

VRF CVT9

Compact design heat pump outdoor units



OUTDOOR UNITS



Refrigerant
R-32



V9 outdoor
units



Heat pump



Air source



Multisensor



EasyCom



EMS2

- ✓ Developed on the new V9 platform, fully compatible with the current V8 (IDU and controls)
- ✓ 5 Models: 25.2-28-33.5-40-45 kW, combinable with up to 2 modules
- ✓ Improved performance metrics, at the top of its class
- ✓ Wide range of installation options due to the use of safety systems for individual rooms
- ✓ EasyCom, EMS2 and Multisensor technologies as used in previous series
- ✓ R32 refrigerant with low environmental impact (GWP 675)

Technological innovation and efficiency

Integrated photovoltaic control

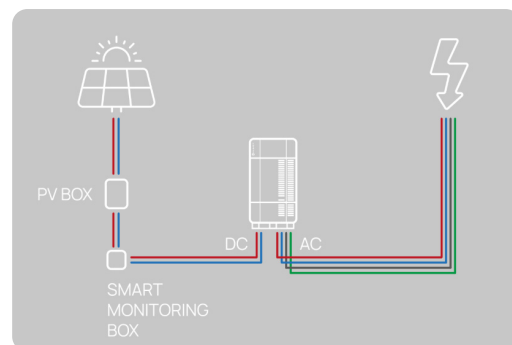
Native control of energy production via photovoltaic (PV) panels and corresponding regulation (0-100%) of power consumption from the grid.

Reduced initial cost due to the option of not using an inverter.

PV Box: Provides a stable DC power supply at a variable voltage of between 400 and 600 V. Eliminates the need for an inverter

Smart Monitoring Box: Connected to the ODU via a bus, it measures power consumption with a high level of electrical safety.

Available from 2027

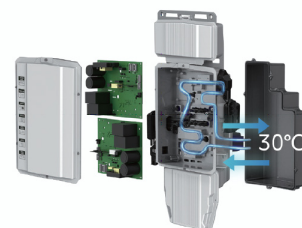


Electronic components protected by SafeBox

Small electronic components are even better protected from adverse conditions (such as corrosion, sand, and moisture) in the new SafeBox2, which now offers comprehensive protection equivalent to the IP68 rating.

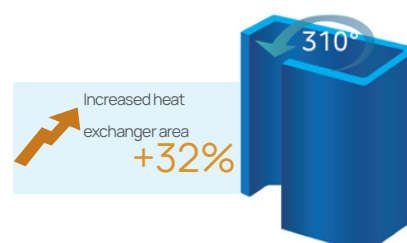
The boards are cooled via a refrigerant circuit to ensure an optimal operating temperature (30°C).

The components are also functionally divided into parts for power, processing and connection, to provide ease of access and ensure electrical safety.



New, more efficient heat exchanger

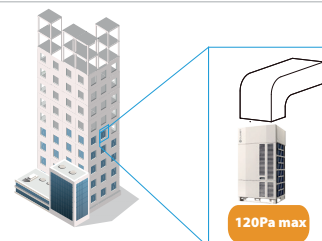
The reduction in the space occupied by the circuit boards enables an increase in the surface area of the heat exchanger, which—thanks to the new, innovative 310° design—significantly improves the effective surface area of the heat transfer. The new arrangement helps increase the overall efficiency of the system, allowing nominal performance to be maintained even in high temperature environments.



Static fan pressure up to 120 Pa

The fan can be set to ensure up to 120 Pa of available pressure. In this way, the outdoor unit can be installed in areas where the correct natural air flow cannot be ensured, ducting the air exhaust from the unit to the outside.

The units are also fitted with an internal refrigerant sensor, meaning they can even be installed in technical rooms (from 2027 onward).



Digital ammeter included

A built-in electricity meter saves space during installation, simplifies wiring, and ensures a neater, more professional appearance.

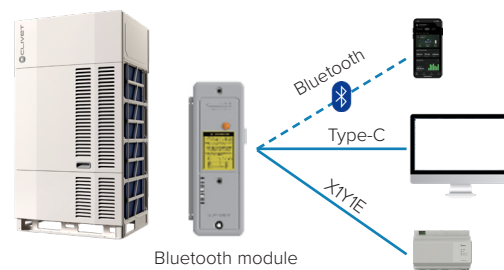
It gives users the added convenience of monitoring power consumption in real time, improves the safety and reliability of the equipment, and helps reduce maintenance costs while also enhancing overall operational efficiency.

Built-in Modbus

The CVT9 units can be managed using native Modbus RTU communication. The special connector on the PCB allows you to control the Trame BMS system without additional accessories.

New bluetooth module

The Bluetooth module for technical assistance has been improved, now also enabling a direct connection via a Type-C USB cable to a PC equipped with diagnostic software. It has also been fitted with an additional XYE port, allowing you to use a second gateway without having to add any further accessories



Multisensor control technology

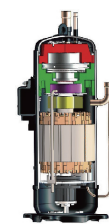
Every component of the refrigerant system is constantly monitored by sensors spread throughout the cooling circuit, thus ensuring high reliability and comfort.

At the same time, and in combination with digital twin technology, a virtual copy of a physical sensor can be created in the event of a failure, so that the system does not stop, thus ensuring comfort while waiting for maintenance to be carried out.

High efficiency

EVI (Enhanced Vapor Injection) compressor

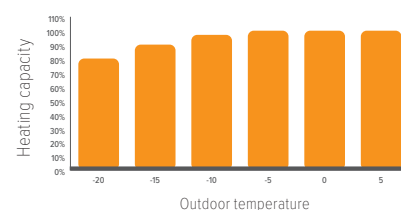
Thanks to the vapour injection DC inverter compressor and a secondary microchannel exchanger, the CVT9 range can operate smoothly in temperatures down to -30°C , while also ensuring significantly higher heating capacities especially in colder outdoor temperatures. The compressor is designed to modulate at a minimum of 7%, vastly increasing the efficiency of the entire system as partial loads.



Vapor injection
DC inverter
compressor

Increased capacity in heating mode

Thanks to the vapour injection DC inverter compressor, the heating capacity is maintained at nominal when the room temperature drops to -5°C .



60 capacity limitation steps

In projects with limited electricity supply, capacity can be set to output from 40 to 100% with 1% discretization steps avoiding tripping and maintaining the system in operation.
Function can be activated either by a centraliser or by a dry contact.

Minimal consumption in standby mode

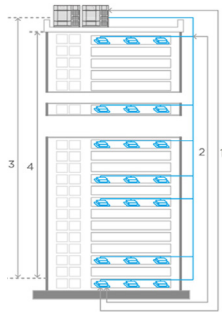
When no demand for cooling or heating is detected, the system automatically cuts off power to the energy-consuming components of the outdoor unit, reducing standby power consumption to as low as 6 W.

Wide application range

Long refrigerant gas piping length

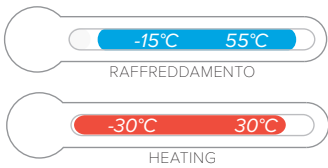
Allowed values				
Piping length	Total piping length	Actual	m	1200
	Maximum piping length ⁽¹⁾	Actual	m	220
		Equivalent	m	260
	Maximum length after first Y-joint ⁽²⁾		m	40/120*
Difference in height	Height difference outdoor unit - indoor unit ⁽³⁾	Outdoor unit up	m	110
		Outdoor unit down	m	110
	Difference in height between indoor units ⁽⁴⁾		m	40

*The longest length after first branch is 40m as standard but can be extended to up to 120m under certain conditions. Please refer to technical manual for further information.



Wide Operating Temperature Range

CVT9 VRF provides a guaranteed operating range.
It can operate reliably at outdoor temperatures ranging from -15°C to 55°C in cooling mode, and from -30°C to 30°C in heating mode.



High Reliability

Backup and uptime balancing

In systems with two external modules, if one unit is in alarm mode and not functioning, the second unit compensates for it, thereby ensuring uninterrupted service.
In addition, the operating logic ensures proper rotation and distribution of operating hours between the modules, optimising the use of each component and extending the operational life of the entire system.

Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anticorrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend overall useful life. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.

Please contact your local dealer for further information about customization price and availability.

- Fan motor
- Painted sheet metal
- Screws / Bolts / Gaskets
- Heat exchanger aluminum foil
- Heat exchanger copper pipe
- Electric Control Box Case

Anti-snow function

The innovatively designed auto snow-blowing function enables the outdoor unit to prevent the accumulation of snow by using ari jet,

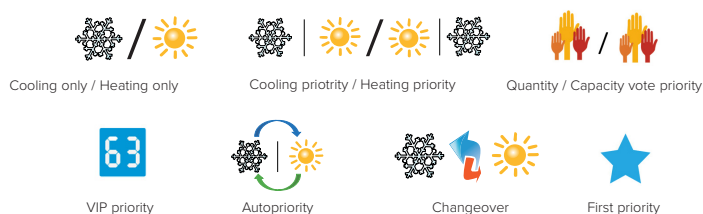
Auto-cleaning function

The innovatively designed dust-clean function enables the outdoor unit to prevent the dust by itself.

Enhanced Comfort

Multiple priority mode settings available

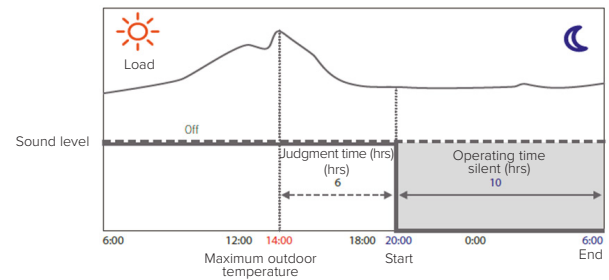
Operating mode priority can be set among 10 different modes to satisfy every specific user's need. Setting can be performed easily on field.



Silent mode and Night Silent mode

To reduce noise levels, there are 15 quiet modes available, able to meet any specific need by limiting the operation of both the compressor and the fan.

You can select silent mode either continuously or only at night, so that it activates after a certain interval - which you can set - following the daily peak period of operation



Easy Installation and Service

Auto addressing

The outdoor unit can assign the addresses of the indoor and outdoor master/slave units automatically.

Remote and wired controllers can be used to query or modify each indoor unit's address.



Automatic refrigerant charging function

Automatic refrigerant charging function make the installation and service easier and more efficient, automatically collecting refrigerant from the tank and stopping the operation when exact refrigerant charge is done.

Automatic refrigerant recovery

Thanks to a specific setting, the recovery and storage of refrigerant can be set in the outdoor unit or in the indoor units, thereby facilitating technical intervention and reducing maintenance times.

Maintenance mode

If the power supply has to be cut off to some of the units during a technical intervention, maintenance mode can be activated and the rest of the system kept active.

Smart input / output contacts

Convenient connectors are available as standard on unit PCB, to realize some convenient operations on field with other building appliances depending on users' needs.

- Input: Two contacts available to choose between cooling/heating mode only, forced shutdown and capacity limitation.

Outputs: One contact available including running status and alarm signal.

Technical data

		CVT9-Y	252T	280T	335T	400T	450T
Capacity		HP	8	10	12	14	16
Combination type		-	-	-	-	-	-
Cooling ⁽¹⁾	Capacity	kW	25.2	28	33.5	40	45
	SEER	-	8,58	8,38	8,18	8,13	8,00
	ns,c	%	340,20	332,20	324,20	322,20	317,00
	Operating temperature range (DB)	°C	-15~55	-15~55	-15~55	-15~55	-15~55
Heating ⁽²⁾	Capacity (Nominal/Max)	kW	25.2/27	28/31.5	33.5/37.5	40/45	45/50
	SCOP	-	4,88	4,89	4,80	4,80	4,78
	ns,h	%	192,20	192,60	189,00	189,00	187,40
	Operating temperature range (DB)	°C	-30~30	-30~30	-30~30	-30~30	-30~30
Connectable Indoor Units		Total Capacity Index ⁽³⁾	%	50-130	50-130	50-130	50-130
		Max quantity	-	13	16	19	23
Compressor	Type	-	DC Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter
	Quantity	-	1	1	1	1	1
Refrigerant	Factory charge	kg	6,7	6,7	6,7	8,5	8,5
	CO ₂ equivalence	ton	4,52	4,52	4,52	5,74	5,74
Pipe connections	Liquid	mm	Φ12,7	Φ12,7	Φ12,7	Φ15,9	15,9
	Gas	mm	Φ25,4	Φ25,4	Φ25,4	Φ28,6	28,6
Fan motor	Quantity	-	1	1	1	1	1
	Static pressure	Pa	0-120	0-120	0-120	0-120	0-120
Dimensions (Length x Height x Depth)		mm	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840
Weight		kg	207	207	207	224	224
Air flow rate		m ³ /h	12600	12600	14400	15800	15600
Sound power level ⁽⁴⁾		dB(A)	78	79	82	84	85
Power supply		V/Ph/Hz	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50

		CVT9-Y	500T	560T	615T	670T	730T	785T	850T	900T
Capacity		HP	18	20	22	24	26	28	30	32
Combination type		-	8+10	10+10	10+12	12+12	12+14	14+14	14+16	16+16
Cooling ⁽¹⁾	Capacity	kW	50	56	61.5	67	73	78.5	85	90
	SEER	-	8,53	8,36	8,44	8,29	8,21	8,17	8,09	8,01
	ns,c	%	338,20	334,60	331,40	328,60	325,40	323,80	320,60	317,40
	Operating temperature range (DB)	°C	-15~55	-15~55	-15~55	-15~55	-15~55	-15~55	-15~55	-15~55
Heating ⁽²⁾	Capacity (Nominal/Max)	kW	50/56	56/63	61,5/69	67/75	73/81,5	78,5/87,5	85/95	90/100
	SCOP	-	4,93	4,86	4,91	4,82	4,82	4,82	4,83	4,83
	ns,h	%	194,20	191,40	193,40	189,80	189,80	189,80	190,20	190,20
	Operating temperature range (DB)	°C	-30~30	-30~30	-30~30	-30~30	-30~30	-30~30	-30~30	-30~30
Connectable Indoor Units		Total Capacity Index ⁽³⁾	%	50-130	50-130	50-130	50-130	50-130	50-130	50-130
		Max quantity	-	29	33	36	39	43	46	50
Compressor	Type	-	DC Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter
	Quantity	-	2	2	2	2	2	2	2	2
Refrigerant	Factory charge	kg	13.4	13.4	13.4	13.4	15.2	17	17	17
	CO ₂ equivalence	ton	9.05	9.05	9.05	9.05	10.26	11.48	11.48	11.48
Pipe connections	Liquid	mm	Φ15.9	Φ19.1	Φ19.1	Φ19.1	Φ22.2	Φ22.2	Φ22.2	Φ22.2
	Gas	mm	Φ31.8	31.8	Φ31.8	Φ31.8	Φ38.1	Φ38.1	Φ38.1	Φ38.1
Fan motor	Quantity	-	2	2	2	2	2	2	2	2
	Static pressure	Pa	0-120	0-120	0-120	0-120	0-120	0-120	0-120	0-120
Dimensions 1 (Length x Height x Depth)		mm	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×841	940×1760×842	940×1760×843
Dimensions 2 (Length x Height x Depth)		mm	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840	940×1760×840
Weight		kg	207+207	207+207	207+207	207+207	207+224	224+224	224+224	224+224
Air flow rate		m ³ /h	12600+12600	12600+12600	12600+14400	14400+14400	14400+15600	15600+15600	15600+15600	15600+15600
Sound power level ⁽⁴⁾		dB(A)	82	82	84	85	86	87	88	88
Power supply		V/Ph/Hz	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50	380-415/3~/50

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) N.No 2016/2281, also known as Ecodesign Lot21. SEER and SCOP according EN14825 regulation

(1) Indoor air temperature 27°C DB/19°C WB; Outdoor air temperature 35°C DB/24°C WB. Equivalent piping length 5m with zero level difference.

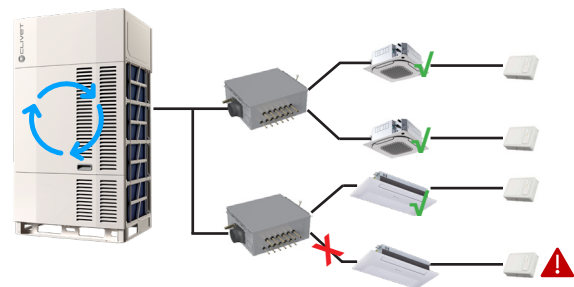
(2) Indoor air temperature 20°C DB/15°C WB; Outdoor air temperature 7°C DB/6°C WB. Equivalent piping length 5m with zero level difference.

(3) Total capacity index = total capacity of indoor units/capacity of outdoor units. 50~200% under specific conditions, refer to the technical documentation for more details

(4) Sound levels are measured in a semi-anechoic chamber, 1 m in front of the unit and 1.3 m off the floor

SV-BOX - New safety systems

For A2L refrigerants such as R32, the IEC 60335-2-40 V7 standard specifies the safety measures to be taken based on the actual amount of refrigerant released in the event of a refrigerant leak. The use of shut-off valves along the refrigerant lines—which shut off the gas flow only in the section affected by the leak—in combination with leak sensors installed in the room, serves the dual purpose of enabling the use of VRF systems even in small spaces and of allowing the system to continue operating even if a refrigerant leak alarm is triggered in a room. Available in four versions, from one to eight connections, they allow you to connect up to a maximum of 40 indoor units per BOX.



						
Size			N8SV-01A	N8SV-04A	N8SV-06A	N8SV-08A
Number of ports			-	4	6	8
Max. number of indoor units per port			-	5	5	5
Max. total number of indoor units per box			-	20	30	40
Max. capacity for each port			kW	16	16	16
Max. total capacity of indoor units per box			kW	64	96	96
Dimensions (Width x Height x Depth)			mm	720x295x780	920x295x780	920x295x780
Dimensions (Length x Height x Depth)			mm	810x480x910	1010x480x910	1010x480x910
Net weight			kg	25	37,4	39,9
Gross Weight			kg	51	65	67,5
Connections	Gas	mm	Ø28,6	Ø28,6	Ø28,6	Ø28,6
	Liquid	mm	Ø15,9	Ø15,9	Ø15,9	Ø15,9
	Condensate drain	mm	Ø25	Ø25	Ø25	Ø25
	Pump head	mm	1200	1200	1200	1200
Power supply			V/Ph/Hz	220-240V/1~/50		

The SV-BOX must be installed in accordance with standard IEC 60335-2-40 v7 and may require the use of ventilation ducting, depending on the specific application. Please refer to the relevant installation manual for further information.