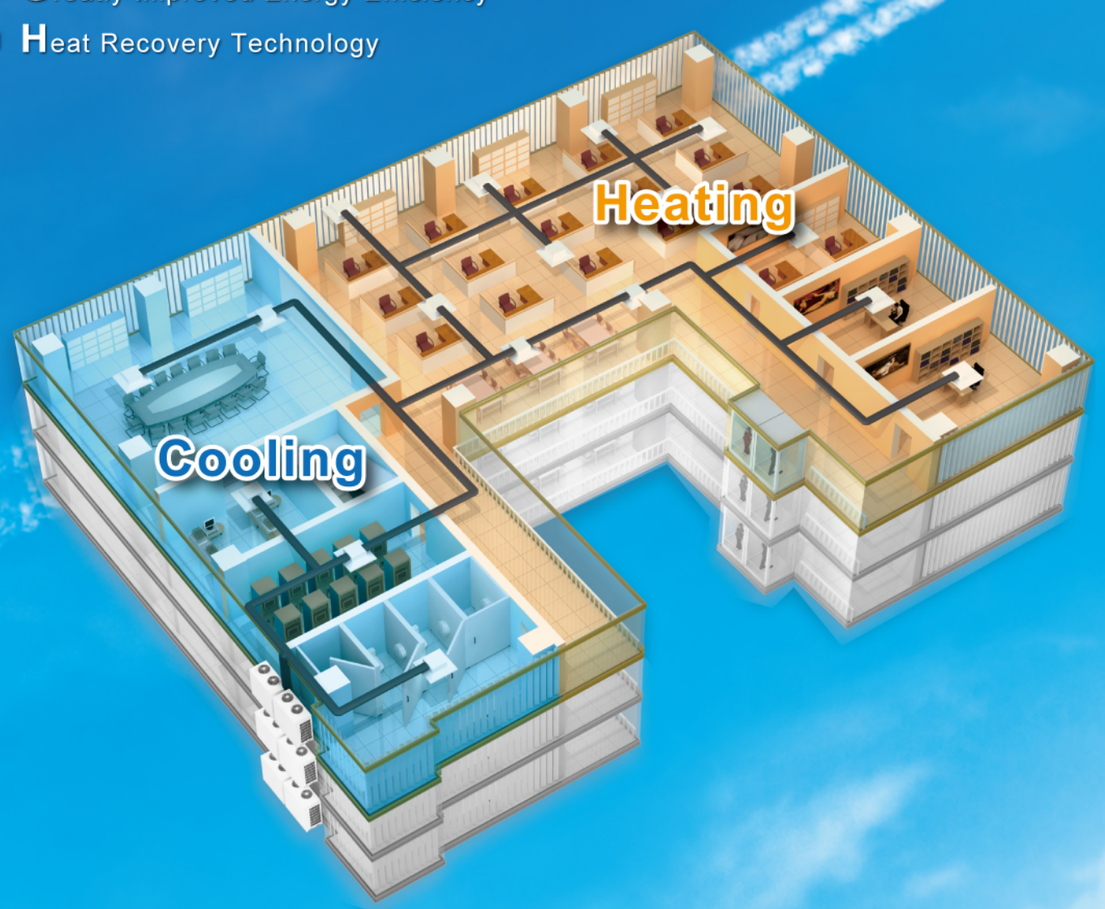
From "Made in China" to "Created in China", Gree, Making Better Air Conditioner!

CONTENTS

GMV HR EVOLUTION

GREE Multi Variable VRF Heat Recovery Air Conditioning System with R410A for Commercial & Residential Buildings

- **A**dvanced Control Functions
- **B**etter Reliability
- **C**ompact Outdoor Unit Design
- **D**C Inverter Scroll Compressor
- **E**CO-friendly R410A Refrigerant
- **F**lexible Piping Design
- **G**reatly Improved Energy Efficiency
- **H**eat Recovery Technology



GMV HR Ⅱ 2008~2009

2nd Generation of GREE Heat Recovery VRF System with DC Inverter Technology, highly improved heat recovery efficiency and system reliability, with a largest combination of 64HP.

GMV HR 2006~2007

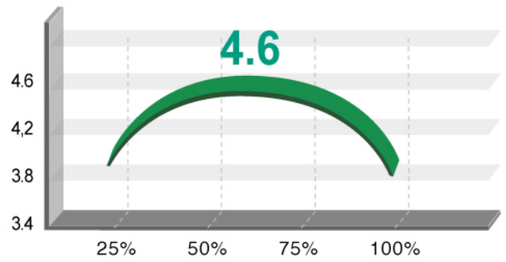
1st Generation of GREE Heat Recovery VRF System with Digital Scroll Compressor and R410A, with capacity of 10HP.

HIGHER EFFICIENCY

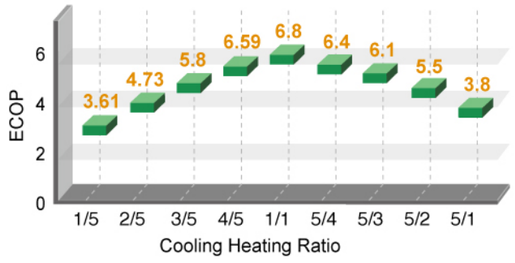
Significantly greater energy efficiency

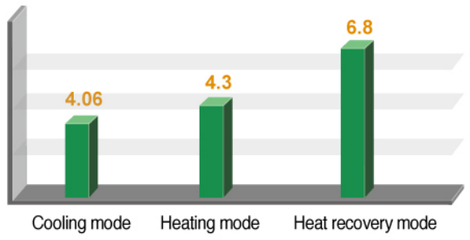
Significantly greater efficiency is realized by the use of DC Inverter Hermetic Scroll compressors with high pressure chamber design, and improved DC inverter driving technology, and large heat exchanger.

► **Cooling Energy efficiency rate of partial load reaches up to 4.6.**



► **ECOP under heat-recovery mode reaches up to 6.8, which is 78% higher than a traditional VRF system.**

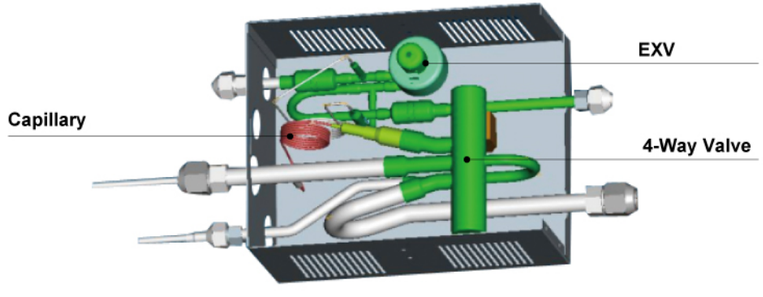




Note:

- *EER is the energy efficiency rate = cooling capacity (kW) ÷ cooling power input (kW)*
  COP is the coefficient of performance = Heating capacity (kW) ÷ heating power input (kW)
- *ECOP is the Economic Coefficient of Performance*
  (when the system is operate as heat-recovery mode)=[cooling capacity (kW) + Heating capacity (kW) ÷ power input (kW)]
- *EER/COP/ECOP values are based on GREE laboratory testing method.*
- *The data refers to a 10HP system.*

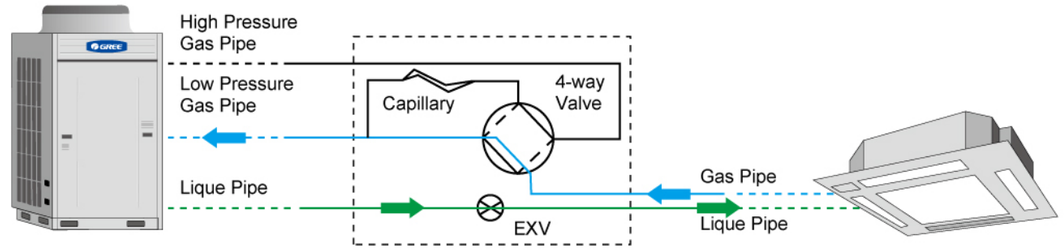
► **MEU (Mode Exchange Unit) connects before each indoor unit, performs the function of real-time operation mode exchanging (Cooling to Heating, Heating to Cooling)**



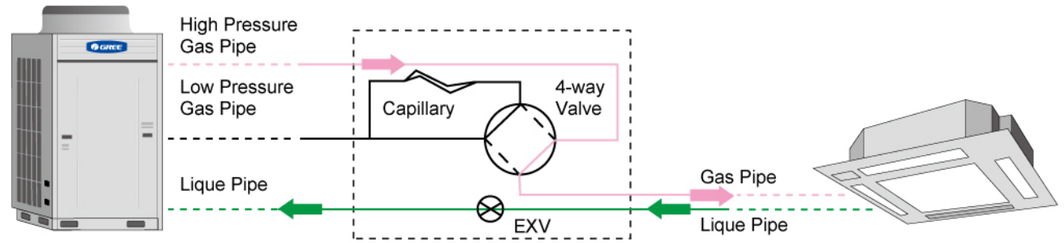
Internal structure of MEU

Operating principle of MELL in cooling & heating mode

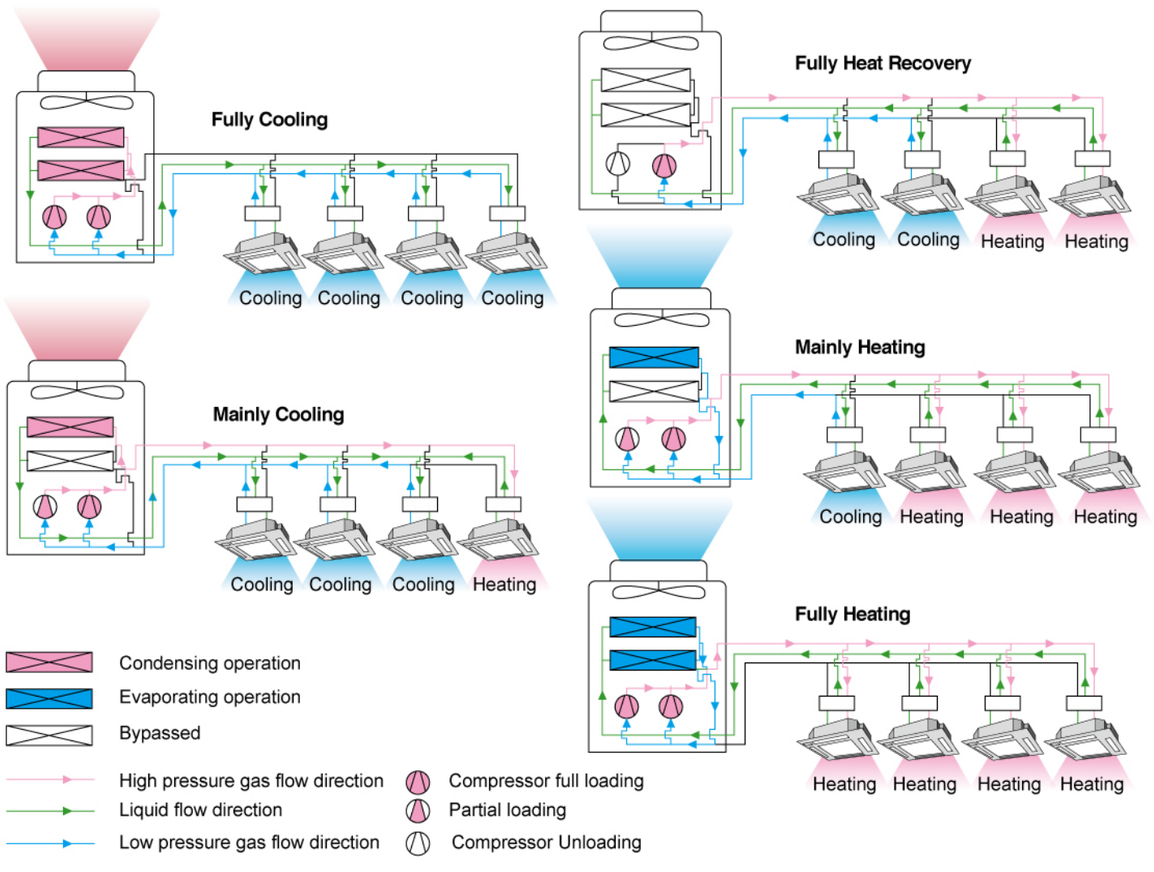
Refrigerant Flow Direction in Cooling Mode



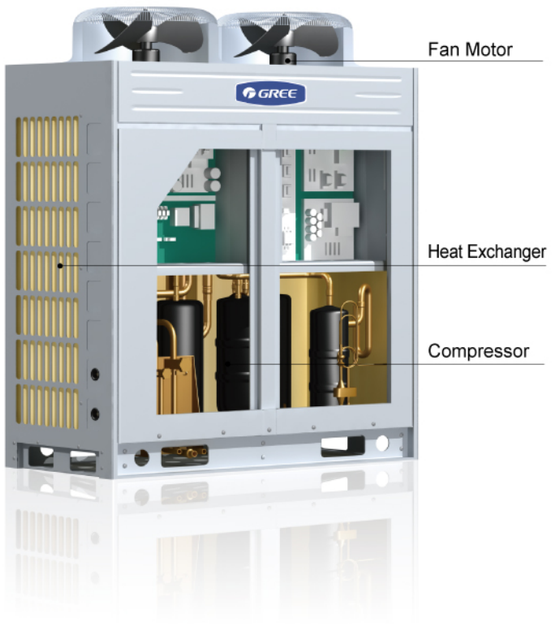
Refrigerant Flow Direction in Heating Mode



Five efficient operation mode



HIGHER EFFICIENCY



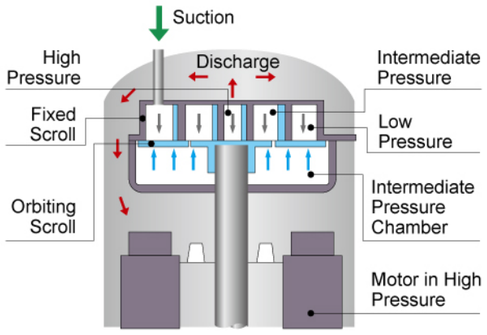
High efficiency compressor

► High pressure chamber design

What's High Pressure Chamber?

Compressed gas discharged from the fix scroll full fills the whole hermetic chamber of compressor, then goes out from the exhaust, that the whole compressor shell is high temperature and the pressure inside the compressor chamber is high.

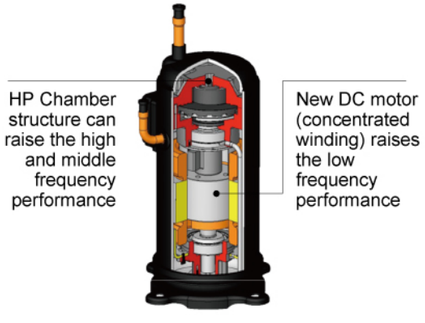
With High Pressure Chamber Design, Compressor performance raised by 3%-5%.

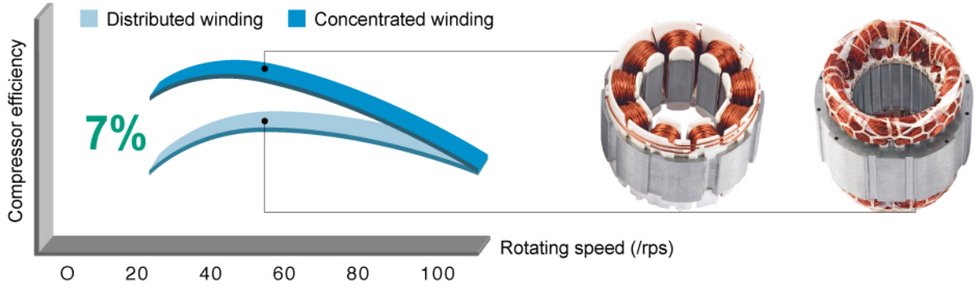


► Comparing with normal compressor, the DC Inverter Scroll Compressor can save up to 40% of energy consumption in a year.

► With stepless power regulating technology, the DC inverter compressor achieves stepless output regulation between 20Hz-120Hz.

► Improved DC inverter motor
Low frequency perfomance is highly raised thanks to the concentrated winding.

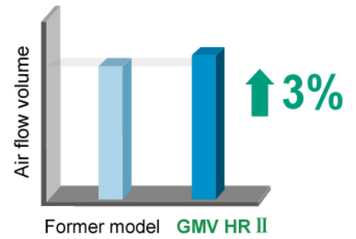




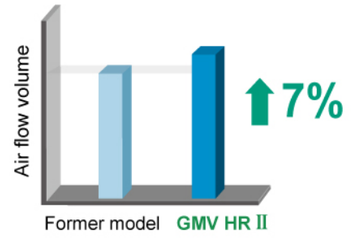
DC Fan motor

Compared with the former model, air flow volume increases by 3% with the same single fan and 7% with the new dual fan, but the power consumption decreases by 5% with the DC inverter motor.

► 8HP / 10HP Models



► 12HP / 14HP Models



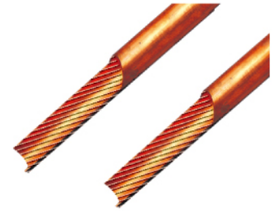
Heat exchanger

► Compared with the common fin, the heat exchange efficiency of the louver fin is increased by 5%.

Former Model:
Normal flat fin

GMV HR Ⅱ :
Louver fin with golden coated

► Special thickened inside-thread copper pipe enhances heat exchanging performance.

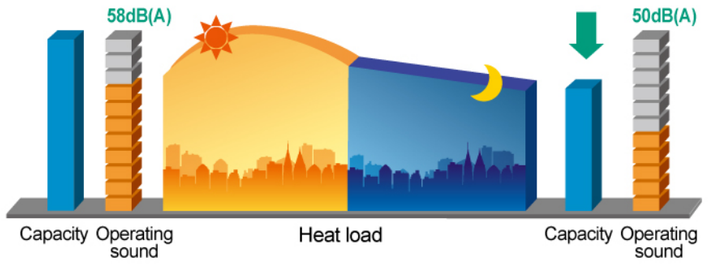


BETTER COMFORT

Quiet operation

► **Quiet operation during night time**

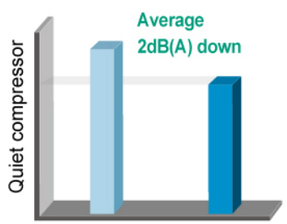
Intelligently adjustment of outdoor fan control can minimize the operation noise during night time.
Up to **8dB(A)** can be reduced and operating noise at night low to **50dB(A)** .

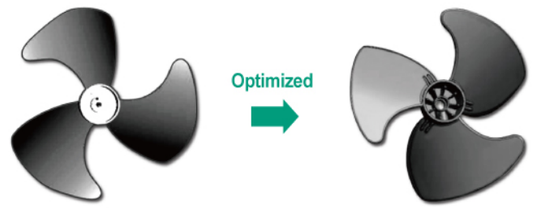


► **Low noise design**

OUTDOOR UNIT

- HP chamber compressor has lower exhaust pressure fluctuation so that noise is lower.
- The optimized design of condensing fan blade reduces the air flow turbulence among blades, so that the noise is lower.





Original design

New design with higher performance & lower noise: **4dB(A)** less !

INDOOR UNIT

Low noise indoor unit

37dB(A)

Office

Duct Type with High ESP

37dB(A)

Meeting Room

Four-way Cassette Type

28dB(A)

Bedroom

Wall Mounted Type

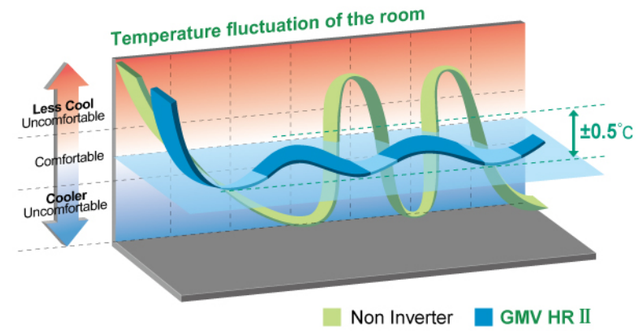
Comfortable

► **Precise temperature control**

The EXV (Electronic Expansion Valve) of each Indoor unit respond to the loading changes of indoor environment, and continually adjusts the flow rate of the refrigerant.

Meanwhile, the outdoor unit with DC inverter compressor provides the capacity with certain amount of refrigerant exactly according to the total demands of indoor units.

With this Variable Refrigerant Flow (VRF) technology, we can quickly get a nearly constant room temperature without the typical temperature fluctuation that occurs with a conventional ON/OFF control system.



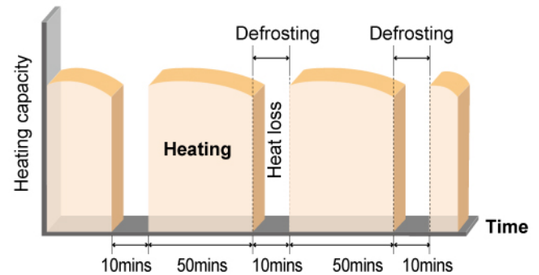
► **Operation mode quick switchover**

Maximum time for Indoor unit operation mode switchover is **180** seconds.

► **Intelligent defrost technology**

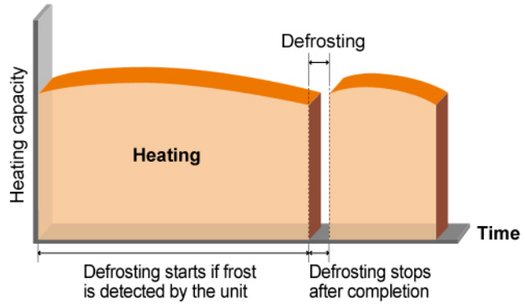
Traditional defrost program

- Simply execute defrosting according in a certain time.
- The defrost function may still starts even there is no such (defrosting) demand.



Intelligent defrost program

- Humanized technology which considers the maximization of energy saving.
- Defrosting program is designed under the consideration of heating efficiency and operation reliability.
- Precise defrosting timing, which is intelligent in deed.
- It's an optimized defrosting program, which will be performed only when system pressure is too low, that can obviously lengthen the time gap between two defrost operations, reduce the times of defrosting.
- Heating capacity loss has been decreased by **75%** with highly comfortable heating operation.



► **Individual control**

The set temperature of each room are may vary by the individual thermostat control of each indoor unit.
That cooling and heating operation can be performed at the same time.

HIGHER RELIABILITY

Modular operating

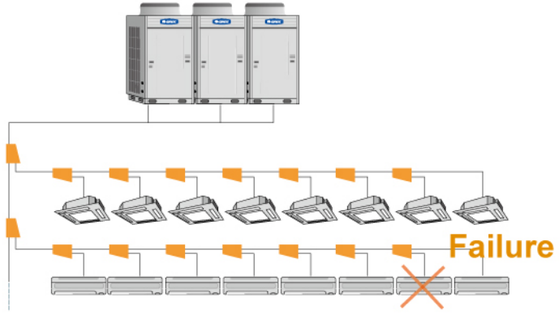
► The operating priority sequence of the outdoor unit modules will be changed without restart when the system accumulatively operates for **8 hours**, which can maximize the service life of the system.

► **Emergency operation**

Each module is an independent sub-system, and the whole system won't fail down even if partial malfunction. Upon malfunction of any one of the modules, emergency operation can be performed after simply manual set up on the outdoor PCB switches.

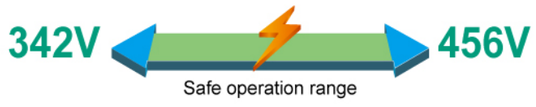
Continuous operation of indoor unit

Each indoor unit is controlled individually on the system network. This allows all indoor units will continue to work even if an error might occur at any indoor unit's on the VRF system.



Wide voltage range operation

The unit can safely operate within **342V~456V**.



Power supply security

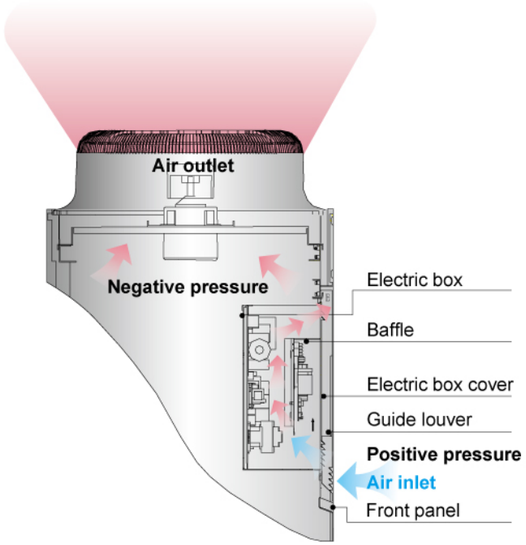
With power supply security, the outdoor unit will start auto-protection if the power voltage or the current is out of the normal range. Protection will be relived automatically if the power condition resumes normal.

Refrigerants reclaiming function

When the indoor unit with malfunction needed to be replaced, press the refrigerants reclaiming button on outdoor unit PCB can claim all refrigerant of the system, which is easy and safe.

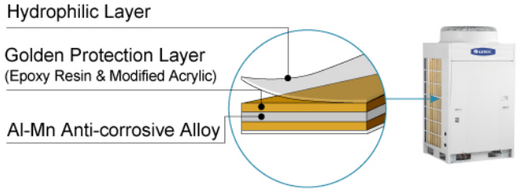
PCB protection design

With unique high efficiency radiating air-duct design, the outdoor electric box is designed as water-proof, dust-proof, damp-proof and well-ventilated, which can ensure the required condition for the electric elements even if in tropical conditions, highly improves the system reliability and service life.



Anti-corrosion

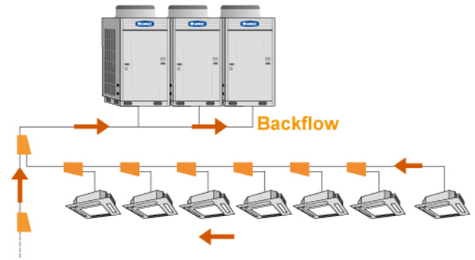
The primary material of Golden Fin is Al-Mn (Aluminum-Manganese) anti-rust alloy, which is coated with the Golden Protection Layer (Components: Epoxy Resin & Modified Acrylic, Silicon free), the anti-corrosive performance in salt-spray testing is **200%~300%** higher than normal Blue Fin*.



** Salt-spary testing result is from GREE materials chemistry testing laboratory.*

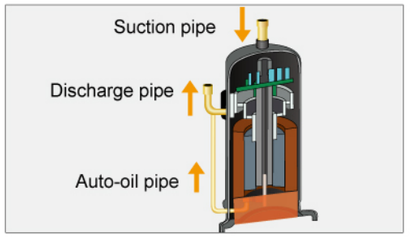
New generation of oil return control

Through pressure control, the oil return of the system is efficiently optimized, thus greatly improving operation life of the compressor.



High efficiency oil-balanced technology

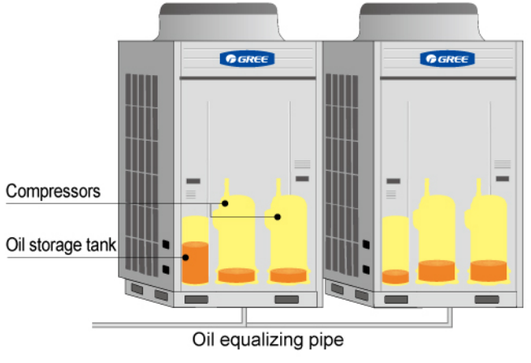
► High pressure chamber compressor with oil-balanced pipe can automatically drain out the excess oil which can prevent oil-unbalance between the compressors.



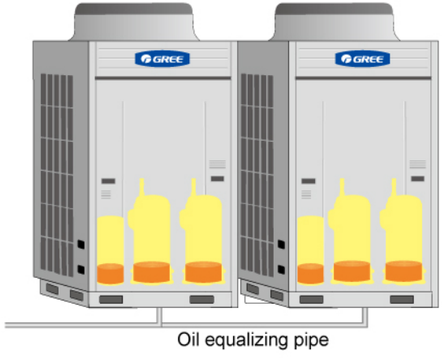
► New patented oil separator allows the oil separating efficiency up to **99%**.

► Oil equalizing pipe connection design at the outside of the modules allows high reliability.

Before Oil Balanced



After Oil Balanced



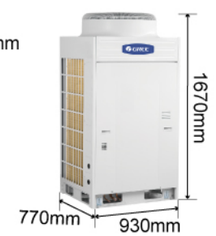
BETTER VERSATILITY

Compact design

Compact size has been achieved by significantly reducing the width of the outdoor units compared to previous models.

8HP/10HP

Dimension:930 x 770x1670mm



Floor area: **0.72m²**

12HP/14HP/16HP

Dimension:1340 x 770x1670mm

Floor area:**1.03m²**

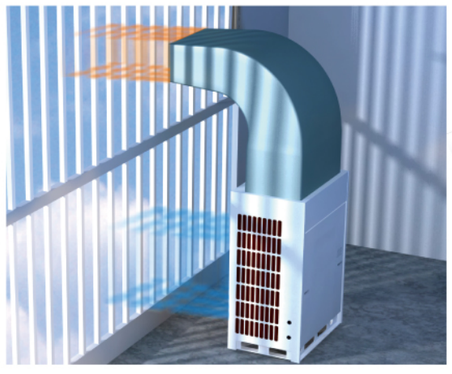
64HP

Floor area: **4.12m²**

Higher static pressure of outdoor unit

The maximum external static pressure (ESP) of the outdoor fan can reach up to 75Pa* .
The outdoor unit can be installed in the equipments room of high buildings.

Note: Default ESP of the product is 40Pa. If higher ESP is required, please contact us.

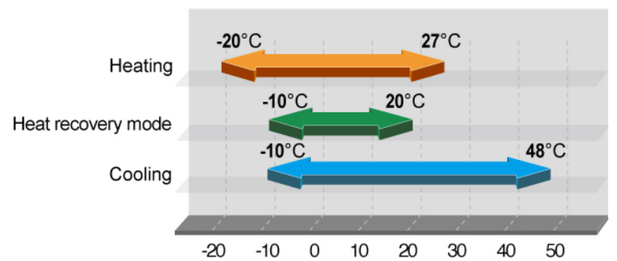


Wide operation range

The unit can operates in wide range, greatly reducing the ambient temperature limitation.

Note:

- *If the required capacity of indoor units is 50% higher than outdoor unit, cooling range may be lower to -15°C.*
- *If the required capacity of indoor units is 50% lower than outdoor unit, cooling range may be up to -5°C.*



Modular outdoor unit design

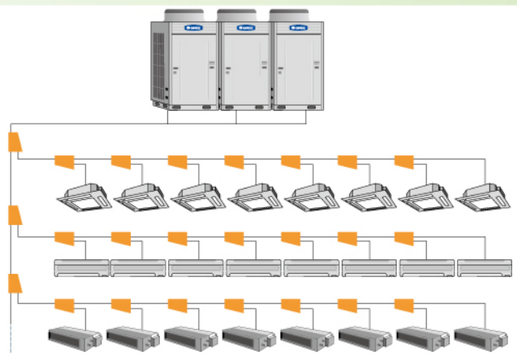
- Various combination form **8HP** to **64HP** with **2HP** increments.
- Max capacity of outdoor unit is **180kW** (4 x modules)

Various combinations

- Up to **110** sets of indoor units can be connected*.

  ** For the standard model that 4 modules connect in parallel, up to 64 indoor units can be connected. If more indoor units are required to be connected, please contact us.*

- **5** types and **42** models of indoor units can be selected ranging form **2.2kW** to **28kW** in capacity.
- Maximum diversity is **135%**.

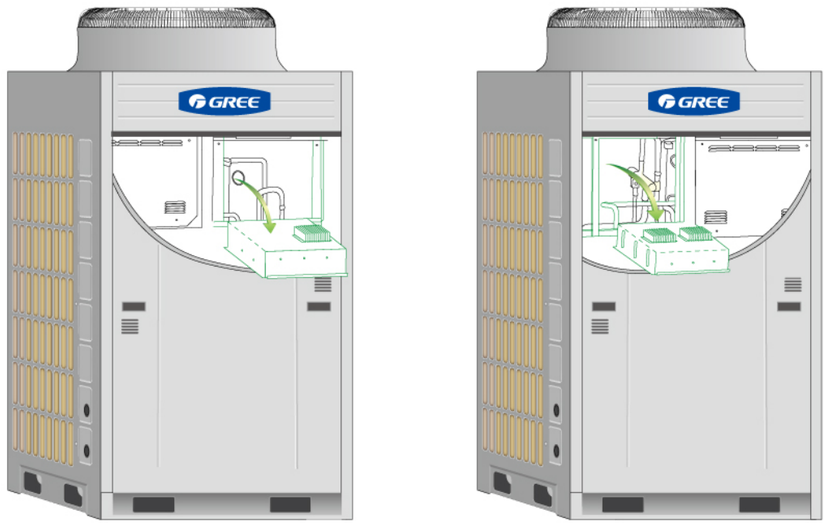


EASY INSTALLATION & MAINTENANCE

Easier maintainability

► **Special-designed electric box**

The electric box can be opened by inverting downwards for easy maintenance.

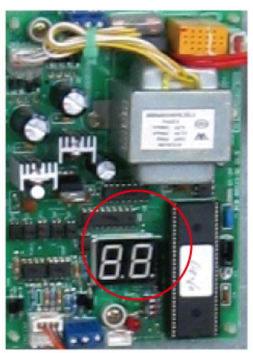


► **Error display & Self diagnostics system**

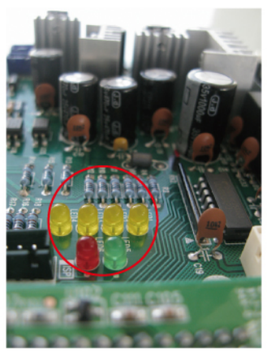
Through LED display (different combinations of ON,OFF or BLINK) on the main board, the malfunction can be judged.

- Self diagnostics system display

- LED display on the connection board



- LED display on the connection board



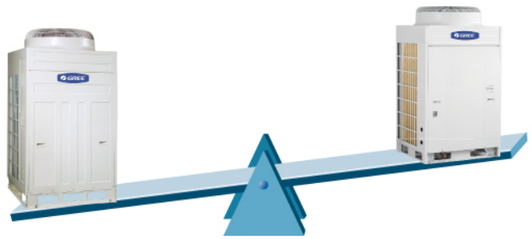
Easier transportation & installations

► **Light weight**

Former model (8HP): 300kg

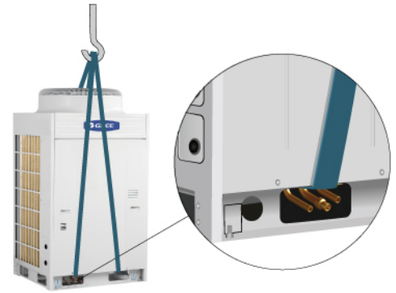
13% weight reduction

GMV HR Ⅱ (16HP): 260kg



► **Optimized base frame**

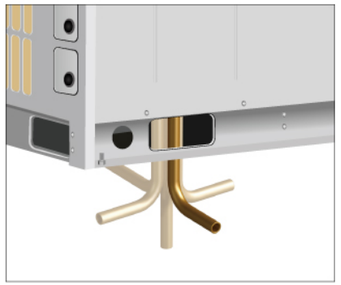
Optimized base frame, the locating and fixing of the outdoor unit during installation is more convenient and reliable.



► **Transportable by forklift**

► **Five-way piping connection**

- Piping and wiring are available to the front and back, left and right, and bottom.
- The five-way piping connection reduces installation difficulty and cost, improves the installation efficiency.



► **Compact design**

With compact design, the outdoor unit can be carried to the roof of building through elevator, no crane is needed.

Traditional Central Air Conditioner

GMV HR Ⅱ

OUTDOOR UNITS LINEUP

MODEL		GMV-Pdhm224W/Na-M (8HP)	GMV-Pdhm280W/Na-M (10HP)	GMV-Pdhm335W/Na-M (12HP)	GMV-Pdhm400W/Na-M (14HP)	GMV-Pdhm450W/Na-M (16HP)
	GMV-Pdhm224W/Na-M (8HP)	⬢				
	GMV-Pdhm280W/Na-M (10HP)		⬢			
	GMV-Pdhm335W/Na-M (12HP)			⬢		
	GMV-Pdhm400W/Na-M (14HP)				⬢	
	GMV-Pdhm450W/Na-M (16HP)					⬢
	GMV-Pdhm504W2/Na-M (18HP)	⬢	⬢			
	GMV-Pdhm560W2/Na-M (20HP)		⬢⬢			
	GMV-Pdhm615W2/Na-M (22HP)		⬢	⬢		
	GMV-Pdhm680W2/Na-M (24HP)		⬢		⬢	
	GMV-Pdhm730W2/Na-M (26HP)		⬢			⬢
	GMV-Pdhm800W2/NaB-M (28HP)				⬢⬢	
	GMV-Pdhm850W2/NaB-M (30HP)				⬢	⬢
	GMV-Pdhm900W2/NaB-M (32HP)					⬢⬢

MODEL		GMV-Pdhm224W/Na-M (8HP)	GMV-Pdhm280W/Na-M (10HP)	GMV-Pdhm335W/Na-M (12HP)	GMV-Pdhm400W/Na-M (14HP)	GMV-Pdhm450W/Na-M (16HP)
	GMV-Pdhm960W3/Na-M (34HP)		⬢⬢		⬢	
	GMV-Pdhm1010W3/NB-M (36HP)		⬢⬢			⬢
	GMV-Pdhm1070W3/Na-M (38HP)		⬢	⬢		⬢
	GMV-Pdhm1130W3/Na-M (40HP)		⬢		⬢	⬢
	GMV-Pdhm1180W3/Na-M (42HP)		⬢			⬢⬢
	GMV-Pdhm1250W3/Na-M (44HP)				⬢⬢	⬢
	GMV-Pdhm1300W3/Na-M (46HP)				⬢	⬢⬢
	GMV-Pdhm1350W3/Na-M (48HP)					
	GMV-Pdhm1410W4/Na-M (50HP)		⬢⬢		⬢	⬢
	GMV-Pdhm1460W4/Na-M (52HP)		⬢⬢			⬢⬢
	GMV-Pdhm1515W4/Na-M (54HP)		⬢	⬢		⬢⬢
	GMV-Pdhm1580W4/Na-M (56HP)		⬢		⬢	⬢⬢
	GMV-Pdhm1630W4/Na-M (58HP)		⬢			
	GMV-Pdhm1700W4/Na-M (60HP)				⬢⬢	⬢⬢
	GMV-Pdhm1750W4/Na-M (62HP)				⬢	⬢⬢⬢
	GMV-Pdhm1800W4/Na-M (64HP)					⬢⬢⬢

OUTDOOR UNIT SPECIFICATIONS

Combination Modules

RATING CAPACITY		HP	8	10	12	14	16
Model			GMV-Pdhm224W/Na-M	GMV-Pdhm280W/Na-M	GMV-Pdhm335W/Na-M	GMV-Pdhm400W/Na-M	GMV-Pdhm450W/Na-M
Combination units			——	——	——	——	——
Connectable indoor unit	Maximum		13	16	19	23	26
	Cooling Capacity	kW	11.2-30.2	14.0-37.8	16.8-45.2	20.0-54.0	22.5-60.8
Power supply			3-Phase,342-420V,50Hz				
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0
	Heating		25.0	31.5	37.5	45.0	50.0
power consumption	Cooling	kW	5.52	7.52	9.23	12.45	14.32
	Heating		5.82	7.70	9.38	11.20	13.90
Compressor	Configration*		DCx1+Cx1		DCx1+Cx2		
Airflow rate		m^3/h	190	190	232	232	232
		CFM	112	112	136	136	136
Sound pressure level		dB(A)	58	58	61	61	61
Dimensions	WxDxH	mm	1670x930x770		1670x1340x770		
Weight	Net	kg	260	260	372	402	402
Refrigerant charge		kg	12	12	14	16	16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20				
		°F	Cooling:23 to 118.4, Heating:-4 to 81,Cooling and Heating:14 to 68				
Connection pipe diameter	Gas	inch	7/8	7/8	9/8	9/8	9/8
	Liquid	inch	3/8	3/8	1/2	1/2	1/2
	Oil balance	inch	3/4	3/4	3/4	7/8	7/8

RATING CAPACITY		HP	18	20	22	24	26
Model			GMV-Pdhm504W2/Na-M	GMV-Pdhm560W2/Na-M	GMV-Pdhm615W2/Na-M	GMV-Pdhm680W2/Na-M	GMV-Pdhm730W2/Na-M
Combination units			GMV-Pdhm224W/Na-M GMV-Pdhm280W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm280W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm335W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm400W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm450W/Na-M
Connectable indoor unit	Maximum		29	32	36	40	43
	Cooling Capacity	kW	25.2-68.0	28.0-75.6	30.8-83.0	33.5-90.5	36.5-98.6
Power supply			3-Phase,342-420V,50Hz				
Capacity	Cooling	kW	50.4	56.0	61.5	68.0	73.0
	Heating		56..5	63.0	69.0	76.5	81.5
power consumption	Cooling	kW	13.04	15.04	16.75	19.97	21.84
	Heating		13.52	15.40	17.08	18.90	21.60
Compressor	Configration*		(DCx1+Cx1)x2		(DCx1+Cx1)+(DCx1+Cx2)		
Airflow rate		m^3/h	190x2	190x2	190+232	190+232	232x2
		CFM	112x2	112x2	112+136	112+136	136x2
Sound pressure level		dB(A)	62	62	62	62	63
Dimensions	WxDxH	mm	(1670x930x770)+(1670x930x770)		(1670x930x770)+(1670x1340x770)		
Weight	Net	kg	260+260	260+260	260+372	260+402	260+402
Refrigerant charge		kg	12+12	12+13	12+14	12+16	12+16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20				
		°F	Cooling:23 to 118.4, Heating:-4 to 81,Cooling and Heating:14 to 68				
Connection pipe diameter	Gas	inch	9/8	9/8	9/8	11/8	11/8
	Liquid	inch	5/8	5/8	5/8	5/8	5/8
	Discharge gas	inch	7/8	9/8	9/8	9/8	9/8
	Oil balance	inch	1/2	1/2	1/2	1/2	1/2

* DC: Digital scroll compressor C: Constant speed scroll compressor

Combination Modules

RATING CAPACITY		HP	28	30	32	34	36
Model			GMV-Pdhm800W2/Na-M	GMV-Pdhm850W2/Na-M	GMV-Pdhm900W2/Na-M	GMV-Pdhm960W2/Na-M	GMV-Pdhm1010W2/Na-M
Combination units			GMV-Pdhm400W/Na-M GMV-Pdhm400W/Na-M	GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm280W/Na-M GMV-Pdhm400W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm280W/Na-M GMV-Pdhm450W/Na-M
Connectable indoor unit	Maximum		47	50	53	56	59
	Cooling Capacity	kW	40.0-108.0	42.5-114.75	42.5-114.8	48.0-129.6	47.5-128.3
Power supply			3-Phase,380-415V,50Hz				
Capacity	Cooling	kW	80.0	78.5	85.0	90.0	96.0
	Heating		88.0	87.5	95.0	100.0	108.0
power consumption	Cooling	kW	25.00	23.55	26.77	28.64	27.49
	Heating		22.40	23.28	25.10	27.80	26.60
Compressor	Configration*		(DCx1+Cx2)x2			((DCx1+Cx1)x2)+(DCx1+Cx2)	
Airflow rate		m^3/h	190x2	190x2	190x2	190x2	190x2+232
		CFM	136x2	136x2	136x2	136x2	112x2+136
Sound pressure level		dB(A)	63	63	63	64	64
Dimensions	WxDxH	mm	(1340x770x1670)+(1340x770x1670)			(930x770x1670)+(930x770x1670)+(1340x770x1670)	
Weight	Net	kg	402+402	402+402	402+402	260+260+402	260+260+402
Refrigerant charge		kg	16+16	16+16	16+16	12+16+16	12+16+16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20				
		°F	Cooling:23 to 118.4, Heating:-4 to 81,Cooling and Heating:14 to 68				
Connection pipe diameter	Gas	inch	11/8	11/8	11/8	11/8	13/8
	Liquid	inch	5/8	3/4	3/4	3/4	3/4
	Discharge gas	inch	9/8	9/8	9/8	9/8	9/8
	Oil balance	inch	1/2	1/2	1/2	1/2	1/2

RATING CAPACITY		HP	38	40	42	44	46
Model			GMV-Pdhm1070W3/Na-M	GMV-Pdhm1130W3/Na-M	GMV-Pdhm1180W3/Na-M	GMV-Pdhm1250W3/Na-M	GMV-Pdhm1300W3/Na-M
Combination units			GMV-Pdhm280W/Na-M GMV-Pdhm335W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm400W/Na-M GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M
Connectable indoor unit	Maximum		64	64	64	64	64
	Cooling Capacity	kW	53.3-143.8	56.5-152.6	59.0-159.3	61.8-66.7	65.0-175.5
Power supply			3-Phase,380-415V,50Hz				
Capacity	Cooling	kW	106.5	113.0	118.0	123.5	130.0
	Heating		119.0	126.5	131.5	137.5	145.0
power consumption	Cooling	kW	31.07	34.29	36.16	37.87	41.09
	Heating		30.98	32.80	35.50	37.18	39.00
Compressor	Configration*		(DCx1+Cx1)+((DCx1+Cx2)x2)			(DCx1+Cx2)x3	
Airflow rate		m^3/h	190+232x2	190+232x2	190+232x2	232x2	232x2
		CFM	112+136x2	112+136x2	112+136x2	136x2	136x2
Sound pressure level		dB(A)	64	64	64	65	65
Dimensions	WxDxH	mm	(930x770x1670)+(1340x770x1670)+(1340x770x1670)			(1340x770x1670)+(1340x770x1670)+(1340x770x1670)	
Weight	Net	kg	260+372+402	260+402+402	260+402+402	402+402+402	402+402+402
Refrigerant charge		kg	12+14+16	12+16+16	12+16+16	16+16+16	16+16+16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20				
		°F	Cooling:23 to 118.4, Heating:-4 to 81,Cooling and Heating:14 to 68				
Connection pipe diameter	Gas	inch	13/8	13/8	13/8	13/8	13/8
	Liquid	inch	3/4	3/4	3/4	3/4	3/4
	Discharge gas	inch	7/8	11/8	11/8	11/8	11/8
	Oil balance	inch	1/2	1/2	1/2	1/2	1/2

* DC: Digital scroll compressor C: Constant speed scroll compressor

Combination Modules

RATING CAPACITY		HP	48	50	52	54	56
Model			GMV-Pdhm1350W3/Na-M	GMV-Pdhm1410W4/Na-M	GMV-Pdhm1460W4/Na-M	GMV-Pdhm1515W4/Na-M	GMV-Pdhm1580W4/Na-M
Combination units			GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm280W/Na-M GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm280W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm335W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm280W/Na-M GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M
Connectable indoor unit	Maximum		64	66	69	71	74
	Cooling Capacity	kW	67.5-182.3	70.3-189.7	73.0-197.1	75.8-204.5	79.0-213.3
Power supply			3-Phase,380-415V,50Hz				
Capacity	Cooling	kW	135.0	141.0	146.0	151.5	155.0
	Heating		150.0	158.0	163.0	169.0	176.5
power consumption	Cooling	kW	42.96	41.84	43.68	45.39	48.61
	Heating		41.70	40.05	43.20	44.88	46.70
Compressor	Configration*		(DCx1+Cx2)x3	(DCx1+Cx1)x2+((DCx1+Cx2)x2)		(DCx1+Cx1)+((DCx1+Cx2)x3)	
Airflow rate		m^3/h	232x3	190x2+232x2	190x2+232x2	190+232x3	190+232x3
		CFM	136x3	112x2+136x2	112x2+136x2	112+136x3	112+136x3
Sound pressure level		dB(A)	65	65	65	65	65
Dimensions	WxDxH	mm	(1340x770x1670)+(1340x770x1670)+(1340x770x1670)	(930x770x1670)+(930x770x1670)+(1340x770x1670)+(1340x770x1670)		(930x770x1670)+(1340x770x1670)+(1340x770x1670)+(1340x770x1670)	
Weight	Net	kg	402+402+402	260+260+402+402	260+260+402+402	260+372+402+402	260+402+402+402
Refrigerant charge		kg	16+16+16	12+12+16+16	12+12+16+16	12+14+16+16	12+16+16+16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20				
		°F	Cooling:23 to 118.4, Heating:-4 to 81,Cooling and Heating:14 to 68				
Connection pipe diameter	Gas	inch	13/8	7/4	7/4	7/4	17/8
	Liquid	inch	3/4	1	1	7/8	1
	Discharge gas	inch	11/8	11/8	13/8	13/8	13/8
	Oil balance	inch	1/2	1/2	1/2	1/2	1/2

* DC: Digital scroll compressor C: Constant speed scroll compressor

Combination Modules

RATING CAPACITY		HP	58	60	62	64
Model			GMV-Pdhm1630W4/Na-M	GMV-Pdhm1700W4/Na-M	GMV-Pdhm1750W4/Na-M	GMV-Pdhm1800W4/Na-M
Combination units			GMV-Pdhm280W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm400W/Na-M GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm400W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M	GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M GMV-Pdhm450W/Na-M
Connectable indoor unit	Maximum		77	80	80	80
	Cooling Capacity	kW	81.5-222.1	85.0-229.5	87.5-236.3	90.0-243.0
Power supply			3-Phase,380-415V,50Hz	3-Phase,380-415V,50Hz	3-Phase,380-415V,50Hz	3-Phase,380-415V,50Hz
Capacity	Cooling	kW	163.0	168.0	175.0	180.0
	Heating		181.5	187.5	195.0	200.0
power consumption	Cooling	kW	50.48	52.19	55.41	57.21
	Heating		49.90	51.80	52.90	55.60
Compressor	Configration*		(DCx1+Cx1)+((DCx1+Cx2)x3)	(DCx1+Cx2)x4		
Airflow rate		m^3/h	190+232x3	232x4	232x4	232x4
		CFM	112+136x3	136x4	136x5	136x6
Sound pressure level		dB(A)	66	66	66	66
Dimensions	WxDxH	mm	(930x770x1670)+(1340x770x1670)+(1340x770x1670)+(1340x770x1670)	(1340x770x1670)+(1340x770x1670)+(1340x770x1670)+(1340x770x1670)		
Weight	Net	kg	260+402+402+402	402+402+402+402	402+402+402+402	402+402+402+402
Refrigerant charge		kg	12+16+16+16	16+16+16+16	16+16+16+16	16+16+16+16
Operation range		°C	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20			
		°F	Cooling:-5 to 48, Heating:-20 to 27,Cooling and Heating:-10 to 20			
Connection pipe diameter	Gas	inch	17/8	17/8	17/8	17/8
	Liquid	inch	1	1	1	1
	Discharge gas	inch	13/8	13/8	13/8	13/8
	Oil balance	inch	1/2	1/2	1/2	1/2

* DC: Digital scroll compressor C: Constant speed scroll compressor

INDOOR UNITS LINEUP

Various designs indoor units suit perfectly for different installation requirement.

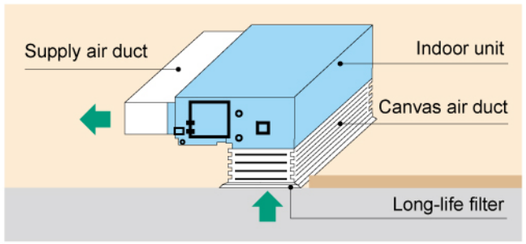
CAPACITY INDEX (kW)	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0	9.0	11.2	12.5	14.0
Duct Type	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Four-way Cassette Type			●		●		●	●	●	●	●	●	●	●	●	●
Wall Mounted Type	●		●		●		●	●	●							
										●	●					
Floor Ceiling Type			●		●			●			●		●	●	●	

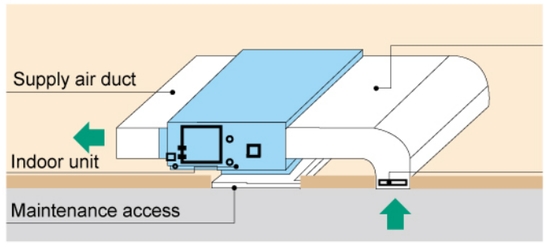
DUCT TYPE

Highly flexible installation

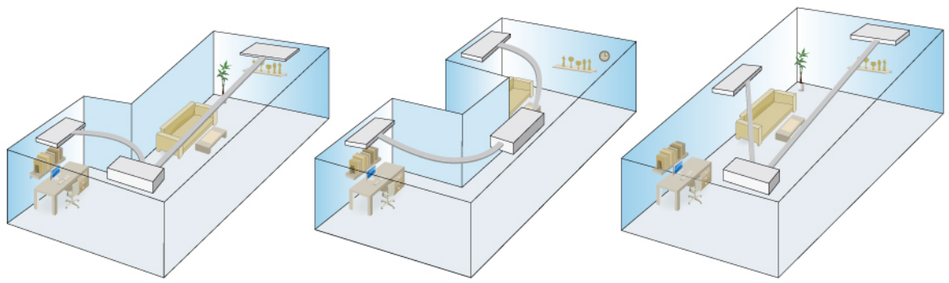
► Highly flexible installation is possible to satisfy various needs.

Installation examples

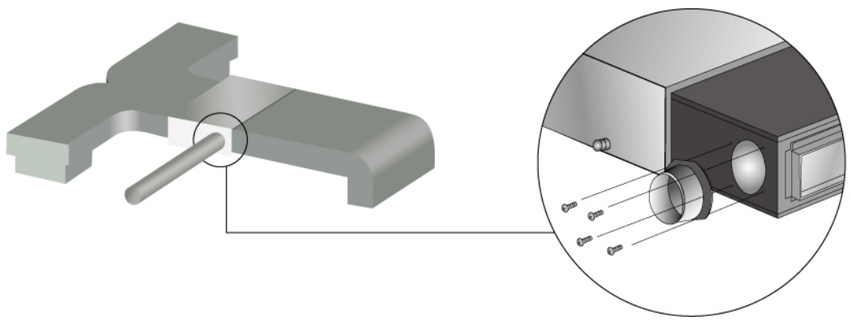




► Flexible and easy to install in type-L, type-U and large rooms.

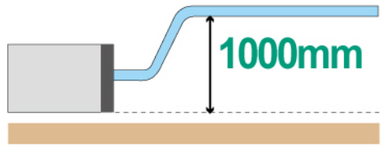


Fresh air function option for 5.6kW and above units



Drain pump lift reaches 1000mm

Only available for GMV(L)-R*PS/NaB-K



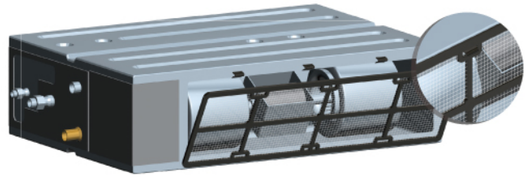
Easy maintenance

► Long life and washable filter with buckles can be easily disassembled from each direction.

► Compact size has been achieved by significantly reducing the width of the outdoor units compared to previous models.

Former structure: push-pull type

The former structure is not easy to disassembly.

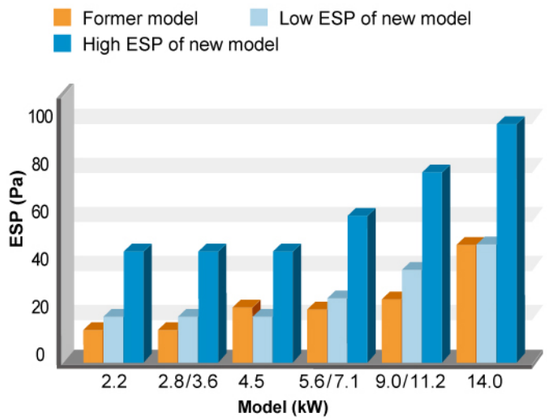


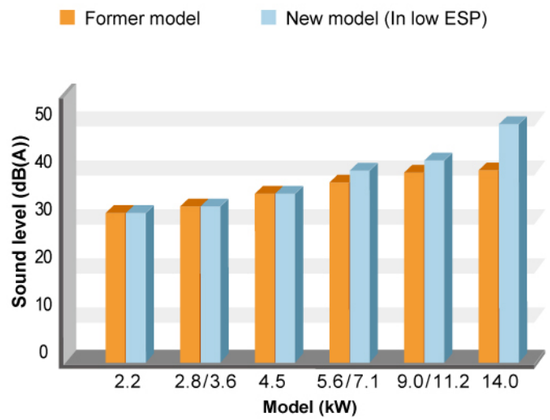
New structure: with buckles

The new structure makes the disassembly convenient.

Higher ESP & lower noise

The ESP is obviously upgraded while the noise is almost at the same level as before.





Key-card control

Duct Type (Pdhm)

MODEL			GMV-Rh22P/Na-K	GMV-Rh25P/Na-K	GMV-Rh28P/Na-K	GMV-Rh32P/Na-K
Power supply			1-Phase, 220-240V, 50Hz			
Capacity	Cooling	kW	2.2	2.5	2.8	3.2
	Heating		2.5	3.0	3.2	3.6
Power consumption		W	20	20	20	20
Airflow rate		m³/h	450	450	570	570
		CFm	265	265	335	335
Sound pressure level (H/M/L)		dB(A)	37/35/33	37/35/33	39/37/35	39/37/35
Standard Esp		Pa	10	10	10	10
Dimensions (W×D×H)		mm	875×680×220	875×680×220	875×680×220	875×680×220
Net weight		kg	27	27	27	27
Connection pipe	Gas (Flare)	inch	3/8	3/8	3/8	1/2
		mm	φ9.52	φ9.52	φ9.52	φ12.7
	Liquid (Flare)	inch	1/4	1/4	1/4	1/4
		mm	φ6.35	φ6.35	φ6.35	φ6.35
Drain pipe	External dia.	mm	φ20	φ20	φ20	φ20
	Thickness	mm	1.7	1.7	1.7	1.7

MODEL			GMV-Rh36P/Na-K	GMV-Rh40P/Na-K	GMV-Rh45P/Na-K	GMV-Rh50P/Na-K
Power supply			1-Phase, 220-240V, 50Hz			
Capacity	Cooling	kW	3.6	4.0	4.5	5.0
	Heating		4.0	4.5	5.0	5.8
Power consumption		W	20	60	60	60
Airflow rate		m³/h	570	700	700	700
		CFm	335	412	412	412
Sound pressure level (H/M/L)		dB(A)	39/37/35	40/38/36	40/38/36	40/38/36
Standard Esp		Pa	10	20	20	20
Dimensions (W×D×H)		mm	875×680×220	980×736×266	980×736×266	980×736×266
Net weight		kg	27	36	36	36
Connection pipe	Gas (Flare)	inch	1/2	1/2	1/2	1/2
		mm	φ12.7	φ12.7	φ12.7	φ12.7
	Liquid (Flare)	inch	1/4	1/4	1/4	1/4
		mm	φ6.35	φ6.35	φ6.35	φ6.35
Drain pipe	External dia.	mm	φ20	φ30	φ30	φ30
	Thickness	mm	1.7	1.5	1.5	1.5

Duct Type (Pdhm)

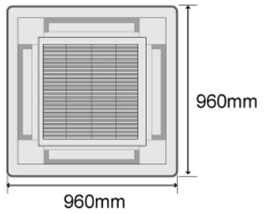
MODEL			GMV-Rh56P/Na-K	GMV-Rh63P/Na-K	GMV-Rh71P/Na-K	GMV-Rh80P/Na-K
Power supply			1-Phase, 220-240V, 50Hz			
Capacity	Cooling	kW	5.6	6.3	7.1	8.0
	Heating		6.3	7.0	8.0	8.8
Power consumption		W	90	90	90	90
Airflow rate		m³/h	1000	1000	1100	1100
		CFm	588	588	647	647
Sound pressure level (H/M/L)		dB(A)	44/42/40	44/42/40	45/43/41	45/43/41
Standard Esp		Pa	25	25	25	25
Dimensions (W×D×H)		mm	1159×736×260	1159×736×260	1159×736×260	1159×736×260
Net weight		kg	37	37	37	37
Connection pipe	Gas (Flare)	inch	5/8	5/8	5/8	5/8
		mm	φ15.9	φ15.9	φ15.9	φ15.9
	Liquid (Flare)	inch	3/8	3/8	3/8	3/8
		mm	φ9.52	φ9.52	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ30	φ30	φ30	φ30
	Thickness	mm	1.5	1.5	1.5	1.5

MODEL			GMV-Rh90P/Na-K	GMV-Rh112P/Na-K	GMV-Rh115P/Na-K
Power supply			1-Phase, 220-240V, 50Hz		
Capacity	Cooling	kW	9.0	11.2	12.5
	Heating		10.0	12.5	13.5
Power consumption		W	135	135	135
Airflow rate		m³/h	1700	1700	1700
		CFm	1000	1000	1000
Sound pressure level (H/M/L)		dB(A)	48/46/44	48/46/44	48/46/45
Standard Esp		Pa	30	30	30
Dimensions (W×D×H)		mm	1385×736×260	1159×736×260	1385×736×260
Net weight		kg	49	49	49
Connection pipe	Gas (Flare)	inch	5/8	5/8	5/8
		mm	φ15.9	φ15.9	φ15.9
	Liquid (Flare)	inch	3/8	3/8	3/8
		mm	φ9.52	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ30	φ30	φ30
	Thickness	mm	1.5	1.5	1.5

FOUR-WAY CASSETTE TYPE

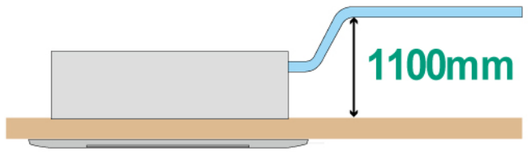
Four - way Cassette Type

► Compact, light weight and square panel in the same size for easy installation



► Slim unit below **5.0kW** is only **190mm** in thickness, which can be installed in narrow ceiling space of at least **210mm**.

► Drain pump fitted as standard with increased lift of **1100mm.**

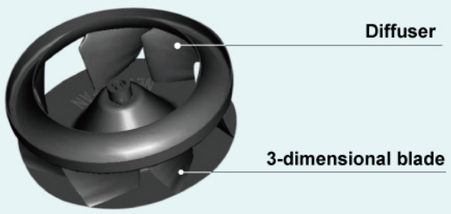


MODEL			GMV-Rh28T/Na-K	GMV-Rh36T/Na-K	GMV-Rh45T/Na-K	GMV-Rh50T/Na-K	GMV-Rh56T/Na-K	GMV-Rh63T/Na-K
Power supply			1-Phase, 220-240V, 50Hz					
Capacity	Cooling	kW	2.8	3.6	4.5	5.0	5.6	6.3
	Heating		3.2	4.0	5.0	5.8	6.3	7.0
Power consumption		W	60	60	65	65	83	83
Airflow rate		m³/h	680	680	680	680	1180	1180
		CFm	400	400	400	400	695	695
Sound pressure level (H/M/L)		dB(A)	37/35/34	37/35/34	37/35/34	37/35/34	39/37/35	39/37/35
Main body	Dimensons(WxDxH)	mm	840×840×190	840×840×190	840×840×190	840×840×190	840×840×240	840×840×240
	Net Weight	kg	25	25	25	25	30.5	30.5
Panel	Dimensons(WxDxH)	mm	950×950×60	950×950×60	950×950×60	950×950×60	950×950×60	950×950×60
	Net Weight	kg	6.5	6.5	6.5	6.5	6.5	6.5
Connection pipe	Gas (Flare)	inch	3/8	1/2	1/2	1/2	5/8	5/8
		mm	φ9.52	φ12.7	φ12.7	φ12.7	φ15.9	φ15.9
	Liquid (Flare)	inch	1/4	1/4	1/4	1/4	3/8	3/8
		mm	φ6.35	φ6.35	φ6.35	φ6.35	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ30	φ30	φ30	φ30	φ30	φ30
	Thickness	mm	1.5	1.5	1.5	1.5	1.5	1.5

MODEL			GMV-Rh71T/Na-K	GMV-Rh80T/Na-K	GMV-Rh90T/Na-K	GMV-Rh112T/Na-K	GMV-Rh125T/Na-K	GMV-Rh140T/Na-K
Power supply			1-Phase, 220-240V, 50Hz					
Capacity	Cooling	kW	7.1	8.0	9.0	11.2	12.5	14.0
	Heating		8.0	8.8	10.0	12.5	13.5	14.5
Power consumption		W	83	83	133	133	133	133
Airflow rate		m³/h	1180	1180	1860	1860	1860	1860
		CFm	695	695	1095	1095	1095	1095
Sound pressure level (H/M/L)		dB(A)	39/37/35	39/37/35	39/37/35	40/38/36	40/38/36	40/38/36
Main body	Dimensons(WxDxH)	mm	840×840×240	840×840×240	840×840×320	840×840×240	840×840×240	840×840×320
	Net Weight	kg	30.5	30.5	38.5	38.5	38.5	38.5
Panel	Dimensons(WxDxH)	mm	950×950×60	950×950×60	950×950×60	950×950×60	950×950×60	950×950×60
	Net Weight	kg	6.5	6.5	6.5	6.5	6.5	6.5
Connection pipe	Gas (Flare)	inch	5/8	5/8	5/8	5/8	5/8	5/8
		mm	φ15.9	φ15.9	φ15.9	φ15.9	φ15.9	φ15.9
	Liquid (Flare)	inch	3/8	3/8	3/8	3/8	3/8	3/8
		mm	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ30	φ30	φ30	φ30	φ30	φ30
	Thickness	mm	1.5	2.5	3.5	1.5	1.5	1.5

Common characteristics

► Low noise with 3-dimensional blade

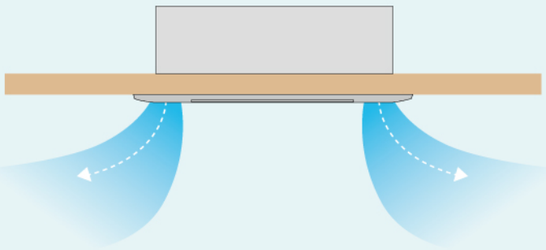


► Designed with fresh air baffle for fresh air introduction

► Long life and washable filter

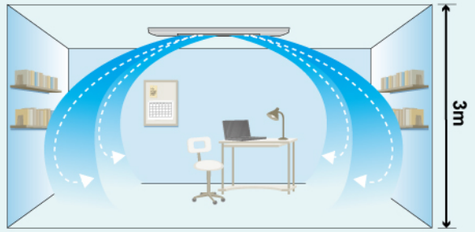
► Air supply in different directions with **30-60** degree sweep for even temperature distribution*

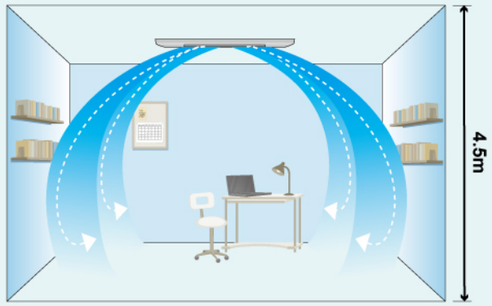
Note:
The guide louver defaults to min. position of 30°during cooling, dry and fan operation, or maximum position of 60°during heating operation.



► Full-automatic operation, 4-way air supply, 3-speed fan setting and strong circulating air flow volume make the cooling or hot air directly reach every corner of the room, even if the ceiling is higher than standard height.

- The unit below **7.1 kW** is applicable to the height below **3m**.
- The unit above **8kW** is applicable to the height below **4.5m**.



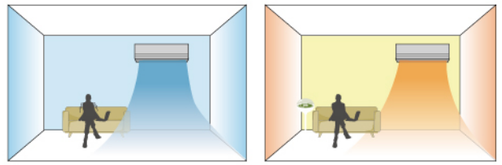


WALL MOUNTED TYPE

Streamlined design for spaces without ceiling

Anti cool air design

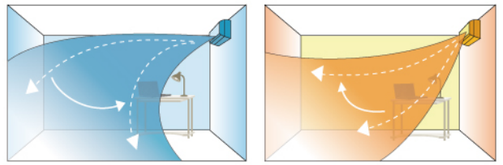
When heating in winter, intelligent anti cool air function is started. Unit only blows when inside the unit is pre-heated to prevent cool air from blowing out.



Vertical auto swing

When cooling, cool air is directed across the room and then sinks. When heating, warm air is directed across the floor and then rises.

Cooling Heating

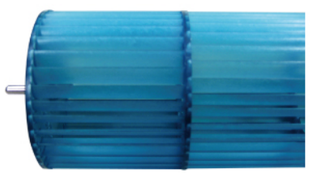


Auto clean (under COOL & DRY mode)

After unit off, the indoor fan would still operate in low speed to dry the inner components and parts to prevent mould and odor growing.

Low noise design

Advanced irregular-distance mixed flow fan, unique duct design and multi-grill auxiliary duct make the operation highly efficient and noise lower.



Ternary filters

Ternary air filters with anti-mildew, static electric dust capture and anti-bacterial function.

Washable grille

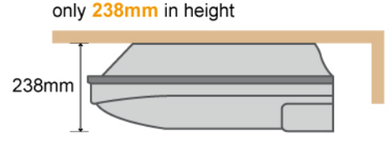
The front grille can be easily removed for washing.

MODEL			GMV-Rh22G/Na-K	GMV-Rh28G/Na-K	GMV-Rh36G/Na-K	GMV-Rh45G/Na-K
Power supply			1-Phase, 220-240V, 50Hz			
Capacity	Cooling	kW	2.5	3.2	4.0	5.0
	Heating		2.8	3.6	4.4	5.5
Power consumption		W	14	14	22	22
Airflow rate		m^3/h	360	360	500	500
		CFm	212	212	294	294
Sound pressure level (H/M/L)		dB(A)	37/33/28	37/33/28	43/35/28	43/35/28
Dimensions (W×D×H)		mm	770x190x250	770x190x250	830x189x285	830x189x285
Net weight		kg	8.5	8.5	11.0	11.0
Connection pipe	Gas (Flare)	inch	3/8	3/8	1/2	1/2
		mm	φ9.52	φ9.52	φ12.7	φ12.7
	Liquid (Flare)	inch	1/4	1/4	1/4	1/4
		mm	φ6.35	φ6.35	φ6.35	φ6.35
Drain pipe	External dia.	mm	φ20	φ20	φ20	φ20
	Thickness	mm	1.5	1.5	1.5	1.5
EXV Position			External			

MODEL			GMV-Rh50G/Na-K	GMV-Rh56G/Na-K	GMV-Rh71G/Na-K	GMV-Rh80G/Na-K
Power supply			1-Phase, 220-240V, 50Hz			
Capacity	Cooling	kW	5.0	5.6	7.1	8.0
	Heating		5.8	6.3	8.0	9.0
Power consumption		W	20	20	26	26
Airflow rate		m^3/h	700	750	1200	1200
		CFm	412	442	707	707
Sound pressure level (H/M/L)		dB(A)	45/42/40	45/42/40	49/45/42	49/45/42
Dimensions (W×D×H)		mm	1020x228x310	1020x228x310	1178x227x326	1178x227x326
Net weight		kg	14.7	14.7	18.2	18.2
Connection pipe	Gas (Flare)	inch	1/2	5/8	5/8	5/8
		mm	φ12.7	φ15.9	φ15.9	φ15.9
	Liquid (Flare)	inch	1/4	3/8	3/8	3/8
		mm	φ6.35	φ9.52	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ30	φ30	φ30	φ30
	Thickness	mm	1.5	1.5	1.5	1.5
EXV Position			Integrated			

FLOOR CEILING TYPE

Compact and light weight



Ultra quiet operation

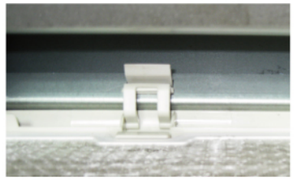
Long life and detachable and washable grille

Easy to install and good looking, satisfies more requirements

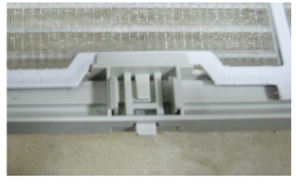
Easy maintenance

Convenient disassembly and maintenance thanks to unique design.

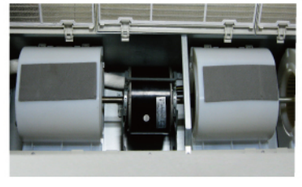
► Plastic filter with buckles



► Grill buckle

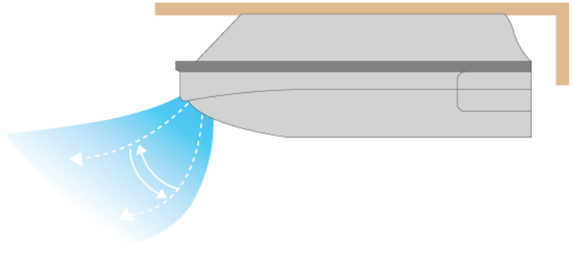


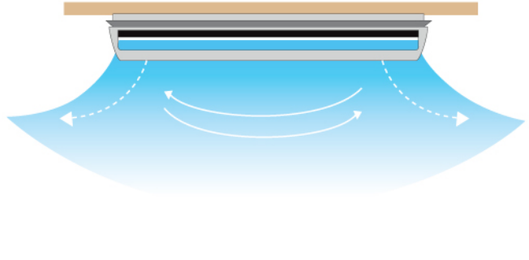
► Dismountable motor



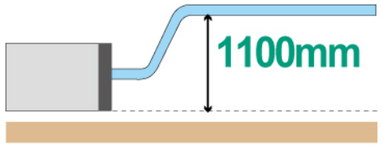
Wide discharge range

With cross-direction sweep, the air supply range is efficiently wider.





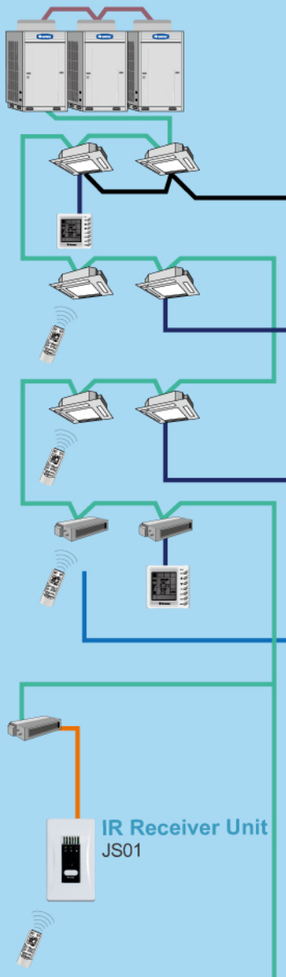
Drain pump lift reaches 1100mm



MODEL			GMV-Rh28Zd/Na-K	GMV-Rh36Zd/Na-K	GMV-Rh50Zd/Na-K	GMV-Rh71Zd/Na-K	GMV-Rh90Zd/Na-K	GMV-Rh112Zd/Na-K	GMV-Rh125Zd/Na-K
Power supply			1-Phase, 220-240V, 50Hz						
Capacity	Cooling	kW	2.8	3.6	5.0	7.1	8.0	11.2	12.5
	Heating		3.2	4.0	5.8	8.0	10.0	12.5	13.5
Power consumption		W	22	22	90	220	330	340	340
Airflow rate		m^3/h	550	600	700	1170	2100	2200	2300
		CFm	324	353	412	689	1236	1295	1354
Sound pressure level (H/M/L)		dB(A)	43/40/38	44/41/38	50/47/44	48/45/43	51/48/44	54/50/46	55/51/47
Dimensions (W×D×H)		mm	840x238x698	840x238x695	840x238x695	1300x188x600	1590x238x695	1714x330x830	1714x330x830
Net weight		kg	26	26	27	32	44	44	44
Connection pipe	Gas (Flare)	inch	3/8	1/2	1/2	5/8	5/8	5/8	5/8
		mm	φ9.52	φ12.7	φ12.7	φ15.9	φ15.9	φ15.9	φ15.9
	Liquid (Flare)	inch	1/4	1/4	1/4	3/8	3/8	3/8	3/8
		mm	φ6.35	φ6.35	φ6.35	φ9.52	φ9.52	φ9.52	φ9.52
Drain pipe	External dia.	mm	φ17	φ17	φ17	φ17	φ17	φ17	φ17
	Thickness	mm	1.75	1.75	1.75	1.75	1.75	1.75	1.75

CONTROL NETWORK SKETCH

System



IR Receiver Unit
JS01

Air Conditioning Individual Control

Group Controller
ZJA011

Wired Remote Controller
Z63351F/Z63151F
Z60351F/Z60151F

Wired Remote Controller
ZX60451

Wireless Remote Controller
YB1FA

Y512

Key-card Control Board
MK03

Key-card

(Field supplied)

Communication Module
ME30-00/E2

Communication Module
ME30-00/E2

RS-422/485 Repeater

Air Conditioning Central Control

RS-232 to RS-422/485 Converter

Gree AC Eudemon 2009 (Monitoring Software)

FE30-00/A(M)

RS-232 to RS-422/485 Converter

Web Monitoring Server

Internet

Web Monitoring Client

Communication Module
ME30-00/E2

Centralized Controller
CE51-24/E(M)

Smart Zone Controller
CE50-24/E

BMS Interface (Modbus)
ME 30-00/E2

Commissioning Program (Software)
Text Parser

Buiding Management

- Module link
- Transmission line (GMV network)
- Group controller line
- Remote controller line
- Modbus network
- IR receiver line
- Key-card control board line
- Key-card signal line

Building Management System

Note: Controll network sketch is for reference only, please refer to the equipment manuals for actual cable connection method.

Controllers comparison

ITEM		Wireless Remote Controller Y512	Wireless Remote Controller YB1FA	Wired Remote Controller Z63351F/Z60351*	Wired Remote Controller XK02	Group Controller ZJA011	Smart Zone Controller CE50-24/E	Centralized Controller CE51-24/E(M)	Gree AC Eudemon 2009	BMS Interface (Modbus)
										
Connections	Max Nos. of Outdoor Units	—	—	—	—	—	—	64	n*255	n*255
	Max Nos. of Wired Controller	1	1	1	1	16	16	1024	n*255*16	n*255*16
	Max Nos. of Indoor Units	1	1	1	1	16	16	1024	n*255*16	n*255*16
Control Functions	ON/OFF	√	√	√	√	√	√	√	√	√
	Mode Setting	√	√	√	√	√	√	√	√	√
	Fan Speed	√	√	√	√	√	√	√	√	√
	Vertical Swing	√	√	√	√	√		√	√	√
	Energy Saving Mode	√	√	√	√				√	√
	Drying		√		√					
	Turbo Mode		√		√					
	Sleeping Mode	√	√	√	√				√	√
	Light	√	√							
Display	Errors			√	√	√	√	√	√	√
	Clock		√				√	√	√	
	Week						√	√	√	
	Room Temp.			√	√	√	√	√	√	√
	Lock		√	√	√	√	√	√	√	√
	Indoor Unit Address			√	√	√	√	√	√	√
Timer	ON/OFF Timer	√	√	√	√	√	√	√	√	
	Minimum Timer Gap	0.5h	1min	0.5h	0.5h	0.5h	0.5h	1min	1sec	
	Weekly Timer						√	√	√	
	Centralized Week Timer						√	√		
	Group Week Timer							√		
Shielding	Shielding			√	√	√	√	√	√	√
	Centralized Shielding					√	√	√		
	Group Shielding							√		
Centralized Control	Centralized Control					√	√	√	√	√
	Group Control							√		

Note:

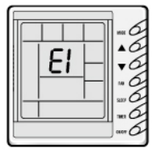
- *n: Nos. of serial port*
- *Control functions availability is based on the indoor units. Please refer to the user's manual of indoor unit for details.*

Comments of control functions

ON/OFF Timer Function

Under ON/OFF state, set the unit to be automatically turned on or turned off in 0.5n hours (1≤n<48).

Error Display



When the malfunction occurs during the operation, the room temperature display area will show the error code.

The Picture here shows the code of compressor high-pressure protection.

Energy Saving Function

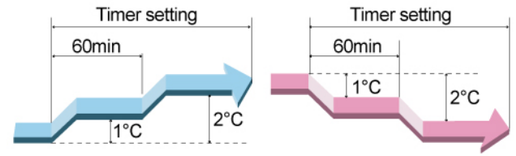
By setting the minimum value of setting temp. in cooling and defrosting mode as well as maximum value in heating mode, the unit can operate in smaller temp. range so as to save energy.

Sleeping Function

Automatically correct the set temperature to prevent excessive cooling or heating during sleep.

In cooling or defrosting mode, the set temperature will automatically increase 2°C in 2 hours (1°C per hour) and then the unit will operate at such temperature.

In heating mode, the set temperature will automatically decrease 2°C in 2 hours (1 °C per hour) and then the unit will operate at such temperature.



Note: There is no SLEEP function in FAN mode.

Switch between Fahrenheit and Celsiur Scale

Under OFF state, press MODE and ▼ buttons simultaneously to switch between °C and °F.

Memory Function

After power failure, if the unit is energized again, it will operate according to previous set which include setting temp, fan speed, swing angle, energy-saving mode, blow function etc.

Turbo Function
(In COOL or HEAT mode)

The unit operates at super-high fan speed so as to cool or heat quickly so that the ambient temperature approaches the set temperature as soon as possible.

When discrepancy between room temperature and set temperature is not more than 2°C， this function will be turned off automatically.

Blow Function
(Only for cooling and heating mode)

When the unit is turned off, the indoor fan will keep running at low speed for 10 min to blow the indoor evaporator dry in order to prevent mildew and keep users healthy.

This function can be memorized.

Shield Function
(Remote monitoring)

Remote control the indoor unit and shield the functions of wired controller which includes ON/OFF, temp. or mode setting, energy-saving function, etc.

Mute Function
(Only for cooling and heating mode)

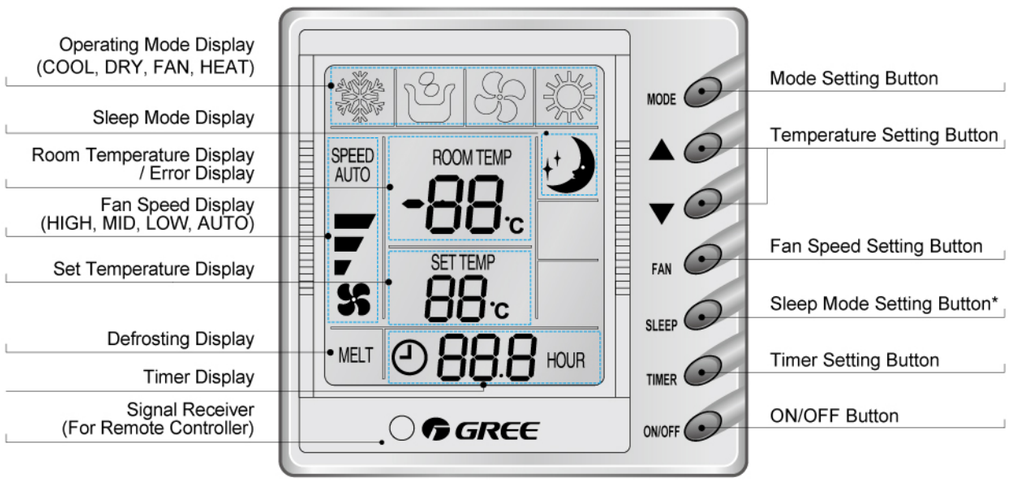
Common mute function: the unit automatically operates at low speed and the fan speed can't be adjustable at that time.

Auto mute function: The unit will enter mute operation according to discrepancy between room temperature and setting temperature. At that time, fan speed can be manually turned down.

WIRED REMOTE CONTROLLER

Z60351F/ Z63351F (Heat pump)
Z60151F/ Z63151F (Cooling only)

- ON/OFF
- Temperature setting
- Fan speed setting
- Energy-saving function
- Room temperature display
- Sleep function
- ON/OFF Timer
- Operation mode setting
- Vertical swing
- Self-diagnosis function（Error code display）
- Memory function
- Child lock function
- Infrared remote control function is available and the remote controller is optional



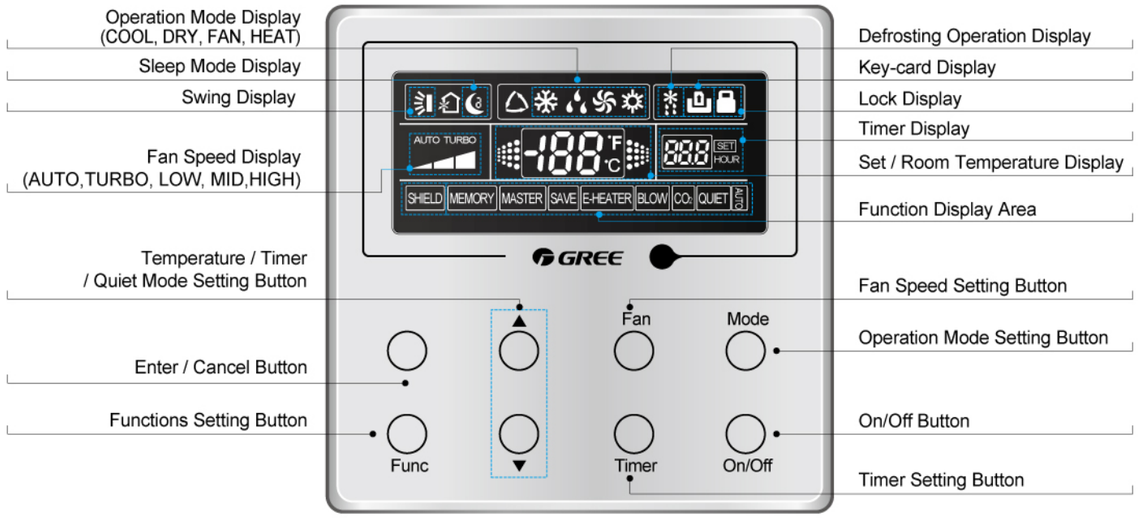
Model Name	Z63351F / Z63151F / Z60351F / Z60151F
Power Supply	DC12V (Supplied by the indoor unit)
Dimensions (H×W×D) (mm)	85×85×20
Weight (g)	94

** Z60351F/Z60151F is for duct type indoor unit, and swing function is unavailable;*
Z63351F/Z63151F is for other types of indoor unit, button "SLEEP" changes to "SWING", and sleep function is unavailable.

WIRED REMOTE CONTROLLER

ZX60451

- ON/OFF
- Displayed as white characters on black background
- Fan speed setting
- Self-diagnosis function（Error code display）
- Turbo cooling/heating function
- Quiet function
- Enquire and setting address of wired controller
- ON/OFF Timer
- Temperature setting
- Vertical swing
- Environmental temperature display
- Evaporating function
- Shield function
- Infrared remote control function is available and the remote controller is optional.
- Touchable wired controller
- Operating mode setting
- Energy saving function
- Sleep function
- Memory function
- Child lock function

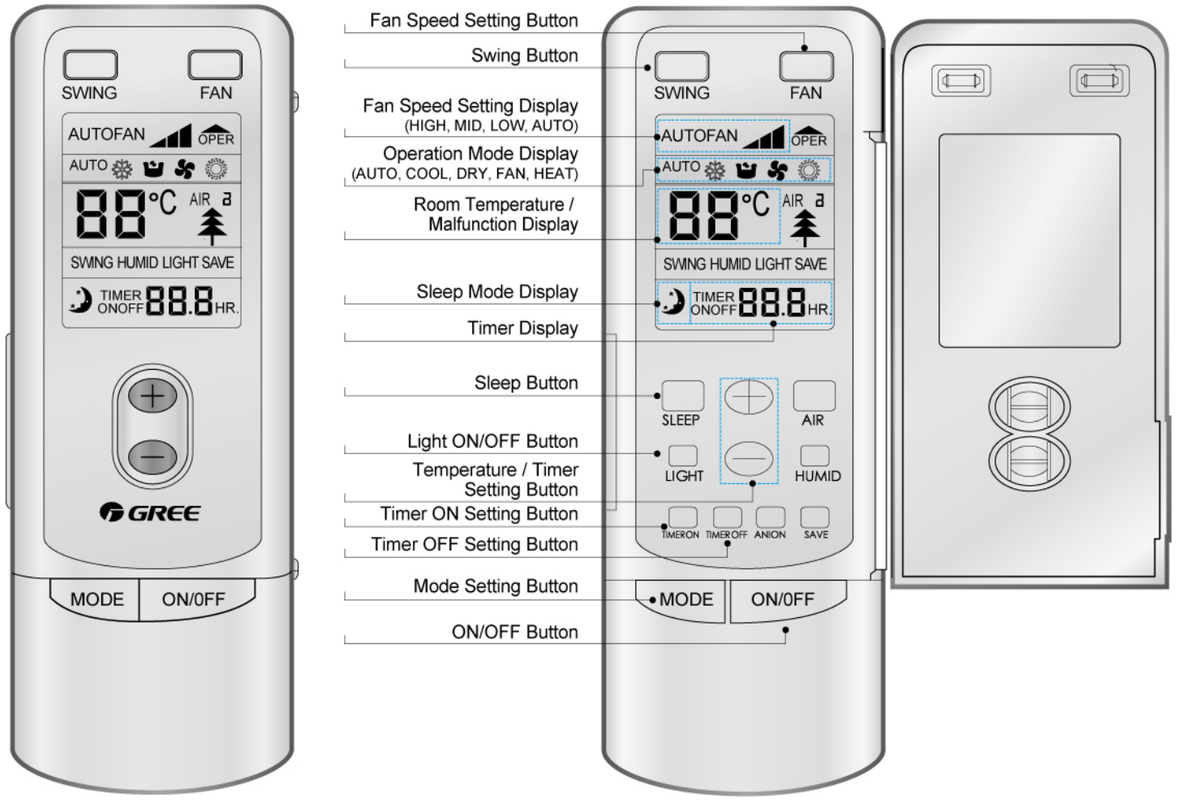


Model Name	ZX60451
Power Supply	DC12V (Supplied by the indoor unit)
Dimensions (H×W×D) (mm)	92×92×24
Weight (g)	116

WIRELESS REMOTE CONTROLLER

Y512

- ON/OFF
- Temperature setting
- Fan speed setting
- Child lock function
- ON/OFF Timer
- Operation mode setting
- Vertical swing
- Sleep function

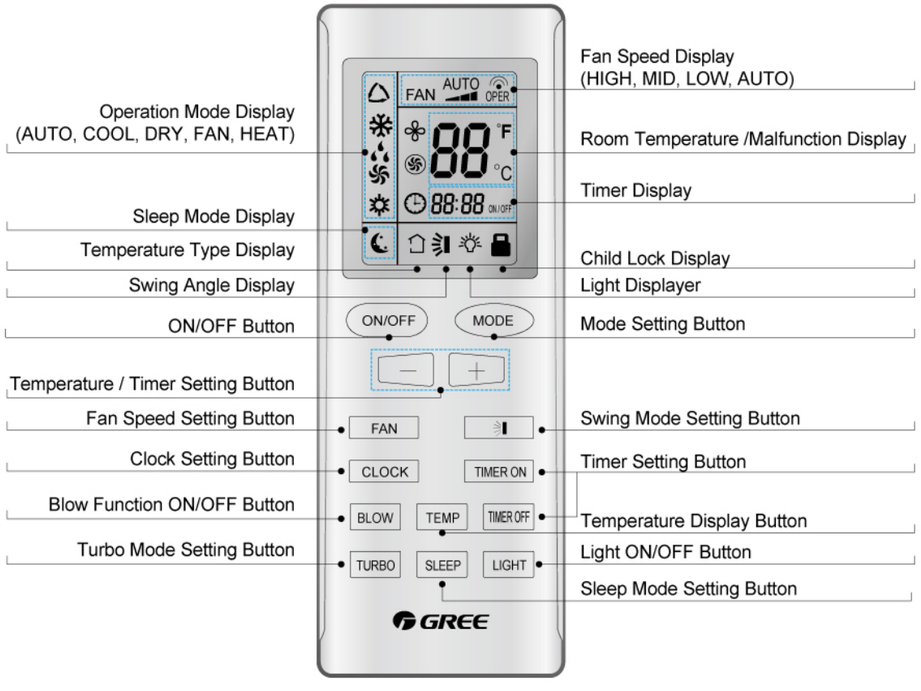


Model Name	Y512
Power Supply	AAA 1.5V×2
Dimensions (H×W×D) (mm)	159×56×18
Weight (g)	92

WIRELESS REMOTE CONTROLLER

YB1FA

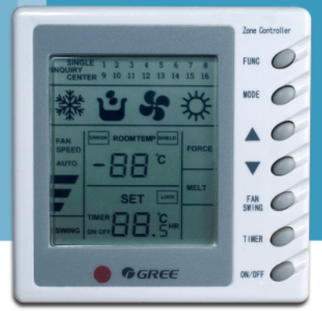
- ON/OFF
- Temperature setting
- Fan speed setting
- Energy-saving function
- Room temperature display
- Turbo cooling/heating function
- Mute function
- Child lock function
- ON/OFF Timer
- Operation mode setting
- Vertical swing
- Self-diagnosis function（Error code display）
- Sleep function
- Blow function
- Memory function（Turbo, Energy save, Quiet, Evaporation, etc）
- Clock display



Model Name	YB1FA
Power Supply	AAA 1.5V×2
Dimensions (H×W×D) (mm)	122×44×21
Weight (g)	70

GROUP CONTROLLER

ZJA011



Group monitoring control and group wired control are the two main control functions for group Controller.

Group monitoring controller can monitor or control 16 indoor units of a group for inquiry and single or centralized control.

Features:

- Both single control and central control to1-16 indoor units in a region are available.
- The wired controller buttons of 16 indoor units in a region can be shielded or locked.
- It can time 16 indoor units in a region.
- It has the function of power-off memory.

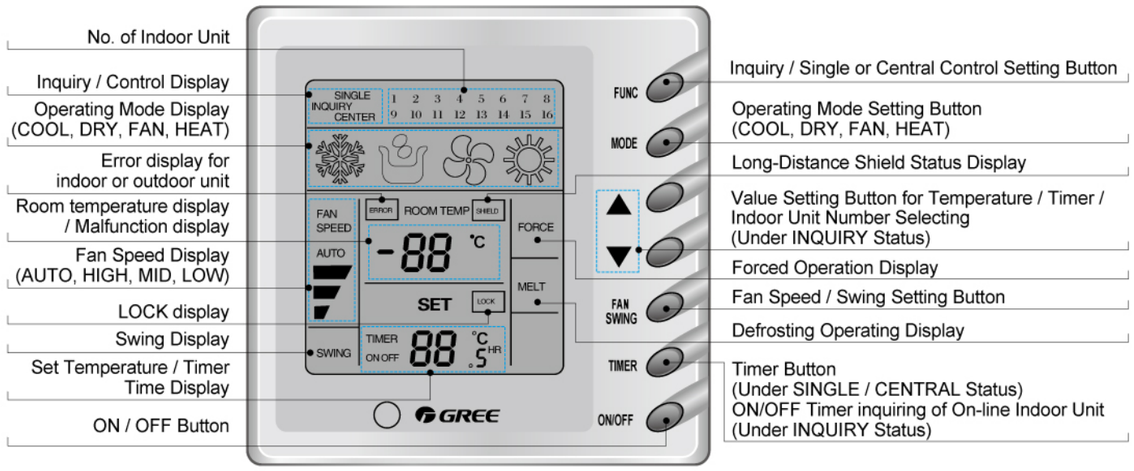
Note: Wired controller must be reserved with which indoor unit has matched.

Group wired controller can replace 1-16 selected wired controllers to uniformly set or control the indoor units.

Features:

- It can uniformly time the selected indoor units.
- It has the function of power-off memory.
- It can replace wired controller to control selected indoor units in a region.

Note: Wired controller matched with indoor unit must be removed and indoor unit must be re-energized after debugging.

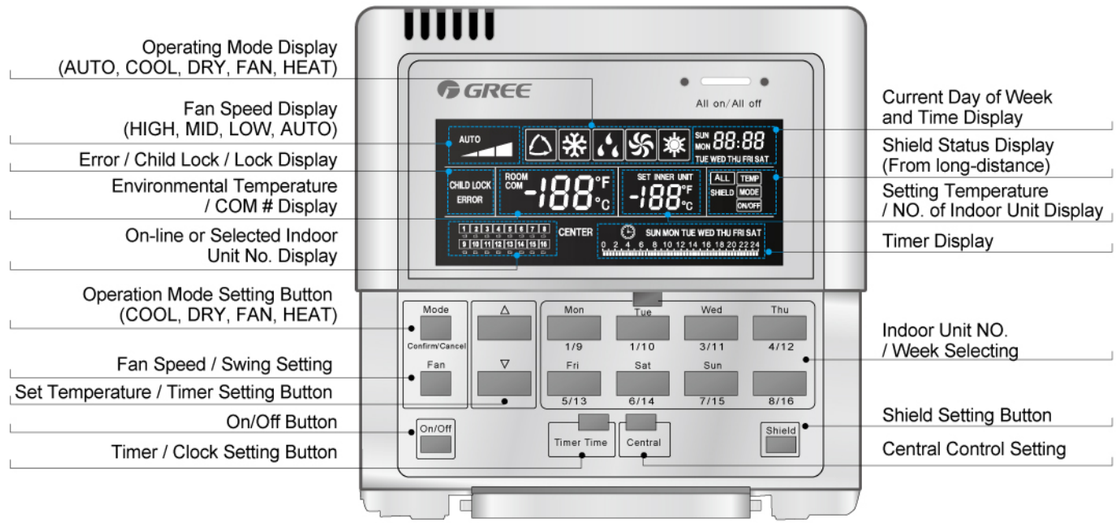


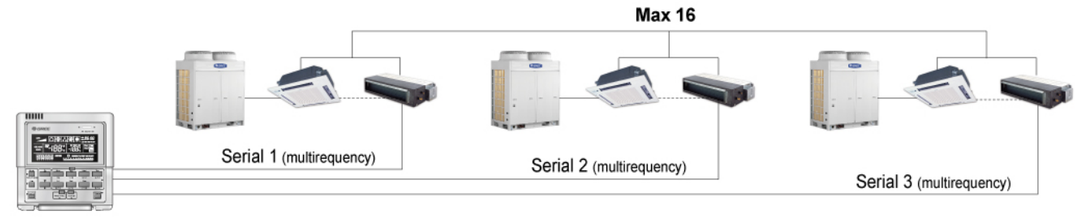
Model Name	ZJA011
Power Supply	DC12V (Supplied by the indoor unit)
Dimensions (H×W×D) (mm)	85×85×20
Weight (g)	94

SMART ZONE CONTROLLER

CE50-24/E

- Indoor units connecting to 3 sets of GMV outdoor units and the air duct type indoor unit can be connected.
- Directly control 16 indoor units in the network without extra communication module.
- Operation status of any one operating indoor unit in its control group can be inquired and displayed.
- Single unit control and centralized control are available.
- Remote shield function.
- Timer function.
- Weekly Timer Function.



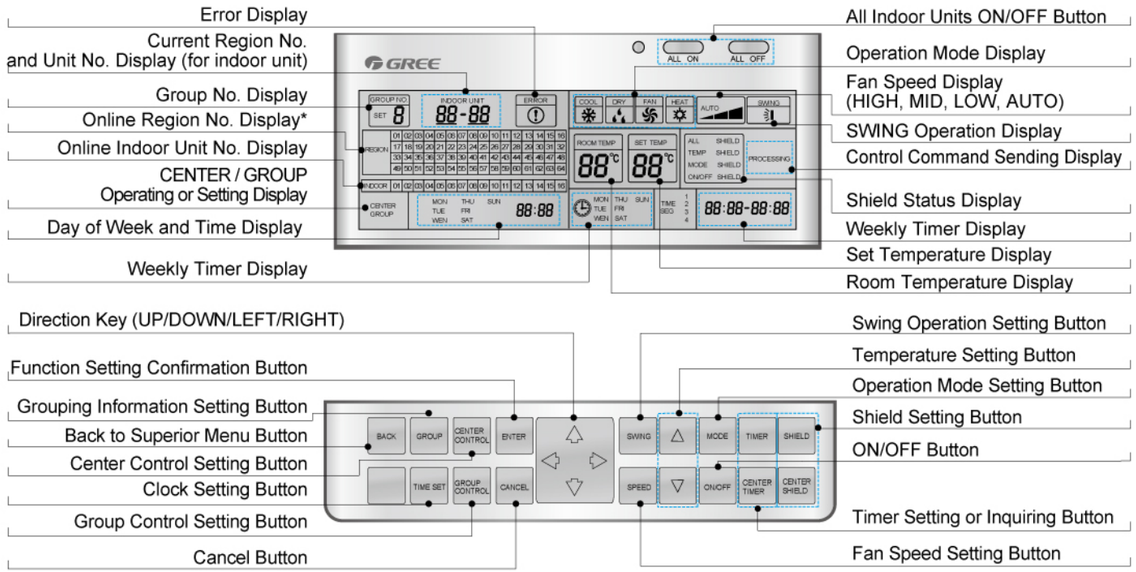


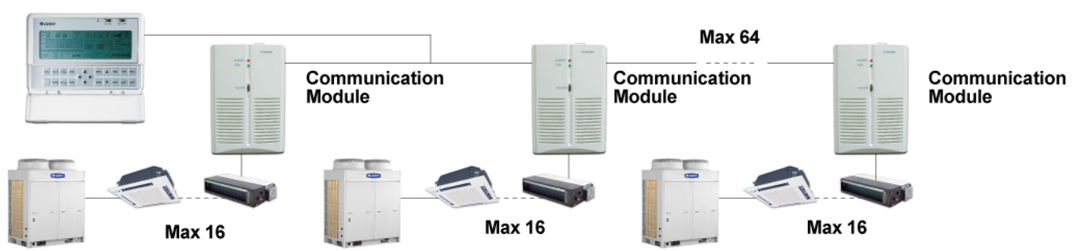
Model Name	CE50-24/E
Power Supply	220V~240V, 50/60 Hz
Dimensions (H×W×D) (mm)	120×120×62
Weight (g)	391

CENTRALIZED CONTROLLER

CE51-24E/(M)

- Clock setting
- Error alarm and error code display
- Single/Group/Center Control (including weekly timer setting, shield setting, etc.)
- 64 communication modules can be connected and 1024 sets of indoor units can be controlled
- Inquire and control the ON/OFF, operation mode, set temperature, fan speed, swing state, etc. of indoor unit
- Automatically detect and display the status of online “region” and indoor unit (including operation mode, set temperature, fan speed, swing, weekly timer, shield, etc.)
- Long-distance shield function
- Up to 1km communication wires without repeaters





** All indoor units connected by one communication module are automatically distributed in one region.*

Model Name	CE51-24/E(M)
Power Supply	220V~240V, 50/60 Hz
Dimensions (H×W×D) (mm)	185×131×68
Weight (g)	557

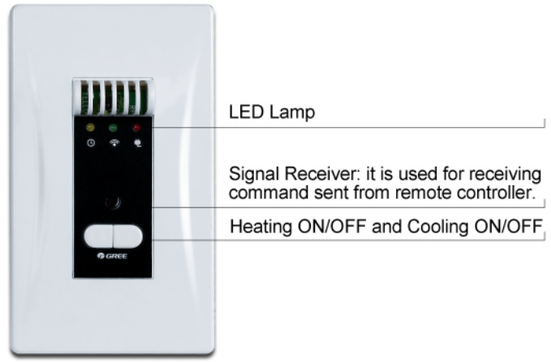
IR RECEIVER & KEY-CARD CONTROL BOARD

JS01 / MK03

IR Receiver

JS01

It is applicable to GMV duct type indoor unit and equipped with LED lamp for status indication and infrared remote control function.



Model Name	JS01
Power Supply	DC5V (Supplied by the indoor unit)
Dimensions (H×W×D) (mm)	120×70×58.5
Weight (g)	172

Key-card Control Board

MK03

- This detection control board is only suitable for Gree multi-variable (GMV) indoor unit with gate-control function.
- The AC will operate after plugging in gate-control card and stop operating after pulling out the card.
- Upon pulling out the card to stop the unit, the running states of the unit will be memorized.
- After plugging in the card, the unit will be under standby state or resume running according to settings.
- The AC will operate when the customer plugs in the card and automatically stop when he pulls out the card, which ensures unit to be turned off after people leaves room and energy to be saved.

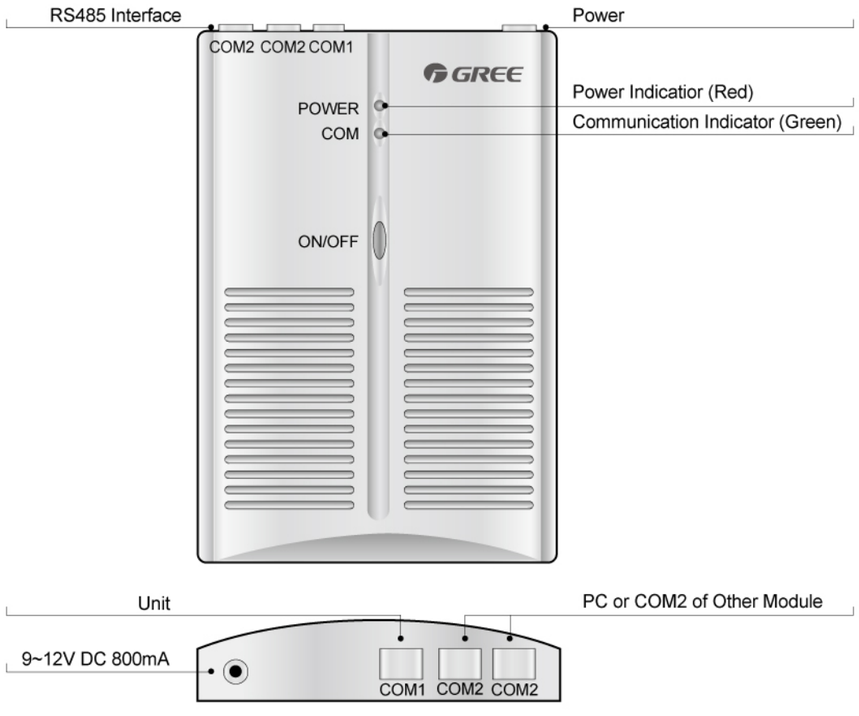
Model Name	MK03
Power Supply	220V~240V, 50/60Hz or DC5V~24V (Supplied by the indoor unit)
Dimensions (H×W×D) (mm)	73×73×36
Weight (g)	65

COMMUNICATION MODULE

ME30-00/E2

Functions

- ► The communication module (ME30-00/E2) is used for transforming and transmitting signals of the computer and the air conditioning system. It acts as a communication controller.
- ► Modbus protocol and RS485 interface are adopted so that the unit can be connected to user's BMS system. and other networks.
- ► Lots of monitoring nodes make it possible to have as many as 255 units in the same network.
- ► Control of setting parameter is available.
- ► Monitoring of operation state is available.
- ► Monitoring of malfunction state is available.



Model Name	ME30-00/E2
Power Supply	220V~240V, 50/60 Hz
Dimensions (H×W×D) (mm)	185×131×68
Weight (g)	557

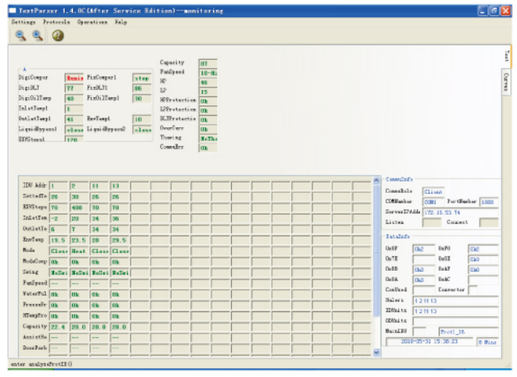
COMMISSIONING PROGRAM

Text Parser

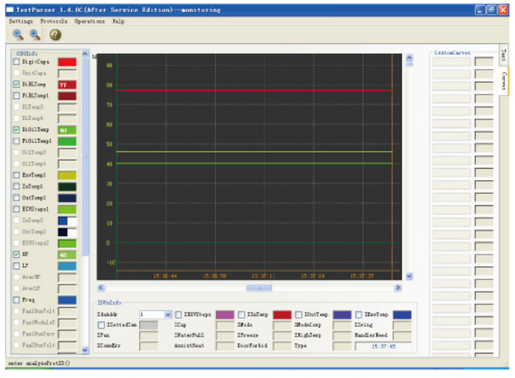
Brief introduction

- ► This software receives data from the GMV system through local COM port or network (both Internet and LAN are suitable) and then analyzes these data according to communication protocol.
- ► Running parameters of unit after analysis will be displayed and saved in real time. There are two kinds of displaying methods which are text displaying and curve displaying. The analytic data can be saved in database. Technician and service person can use this software to do the commissioning.

Real-time parameter display



Curves Analysis

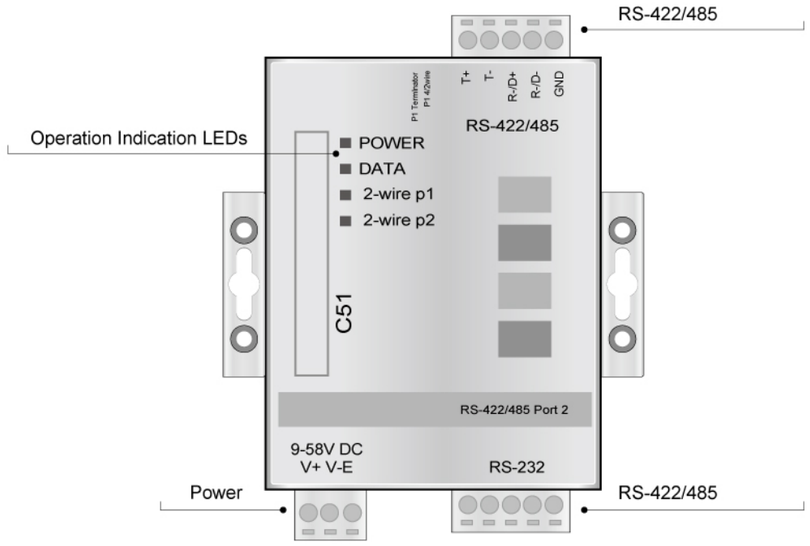


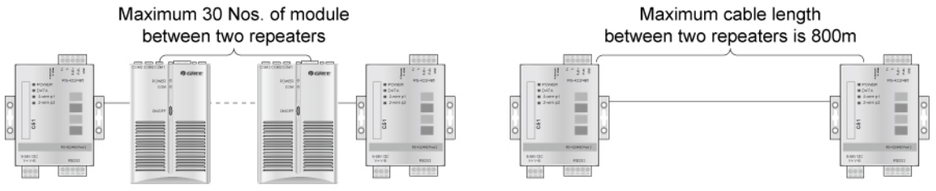
Operating System	Microsoft® Windows® 2000 Professional (English version / Service pack 4 or later)
	Microsoft® Windows® XP Professional (English version / Service pack 2 or later)
	Microsoft® Windows Vista® Home Premium / Business / Enterprise / Ultimate
	Microsoft® Windows® 7 Home Premium / Business / Enterprise / Ultimate
	64-bit version of Windows® are not supported.
CPU	Intel® Pentium® / Celeron®, AMD® Athlon™ / Duron™ 1 GHz or higher
HDD	4 GB or more of free space
Memory	512MB or more

RS-422/485 REPEATER (ISOLATED)

Functions

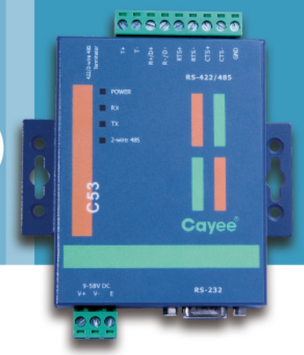
Rs-422/485 Repeater (isolated) is used to amplify the communication signal when the quantity of communication modules in the network is more than 30, or communication distance is longer than 800m.





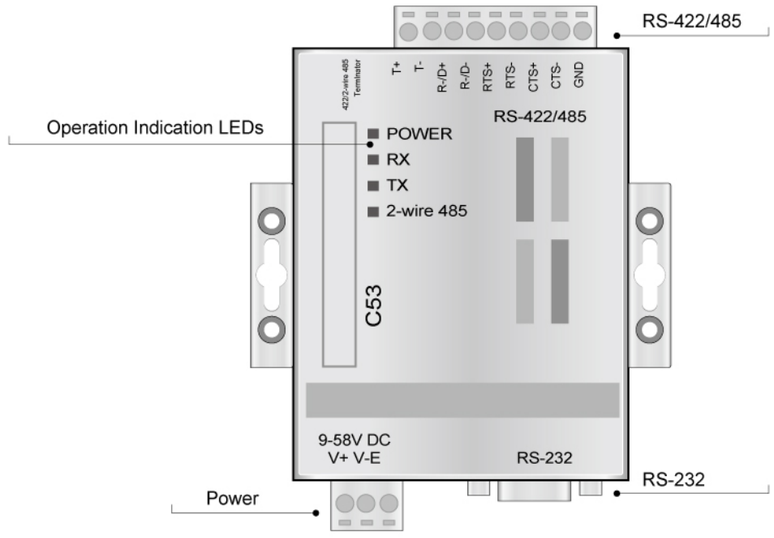
Power Supply	Input AC 220V~50/60HZ Output 12~30V DC 800mA
Dimensions (H×W×D) (mm)	96 x 100.6 x 25
Weight (g)	277

RS-232 TO RS-422/485 CONVERTER (ISOLATED)



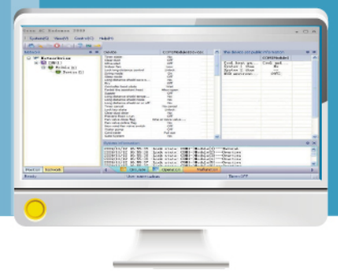
Functions

RS232-RS485 optoelectronic isolated converter is used for converting the signal between computer / BMS System (RS232) and Gree Air Conditioning Systems (RS485).



Power Supply	Input AC 220V~50/60HZ Output 12~30V DC 800mA
Dimensions (H×W×D) (mm)	96 x 100.6 x 25
Weight (g)	263

GREE AC EUDEMON 2009 PC SUIT



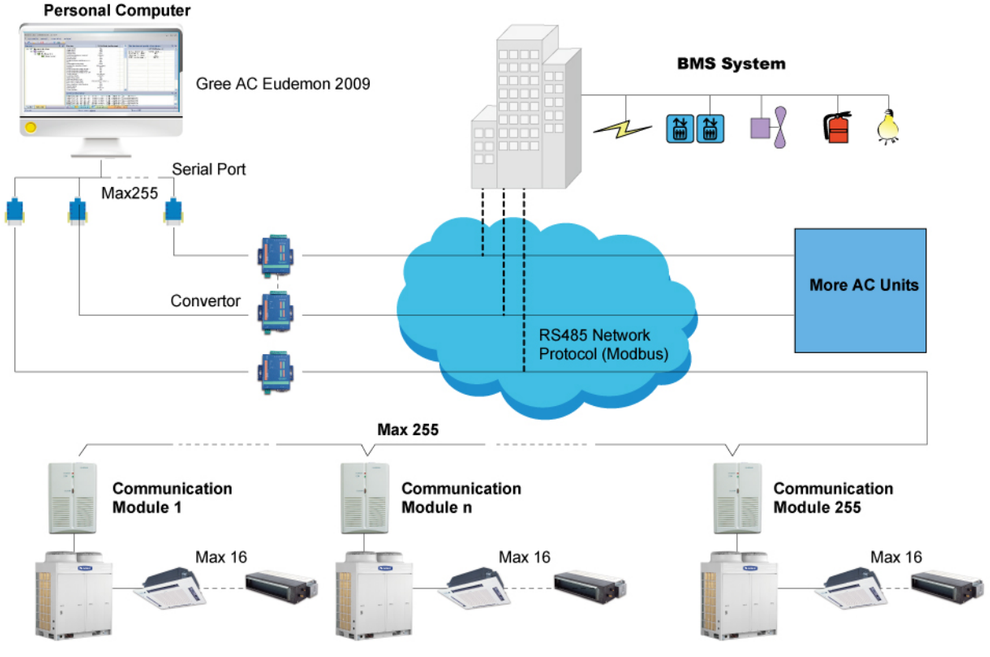
Brief of Gree AC Eudemon 2009

Gree AC Eudemon 2009 is the latest solution for controlling, monitoring and management of GREE central air conditioning systems with your PC.

- ► Maximum Connectable Systems/Outdoor Units: 255
- ► Maximum Connectable Indoor Units (GMV System): 4,000
- ► Maximum Control Distance: 5,600 m (Standard distance 800m & extendable to 5.6km)
- ► Compatible Systems: GMV System, Centrifugal Chiller, Water-cooled screw chiller, Air-Cooled screw chiller, Air-cooled scroll chiller, etc.

System schematic plan

Gree AC Eudemon 2009 Management System/BMS Network Schematic Plan



Note:

- *In a RS485 Network, different type of systems can not be connected.*
- *User can only choose either Gree AC Eudemon 2009 or BMS (Modbus) to manage the Air-conditioner system.*

Functions of Gree AC Eudemon 2009

- ► Air Conditioning System running status / error information checking.
- ► Air Conditioning System Operation Parameter setting.
- ► Multi User Management with different authorized levels.
- ► Intelligent Timer with simplified schedule management.
- ► Multi Serial port and Multithreading Monitoring.
- ► Automatic Detection enables quick monitoring even if the user is not familiar with the concept of equipments, protocol and models, etc.
- ► Vivid network plan helps the easy understanding of the physical structure of the air conditioning system.
- ► Vivid location plan helps easy management of the air conditioning system.

Content of Gree AC Eudemon 2009

Model Name	Gree AC Eudemon 2009 FE30-00/A(M)
Content	Gree AC Eudemon 2009 CD-ROM x 1 PCS
	RS232-RS485 Optoe lectronic Isolated Convertor x 1 PCS

Requirement of PC for Gree AC Eudemon 2009

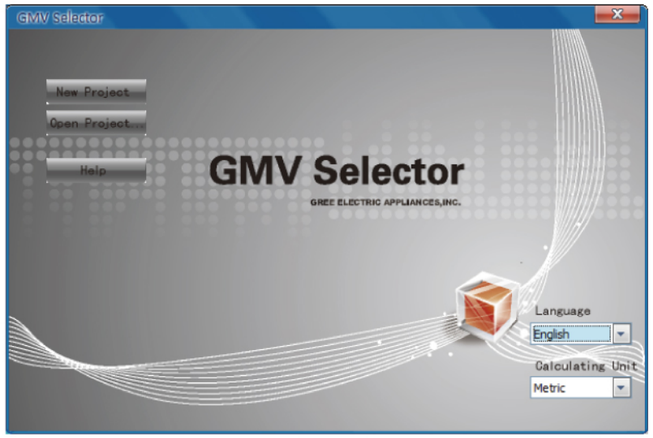
Operating System	Microsoft® Windows® XP Professional (English version / Service pack 2 or later)
	Microsoft® Windows Vista® Home Premium / Business / Enterprise / Ultimate
	Microsoft® Windows® 7 Home Premium / Business / Enterprise / Ultimate
	64-bit version of Windows® are not supported.
CPU	Intel® Pentium® / Celeron®, AMD® Athlon™ / Duron™ 1 GHz or higher
HDD	10 GB or more of free space
Memory	1 GB or more
Software Environment	Internet Explorer® 6.0 SP1 or later (.NET Framework supported)
	Microsoft® .NET Framework® 2.0
	Microsoft® SQL Server® 2005 Express
	Microsoft® Data Access Components (MDAC) 2.8 SP1 or later.
	Microsoft Visual C++® 2008 Redistributable SP1

PIPING DESIGN PROGRAM

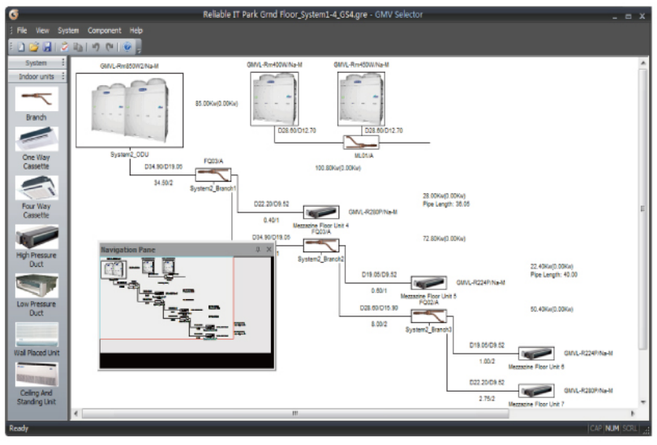
—— GMV SELECTOR

Brief introductions

► Gree GMV Selector is a program for doing the piping design of GMV VRF systems.



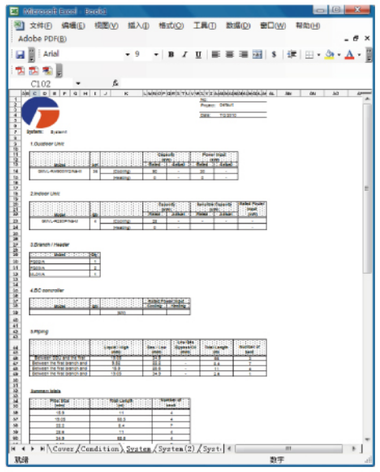
► Interface of the main program

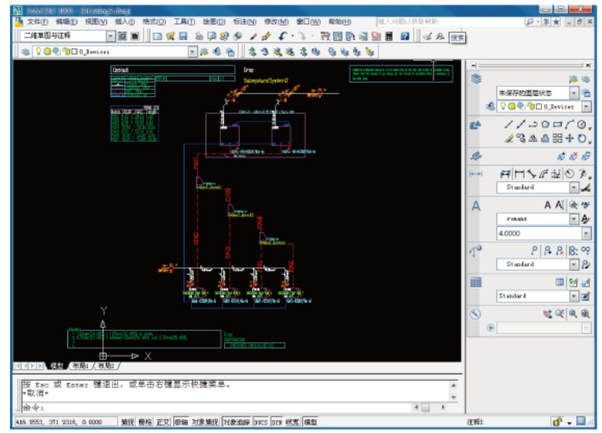


The software provides two ways to output the design

► Excel summary files: it consists of the equipment summary, design condition, system details and remote monitor detail.

► Auto CAD drawings: Electrical & Communication wiring design of the system.

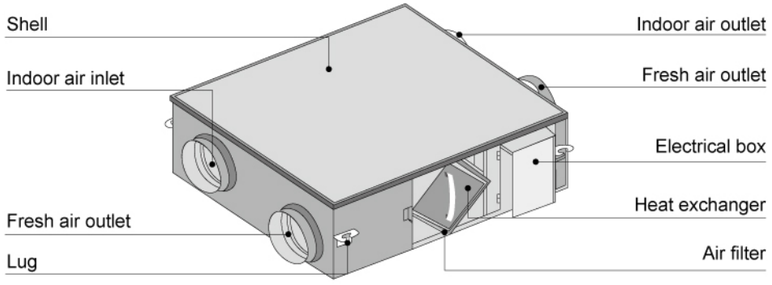




Operating System	Microsoft® Windows® 2000 Professional (English version / Service pack 4 or later)
	Microsoft® Windows® XP Professional (English version / Service pack 2 or later)
	Microsoft® Windows Vista® Home Premium / Business / Enterprise / Ultimate
	Microsoft® Windows® 7 Home Premium / Business / Enterprise / Ultimate
	64-bit version of Windows® are not supported.
CPU	Intel® Pentium® / Celeron®, AMD® Athlon™ / Duron™ 1 GHz or higher
HDD	4 GB or more of free space
Memory	512 MB or more
Software Environment	Autodesk® AutoCAD® 2004 / 2005 / 2008
	Microsoft Office® Excel 2000/2003/2007 Professional
	Microsoft Visual C++® 2008 Redistributable SP1

ENERGY RECOVERY VENTILATION

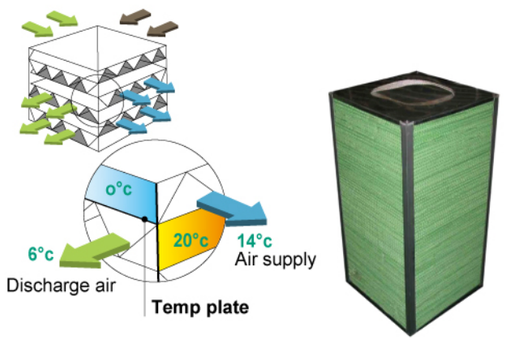
Introducing outdoor fresh air and discharging indoor air, make you feel comfortable as in the nature.



Energy saving

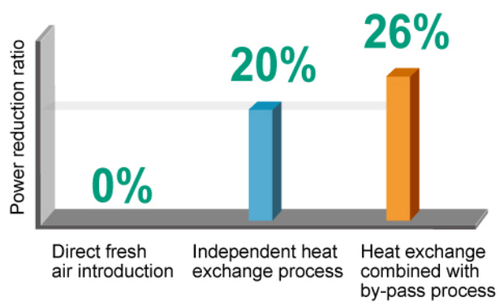
► Internal heat exchanger performs cooling and heating exchange between the discharged air and fresh air.

Energy-recovery rate above **70%**, highly energy saving.

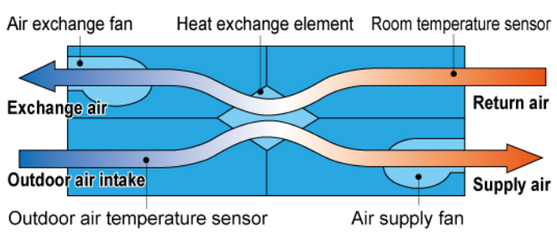


► Unique by-pass mode can reduce power consumption of fan motor to prolong lifetime of heat exchanger core.

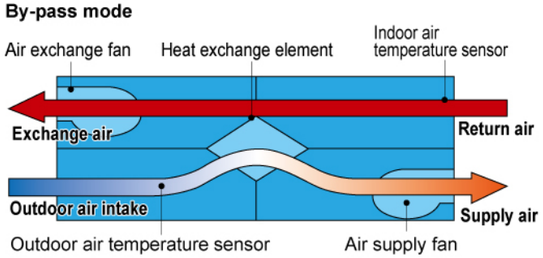
By the combination of heat exchange mode and by pass mode, the unit load can reduce by about **26%** in a year.



Heat exchange mode



By-pass mode

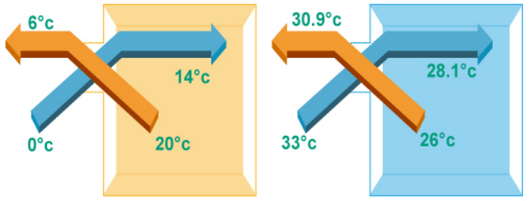


High efficiency heat exchange

The ERV can exchange the latent heat and sensible heat simultaneously, which can adjust temperature and humidity at the same time. It can be widely applied where there is big humidity difference between indoor and outdoor.

► **Heat exchange (sensible heat) inside the core**

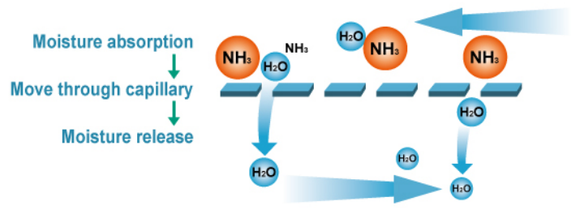
Heat exchange between discharged air and fresh air, so that the fresh air temperature comes down and close to the indoor temperature. Avoiding the feeling of uncomfortable and meanwhile effectively decreasing the load of air conditioning.



► Exchange of humidity (latent heat)

The vapor on the side with high humidity is absorbed by hygroscopic agent and discharged to the side with low humidity through capillary action of the fiber.

Through heat exchange between the indoor air and fresh air, the internal heat exchanger reduces the fluctuation of indoor temperature and prevents high supply air temperature difference while reducing operation load of the unit.



► Air Filtration and purification Function

- Internal air filter keeps the fresh air introduced into room pure and dustless.
- The efficient isolation between fresh air duct and discharge air duct ensures pure air supply.
- With antibacterial and anti-mildew materials, the heat exchange core is suiting for healthy.

► Wide range of models

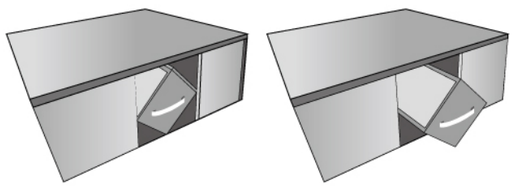
7 models in a range of **350~3000m³/h**, which can fit for different spaces and reduce the waste of power. Wide range from **350** to **3000m3/h**, matching with the buildings of various structures.

► Flexible control

- LED display
- Energy saving mode
- **24h** timer
- Centralized controller
- Weekly timer
- Long-distance Monitoring Control (optional)

► Reliability and easy maintenance

- The complete unit with non-moving parts except the fan motor can reliably operate for a long period of time, without frequent maintenance.
- Filter and heat exchange core can be easily take out from the access door for cleaning.



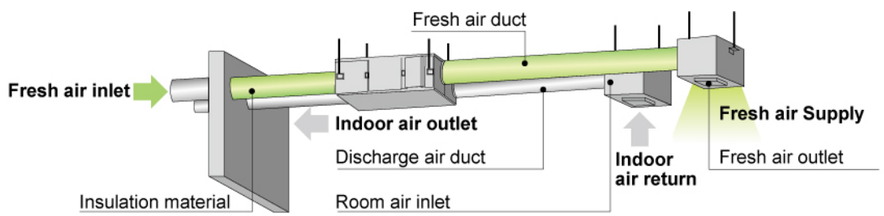
► Compact design and easy installation

With a minimum height of **306mm**, the unit is space saving, which can be installed inside limited ceiling spaces.

► Low-noise Design

Build-in low-noise ventilation fan.

Installation example



SPECIFICATIONS

ERV

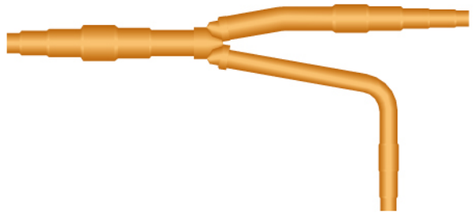
MODEL			FHBQ-D3.5-K	FHBQ-D5-K	FHBQ-D8-K	FHBQ-D10-K
Power supply			220~240V~1Ph-50Hz			
Power Input	Cooling	W	165	262	400	440
Airflow rate	H/M/L	m^3/h	360/260/210	500/380/300	800/600/480	1000/750/600
		CFM	212/153/124	294/224/176	471/353/282	588/441/353
Sound pressure level		dB(A)	37	39	45	46
External statics pressure	H/M/L	Pa	100/80/60	100/80/60	110/85/65	110/85/65
Temperature exchange efficiency	H/M/L	%	71/73/75	68/70/72	70/72/74	75/77/79
Enthalpy exchange efficiency	Heating (H/M/L)	%	65/67/68	62/64/65	63/65/67	66/68/70
	Cooling (H/M/L)	%	61/63/65	57/59/61	60/62/64	62/64/65
Dimension	W×D×H	mm	800X879X306	800X879X306	832X1016X380	832X1016X380
Net weight		kg	45	45	57	57

MODEL			FHBQ-D15-M	FHBQ-D20-M	FHBQ-D30-M
Power supply				380~415V 3N~50Hz	
Power Input	Cooling	W	600	950	2800
Airflow rate		m^3/h	1500	2000	3000
		CFM	882	1176	1765
Sound pressure level		dB(A)	48	50	54
External statics pressure		Pa	150	150	220
Temperature exchange efficiency		%	73	71	70
Enthalpy exchange efficiency	Heating	%	65	62	62
	Cooling	%	60	58	58
Dimension	W×D×H	mm	1210X1215X452	1210X1215X452	1340X1550X572
Net weight		kg	100	100	240

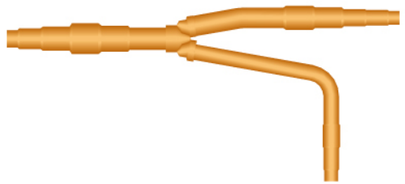
CONNECTION BRANCHES

Modular Outdoor Unit Branch Joint

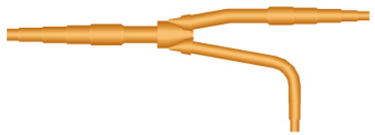
Low Pressure Gas Pipe



High Pressure Gas Pipe

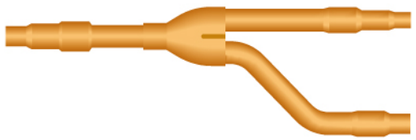


Liquid Pipe

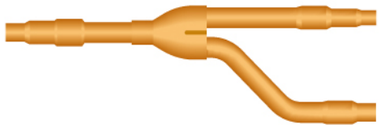


Indoor Unit Y-Type Branch Joint

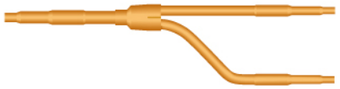
Low Pressure Gas Pipe



High Pressure Gas Pipe



Liquid Pipe



Modular Outdoor Unit Branch Joint

Model Name	Configration	
	Number of Outdoor Unit Modules	Number of Branch Joints
	4	3
ML02R	3	2
	2	1

Indoor Unit Y-Type Branch Joint

Model Name	Total cooling capacity of indoor unit (X, kW)
FQ01Na/A	X ≤ 5.6
FQ02Na/A	5.6 < X ≤ 22.0
FQ03Na/A	22.0 < X ≤ 30.0
FQ04Na/A	30.0 < X ≤ 68.0
FQ05Na/A	68.0 < X ≤ 96.0
FQ06Na/A	96.0 < X ≤ 135.0