SECCOPROF 38

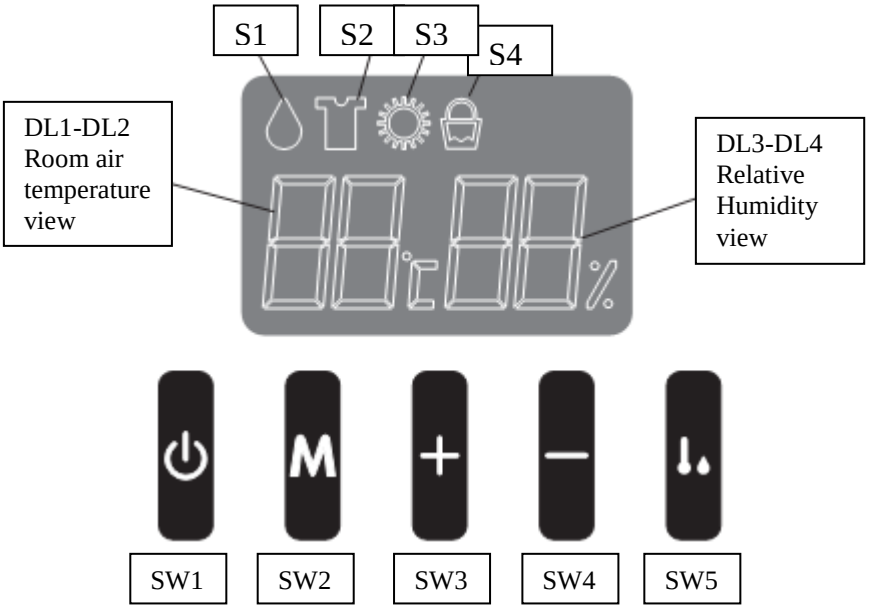
1.Data sheet

Descrizione	Description	Unità di misura / Unit	Valori / Value
Capacità di deumidificazione (1)	Dehumidification capacity (1)	l/24h	**20**
Capacità di deumidificazione (2)	Dehumidification capacity (2)	l/24h	**38**
Volume deumidificabile (min/max)	Dehumidificable volume (min/max)	m³	**330**
Potenza di riscaldamento	Heating capacity	W	-
Potenza assorbita in deumidificazione (1)	Power absorption in dehumidifcation mode (1)	W	**500**
Assorbimento nominale in deumidificazione (1)	Nominal absorption in dehumidification mode (1)	A	**2,8**
Potenza assorbita massima in deumidificazione (2)	Max. power absorption in dehumidification mode (2)	W	**585**
Assorbimento massimo in deumidificazione (2)	Max. absorption in dehumidification mode (2)	A	**3,1**
Potenza assorbita massima in deumidificazione (U.L.U.)	Max. power absorption in dehumidification mode (U.L.U.)	W	**700**
Assorbimento massimo in deumidificazione (U.L.U.)	Max. absorption in dehumidification mode (U.L.U.)	A	**3,6**
Potenza assorbita max. in deumidific.+riscaldamento (U.L.U.)	Max. power absorption in dehumidif.+heating mode (U.L.U.)	W	-
Assorbimento max. in deumidific.+riscaldamento (U.L.U.)	Max. absorption in dehumidif.+heating mode (U.L.U.)	A	-
Grado di protezione	Protection level		**IP X1**
Max pressione di esercizio, lato alta pressione	Maximum operating pressure, high pressure side	Mpa	**1,80**
Max pressione di esercizio, lato bassa pressione	Maximum operating pressure, low pressure side	Mpa	**0,49**
Velocità di ventilazione	Fan speeds	l	**1**
Capacità tanica	Tank capacity	m³/h	**10,0**
Portata aria (max)	Air volume (max)	mm	**350**
Dimensioni prodotto (Larg. x Alt. x Prof.)	Dimensions (W x H x D)	mm	**310 x 650 x 435**
Dimensioni imballo (Larg. x Alt. x Prof.)	Packing dimensions (W x H x D)	db(A)	**380 x 720 x 510**
Livello sonoro	Noise level	db(A)	**49**
Peso (senza imballo)	Weight (without packing)	Kg	**22**
Peso (con imballo)	Weight (with packing)	Kg	**26**
Gas refrigerante / carica	Refrigerant gas / charge	Tipo-Type / kg	**R134A / 0,330**
Cavo di alimentazione (N° poli x sezione mmq)	Power cable (N° pole x section mmq)		**3 x 1**
Alimentazione	Power supply	V-F-Hz	**230 - 1 - 50**
Tensione di alimentazione minima/massima	Power supply min - max	V	**198 / 244**
Fusibile	Fuse		**10AT**
Marcature di conformità	Conformity Mark		**CE**
Enti certificatori	Certification Mark		-

CONDIZIONI LIMITE DI FUNZIONAMENTO	OPERATIONAL LIMITS	
Temperature di esercizio massime	Maximum operating temperature	(U.L.U.) DB 35°C - WB 31°C
Temperature di esercizio minime	Minimum operating temperature	(L.L.U.) DB 2°C - WB 1°C

CONDIZIONI DI PROVA	TEST PARAMETERS	(1) DB 27°C - WB 21°C (27°C - 60% RH)
		(2) DB 32°C - WB 29°C (32°C - 80% RH)

2.Control panel keys and display



S1: Dehumidification
S2:Drying mode
S3:Defrosting enabled
S4:Full water tank/No water tank.If blinking with frequency of 1.25Hz,continuous discharge function is enabled
SW1:Turn on/Stand-by key
SW2:Mode selection key.
SW3:Humidity/temp. increasing key
SW4:Humidity/temp. decreasing key
SW5:Room humidity/temp. key show on DL1 and DL2 the Room air temperature measured, and on DL3 and DL4 the measured Room air relative humidity, both in blinking mode and with duration of 5 seconds;

DL1,DL2,DL3,DL4:_In normal working operations,they display the Set Temperature and Set Relative Humidity values respectively (according to the function selected) both in blinking mode and with duration of 5 seconds.Furthermore following information can be shown:

Digit DL1 and DL2	*Digit DL3 and DL4*	*Corresponding information*
OFF	**30% - 90%**	Relative humidity set value
-9°C - 30°C blinking	**30% - 90%** blinking	Room air Temperature and relative humidity measured
OFF	**HI**	Dry working function
OFF	**Hr** blinking	Humidity sensor / room air NTC sensor malfunction
OFF	**tE** blinking	Evaporator NTC sensor malfunction
OFF	**LO** blinking	Low temperature alarm
-9°C – 50°C	**At**	Autotest mode, evaporator temperature value
Co	**5 - 50**	Setup mode: compressor defrosting ON time
Cf	**3 - 15**	Setup mode: compressor minimum OFF time
Ft	**-9 - 9**	Setup mode: frost accumulation temperature
St	**0 - 9**	Setup mode: end of defrosting temperature
tC	**20 - 40**	Setup mode: set point temperature in combined mode

3.Buzzer and backlight

Activation mode	*Corresponding information*
Single short pulse	Keys pressed on control board confirmation
Two short pulses	System activation (through SW1)
Three short pulses	Parameter EEprom writing confirmation
Five short pulses	Autotest and Set-up modes activation
Intermittent for 15 seconds	Tank micro switch opening Probe malfunctions Evaporator exchanger low temperature malfunction

- As soon as the tank switch opens the unit has to switch-off all the active loads (except the fan whose switching off has to be delayed by 30 seconds), switch-on of the corresponding symbol in fixed mode and enable an intermittent acoustic signal for 15 seconds; press any key with the acoustic alarm active or re-close the microswitch to silence the alarm.
- The board confirms any command by a brief acoustic signal and switching on the LCD backlight for 10 seconds.

4.Working modes description

4.1 STAND-BY MODE

This mode can be selected by pressing SW1 key on the control board, and is signalled by ‘ - - - - ‘ on display;
In this condition, if the key is pressed again, all the functions previously selected are restored (operating mode, set-point, etc.).
When switching to stand-by mode all board outputs are switched OFF, but if compressor was active, the fan only continues to run for 30 seconds further before stopping.
In STAND-BY mode (and only in this mode) it is possible to enter the parameter programming mode where new parameter values can be stored in eeprom (see related paragraph).

4.2 AIR CLEANING MODE

When selected by SW2 (see par.2) the fan is switched on, while is switched off only in the following cases: the tank switch opens or any alarm occurs.
When this function is selected, the symbol S6 is switched ON, while digits DL-DL2 and DL3-DL4 show the actual room temperature and Relative Humidity values acquired (button SW5 is disabled).
The fan speed is the only one available (power board output FAN1).

4.3 DEHUMIDIFICATION MODE

Selected by SW2 and signalled by S1 (+S3 blinking mode when hot gas valve output is ON).
Compressor and fan (power board output FAN1) are switched on if the minimum OFF time (**Cf**) has elapsed and if the relative humidity value is higher than the set point + 3%; compressor and fan remain ON as long as the relative humidity value is above the set point – 3%; when below the set point – 3%, compressor and

fan switch off (the fan is switched-off 30 seconds later than the compressor) and remain off for a minimum time equal to **Cf** (measured from the compressor shut down), at the end of which the compressor and the fan are switched back on again if the relative humidity value is greater than the set point +3%.
The relative humidity (RH) set point can be adjusted from 30% to 90% in steps of 5%. By pressing the UP (SW3) or DOWN (SW4) keys the set point value is increased or decreased by 5%.
In this mode the defrosting function can operate as described in par. 5.4.

4.4 DRYING MODE

When selected by SW2 (see par. 2) compressor and fan are switched on in continuous mode if the minimum delay time **Cf** has elapsed. Compressor and fan shall be switched off in the following cases only: the tank switch opens, any alarm occurs (the fan shall be always switched off after 30 secs from compressor shut down).
When this function is activated the symbol S2 is shown (+S3 blinking mode when hot gas valve output is ON) and on digits DL3 and DL4 the message **HI** appears (see par.2).
In this mode the defrosting function can operate as described in par. 5.4.

5.Other functions and modes

5.1 Tank switch

If the tank switch remains open for more than 2 seconds continuously, the unit has to switch-off all the active loads (except the fan that has to be switched off 30 seconds later), switch-on the corresponding symbol S4 in fixed mode and enable an intermittent acoustic signal for 15 seconds; by pressing any key with the acoustic alarm active or by re-closing the micro switch the alarm shall be silenced (but still signalled). If the switch is then closed for more than 2 seconds continuously the water tank alarm resets and the unit restores the previous working operation (the compressor can be switched on again when **Cf** minutes have elapsed from its previous shut down).

5.2 Auto-recovery function

The ON/OFF status, the set point, the operating mode (including tank switch inhibition) are saved in EEprom memory. After a black-out or a power mains failure the unit recovers all operations previously set without observing any compressor **Cf** OFF time.

5.3 Compressor switching

Compressor can be switched ON only when **Cf** minutes have elapsed starting from previous compressor shut down.

5.4 Defrosting function

When a frost condition (evaporator temperature < **Ft**, compressor ON and hot gas valve output OFF) **continuously** occurs for **Co** minutes, then defrosting takes place: the compressor keeps ON, the hot gas valve output is switched ON (power board output ER) and fan is switched OFF. When hot gas valve output is ON, the symbol S3 is shown in blinking mode on display (see par.2). Defrosting function terminates as soon as the pre-set temperature **St** is reached (evaporator temperature > **St**), when the hot gas valve output is switched back OFF and fan switched back ON (standard working condition is restored).

According to the above description, the parameters **Co** and **Ft** refer to defrosting start condition (higher Co and lower Ft values means higher ice accumulation on evaporator heat exchanger before defrosting), whereas the parameter **St** refers to defrosting exit condition (lower St value means shorter function duration).
As the compressor keeps always ON during defrost operations, the hot gas valve activation period can be shorter than **Cf** minutes.
If the frost condition (evaporator temperature < **Ft**, compressor ON and hot gas valve output OFF) lasts for less than **Co** minutes then no defrosting operations shall occur.
In dehumidification mode, if frost condition is detected and RH set point is reached within **Co** minutes, the unit shall switch off the compressor and the fan (30 seconds later) as usual, and the defrosting function currently running is not completed. If RH set point is reached during the hot gas valve output activation, the unit must complete the defrosting function currently running before switching off the compressor (keeps working with compressor and hot gas valve output ON and fan OFF until the evaporator temperature reaches **St**, then all outputs can be finally switched OFF).
If Stand by mode is selected during any defrost function operation, all outputs shall be switched OFF immediately and defrost function shall be aborted.
When the tank switch is enabled to work and is opened during a defrost session (during **Co** count with hot gas valve output OFF or during hot gas valve output ON periods), the unit behaves as usual (all outputs are switched OFF, the fan is switched OFF with 30 seconds delay, acoustic signal and S4 symbol are enabled), but when this switch is closed, the interrupted defrost session shall be completed without resetting the **Co** counter (if evaporator temperature conditions for defrosting are still present). In this case too the compressor can be switched ON only when **Cf** minutes have elapsed starting from previous compressor shut down.

5.5 Inhibition of Tank Full switch

The tank full switch is ignored: this function is accessed only if the level switch is open (tank full or absent) by keeping the SW3+SW4 keys pressed for 3 seconds (5 beeps confirm that the function has been enabled). When the function is enabled, the tank switch is ignored and the S4 symbol blinking indicates that the function is active. The function is automatically terminated when the level switch is closed.

5.6 Autotest mode

When the unit is in Stby mode, by pressing the keys SW4+SW5 for 3 seconds (SW4 first), the following sequence is started (5 beeps confirm that the function has been enabled):

- all LCD symbols are switched ON for 3 seconds;
- the SW release is shown for 3 seconds (on DL4 is shown “2”) (in order to recognize the proper SW release during EOL check inspection);
- hot gas valve output (power board output ER) is switched ON for 6 seconds and S3 blinks, then is switched OFF;
- both fan and compressor are switched ON, the LCD shows the code **At** on digits DL3 and DL4 and evaporator probe temperature on digits DL1 and DL2.
- The compressor remains ON continuously, regardless of the RH set point and tank microswitch condition; the defrosting function is disabled and compressor can be powered even if **Cf** minutes have not elapsed from previous compressor shut down.

The tank level symbol (S4) is switched ON if the tank is absent/full (microswitch open), and remains OFF if the tank is present (board input closed).
By pressing the key SW5 the unit shows the measured room air temperature and relative humidity values (like during normal operations)
Once the compressor has been switched ON, by pressing the key SW3 the hot gas valve (power board output ER) is energized and the symbol S3 is shown in blinking mode on display (in addition to other displayed symbols). By pressing again the key SW3 the hot gas valve and symbol S3 are switched back OFF.
In autotest mode, in case any probe alarm (**Hr** or **tE**) occurs, the relevant alarm code blinks on the LCD display without any acoustic signal emission.
Press the stand-by key (SW1) or disconnect the power supply to quit the auto test mode.

5.7 Setup mode

By pressing the keys SW5+SW3 for 3 seconds in stand-by mode it shall be possible to enter the setup function (5 beeps confirm that the function has been enabled). When the function is active, on DL1 and DL2 it shall be shown the parameter mnemonic, whereas on DL3 and DL4 the current parameter value. By pressing SW5 it shall be possible to select the next parameter, by pressing SW5+SW3 or SW5+SW4 (SW5 first) it shall be possible to increase or decrease the value. In this case, when the SW5 key is released the current value is stored in the memory (3 beeps confirm that the new parameter value has been stored) but all new parameters will be stored in the EEprom memory only when the setup function is stopped by pressing SW1.
In order to quit the setup mode, press the SW1 key or disconnect the power supply.
The default values shown in the table below are programmed during the electronics test process.

Mnemonic	*Range scheduled*	***Parameters set***	*Description*
Co	5 - 50 min	15	Compressor in defrosting ON time
Cf	3 - 15 min	3	Compressor minimum OFF time
Ft	-9 – 9 °C	5	Frost accumulation temperature
St	0 – 9 °C	6	End of defrosting temperature

6.ALARMS

6.1 PROBES ALARM

Any failures in the probes are displayed by **Hr** or **tE** blinking for the humidity sensor probe/ambient probe and evaporator probe respectively; in the case of a failure in the probes all the loads are de-activated (except the fan whose switching off has to be delayed by 30 seconds) and an intermittent acoustic signal is emitted (which can be silenced by pressing any key) with duration of 15 seconds.

The humidity probe signals the failure even if it measures a room relative humidity percentage below 22%, a condition in which the unit must be deactivated. Operation is automatically restored as soon as the relative humidity rises back above 22%.

6.2 LOW TEMPERATURE ALARM

If after 30 minutes of operation in defrosting mode (hot gas valve output ON and fan OFF) the evaporator temperature does not exceed **St**, then the compressor and hot gas valve are stopped, the display shows the alarm code **LO** blinking and an emission of an intermittent acoustic signal is enabled (which can be silenced by pressing any key) with duration of 15 seconds.

Reset of this alarm status occurs automatically as soon as the evaporator temperature rises above the value stored in parameter **St** other than when the unit is switched to Stby mode and after a power mains interruption.

7.WIRING DIAGRAM

A1 - *Electronic card (power)*
A2 - *Humidity/temperature sensor card*
A3 - *Electronic card (control)*
B1 - *Humidity/temperature sensor*
B2 - *Evaporator sensor*
F1 - *Compressor thermal cutout*
P1 - *Bypass valve coil*
RY101 - *Bypass valve coil relay*
RY102 - *Compressor relay*
RY104 - *Fan relay*
M1 - *Motor-driven compressor*
M2 - *Fan*
S1 - *Tank full microswitch*
S2 - *Tray presence microswitch*
S301 - *Signal key for the humidity/room temperature detected*
S302 - *Desired humidity decrease key*
S303 - *Desired humidity increase key*
S304 - *Switch-on/stand-by key*
S305 - *Operating mode selection key*
T1 - *Transformer*
X1 - *2-pole connector*
Z1 - *Compressor capacitor*

Modello con valvola by-pass / ***Model with by-pass valve*** / **Modèle avec valve de dérivation** / ***Modell mit Bypass-Ventil*** / **Modelo con válvula by-pass** / ***Modelo com válvula de by-pass*** / **Model met bypass-klep** / ***Μοντέλο με βαλβίδα by-pass***