

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS



Ducted fan coil units





Quality and Environment Management Systems Approval

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1 - PRECAUTIONS

1.1 - Operating limits

1.1.1 - Cooling mode

Minimum supply air temperature 12°C when the unit is installed where the ambient temperature is 27°C dry bulb with 65% relative humidity.

In steady state, the ambient conditions shall not exceed 27 $^{\circ}\mathrm{C}$ dry bulb temperature and 65% relative humidity.

1.1.2 - Heating mode

Max. supply air temperature = 60° C to avoid damage of the discharge spigots. To avoid all risks of stratification, Carrier recommends to keep the supply air temperature below 35° C.

1.1.3 - Operating environment

The 42EM has been designed for indoor application in 'urban' conditions having a non-corrosive, dust-free and non-marine environment.

The concentrations of the following chemicals must not be exceeded in any event:

- SO₂ < 0.02 ppm
- $H_2 \dot{S}$ < 0.02 ppm
- $NO, NO_2 < 1 \text{ ppm}$
- $NH_3 \sim < 6 \text{ ppm}$
- N_2O < 0.25 ppm

Do not install a unit where flammable gases or products of an acidic or alkaline character may be present. The copper/ aluminium coil or components inside the unit could suffer irreparable corrosion damage in their presence.

1.1.4 - Recommended coil water quality

At installation handover, and then periodically every year, it is advised to analyse the water for bacteria (detection of ferro-bacteria, H₂S-producing and sulphate-reducing bacteria) and chemicals (in order to avoid problems due to corrosion and scaling).

The water circuit must include all the necessary elements for the treatment of the water: filters, additives, intermediate exchangers, purges, drains, isolating valves, etc., according to the analysis results.

The results must be in accordance with the values shown below:

•	Total hardness in mmol/l:	1 < mmol/l < 1.5
•	Chloride [CL ⁻]	< 10 mg/litre
•	Sulphate $[SO_4^2]$	< 30 mg/litre
•	Nitrate [NO ₃]	= 0 mg/litre
•	Dissolved iron:	< 0.5 mg/litre
•	Dissolved oxygen:	$4 < [O_2] < 9 mg/litre$
•	Carbon dioxide $[CO_2]$	< 30 mg/litre
•	Resistivity:	20 Ohm·m < Resistivity
		< 50 Ohm·m
•	pH:	6.9 < pH < 8

1.2 - Clearances required

Without return air plenum: Fig. 1 With return air plenum: Fig. 2

1.3 - Receiving a shipment - installation methods

When receiving a shipment, check the condition of the goods and report any damage in transit to the shipping company. Do not unpack the units until just before they are due to be installed, and make sure they are as close as possible to the installation site when unpacking them. Do not place heavy articles of any sort on them.

1.4 - Supply voltage 230 V \pm 10% - 50 Hz

Check that the supply voltage and frequency correspond to the values of the unit to be installed.

WARNING: Failure to take proper account of the above advice and unauthorised modification of the electrical connections will render the Carrier warranty on the product null and void.

2 - SAFETY CONSIDERATIONS

WARNING: Switch off the main electrical power supply to the unit and accessories (if installed) before doing any work on the unit.

2.1 - General

Installing, commissioning and servicing of the various component (unit, control system, hot and cold water system, air distribution system) can be dangerous unless certain aspects of the installation, such as the presence of mains electricity and hot or cold water in the air conditioning equipment, are taken into account. Only specially trained and qualified technicians and installers who have been fully trained on the product concerned are authorised to install, commission and service this equipment.

During servicing work, it is essential to apply all recommendations and instructions given in service leaflets, on labels or in the instructions delivered with the equipment, and to comply with any other relevant instructions.

Definition of the pictograms used:

- Electrical danger Fig. 3
- Caution hand hazard Fig. 4
- General danger Fig. 5

Comply with all safety rules and regulations currently in force. Wear eye protectors and work with hand gloves and any individual protection equipment following local legislation. Take care when moving or positioning of the equipment.

2.2 - Protection against electrocution

Only electricians qualified to the level recommended by the IEC (International Electrotechnical Commission) in its standard IEC 364, corresponding to Europe HD 384, France NFC 15 100 and UK IEE Wiring Regulations, may have access to electrical components. In particular it is obligatory to disconnect all power supplies to the unit and its accessories before carrying out any work. Disconnect the main power supply with an isolating device (not supplied by Carrier).

IMPORTANT: The components, which make up the different control loops described in this manual include electronic items. As such, they may generate or be harmed by electromagnetic interference unless they are installed and used in accordance with these instructions. The components making up these control systems conform to the requirements of electromagnetic compatibility in residential, commercial and light industrial areas. They also comply with the low-voltage directive.

If the product is supplied without a Carrier control device, verification of EMC conformity is the responsibility of the installer.

2.3 - General installation conditions

IMPORTANT: The Carrier numeric controller, power module, or in general units fitted with controls loops must have an isolating device upstream (for example a doublepole circuit breaker). If necessary, an easily operated emergency stop device (such as a punch-button switch) must cut off the power to all equipment. These safety devices shall be sized and installed in accordance with IEC Recommendation 364, corresponding to Europe HD 384, France NFC 15 100 and UK IEE Wiring Regulations. These devices are not supplied by Carrier.

In general terms the following rules must be applied:

Upstream over-voltage protection	
Unit without electric heater	T2A
Standard unit sizes 05/09/10/19/21/31 with electric heater	T10A
Standard unit sizes 22/23/29/32/33/39 with electric heater	T16A

- Units must be provided with over-voltage protection upstream (not supplied by Carrier). Caution: In LEC motors the leakage current can reach 3 mA.
- The power disconnection device must be clearly labelled to identify which items of equipment are connected to it.
- The wiring of the components which make up the different control systems and the communication buses must be carried out in accordance with the latest rules and regulations by professional installers.
- The power supply cable must be doubly insulated and fixed using a cable clamp. A hole is provided for this purpose in the plastic Carrier controller housing. The cable must be clamped on the outer insulation.
- The control loop components must be installed in an environment, which conforms to their index of protection (IP).
- The maximum level of pollution is normally pollutant (level 2) and installation category II.
- The low-voltage wiring (communication bus) must be kept physically separate from the power wiring.
- In order to avoid interference with the communication links:
 - Keep low-voltage wiring away from power cables and avoid using the same cable run (a maximum of 300 mm in common with the 230 V a.c., 30 A cable).
 - Do not pass low-voltage wires through loops in the power cables.
 - Do not connect heavy inductive loads to the same electrical supply (circuit breaker) used by the controllers, power modules or speed controllers.
 - Use the screened cable type recommended by Carrier and make sure all cables are connected to the controllers and power modules.

2.4 - Caution for the control of the unit

IMPORTANT: It is not permitted to connect several unit units to the same control device (electronic NTC controller, HDB controller, or any other third party controller). Carrier electronic Thermostat type A&B for AC motors require additional accessory board to allow master/slave function. Carrier electronic Thermostat type C&D for EC motors can be connected upto 10 units, refer to thermostat installation manual instructions.

2.5 - Conformity

This equipment is in compliance with the essential requirements of the following European directives:

- Electromagnetic compatibility: 2004/108/EEC,
- Low-voltage directive: 2006/95/EEC.

3 - INSTALLATION OF THE UNIT

3.1 - Installing the unit in the false ceiling

The positioning of the unit must not create an obstacle that may lead to an unequal distribution and/or return flow of the air. The ceiling must be sufficiently even to allow a simple installation without danger from the unit. The supporting structure must be able to carry the unit weight and prevent deformation, breaks or vibrations during operation.

INSTALLATION PRECAUTIONS: During the installation process, remove all debris and construction material from the ducts to prevent any damage to the unit.

3.2 - Installation procedure

- Position the 42EM close to where it is to be installed in the ceiling void. For installation in a false ceiling use a hydraulic lift and a folding ladder to make the task easier (Fig. 6).
- Check that the clearances around the unit are sufficient to allow easy maintenance. Please refer to the diagram that shows the service clearances.
- Mark the position of the threaded hangers on the ceiling (if several units need to be installed, it may be advisable to produce a drilling template). The method of fixing the threaded hangers (not supplied by Carrier) depends on the ceiling type (maximum diameter of the threaded hangers is 10 mm). Once the threaded hangers are fixed to the ceiling, tighten the first nuts.

WARNING: When moving the units, do not use water pipes, condensate drain pan, valves or flexible pipes to lift them.

Lift the unit and align it on the threaded hangers, insert the second nuts and tighten them slightly.

NOTE: At this point do not tighten the nuts fully and do not clamp the unit up to the ceiling (leave a space between the ceiling and the unit). The nuts will be adjusted finally, when the unit has been connected to the pipework and ducts and levelled.

Level the unit (Fig. 7).

Adjust the hanger nuts so that the unit is inclined 0.5% towards the condensate drain pan. In the other direction (air flow direction) the unit must be perfectly level (Fig. 8).

Condensate drain pipe (Fig. 9): Use a flexible pipe with an inside diameter of 17 mm and provide a constant fall of 20 mm/m (9a) over the whole horizontal pipe run. Install a 50 mm (minimum) siphon (9b) to prevent gases and odours from flowing back into the ceiling void.

WARNING: After drain pipe connection, control clamping of the drain pipe and be sure there is no water leakage. If needed, screw the nut of the drain part (inside the drain pan) by a maximum torque of 1 N.m.

If several units are connected to a common collector, a device must be installed (Fig. 10). Before operating the unit, ensure that the water flows into the internal condensate drain pan by pouring some water into it. If problems are detected, check the drain pipe slope and look for possible obstructions. In all cases the connection duct(s) at the unit outlet must be insulated to prevent any condensate formation on the walls.

NOTE: The pressure losses of these ducts must be compatible with the unit performance. The duct must be as smooth as possible. Avoid sharp bends. Check that there are no leaks or kinks, and that there is no dirt or installation debris inside the ducts. Debris within the ducts might damage the fan wheel and the damper in the air diffusers.

When installation is complete - i.e. when the 42EM is attached to the ceiling, air ducts are complete, water mani-folds are in position with stop valves ready on the connec-tion stubs, and electrical installation is prepared then connect the water pipes (Carrier recommends the use of flexible water pipes that can be supplied as an accessory). Each flexible pipe has a 1/2" gas screw connector, depend-ing on the model. Ensure that a gasket (not supplied by Carrier) is installed between the screw connector and the stop valve.

When all units are installed, open the stop valves on the manifolds, bleed and then pressurize the circuits. To bleed the coils, slightly loosen the bleed screws. The installation can then be started.

NOTE: Do not switch on the power until all connections are made and earthed.

3.3 - Removal procedure

Switch off the unit power supply at the isolator provided for the purpose during installation (isolator not supplied by Carrier).

- Disconnect the power supply and connection cables.
- Close the isolating valves on the manifolds.
- Disconnect the flexible water pipes by unscrewing the gas connectors.

WARNING: Since the flexible water pipes do not have drain valves, a receiver must be provided to allow the cooling coil to be drained.

- Disconnect the supply air ducts.
- Disconnect the flexible condensate drain pipe. Drain the siphon into a suitable vessel.
- Support the unit lightly and release it by unscrewing the four nuts on the threaded hangers. Lower the unit carefully.

4 - COMPONENTS

4.1 - Fan motor assembly

4.1.1 - Fan assembly removal procedure

WARNING: Disconnect the power supply to the unit before carrying out any work on the unit.

Identify and note the wired fan speeds. If the fan develops a fault the whole assembly must be removed and replaced (Fig. 12).

- Remove the filter.
- Remove the fan access panel (12a).
- Disconnect the fan assembly power supply cables (power and control wiring for variable-speed motor).
- If necessary remove the controller (fixed with screws) to gain access to the maintenance screws of the panel supporting the fan.
- The fan assembly and its panel are held in place by four torx screws (T20) (12b). Remove these screws and slide the assembly down (12c).
- Remove the fan motor assembly.

NOTE: Be careful not to touch the fan blades during the removal process to avoid unbalancing the fans.

- For units with the electric heater option, disconnect the power supply cable to the heater. Withdraw the cable through the cable gland.
- Unscrew the electric heaters.
- Replacement of the fan motor assembly is by the reversal of the above procedure.

WARNING: The electrical connections to the fan motor must be made in accordance with the labels on the con-nector block.

For the variable-speed motor carefully separate the power wiring cable from the control wiring cable and pull them apart as far as possible.

4.1.2 - Capacitor replacement procedure (Fig. 13)

- Disconnect the power supply to the unit before carrying any work on the unit.
- Remove the filter.
- Remove the fan motor assembly access panel.
- Remove the capacitor that is attached to the motor chassis assembly.
- Disconnect the capacitor by withdrawing the flat spade connectors from the back of the capacitor.
- Replacement of the capacitor assembly is by the reversal of the above procedure.

4.1.3 - Fan wiring

4.1.3.1 - Multi-speed unit with bare wires - 3 speeds wired

The fan motor has six speeds, provided by an auto-transformer, offering the unit greater flow control flexibility. Three of the six speeds must be selected to allow connection of the fan motor in accordance with the applicable electronic regulations (minimum speed = 6, maximum speed = 1). See Fig. 14. The three speeds are connected to a five-pole Wego connector - see Fig. 18.

Speed wiring modification

ON a unit supplied with bare wires, the speeds are prewired at the factory, as ordered.

To modify the wiring, change the speeds at the autotransformer inside the unit. See Fig. 14.

4.1.3.2 - Multi-speeds unit with fast connector option - 6 speeds wired

This option enables to get six speeds from the AC fan motor available through a fast connector. Refer to Fig. 22.

4.1.3.3 - Multi-speeds unit with control box option

This option allows the installer to connect the unit to a terminal board inside a control box. To comply with the applicable regulations, the control box can be opened with a screw driver.

Three of the available six speeds are connected - the default factory wiring is 5-3-1 (minimum speed = 6, maximum speed =1).

The control box option permits changing the speed wiring without access to the motor. See Fig. 20.

4.1.3.4 - Variable-speed bare-wire LEC unit

Connection of the 230 V a.c. fan motor power supply is at a three-point Fast connector. Connection of the 0-10 V d.c. control signal is at a two-point Fast connector. See Fig. 19.

4.1.3.5 - Variable-speed LEC unit with control box option

This option allows the installer to connect the unit to a terminal board inside a control box. To comply with the applicable regulations, the control box can be opened with a screw driver.

The 0-10 V d.c. signal that controls the variable fan speed is directly accessible at the terminal board. See Fig. 21.

4.1.4 - Wiring precautions during replacement of a fan motor on sizes 22, 23, 32, 33 with a.c. motor

During replacement of the a.c. fan motor, the installer must wire the speeds in accordance with the instructions in the table below:

Wiring for 42EM 22 and 42EM 32: Fig. 16

		•	
		42EM sizes 2	2 and 32
Neutral (com)	1	White	
Phase connected	2	Red	
Wiring legend:			
Minimum speed	= Terminal 6	Medium speed	= Grey wire (14b)
Maximum speed	= Terminal 1	High speed	= Black wire (14c)
Low speed	= Hed wire (14a)	L	= Neutral

Wiring for 42EM 23 and 42EM 33: See Fig. 27.

4.2 - Water coil

4.2.1 - Coil removal procedure

WARNING: Disconnect the power supply to the unit before carrying out any work on the unit.

- Close the isolating valves on the manifolds.
- Unscrew the union nuts to disconnect the flexible water pipes.
- Remove the valve actuators taking care to identify the cooling and heating valves.
- Disconnect the flexible condensate drain pipe held in place by a collar (the collar is not supplied by Carrier).
- Remove the two-way or four-way water flow control valve bodies. Depending on the unit configura-tion the four-way valve coupling may be fitted with a heating/ cooling changeover switch. If so, do not remove it.
- Loosen the four fixing screws (4 torx screws (T20)). Pull out the drain pan and coil assembly (the drain pan remains attached to the unit for approximately 100 mm) until the coil is completely detached. Then remove the coil from the drain pan.
- Replacement is by the reversal of the procedure described above. Ensure that all gaskets are changed (new gaskets fitted) and that the inlet and outlet connections to the coil are made correctly using an appropriate sealing compound applied to the valve body.
- Bleed all air from the coil during refilling.

ATTENTION: Take care when tightening the value body to the coils (15 $N \cdot m$ is sufficient) to ensure they are not damaged.

NOTE: The coil connection can be changed on site by changing the condensate pan and coil assembly in the guides.

For size 3 the water inlet and outlet need to be reversed to achieve the published performance.

4.2.2 - Coil inlet/outlet and cooling/heating side positions Water inlets/outlets, all sizes : Fig. 23. Coil drawing with cooling and heating side position: Fig 24.

ATTENTION: Carefully observe the direction indicated by the arrow on the valves, based on the valve type.

4.3 - Duct connection spigots

These are manufactured from high density plastic with a VO fire rating, more or less equivalent to class M1 (French standard). They are encased inside the unit. The ducts should be fixed to these spigots using circular collars or adhesive. Screws and rivets should not be used.

WARNING: In order to guarantee good air tightness, the duct should overlap the whole of the spigot.

Make sure that the maximum supply air temperature does not exceed 60° C.

Do not lift or support the unit using the spigots, place loads on the spigots or damage the spigots during installation or operation.

English

4.4 - Optional filter and filter access

4.4.1 - Description

The Carrier unit is fitted with G3 filter as standard (85% gravimetrie filter) or G4 filter as option, according to standard EN 779. Medium fire rating M1, metal wire frame.

Different filter access are available:

- Unit with non-ducted return air: Access is from the rear of the unit.
- Unit with ducted return air: Access is from below.

4.4.2 - Air filter replacement

Air filters should be changed regularly. Filter life depends on the rate at which the filter becomes clogged, which depends upon the cleanliness of the working environment.

If clogged filters are not changed they can increase the air pressure drop, trapped dust particles may be given off and entrained in the air supply, and the general performance of the unit may be degraded (as the air flow reduces).

NOTE: When installing a unit in a ceiling void, check that no T-bars will obstruct filter access and removal.

4.5 - Fresh air controller

4.5.1 - Fresh air controller with constant air volume

The 42EM unit can be fitted with a constant fresh air flow controller, fixed at 8.5 l/s ($30 \text{ m}^3/\text{h}$) or adjustable from 17 l/s ($60 \text{ m}^3/\text{h}$) to 44 l/s ($160 \text{ m}^3/\text{h}$) to allow contol of the introduction of fresh air and of the air change rate.

Controllers with adjustable fresh air flow: The diameter of the spigot housing the fresh air flow controller is 125 mm.

The fresh air controller may be modified on site by relocating or removing two plastic restrictors in order to change the maximum constant fresh air flow of 17 1/s ($60 \text{ m}^3/\text{h}$) to 44 1/s ($160 \text{ m}^3/\text{h}$). A label on the 42EM shows how to adjust the two plastic restrictors (Fig. 11).

Modification procedure

- Disconnect the fresh air duct from the spigot on the unit.
- Remove or reposition the two plastic restrictors, following the fresh air flow controller.
- Reconnect the fresh air duct to the spigot.

IMPORTANT: If the unit is fitted with a return air temperature sensor, the constant fresh air flow rate must not exceed 50% of the supply air flow delivered by the unit at minimum speed.

NOTE: To operate correctly, the 8.5 l/s ($30 \text{ m}^3/h$) the constant fresh air flow controller requires a differential pressure in the range of 50 Pa to 200 Pa. The controller with adjustable fresh air flow from 17 l/s ($60 \text{ m}^3/h$) to 44 l/s ($160 \text{ m}^3/h$) requires a differential pressure in the range of 70 to 200 Pa.

4.5.2 - Fresh air controller with variable air volume

The 42EM unit can be equipped with an optional variable fresh air flow controller from 0 to 55 l/s (0 to 200 m³/h).

This is connected to the numeric Carrier controller and can regulate the fresh air intake in two ways:

- Either using a fixed rate set by the installer that can be reconfigured as required
- Or based on the CO₂ level; in this case it is connected to a CO₂ sensor via the Carrier numeric controller (the CO₂ sensor is located opposite the fresh air inlet).

NOTE: With the variable fresh air flow controller the upstream pressure in the fresh air duct must be 180 Pa.

4.6 - Optional water flow control valves

These valves are either two-way or four-way type (threeway with integral bypass). The body of the valve is designed to withstand a 16 bar operating pressure.

With this option, the couple (valve + actuator) is usually normally closed (NC). Thus, the water flow is null in case of power cut. To fill the installation, to equalise the water circuits and to purge the units, the actuators must be connected to the power supply and the valves must be opened via the controller (thermostats or BMS).

For the replacement of these components refer to the chapter "4.6.3. - Actuator replacement procedure".

4.6.1 - 230 V - Actuators

Two types of valve actuators are provided : electrothermal actuator (on/off control) or modulating actuator (3-point). The actuator supply is 230 V a.c.

4.6.2. 24 V - Actuators

Three types of valve actuators are provided : one electrothermal actuator (on/off control) or two modulating actuators (3-point or 0-10V).

Both modulating actuators can be operated manually with a hexagonal key. The 0-10V command voltage range of the modulating actuator can also be adjusted. The actuator supply is 24 V a.c.

NOTE: 24V actuators are not compatible with Carrier controllers (Thermostats A/B/C/D, HDB & NTC).

4.6.3 - Actuator replacement procedure

The actuators on both the chilled water and the hot water valves may be replaced if either develops a fault.

WARNING: Do not connect on the same neutral wire the valve actuator 24 Vac and the controller.

- Disconnect the power supply to the unit before carrying out any work on a unit.
- Disconnect the actuator power supply cable.
 - 230 V type actuator used with the Carrier numeric controller: Disconnect the actuator power supply cable fitted with a quick connector.
 - 230 V actuator used with an electronic thermostat: Remove the plastic protection cover held in place with two screws. Disconnect the actuator power supply cable connected to the quick connector. This can be done by pressing down the spring tongue using a screwdriver and pulling out the wire from the appropriate terminal.
- Uncouple the faulty actuator. Refitting is by the reversal of the procedure described above.

WARNING: Ensure that the actuator is firmly screwed to the valve body (maximum torque 15 N·m).

4.6.4 - Valve body replacement procedure

- Disconnect the power supply before carrying out any work on a unit.
- Close the isolating valves on the manifolds.
- Unscrew the union nuts to disconnect the flexible water pipes.
- Remove the valve actuators taking care to identify the cooling and heating valves.
- Disconnect the flexible condensate drain pipe which is held in place by a collar (the collar is not supplied by Carrier).
- Remove the two-way or four-way water flow control valve bodies. Depending how the unit is configured, the four-way valve coupling may be fitted with a heating/cooling changeover switch, if so do not remove it.
- Fit the new valve body to the coil (fit new gaskets).
- Reconnect the flexible condensate drain pipe which is held in place by a collar (the collar is not supplied by Carrier).
- Refit the valve actuators taking care to ensure that they are correctly fixed to the valve body.
- Reconnect the flexible water pipes by tightening the union nuts. Retighten all the water connections and ensure that all gaskets have been changed and correctly fitted (maximum torque 15 N·m).
- Open the isolating valves on the manifolds and purge all air from the system.
- Check that there are no leaks and reconnect the power to the unit.

WARNING: When replacing a valve always ensure that the direction of flow through the valve is as shown by the arrow on the valve body. If the direction of flow is wrong, the valve body will deteriorate rapidly.

4.7 - Flexible pipe option

Minimum bending radius:

- non-insulated pipes 72 mm
- insulated pipes 106 mm.

4.8 - Optional electric heater

WARNING: Disconnect the power supply before carrying out any work on the unit.

If the electric heater develops a fault, it must be replaced; this requires the removal of the fan motor assembly: Fig. 17 (17a = screw).

CAUTION: Do not touch the live metal heater elements when the electric heater is connected to the power supply.

Electric heater replacement procedure:

- Remove the filter.
- Remove the fan motor assembly access panel.
- Identify and note the fan speeds wired to the autotransformer terminal block. Disconnect the power supply cable.
- Remove the fan motor assembly.

NOTE: Be careful not to touch the fan blades during the removal process to avoid unbalancing the fans.

- Disconnect the electric heater power supply cables and remove them through the cable conduit.
- Unscrew the defective heater(s) and replace it (them).
- Replacement of the fan motor assembly is by the reversal of the above procedure.

WARNING : Carrier Electronic thermostat type B and D are embedded with Electric heater relay 8 Amps. Accordingly, Carrier requires an additional protection relay for electric heater 2000W and 3200W.

WARNING : In case of customer supplied controller, Carrier recommends to set up an additional protection relay corresponding to the electric heater capacity.

4.9 - Optional condensate pump (fig. 26)

According to the fig. 26, the condensate pump installation require the following actions:

- Press the pump at the lowest position according to the available height in the false celling (fig. 26b)
- Check the sealing of the hydraulic connection of the condensate pump and condensate recovery

The meaning of the electrical wires is described below:

- Brown Blue wires : Electrical supply 230V 50/60Hz
- Black Grey wires : Alarm contact Normally Closed
 (NC) 250V/8A maxi

Fan motor speed wiring

		Codific or opti	cation (l on 600	ast digit) A	В	С	D	E	F	G	Н	J	K	L	M	N	Р	Q	R	S	Т	U	V	W	Y	1		
Γ		Red	wire		6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	4	4	4	3			1		
	set	Grey	v wire		5	5	5	5	4	4	4	3	3	2	4	4	4	3	3	2	3	3	2	2					
A 2 pipes right B 9 A 2 pipes right B A 9 A 2 pipes right B A B 9 C 4 pipes right D A C 9 C 4 pipes right D A D 9 C 4 pipes right D A pipes right D A pipes right D A 9 N 2 pipe/2 wire right 1 x: 05/09/10/19 D A pipes left D C 2 D 4 pipes left D 2 pipe/2 wire right 1 x: 05/09/10/19 D A 9 M 2 pipe/2 wire right 1 x: 05/09/10/19 D A D 9 N 2 pipe/2 wire right 1 x: 05/09/10/19 & 2 D D D 9 N 2 pipe/2 wire right 100 42EM 05/09/10/19 & 2 21/22/32/9/31/32/33 S 2 pipe/2 wire right 100 42EM 05/09/10/19 & 2 21/22/32/9/31/32/33 T 2 pipe/2 wire right 100 42EM 05/09/10/19 & 2 21/22/32/9/32/32/32/32/32/32/32/32/32/32/32/32/32/	Blac	k wire		Δ	2	2	1	2	2	1	2	1	1	2	2	1	2	1	1	2	1	1	1						
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NOT	E: Terminal	1 = hi ₂	ghest	speed	l, Ter	min	al (5 = I	lowes	st sj	peed	l.	and	optio	n 570) = N	TC or	HDB						Varia LEC	ble-sı motor	beed			
			Product type				Size		Modification code	Soils	Supply and	Supply and eturn air plenum	eturn air plenum /alves	Valves	/alve motors	/alve motors	/alve motors	Control	Sensors			Fresh air	1 otor wiring	5					
Produ	ict reference	4	2	E	М	0		5	E	А		т	-	0		-	-	E	3	-	Q								
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A B C D L	A 2 pipes right 3 2 pipes left C 4 pipes right D 4 pipes/2 wire right 1 x 500W (42 EM 05/09/10/19) //										/								- v v c w c	Vithout 33 34	filter								
M N P	2 pipe/2 wire left 05/09/10/19) 2 pipe/2 wire righ 05/09/10/19) 2 pipe/2 wire left 05/09/10/19) 2 pipe/2 wire righ	Ieft 1 x 500W (42 EM right 1 x 800W (42 EM right 1 x 800W (42 EM right 1000W (1 x 1000 10/19 & 2 x 500 42EM 31/32/33/39) Ieft 1000W (1 x 1000 10/19 & 2 x 500 42EM 31/32/33/39) G							With Con 2-wa 2-wa	Without Condensate pump 2-way valve + condensate pump 2-way valve 4-way valve + condensate pump 2-way valve + flexible piping + condensate pump 4-way valve + flexible piping + condensate pump 2-way valve + flexible piping 4-way valve + flexible piping										- A B C E	Withou 125 mr 3.5l/s (17-44 l (75/10) Motoris	out nm ø fresh air spigot only s (30 m³/h) 4 l/s (21/28/36) 60-160 m³/t 00/130) rised fresh air valve adapte				/h			
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V	21/22/23/29/31/32/33/39) J 2 pipe/2 wire right 2000W (2 x 1000W 42EM 22/23/29/32/33/39) V 2 pipe/2 wire left 2000W (2 x 1000W 42EM 22/23/29/32/33/39)										A 230 V on/off B 24 V on/off C 230 V 3 points D 24 V 3 points									D E F G	A + B A + B A + C B + C	+ C	i wale	i sens					
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	42EM 22/23/29/3	2/33/39)		_/						A	NTC	; ;								K	B + C(C + C(2 ₂							
				/						B C	HDB With	s iout +	Plastic	cove	r alon	е				M	A + B	+ČO ₂							
B C	Modular unit with Modular unit with	2 supply air 3 supply air	supply air spigots supply air spigots							D E	NTC Term	+ IAC	card lock 6	speed	ds with	h plas	tic box			P	B+C	+ CO ₂ + C + 0	00						
G	Modular unit with (in-line configurati	unit with 1 supply air spigot at the end F onfiguration) G unit with 1 supply air spigot at the side coil) L unit with 4 supply air spigots M unit with 5 supply air spigots N r plenum 1 spigot and modular unit 1 supply P							F G	E + r E + r	relay relay +	- fuse	holder	·								- 0,							
Н	Modular unit with (opposite coil)								K L	NTC	; + fus ; + IAC	e hold 2 card	er + fuse	e holde	er														
R	Modular unit with Modular unit with								M	HDB	3 + fus	e hold	ler older																
M	Return air plenum								Without + relay																				
N	Return air plenum	1 spigot an	id modula	ar unit 1 s	upply					R	E + f	iout + fuse h	tuse h older	older -	+ relay	y													
P	Return air plenum	2 spigots a	nd modu	ılar unit 2						S T	Elec	tric bo fuse h	ox older																
Q	supply air spigots Return air plenum	3 spigots a	nd modu	ılar unit 3						U	S+r	relay	older	role	,														
R	supply air spigots Return air plenum	4 spigots a	nd modu	ılar unit 4						W	C+f	fuse n	older -	- гегау															
s	supply air spigots Return air plenum	5 spigots a	nd modu	ılar unit 5						X Y	C + relay C + relay + fuse holder																		
	supply air spigots	1 return air	spigot o	nd 1 supr	olv air					2	With	iout ((6 spee Plastic	ds) c cove	r alon	e(64	peeds)											
	snigot	··········	spigora	1 return air spigot and 1 supply air							 without + Plastic cover alone (6 speeds) Without + fuse holder (6 speeds) 																		
	Compact	2 return air spigots and 2 supply							1.5	Without + relay (6 speeds) Without + fuse holder + relay (6 speeds)																			
U	Compact unit with air spigots	2 return air	spigots	and 2 sup	ply					5 6	With	iout + iout +	fuse h	6 spe older -	eds) + relay	y (6 s	peeds)											



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