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POWRMATIC®

CECx

User, Installation & Servicing Manual

Issue 2.9 September 2018

Users, Installation and Servicing Instructions

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1.1 Introduction

The Calecon unit you have installed is operated automatically, by an inbuilt thermostat, to turn on when the air temperature at high level exceeds the thermostat setting.

The Calecon unit will automatically recirculate the high level hot air in high roofed buildings drastically reducing stratification and heat losses and minimise the temperature gradient between low and high level.

The unit will turn off automatically when the air temperature at high level falls below the setting on the thermostat.

Mounted externally on the unit is the air temperature sensing thermostat.

Units are fully pre-wired, fully tested and fitted with four eyebolt suspension points.

In some installations a low level master control may be installed to provide user control of the units.

A) Maintenance

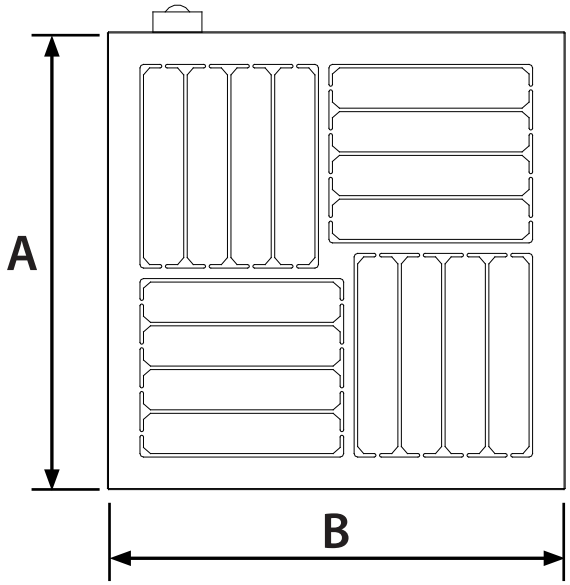
Regular servicing is essential to maintain efficient, reliable and safe operation of the units. Users are strongly recommended to have Calecons serviced by a qualified person at least annually and preferably at the end of the heating season.

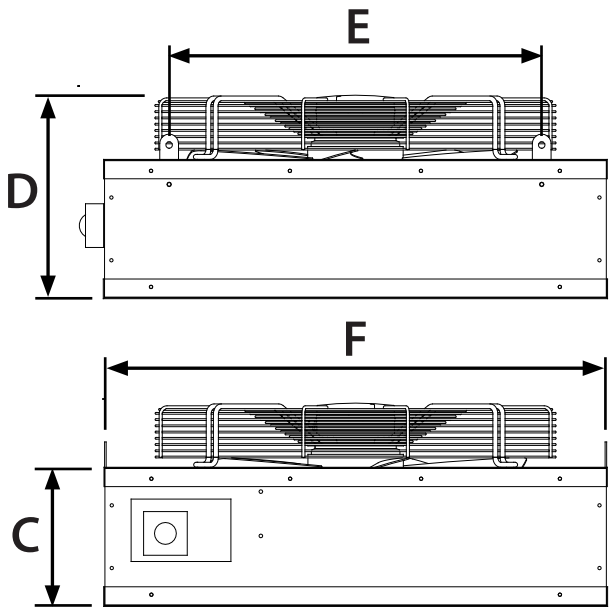
Note: access must be maintained to the Calecon units for servicing purposes.

WARNING: All Calecon units use electricity to power them and contain moving parts, the fan. It would be hazardous to tamper with or attempt to service unless you are a competent person in the field of Electrical work.

If you have any safety questions reference the servicing and installation of this equipment please do not hesitate to contact our head office for expert advice.
Your safety is paramount to us.

Dimensions





Dim	Model	CECx 1400	CECx 2250	CECx 3350	CECx 4500	CECx 6500
A	Enclosure Width	499	599	654	807	807
B	Enclosure Depth	499	599	654	807	807
C	Enclosure Height	260.5	260.5	260.5	223	223
D	Overall Height	380	380	390	390	400
E	Suspension ctrs	288	388	443	597	597
F	Suspension ctrs	493.5	593.5	647.5	802.5	802.5

1.2 Technical Data

Model			CECx 1400	CECx 2250	CECx 3350	CECx 4500	CECx 6500
Air Displacement		m^3/s	0.77	1.2	1.8	2.3	3.1
		m^3/h	2800	4467	6410	8110	11025
Mounting Height (Maximum)		m	6	12	15	17	25
Mounting Height (Suggested Minimum)		m	2.1	2.8	3.8	4.1	6.0
Electrics	Supply	V/p/H	230/1/50				
	Start Current	amps	1.3	2.9	3.1	5.6	5.7
	Run Current	amps	0.7	0.8	1.2	2.2	2.1
Dimensions	Width	mm	498	599	654	807	807
	Depth	mm	498	599	654	807	807
	Overall Height	mm	380	380	390	390	400
Nett Weight		kg	16	22	25	29	33
Noise Levels (Sound power level)		Lw_{AS} dB	59	66	66	66	68
Noise Levels (Sound pressure level) @5M, Q=2		Lp_A dB	34	41	41	41	43

1.3 General Requirements

1.2.1 Location

Calecon units will be effective in any high roofed building where temperature stratification will otherwise occur.

Units should be installed at the highest available location once the roof architecture and maximum mounting height for the unit have been taken into account (see section 1.2).

Units should be placed in positions where the downward directed airflow will not be impeded by racking or other obstructions. Ensure units are not mounted so as to obstruct the movement of overhead cranes, forklift trucks etc.

Where multiple units are being used, their positioning should ensure as even airflow pattern in the building as practicable, taking into account the positions of any affected occupants.

There should be a minimum of 1-metre free area between the top of the units and the underside of the roof.

Calecon units sited adjacent to roof glazing or large expanses of wall should be avoided as well as situated close to open flued heaters.

'Free heat' can be gained by positioning the Calecon units above heat generating lighting or machinery. Calecon units positioned close to doorways help to quickly restore comfortable conditions after door operation.

1.2.2 Electrical Supply

WARNING: Wiring external to the unit must be installed in accordance with the I.E.E. Regulations and any local regulations which apply.

Calecon units will require a 230V 50Hz 1ph fused supply to operate and are equipped with a cable gland for mains input via an isolator located adjacent to the unit.

The fan motor starting amps are approximately 3 times the full load current.

2.1 Fitting the Unit

2.1.1 General Fitting

The calecon unit is equipped with four suspension points, one on each corner. These take the form of an eyebolt.

Using either our fixing kit, chain or wire rope, connect each point to a rigid construction i.e. Unistrut, girders etc.

WARNING: Ensure the framework is adequate to take the weight of the particular destratification unit. Once the destratification fan is in position, the wiring can commence.

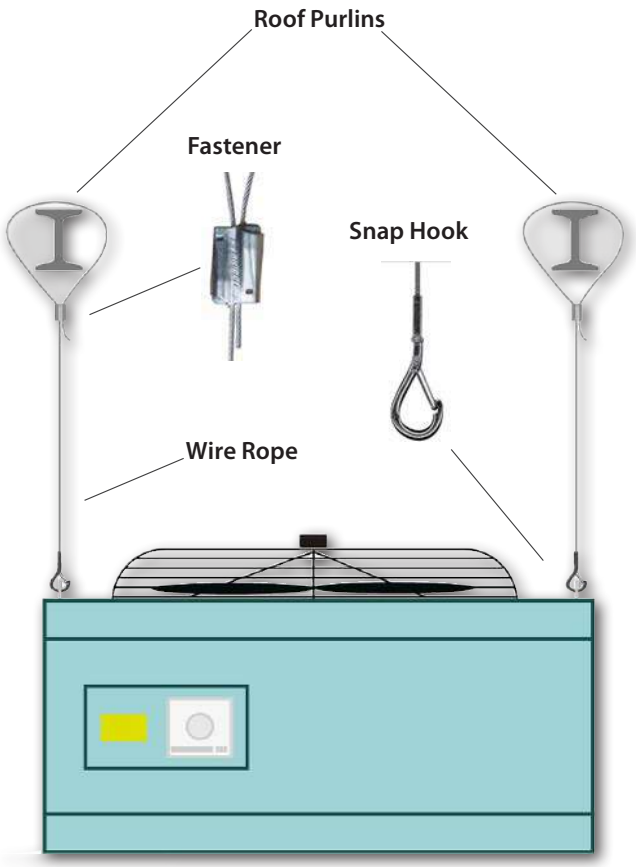
2.1.1.1 CECx Fixing Kit

The CECx fixing kit is a fast locking solution for quick and easy suspension of our CECx destratification fans.

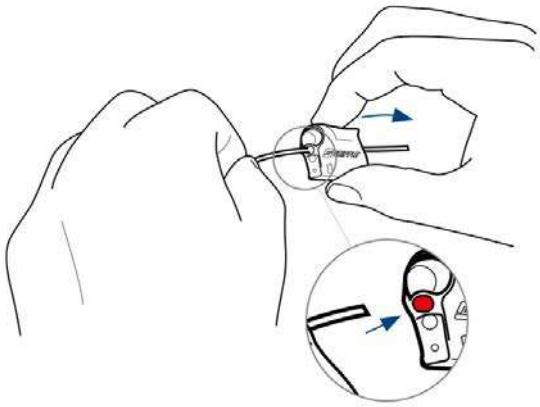
Features:

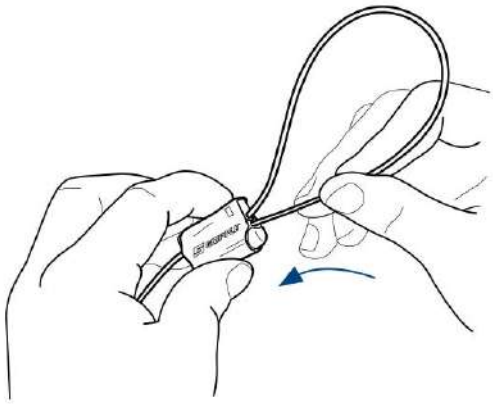
- Up to 6 times faster to install than traditional methods
- Key-less - no tool required for adjustment
- Ergonomic buttons allow rapid adjustment
- Discreet and aesthetic design
- Load rated at 45 kg per wire with a 5:1 safety factor
- Supplied as a ready-to-use kit

Installation:

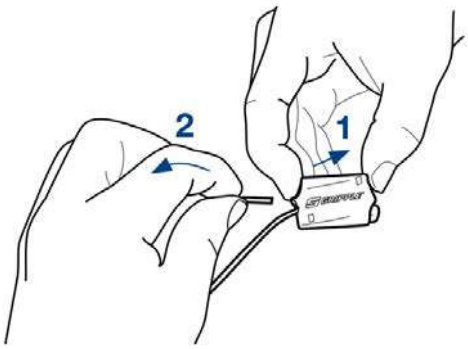


2.1.1.1.1 Connecting





2.1.1.1.2 Releasing



2.1.2. Electrical Connections

All units are fully pre-wired and only require final connections for the incoming mains supply.

The electrical supply must be run to a point adjacent to the unit and be suitably terminated to provide an isolation point that will prevent activation of the unit during servicing.

Refer to the specifications data in section 1.2 to ascertain the electrical loading of the unit(s) being installed so that cables of adequate cross-sectional area to safely carry that load are used for the electrical installation.

The length of the conductors between the cord anchorage and the terminals must be such that the current carrying conductors become taut before the earth conductor if the cable or cord slips out of the cord anchorage.

Any external controls that are used in conjunction with the units must be of an approved type.

To wire the Calecon unit:-
1. Remove the two screws securing the electrical panel to the casing and hinge down panel.

2. Pass the incoming supply cable through the cable gland on the top of the unit.

3. Connect the live and neutral wires to the terminal block. The incoming earth wire should be fitted with a ring type crimp terminal and clamped onto the earth stud using the spare nut and washer provided.

4. Tighten the cable gland and secure the electrical panel back to the casing.

2.1.3. Speed Control Units

Manual, or temperature controlled, speed regulators may be used in conjunction with Calecon units to provide greater system flexibility.

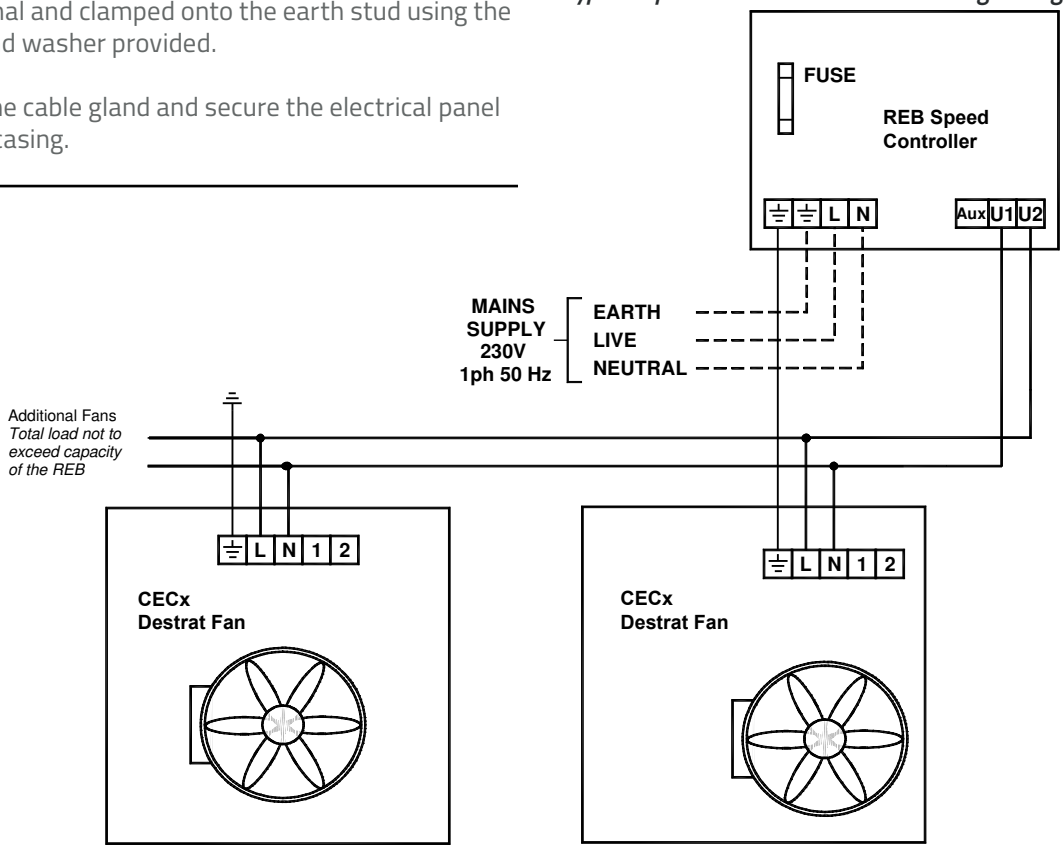
Note: A calculation based on building volume is used to provide the correct model size and quantity of Calecon units to effectively distribute the heat throughout the space enabling stratification to a minimum and result in a very small temperature gradient between the working zone and the roof space. The use of speed control units could have an adverse affect on this result.

Powrmatic can supply speed controllers for certain models.

3Amp speed controller
(can be used with a maximum of 2 Calecon1400 or a single Calecon 2250)

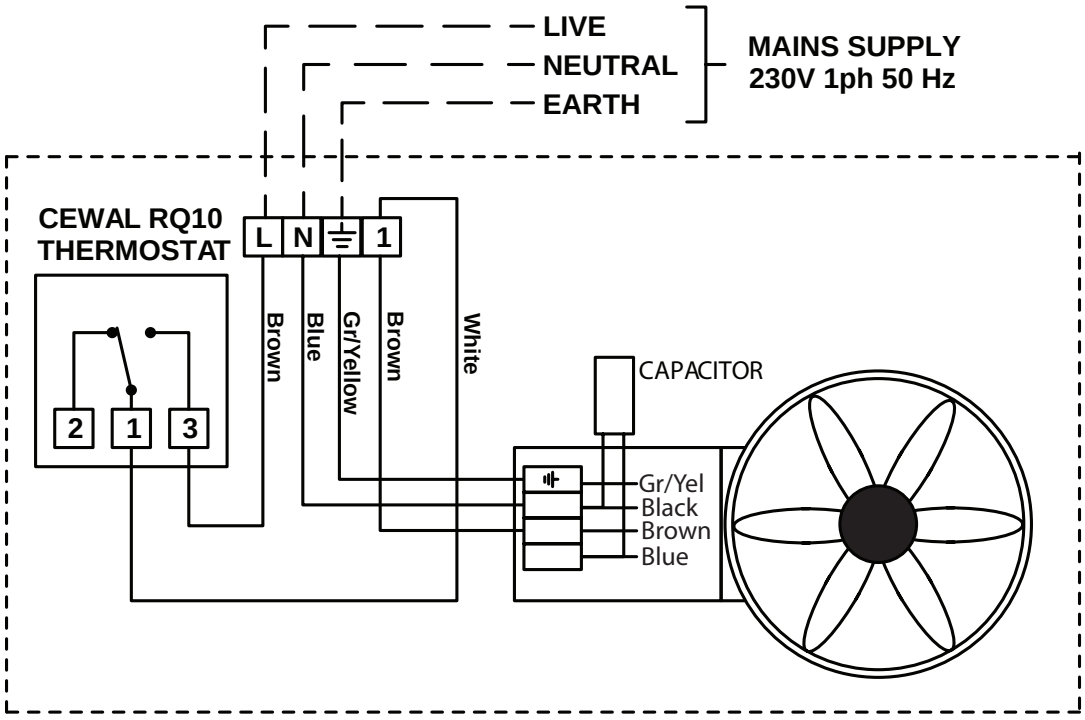
If the speed regulators are not of Powrmatic supply, it must be established that they are compatible with the Calecon units. Refer to section 1.2 for max amps of Calecon.

Typical speed controller interconnecting wiring

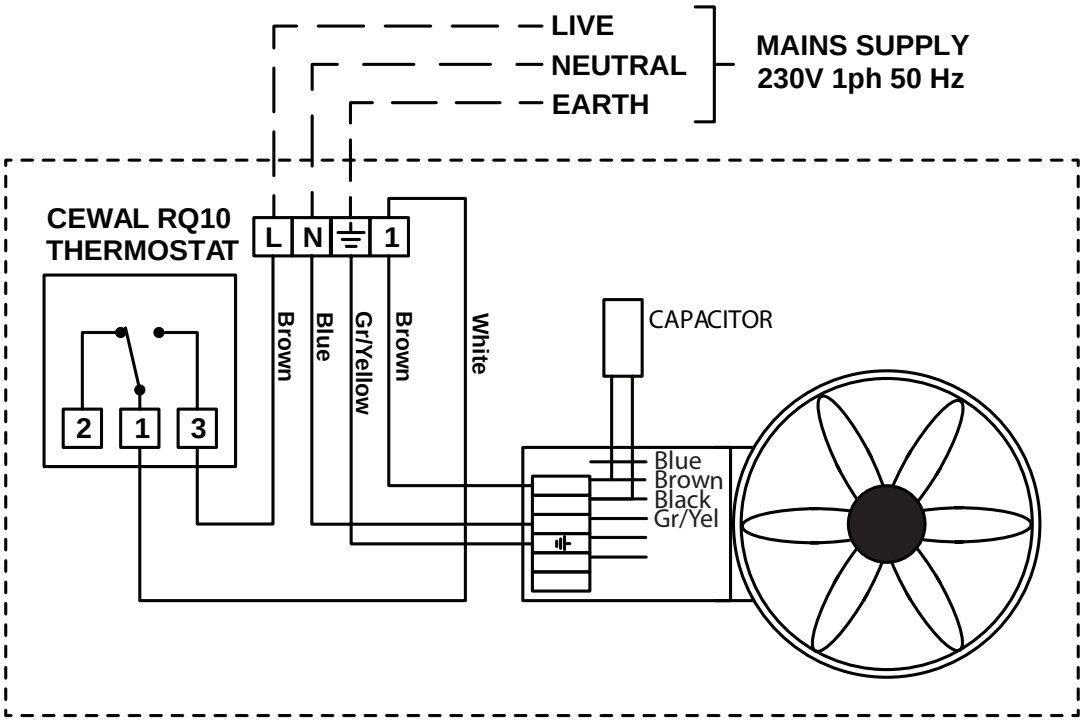


2.2 Wiring Diagrams

2.2.1 1ph Calecon CECx1400/2250/3350 - REMCO Fans



2.2.2 1ph Calecon CECx4500 & CECx6500 - EBM Fans



2.3 Commissioning and Testing

2.3.1. Electrical Installation

Checks to ensure electrical safety must be carried out by a qualified person.

2.3.2. Final Adjustments and Testing

WARNING: When the electrical supply is turned on the unit may start immediately depending on the ambient temperature.

- Turn the thermostat on the side of the unit to its lowest setting.

- Turn on the electrical supply and the fan should run.

- Adjust the outlet louvres to give the required air pattern and floor level air velocity viz. Louvres at 45° will give a wide spread pattern and lower floor level air velocities, louvres at 90° will give a narrow throw pattern and higher floor level air velocities. Do not over turn the louvres as this can cause damage.

- Set the thermostat to the required value, normally 2° to 3° above the design temperature of the building.

The unit is now ready for operation.

2.4 Servicing

WARNING: Before undertaking any servicing turn off and isolate the electrical supply. Use a safe means of access.

Note: Units should be serviced at least annually.
Motors are sealed for life and do not require servicing.

1. Remove the two screws securing the electrical panel to the casing and hinge down panel.

2. Disconnect the incoming electrical connections and the earth lead. Release the locking nut of the cable gland on the top of the unit and withdraw the incoming supply cable.

3. Release the unit from its suspension points and lower to a safe working area.

4. Remove the four bolts securing the fan to the casing and lift out fan.

5. Clean off any build up of dust.

6. Ensure that the ventilation slots of the thermostat are clear.

7. Reassemble unit in reverse order and reinstall.

2.5 Replacement of Faulty Components

WARNING: Before undertaking any component replacement turn off and isolate the electrical supply.

2.5.1 Fan

1. Remove the two screws securing the electrical panel to the casing and hinge down panel.

2. Disconnect the incoming electrical connections and the earth lead. Release the locking nut of the cable gland on the top of the unit and withdraw the incoming supply cable.

3. Release the unit from its suspension points and lower to a safe working area.

4. Remove the four bolts securing the fan to the casing and lift out fan.

5. Remove terminal box cover from motor and disconnect motor wiring.

6. Check that replacement fan is of the correct type.

7. Reassemble unit in reverse order and reinstall.

2.5.2 Thermostat

1. Pull off the thermostat cover, whilst pushing in the side retaining tabs with a small screwdriver, and disconnect electrical connections.

2. Remove the two screws securing the thermostat to the electrical panel.

3. Reassemble in reverse order.

3.1 List of Parts

Item	Description	Usage	Part No.
	Main Air Fan	CECx1400 CECx2250 CECx3350 CECx4500 CECx6500	PM-6-400-B-15 PM-6-500-B-15 PM-6-550-B-15 140232006/E/15 140232007/E/15
	Thermostat	All	143000534
	CECx Fixing Kit	All	CECXFIX