

R290 Commercial Air to Water Heat Pump HS50V

HS50V provides an efficient, low-carbon and future-proof solution for commercial heating and cooling applications. Designed for both new-build projects and renovation applications, the system combines high seasonal efficiency, high flow temperature capability and advanced control features, meeting the requirements of modern commercial buildings.

System functions

Space heating and cooling

Year-round operation with high comfort and energy efficiency

Heat distribution compatibility

Compatible with underfloor heating systems

Suitable for radiator heating, including retrofit applications

Supports fan coil units for both heating and cooling

With flow temperatures up to 75 ° C, the HS50V is well suited for low- and medium-temperature heat distribution systems, including radiator-based and hybrid solutions.

Typical applications

New commercial buildings

Renovation and replacement of existing boiler systems

Centralized heating and cooling systems for commercial facilities

Natural refrigerant R290 (GWP = 3)

This series uses the natural refrigerant R290, offering excellent thermodynamic performance with a very low Global Warming Potential (GWP = 3). R290 ensures long-term compliance with current and future EU environmental and F-Gas requirements, making the HS50V a sustainable choice for commercial projects.



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Full DC inverter technology

The frequency-controlled inverter compressor continuously adapts output to real-time demand, resulting in:

- Higher part-load efficiency
- Lower energy consumption
- Reduced mechanical stress
- Extended system service life

Low-noise design for commercial applications

Equipped with a DC inverter brushless fan motor, the HS50V enables precise airflow control and reduced acoustic emissions, supporting compliance with commercial noise regulations across European markets.

Intelligent defrost management

An advanced defrost algorithm minimizes unnecessary defrost cycles, reducing energy losses and ensuring consistent heating performance under humid and freezing conditions.

Integrated anti-freeze protection

Built-in anti-freeze protection safeguards the hydraulic circuit and key components, reducing installation risks and ensuring safe operation in low-temperature environments.

Modbus communication & BMS integration

A standard Modbus interface allows seamless integration with building management systems (BMS), enabling centralized monitoring, remote control and optimized system management for commercial and multi-unit installations.

Remote monitoring & service support

Tuya Smart Life App for end-user remote operation

Tuya Spatial App and SaaS platform for professional partners, enabling remote diagnostics, fault analysis and fleet management

This reduces on-site service interventions and improves after-sales efficiency.

Certifications & compliance:

CE certified

Designed to meet applicable EU regulations and standards for commercial heat

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HS50V

Model Number		HS50V
Heat output range A7/35°C	kW	17.70~ 54.20
Rated heat output at A7/W35°C (partial load)	kW	36.30
Rated power consumption A7/W35°C (partial load)	kW	7.60
Rated COP at A7/W35°C (partial load)		4.78
Heat output at A2/W35°C	kW	40.50
Power consumption A2/W35°C	kW	11.57
COP at A2/W35°C		3.50
Heat output at A-7/W35°C	kW	34.50
Power consumption A-7/W35°C	kW	10.71
COP at A-7/W35°C		3.22
Heat output range A7/55°C	kW	17.60~52.80
Rated heat output at A7/W55°C (partial load)	kW	32.70
Rated power consumption A7/W55°C (partial load)	kW	9.97
Rated COP at A7/W55°C (partial load)		3.28
Heat output at A-7/W55°C	kW	32.22
Power consumption at A-7/W55°C	kW	14.07
COP at A-7/W55°C		2.29
Cool output range A35/W7°C	KW	12.20~35.80
Cool output at A35/W7°C	kW	35.80
Power consumption at A35/W7°C	kW	13.36
EER at A35/W7°C		2.68
Cool output range A35/18°C	KW	13.20~39.5
Cool output at A35/W18°C	kW	39.50
Power consumption at A35/W18°C	kW	10.97
EER at A35/W18°C		3.60
Power Supply		380-415V/3N~/50Hz
Compressor		twin rotary
Compressor quantity		2
Refrigerant circuit quantity		2

Refrigerant R290 filling weight	kg	2x2.0kg
GWP R290		3
CO2 equivalent	Tonnes	0.0120
Max. power input	kW	20.5
Max operating current	A	31.5
Recommended circuit breaker	A	40-50 (C-curve)
Condenser		Plate exchanger
Medium flow range	m3/h	3.98-9.40
Internal pressure drop at nominal flow	kPa	23
Nominal air flow	m³/h	18800
Nominal fan output	W	750 X 2
Max outlet heating medium temperature	°C	75
Anti electric shock grade		I
Water proof grade		IP X 4
Max.Operation pressure of low side	Mpa	3.0
Max.Operation pressure of high side	Mpa	3.0
Max allowable pressure	Mpa	3.3
Dimensions (HxDxW)	mm	1980x900x1800
Pipe connector		G2"
Net Weight	kg	540
ErP Level(35°C)		A+++
ErP Level(55°C)		A+++
Rated heat output Prated (35°C)	KW	41
Energy efficiency ns (35°C)		193%
Rated heat output Prated (55°C)	KW	37
Energy efficiency ns (55°C)		156%
Operating ambient temp. range	°C	Heating: -25-46 DHW: -25-46 Cooling:10-45
Sound power level L _{WA} (ErP)	dB(A)	76

The above data is tested by EN14511. A7/W35°C means air temp. 7°C,outlet water temp. 35°C

The Sound power level is tested by EN12102