BOSS™ Copperad®

BOSS™ COPPERAD CT SOLO PLUS

Instruction, Operation and Maintenance Manual

OVER
100 YEARS
OF QUALITY

Contents

1.1 GENERAL Description

The BOSS™ Copperad CT Solo Plus is a self-contained fan convector heater designed for recessed installation into suspended T bar or plasterboard ceiling. The unit can be freely suspended if required. The unit is designed for use against low temperature hot water associated with heat pumps and condensing boilers.

Size WxLxH	595mm x 595mm x 260mm
Weight	20kg
Power supply	230V/1Ph/50Hz
Fan type	Forward curved double inlet
Motor type	EC (brushless DC)
Maximum power draw	38W
Hot water connections	15mm copper

Table 1. General specification

1.2 GENERAL Receipt and Preparation

The units are wrapped and display the BOSS™ Copperad works order number, model reference, site reference (where appropriate), and site details.

On receipt, check that all details are correct to the customer schedules prior to opening the packaging. Damages should be reported to your local BSS branch and to the BOSS™ Copperad Technical Department immediately (see back page for contact details).

It is recommended that the packaging is kept in place and the units stored in a safe dry area until the necessary services are complete in order to avoid the possibility of site damage.

2.1 INSTALLATION
Key sizes, dimensions and weight

Units should be installed at a minimum of 1.8m above the floor and a recommended maximum height of 3m.

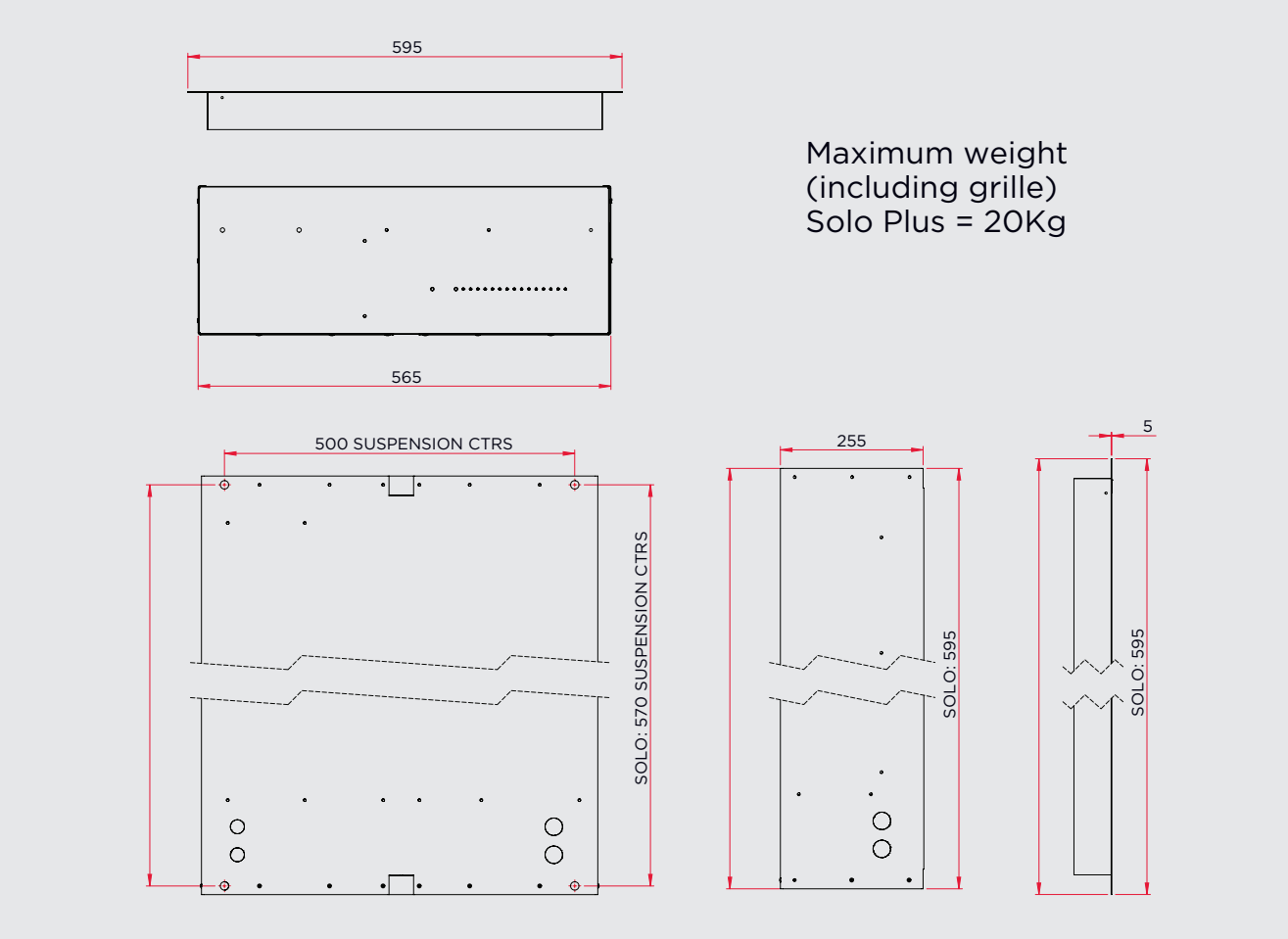


Figure 1

2.2 INSTALLATION
Installation into a suspended/T bar ceiling

The BOSS™ Copperad CT Solo Plus has a nominal size of 600mm x 600mm and is suitable for replacing a standard ceiling tile. The inlet/outlet eggcrate grille will sit inside the suspension bars and the grille core is hinged to allow internal access. Ceiling tiles adjacent to the position of the unit should be removed during installation to allow unimpeded access around the exterior of the unit.

The units are suitable for suspension using either rod or wire but always of a gauge commensurate with the weight of the unit shown above (minimum 14 swg galvanised steel wire). Having marked and fitted ceiling anchors the unit should be secured to these via the holes provided in the turned out flanges on the top of the casing. The grille is laid onto the suspensions/T bars and the height of the suspended unit can then be adjusted to fit around the flanges of the grille.

Ensure that the grille is oriented in such a way that the hinge is on the side indicated or it will not sit flush or open properly.

The unit must not be allowed to rest just on the suspended ceiling without attachment to the soffit/ main ceiling which is load bearing.

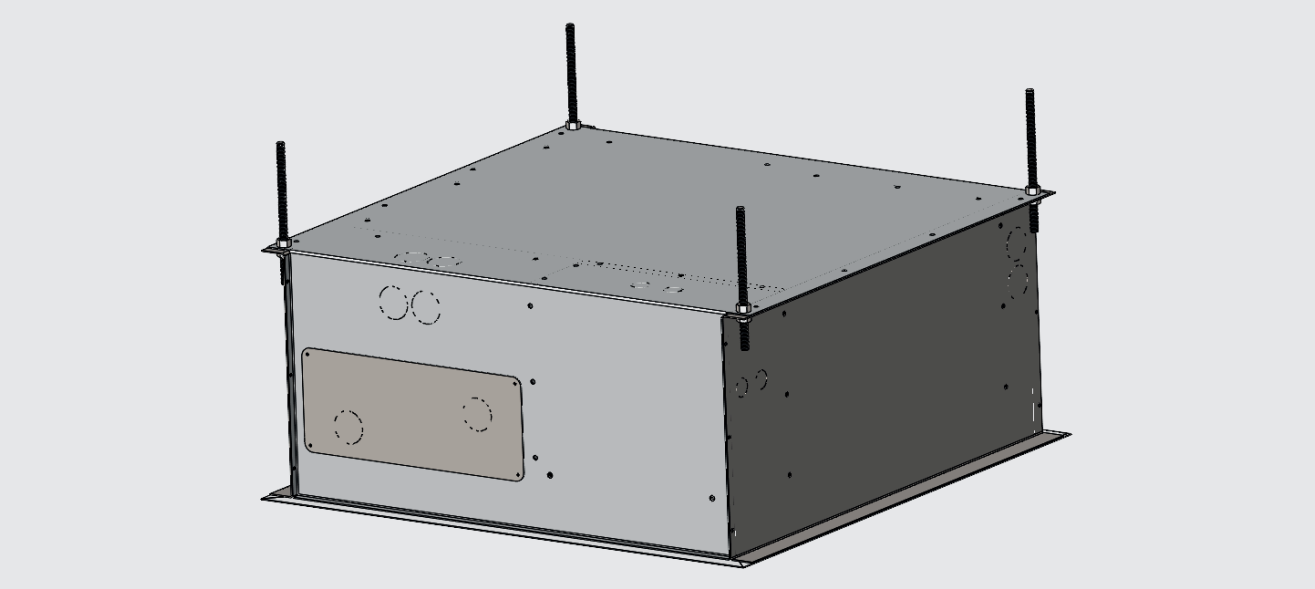


Figure 2. Ceiling mounting

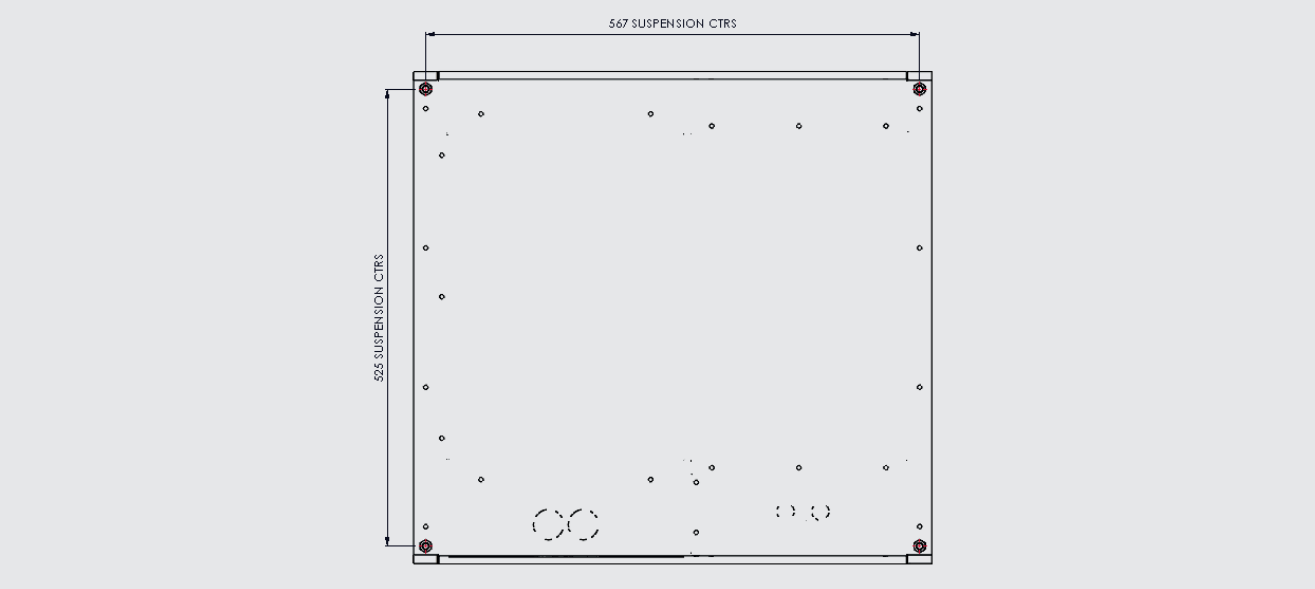


Figure 3. Mounting hole positions

2.3 INSTALLATION
Installation into a plasterboard ceiling

Note: Access into the ceiling void is required for installation.

The same four suspension holes on the flanges of the casing are used as above and the ceiling needs to be marked out and appropriate anchors fitted.

The plasterboard needs to be cut prior to installing the unit; an aperture of 575mm x 575mm is required.

The unit should be passed through the plasterboard and secured to the ceiling using rod or wires attached to the anchors (minimum 14 swg galvanised steel wire). The height of the unit should then be adjusted such that it finishes just above the level of the plasterboard.

The grille is located just below the plasterboard and pushed upwards such that the flanges of the grille pass into the unit itself. A 3.5mm bit should be used in 4 places (2 on one side, 2 opposite) and drilled through the grille and unit sides to be used to hold the grille in position. The 3.5mm holes in the grille flange should be opened out to 5mm and No.8 screws used to hold it in position.

Figure 4

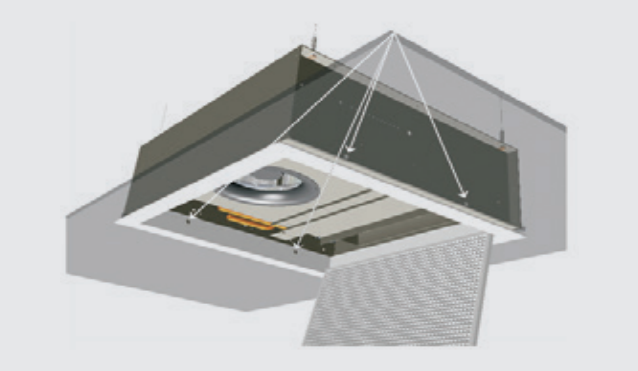


Figure 5

2.4 INSTALLATION
Free-hanging

While the units are intended for recessed installation they can be free-hanging if required. The units should be suspended from the ceiling as above and the grille attached to the unit as in the instructions for plasterboard installation given above.

3 PIPEWORK CONNECTIONS

The unit is supplied with a heat exchanger which terminates in 15mm copper pipes. When installed it is important that the flow and return are made to the correct connection in order to optimise the heat output of this unit. The flow connection must be made on the upper connection and the return on the lower connection. See diagram below.

There is an aperture on the side of the unit adjacent to the internal pipe terminations. This is held in place by self-tapping screws and can be removed when piping up to provide enhanced access. Flexible connectors are ideal for the final connection to the unit; these can be push-fit or compression. Particularly for push-fit connections, but in general, the ends of the pipes must be subject to a final deburr and rounding to ensure a robust joint.

The upper flow connection will be connected to pipework which is likely to form a high point and air vents should be fitted in the pipework at high points to prevent any airlocks. Air vents should be automatic unless they are to be regularly serviced.

There are a number of knock-outs provided in the unit casing and these can be used to introduce the pipework. Alternatively holes can be cut in the sides or top of the unit though care must be exercised so as not to damage any internal components.

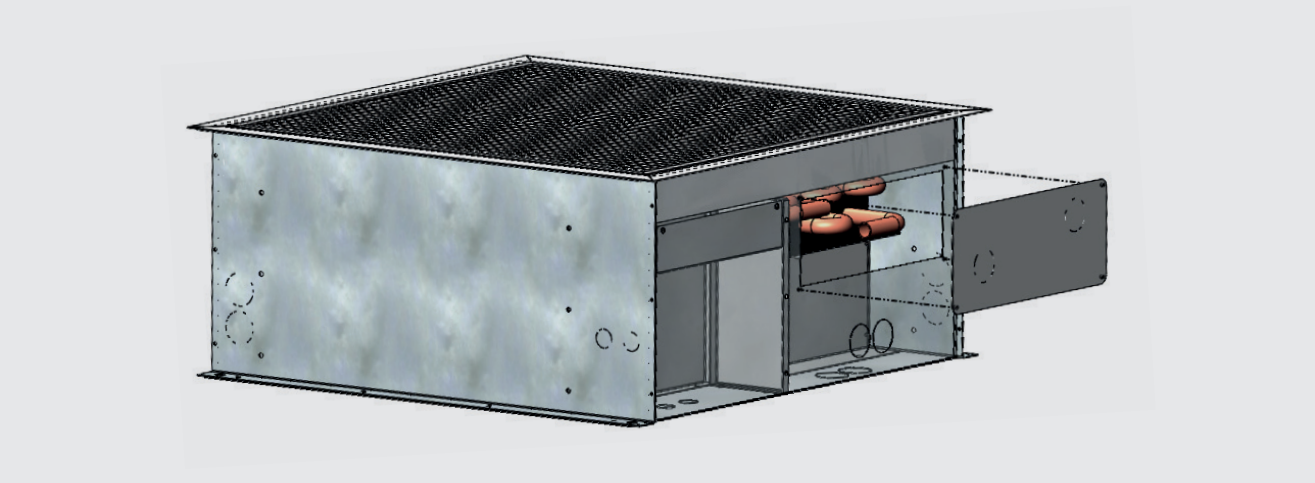


Figure 6. Pipe connection panel and knock-outs

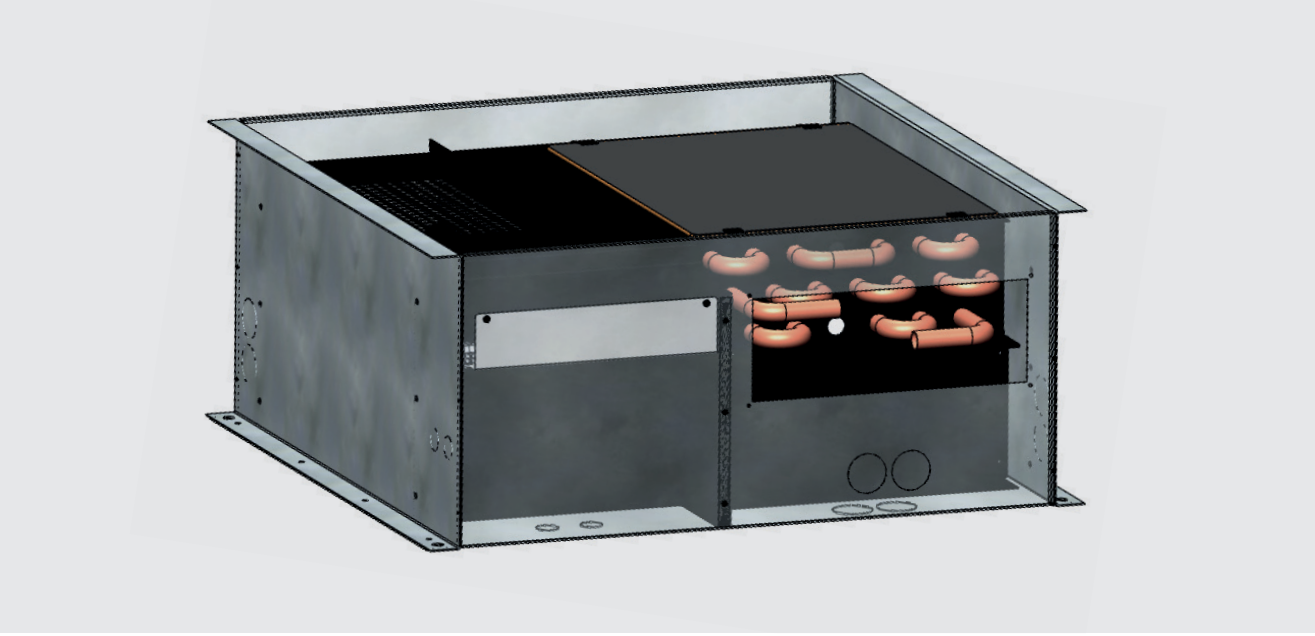


Figure 7. Coil and pipe connections

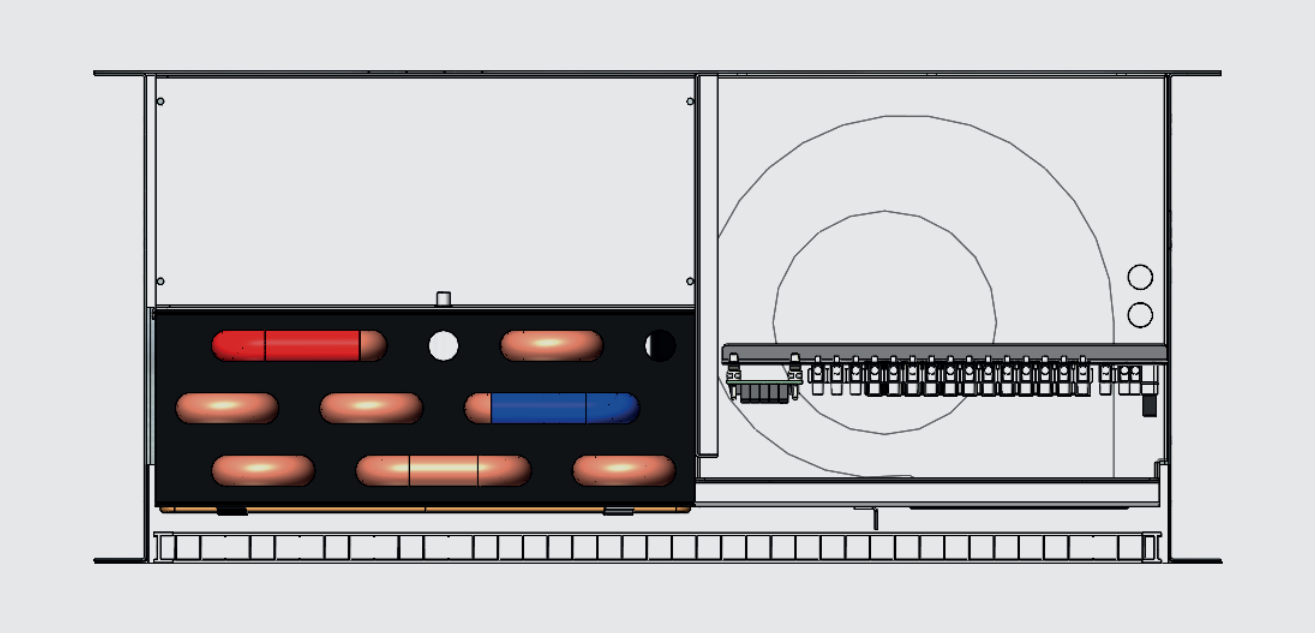


Figure 8. Flow connection at top, return connection closest to grille

4.1 WIRING
General

Units incorporate high efficiency EC motors directly coupled to the fan. Power to the units is from a standard 230V/1Ph/50Hz supply and transformation and rectification is provided by the motor. The table above gives details of the power draw.

All wiring should be undertaken by a certified electrician in line with the latest version of the wiring regulations. The unit should be isolated prior to working on it or opening the hinged grille. It is recommended that each unit is powered from a dedicated fused/switched spur. An earth connection must be provided as part of the power supply.

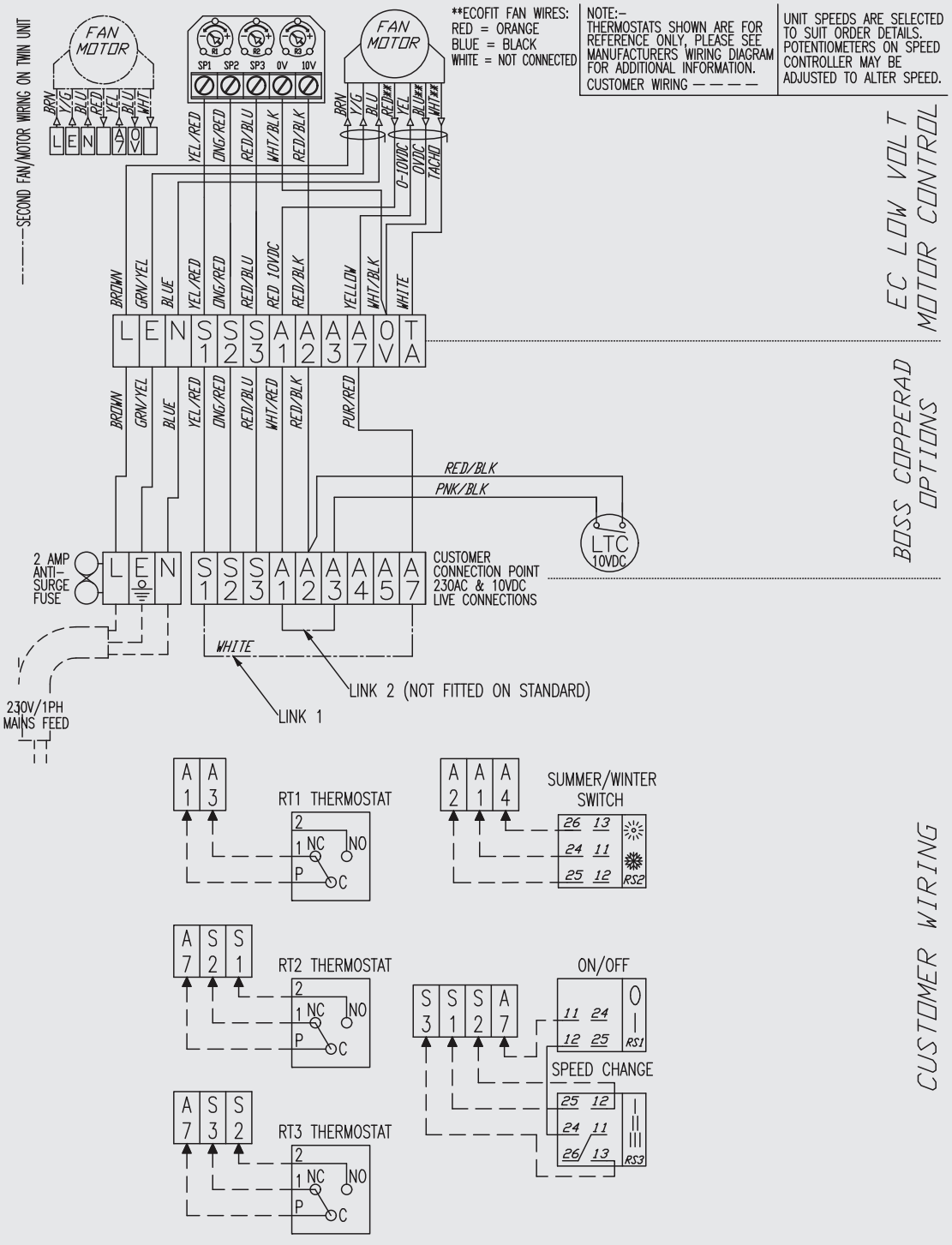
Electrical connections, both power and control, are made direct to a terminal block in the electrical housing inside the unit. Knock-outs are provided for cable entry or holes can be cut in other place ensuring that no internal components are damaged. All cable openings must have glands/grommets.

4.2 WIRING
Control Wiring

A wiring diagram showing customer connections is included with each unit. For wiring other than with the standard available options, the BOSS™ Copperad Technical Department should be contacted. Please see the back page for contact details.

Below is the standard wiring diagram for the unit. Please refer to the wiring diagram supplied with your unit for your order.

CT/CT Plus wiring



5 STANDARD CONTROL OPTIONS

A range of control options are available with the unit and a wiring diagram is provided with each. Controls for CT Solo Plus units will be remote and will consist of on/off, change speed or proportional thermostats along with on/off, change speed and summer/winter switches. If the wiring diagram is not available or lost then please contact BSS.

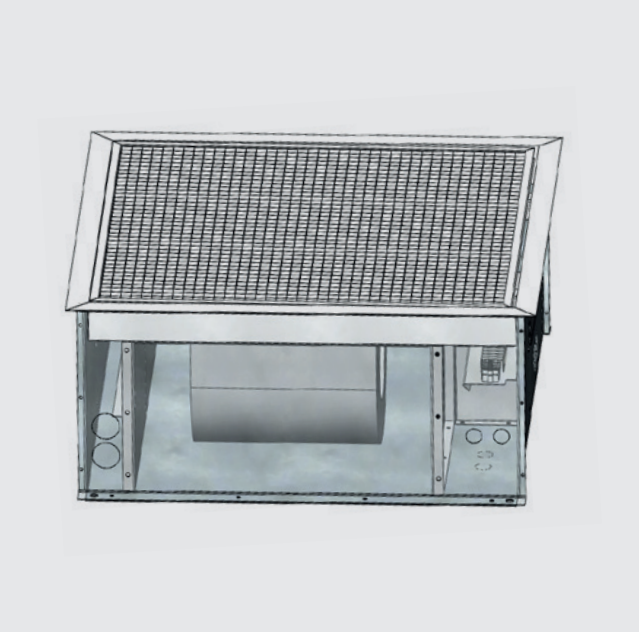


Figure 9. Terminal block and wiring knock-outs

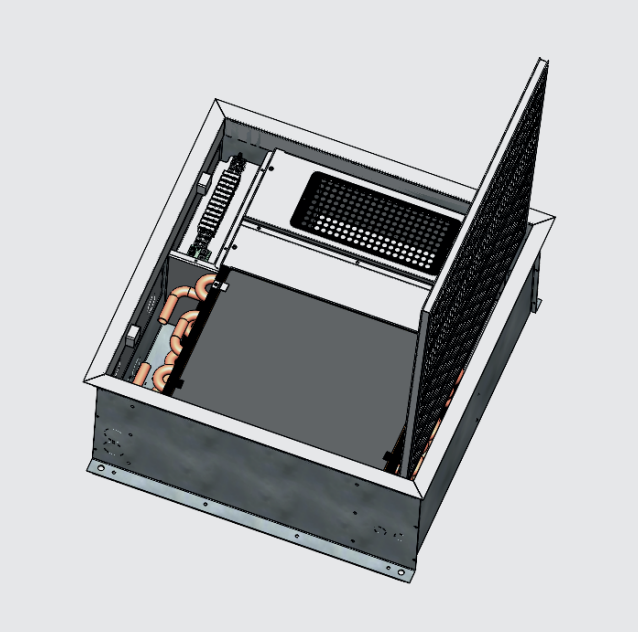


Figure 10. Terminal block position

6 COMMISSIONING

Commissioning of CT Solo Plus heaters requires the following:

- Check rotation of all fans
- Check leaving air temperature
- Check operation of any controls
- Check no excessive and/or unexpected noise

7.1 MAINTENANCE
General

Warning! Electrically isolate the unit prior to commencing work.

7.2 MAINTENANCE
Opening the centre section of the grille

The hinged centre section is retained by “press-to-release” clips. Press the edge of the grille up where the catches are visible through the grille, the centre section will then hinge down. To close the grille, push the centre section back up until the clips are engaged. See Figure (11).

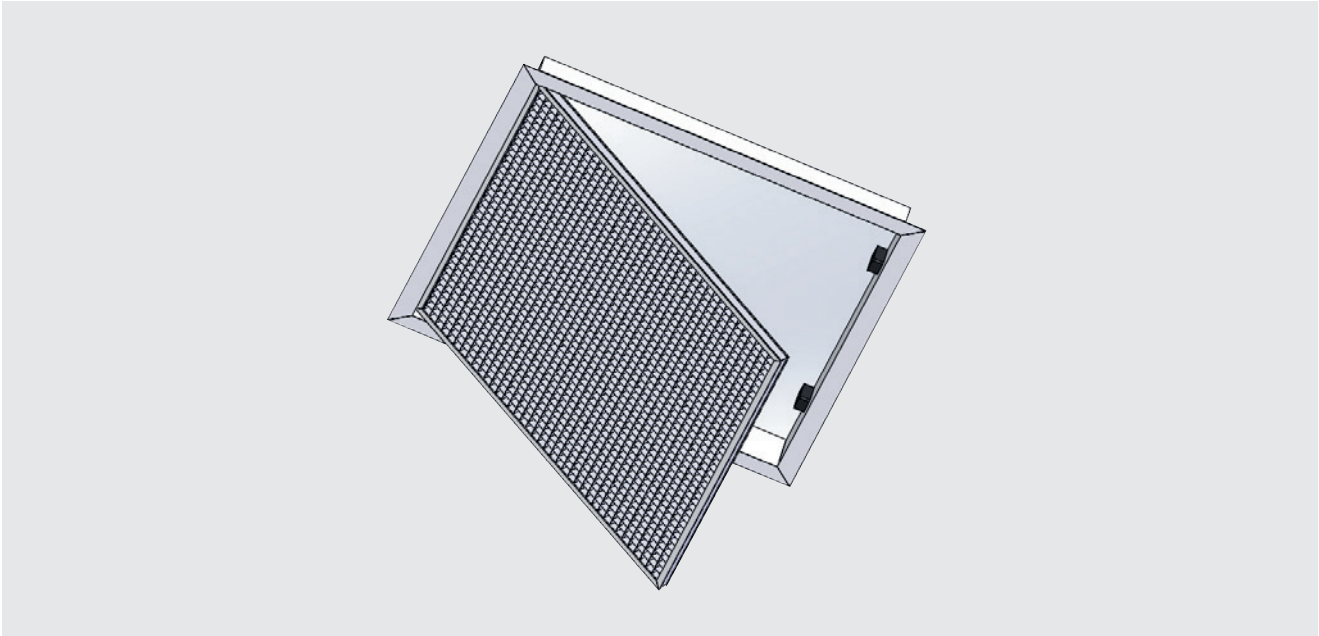


Figure 11

7.3 MAINTENANCE
Filter

Filters should be cleaned regularly in order to maintain unit performance. The filter is located behind the shallow U-section metal strip held in place with wing-nuts. To remove, loosen the wing nuts and slide metal cover aside to expose filter. Extract the filter using the fitted loop. To refit locate filter within internal runners and push home. Cover with metal section and tighten wing-nuts.

7.4 MAINTENANCE
Coil

To periodically clean the coil it is necessary to remove the filter cover section and fan cover plate. The coil can then be carefully cleaned with a brush or vacuum cleaner. Care should be taken to avoid damaging the coil surface.

7.5 MAINTENANCE
Fan set

The fan/motor set has sealed for life bearings which should not require any user maintenance.

7.6 MAINTENANCE
Fusing

Fan motor fuses anti-surge 20mm x 5mm 2A to BS 4265/IEC127.

7.7 MAINTENANCE
Spares list

Item	Code
2A Fuse	33 / 114
Filter	CT600+ FILTER ASSY
ALTC	ALTC
Fan/Motor Set	CT600+ MOTOR ASSY
Coil	CM 2436

8 FAULT FINDING

Below is a list of common faults and the steps required to resolve them.

All electrical investigations must be performed by a qualified electrician.

Fault	Cause	Remedy
Fan not running	No power	Check electricity supply to unit.
	Fuse blown	Check fuse on fan box.
		Check unit fuse and any circuit breakers.
	Controls	Check switches.
		Check controls are not preventing fan(s) from operating.
		Check controls are not preventing fan from energising.
	Damaged fan/motor	Replace faulty fan assembly.
		Check impeller runs freely.
Low leaving air temperature	Controls	Check controls are not preventing valves from opening in the pipework external to the unit.
	No/low water flow and/or temperature	Ensure good flow of hot water to the unit.
		Check for excessive temperature drop between flow and return pipes.
		Check temperature of hot water to the unit.
No heating – LPHW	Controls	Check LTC contact on pipework.
		Check integrity of wiring.
		Check thermostat operation (if fitted).
	Heat Exchanger	Check coil is vented.

9 DISPOSAL

Units have a heat exchanger from copper tubes and aluminium fins. The units include fan assemblies from mixed materials and printed circuit boards which should be disposed of separately and in line with WEEE directives. It is not recommended that the units are disposed of with domestic waste but that the components are recycled as far as possible.

BOSS™ Copperad®

For further technical support, please contact the BOSS™ Technical Team on 03330 341920 or email bosstechnicalteam@bssgroup.com

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