

HDA

Industrial dehumidifiers



HDA

HDA dehumidifiers series are high-performances units especially designed for industrial or commercial purposes where humidity level should be controlled or water vapor condensation should be prevented. These units are particularly indicated for archives, ironing rooms, bookstores, cheese factories, underground rooms, cellars and industrial sites where high humidity level is present. This series comprises 5 models which cover a capacity range from 73 to 240 l/24h. HDA units are designed for easy maintenance and service, each part being readily accessible and, when required, easily replaceable thus reducing service and maintenance costs.

The units are supplied with a solenoid valves set for the hot gas injection used to defrost the evaporator in case of severe working conditions.

VERSIONS

- D** Neutral air dehumidifier: in addition to the base components, the unit is equipped with a partial air condenser, installed on the unit, designed to dissipate the extra heating load so that to ensure air neutral conditions in the ambient which has to be treated.
- Z** These versions are supplied with an air condenser and are used in those applications where it is necessary the simultaneous control of temperature and humidity.
- WZ** With temperature control: These versions are supplied with a built in water condenser and are used in those applications where it is necessary the simultaneous control of temperature and humidity.

ACCESSORIES

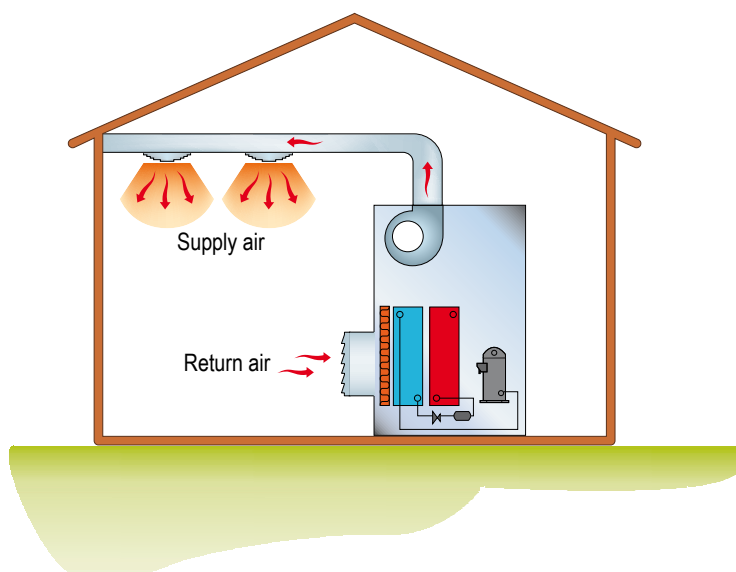
- FARC** Air filter with frame for ducted installation.
- HYGR** Remote mechanical hygrostat.
- INOX** Stainless steel frame.
- INSE** Serial interface card RS485.
- PCRL** Remote control panel.
- PM** Available static pressure 200 Pa.
- RGDD** Humidity and Temperature electronic probe sensor.
- TROL** Floor trolley version.
- VECE** High efficiency E.C. fans.

Models HDA		75	100	150	200	250
Moisture removed at 30°C - 80%	l/24h	73,0	95,2	157,1	194,3	240,2
Moisture removed at 30°C - 60%	l/24h	56,6	76,5	111,0	145,3	190,3
Moisture removed at 27°C - 60%	l/24h	49,4	68,5	99,7	127,8	169,5
Moisture removed at 20°C - 60%	l/24h	34,5	50,2	66,6	90,6	122,4
Nominal input power at 30°C - 80%	kW	1,10	1,72	1,96	2,64	3,45
Maximum input power	kW	1,55	2,07	2,34	2,72	6,10
Supplementary electric heater	kW	3,0	3,0	6,0	6,0	6,0
Maximum input power	A	5,7	9,0	11,4	14,5	29,0
Peak current	A	20,2	39,0	45,6	65,0	131,0
Air Flow	m³/h	800	1000	1500	1800	2000
Available static pressure	Pa	50	50	50	50	50
Refrigerant		R410A	R410A	R410A	R410A	R410A
Sound pressure ⁽¹⁾	dB(A)	52	54	60	62	63
Temperature operating range	°C	10-36	10-36	10-36	10-36	10-36
Humidity operating range	%	50-99	50-99	50-99	50-99	50-99
Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50

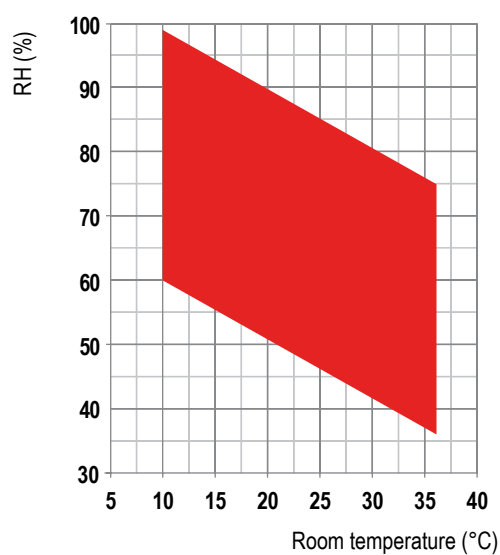
Performances refer to the following conditions:

(1) Sound pressure level measured at 1 mt from the unit in free field conditions according to ISO 9614.

PLANT SCHEME



OPERATION LIMIT



FRAME

All units are made from hot-galvanised thick sheet metal, painted with polyurethane powder enamel at 180°C to ensure the best resistance against the atmospheric agents. The frame is self-supporting with removable panels. All screws and rivets are in stainless steel. The colour of the units is RAL 9018.

REFRIGERANT CIRCUIT

The refrigerant gas used in these units is R410A. The refrigerant circuit is made by using international primary brands components and according to ISO 97/23 concerning welding procedures.

The refrigerant circuit includes: sight glass, filter drier, thermal expansion valve with external equalizer, Schrader valves for maintenance and control, pressure safety device (according to PED regulation).

COMPRESSOR

The compressors are rotary with crankcase heater and thermal overload protection by a klixon embedded in the motor winding. The compressors are mounted on rubber vibration dampers and they can be supplied with sound attenuation jacket to reduce the noise emission (option).

The inspection on the compressors is possible only through the unit front panel.

CONDENSER AND EVAPORATOR

Condensers and evaporators are made of copper pipes and aluminium fins.

All evaporators are painted with epoxy powders to prevent corrosion problem due to their use in aggressive environments. The diameter of the copper pipes is 3/8" and the thickness of the aluminium fins is 0,1 mm. The tubes are mechanically expanded into the aluminium fins to improve the heat exchange factor. The geometry of these heat exchangers guarantees a low air side pressure drop and then the use of low rotation (and low noise emission) fans.

All units are supplied, standard, with a stainless steel drip tray and all evaporators are supplied with a temperature sensor used as automatic defrost probe.

FAN

The fans are made of galvanized steel, centrifugal type. It is statically and dynamically balanced and supplied.

The electric motors are directly connected to the fan; they are all at 3 speeds, with integrated thermal protection. The protection class of the motors is IP 54.

AIR FILTER

It is made of synthetic filtering media, undulated type, without electro-static charge; they are all removable for differential disposal. Efficiency class G5, according to EN 779:2002.

MICROPROCESSOR

All units are supplied standard with microprocessor controls. The microprocessor controls the following functions: compressor timing, automatic defrost cycles, alarms.

An appropriate LCD display shows the operation mode of the unit, set point and alarms.

ELECTRIC BOX

The electric switch board is made according to electromagnetic compatibility norms CEE 73/23 and 89/336. The accessibility to the board is possible after removing the front panel of the unit and the OFF positioning of the main switch. The following components are also standard installed: main switch, magnetic-thermal switches (as a protection fans and compressors), control circuit automatic breakers, compressor contactors, fan contactors. The terminal board is supplied with voltage free contacts for remote ON-OFF and general alarm.

CONTROL AND PROTECTION DEVICES

All units are supplied with the following control and protection devices: antifreeze protection sensor, high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection.

TEST

All the units are fully assembled and wired at the factory, carefully evacuated and dried after leak tests under pressure and then charged with refrigerant R410A.

They are all fully operational tested before shipment. They all conform to European Directives and are individually marked with the CE label and provided with Conformity Declaration.

ACCESSORIES

HYGR - REMOTE MECHANICAL HY-GROSTAT

To be installed on the wall, it is supplied with a regulation knob and working range from 30% to 100% with precision of 3%.

INSE - SERIAL INTERFACE CARD RS485

This interface card enables the controller to communicate with other devices using Modbus protocol.

PCRL - REMOTE CONTROL PANEL

This panel can be mounted up to 50m (maximum) from the unit and replicates all of the control functions. It is connected using a twin cable of 0.5 mm sq section.

RGDD - BUILT IN-ELECTRONIC SENSOR (TEMP.+HUMIDITY)

Built-in Electronic temperature and humidity probe.

VECE - E.C. SUPPLY FAN

The supply fan is a high performance centrifugal type, double inlet forward curved blades, directly coupled to the electric motor. The fan wheel and the scroll are made from hot galvanised thick sheet metal, painted with polyurethane powders, to ensure the best resistance against aggressive environments. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost

due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6,3 according to ISO1940. The electric motor has a separate electronic com-

muter (driver) and a speed modulation 0-10V, integrated PFC, burn out thermal protection (in case of considerable reduction of the power supply), protection degree

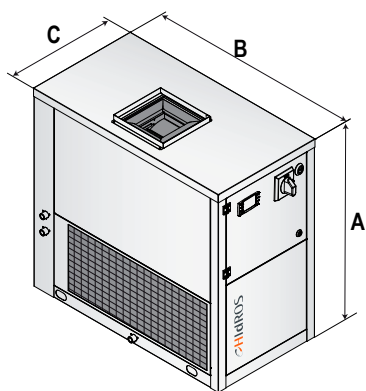
IP54, serial interface card with modbus protocol RTU.

HDA Versions	Code	75	100	150	200	250
Remote mechanical hygostat	HYGR	○	○	○	○	○
Available static pressure 200 Pa	PM	○	○	○	○	○
Floor trolley version	TROL	○	○	○	○	○
Stainless steel frame	INOX	○	○	○	○	○
Air filter with frame for ducted installation	FARC	○	○	○	○	○
Umidity and Temperature electronic probe sensor	RGDD	○	○	○	○	○
Remote control Panel	PCRL	○	○	○	○	○
High efficiency E.C. fans	VECE	○	○	○	○	○
Serial interface card RS485	INSE	○	○	○	○	○

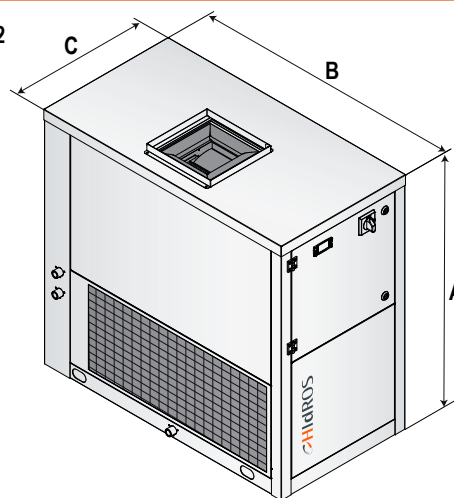
● Standard, ○ Optional, – Not available.

HDA

F1



F2



Mod.	Frame	A (mm)	B (mm)	C (mm)	Kg
75	F1	800	800	400	80
100	F1	800	800	400	85
150	F2	1000	1060	550	108
200	F2	1000	1060	550	115
250	F2	1000	1060	550	120