



## Epic Fan Coil Units

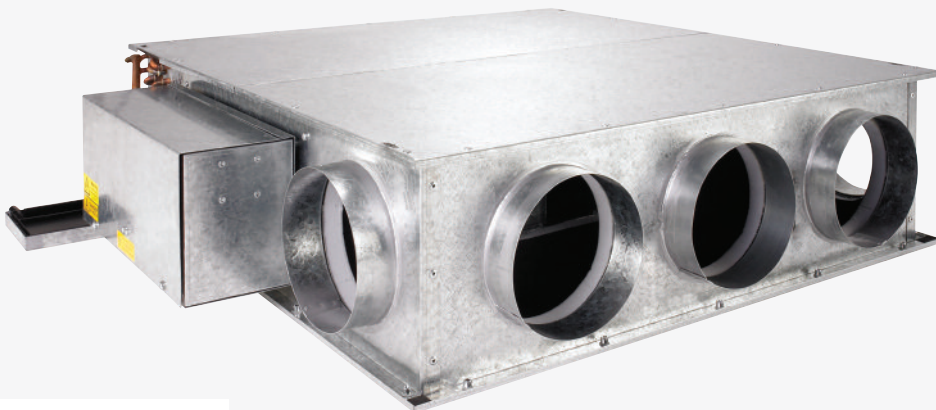
Installation, Operations and Maintenance Recommendations

# Prior to Installation

Prior to installation, inspect the fan coil unit and any accessories to ensure that it has been transported to, received and stored on site in good condition.

## Visual Examination

1. Examine the fan coil unit outer casing together with any accessories for cleanliness and freedom from any foreign matter.
2. Examine the fan coil unit and any accessories to establish that the protective closing panels to the fan coil unit and accessory orifices are in place and undamaged.
3. Establish that the control panel seal is intact.
4. Examine the fan coil unit and any accessories for any distortion or damage, which could inhibit the operation of the equipment.
5. Examine the inlet spigot.
6. Examine the discharge spigots to establish any degree of ovality.
7. Examine the mounting brackets/cleats to establish that they are correctly and securely located and free from damage/distortion.



EPIC Fan Coil Units  
280mm high

# Mechanical Installation

1. Before commencing installation ensure that all transit-packaging materials are removed.
2. Ensure that any steelwork or structural slab from which the fan coil unit is to be suspended is suitable to support the weight of the fan coil unit.
3. Ensure that any fixings into steelwork or structural slab are suitable to support the weight of the fan coil unit.
4. Ensure that there is sufficient space allocation in the chosen location, such that the fan coil unit can be easily installed and such that all access panels are freely accessible.
5. Ensure that there is a minimum clearance of 500mm. between the inlet/air filter and any impervious vertical surface to ensure adequate airflow to the Fan Coil Unit, failure to do so will result in the Fan Coil Unit failing to operate correctly.
6. The fan coil unit should be lifted into position with M8 min. drop-rods/studding/all-thread passing through the mounting slots, being secured by a suitable washer, nut and lock-nut.  
  
NB. We recommend that drop-rods/studding/all-thread does not exceed 1000 mm. in length.
7. The fan coil unit should be adjusted to ensure a fall to drain at the condensate tray.
8. The inlet spigot closing/protective plate should be removed and the leading edge visually examined for damage/distortion.
9. The inlet filters should be examined for any damage and correct location.
10. The discharge spigot closing/protective plate should be removed and the flange visually examined for damage/distortion.
11. The discharge spigot should be mated to the multiple outlet plenum and secured using suitable gasket material, bolts, washers and nuts.

Care should be exercised to ensure that no adjacent ductwork is directly supported by the fan coil unit.



# Condensate Pump (where fitted)

1. It is essential that the fan coil unit has been installed to ensure a fall to drain at the condensate tray discharge point, if this has not been achieved then the condensate pump system may not function correctly, which could result in overspill from the condensate tray and consequent damage to any materials below (suspended ceiling tiles etc.).
2. Before operating the condensate pump, the condensate tray should be cleaned to remove any building debris or contaminants which could block the outlet or pipework connecting the detection unit and pump.
3. Examine the condensate discharge outlet to ensure there are no obstructions which could prevent the free flow of water, and clean/remove obstructions if necessary.
4. Examine the location of the condensate pump to establish if it is above the level of the detection unit.
5. Examine the detection unit to establish if it has been correctly installed using the correct and purpose-made pipe fittings
6. Examine the detection unit to establish if the breather pipe is of the correct type and has been securely and correctly fitted.
7. Examine the connecting tube between the detection outlet and condensate inlet to establish if it has been correctly installed using the correct and purpose-made pipe fittings
8. Examine the discharge tub from the condensate pump to establish if it has been correctly installed using the correct and purpose-made pipe fittings including an anti-siphon device.
9. Examine the power plug on top of the condensate pump to establish if it has been correctly and securely inserted into the purpose-made socket.
10. Examine the communications plug in the underside of the condensate pump to establish if it has been correctly and securely inserted into the purpose-made socket.

Note 1: We recommend that transparent tubing to the correct specification is utilised throughout the condensate/detector unit assemblies to facilitate the identification of any blockages due to debris, and to prevent "kinking" of the tube which can restrict the flow of water.

Note 2: We recommend a separate 230 Vac, single phase, 50 Hz electrical supply via a local 13 A switched fused spur be provided to the condensate pump.

# Electrical Installation

## Electrical Requirements

Model	Voltage	Power	Rated current	Recommended protection
EPIC 600	230Vac 50Hz	300Watt	3.5 Amps	6 Amp type D (motor rated)
EPIC 900	230Vac 50Hz	300Watt	3.5 Amps	6 Amp type D (motor rated)
EPIC 1200	230Vac 50Hz	550Watt	6.5 Amps	10 Amp type D (motor rated)
EPIC 1500	230Vac 50Hz	800Watt	9.5 Amps	16 Amp type D (motor rated)
EPIC 1800	230Vac 50Hz	800Watt	9.5 Amps	16 Amp type D (motor rated)

### Notes in Installation

All external wiring to this equipment should only be undertaken by a suitably qualified electrician.

In stand-alone configuration there is only the requirement for one external power connection to the control panel.

Advanced Air, like most other electrical equipment manufacturers, do not publish data on the connection of multiple fan coil units on the same radial or ring circuit. It is recommended that each fan coil unit has its own individual circuit breaker or fuse. However where this is not possible, it is recommended that no more than 4 units are fed from the same circuit breaker and the circuit breaker is rated at the entire full load current plus 20% spare capacity.

It should be noted that the fan coil unit is supplied pre-wired and tested, therefore it should be unnecessary to gain access to the internal components of the control panel other than to make final power connection.

Access to the internal components of the control panel can be gained by removal of the control panel cover fasteners.

The internal components should be visually examined to establish if there are any damaged or insecure items.



### Method of Electrical Installation

1. A 230 Vac. mains connection to the terminal unit should be made using suitable cable passing through the designated cable gland in the control panel casing.
2. Relocate the control panel cover and secure the fasteners, the control panel can now be energised.
3. It should not be attempted to energise the control panel until such time that the primary air fan/air handling unit is operational.

When the control panel has been energised then after approx. 30 seconds, the motor can be heard operating.

### Control Wiring

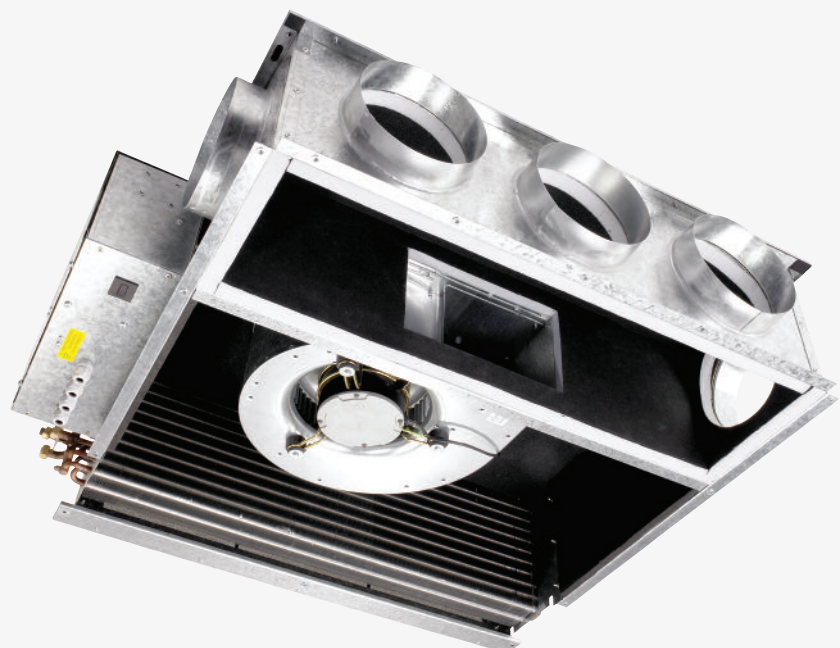
All external wiring to this equipment should only be undertaken by a suitably qualified electrician.

In stand-alone configuration there are no external controls connections to be made.

Access to the internal components of the control panel should only be attempted after the mains power electricity supply has been disconnected.

Access to the internal components of the control panel can be gained by operating the mains isolator (where fitted) and removal of the control panel cover fasteners.

The internal components should be visually examined to establish if there are any damaged or insecure items.



# Fault Finding

## If the Fan Motor(s) Fails to Operate

1. The following should only be carried out by a qualified electrician.
2. Isolate the control panel and remove the control panel cover.
3. Visually check for disconnected cables or any other obvious fault.
4. Check that the mains connection terminals are secure.
5. Check that there is power at the terminals.
6. Check that the primary connections to the transformer are secure.
7. Check that the secondary connections to the transformer are secure.
8. Check for 24VAC at secondary of transformer.
9. Check that the fuse is intact, if not, replace.
10. Check that the power plug to the motor controller is secure.
11. Check that the control plug to the motor controller is secure.
12. Check that the terminals on the EPIC pcb are correctly located and secure.
13. Relocate the cover of the control panel, and secure the fasteners.
14. Operate the mains isolator (where fitted), then after approx. 30 seconds, the motor can be heard operating.
15. If the motor fails to operate contact the Advanced Air systems department for assistance.

## If the Chilled Water Valve Motor Fails to Operate

1. Isolate the control panel and remove the control panel cover.
2. Visually check for disconnected cables or any other obvious fault.
3. Check that the mains connection terminals are secure.
4. Check that there is power at the terminals.
5. Check that the fuse is intact, if not, replace.
6. Check that the 230 Vac. and 24 Vac. terminals to the transformer are secure.
7. Check that the 24 Vac. power connection terminals to the Chilled Water valve motor/actuator are secure.
8. Check that the control signal connection terminals to the Chilled Water valve motor/actuator are secure.
9. Check that the return air temperature sensor connections are secure.
10. Relocate the cover of the control panel, and secure the fasteners.
11. Operate the mains isolator (where fitted).
12. The Chilled Water valve motor/actuator will operate to either its open or closed position dependent upon return air temperature.
13. If the Chilled Water valve motor/actuator fails to operate contact the Advanced Air systems department for assistance.



### **If the Low Pressure Hot Water Valve Motor Fails to Operate**

1. Isolate the control panel and remove the control panel cover.
2. Visually check for disconnected cables or any other obvious fault.
3. Check that the mains connection terminals are secure.
4. Check that there is power at the terminals.
5. Check that the fuse is intact, if not, replace.
6. Check that the 230 v. and 24 v. terminals to the transformer are secure.
7. Check that the 24 v. power connection terminals to the Low Pressure Hot Water valve motor/actuator are secure.
8. Check that the control signal connection terminals to the Low Pressure Hot Water valve motor/actuator are secure.
9. Check that the return air temperature sensor connections are secure.
10. Relocate the cover of the control panel, and secure the fasteners.
11. Operate the mains isolator.
12. The Low Pressure Hot Water valve motor/actuator will operate to either its open or closed position dependent upon return air temperature.
13. If the Low Pressure Hot Water valve motor/actuator fails to operate contact the factory.

### **Air Filter**

The filter is installed to protect the coil from particles that may be present in the air and could attach to the coil causing a blockage. Part of any maintenance program where FCU are used will include for inspection, and if necessary, cleaning of FCU inlet filters. The period between inspections will depend on the use and cleanliness of the building. We recommend that filters are checked 6 months after completion of a new build and then on a yearly basis. This period should be adjusted as necessary to suit the building.



# Important Safety Notes

## **Danger from Electrical Current**

- Before carrying out any work on the fan coil unit, it should be disconnected from the electrical supply to avoid injury from electrical current. Check that the unit is isolated and ensure that the appropriate point of the unit for the on-site power supply is secured against being switched back on

## **Danger of Scalding**

- Before performing work on control valves or the inlet or outlet pipes, seal off the heating or cooling medium inlet to prevent scalding. Do not commence work before the heating medium has cooled down.

## **Danger of Pressure**

- Before performing work on control valves or inlet or outlet pipes, seal off the heating or cooling medium inlet and drain the coil, only commence work when the coil is fully drained.

## **Danger from Rotating Parts**

- Rotating fans can cause injury! Before performing any work on the fan coil unit, ensure that it is disconnected from the electrical supply. Ensure that the appropriate point for the on-site power supply is secured against being switched back on.

## **Working at Height**

- Fan Coil Units installed in ceiling voids or at high level will be subject to the Working at Height Regulations. Ensure that these regulations are complied with when installing, commissioning or maintaining the Fan Coil Unit.

## **Inhalation of Dust**

- When removing the air filter from the Fan Coil Unit there is the potential of dust inhalation, to prevent this then appropriate dust mask should be worn.

## **Laceration**

- When working on the Fan Coil Unit there can be a risk of laceration from sharp edges on the units, the cooling fins on the coil present the biggest risk. Appropriate hand protection is recommended when working on the Fan Coil Unit.

## **Biohazard**

- When working on the Fan Coil Unit there can be a Biohazard risk from any stagnant condensate which has not been drained from the condensate collection tray. Ensure that the condensate collection tray is empty and dry before commencing work. Appropriate dust mask and hand protection is recommended when working on the Fan Coil Unit.

## Other products from Advanced Air

### Air Distribution Equipment

- Grilles and diffusers including louvre face diffusers
- Linear slot diffusers
- Linear bar grilles
- Eggcrate grilles and door transfer grilles
- A variety of finishes, powder coated to RAL9010 as standard, with other colours available
- Floor swirl diffusers which supply a low velocity, helical discharge air pattern
- "Twister" ceiling swirl diffuser
- External weather louvers suitable for most wall configurations

### VAV Terminal Units

- Single duct and dual duct units for different types of variable air volume systems
- Fan Powered VAV units that use advance Brushless DC motors to give lower energy consumption and simpler commissioning

### Air Control Products

- Low leakage fire smoke dampers, tested to EN 1366-2
- Smoke and high temperature smoke dampers, which can be used up to 300°C for 120 minutes
- Curtain fire dampers provide a wide range of models suitable for most applications
- Control dampers from value solutions to a low leakage, low pressure drop, airfoil blade type

### Control Panels

- Fire smoke damper control panels are available to provide solutions to suit all requirements
- Bespoke units, which can be manufactured to suit specific customer requirements

### Service & Maintenance

- Dedicated service team for service & support
- Maintenance contracts for Advanced Air products

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