MICROWELL

User‘s manual

2025 Touch controller DRY

Model: FRS0193039-040 1.3

Compatibility: DRY300-400-500-800-1200 in make: WAVE, METAL (ALU), SILVER, DUCT, HORIZON

Version: 01/2026;
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EC fan update

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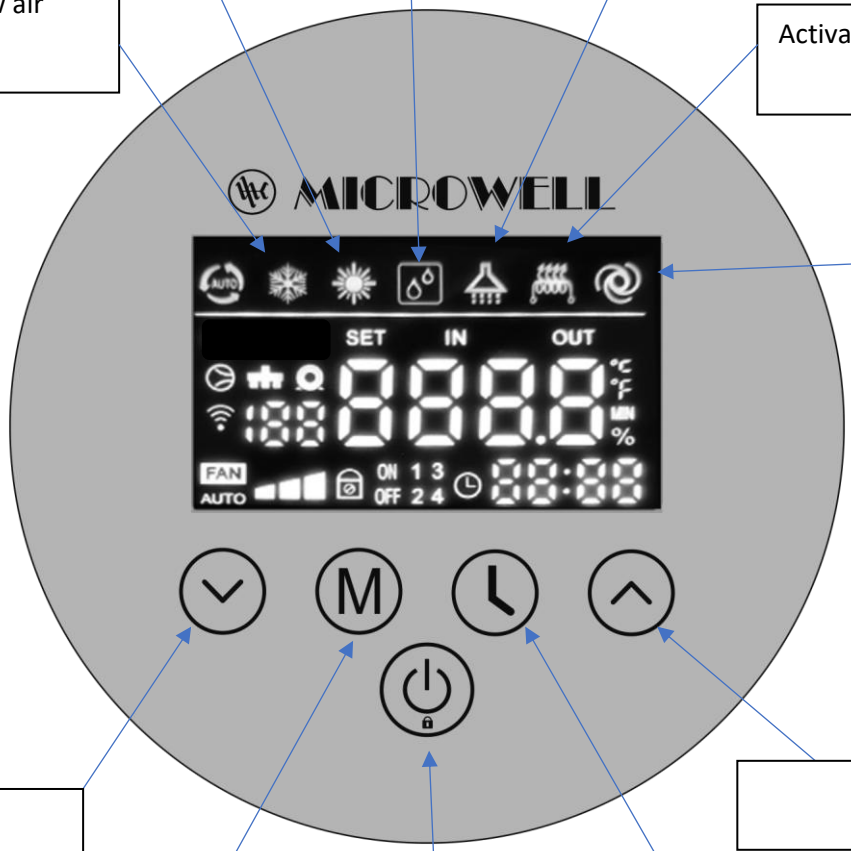
1. Description of display

Please note that actual display and/or its icons may differ from the product you have.



Heating mode.

Dehumidification mode.

Winter module activation.

Defrosting or low air temperature.

Activation of heating (heating on).

Activation of external ventilation.

DOWN arrow.

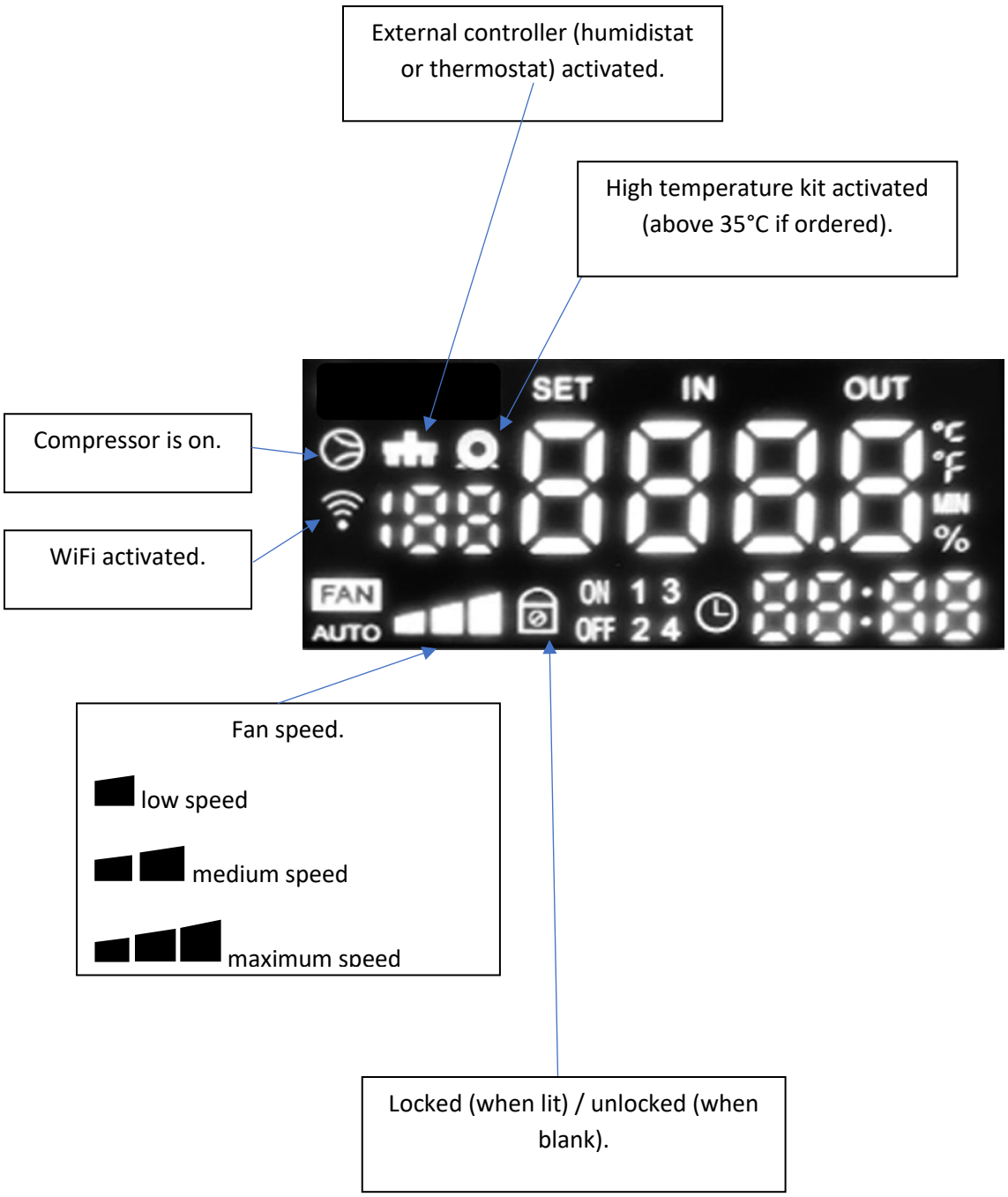
UP arrow.

Access to operational parameters / main settings.

Main ON/OFF button; LOCK/UNLOCK

Press & hold 5 seconds to lock or unlock.

Clock button.


External controller (humidistat or thermostat) activated.
High temperature kit activated (above 35°C if ordered).
Compressor is on.
WiFi activated.
SET
IN
OUT
°C
°F
MIN
%
FAN
AUTO
ON 1 3
OFF 2 4
Fan speed.
low speed
medium speed
maximum speed
Locked (when lit) / unlocked (when blank).

2. Humidity settings

Target humidity should be set within 50~65% RH range. Humidities lower than 40% may cause too dry environment, unnecessary electrical consumption and can cause unwilling dry feeling. Humidities above 70% create favorable environment for mold and/or bacteria growth.

Example:

Below picture shows stand-by in dehumidification mode (compressor off), current reading of relative humidity 64%, time 21:10, Wi-Fi function activated, fan on medium speed and external controller activated.

In order to set target humidity to activate dehumidification, make sure to **unlock the display** by pressing and holding the ON/OFF button for 5 seconds. Then **set with up or down arrow**.

Humidity function is also dependent on hysteresis (difference between the target and actual relative humidity to activate/inactivate dehumidification). Parameter C22 is Humidity Hysteresis. Refer to its settings below in Settings (Main parameters). Hysteresis is positive (1 directional).

Should the controller be set to different than dehumidification mode then set dehumidification by pressing and holding the up arrow for 5s. You need to set the water drop icon . Make sure the display is unlocked.

5 seconds press & hold => .

3. Air heating settings

In order to set target air temperature to activate air heating, make sure to **unlock the display** by pressing and holding the ON/OFF button for 5 seconds. Then press and hold M

button  to access "C" System Settings (Main parameters). If you only press M button shortly you will be prompted to self-diagnosis "d" parameters. Then proceed with arrows  to move to **C2** parameter, then press M button  to access settings of C2, then **set your requested air temperature with up**  **or down**  **arrow**, confirm with M button. We suggest to keep the air temperature in range +2°C above water temperature for general pools (normally in range 26~32°C).

Air heating function is also dependent on hysteresis (difference between the target and actual air temperature to activate/inactivate air heating). Parameter C21 is Air heating Hysteresis. Refer to its settings below in Settings (Main parameters). Hysteresis is negative (1 directional).

Should the controller be set to different than dehumidification mode then set dehumidification by pressing and holding the up arrow for 5s. You need to set the sun  and water drop icon  . Make sure the display is unlocked.

5 seconds press & hold  =>  ., then again **5 seconds press & hold to show both sun and water drops**  . Since the device is dehumidifier, you should keep dehumidification settings activated (water drop) and have sun activated too (to enable air heating). Please note that the actual order of symbols may differ.

4. Self-diagnosis (operational parameters)

Your controller is equipped with self-diagnosis function. This is very convenient function that enables you and your installer (dealer) to diagnose the dehumidifier based only on display readings. In most cases it allows the installer (dealer) to determine if the device is working properly and/or to identify the fault.

In order to access the self-diagnosis, make sure to **unlock the display** by pressing and holding the ON/OFF button  for 5 seconds. Then **press the M button**  **shortly (1 second)** to access "**d**" parameters. If you press and hold the M button for 5 seconds and more you will be prompted to "C" System parameters (settings). Press on/off to return to basic view and then tap the M shortly to access the d operational parameters.

List of self-diagnosis parameters below:

Parameter code	Sensor type	PCB connector number	Meaning of parameters	Parameter range	Sensor connector color
d1	T5 – air, 5kΩ plastic	CN3	**Air temperature**	-30℃~99℃	White
d2	T1 – HT sensor	CN11	**Relative humidity**	0%RH-99%RH	White
d3	T4 – evaporator, 5kΩ copper	CN6	**Evaporator temperature**	-30℃~99℃	Yellow
d4	T3 – 5koΩ copper	CN8	**Suction temperature**	-30℃~99℃	Black
d5	T2 – 50kΩ copper	CN9	**Compressor discharge temperature**	-30℃~99℃	Red
d6	-	CN3	Step number of EEV 1	0-500 steps	-
d7	-	CN4	Step number of EEV 2	0-500 steps	-
d8	-	-	Operation frequency of the DC inverter fan motor	0-2000Hz	-
D9	T6 – 50kΩ copper	CN2	Electrical heating coil temperature (if C33=1)	-30℃~99℃	

5. System Settings (main parameters)

Main settings (or parameters) mean overall core settings of your device. **Do not interfere with these settings unless you have been trained to do so.** Manufacturer, installer and/or dealer are not responsible for damages on the device, equipment and/or health risks from incorrect settings.

Your device comes with pre-set factory settings. Should you need to change the parameters, then please make sure to **unlock the display** by pressing and holding the ON/OFF button for 5 seconds. (if you only short press M button you will be prompted to "d" self-diagnosis parameters). Then **press and hold M button** to access "C" Settings (Main parameters). Then proceed with arrows to move to C1-C28 parameters. In order to set particular C parameters, press M button to access its settings. **Set with up or down arrow**, confirm with M button.

List of System parameters below:
C1->C9
10->28 means C10 to C28

Parameter code	Meaning of the codes	Description of parameters	Default
C1	Requested humidity	1%RH-99%RH	58%RH
C2	Requested air temperature for air heating	5℃－45℃	30℃
C3	With or without heating	0～1, 0= without heating 1= with heating	The default is 1
C4	Humidity sensor correction	－10%～10%	0%
C5	Delay detection time after the compressor starts Minimal compressor running before defrosting	20～90min	40
C6	The temperature at which the system enters the defrost point (self-diagnosis d3)	－10℃～10℃	－2
C7	Temperature at which the system exits the defrosting point	0℃～15℃	8
C8	Maximum defrosting time	2min～12min	10

C9	Fan control mode	0-2 0=periodical 1=continual 2=smart – air sampling for 60s after time based on parameter C24	2
C 10	The return difference when the EEV exits after entering the permissible discharge temperature	1~30℃	10℃
C 11	The permissible discharge temperature when adjusted by the EEV	80℃～150℃	95℃
C 12	Operation period of the EEV.	20s～90s	30s
C 13	Target super heat.	-10~10℃	5℃
C 14	The minimum opening EEV settings	1～240	75
C 15	Fan type selection	0-AC；1-DC	0
C 16	High wind speed of DC motor	400-1500	1500
C 17	Low wind speed of DC motor	400-1500	600
C 18	High pressure detection function (this is refrigerant system core protection, do NOT set „0"for parameter C18 unless you have been clearly instructed by your installer or dealer to do so). Settings „0"is used to enable the device to start and read out self-diagnosis even though high-pressure protection has been engaged – error E4.	0-without；1-with	1 (set to "0" only for self-diagnosis purposes after you have experienced E4 error code)
C 19	Low pressure detection function (this is refrigerant system core protection, do NOT set „0"for parameter C19 unless you have been clearly instructed by your installer or dealer to do so). Settings „0"is used to enable the device to start and read out self-diagnosis even though low-pressure protection has been engaged – error E5.	0-without；1-with	1 (set to "0" only for self-diagnosis purposes after you have experienced E5 error code)
C 20	Return air temperature function	0-without；1-with	1

C 21	Air heating hysteresis Negative hysteresis – turns on when actual air temperature is less than (C2-C21), turns off at C2.	0~+10°C	1
C 22	Air humidity hysteresis Positive hysteresis – turns on when actual RH is more than (target humidity+C22), turn off at target humidity.	0-10%; 0-1-2-3-4-5-...10	4
C 23	Air temperature sensor correction This parameter is to be used when you need to adjust the air temperature sensor reading.	-5~+5	0
C 24	Air sampling (periodic air measurement with „low fan speed"), 60 seconds	10-60minutes, step by 10minutes (10-20-30-40-50-60)	20
C 25	Active / Passive defrosting Attention to user: do not set „1" yourself, there is risk of frost with subsequent damage of your dehumidifier. Settings of "1" is only used when your dehumidifier is equipped with 4-way valve (low temperature kit for air operations from +5°C).	0~1 0 = passive = 14~45°C (air flow defrosting) 1 = active = 9~45°C (only with 4-way valve)	0
C 26	Fan speed control Your dehumidifier is equipped with simulated step inverter fan. This allows the fan to assume lower speed if the air temperature and humidity and/or air heating function enables it. Typically if RH and/or Air temperature are less than 5% (5°C) from target then if air temperature is below C26, the fan will automatically assume lower speed.	5-45	27
C 27	Temperature at which the system exits the defrosting point PASSIVE defrosting (C25=0)	0℃～20℃	15
C 28	Maximum defrosting time PASSIVE defrosting (C25=0)	2min～25min	15
C29	Ventilation	0-1	0

C30	DUCT unit	0-1	0
C31	Phase Sequence Protection / Electrical Protection IN1	0-1	0
C32	Dry Contact/PV Ready IN2	0-1	0
C33	Electric heater	0-1	0
C34	LED microLIGHT	0-1	0
C35	Medium wind speed of DC motor	400-1500	900
C36	DC fan quantity	0-1 0 = single fan 1 = two fans	0

6. Description of general function

Your dehumidifier is able to maintain following function modes:

Mode	Range of the ambient temperature		Display settings in abnormal mode (including downtime due to failure)	Symbol
	5℃-45℃	Outside the range of 5℃-45℃		
Dehumidification mode	Normal dehumidification	The dehumidification mode is off, the compressor is off, and the fan is off	The dehumidification mode icon keeps flashing	
Independent heating mode	Normal heating	Normal heating	In heating mode, the icon flashes continuously	
Dehumidification and heating mode	Normal dehumidification and normal heating	The dehumidification mode is turned off. The compressor is turned off, but the fan remains on for independent heating	The icon of dehumidification plus heating mode keeps flashing	 
Air supply mode	Normal output	Normal output		

Display flashes water drops  and snowflake  => unit is defrosting.

Display shows OFF  and OUT  => DRY contact is disconnected (PV ready disabled).

The dehumidifier is programmed for automatic operations. This means that the dehumidification, air heating and ventilation (fresh air) is turned on based on requested target relative humidity and target air temperature. The fan is programmed to automatically adjust its speed from low to high speed based on demand. If the relative humidity is within 5% (percentage points) difference from target and air temperature is below settings C27, the fan will not assume high speed. After the system has turned off active dehumidification or air heating, the fan will continue to work on medium speed to dry out or cool down the system for another 120 seconds.

- **Real-time clock setting:**

On the main interface, press "Clock" to enter the real-time clock setting screen.

On the real-time Clock screen, press the "Clock"  key, and the digit in the hour part blinks. Press the "+" key or the "-" key to set the hour of the real-time clock.

After the hours part is set, press the "Clock" key again, and the number in the minutes part blinks. Press the "+" key or the "-" key to set the minutes of the real-time clock.

After the minute part is set, press the "Clock" key again to confirm the real-time clock setting and return to the main interface.

If no key is pressed for 30 seconds on the real-time Clock setting screen, the system confirms the current real-time clock setting value and returns to the main interface.

On the real-time Clock setting screen, press the "on/off" key to confirm the current real-time clock setting and return back to the main interface.

- **Set the timer to on/off:**

On the main interface, press and hold the "Clock" key for 5 seconds to enter the screen for setting the timer group.

At this time, press the "+" key or "-" key to set the timer group,1, 2, 3 and 4.

When segment 1 is blinking, press the "Clock"key to enter the screen for setting the hour part of the timer startup time for timer group 1. When the number of the hour part of the timer startup time is blinking, press the "+" key or the "-" key to set the timer hour section for timer group 1.

After the hour part is set and you press the "Clock" key, the number in the minute part of the timer startup time blinks. Press the "+" key or the "-" key to set the timer startup minutes. Then you can set the timer of 1 group of startup minutes.

After setting the timer of the minute section for starting group 1, press the "Clock" key to enter the hour setting for shutting down of timer group 1. The setting method is the same as the above.

After the scheduled shutdown time is set, press the "Clock" key to confirm the current set timer on/off time, enter the on/off setting of timer group 2, the setting is the same as timer group 1, and return to the main screen.

On the timer setting screen, hold down the Clock key for 5 seconds to disable the timer on/off.

On the timer interface, if no button is pressed for 30 seconds, confirm the current timer time and return to the main screen. (Power off after timing can be remembered).

On the timer interface, press the "on/off" key to confirm the current timer time and return to the main screen.

The timer settings for other segments are the same as those for segment 1.

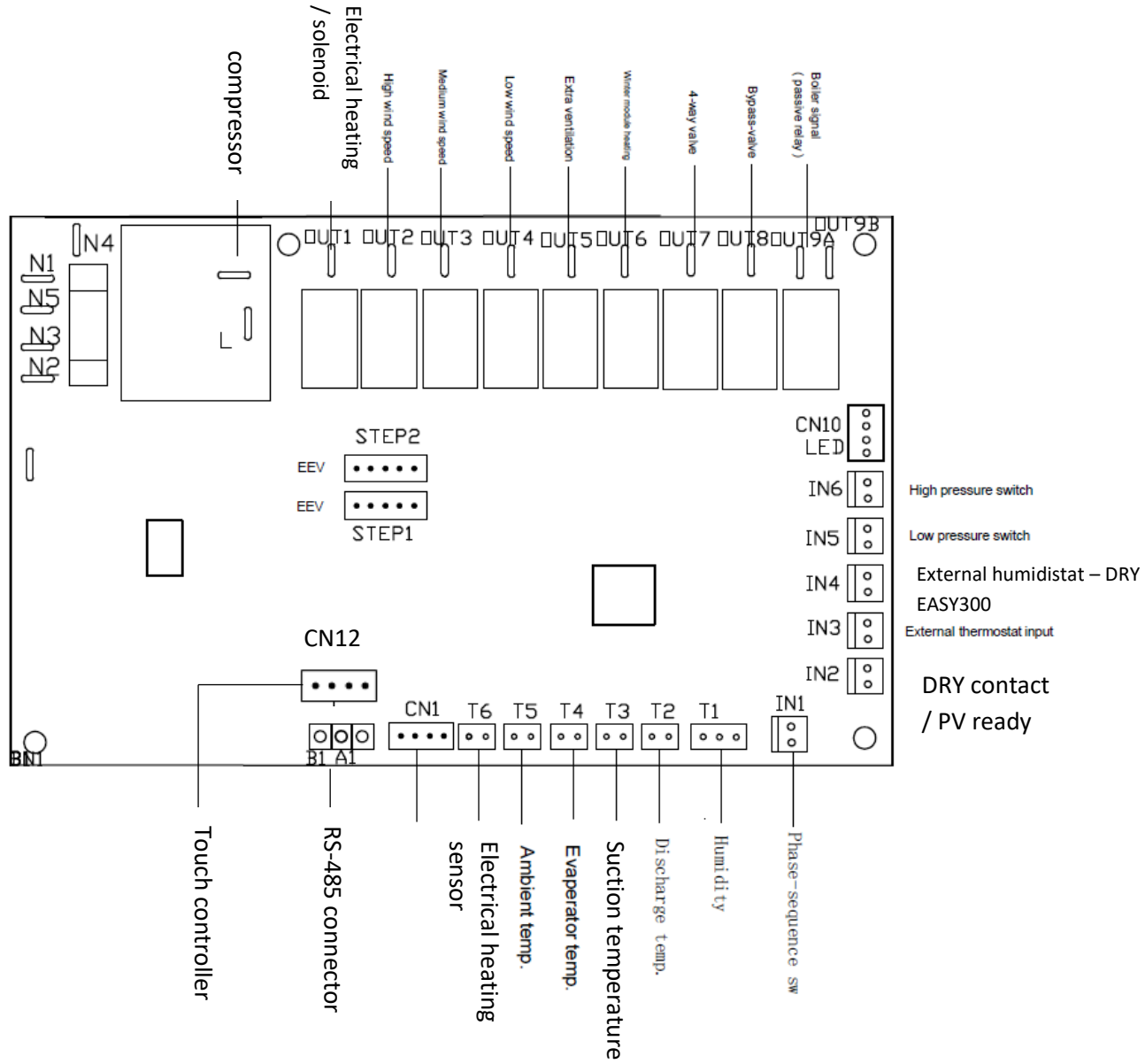
7. WiFi

Press and hold CLOCK + UPPER ARROW for 5 seconds  to enter WIFI pairing. Then the WIFI icon will flash. 

Application is Smart Life 

Open the Smart Life APP and log in to the home screen. Tap "+" in the upper right corner or "Add Device" on the screen to enter the device type selection. Select "Other" from "Other device" to enter the screen for adding device

8. RS-485 and other interfaces (DRY contact)



IN4 = DRY EASY300, EBERLE HYG6001 /0V

IN3 = DRY EASY300

IN2 = DRY contact, PV ready, other master control /0V

IN1 = phase sequence protection / electrical heater protection

OUT5 = external ventilation (fresh air connection) / 230V

OUT1 = Electrical heating or Solenoid valve for water heating / 230V

CN1 = External controller touch WiFi

9. Error codes

Error code	Operational status of the dehumidifier	Protection/Failure description	Solution	Recoverable
E1	Air heating function is disabled. Compressor and dehumidification function remains. In the case of E1 and closed IN3 (external thermostat) the heating and fan must remain too. E1 on display OK.	**Indoor temperature sensor error**	Check the CN3 white connector sensor and/or exchange it.	yes
E2	Air heating function works normally. Dehumidification works normally with periodic defrosting and E2 error showed.	**Evaporator temperature sensor error**	Check the CN6 yellow connector sensor and/or exchange it.	yes
E3	Air heating function works normally. Dehumidification is disabled.	**Humidity sensor error**	Check the CN11 white connector sensor and/or exchange it.	yes
E4	Dehumidification function is disabled. **Serious error**. This error is non-recoverable and requires manual intervention. Air heating function works normally.	**High pressure protection**	Restart your device with ON/OFF button, if E4 happens repeatedly, pls contact your installer or dealer. You may disable the high pressure protection by setting parameter C18 to 0. This allows you to run the device and read out operational parameters to confirm or deny the error.	no
E5	Dehumidification function is disabled. **Serious error**.	**Low pressure protection**	Restart your device with ON/OFF button, if E5 happens repeatedly, pls	no

	This error is non-recoverable and requires manual intervention. Air heating function works normally.		contact your installer or dealer. You may disable the high pressure protection by setting parameter C19 to 0. This allows you to run the device and read out operational parameters to confirm or deny the error.Low pressure error may also occur in low air temperatures. The system is programmed to automatically adjust for given air temperature: 25<Ta<45, 30seconds If 15<Ta<24, 60seconds If 5<Ta<14, 120seconds	
E6	Dehumidification may be disabled. Air heating works normally.	**Defrosting error**	Speak with your installer/dealer, possible causes: dirty or clogged drain or 4-way valve, too cold, etc. When C25=0 or C25=1 and unit enters defrosting, then if **3** consecutive times AND each time the system exits defrosting based on time = C28 (C8) (and not based on temperature C27 (C7)), then E6 is activated, then compressor off. Heating function is not changed.	no
E7	**Serious error**, dehumidification is disabled. Air heating function works normally.	**Overheat protection, high compressor temperature**	E7 – requires correction – described further below.	no

E8	Dehumidification works normally. Air heating is disabled.	**High temperature by air heating protection** **Alternative Phase-sequence protection**	IN1=OPEN, (electrical heater protectionf fuse failure, fan malfunction, filter dirty, system frozen, problem with air flow) Alternative phase protection (order of the phases, missing phase, etc) /3ph 400V units only)	No Fan running for 120 seconds at high speed.
E9	Dehumidification disabled. Air heating works normally.	**Suction temperature sensor error**	Check the suction sensor – CN8 black and/or change the sensor.	yes
E10	Dehumidification disabled. Air heating works normally.	**Discharge temperature sensor error**	Check the suction sensor – CN9 red and/or change the sensor.	yes
E11	Dehumidification disabled. Air heating works normally.	**High discharge temperature protection**	The device signalizes it is overheating. It will attempt to restart and run the fan at high speed to cool down. If this error is activated 3 consecutive times (within single running period), the system is turned off and E7 (non-recoverable) error is displayed which requires human interaction.	yes
EE	Unit is disabled.	**Communication error**	Incompatible SW (FW) versions of the PCB and/or display; cable connection.	yes
E12	Unit is disabled.	**DC fan failure**	Check the cable connection of the display and the PCB and the fan(s). Check PCB for burns.	No
E13	Unit is disabled.	**Communication failure between the main board and the DC inverter module**	Check the cable connection of the display and the PCB. Check PCB for burns.	No
E14	Unit is disabled.	**Too low ambient temperature alarm** **Snow flake and OFF are flashing** 	Increase air temperature. The reason for this error is lower air temperature than settings range within parameter C25 (i.e. less than 9°C or 5°C).	Yes

E15	Electrical heating disabled, dehumidification works normally	**Failure of the T6 (CN2) electrical heater sensor**	Check the sensor cable and-or replace the sensor. It is 50kΩ copper head.	Yes
E16	Electrical heating disabled, dehumidification works normally	**Critical temperature of the electrical coil**	Check the air flow, if there aren't objects blocking the air flow Check fan motor if it works normally. Check the unit for dirt and/or any blockage.	Yes Activation above 120°C, disactivation below 90°C

Main technical performance indicators:

1.1 Working voltage: AC (0.85-1.15)220V,50Hz.

1.2 Temperature control accuracy, in the temperature control range of the electronic controller: ±1 °C (using a precision resistance box), the measurement accuracy of the sensor: ±1.5 °C, the humidity sensor accuracy of ± 5%RH, can be calibrated to ± 2%RH (10%-90%RH range) through parameters.

1.3 Power consumption of a single controller in standby state: ≤5W.

1.4 Starting voltage: ≤ 80% of rated voltage.

1.5 Storage temperature range: -20℃ to 80℃.

1.6 Printed circuit board in accordance with GB/T 4588.1-1996 "Non-metallized hole single, double-sided printing board specification".

1.7 The controller complies with GB14536.1 "Household and similar electrical automatic controller Part 1: General requirements".

1.8 The controller conforms to GB/T 17626.4-1998 "Electromagnetic Compatibility Test and measurement technology Electrical fast transient pulse group immunity Test", GB4343-1995

"Household and similar electric appliances, electric heating appliances, power tools and similar electrical radio interference characteristics measurement method and allowable value".

Notes:

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