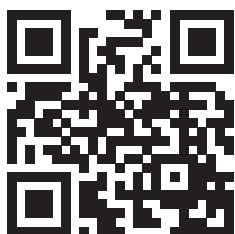


Haier
HVAC Solutions



Haier HVAC
haierhvac.eu

Copyright © 2024 Haier. All rights reserved.

Haier

More Creation, More Possibilities

Haier

HVAC Solutions

NEW R32 MRV7S DC INVERTER

An advanced VRF system integrating technology, safety and efficiency for modern solutions.



Outdoor Units With Front Discharge

SPECIFICALLY TAILORED FOR THE EUROPEAN MARKET

The new **R32 MRV7 S** system offers a powerful combination of high energy efficiency, innovative design, and a steadfast commitment to safety and environmental responsibility. This system not only enhances operational performance and simplifies installation procedures but also strengthens leak

protection and significantly increases system flexibility. The **MRV7 S** is suitable for a diverse array of applications across vertical markets and is available in **4,5 & 6 HP single fan** and **8,10 & 12HP double fan** both with front discharge.

INTEGRATING DESIGN WITH EFFICIENCY

The introduction of the R32 **MRV7 S** emphasises Haier's dedication to transitioning its MRV range from R410A to R32. This innovative solution positions Haier at the forefront by boosting energy efficiency by up to 17%, implementing advanced safety features to prevent refrigerant leaks, and providing increased flexibility in installation, equipment control, and connectivity.

The **MRV7 S** incorporates a suite of innovative technologies to optimise efficiencies and operational costs. These include a dual-screw DC inverter compressor, which not only boosts efficiency but also reduces noise. A high efficiency stepless axial fan is engineered to move large volumes of air with minimal power consumption, contributing to sustainability through its robust design.

The **MRV7 S** boasts a scalable and modular architecture, expertly designed to accommodate the specific needs of each individual project. It offers broad compatibility with a variety of indoor unit types, including wall-mounted, cassette, and ducted units, alongside extended pipe lengths up to 400 meters. This allows for highly adaptable configurations that seamlessly integrate with centralised control systems. From compact spaces to expansive infrastructures, the system guarantees customised comfort, without compromising on performance or efficiency.

INTEGRATING SAFETY WITH PRECISION

The **MRV7 S** is engineered with a multi-zone leak detection system, providing comprehensive safety through built-in leak detectors in all our indoor units. The system incorporates visual and audible alarms within the new controllers. For added flexibility, an optional automatic shut-off valve can be installed, supported by a battery-powered emergency function, which is especially useful during power outages. This feature also allows

for zone segregation, enabling the valve to isolate refrigerant and prevent leaks.

These advanced safety protocols are built-in to proactively manage and reduce risks throughout the product's lifecycle, from its initial design to its day-to-day operation, fully compliant with the new EU regulation 573/2024.

INTEGRATING INSTALLATION AND CONTROL FLEXIBILITY

The **MRV7 S** is designed for streamlined installation and maintenance. It incorporates innovative features like Space-Link technology, a novel protocol that provides installers with unparalleled flexibility in wiring the communications network, moving away from the traditional chain method. This results in simplified wiring, faster installation times, and reduced cabling needs. Furthermore, the integrated self-clean functions for both indoor and outdoor units not only ensure cleaner air quality but also minimize the accumulation of dirt and bacteria, thereby extending maintenance intervals.

To further enhance efficiency, the **MRV7 S** features automatic addressing functionality. This simplifies the commissioning process by automatically assigning unique addresses to each indoor unit, eliminating the need for manual configuration. This is

particularly advantageous for larger VRF systems with numerous indoor units, making both installation and commissioning processes more efficient and user-friendly. The new R32 MRV indoor units are all backward compatible with R410A refrigerant, reducing complexity from logistics to installation.

The new controller has been given a communication protocol upgrade, with a smart interface which is compatible with both R32 and R410A indoor units. Integrated with faster communication and zero-latency operation. Furthermore, the system features **AVRA-AI** for intelligent refrigerant control and advanced communication protocols, allowing for faster installation and more precise system control. Each component is meticulously designed to provide practical, real-world solutions.

MRV7 S - INTEGRATING NEW FEATURES

The New R32 MRV7 S by Haier is the latest generation of VRF systems developed to meet European F-Gas Regulation 573/2024, using low-GWP R32 refrigerant. Specifically designed for the European market, it brings together advanced energy efficiency, cutting edge technology, and a strong commitment to safety and environmental sustainability. This system not only enhances operational performance but also simplifies installation, reinforces leak protection, and ensures adaptability across a multitude of applications including commercial, residential, and hospitality to name a few.

High efficiency DC motor

- DC fan motor with stepless inverter control, from 0 to 91Hz.
- Offering a 17% efficiency improvement over regular DC motors

Axial flow fan

- Ø824mm axial flow fan
- Reduces the airflow resistance at high speed
- Reduces the noise by 3 dB

Compressor

- Low-Noise, High-Efficiency, Twin-Rotary Inverter Compressor.
- Built-in exhaust noise reduction design, reducing compressor airflow noise
- The compressor adopts new vibration-absorbing materials, combined with rubber damping pads, completely isolating the compressor from the housing, reducing compressor rotational noise and vibrations

Electronic control module

- The variable frequency drive control is designed to use high performance vector control without a position sensor. This achieves a control accuracy of up to 0.01rps, thereby making operation more stable, drives higher efficiencies and ensures best capacity management.
- Refrigeration of PCB for optimal performance of electronic system in hot ambient temperatures

Heat exchanger - coating

- Better corrosion resistance
- Better defrost performance
- Reduces dirt accumulation
- Improves heat exchange, maximising seasonal efficiency

Refrigerant flow path silencer

- Effectively eliminating refrigerant flow noise

Gas-liquid separator

- Equips a larger-sized gas-liquid separator, it ensures a more reliable system operation.

High efficiency oil separator

- Faster and more efficient separation



MRV7 S

Outdoor Units With Front Discharge

R32

R32 LOW GWP

R32 refrigerant has an Ozone Depletion Potential (ODP) of 0 and a Global Warming Potential (GWP) of 675. This means it has no damaging effect on the ozone layer and boasts a 68% lower GWP compared to R410A. The 60335 regulation introduces new safety standards for R32 VRF systems, presenting new design challenges. The R32 MRV7 S front discharge unit is engineered to comply with these standards as well as minimize its carbon footprint.

SIMPLE INDOOR UNIT (IDU) ADDRESSING

The MRV7 S uses automatic addressing mode to set the IDU and ODU (Outdoor Unit) addresses. If the AC system is powered off, the original address will be retained, this solves the pain point of resetting the address after the power failure.

Two options for addressing the indoor units:

- Use the indoor unit's PCB board dip setting addressing **or**
- Use wired controller set the indoor unit addressing

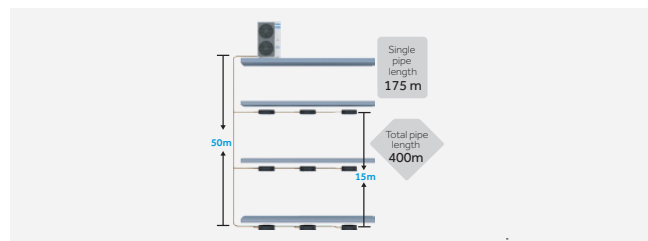


EASY INSTALLATION AND MAINTENANCE

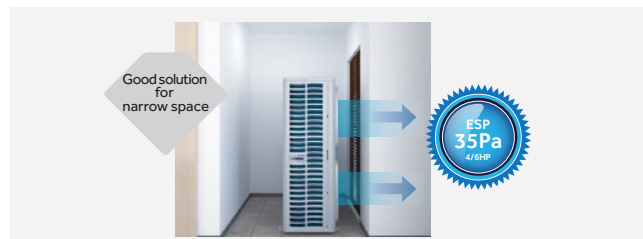
"888" test panel: all running data & error can be checked from "888" screen, which is easy for installers. Rotary switch design, easy setup parameter.



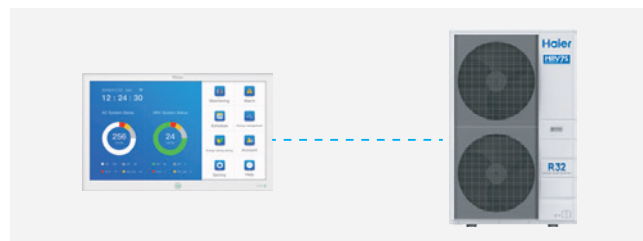
Total pipe length is up to 300m (single fan), 400m (double fan) complete installation flexibility.



External static pressure is up to 35Pa (single fan), 45Pa (double fan). Unlike a top discharge unit, you do not require an additional ventilation hood.



The ODU can be directly connected to a centralised control system without the need for Modbus.



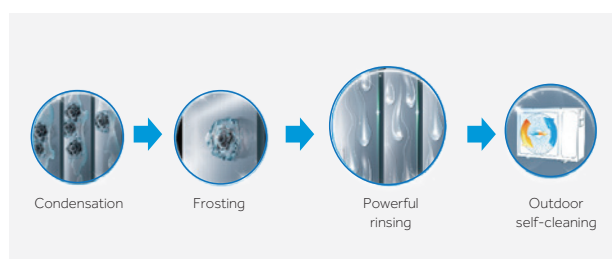
SELF CLEAN TECHNOLOGY

Both indoor and outdoor units benefit from Haier's Self Clean functionality without stopping the compressor and distributing the operation of the unit.

The cold expansion technology forms a layer of frost on the evaporator/condenser which

generates a strong force of cold expansion that easily removes dirt from the surface.

The IDU uses the waste heat of the ODU to defrost the heat exchanger, to dry the condensed water, effectively prevent mold breeding.

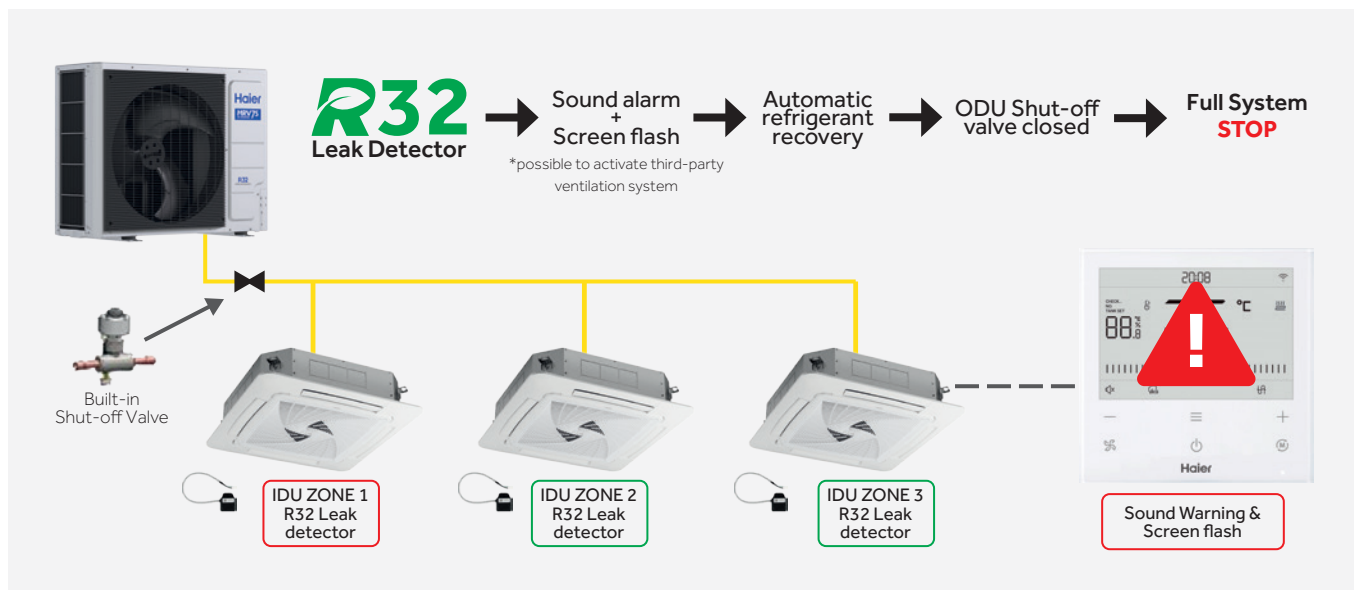


BUILT-IN R32 LEAK DETECTION WITH SHUT-OFF VALVE

The system is engineered for safety, automatically detecting refrigerant leaks. Upon detection, it activates visual and audible alarms and immediately isolates the affected areas using an automatic shut-off valve.

ODU SHUT-OFF VALVE

Scenario 1: Outdoor unit directly connected to indoor units (without shut off kit) will shut down the whole system.

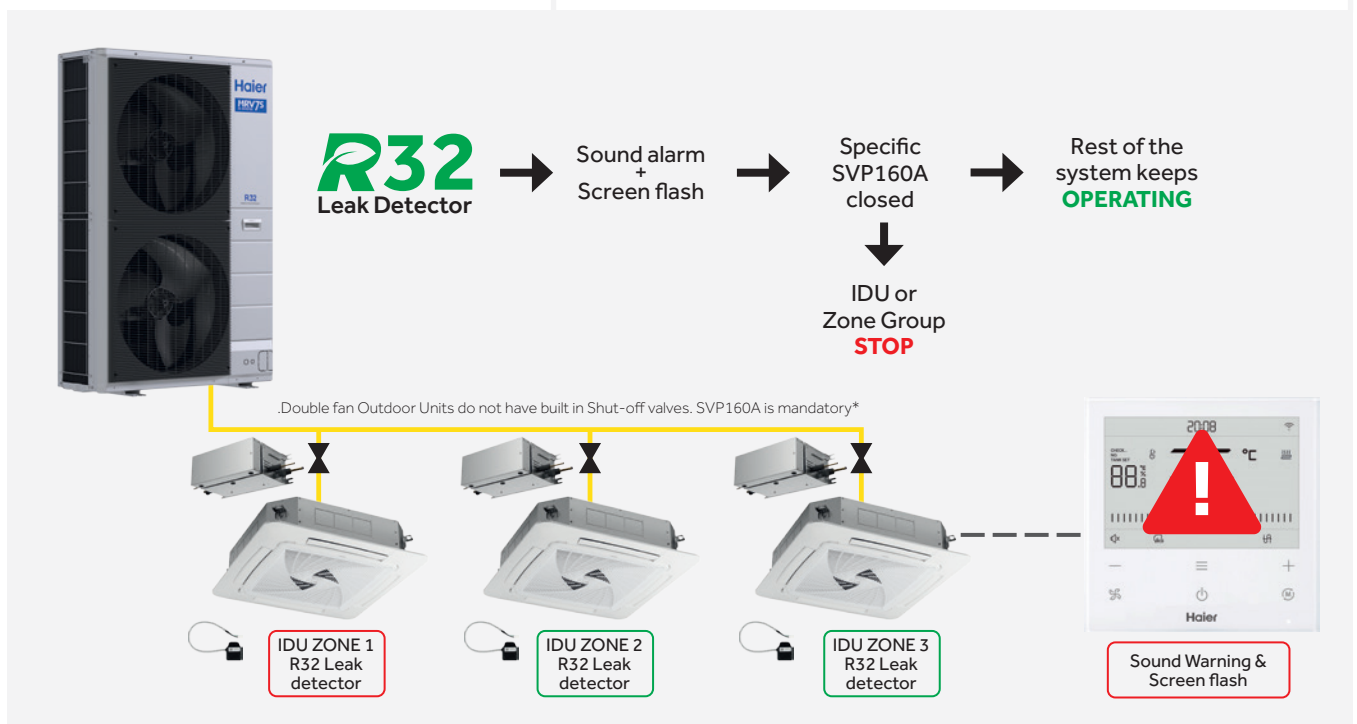


SHUT-OFF VALVE BOX (SVP-160A)

Scenario 2: Outdoor unit connects to VRF indoor unit with shut-off valve kit.



SVP-160A is an automatic shut-off valve that isolates only the circuit zone where a refrigerant leak is detected, while maintaining normal operation across the rest of the system. A single SVP box can support **up to 5 indoor units** with a maximum **total indoor capacity of 18 kW**.



MRV7 S

Outdoor Units With Front Discharge

R32

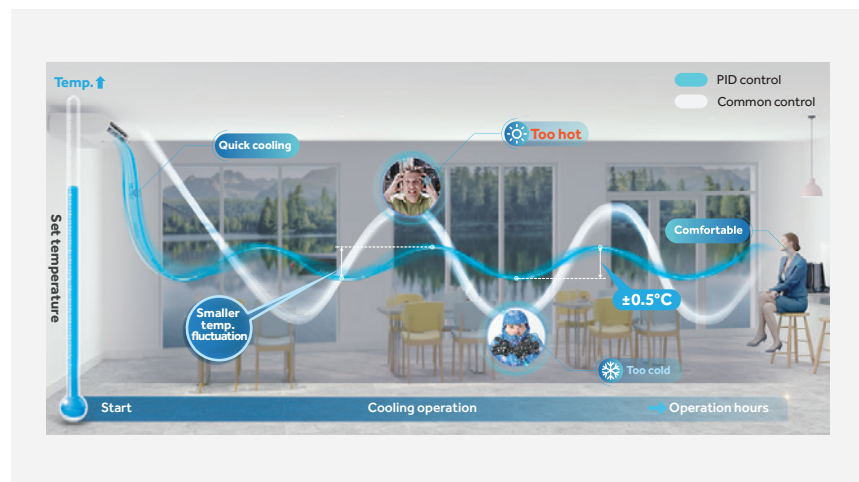
DIAMOND SHIELD-R32 SAFETY PROTECTION

- **Software:** new version of the MRV selection software calculates the amount of refrigerant in the room and alerts if the safety limit is exceeded.
- **Alarm:** the wired controller, panel and wall-mounted refrigerant detector can trigger a sound and light alarm in the case of a refrigerant leak.
- **Battery:** SVP160A are equipped with a back-up battery, in order to supply power to close the shut off valves in the event of a system power failure.
- **Leak Detectors:** Indoor units are equipped with built in leak detectors. There is no need to replace them after detection.
- **Recovery:** In the case of a leakage, the system can recover the R32 refrigerant to the ODU and will be isolated by the shut off valves (single fan ODU). Unaffected units with SVP160A will continue operation, providing comfortable temperature to the user.
- **Shut off valve:** the 4/5/6 HP MRV7 S outdoor units are equipped with built-in R32 shut off valves.

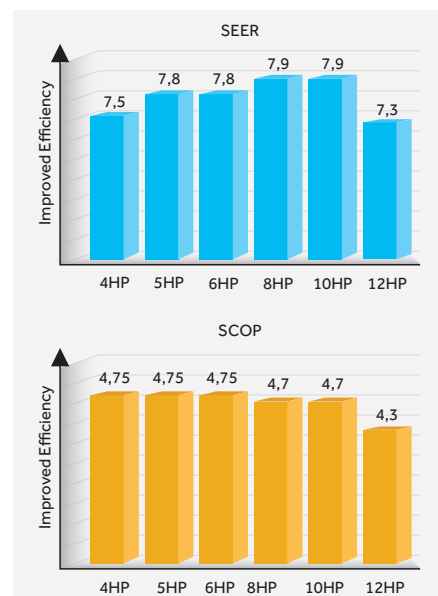
For the 8/10/12 HP MRV7 S outdoor units, an external shut off valve box (SVP160A) should be ordered to be installed wherever it is necessary.

INTELLIGENT CONTROL MODE

The intelligent control mode enable quick cooling and heating, which increases the compressor output. The double pressure sensor with PID control technology enables temperature control to $\pm 0.5^{\circ}\text{C}$, for optimum indoor air comfort.



MRV7 S - EFFICIENCY



AVRA (ADVANCED VARIABLE REFRIGERANT ADJUSTMENT)

AVRA is an intelligent control technology that dynamically adjusts the refrigerant evaporation temperature based on outdoor ambient temperature and indoor comfort requirements. By simultaneously adjusting the compressor frequency and the electronic expansion valve (EEV) opening, the system can automatically optimise indoor comfort, improve energy efficiency and adapt its performance in real time without requiring any manual intervention.



MRV7 S - Single Fan

Outdoor Units With Front Discharge

4 HP

5 HP

6 HP



4-5-6 HP

Single Phase

AU042FCFRA

AU052FCFRA

AU062FCFRA



Model			AU042FCFRA	AU052FCFRA	AU062FCFRA
Capacity ^[1]	Power Class	HP	4	5	6
	Cooling	kW	12,10	14,00	15,50
	Heating	kW	12,10	14,00	15,50
Electrical parameters	Power supply	Ph/V/Hz	1 / 220-240 / 50	1 / 220-240 / 50	1 / 220-240 / 50
	Absorbed power - Cooling	kW	3,44	4,12	4,80
	Max. Power Input - Cooling	kW	7,10	7,40	7,70
	Absorbed power - Heating	kW	2,72	3,50	4,08
	Max. Power Input - Heating	kW	6,80	7,10	7,40
	EER energy class	/	3,52	3,40	3,23
	COP energy class	/	4,45	4,00	3,80
	SEER energy class (T1)	/	8,09	7,85	7,62
	SCOP energy class (T1)	/	4,88	4,75	4,71
	Max. external static pressure	Pa	35	35	35
	ηs,hs,c %	%	321	311	302
	ηs,hs,h %	%	192	187	185
Fan	Air flow (High)	m³/h	5800	5800	5800
Pressure sound level	Sound pressure level (Cooling)	dB(A)	54	55	56
	Sound pressure level (Heating)	dB(A)	56	57	58
Dimensions	Unit Dimensions WxDxH	mm	1050x400x965	1050x400x480	1050x400x480
	Packaged unit dimensions WxDxH	mm	1160x520x1015	1160x520x1015	1160x520x1015
Weight	Net/Shipping weight	kg	96	96	96
Compressor	Compressor type	/	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary
	Motor Power	W	4150	4150	4150
	Compressor quantity	/	1	1	1
Refrigerant	Refrigerant type	/	R32	R32	R32
	Pre-charged refrigerant qty.	kg	3,00	3,00	3,00
Piping	Ø Liquid side refrigerant pipe	mm (inch)	9,52 (3/8)	9,52 (3/8)	9,52 (3/8)
	Ø Gas side refrigerant pipe	mm (inch)	19,05 (3/4)	19,05 (3/4)	19,05 (3/4)
	Maximum piping length	m	300	300	300
	Max linear piping length (Equivalent/Real)	m	120	120	120
	Std. drop between IU and OU	m	50/40	50/40	50/40
	Max. drop between IU	m	15	15	15
Connection ratio	Indoor / Outdoor Capacity Ratio	%	50%-150%	50%-150%	50%-150%
	Maximum number of connectable IUs	/	13	16	18
Working temp.	Cooling	°C	-5-52	-5-52	-5-52
	Heating	°C	-25-21	-25-21	-25-21

Indoor temperature (cooling): 27°C DB / 19°C WB, indoor temperature (heating): 20°C DB / 14.5°C WB

Outdoor temperature (cooling): 35°C DB / 24°C WB, outdoor temperature (heating): 7°C DB / 6°C WB

MRV7 S - Single Fan

Outdoor Units With Front Discharge

4 HP

5 HP

6 HP



4-5-6 HP

Three Phase

AU04IFCFRA

AU05IFCFRA

AU06IFCFRA

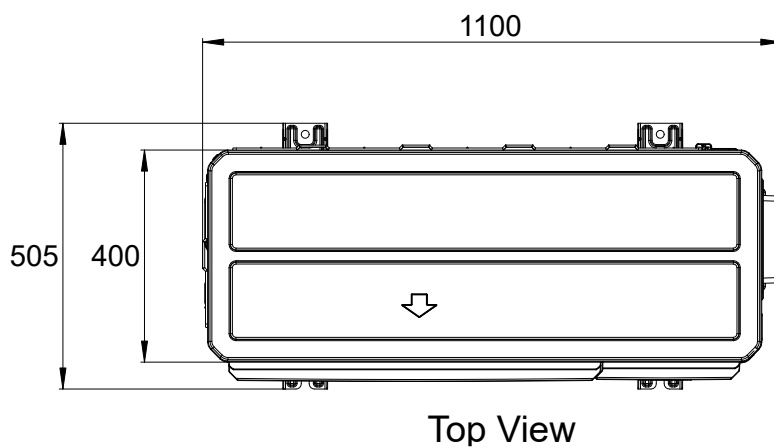
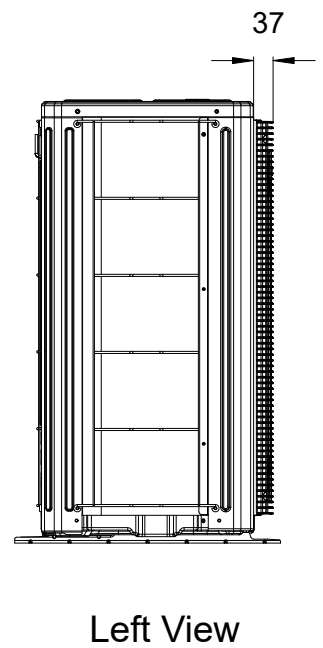
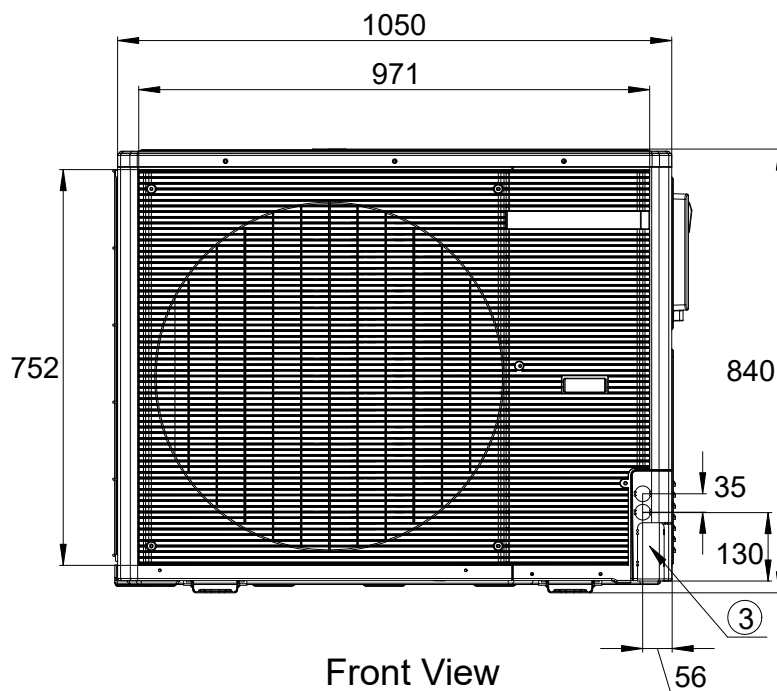


Model			AU04IFCFRA	AU05IFCFRA	AU06IFCFRA
Capacity ^[1]	Power Class	HP	4	5	6
	Cooling	kW	12,10	14,00	15,50
	Heating	kW	12,10	14,00	15,50
Electrical parameters	Power supply	Ph/V/Hz	3 / 380 - 415 / 50	3 / 380 - 415 / 50	3 / 380 - 415 / 50
	Absorbed power - Cooling	kW	3,44	4,12	4,80
	Max, Power Input - Cooling	kW	7,10	7,40	7,70
	Absorbed power - Heating	kW	2,72	3,50	4,08
	Max, Power Input - Heating	kW	6,80	7,10	7,40
	EER energy class	/	3,52	3,40	3,23
	COP energy class	/	4,45	4,00	3,80
	SEER energy class (T1)	/	8,09	7,85	7,62
	SCOP energy class (T1)	/	4,88	4,75	4,71
	Max, external static pressure	PA	35	35	35
	ηs,hs,c %	%	321	311	302
	ηs,hs,h %	%	192	187	185
Fan	Air flow (High)	m³/h	5800	5800	5800
Pressure sound level	Sound pressure level (Cooling)	dB(A)	54	55	56
	Sound pressure level (Heating)	dB(A)	56	57	58
Dimensions	Unit Dimensions WxDxH	mm	1050x400x840	1050x400x840	1050x400x840
	Packaged unit dimensions WxDxH	mm	1160x520x1015	1160x520x1015	1160x520x1015
Weight	Net/Shipping weight	kg	106	106	106
Compressor	Compressor type	/	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary
	Motor Power	W	4165	4165	4165
	Compressor quantity	/	1	1	1
Refrigerant	Refrigerant type	/	R32	R32	R32
	Pre-charged refrigerant qty,	kg	3,00	3,00	3,00
Piping	Ø Liquid side refrigerant pipe	mm (inch)	9,52 (3/8)	9,52 (3/8)	9,52 (3/8)
	Ø Gas side refrigerant pipe	mm (inch)	19,05 (3/4)	19,05 (3/4)	19,05 (3/4)
	Maximum piping length	m	300	300	300
	Max linear piping length (Equivalent/Real))	m	120	120	120
	Std, drop between IU and OU	m	50/40	50/40	50/40
	Max, drop between IU	m	15	15	15
Connection ratio	Indoor / Outdoor Capacity Ratio	%	50%-150%	50%-150%	50%-150%
	Maximum number of connectable IUs	/	13	16	18
Working temp,	Cooling	°C	-5-52	-5-52	-5-52
	Heating	°C	-25-21	-25-21	-25-21

Indoor temperature (cooling): 27°C DB / 19°C WB, indoor temperature (heating): 20°C DB / 14.5°C WB

Outdoor temperature (cooling): 35°C DB / 24°C WB, outdoor temperature (heating): 7°C DB / 6°C WB

AU042FCFRA AU052FCFRA AU062FCFRA AU041FCFRA AU051FCFRA AU061FCFRA



MRV7 S - Double Fan

Outdoor Units With Front Discharge

8 HP

10 HP

12 HP



8-10-12 HP

Three Phase

AU08NFAFRA

AU10NFAFRA

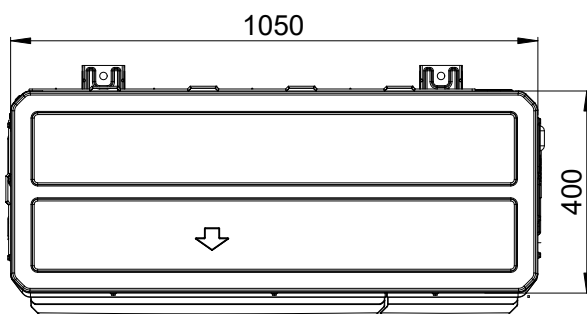
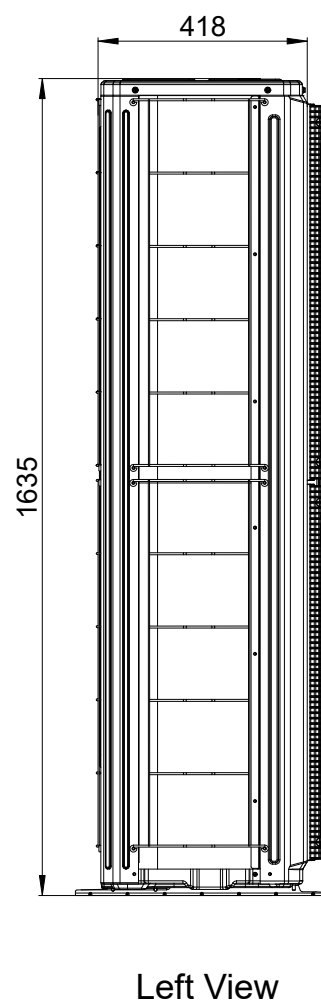
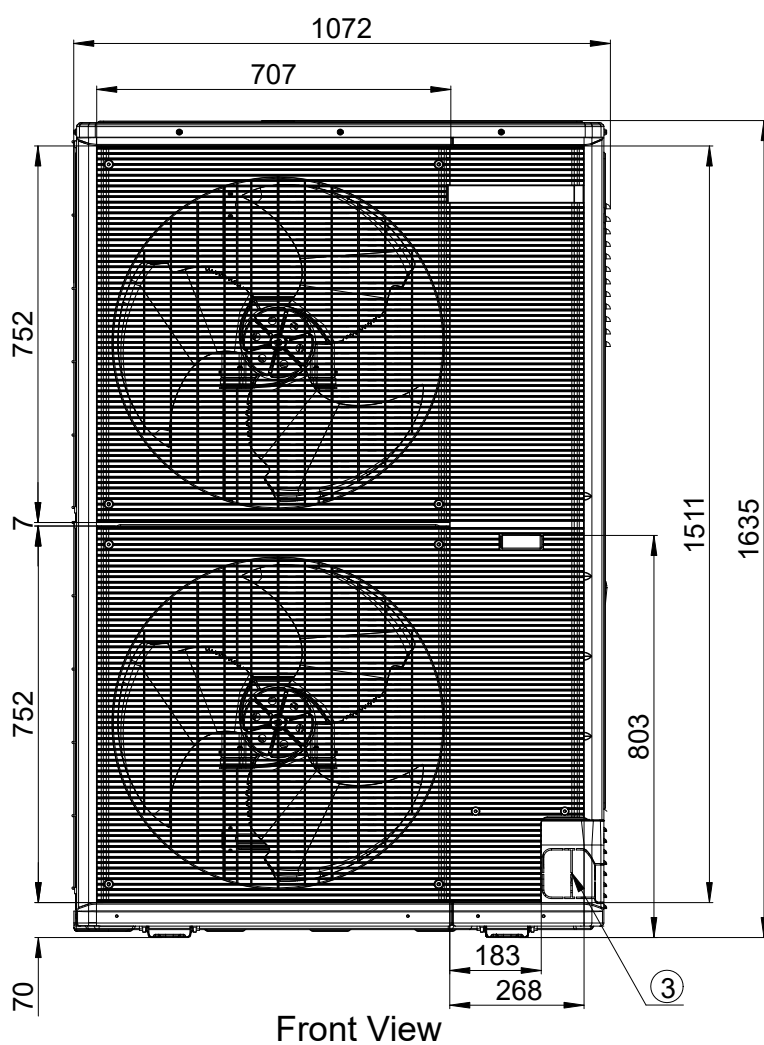
AU12NFAFRA








Model			AU08NFAFRA	AU10NFAFRA	AU12NFAFRA
Capacity ^[1]	Power Class	HP	8	10	12
	Cooling	kW	22,60	28,00	31,50
	Heating	kW	22,60	28,00	31,50
Electrical parameters	Power supply	Ph/V/Hz	3 / 380 - 415 / 50	3 / 380 - 415 / 50	3 / 380 - 415 / 50
	Absorbed power - Cooling	kW	6,95	8,67	11,54
	Max. Power Input - Cooling	kW	11,40	14,30	15,30
	Absorbed power - Heating	kW	5,79	7,37	8,49
	Max. Power Input - Heating	kW	10,80	13,60	14,50
	EER energy class	/	3,25	3,23	2,73
	COP energy class	/	3,90	3,80	3,71
	SEER energy class (T1)	/	7,67	7,65	7,50
	SCOP energy class (T1)	/	4,65	4,60	4,55
	Max. external static pressure	Pa	45	45	45
	ηs,hs,c %	%	303,8	303,0	297,0
	ηs,hs,h %	%	183	181	179
Fan	Air flow (High)	m³/h	12500	12500	12500
Pressure sound level	Sound pressure level (Cooling)	dB(A)	57	59	61
	Sound pressure level (Heating)	dB(A)	60	62	64
Dimensions	Unit Dimensions WxDxH	mm	1050x400x1635	1050x400x1635	1050x400x1635
	Packaged unit dimensions WxDxH	mm	1160x520x1805	1160x520x1805	1160x520x1805
Weight	Net/Shipping weight	kg	165,5	165,5	165,5
Compressor	Compressor type	/	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary
	Motor Power	W	6890	6890	6890
	Compressor quantity	/	1	1	1
Refrigerant	Refrigerant type	/	R32	R32	R32
	Pre-charged refrigerant qty.	kg	6,50	6,50	6,50
Piping	Ø Liquid side refrigerant pipe	mm (inch)	12,70 (1/2)	12,70 (1/2)	12,70 (1/2)
	Ø Gas side refrigerant pipe	mm (inch)	19,05 (3/4)	19,05 (3/4)	19,05 (3/4)
	Maximum piping length	m	400	400	400
	Max linear piping length (Equivalent/Real)	m	150	150	150
	Std. drop between IU and OU	m	50/40	50/40	50/40
	Max. drop between IU	m	15	15	15
Connection ratio	Indoor / Outdoor Capacity Ratio	%	50%~150%	50%~150%	50%~150%
	Maximum number of connectable IUs	/	20	25	30
Working temp.	Cooling	°C	-5~52	-5~52	-5~52
	Heating	°C	-25~21	-25~21	-25~21

Indoor temperature (cooling): 27°C DB / 19°C WB, indoor temperature (heating): 20°C DB / 14.5°C WB
 Outdoor temperature (cooling): 35°C DB / 24°C WB, outdoor temperature (heating): 7°C DB / 6°C WB

AU08NFAFRA AU10NFAFRA AU12NFAFRA



INDOOR UNIT RANGE





SERIES	REFRIGERANT	1,5 kW	2,2 kW	2,8 kW	3,6 kW	4,5 kW	5,6 kW	7,1 kW	8,0 kW	9,0 kW	11,2 kW	14,0 kW	16,0 kW
 ROUND FLOW CASSETTE			•	•	•	•	•	•	•	•	•	•	•
 COMPACT CASSETTE		•	•	•	•	•	•	•					
 WALL MOUNTED*		•	•	•	•	•	•	•	•	•			
 1 WAY CASSETTE		•	•	•	•	•	•	•					
 2 WAY CASSETTE			•	•	•	•	•	•	•	•	•	•	
 SLIM DUCTED* LOW PRESSURE (40Pa)		•	•	•	•	•	•	•	•				
 COMPACT DUCTED* LOW-MED PRESSURE (90Pa)		•	•	•	•	•	•	•					
 DUCTED MED - HIGH PRESSURE (200Pa)		•	•	•	•	•	•	•	•	•	•	•	•
 CONSOLE		•	•	•	•	•	•						

*INTERNAL/ EXTERNAL EEV AVAILABLE




CONTROLLER RANGE

MRV7 S - Wired controllers - Flexible and Easy install

Our new range of controllers features the advanced 1192 non-polarity 2-wire protocol for faster, zero-latency communication and easy installation. They are fully compatible with both R410A and R32 indoor units via dual communication ports, and the modern design of the controllers are backlight and come with parameter monitoring for indoor and outdoor units. The indoor units can also be addressed without the need to access the PCB. The premium models offer a TFT color display with black or white frame options.

	NEW HW-BA316AFK	<ul style="list-style-type: none"> • Two core non-polarity wiring, installation convenience • Basic function: on/off, mode, fan speed, temperature setting • Individual & group control (max. 16 indoor units) • Could receive wireless controller signal
	NEW HW-SA301AFK	<ul style="list-style-type: none"> • Two core non-polarity wiring, installation convenience • IDU & ODU parameters checking • Individual & group control (Max. 16 indoor units) • On/Off, mode, fan speed, temperature, swing • °C/°F, Temp. adjustment sensitivity $\pm 0.5^{\circ}\text{C}$ ($\pm 1^{\circ}\text{F}$) • Timer • Backlight off • Built-in infrared signal receiver for duct units • Individual louver control for round-way cassette • R32 refrigerant leakage alarm • Self-cleaning function
	NEW HW-PB101AFK	<ul style="list-style-type: none"> • Two core non-polarity wiring, installation convenience • Individual & group control (max. 16 indoor units) • Basic function: on/off, mode, fan speed, temperature setting • Built-in infrared signal receiver for infrared remote control • Built-in buzzer • R32 refrigerant leakage alarm • IDU & ODU parameters checking
	YR-HQS01	<ul style="list-style-type: none"> • On/Off, Operation Mode, Fan speed, Temperature setting, Swing • Turbo and Quiet • Individual louver control for Round Flow, 4-way cassette and compact cassette • Clock & Timer • Health function • Self-Clean • Backlight

ACCESSORIES

	SVP-160A SHUT-OFF VALVE BOX	<p>Automatic shut-off valve only isolates the circuit zone where a refrigerant leak is detected, while maintaining normal operation across the rest of the system. A single SVP box can support up to 5 indoor units with a maximum total capacity of 18kW.</p>
	HDEC-R32A EXTERNAL R32 LEAK DETECTOR	<p>An external R32 leak detector for MRV7S systems, providing additional protection alongside the built-in detectors in all our indoor units, ensuring safety and compliance.</p>
	HA-AA110AD COMMUNICATIONS AMPLIFIER	<p>The amplifier/repeater boosts and cleans the signal to prevent quality loss over long cables, enabling longer network transmission distances. It supports up to 2 repeaters per system and 30 indoor units. Repeaters extend the signal range for larger setups or distances exceeding 200 meters</p>

NOTES

NOTES