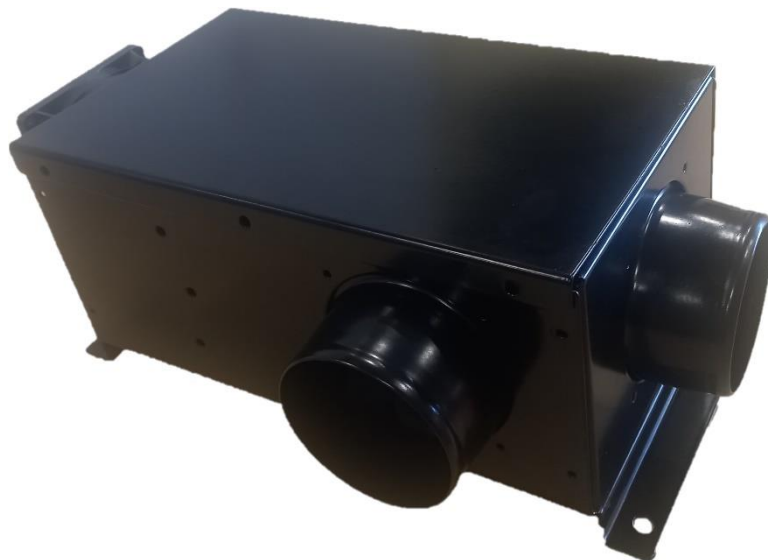

REMOTE HEATING UNIT (RHU)

Information booklet

All repairs, maintenance, and installations must be overseen by qualified personnel



JUNE 23, 2020

RENCOOL

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Schematic Diagram

Specifications

Outlets

1,2 or 3 outlets (built to order)

Size

300 x 150 x 125 mm (not including outlets)

Outlets + 35mm

Fan

Brushless 80mm 50,000 MTF.

Globes

10,000 cycle DC thermal rose quartz elements

12V 200W 18A stabilised current draw

24V 250W 11A stabilised current draw

Frame

Powdercoated steel frame

Protection

Dual internal overtemperature protection

Mains switching

Remote solid-state relay supplied

Heating capacity

from 200 W - 1KW

12 VDC: Minimum requirement of power input of 10 VDC and max of 16 VDC.

24 VDC: Minimum requirement of power input of 20 VDC and max of 31 VDC

RHU Requirement

Rencool Units

- Rencool DC voltage HVAC systems are designed to work from the Engine Alternator and/or from other power sources such as Batteries, Solar, and Wind Turbines producing DC Voltage power from 12 to 48 VDC. The below is only a guideline for amp draw (Power Consumption) of the HVAC system using 12 / 24-VDC.
- Amp draw is dependent on the Voltage & Wattage of the unit.
- **Note:** inrush current of the cold globe is approximate + 60% of stable current draw

Heating capacity from 200 W - 1KW

- 12 VDC: Minimum requirement of power input of 10 VDC and max of 16 VDC.
- 24 VDC: Minimum requirement of power input of 20 VDC and max of 31 VDC

Connecting Power Cables

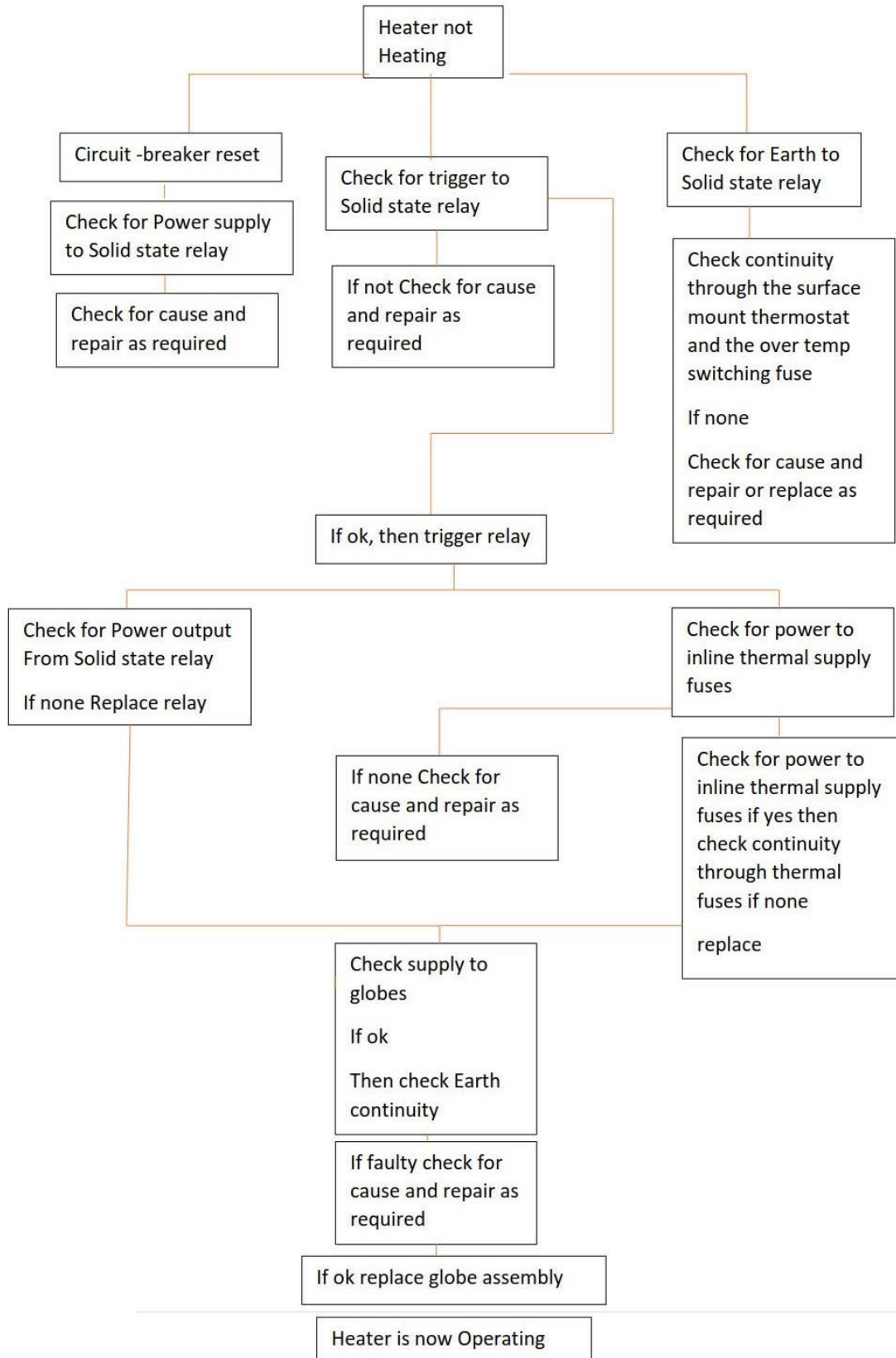
- A minimum of 6mm copper insulated automotive cabling **MUST BE** used. Failing to use the recommended cabling could result in high current consumption, high resistance, and overall poor performance from the DC voltage HVAC system. Length of cabling **MUST BE** calculated so resistance is kept to a minimum.

Working with Heater systems

- **Do not use test lights or analogue meters to test circuits these can cause voltage shifts which can cause damage.**
- **Use Digital Meters only**
- Conduct regular general inspections of the condition and ensure there are no broken or damaged items.
- Ensure airflow back to the RHU is achieved to provide the airflow to the unit to maintain optimal conditions.

Trouble Shooting

Trouble Shooting - Heater block diagnoses



General Operational Assessment

- Assess the engine is running when testing
- Ensure the Alternator is charging above 12VDC or 24VDC depending on system voltage while the unit is turned on
- Ensure the Internal fan working at all speeds
- Ensure Thermostat is working

- Note: power cables to the Alternator should be at least the size of the cabling to support the full current rating of the alternator to the battery circuit to avoid voltage drop.

- Other things to consider if performance is unsatisfactory:
 - Assess all fuses
 - Assess all plug connections
 - Assess for gas leaks (look for fresh oil marks)
 - fans not working
 - Assess for physical obstruction (sticks etc.)
 - Assess relays
 - Assess terminal connections

- Ensure airflow back to the RHU is occurring and keep the RHU cool and operating in optimal conditions.
- Continual running of the RHUs on full cooling is **not** the best way to make your RHU last, to achieve less wear to your unit set it to the most energy-efficient thermostat setting.
- Note although the RHU has internal safety control such as over-temp is not cabin control temperature if temperature control is required an external control method is required.
- All RHU systems must be circuit protected with an appropriate system.

Disclaimer

Please Note:

Rencool takes no liability for improper calculation on power inputs from alternators or any other such power supplies including **AC** (Alternating Current) to supply to any Rencool DC HVAC RHU and/or full complete for units containing our MD or DRK7/& 8 series RHUs on complete unit systems.

Your alternator can cope with your calculated other power consumptions on the truck, machine, Van, or any type of vehicle mobile or stationary, etc used while in use must be sufficient to do all is required to run the truck, machine, Van, or any type of vehicle mobile or stationary, etc. We recommend always best to consult Auto-Electrician for these calculations. Original power cables, the electrical system installed on the truck, machine, Van, or any type of vehicle mobile or stationary, etc must also be sufficient to handle the extra load from the Rencool RHU and/or complete system.

Rencool staff will share any information on our systems they made need answering regards to the RHU and/or complete system/s you are considering purchasing so you or your Electrician/s can be sure the calculations are correct.

The design of the installation is the responsibility of the installer and Rencool will not be held responsible for incorrect or mishandled installations.

Rencool DC HVAC Systems

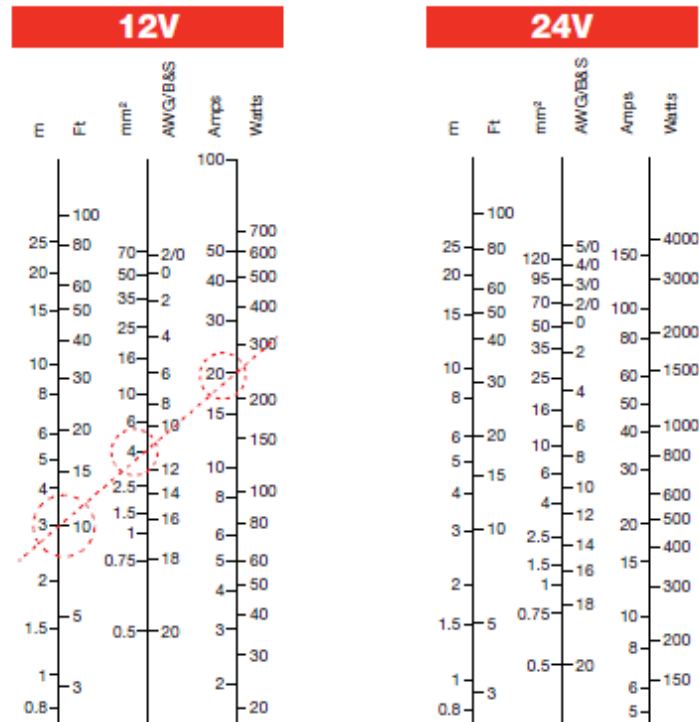
[A better shade of green](#)

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Annex A - Cable guide

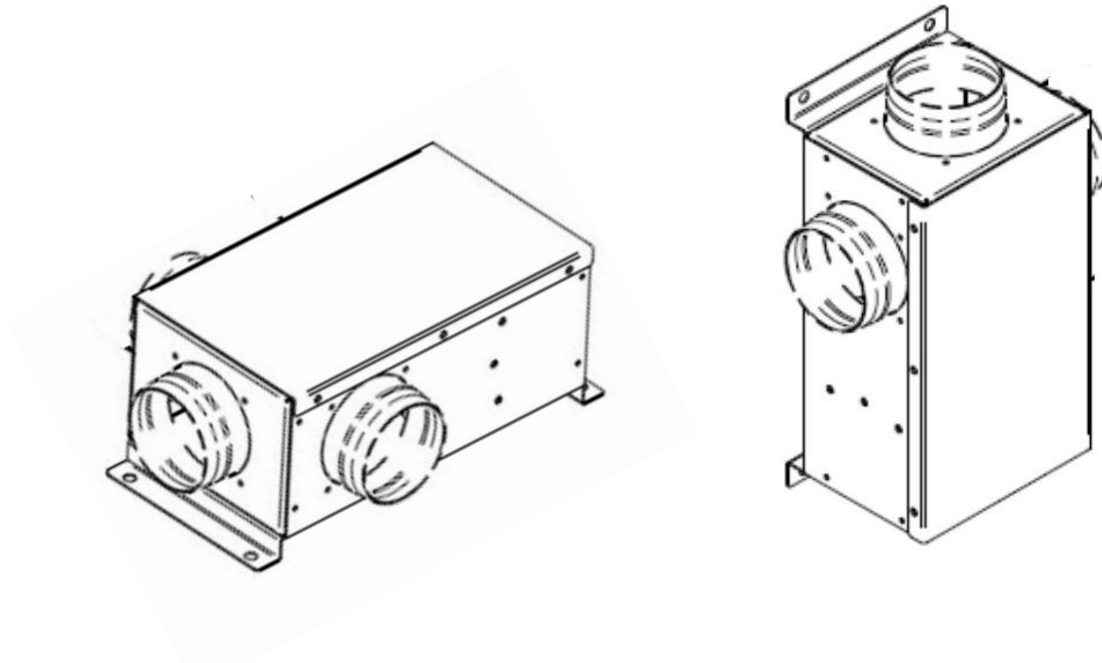
The below diagram will advise the minimum required wire gauge for a given cable length and the current draw or wattage. Simply draw a line from the required cable length (meters or feet), to the required current draw or wattage figure. Where the line passes through the gauge column will indicate the required wire gauge.

The example shows a BCDC1220 install with a total cable length of 3 metres. The chart suggests a 4mm² cross sectional area to handle the 20A maximum current draw.



Annex B - Mount RHU

Mount RHU with the outlet horizontally or the front outlet facing up.



Be sure airflow is good and nothing heat-sensitive is in the immediate surrounding area.

Please see below for possible configurations







