



Ducted Dehumidifiers DD / DD-F - series



» OPERATING AND MAINTENANCE MANUAL



rev. 6.11



KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

CONTENTS

FOREWORD	3
Purpose	3
Content	3
Rights reserved	3
1 SAFETY INTRODUCTION	4
1.1 Safety	4
1.2 Applications	4
2 INTRODUCTION OF DEVICE	5
2.1 Standards	5
2.2 Structure	5
2.2.1 Housing and body	6
2.2.2 Inlet / Outlet air panel	6
2.2.3 Refrigeration system	6
2.2.4 Compressor	6
2.2.5 Throttling device system	6
2.2.6 Protection devices	6
3 INSTALLATION	7
3.1 Brief introduction	7
3.2 Delivery and storage.....	7
3.3 Inspection before installation.....	7
3.4 Moving machine	7
3.5 Installation location	7
3.6 Ground/Base	7
3.7 Ducting connection	8
3.8 Drain pipe connection	8
3.9 Electrical connection	8
3.10 External sensors	8

4 OPERATIONS	9
4.1 Universal control panel (controller)	9
4.1.1 Controller terminals	9
4.1.2 Controller's interface	10
4.1.3 Parameters setting	10
4.1.4 Icon's meaning	11
4.1.5 Dehumidification working mode	12
4.1.6 Parameters code description	13
4.1.7 Working status display	15
4.1.8 Error code	15
4.1.9 External temp. & humidity sensor RS485-1 MODBUS communication protocol	15
4.1.10 RS485-2 MODBUS communication protocol	16
4.1.11 Wi-Fi connection	17
4.2 Security	19
5 MAINTENANCES	19
5.1 Maintenance introduction	19
5.2 Filter	19
5.3 Motor	19
5.4 Maintenance program	19
6 TROUBLESHOOTING	20
6.1 Don't respond to humidity set point on humidistat	20
6.2 Neither fan nor compressor running	20
6.3 Compressor is not running	20
6.4 Compressor cycles on and off	20
6.5 Fan is not running	20
6.6 Low dehumidification capacity	20
6.7 Removes some water, but not as much as expected	20
7 TECHNICAL SPECIFICATIONS	21
8 CAPACITY DIAGRAMS	22
9 DRAWINGS	23
10 CIRCUIT DIAGRAMS	26

Ducted dehumidifiers DD / DD-F - series

DanVex (Finland)
www.danvex.fi



FOREWORD

Purpose

This manual provides all the information about this precise dehumidifier, including the structure, installation, principle, work process and the detailed operating instruction is provided.

Content

Dehumidifying control system, operating ways, maintain, regular failure and failure elimination

Rights Reserved

We reserve the rights of updating/explaining all contents of manual involved.

WARNING!!!

All electrical connections works must be done by local professionals, according to relevant provisions to operate, or some loss of life, personal injury, property loss may be happen.

Do please read through the manual before electrical works, avoiding any fault operation that causing loss of life or property.

Please contact the supplier or the manufacturer if there are any issues arises that are not stated in this manual.

1. SAFETY INTRODUCTION

1.1 Safety

This series of dehumidifier is in conformance with all provisions of European security requirements and standards, the safety of worker and equipment are taken into care while in design and manufacture process. In each section of the manual, there are safety information and explicitly pointed out operation that may causes danger. And it is mark with "Danger" as a warning sign.

This manual provides information on the appropriate ways of operating the dehumidifier. It shall serve as a guideline only and are not liable for any personal responsibility or meeting local safety regulations.

During the installation and operation of the equipment, everyone shall bear the liability as listed below:

- To ensure the equipment in good condition according the description provided in this manual;
- Do care the safety of yourself and others;
- Dehumidifier should be operated and maintenance by related qualification professionals;
- Do not install dehumidifier around the explosive protection devices;
- Cut off the power before open any cover in the housing;
- When the operation ended, please allow the equipment to cool down at least 15 minutes before begin the maintenance service;
- The machine panel should be closed at all time if maintenance work is not carried out;
- Dehumidifier is limited to atmospheric pressure condition to dehumidify;
- Filter device must be installed before using the dehumidifier;
- Removing or deleting the marks/declares/notes in the dehumidifier is prohibited;
- The manual should be kept well for using in the future;
- Original spare parts should be used for any replacement;
- The written permission from manufacture must be needed before repairing the dehumidifier

1.2 Applications

The dehumidifiers are widely used in hotels, office buildings, hospitals, commercial, research institutions and other applicable places. Its working principle is to remove excess moisture by drying the air under normal atmospheric pressure. Its working humidity range is from 30%-90% (the humidity can be reduced down to 35% at most), and working temp range is 5 °C to 35 °C, if it works beyond these ranges, the dehumidify capacity will be affected, this problem does not reflect to the quality of the equipment itself.

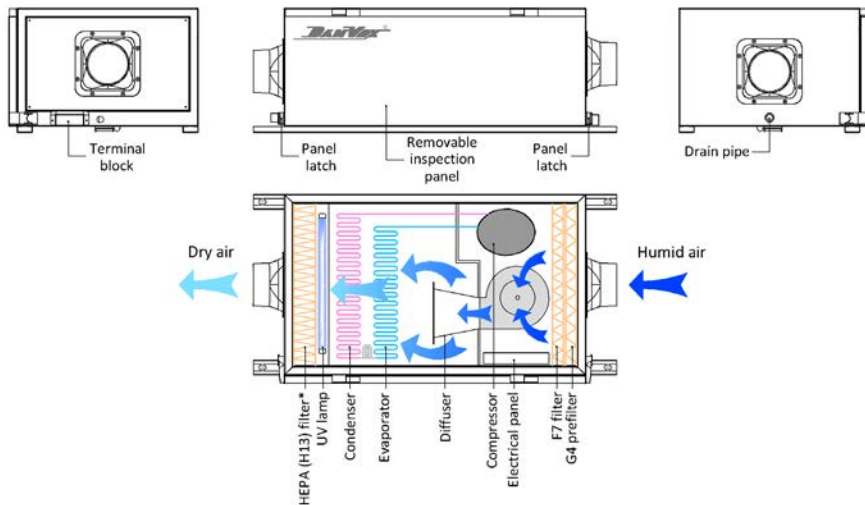
2. INTRODUCTIONS OF DEVICE

2.1 Standards

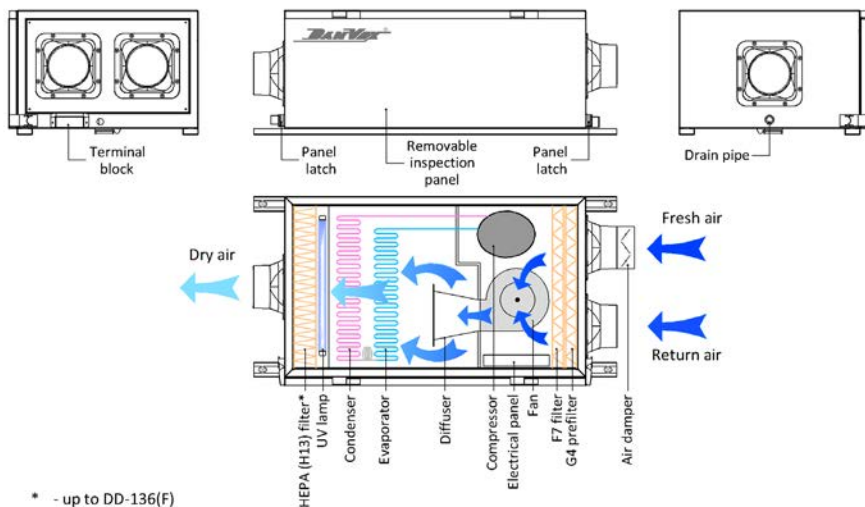
The design meets IEC protection class IP 45 requirements.

2.2 Structure

DD - series



DD-F - series



* - up to DD-136(F)

2.2.1 Housing and body

- Adopts steel frame structure, compact, strong, corrosion resistance, and the anti-frozen technology, effectively preventing the "frozen" phenomenon;
- Removable flush seamless access panels;
- Patent defrosting tech, effectively guarantee a reliable capacity;
- Water tray equipped ensures that all condensate water drain out, preventing water stagnation.

2.2.2 Inlet / Outlet air panel

- Removable filter is equipped in each air inlet;
- Centrifugal fan with steel volute and blades, high efficiency and low noise.

2.2.3 Refrigeration system

- The design of the dehumidifier use energy-saving heat exchanger by integrating a liquid separator reservoir and heat exchangers. It can effectively regulate the fluid flow volume, maximizing freezing capacity, and ensuring compressor operate well. Meanwhile, dry filter was introduced in this system to prevents clogging/impurities in expansion valve or capillary;
- Patented defrosting structure, it brings stable operation of refrigeration system;
- Hydrophilic membrane fin (heat exchanger), heat transfer efficiency increases by 20%. Good insulation material also increases insulating effect by 15%.

2.2.4 Compressor

Compressor is the core part of this dehumidifier. It directly impacts dehumidifier's performance. It is the heart of this dehumidifier, provides powers for whole system. We only use the international well-known brand compressors.

2.2.5 Throttling device system

Throttling device system is one of four vital items in the refrigeration systems. It will reduce the liquid refrigerant (coming from condenser) high pressure, make the refrigerant absorb heat under low pressure (low temp) while vaporization happen. It's ensuring high pressure in condenser and low pressure in evaporator. As a result of this direct expansion, loss of cooling capacity is reduced thus ensuring higher efficiency. It also prevents over-heating on the compressor.

2.2.6 Protection devices

- Dehumidifier controller is specially designed according the operation of the dehumidifier that meant for, powerful and overall high-performance operation. Motor overload and short circuit protection is introduced too;
- Starting-up delay protection: If the dehumidifier is cut off during operation, it will take 3 minutes to turn it on again;
- Shutdown delay protection: When the dehumidifier is cut off during operation, fans will keep running for 3 minutes, to cool down the dehumidifier thus reducing the internal heat of the dehumidifier;
- Fans operation mode: Fan can stop/keep running while the setting RH is reached, customer

can set it according to their requirements;

- High temperature protection: Prevent the compressor running continuously at high temperatures;
- Low pressure protection: Prevents the dehumidifier running without refrigerant to avoid compressor from being burned.

3. INSTALLATION

3.1 Brief introduction

Ceiling mounted dehumidifier can be installed in many places, depending on the requirements of owners. It can also integrate with current ventilation system via duct system. This chapter records info about preparation work, and installation work and etc. Please serve it as a guide before installation.

3.2 Delivery and storage

To ensure the quality and reliability of each dehumidifier, it has been thoroughly tested in factory. If dehumidifier has to be stored for a while prior to installation, please take notes of the following:

- Keeping transport package in good condition;
- Avoiding physical damage;
- Dehumidifier should be stored indoor and covered properly to prevent dust, frost and rain intrusion.

3.3 Inspection before installation

Unpack package and check machine: If any damage is found, please contact supplier /manufacturer.

3.4 Moving machine

Please check the dehumidifier weight before any loading / unloading. For moving the unit of a longer distance, it is advice to use proper equipment (trolley or forklift) to move the goods. It should be take note that the dehumidifier shall be lifted up properly and the lifting point should be away from the motor, control system and exposed pipe to avoid any damages onto the equipment.

3.5 Installation location

For best operation and maintenance service, it is advice to install the dehumidifier indoor / inside of room with extra space for routine maintenance/checking in order to prevent condensation inside the dehumidifier, the unit should not be exposed to environment where temperature is below the process air's dew point. Please place the device near to power source.



Please provide enough space around the dehumidifier for troubleshooting and maintenance service purpose

3.6 Ground/Base

Dehumidifier must be installed horizontally with well-balanced level. Please use horizontal ruler to measure the level during installation.

3.7 Ducting Connection

The dimension of ducting for inlet and outlet air should be in line with ISO7807 recommended values. Ducting should be connected with the connection part on flange, meanwhile, the screw bolt is limited to within 20mm. While connecting the ducts, some notes as below:

- In order to reduce loss of static pressure, do the best to shorten the length of the ducting;
- To ensure performance of machine, all rigid (galvanized) ducting fittings are required to have air-tightness;
- The ducting should have a good capacity of thermal insulation, then the phenomenon of moisture condensation inside pipe wall will be avoided, and the pipeline won't be corroded;
- To reduce noise and vibration transmitted along the pipes, the good quality, soft and strong airtight adapting pieces should be used in the joint parts.

3.8 Drain pipe connection

A drain hose (not included) is connected to the drain fitting on the dryer body. The diameter of the hose is selected according to the diameter of the drain fitting (see table of specifications). The removal of condensed moisture to the drain is non-pressure, so the drain line should be laid with an inclination towards the drain point, and the outlet of the hose should be below the point where the hose connects to the dehumidifier.

3.9 Electrical connection



Be careful! All electrical connection works must meet local electrical equipment installation standards, done by qualified professionals.

- It is forbidden to connect the power supply beyond the specified voltage and frequency;
- Before the connecting the power supply, the electrical point should be checked to ensure that its voltage and frequency fluctuation does not go beyond $\pm 10\%$;
- Unit must be grounded and turn off power during checking.

3.10 External sensors

The installation of temperature and humidity detection devices should follow the requirements as below:

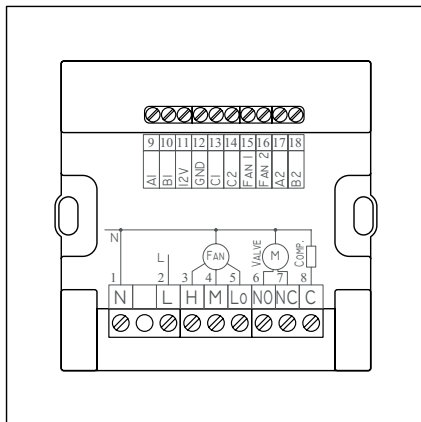
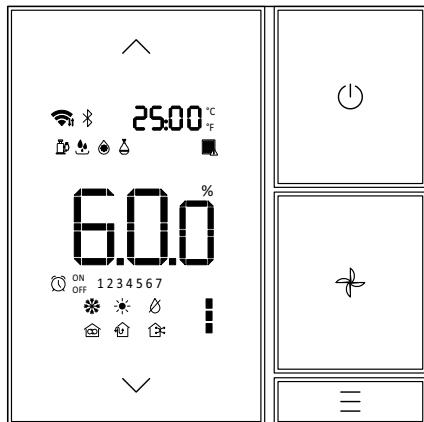
- Temperature and humidity detection devices should be installed above ground 1m - 1.5m, to ensure the device can detect the humidity of the dehumidifying area;
- Detection device should be installed away from dry air or wet air or airflow from outside;
- Temperature and humidity detectors should stay away from cooling equipment;
- Do not directly exposed to sunshine place, as the change of the temperature will affect the actual assessment;
- External control system must be compatible with the low voltage control circuit of dehumidification equipment.

4. OPERATIONS

4.1 Touch control panel G6 with built-in humidity and temperature sensors

ATTENTION! *The control functions supported by the controller are only partially implemented in the dehumidifier, so some of the functions are either not available in a particular model of the dehumidifier, or can only be available as an option*

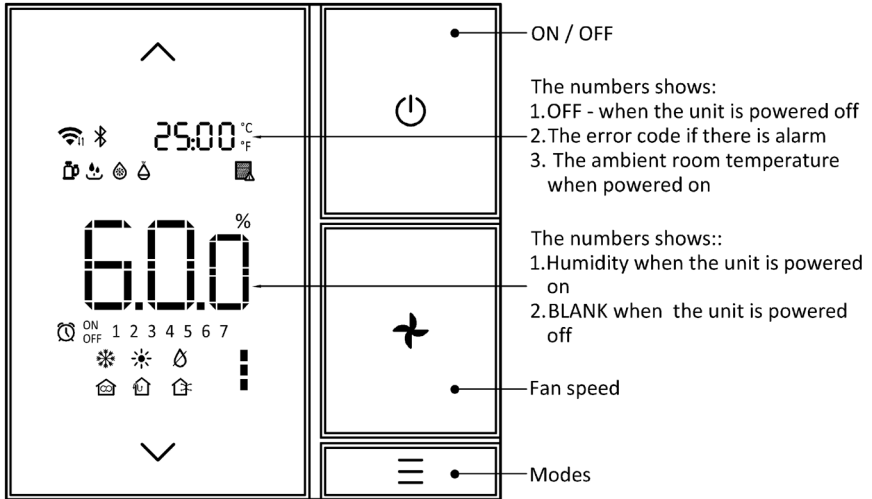
The universal remote control (controller) is equipped with built-in temperature and humidity sensors, and allows you to monitor the temperature and humidity in the room in real time.



4.1.1 Controller terminals

Terminal	Description	Load	
1	N	230 VAC	Power supply
2	L	230 VAC	Power supply
3	H - Relay 1	230 VAC output, Max.1A	High fan speed
4	M - Relay 2	230 VAC output, Max.1A	Medium fan speed; Fan coil valve
5	Lo - Relay 3	230 VAC output, Max.1A	Low fan speed; Humidifier
6	NO - Relay 5	230 VAC output, Max.1A, SPDT (single-pole double-throw)	Air damper open
7	NC - Relay 5	230 VAC output, Max.1A, SPDT (single-pole double-throw)	Air damper close
8	C - Relay 4	230 VAC output, Max.1A	Compressor
9	A1-RS485		Communicate with external temp.& humidity sensor
10	B1-RS485		Communicate with external temp.& humidity sensor
11	12V		Power the external temp.& humidity sensor
12	GND		Weak current common terminal
13	C1-RS485		Communicate with third-party
14	C2-RS485		Communicate with third-party
15	Fan1	0~10V	EC motor supply fan
16	Fan2	0~10V	EC motor exhaust fan
17	A2-RS485		Communicate with third-party
18	B2-RS485		Communicate with third-party

4.1.2 Controller's Interface



4.1.3 Parameters Setting


A. General parameters



- ON/OFF:
 Short press to turn on/off the controller: the small OFF appear in the top when the unit is powered off and disappear after 3 minutes;
 Short press to exit during parameters setting.
- Fan Speed:
 Press to adjust the fan speed.
- Air Damper:
 Press to open or close the air damper.
- Mode Change:
 Short press & simultaneously to change the available system working mode.
- Humidity Set:
 Press to reduce humidity, press to raise humidity (1% changed each press).
- Temperature Set:
 Only for the available system working mode.
- Filter:
 Long press & simultaneously for 5 seconds to display the run time, wait for 5 seconds to exit,
 Long press for 10 seconds to clear the alarm and reset the time.


B. Factory parameters


Long press  for 5 seconds to enter the factory parameters setting mode: the parameters code R,P,O,H,C,A,D,F will appear.




Press  or  to select the parameters code R,P,O,H,C,A,D,F;

Short press  to set the available code;

Press  or  to adjust the code value;

















Short press  to save the code value ;

Short press  to exit without saving during the code value setting or return to the previous page.

Long press  &  &  simultaneously for 3 seconds to reboot the controller's setting.

10 seconds without setting, the value will not be saved and exit to the home screen.

4.1.4 Icon's meaning

Icon	Description
	WIFI connection established
	WIFI connection not established
	ESP32 trigger
	Defrost
	Filter max. working time alarm, disappear after reset
	Compressor relay output active
	*Compressor working *Flashing when the minimum absolute humidity protection is activated
	Humidification
	Timer
°F	H05=1, temperature in degrees Fahrenheit
°C	H05=0, temperature in degrees Celsius
60%	Current humidity
	Current air speed, AC 3 speeds, EC 1~5 speed
	100% return air
	100% fresh air
	Mixed fresh and return air
	Dehumidification mode
	Cooling mode
	Heating mode

4.1.5 Dehumidification Working Mode

Mode Code	H04=0
Function	Dehumidification
Relay 1	High fan speed
Relay 2	Medium fan speed
Relay 3	Low fan speed
Relay 4	Compressor
Relay 5	Air damper open

Description

If the humidity of the air is higher than the setting, the fan turns on; 5 seconds later, the compressor turns on;

If the humidity of the air is lower than the setting, the compressor turns off; 3 minutes later, the fan turns off.

Initial Value

The controller has data memory function when there is power failure.

The initial value as below:

- Fan speed - high;
- Air damper - close;
- Mode - the same before the power failure.

Fan Control

The initial value is high speed, can be adjusted manually.

EC motor (0~10V) fan has 5 fan speeds, which can be set separately.

AC motor fan speed can be adjusted manually when H04=0:

- F01=1, high fan speed available;
- F01=2, high fan speed & low fan speed available;
- F01=3, high fan speed & medium fan speed & low fan speed available.

High fan speed & low fan speed available when H04=1.

High fan speed available when H04=2.

Fan works according to F02 when achieve the set humidity and temperature (only for the available system working mode):

- F02=1, the fan turns off 3 minutes later after achieved the set humidity and temperature (only for the available system working mode);
- F02=2, the fan keeps working after achieved the set humidity and temperature (only for the available system working mode).

Air Damper Control

Air damper works according to H01,R03 when the unit is turned on manually.

Open or close air damper manually when H01=0:

- Air damper close: 100% return air
- Air damper open: mixed fresh and return air

Open or close air damper automatically when H01=1:

- Indoor humidity \geq R03: air damper close; Indoor humidity \leq R03~R04: air damper open.
- Can switch to manual mode from automatic mode and works manually for 30 minutes and continue to work automatically.
- Air damper close when the unit is powered off manually.

Defrost Control

Defrost conditions: Indoor temperature \leq D3, Defrost interval \geq D1

Defrost mode: compressor cycle off & fan runs at high speed.

Defrost stop conditions:

- Defrost time \geq D2;
- Unit is turned off manually;
- Unit is turned off faulty.

Alarm

- Filter Alarm: If the fan's running hour \geq H02, the filter alarm icon will appear. Reset the timer, the alarm will disappear.
- Built-in temp. & humid sensor Error
When H03=1, if there is an open/short circuit of the humidity sensor or abnormal data (out of the normal temp.&humidity range), only the fan keeps working. The error code is E01. It will resume operation after the error addressed.
- RS485-1 Communication Error

When H03=0, if there is RS485-1 communication failure, only the fan keeps working. The error code is E03. It will resume operation after the error addressed.

4.1.6 Parameters Code Description

Parameters	Code	Default	Precision	Range
Humidity set (dehumidify)	R01	50%	1%	1%~99%
Air damper automatic close/open value	R03	50%	1%	1%~99%
Air damper humidity differential	R04	3%	1%	1%~10%
Indoor temp. set	R05	25 (77°F)	0.5 (1°F)	5~35°C (41~95°F)
Humidity set (humidify)	R06	70%	1%	1%~99%

Parameters	Code	Default	Precision	Range
Humidity differential (humidify)	R07	3%	1%	1%~10%
Air damper automatic close/open	H01	1	/	0 - no in use 1 - in use
Filter alarm hour	H02	200	1	0 - no alarm 100 - 990, 1=10 hours
Humidity sensor	H03	1	/	0 - external sensor RS485 1 - built-in sensor
Defrost interval	D01	40 minutes	1 minute	30~60 minutes
Defrost stop	D02	10 minutes	1 minute	1~15 minutes
Defrost start	D03	17 (62°F)	1 (2°F)	1~20°C (34~68°F)
AC fan speed set	F01	1	/	1 - low speed; 2 - medium speed (DC motor fan: 1,2 - low; 3,4,5 - high); 3 - high speed (DC motor fan: 1,2 - low; 3,4 - medium; 5 - high)
Fan set under achieved humidity	F02	1	/	1 - turns off 3 minutes later after achieved the set humidity; 2 - keeps working after achieved the set humidity
FAN1, DC fan motor, speed 1 voltage	F03	500 (5V)	10 (0.1V)	400~950
FAN1, DC fan motor, speed 2 voltage	F04	600 (6V)	10 (0.1V)	F03~950
FAN1, DC fan motor, speed 3 voltage	F05	700 (7V)	10 (0.1V)	F04~950
FAN1, DC fan motor, speed 4 voltage	F06	800 (8V)	10 (0.1V)	F05~950
FAN1, DC fan motor, speed 5 voltage	F07	900 (9V)	10 (0.1V)	F06~950
FAN2, DC fan motor, speed 1 voltage	F08	400 (4V)	10 (0.1V)	400~950
FAN2, DC fan motor, speed 2 voltage	F09	500 (5V)	10 (0.1V)	F08~950
FAN2, DC fan motor, speed 3 voltage	F10	600 (6V)	10 (0.1V)	F09~950
FAN2, DC fan motor, speed 4 voltage	F11	700 (7V)	10 (0.1V)	F10~950
FAN2, DC fan motor, speed 5 voltage	F12	800 (8V)	10 (0.1V)	F11~950
RS485-2 Baud rate	P01	0		0-4800 1-9600
RS485-2 Address	P02	1		1~255
RS485-2 Protocol	P03	0		General open protocol

Parameters	Code	Default	Precision	Range
Protection of the minimum absolute humidity	A01	1	/	0 - not activated 1 - activated
RS485-2 Communication status	007			0 - abnormal 1 - normal
Software version	009			
Dew point	010			
Absolute humidity	011			

4.1.7 Working Status Display

Type	Range	Precision
Indoor temperature	-30~99°C, -22~210°F	0.1°C, 1°F
Indoor humidity	0~100%	0.1 %
Absolute humidity	0.0~99.9	0.1 g/kg
Fan's running time	0~999	10 hours

4.1.8 Error Code

Error	Code
Built-in temp. & humidity sensor failure	E01
External temp. & humidity sensor failure	E02
RS485-1 communication failure	E03

4.1.9 External temp. & humidity sensor

The controller supports connection of external sensors via MODBUS RTU RS485

MODBUS RS485-1; Address: 13; Baud rate: 9600; Parity: 8N1

Name	Add	Code	Byte	Read Only or Read/Write	Precision	Data Type
Humidity	0000H	03	2	Read Only	0.1%	Temp1
Temperature	0001H	03	2	Read Only	0.1%	Temp1

4.1.10 RS485-2 MODBUS communication protocol

Function code description:

function 03 – read; function 06 – write single; function 16 – write multiple

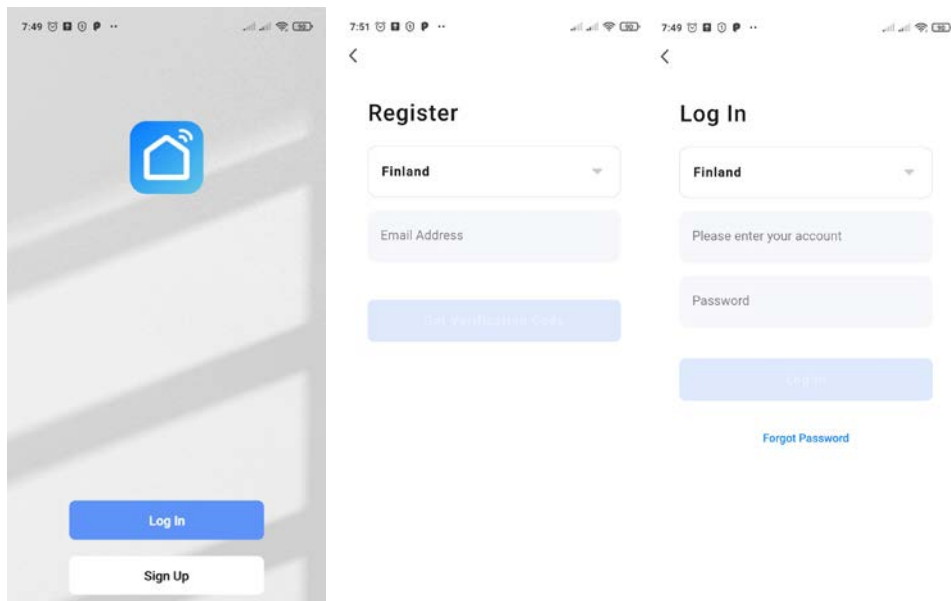
Address	Function Code	Object	Byte	Read Only or Read/Write	Data
0x1001	03/16/16	ON/OFF	2 bytes	Read/Write	0 - OFF 1 - ON
0x1002	03/16/16	Fan speed	2 bytes	Read/Write	1 - 1st fan speed 2 - 2nd fan speed 3 - 3rd fan speed 4 - 4th fan speed 5 - 5th fan speed
0x1003	03/16/16	Air damper close/open	2 bytes	Read/Write	0 - close 1 - open
0x1004	03/16/16	Humidity set	2 bytes	Read/Write	1~99%
0x1006	03/16/16	Air damper automatic humidity set	2 bytes	Read/Write	1~99%
0x1008	03/16/16	Air damper automatic close/open	2 bytes	Read/Write	0 – not in use 1 - in use
0x101B	03/16/16	Temperature set	2 bytes	Read/Write	5~35°C
0x101C	03/16/16	Working modes	2 bytes	Read/Write	0 - dehumidification 1 – cooling+dehumidification 2 – heating+dehumidification 3 – cooling+humidification 4 – heating+humidification 5 - humidification
0x101D	03/16/16	Humidification set	2 bytes	Read/Write	1~99
0x2001	03	Indoor temperature sensor	2 bytes	Read Only	
0x2002	03	Indoor humidity sensor	2 bytes	Read Only	
0x2003	03	External temperature sensor	2 bytes	Read Only	
0x2004	03	External humidity sensor	2 bytes	Read Only	
0x2005	03	Fan running time	2 bytes	Read Only	1=10 hours
0x2006	03	Failure	2 bytes	Read Only	Bit 0: built sensor failure bit 1: external sensor failure bit 2: filter alarm bit 3: minimum absolute humidity protection bit 4: in defrost
0x2007	03	Dew point	2 bytes	Read Only	
0x2008	03	Absolute humidity	2 bytes	Read Only	

4.1.11 Wi-Fi connection

1. Connect your smartphone to local Wi-Fi router
2. Turn on Bluetooth and GPS on your smartphone
3. Download and install the "Smart life" application by scanning the QR code

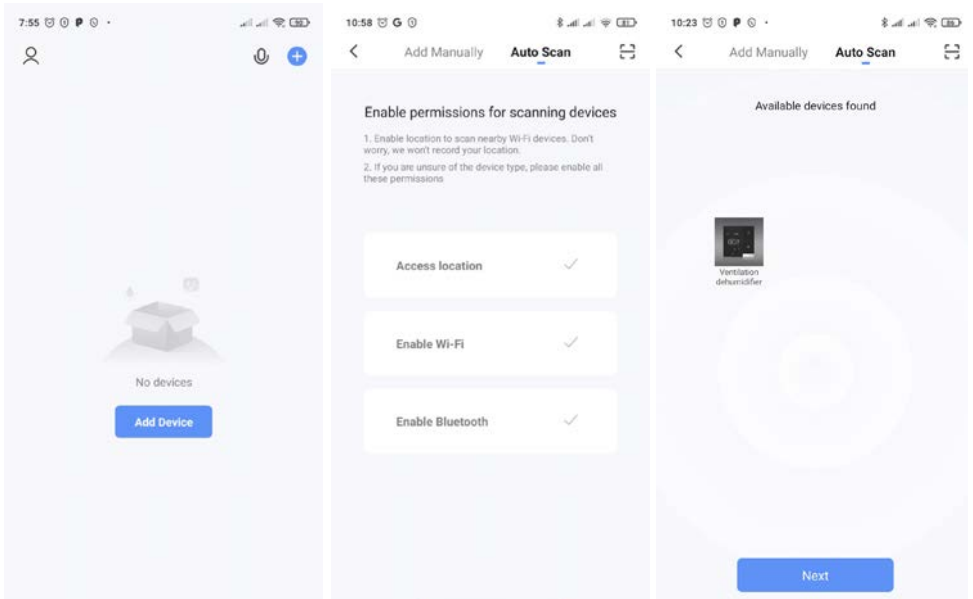


4. Open the app, register and login

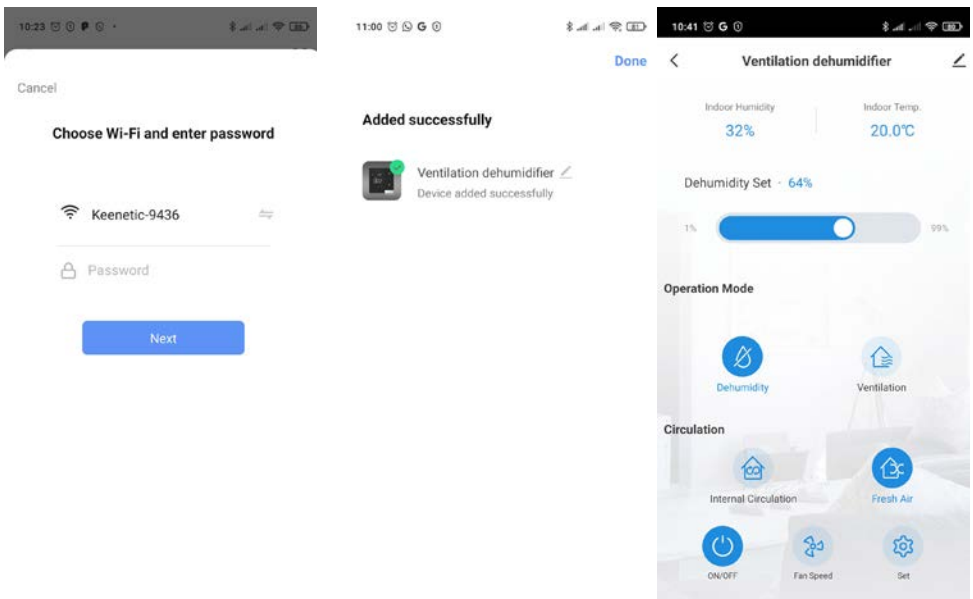


5. Select "Add device" to add a device
6. Go to "Auto Scan" to automatically search for the device
7. Press and hold the "ON/OFF" button on the controller for 10 seconds until the LCD boots up. Then release the button. The display will flash

8. The app will automatically detect the device. Then click "Next"



9. Enter your Wi-Fi password and click "Next"



10. Setup completed.

4.2 Security

Dehumidifier has high-speed moving parts. Before running, make sure panel is closed correctly and no debris present at the exterior. Do not use force to open the machine during operation otherwise, it will cause serious consequences to dehumidifier.

- Temperature and humidity sensors are sensitive components, do not touch the components.
- All wires are distinguished by colors, please let professionals do the wiring work.
- Temperature and humidity control should be placed in clean environment. Acetone, chlorine or high concentrations smoke and will cause damage.
- Humidistat is sensitive to ambient humidity. Do not place in dusty area.
- If some problem happened to the dehumidifier, it will stop. Please check the machine first before turn in on again.
- Don't move dehumidifier or unplug until the fan stops.

5. MAINTENANCES

5.1 Maintenance introduction

The ceiling mounted dehumidifier can last for long with proper maintenance. Maintenance frequency depends on operating conditions of dehumidifier. Therefore, maintenance cycle can be determined according to the actual situation. Improper maintenance may reduce dehumidification performance.

5.2 Filter

Dehumidifier equips with filter in process air inlet. It helps to filter dust and clean the air that enter the dehumidifier. It is not recommended to run dehumidifier in the absence of filter. Recommend to clean/replace filter on monthly basis.

5.3 Motor

The motor is equipped with bearings, which has same lifetime with motor, which would require to replace as it will be wear and tear after certain period.

5.4 Maintenance program

Table (below) lists the routine maintenance procedures for normal components. If necessary, refer to other relevant information provided by manufacturer

Malfunction	Possible cause of trouble	Corrective action
None or reduced dehumidification capacity	Filter clogged Electrical heater faulty Airflow reduced Internal leakage in unit Altered air volumes Air leakage	Clean or replace filters Check fuses Check openings and dampers Check springs Measure and check air volumes Check panel and casing
Main fuse faulty	Fan faulty Too large air volume No power supply	Check fans and motors Check air volumes and dampers Check main fuse
Dehumidifier does not start	No control circuit Faulty control circuit Fuse for controls faulty	Check control fuses Check external start/stop signal Check electrical components
No dry or wet air volume	Filter clogged Fan faulty Ducts blocked	Clean or replace filters Check fan, motor and impeller Check dampers and ducts

6. TROUBLESHOOTING

6.1 Don't respond to humidity set point on humidistat

- 6.1.1 Verify built-in humidistat is lighting.
- 6.1.2 Check calibration of the control to determine if it is reading humidity level properly.

6.2 Neither fan nor compressor running

- 6.2.1 Unit unplugged or no power to outlet;
- 6.2.2 Humidistat sets too high;
- 6.2.3 Loose connection in internal or control wiring;
- 6.2.4 Defective compressor relay;
- 6.2.5 Defective control transformer.

6.3 Compressor is not running

- 6.3.1 Defective capacitor of compressor;
- 6.3.2 Loose connection in compressor circuit;
- 6.3.3 Defective compressor overload;
- 6.3.4 Defective compressor;
- 6.3.5 Defrost thermostat open.

6.4 Compressor cycles on and off

- 6.4.1 Low ambient temperature and/or humidity causing unit to cycle through defrost mode;
- 6.4.2 Defective compressor overload;
- 6.4.3 Defective compressor;
- 6.4.4 Defrost thermostat defective;
- 6.4.5 Dirty air filter(s) or air flow restricted.

6.5 Fan is not running

- 6.5.1 Loose connection in fan circuit;
- 6.5.2 Obstruction prevents fan impeller rotation;
- 6.5.3 Defective fan;
- 6.5.4 Defective fan relay.

6.6 Low dehumidification capacity

- 6.6.1 Defrost thermostat loose or defective;
- 6.6.2 Low refrigerant charge;
- 6.6.3 Dirty air filter(s) or air flow restricted;
- 6.6.4 Excessively restrictive ducting connected to unit.

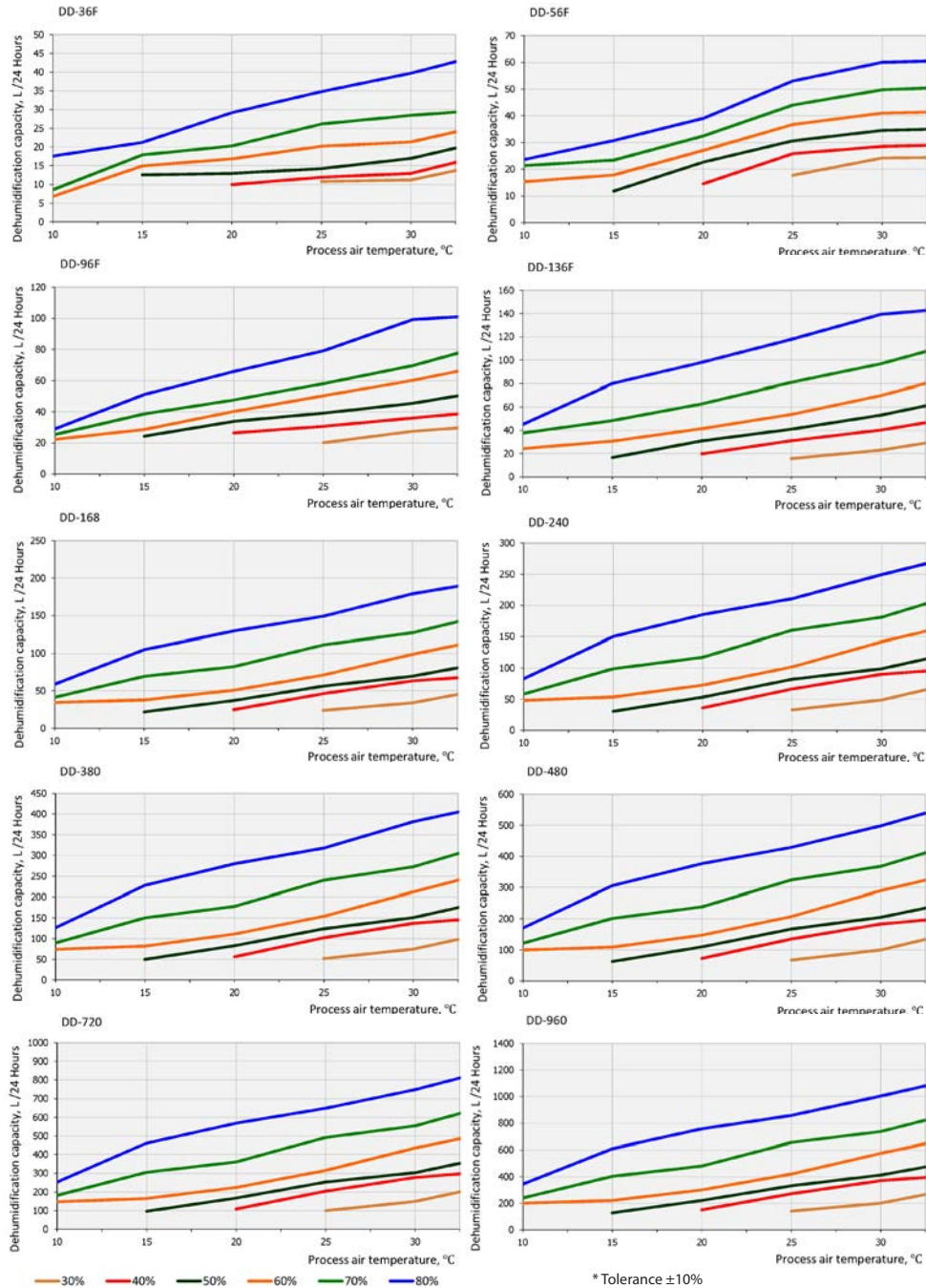
6.7 Removes some water, but not as much as expected

- 6.7.1 Air temperature and/or humidity have dropped;
- 6.7.2 Humidity meter and or thermometer used are out of calibration;
- 6.7.3 Unit has entered defrost cycle;
- 6.7.4 Air filter dirty;
- 6.7.5 Defective defrost thermostat;
- 6.7.6 Low refrigerant charge;
- 6.7.7 Air leak such as loose cover or ducting leaks;
- 6.7.8 Defective compressor;
- 6.7.9 Restrictive ducting.

7. TECHNICAL SPECIFICATIONS

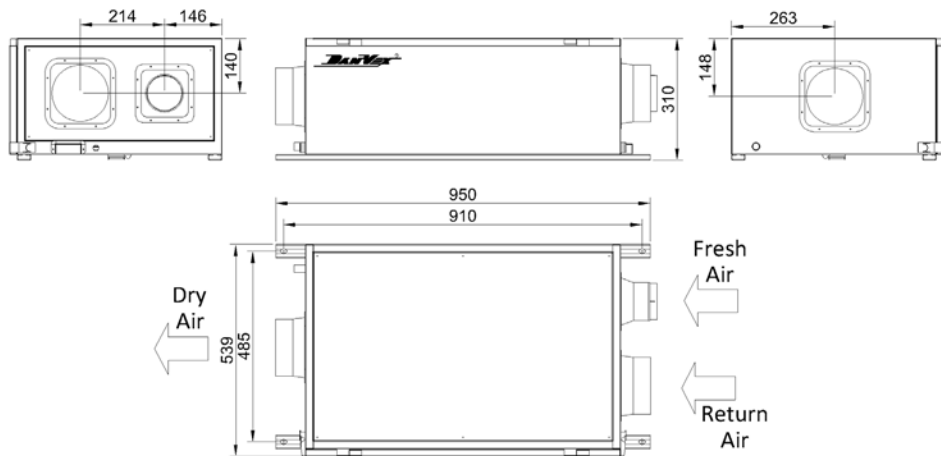
Model	DD - 36F	DD - 56F	DD - 96F	DD - 136F	DD - 168	DD - 240	DD - 380	DD - 480	DD - 720	DD - 960
Maximum capacity, L/Day (30C, 80%)	36	56	96	136	168	240	380	480	720	960
Supply airflow, m ³ /h	500-670	650-780	1000-1200	1200-1350	1800-2200	2500-2900	3500-3850	4800-5300	7500-9000	9000-11000
Return airflow, m ³ /h	350-460	470-550	680-800	750-850	1800-2200	2500-2900	3500-3850	4800-5300	7500-9000	9000-11000
Fresh airflow, m ³ /h	150-210	180-230	320-400	400-500	-	-	-	-	-	-
Static Pressure, Pa	100	100	100	100	200	200	200	200	400	400
Filters	G4+F7+H13	G4+F7+H13	G4+F7+H13	G4+F7+H13	G4+F7	G4+F7	G4+F7	G4+F7	G4+F7	G4+F7
Sterilize (UV-lamp)	+	+	+	+	+	+	+	+	+	+
Power, W	670	700	1050	1300	2800	4000	5500	9000	15000	21000
Current, A	3	3,3	4,9	6,2	5,1	7	10	16	26	37
Voltage	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz
Noise level, dB	< 45	< 45	< 45	< 45	< 55	< 55	< 55	< 55	< 55	< 55
Refrigerant	R32*450g	R32*650g	R32*650g	R32*680g	R32*1600g	R32*1800g	R32*1600g*2	R32*1800g*2	R32*1800g*3	R32*1800g*4
Drain hole size, DN	20	20	20	20	32	32	32	32	32	32
Return air duct, mm	150	150	200	200	500x400	500x400	750x450	750x450	1200x450	1200x450
Supply air duct, mm	150	150	200	200	350x350	350x350	818x313	818x313	1058x348	1058x348
Dimensions, mm	950x539 x310	950x539 x310	1030x639 x375	1030x639 x375	1160x820 x600	1160x820 x600	1370x1120 x720	1370x x720	1700x1642 x720	1700x1642 x720
Weight, kg	42	47	63	67	96	105	245	265	422	450

8. CAPACITY DIAGRAMS*

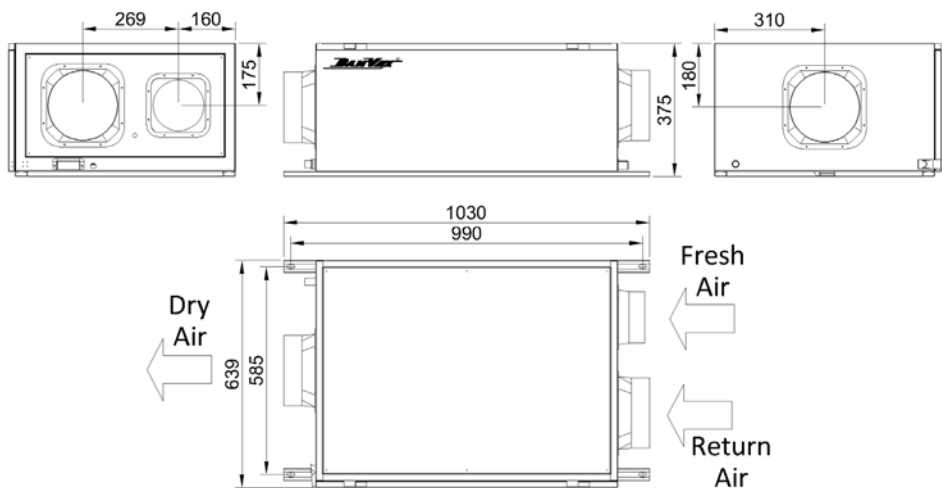


9. DRAWINGS

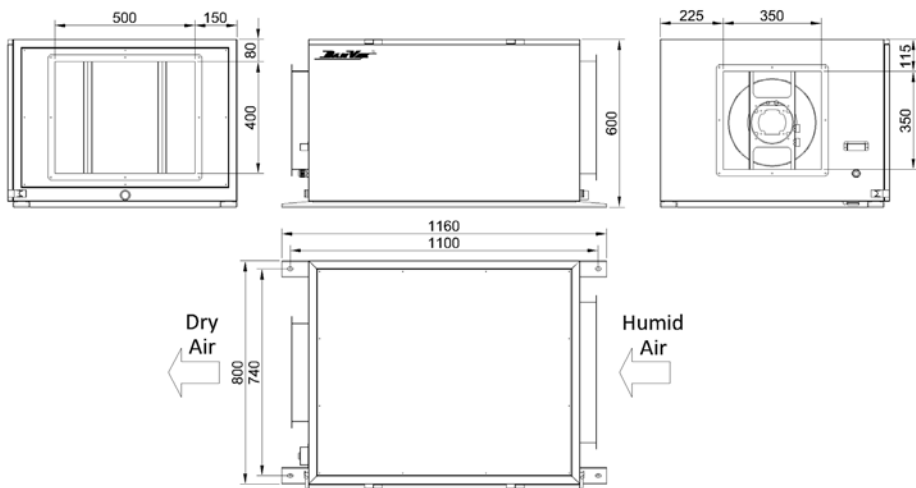
DD-36F/56F



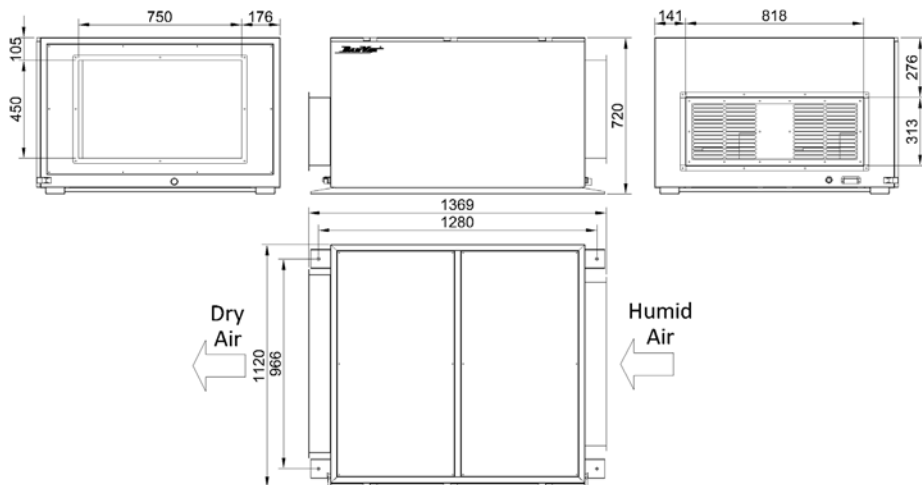
DD-96F/136F



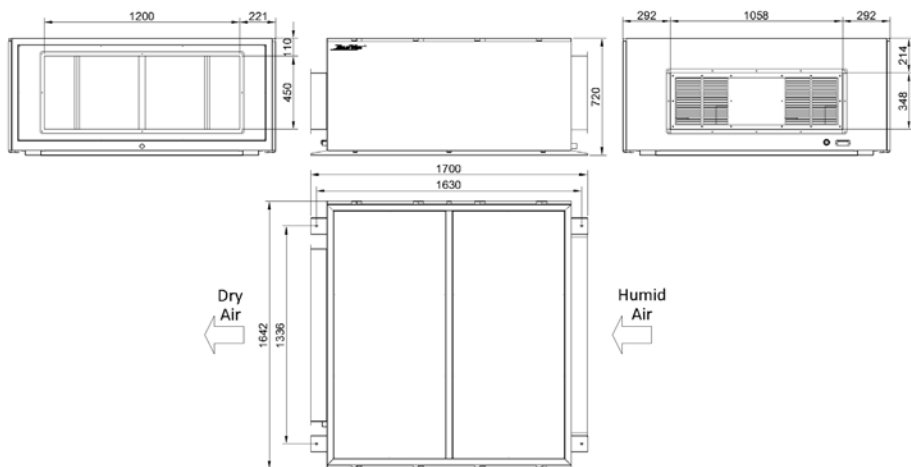
DD-168/240



DD-380/480

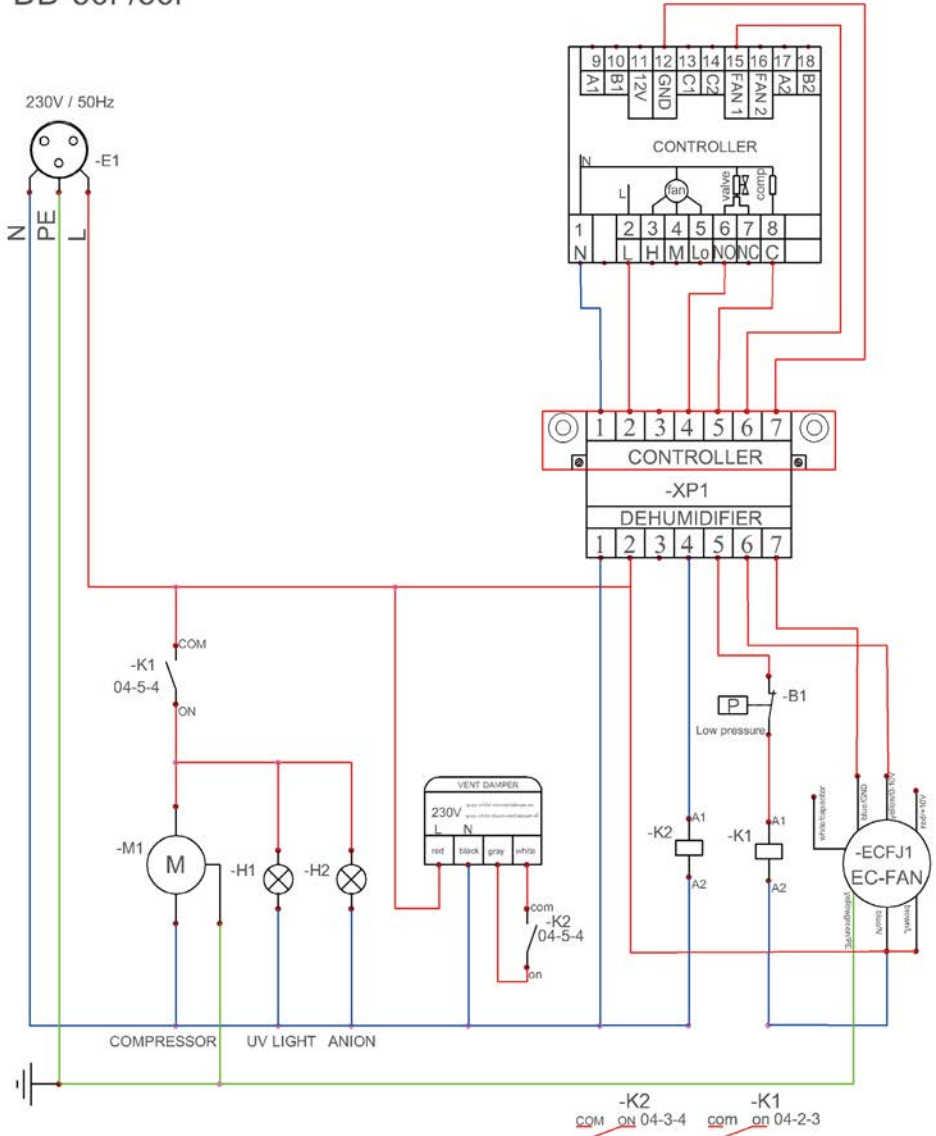


DD-720/960

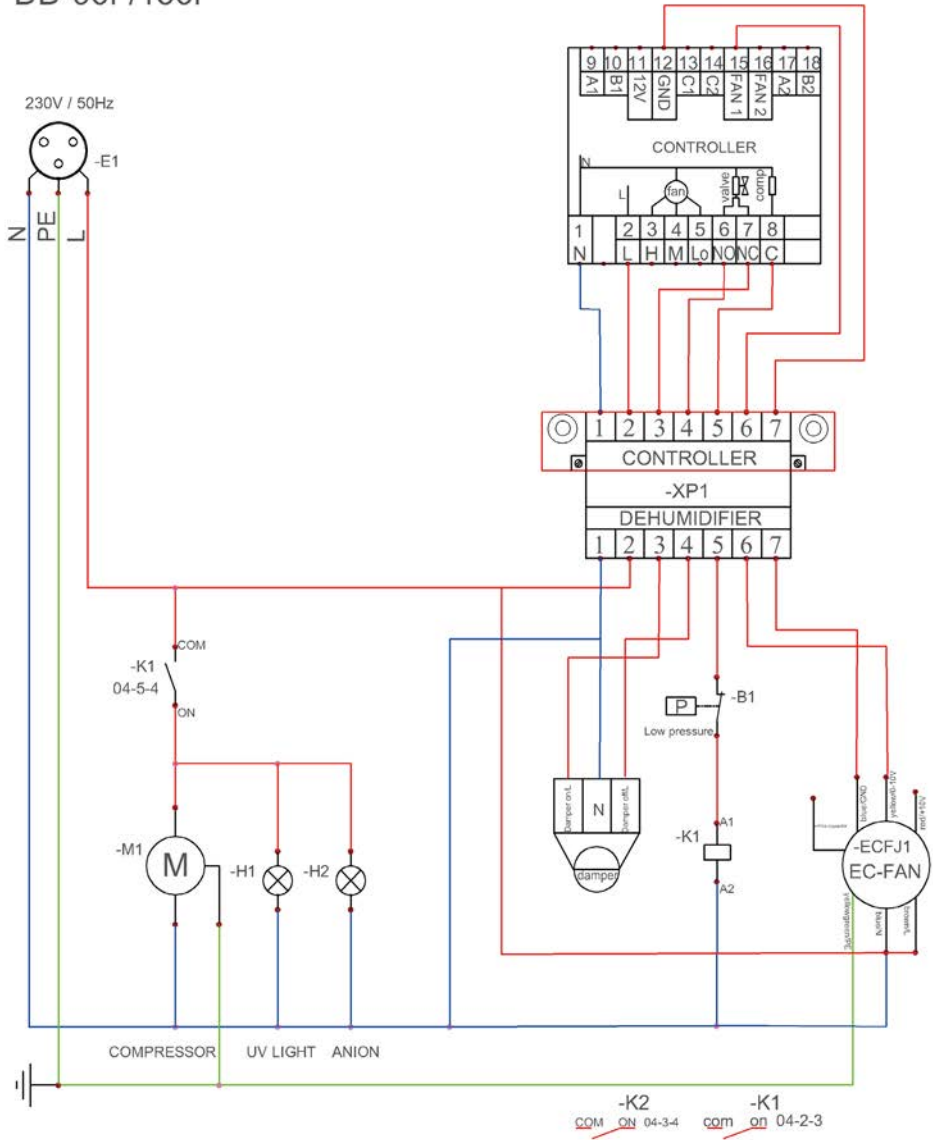


10. CIRCUIT DIAGRAMS

DD-36F/56F



DD-96F/136F



DD-168/240

3P/380V/50Hz

