

# Dehumidification and ventilation for residential, industrial radiant systems and swimming pools



HiDew is proud to present a complete range of dehumidifiers for radiant cooling systems, industrial processes, public swimming pools and high-performance heat recovery systems for the residential Controlled Mechanical Ventilation.

Every HiDew dehumidifier and recovery system has been designed to respond to an increasingly demanding market in terms of technology, reliability, design, compactness, efficiency, sound level, simplicity and installation ease. A wide range of accessories (optional) can fulfil any request and, in the event that installation is especially difficult, HiDew technicians are available to suggest and provide customised solutions.



# **QUALITY FOR YOUR WELLBEING**



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The fitted vertical dehumidifiers of the **RSV** range and the horizontal ductable dehumidifiers for drop ceilings of the **RSO** / **RSE** range are designed for civil, residential and commercial environments with high latent load that require 24hrs/day operation. These are particularly suitable for buildings cooled by radiant systems, such as flooring, walls or ceiling. HiDew dehumidifiers can be connected and monitored with RS485 serial port.

#### The RS range consists of two versions : A – I

**A** = **Neutral air version (isothermal):** The letter "A" represents the neutral air isothermal dehumidifier with air condensation, which is supplied with pre and post cooling coils as standard. The outlet air is the same temperature as the inlet air.

**I** = **Cold integration version:** The letter "I" represents the dehumidifier that can add cold power to the radiant system. Thanks to a brazed plate condenser, the "I" models cool the air when required, just as a normal air-conditioner. This function is particularly useful, during half seasons, due to the high difference in temperature, or when cooking or when guests arrive. The "I" models must always receive water from the radiant system in order to operate.

Technical sheet of the	range <b>RS</b>	RSO 020 A	RS0 020 I	RSV 020 A	RSV 0201	RSE 050 A	RSE 050 I			
Dehumidifying capacity	L / day	20	20	20	20	48	48			
Air flow rate	m³/h	250	250	250	250	600	600			
Cooling Power	Watt	isothermal	1240	isothermal	1240	isothermal	3360			
Sound level	dB(A)	38	38	38	38	42	42			
Power supply	V/ph/Hz		l 230/1/50l							
Dimensions LXDXH	mm	I 530 × 600	) x 242l	I 480×220	) x 665l	I 760 × 650	0×350I			

All the values refer to the following conditions: Air temperature 26°C, Relative humidity 65%, Water temperature 15°C

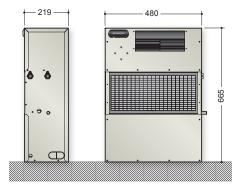


## DEHUMIDIFIERS FOR FITTED VERTICAL RADIANT SYSTEMS



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HiDew





#### Options:

- Formwork
- White lacquered wooden panel
- Painted steel sheet panel with plastic grills
- Supply plenum
- Mechanical humidistat
- RS485 serial port
- Supply flange
- Steel case for the out-of-the-wall installation
- Wooden case for the out-of-the-wall installation
- Painted steel sheet panel with aluminium grilles
- 2-steps mechanical humidistat
- Regulation for floor hot / cold / humidity







## RADIANT SYSTEMS DEHUMIDIFIERS WITH AIR RENEWAL AND HIGH-EFFICIENCY HEAT RECOVERY SYSTEM





The **RER** range dehumidifiers with high-efficiency heat recovery system are used in radiant cooling buildings together with an air renewal system. The RER dehumidifiers dehumidify, cool, heat and change the air. They recover heat from expelled air.

High pressure and minimum electric consumptions are guaranteed by the adjustable electronic fans with permanent magnet brushless motor and cutting-edge incorporated inverter. The top-quality refrigeration, hydraulic, aerolic and electrical components make RER units state of the art dehumidifiers in terms of efficiency, reliability and silence.

More than 90% yield is guaranteed by the high-efficiency counter-current heat recovery system. The zero to 130/250 m3/h modulating air renewal can be manual or automatic. The humidifier autonomously controls room temperature and humidity through the standard fitted temperature and humidity sensors. The RER dehumidifiers can be connected to a home automation system thanks to the standard supplied RS485 serial port and requested software customisation.

			RER 020		RER 050				
Technical sheet of the ra	nge <b>RER</b>	W	A		W	A			
Dehumidifying capacity	L/24h	29	24,5	24,5	58	48	48		
Air flow rate	m³/h	260	260	260	520	520	520		
Air renewal	m³/h	0 - 130	0 - 130	0 - 130	0 - 250	0 - 250	0 - 250		
Recovery system yield	%			> 90	%		I		
Cooling Power	Watt	1920	isothermal	1300	3650	isothermal	3230		
Sound level	dB(A)	38	39	39	43	44	44		
Power supply	V/ph/Hz			230/ 1~+	N /50				
Dimensions L X D X H	mm	1005 x 680 x 250	) I 1125×	680 x 250I		1665 x 760 x 375 -			

All the values refer to the following conditions: Air temperature 26°C, Relative Humidity 65%, W Version Water temperature 15°C : water at 10°C

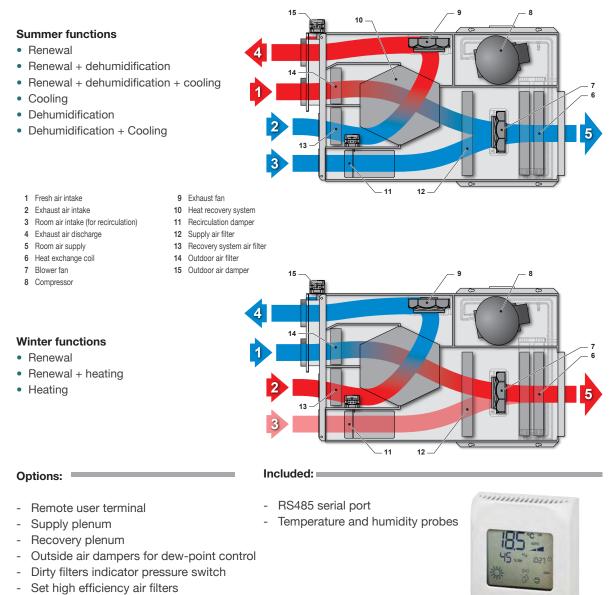


#### The RER range consists of 3 versions : A – I - W

**A** = Neutral air version (isothermal): The letter "A" represents a neutral air isothermal dehumidifier with air condensation, which is supplied as standard with pre and post cooling coils. The outlet air has the same temperature as the inlet air.

**I = Cold integration version:** The letter "I" represents a dehumidifier that can add cold power to the radiant system. Thanks to the presence of a brazed plate condenser, the "I" models cool the air as a normal air-conditioner, when required. This function is particularly useful, during half seasons, due to the high difference in temperature or when cooking or when gusts arrive. In order to operate, the "I" models must always receive water from the radiant system.

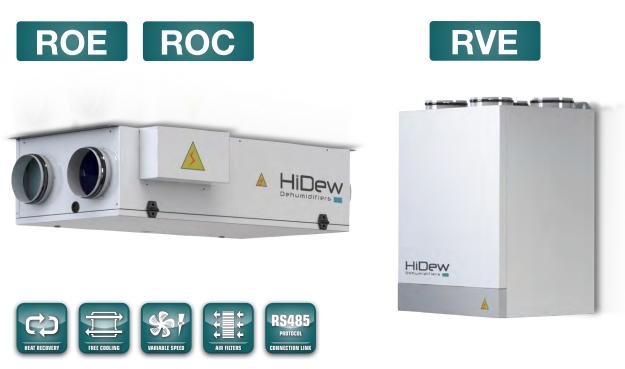
**W** = Water version: The letter "W" identifies an especially silent chilled water hydronic dehumidifier without compressor. The outlet air is always cooler than the inlet air. The "W" version supplies conditioned air in summer and heating in winter.



- Antifreeze thermostat
- Air distribution systems: see VMC chapter



### **HEAT RECOVERY SYSTEMS**



Air quality and purity, temperature and humidity are critical for comfort, especially during the winter when opening the windows for air results in a significant loss of heat and discomfort for the occupants. In this case a system of controlled mechanical ventilation is the best solution to maintain both the levels of energy performance and the quality of the indoor air.

Recent regulations on energy saving in buildings combined with increasingly efficient thermal insulation and ever-better fitting of doors and windows, have definitely made our homes more comfortable both thermally and acoustically. This, however, has also transformed them into potential "hazardous, sealed traps" where pollutants used in the production process (such as formaldehyde) can be spontaneous released. To achieve adequate air renewal in the building and to ensure good indoor air quality, it is essential to install a controlled mechanical ventilation system. Air renewal is essential for clean living air. The European Parliament has legislated on this, citing ventilation as a "need" for the building. This "need" can clash with the need to improve the building's energy performance to reduce consumption to a minimum. Controlled mechanical ventilation with **ROE**, **RVE** and **ROC** of HiDew heat recovery is the best solution to reduce the energy needs of a building and at the same time improve the healthiness of the spaces.

		ROE			RVE		ROC		
Technical sheet of the range ROE, I	RVE, ROC	10	20	35	50	35	50	10	20
Nominal air flow rate	m³/h	100	200	350	500	350	500	100	200
Efficiency	%	93	91	90	88	90	88	93	93
Recovered heating power in winter	Watt	790	1547	2660	3732	2660	3732	790	1580
Recovered heating power in summer	Watt	270	538	920	1280	920	1280	270	540
Rated power consumption	Watt	21	40	75	85	75	85		
Power supply	V/ph/Hz	ا			230/	1/50			I
Available static pressure maximum s	peed Pa	150	160	150	160	150	160		
Load losses	Pa							110	110
Air connections diameter	mm	4x125	4x160	4x180	4x180	4x180	4x180	4x125	4x160

The recovered heat power and yield values are stated in the indoor air 20°/50%rh and outdoor air -5°/80%rh points



	STANDARD CONTROL	DEVELOPMENT CONTROL
Electronic fans with brushless motor and built-in inverter	STANDARD	STANDARD
Correct fan rotation control	STANDARD	STANDARD
Intelligent automatic defrost	STANDARD	STANDARD
3 speed setting	STANDARD	
Multi-speed setting		STANDARD
Timed dirty filters signalling	STANDARD	STANDARD
General fault signalling	STANDARD	
Detailed fault signalling		STANDARD
Graphic adjustment display to be placed on the wall		STANDARD
Boost mode		STANDARD
Programming by time bands		STANDARD
RS485 serial port		OPTIONAL
Free-cooling	OPTIONAL	OPTIONAL
Dirty filters pressure switch		OPTIONAL
Humidity sensor		OPTIONAL
CO2 sensor		OPTIONAL
VOC sensor		OPTIONAL
Air purifier		OPTIONAL
Coil water duct	OPTIONAL	OPTIONAL
Supply temperature control kit		OPTIONAL
High-efficiency air filtering set	OPTIONAL	OPTIONAL
Air supply at constant flow		OPTIONAL
Air supply at constant pressure		OPTIONAL





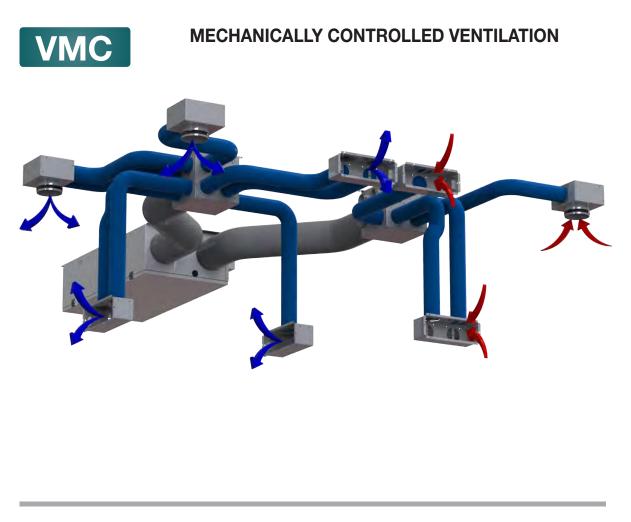
Sample of standard control (not supplied)

### THE HEAT RECOVERY SYSTEMS:

- Increase efficiency class and property value
- Renew air without dispersing heat
- Reduce danger of allergies







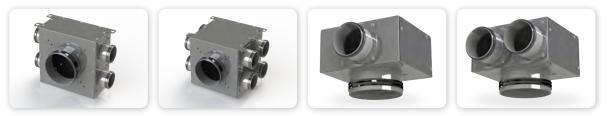
The new Series of **VMC** accessories for air distribution, to be combined with the units of our **RS**, **RER** and **ROE** / **ROC** / **RVE** Series.

Thanks to the variety and completeness of this line, it is possible to realize the ideal comfort conditions and to give an optimal response to the needs for the different installations and canalizations of the units. Our supply and recovery plenums, the coils for ducted installations and the grilles, combined with our machines, grant the realization of flexible, complete and customizable systems for the air distribution, capable of satisfying the needs of each single ambient.





#### Accessories



Supply and recover air galvanized steel plenums with internal thermal insulation and sound absorber, with circular connections.









Supply and recover air galvanized steel plenums with internal thermal insulation and sound absorber, to be combined with design grilles. All our plenums are equipped with an exclusive system of air flow calibration, to grant the right value of air renewal.



Conical supply plenum in galvanized steel with internal thermal insulation and sound absorber (for RER models).



Hot / cold water coil ducted with galvanized steel plenum, internal insulation, sound absorber and steel basin for condensation collection.





Supply and recover grilles with high design, available in aluminium or glared steel.



Flange for the connection of flexible pipes in / out air renewal.



Ventilation valve for the air recover with adjustable jet. mm. 125 / 160 / 180 / 200.



Flexible pipe diameters



Polyethylene pipes for the canalization and distribution of air, to be combined with supply and recover plenums.





**DDS** and **DCS** series dehumidifiers with advanced control are completely autonomous and are conceived for wall-mounted installation in small private swimming pools.

DDS models are thought to be installed directly in the room to be dehumidified and the pleasant design is suitable also for other ambiences, such as museum, archives, libraries, churches, cellars and basements. The sober but elegant look eases the installation in public and private ambiences, generally characterized by a sophisticated design.

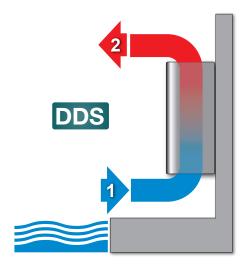
DCS models are thought for the installation in a technical room adjacent to the ambience to dehumidify: in this case, the installation requires supply and recover grilles.

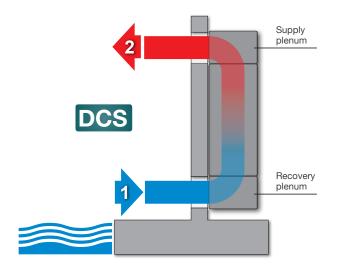
The series consists of 10 models, from 46 up to 226 L/day.

DDS and DCS dehumidifiers are completely autonomous in managing humidity: the control on board reads the ambient humidity and activates the dehumidification process when necessary: finally, the installation of these units is particularly simple.









		DDS - DCS									
Technical sheet of the range		040	050	060	070	090	100	160	190	210	230
Dehumidifying capacity (at 30°C / 80% R.H.)	L/day	46	52	61	68	89	98	165	186	211	226
Nominal air flow	m3/h	350	450	500	600	700	800	1000	1200	1500	1500
Hot water coil capacity (1)	kW	3,7	4,5	4,5	6,1	6,8	7,5	10,1	11,5	14,5	14,5
Load losses water without valve	kPa	8	11	11	25	30	36	14	18	32	32
Load losses water with valve	kPa	11	16	16	35	42	50	24	31	52	52
Electrical heater capacity	kW	1,5	1,5	1,5	2	3,6	3,6	4	4	7,2	7,2
Power consumption	kW	0,9	0,9	1	1	1,7	1,7	2,6	2,7	3,6	3,9
Dimensions L x H x D	mm	I 8	50 x 780 x 2	80	l 10	)50 x 780 x 2	280I	1350 x 8	350 x 330 -I	- 1550x8	50 x 330 -l
Refrigerant gas						R4	10A				
Power supply	V/ph/Hz	I			230 /	1/50				400 / 3+	-N / 50I
Working temperature range	°C					12 -	36				
Working humidity range	% R.H.					45 -	- 95				

(1) Hot water coil capacity declared at the following conditions: water T 80°C, ambient T 30°C.

#### Options:

- Advanced control
- Advance remote display
- Hot water coil
- Electrical heaters for air
- Hot water coil with 3-ways valve
- Silent version
- Serial board RS485 for Modbus communication (only combined with the advanced control)
- Mechanical hygrostat on board (only combined with the standard control)
- Remote mechanical hygrostat
- Chrono thermo hygrostat
- Supply and recovery plenum (only for DCS models)
- Supply and recovery grilles (only for DCS models)





# **AIR CONDITIONER FOR CELLARS**

The new **CCV** air conditioner is studied and developed to grant a fine control of temperature and humidity parameters, especially for small private cellars and other ambiences that need such a fine parameters control.

The compact and elegant design of the unit can satisfy the most exigent requests according to reduced spaces, as often is the case for the ambiences of destination.

The unit is a mono-block direct expansion solution with a high technology degree.

#### **Functions:**

- Heating
- Cooling
- Humidification
- Dehumidification





#### Focus on technology:

- Electrical heating
- Refrigerant cooling circuit
- Humidification with distilled water tank
- Recirculation fan: electronic radial with brushless engine and inverter, that can be modulated from 0 up to 100%
- Condensation fan: electronic radial with brushless engine and inverter, that can be modulated from 0 up to 100%
- Temperature and humidity probe on board with close tolerance (+/- 0,5 °C/%)
- Advanced and programmable control with available remote display
- Water sanitization system
- Time-bands program
- Access and unit maintenance from the front

#### Advantages:

- Mono-block extremely compact unit
- Elegant design
- Connection with the aeraulic system compatible with the new HiDew VMC Series for air distribution
- Short installation time
- No needs for refrigerator technician neither for refrigerant gas empty or fill in operations
- The risk of installation faults is extremely reduced: higher economy
- Circular connections nr° 6 x 160 mm





Technical sheet		CCV 450 S	CCV 450 H
Cooling power (*)	Watt	1750	2150
Recirculation internal air flow	m³/h	450	450
Condensation external air flow	m³/h	Modulated from 0 to 450	Modulated from 0 to 450
Recirculation fan pressure	Pa	180	180
External air fan pressure	Pa	150	150
Electrical heater capacity	Watt	1600	1600
Nominal power consumption	Watt	890	910
Maximum power consumption	Watt	1240	1260
Maximum power consumption with electrical heater	Watt	2840	2860
Dimensions L x H x D	mm	650 x 1645 x 450	650 x 1645 x 450
Refrigerant gas		R 134 A	R 410 A
Power supply	V/ph/Hz	230 / 1 / 50	230 / 1 / 50
Internal temperature working range	°C	da 10 a 28	da 10 a 25
External temperature working range	°C	da -5 + 37	da -5 + 35
Internal humidity working range	%u.r.	45 - 95	45 - 95

(\*) internal conditions  $18^\circ C$  / 80% R.H, - external air  $30^\circ C$ 

#### Options:

- Humidification system
- Humidification water sanitization system
- Electrical heater
- RS485 Serial board
- Remote user terminal
- Silent version
- Wood-like cover







### DEHUMIDIFIERS FOR SWIMMING POOLS AND INDUSTRY



The **ID** and **SP** range dehumidifiers are designed for use in high latent load environments requiring 24hrs/day operation. They are typically installed in environments such as public and private swimming pools, dairies, basements, ironing shops, curing cellars, warehouses and wherever a lack of humidity control can damage the structure or the product.

Technical sheet of the range		0130	0160	0190	0210	0260	0300	0350	0450	0580
Dehumidifying capacity	L / day	128	157	190	210	268	302	358	452	581
Air flow rate	m³/h	1200	1600	1600	2000	2800	2800	3800	4000	4800
Hot water coil capacity	kW	9,8	9,8	9,8	16,5	17	17	26,5	26,5	27
Power supply	V/ph/Hz	I	230/1/50				400/3/50	)		
Dimensions L X D X H	mm	I 70	0 x 550 x 9	)00I	7(	00 x 850 x 9	900l	I 830	x 850 x 13	50I

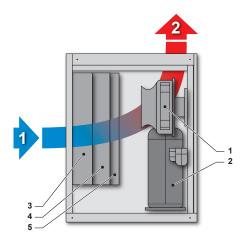
Technical sheet of the range	•	0750	0950	1100	1400	1500	1700	1900	2200	3000
Dehumidifying capacity	L / day	760	955	1120	1380	1480	1710	1870	2180	2960
Air flow rate	m³/h	7000	8200	11000	12500	13000	15000	15000	17000	25000
Hot water coil capacity	kW	48	55	76	83	98	107	107	118	168
Power supply	V/ph/Hz	I			4	00/3/50 -				
Dimensions L X D X H	mm	1000×14	00×1350 -	I- 1000×19	50×1640 -		- 1000 x 25	00×1640	I 100	10 x 3390 x 1640

All the values refer to the following conditions: Air temperature 30°C, Relative Humidity 80%, Water temperature 80/70°C



1 Recirculation air fan

- 2 Compressor
- 3 Evaporator coil
- 4 Condenser coil
- 5 Post heating coil (optional)



	STANDARD CONTROL	DEVELOPMENT CONTROL
Electronic radial fans		OPTIONAL
ACF: automatic control flow		OPTIONAL
High pressure centrifugal fans	OPTIONAL	OPTIONAL
Hot water reheat coil with valve	OPTIONAL	OPTIONAL
Desuperheater	OPTIONAL	OPTIONAL
Dirty filters sensor	OPTIONAL	OPTIONAL
Softstart	OPTIONAL	OPTIONAL
RS485 serial port	OPTIONAL	OPTIONAL
Filter holder frame for suction ducting	OPTIONAL	OPTIONAL
EU4 Efficiency air filters	OPTIONAL	OPTIONAL
Condensate drain pump	OPTIONAL	OPTIONAL
Clock card - time bands		OPTIONAL
Humidity sensor		OPTIONAL
Mechanical humidistat	OPTIONAL	
CTI - Chrono-hygrothermostat	OPTIONAL	
Fresh air damper	OPTIONAL	OPTIONAL
Hot gas defrosting	OPTIONAL	OPTIONAL
CO2 or VOC sensor		OPTIONAL
Electric coils	OPTIONAL	OPTIONAL
Remote wall terminal		OPTIONAL
Outdoor version	OPTIONAL	OPTIONAL
Manometers	OPTIONAL	OPTIONAL
Summer / Winter operating modes		OPTIONAL







SPR





The **SPR** units are ideal for swimming pools that not only require dehumidification but must also renew the indoor air without dispersing heat outdoors. Up to 80% yield is guaranteed by the high-efficiency recovery system. The SPR units represent the state-of-the-art in terms of efficiency, reliability and emitted sound power. The SPR range only uses electronic radial fans with high-energy efficiency incorporated inverter.

HiDew has developed a sophisticated adjustment software to adjust the SPR dehumidifiers air flow rate. This software sets, measures and controls the air flow rate, eliminating any chance of incorrectly calculating the ducts' pressure drops, thereby making dehumidifier installation and system commissioning extremely easy and quick and reducing installation times and costs.

Technical sheet of the range	SPR	0130	0160	0190	0210	0260	0300
Dehumidifying capacity	L / day	128	157	190	210	268	302
Recirculation air flow rate	m³/h	1200	1600	1600	2000	2800	2800
Fresh air flow rate	m³/h	0 - 1200	0 - 1200	0 - 1200	0-2000	0-2000	0 - 2000
Hot water coil capacity	kW	9,8	9,8	9,8	16,5	17	17
Heat recovery system efficiency	%	70	70	70	70	70	70
Alimentazione elettrica	V/ph/Hz	I	230/1/50		I	400/3/50	I

Technical sheet of the range	SPR	0350	0450	0580	0750	0950	1100	1400
Dehumidifying capacity	_ / giorno	358	452	581	760	955	1120	1380
Recirculation air flow rate	m³/h	3800	4000	4800	7000	8200	11000	12500
Fresh air flow rate	m³/h	0 - 2000	0 - 2000	0-2000	0 - 6000	0 - 6000	0 - 11000	0 - 12500
Hot water coil capacity	kW	26,5	26,5	27	48	55	76	83
Heat recovery system efficiency	%	70	70	70	70	70	70	70
Power supply	V/ph/Hz	I			400/3/50 -			I

Dehumidification power in following conditions: Air Temperature 30°C, Relative Humidity 80% net of contribution of air renewal Recovery system efficiency with indoor 26°C/60% RH outdoor -5°C/80% RH conditions



3

1 Inlet fresh outdoor air flow 2 Indoor recirculation air flow 3 Expelled outdoors air flow 4 Supply air flow indoors 5 High-efficiency crossed flows heat recovery system 6 Exhaust air exhaust fan 7 Recirculation air fan 8 Outdoor air damper 9 Calibration damper 10 Discharged air gravity damper 14 Reheat coil (optional) 12 13 15 Outdoor fresh air filter 16 Indoor recirculation air filter

#### **Options:**

- ACF: automatic control flow
- Hot water reheat coil with valve
- Desuperheater

11 Compressor 12 Evaporator coil 13 Condenser coil

- Dirty filters sensor
- Softstart
- RS485 serial port
- EU4 Efficiency air filters

- Condensate drain pump -
- Clock card time bands \_
- Electric coils
- Wall remote terminal \_
- Outdoor version -
- Manometers
- Summer / Winter operating modes \_

### Key to symbols used



Heat Recovery

**De-humidification** 



Winter time heating mode



Summer time cooling mode



Free-Cooling



Isothermic version



R134a refrigerant gas

R410A refrigerant gas



Scroll Compressors



**BLDC** Compressors



High Efficiency Fans

Low noise version

EC plug fans

VARIABLE SPEED



Air filter



Remote control via RS485



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