

DEH +

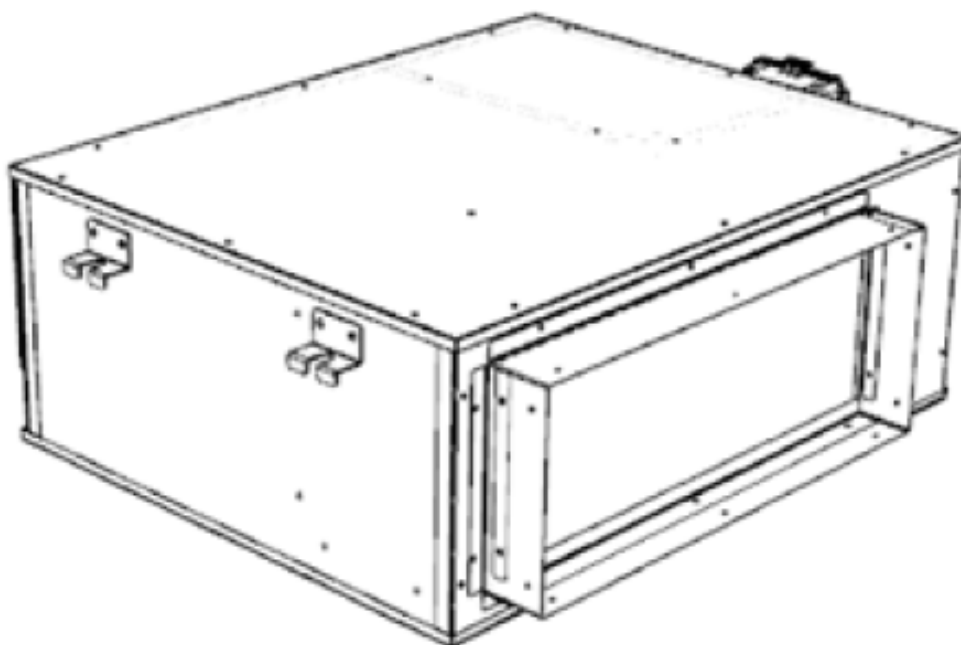
Dehumidifiers for suspended ceiling installations

With high efficiency EC motor

Ductable

For radiant systems with water connection

For stand-alone use without water connection and model with integration

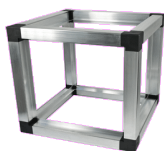


GENERAL FEATURES

STRUCTURE

High-strength structure with self-supporting galvanized sheet metal frame

Selection of materials with high thermal and acoustic insulation characteristics



FANS

The unit is equipped with EC centrifugal fans
With high-efficiency Brushless motor



COMPRESSOR

High efficiency reciprocating compressor



FILTRATION

Flat filters with Coarse filtration class

TECHNICAL FEATURES

DEH+ is an air conditioning unit designed for specific dehumidification/air conditioning needs in low-energy environments.

The unit is particularly suitable for single family units, apartments, offices where there is a radiant air conditioning system or places where effective dehumidification is needed such as basement rooms, bathrooms, laundries, swimming pool areas and spas.

VENTILATION:	Fans with dual-intake brushless EC motor. Very high efficiency and low noise levels Erp-compliant.
AIR HANDLING SECTION:	<p>The unit is equipped with a cooling circuit for dehumidification or integration of cooling and heating.</p> <p>In the various configurations, it will be possible to select the desired type of air treatment between dehumidification only or dehumidification with cooling.</p>
FILTRATION:	Coarse filter with low pressure drop easily removed on recirculating air.
STRUCTURE:	<p>Self-supporting perimeter structure made of galvanized sheet metal.</p> <p>Panel insulation is made of 10 mm thick polyethylene insulation.</p>
REFRIGERATION CIRCUIT:	Made of brazed copper complete with: High-efficiency compressor, finned coils, water exchanger, thermostatic valve.
ADJUSTMENT:	<p>On-board electrical panel with microprocessor and dedicated control. Fan management, timed dirty filter management, recirculation air management. Possibility of controlling the unit with these three solutions:</p> <ol style="list-style-type: none"> 1: Management through external controls and digital inputs 2: Management through remote panel with integrated T/H sensor 3: MODBUS RTU RS 485 Communication

UNIT CONFIGURATION

	-1-	-2-	-3-	-4-
DEH +	30	H	I	D

(1) Defines the total max flow rate
Model 300 – 500 m³/h

2) Installation type
H: horizontal

3) Construction type
I: electronics I

4) Construction type
D: Dehumidification version
DC: Version for dehumidification and integration in cooling

Dehumidification version (D)

Unit for dehumidifying only the air from the recirculating EC fan, thus allowing the refrigeration circuit to operate, obtaining dehumidified air during the summer period (compressor on).

Equipped with a hydronic post cooling/heating coil that when powered allows for supplementary cooling/heating power to be provided to the air conditioning system.

Version for dehumidification and integration in cooling (DC)

Unit for dehumidification of air from the recirculating EC fan allowing integration of cooling/heating power to the radiant air conditioning system.

During the summer period (compressor on), the unit can operate in 2 modes:

- Dehumidification: the unit condenses totally in water through the plate condenser, resulting in neutral and dehumidified air through active post;
- Dehumidification + Cooling Integration: the unit condenses totally in water excluding post, thus obtaining dehumidified and cooled air.

During the winter period (compressor off) the hydronic coils are supplied with hot water from the heating system and behaves like a fan coil.

COMPOSITION OF THE UNIT

	Version-D	Version-DC
Hermetic reciprocating compressor	●	●
Copper tube air condenser with aluminum fins	●	●
Hydronic condenser with stainless steel exchanger	/	●
Copper tube air evaporator with aluminum fins	●	●
Laminating organ	●	●
Filter drier	●	●
TX thermostatic valve	●	●
Hydronic post cooling/heating coil	●	●
Ec Brushless centrifugal forward curved fan	●	●
Recirculating Air Coarse Filters	●	●
Microprocessor	●	●

● = Installed as standard
/ = Not available

UNIT PERFORMANCE

GENERAL TECHNICAL DATA - VERSION D

		DEH + 30		DEH + 50	
Aeraulic performance in dehumidification					
Nominal air flow rate	m³/h	300		500	
Useful prevalence	Pa	150		98	
Dehumidification performance (W 16; A 26)					
Dehumidification capacity	L/24h	18,9		36,2	
Heating performance (W 45; A 20)					
Total power output	kW	0,62		1,30	
Cooling performance (W 16; A 25)					
Total power output	kW	0,58		1,22	
Sensible power output	kW	-		-	
Hydronic battery power output	kW	0,58		1,22	
Water flow rate	L/h	150		300	
Pressure drop	kPa	4,5		9,0	
Room side fan					
Type		Ec Brushless centrifugal forward curved fan			
Number	Nr.	1		1	
Room air recirculation filter					
Type		Nylon flat filter			
Number	Nr.	1		1	
Efficiency		Coarse			
Compressor					
Type		Alternative			
Refrigerant type		R134a			
Electrical characteristics					
Power supply	V/ph/Hz	230/1/50			
Total maximum power consumption	W	736		1219	
Total absorbed current	A	3,20		5,30	
Degree of protection	IP	20		20	
Room-side sound levels (UNI EN 3741; 3744)					
Sound power Lw	dB(A)	53		55	
Radiated sound power in the channel Lw	dB(A)	51		54	
Average sound pressure at 1 m Lp	dB(A)	41		43	
Average sound pressure at 3 m Lp	dB(A)	36		38	

(1) Ambient temperature 26 °C; relative humidity 65% nominal air flow rate without water supply;

(2) Ambient temperature 26 °C; relative humidity 65%; nominal air flow; Water 7/12 °C (IN/OUT);

(3) Room temperature 20 °C; relative humidity 50%, rated air flow; Water 45/40 °C (IN/OUT);

GENERAL TECHNICAL DATA - VERSION DC


		DEH + 30 DC		DEH + 50 DC	
Aeraulic performance in dehumidification					
Nominal air flow rate	m³/h	300		150	
Useful prevalence	Pa	150		98	
Dehumidification performance (W 16; A 26)					
Dehumidification capacity	L/24h	18,9		36,2	
Heating performance (W 45; A 20)					
Total power output	kW	0,62		1,30	
Cooling performance (W 16; A 25)					
Total power output	kW	1,27		2,39	
Sensible power output	kW	0,77		1,44	
Hydronic battery power output	kW	0,58		1,22	
Water flow rate	L/h	150		300	
Pressure drop	kPa	4,5		9,0	
Room side fan					
Type		Ec Brushless centrifugal forward curved fan			
Number	Nr.	1		1	
Room air recirculation filter					
Type		Nylon flat filter			
Number	Nr.	1		1	
Efficiency		Coarse			
Compressor					
Type		Alternative			
Refrigerant type		R134a			
Electrical characteristics					
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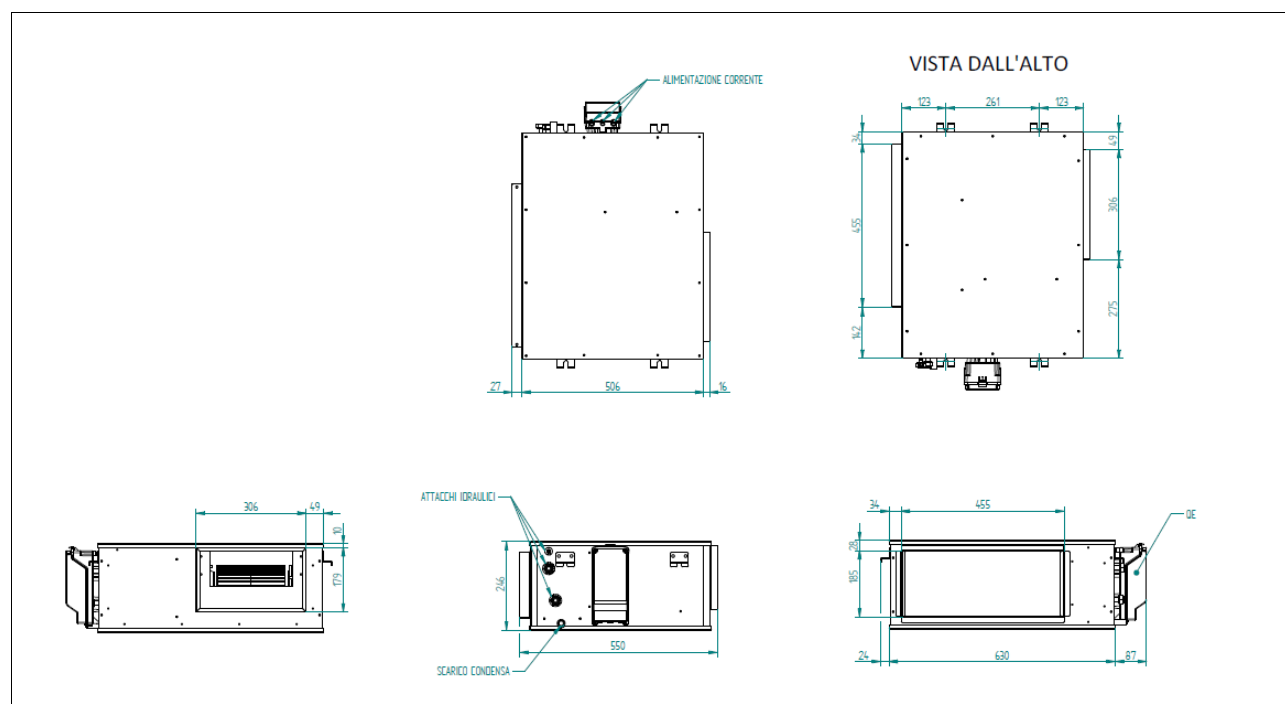
(3) Room temperature 20 °C; relative humidity 50%, rated air flow; Water 45/40 °C (IN/OUT);

SPECIFICATION

	<p>Dehumidifier for radiant air conditioning systems with air handling section with dehumidification and cooling.</p> <p>The unit is particularly suitable for residential, commercial, or collective residential buildings and is provided plug-and-play for quick and simplified installation.</p> <p>The unit consists of a monoblock including every component for proper operation and allows operation with wide outdoor temperature ranges and in conjunction with radiant systems.</p> <p><u>CONSTRUCTION FEATURES</u></p> <p>Self-supporting perimeter structure made of galvanized sheet metal. Panel insulation is made of 6 mm thick polyethylene insulation.</p> <p>Compact size and low height for simplified installation with easily accessible bottom panel for maintenance and inspection.</p> <p>Rectangular inlets with connection to ductwork or can be combined with plenums of various types as an accessory.</p> <p>Quick filter inspection, and side condensate drain for condensate evacuation.</p> <p>Refrigeration circuit with high-efficiency hermetic compressor, heat exchange coils, lamination organ and safety organs.</p> <p>Electrical box, excluded from airflow with management boards and control terminal blocks.</p> <p>Fans with dual-intake brushless EC motor; Very high efficiency and low noise levels Erp-compliant.</p> <p>Coarse filter with low pressure drop easily removed on recirculating air.</p> <p>On-board electrical panel with microprocessor and dedicated control.</p> <p>Fan management, internal machine temperature probe display, timed dirty filter management, recirculation and fresh air management.</p> <p>Possibility of controlling the unit with these three solutions:</p> <ol style="list-style-type: none"> 1: Management through external commands 2: Management through remote panel with integrated T/H sensor 3: MODBUS RTU RS 485 Communication
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DIMENSIONAL DATA

HORIZONTAL VERSION



	DEH+	30 D	50 D	30 DC	50 DC
Width	mm	690	690	690	690
Length	mm	690	800	690	800
Height	mm	250	310	250	310
Weight	Kg	40	53	42	55

LIST OF ACCESSORIES

ECA033II / ECB033II

SMART TOUCH wall control panel with thermostat and room temperature and relative humidity probe, color black or white



2-WAY VALVE

2-way zone valve operated directly from the unit to enable hydronic coil supply.



3-WAY VALVE

3-way zone valve operated directly from the unit to enable hydronic coil supply.



DELIVERY PLENUM FOR HOSES

Delivery plenum with 3 circular ports Dn 125 mm Flanges for fixing to unit. Internal polyethylene insulation.



DELIVERY PLENUM FOR HOSES

Delivery plenum with 5 circular ports Dn 125 mm Flanges for attachment to unit. Internal polyethylene insulation.



DELIVERY PLENUM FOR CORRUGATED PIPES

Delivery plenum with 8 front ports + 8 side ports for DN 75 / DN 90 mm connection



DELIVERY PLENUM FOR CORRUGATED PIPES

Delivery plenum with 12 front ports + 8 side ports for DN 75 / DN 90 mm connection



PLENUM FOR SINGLE TUBE

Duct discharge plenum with 1 circular inlet Dn 200 mm for remote supply manifold Flanges for fixing to unit. Internal polyethylene insulation.
For size 30


PLENUM FOR SINGLE TUBE

Ducted delivery plenum with 1 circular inlet Dn 200 mm for remote supply manifold Flanges for fixing to unit. Internal polyethylene insulation.
For size 50


ACOUSTIC SILENCER

Silencer composed of painted steel outer structure, inner structure covered with sound-absorbing panels 20 mm thick.


STARTING CORRUGATED PIPE

Male/female adapter for direct connection between manifold and round pipes.


REPLACEMENT FILTER

Kit consisting of replacement Coarse filter; Filters are easily removed through dedicated inspectable ports.



UNIT ORDERING CODES

Unit codes

Codes	Description
Dehumidification-only versions	
DHSD30H01II	DEH+ 30 H D - Dehumidifier for suspended ceiling installation. Installation only horizontal version with dehumidifica
DHSD50H01II	DEH+ 50 H D - Dehumidifier for suspended ceiling installation. Installation only horizontal version with dehumidifica
Dehumidification and integration versions	
DHSI30H01II	DEH+ 30 H DC - Dehumidifier for suspended ceiling installation. Horizontal-only installation version with dehumidification and integration in cooling
DHSI50H01II	DEH+ 50 H DC - Dehumidifier for suspended ceiling installation. Horizontal-only installation version with dehumidification and integration in cooling

Nota: Both "D" and "DC" versions should be installed with hydraulic connections.

The "D" version alone can also be installed without hydraulic connections with appropriate parameterization by the Technical Assistance Center (CAT). In this mode, the outlet air temperature is no longer neutral.

ACCESSORY ORDERING CODES

Wall control panel

Model	All	
Description	SMART TOUCH wall control panel with thermostat and room temperature and relative humidity probe. Color White	SMART TOUCH wall control panel with thermostat and room temperature and relative humidity probe. Black color
Code	ECB033II	ECA033II

Motorized 2-way valve

Model	All	
Description	2-way motorized ON/OFF valve. Valve diameter 1/2"	
Code	AHRD0314II	

Motorized 3-way valve

Model	All	
Description	3-way motorized ON/OFF valve. Valve diameter 1/2"	
Code	AHRD0315II	

Coarse replacement filters

Model	DEH + 30 H D / DEH + 30 H DC	
Description	Coarse replacement filters	
Code	ARAD0123II	

Coarse replacement filters

Model	DEH + 50 H D / DEH + 50 H DC	
Description	Coarse replacement filters	
Code	ARAD0124II	

Delivery plenum for flexible hoses - 3 ports DN 125 mm

Model	DEH + 30 H D / DEH + 30 H DC	
Description	Delivery plenum for flexible hoses with 3 circular ports	
Code	AHRD0017II	

Delivery plenum for flexible hoses - 5 ports DN 125 mm

Model	DEH + 50 H D / DEH + 50 H DC	
Description	Delivery plenum for hoses with 5 circular ports	
Code	AHRD0018II	

Delivery plenum for corrugated pipes – 8 frontal inlets and 4+4 side inlets

Model	DEH + 30 H D / DEH + 30 H DC	
Description	Delivery plenum for flexible hoses with 8 front inlets and 4+4 side inlets for DN 75 / DN 90 mm connection	
Code	SCO312008II	

Delivery plenum for corrugated pipes – 12 front inlets and 4 +4 side inlets

Model	DEH + 50 H D / DEH + 50 H DC
Description	Delivery plenum for flexible hoses with 12 front ports and 4+4 side inlets for DN 75 / DN 90 mm connection
Code	SCO502512II

Delivery plenum for single pipe

Model	DEH + 30 H D / DEH + 30 H DC
Description	Single duct delivery plenum 1xDN 200 mm
Code	AHRD0217II

Delivery plenum for single pipe

Model	DEH + 50 H D / DEH + 50 H DC
Description	Single duct delivery plenum 1xDN 200 mm
Code	AHRD0227II

Acoustic silencer

Model	DEH + 30 H D / DEH + 30 H DC
Description	Silencer module and extension for coupling between air inlet plate and main body for flexible supply plenum 3xDN 125 mm / corrugated pipe supply plenum 8xDN 75/90 mm / single pipe plenum 1xDN 200 mm.
Code	SCO454084II

Acoustic silencer

Model	DEH + 50 H D / DEH + 50 H DC
Description	Silencer module and extension for coupling between air inlet plate and main body for 5xDN 125 mm flexible delivery plenum / 12xDN 75/90 mm corrugated pipe delivery plenum / 1xDN 200 mm single pipe plenum
Code	SCO654124II

Departure corrugated pipe – DN 75 mm

Mode	All
Description	Male/female adapter for direct connection between manifold and DN 75 mm round pipes, Connection: M/F, including 1 O-ring (Pack of 4)
Code	SRS075140II

Departure corrugated pipe – DN 90 mm

Model	All
Description	Male/female adapter for direct connection between manifold and DN 90 mm round pipes, Connection: M/F, including 1 O-ring (Pack of 4)
Code	SRS090140II

The accessories Supply Plenum for Flexible Hoses (AHRD0017II - AHRD0018II), Supply Plenum for Corrugated Hoses (SCO312008II - SCO502512II) and Single Hose Plenum (AHRD0217II - AHRD0227II) can also be used for air intake.

[illegible]

CE Marking

The CE marking (found on each machine) certifies compliance with the following community standards:

- Low Voltage Directive 2014/35/EC
- Electromagnetic Compatibility Directive 2014/30/EC

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The data in this technical catalog may be changed by the manufacturer without notice.