



# NEW R32 MRV75 DCINVERTER

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 font 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 dualscrew 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 quarantees 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

### • The variable frequency drive

Electronic control module

- 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

• Equipped with 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** 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

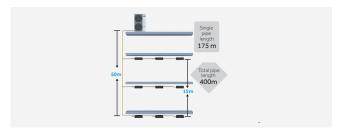


### **EASY INSTALLATION AND MAINTENANCE**

"888" test panel: all running data & errors can be checked from the "888" screen. Rotary switch design for easy set up and faster parameter checking.



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



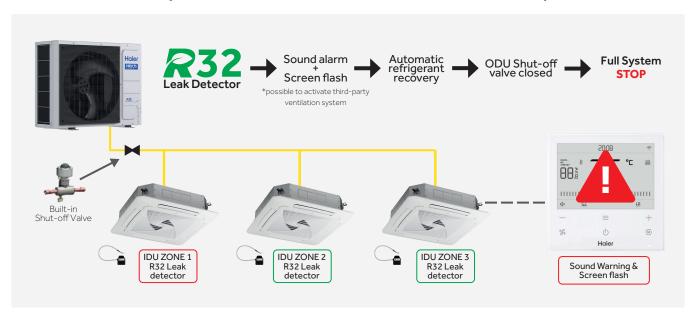


### **BUILT-IN R32 LEAK DETECTION WITH SHUT-OFF VALVE**

The system is engineered for safety, which automatically detects 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.





Scenario 2: Outdoor unit connects to VRF indoor unit with shut-off valve kit to allow for localised isolation



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





### **Outdoor Units With Front Discharge**

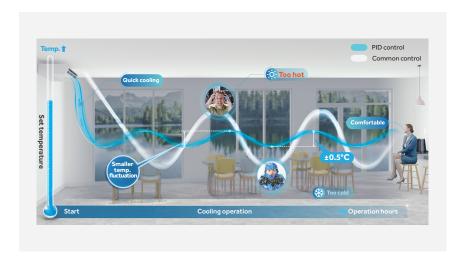
### **DIAMOND SHIELD-R32 SAFETY PROTECTION**

- 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.

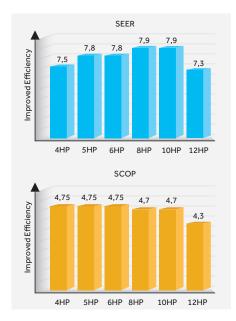
For the 8/10/12 HP MRV7 S outdoor units, an optional external shut off valve box (SVP160A) can be installed wherever it is necessary.

#### 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 ±0.5°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



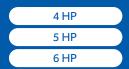
4-5-6 HP Single Phase AU042FCFRA AU052FCFRA AU062FCFRA



Model			AU042FCFRA	AU052FCFRA	AU062FCFRA		
	Power Class HP		4	5	6		
Capacity <sup>[1]</sup>	Cooling	kW	12,10	14,00	15,50		
	Heating	kW	12,10	14,00	15,50		
	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		
Electrical	EER energy class	1	3,52	3,40	3,23		
parameters	COP energy class	1	4,45	4,00	3,80		
	SEER energy class (T1)	1	8,09	7,85	7,62		
	SCOP energy class (T1)	1	4,88	4,75	4,71		
	Max. external static pressure	Pa	35	35	35		
	ŋs,hs,c %	%	321	311	302		
	ŋs,hs,h %	%	192	187	185		
Fan	Air flow (High)	m³/h	5800	5800	5800		
Pressure	Sound pressure level (Cooling)	dB(A)	54	55	56		
sound level	Sound pressure level (Heating)	dB(A)	56	57	58		
Dii	Unit Dimensions WxDxH	mm	1050x400x965	1050x400x480	1050x400x480		
Dimensions	Packaged unit dimensions WxDxH	mm	1160x520x1015	1160x520x1015	1160x520x1015		
Weight	Net/Shipping weight	y weight kg		96	96		
Compressor	Compressor type	1	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary		
	Motor Power	W	4150	4150	4150		
	Compressor quantity	1	1	1	1		
D = f = i = = = = +	Refrigerant type	1	R32	R32	R32		
Refrigerant	Pre-charged refrigerant qty.	kg	3,00	3,00	3,00		
	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		
Piping	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	Indoor / Outdoor Capacity Ratio	%	50%~150%	50%~150%	50%~150%		
ratio	Maximum number of connectable IUs	1	13	16	18		
Working	Cooling	°C	-5~52	-5~52	-5~52		
temp.	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):  $35^{\circ}$ C DB /  $24^{\circ}$ C WB, outdoor temperature (heating):  $7^{\circ}$ C DB /  $6^{\circ}$ C WB

## MRV7 S - Single Fan Outdoor Units With Front Discharge





4-5-6 HP **Three Phase** AU04IFCFRA AU05IFCFRA AU06IFCFRA

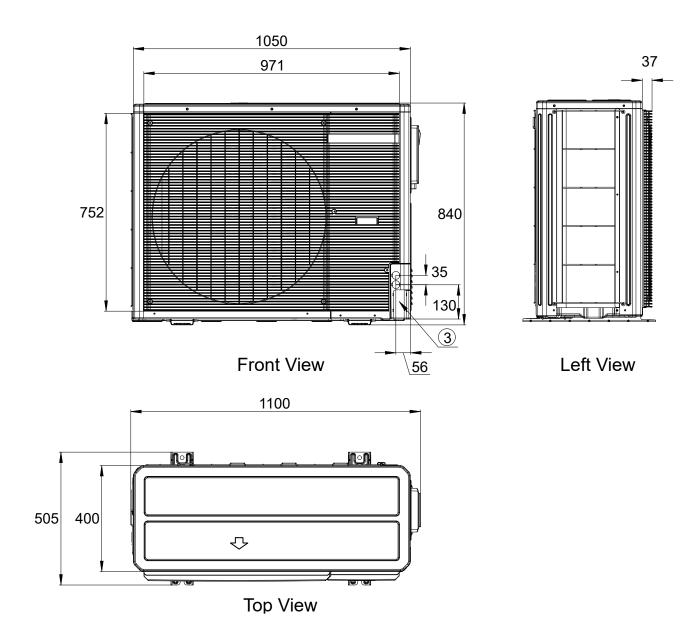


Model			AU04IFCFRA	AU05IFCFRA	AU06IFCFRA
	Power Class HP		4	5	6
Capacity <sup>[1]</sup>	Cooling	kW	12,10	14,00	15,50
	Heating	kW	12,10	14,00	15,50
	Power supply	Ph/V/Hz	3 / 380 - 415 / 50	3 / 380 - 415 / 50	3 / 380 - 415 / 50
	Absorbed power - Cooling	kW	3,44	4,12	4,80
	Max, Power Input - Cooling	kW	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
Electrical	EER energy class	1	3,52	3,40	3,23
parameters	COP energy class	1	4,45	4,00	3,80
	SEER energy class (T1)	1	8,09	7,85	7,62
	SCOP energy class (T1)	1	4,88	4,75	4,71
	Max, external static pressure	PA	35	35	35
	ŋs,hs,c %	%	321	311	302
	ŋs,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
	Unit Dimensions WxDxH	mm	1050x400x840	1050x400x840	1050x400x840
Dimensions	Packaged unit dimensions WxDxH	mm	1160x520x1015	1160x520x1015	1160x520x1015
Weight	Net/Shipping weight	kg	106	106	106
	Compressor type	1	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary
Compressor	Motor Power	W	4165	4165	4165
	Compressor quantity	1	1	1	1
5.61	Refrigerant type	1	R32	R32	R32
Refrigerant	Pre-charged refrigerant qty,	kg	3,00	3,00	3,00
	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
Piping	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	Indoor / Outdoor Capacity Ratio	%	50%~150%	50%~150%	50%~150%
ratio	Maximum number of connectable IUs	1	13	16	18
Working	Cooling	°C	-5~52	-5~52	-5~52
amn	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 AU04IFCFRA AU05IFCFRA AU06IFCFRA



## MRV7 S - Double Fan

8 HP 10 HP 12 HP

### **Outdoor Units With Front Discharge**



8-10-12 HP **Three Phase** AU08NFAFRA AU10NFAFRA AU12NFAFRA

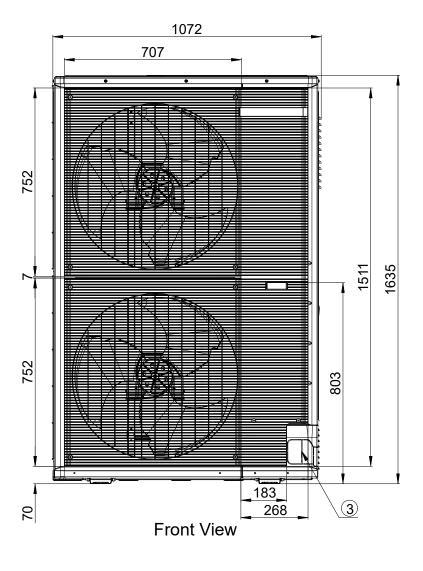


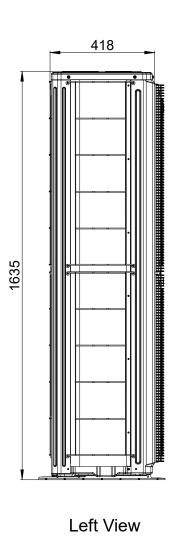
Model			AU08NFAFRA	AU10NFAFRA	AU12NFAFRA	
	Power Class HP		8	10	12	
Capacity <sup>[1]</sup>	Cooling	kW	22,60	28,00	31,50	
	Heating	kW	22,60	28,00	31,50	
	Power supply	Ph/V/Hz	3 / 380 - 415 / 50	3 / 380 - 415 / 50	3 / 380 - 415 / 50	
	Absorbed power - Cooling	kW	6,95	8,67	11,54	
	Max. Power Input - Cooling	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	
Electrical	EER energy class	/	3,25	3,23	2,73	
parameters	COP energy class	1	3,90	3,80	3,71	
	SEER energy class (T1)	/	7,67	7,65	7,50	
	SCOP energy class (T1)	1	4,65	4,60	4,55	
	Max. external static pressure	Pa	45	45	45	
	ŋs,hs,c %	%	303,8	303,0	297,0	
	ŋs,hs,h %	%	183	181	179	
an	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	
	Unit Dimensions WxDxH	mm	1050x400x1635	1050x400x1635	1050x400x1635	
Dimensions	Packaged unit dimensions WxDxH	mm	1160x520x1805	1160x520x1805	1160x520x1805	
Weight	Net/Shipping weight	kg	165,5	165,5		
	Compressor type	1	Inverter twin rotary	Inverter twin rotary	Inverter twin rotary	
Compresso	Motor Power	W	6890	6890	6890	
	Compressor quantity	1	1	1	1	
2-6-1	Refrigerant type	/	R32	R32	R32	
Refrigerant	Pre-charged refrigerant qty.	kg	6,50	6,50	6,50	
	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)	
Dining	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	Indoor / Outdoor Capacity Ratio	%	50%~150%	50%~150%	50%~150%	
atio	Maximum number of connectable IUs	1	20	25	30	
Norking	Cooling	°C	-5~52	-5~52	-5~52	
tomn	Heating	°C	-25~21	-25~21	-25~21	

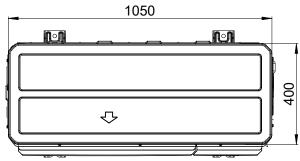
Indoor temperature (cooling): 27°C DB / 19°C WB, indoor temperature (heating): 20°C DB / 14.5°C WB Outdoor temperature (cooling): 35°C DB / 24°C WB, outdoor temperature (heating): 7°C DB / 6°C WB

## Haier

### AU08NFAFRA AU10NFAFRA AU12NFAFRA







## MRV7 S



### **Indoor Units, Controllers & Accessories**

### 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	R32		•	•	•	•	•	•	•	•	•	•	•
CASSETTE 620	R32	•	•	•	•	•	•	•					
WALL MOUNTED*	Rsż	•	•	•	•	•	•	•	•	•			
1 WAY CASSETTE	R32	•	•	•	•	•	•	•					
2 WAY CASSETTE	R32		•	•	•	•	•	•	•	•	•	•	
SLIM DUCTED* LOW PRESSURE (40Pa)	R32	•	•	•	•	•	•	•	•				
COMPACT DUCTED* LOW-MED PRESSURE (90Pa)	R32	•	•	•	•	•	•	•					
DUCTED MEDIUM PRESSURE (200Pa)	R32	•	•	•	•	•	•	•	•	•	•	•	•
CONSOLE	R32	•	•	•	•	•	•						



### 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. In addition to the modern design of the new controllers, they also feature backlight, built-in R32 leak alarm and parameter monitoring for both Indoor and Outdoor units.. The premium models offer a TFT color display with black or white frame options.



### **NEW** HW-BA316AFK

- Two core non-polarity wiring, for installation convenience
- Basic function: on/off, mode, fan speed and temperature setting
- Individual & group control (max. 16 indoor units)
- Built-in infrared signal receiver for infrared remote control
- · R32 visual and acoustic leakage alarm



### **NEW** HW-SA301AFK

- Two core non-polarity wiring, for 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 ±0.5°C(±1°F)
- Timer

- Built-in infrared signal receiver for infrared remote control
- Individual louver control for Round-Way Cassette
- R32 visual and acoustic leakage alarm
- · Self-cleaning function



### **NEW** HW-PB101AFK

- Two core non-polarity wiring for installation convenience
- IDU & ODU parameters checking
- 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
- · R32 visual and acoustic leakage alarm
- · IDU & ODU parameters checking



### YR-HQS01

- On/Off, operation mode, fan speed, temperature setting, swing
- · Turbo and Quiet mode
- Individual louver control for Round Flow, 4- Way Cassette and Compact Cassette
- · Clock & Timer

- · Health function · Self-Clean function
- · Backlight

### **ACCESSORIES**



### SVP-160A SHUT-OFF VALVE BOX

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.



### HDEC-R32A EXTERNAL R32 LEAK DETECTOR

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.



### HA-AA110AD COMMUNICATIONS AMPLIFIER

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.



### **Outdoor Units With Front Discharge**

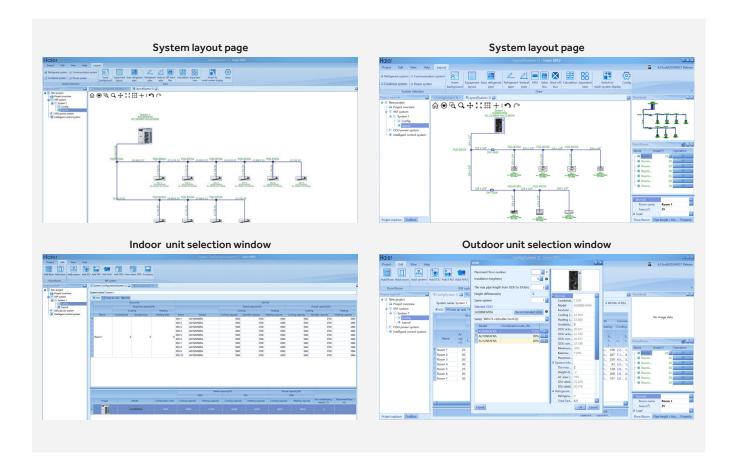
### HAIER SELECTION SOFTWARE

### **EASY DESIGN AND CUSTOMISATION**



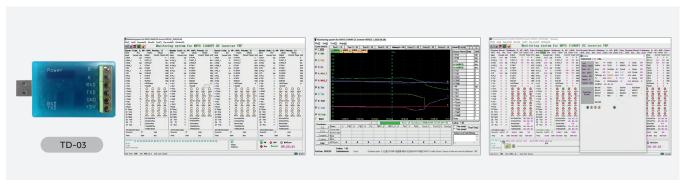


With the Haier MRV Selection software, engineers and consultants can easily design layouts and prepare a full MRV system in a few steps. It selects the right models to meet your building load requirements and calculates the piping schematic automatically or manually, as well as the wiring. It's possible to import DWG and JPG drawings. The selection software guides you within design rules and offers a comprehensive system design report in PDF, Word or Excel format. Haier Selection software supports R32 and R410A systems, two technologies combined in a single software.



### SERVICE TOOL TD-03 WITH MONITORING SOFTWARE

Installers and Service technicians can use TD-03 service tool together with monitoring software for real-time monitoring of the system as well as access to operating data of VRF system through the PC. The running data and parameters can be used to analyse errors for fast troubleshooting. In addition, it is possible to save and export the data for further analysis.





NOTES			







**Haier HVAC**