

THE POWER OF
REDARC



REDVISION VEHICLE MANAGEMENT SYSTEM INTERMEDIATE

IN THIS MODULE

1. The R-Bus 'Spine' Explained
2. Mounting Instructions
3. DC Cable Size Requirements & Digital I/Os
4. Fuses and Override Switches
5. Battery & Charger Connection
6. Water Level Sensors
7. Optional Inverter Connection
8. Video

THE R-BUS 'SPINE' EXPLAINED

R-Bus and CANBus systems include devices designed to work in a daisy-chain network. A terminating resistor must be present at each end to terminate the network.

All current REDARC R-Bus compatible devices (except the Manager Battery Sensor) now feature 2x RJ45 sockets allowing simple integration into the R-Bus network as outlined in Diagram 1. The device becomes a part of the R-Bus spine, where previously the network design had some devices as an offshoot of the spine, which limited the allowable install distance of the device from the spine to 2m.

The REDARC Manager 30 Sensor has this resistor built in, thus removing the need to add an extra terminating resistor to one end of the system. The other end of the network should be terminated by inserting the supplied Terminating Resistor into the last device in the network (for example, into the RedVision Display in Diagram 2).

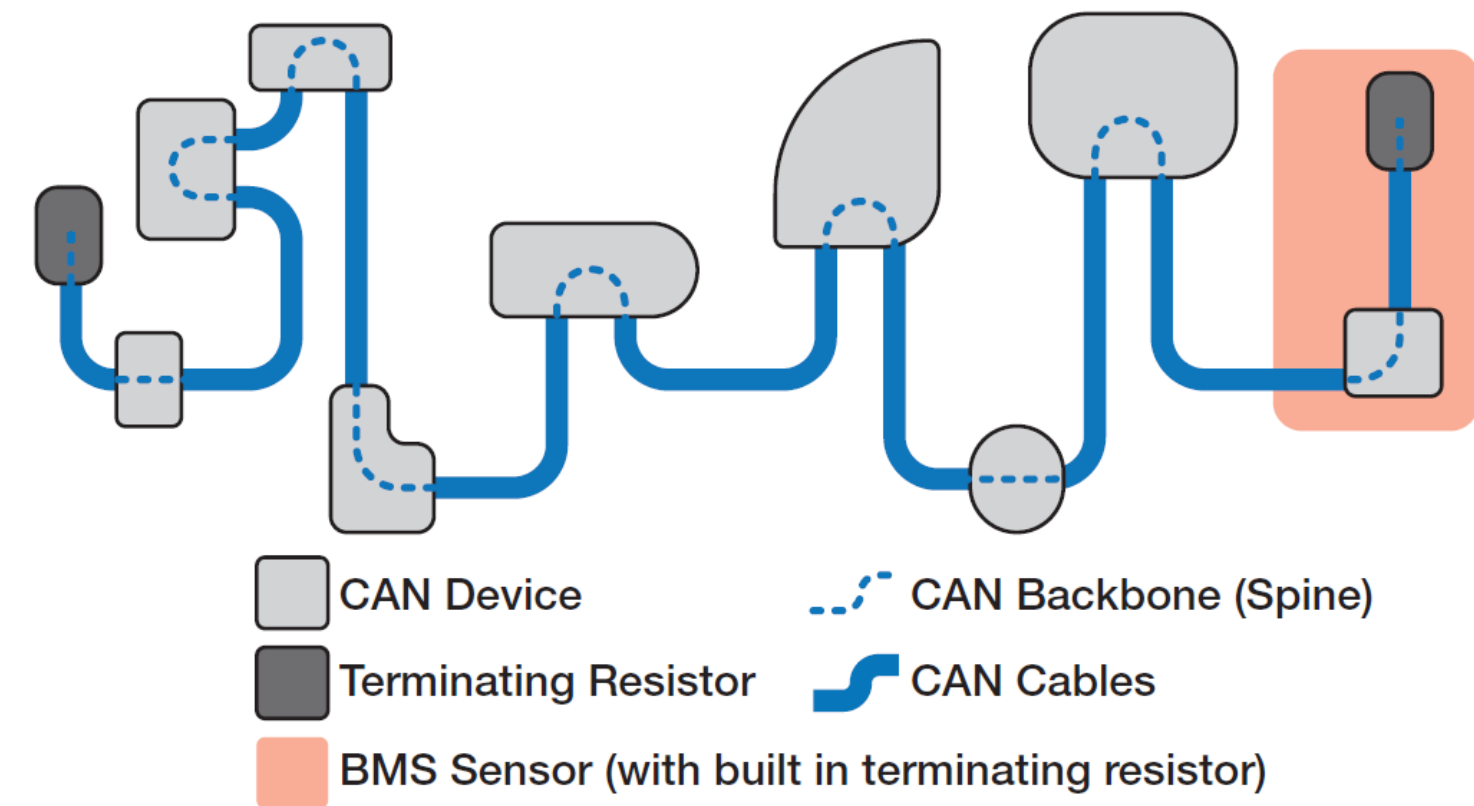


Diagram 1 - A typical CAN network

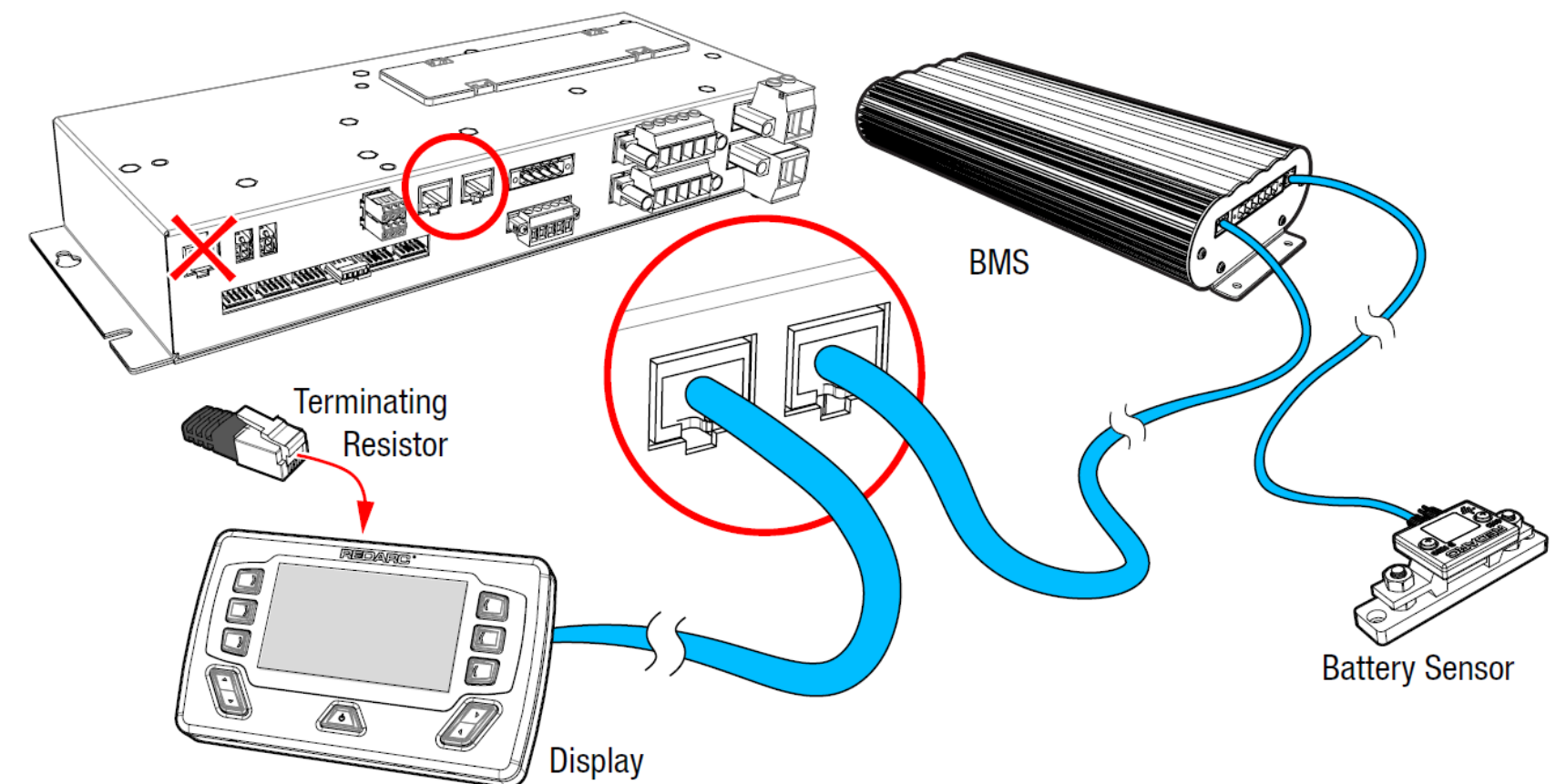


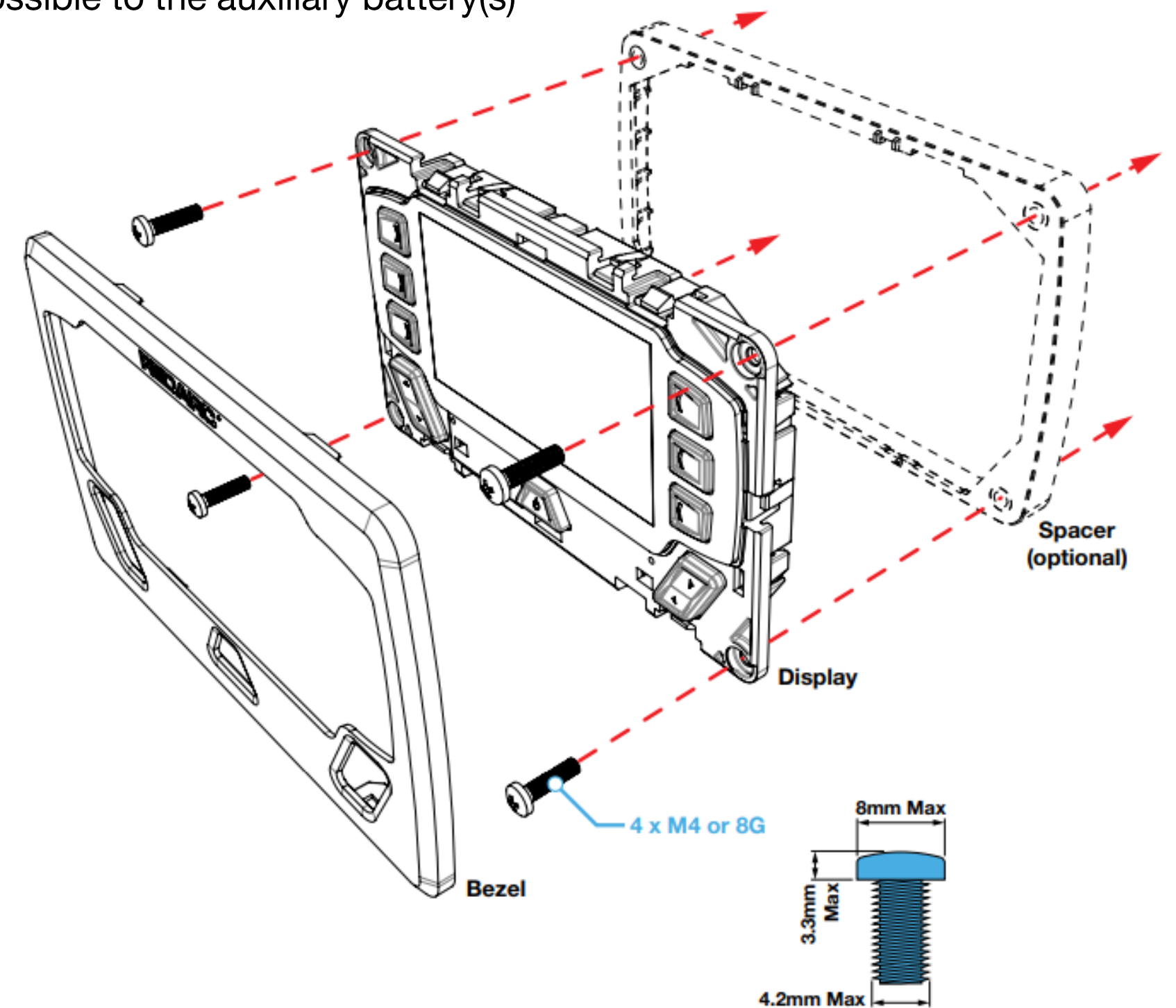
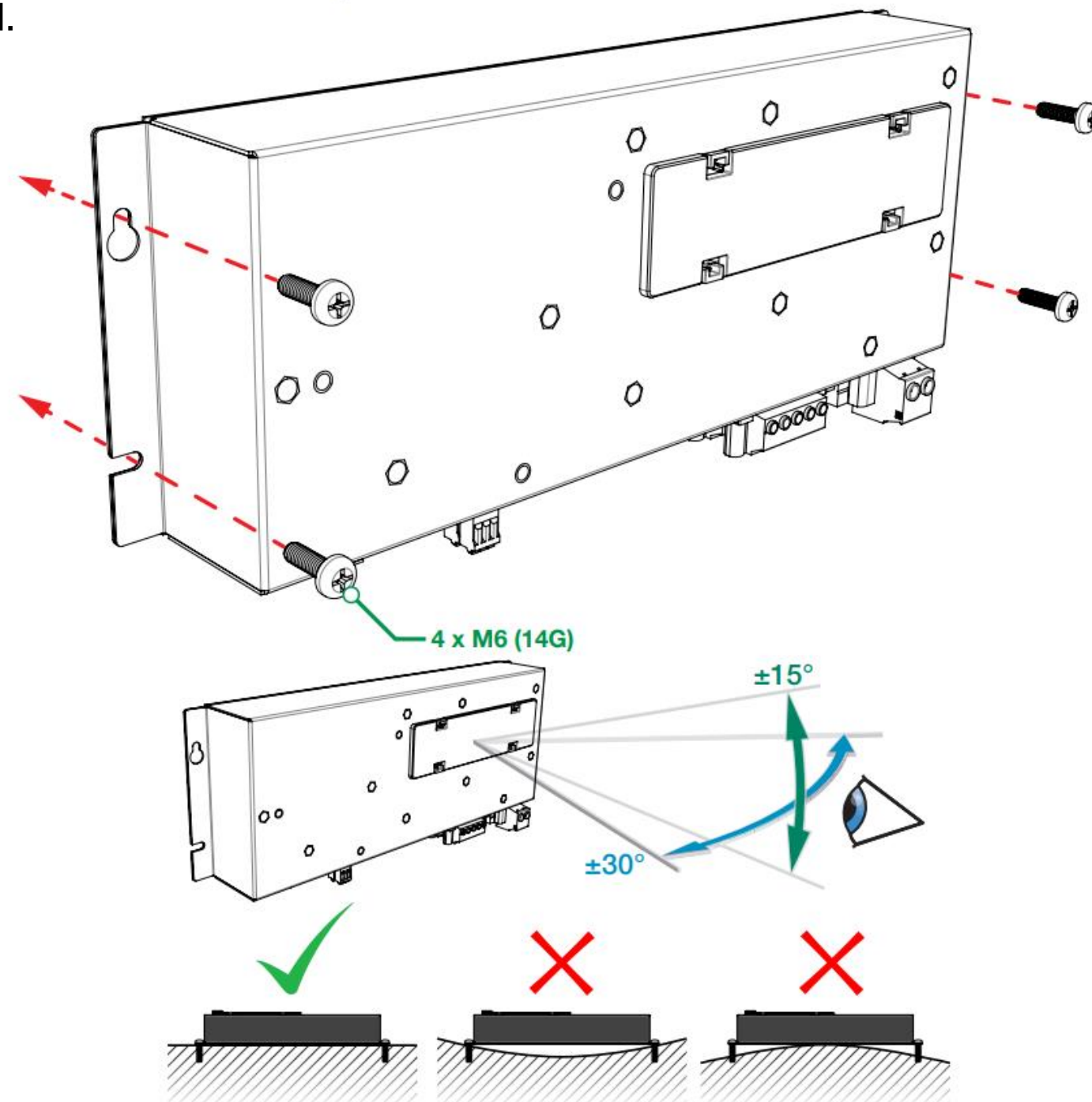
Diagram 2 - A typical Manager/RedVision Installation

MOUNTING INSTRUCTIONS

The Distribution Box should be mounted as close as possible to the auxiliary battery(s) and Battery Charger to avoid voltage drop.

Mounting the Distribution Box

The Distribution Box may be mounted in any orientation but must be mounted onto a flat, solid surface using 4 x M6 (or 14G) screws or bolts. Failure to adequately mount the unit, such as using adhesives to mount the unit may result in unreliable operation of the Distribution Box. Ensure clear access to the fuse panel to ensure service of fuses and override of channels can be performed.



Mounting the Display

The Display should be mounted on a flat, solid surface in a sheltered location such as in the vehicle (Refer to the user manual, Page 48 for a 1:1 cutout template). It is however acceptable to mount the Display in any convenient location, as long as it is protected from harsh environments such as being exposed to rain or severe amounts of dust or full-time direct sunlight.

DC CABLE SIZE REQUIREMENTS & DIGITAL I/Os

Input Wire size

REDARC recommends the installer use cabling between 8-4AWG automotive. Refer to the table below for further information. Note: AWG and B&S wiring standards are identical.

Connection	Terminal Size	Max Cable Size	Cable Size: length <3M	Cable Size: length >3M
Charger Output to Ground	16 mm ²	4AWG	8AWG	6AWG
Auxiliary Battery Positive to Ground	16 mm ²	4AWG	6AWG	4AWG

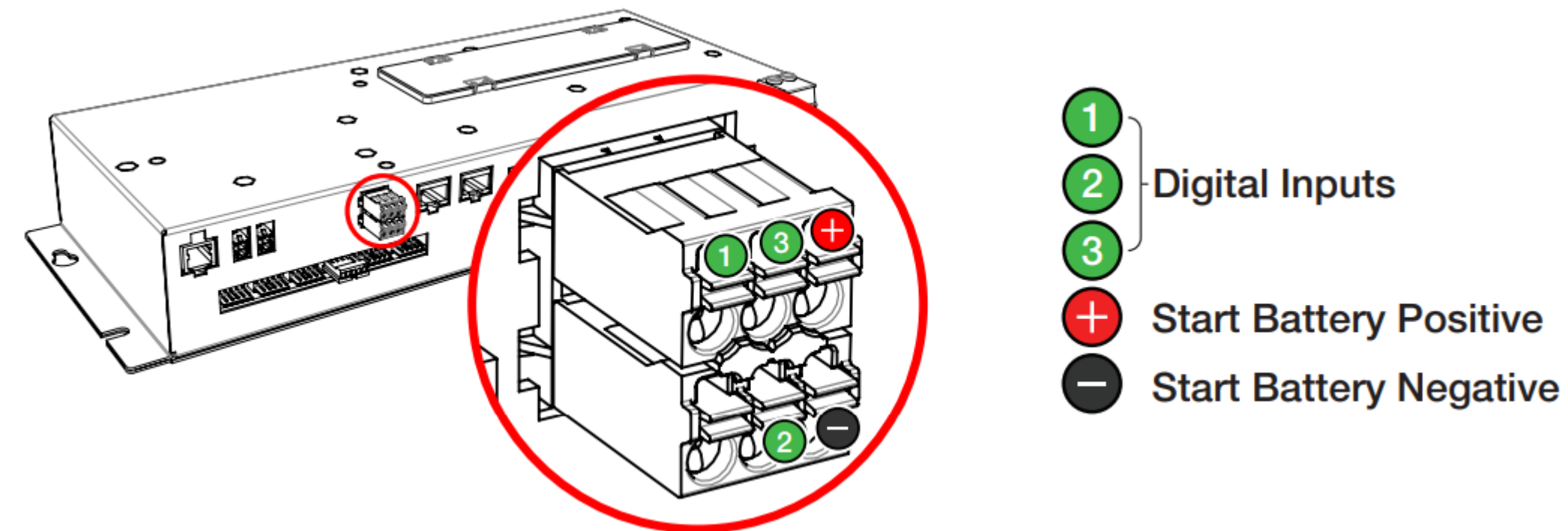
Output Wire Diameter Selection

REDARC recommends the installer use suitably rated cable and fuses for the load connected. Refer to the table below for the 10 and 30 amp connector terminal sizes and maximum cable sizes.

Connection	Terminal Size	Max Cable Size
10A Circuits	2.5 mm ²	10AWG / 6mm Auto
30A Circuits	6.0 mm ²	8AWG

Digital I/Os

The Distribution Box incorporates 3 digital inputs. The digital inputs, 1, 2 and 3, can be configured to switch Distribution Box output loads on/off when triggered (for example, to turn off all loads except a fridge when the vehicle ignition is on). The Start Battery Positive (+) and Start Battery Negative (-) inputs can be used to monitor and display a voltage from an external source (for example, to display the vehicle's starter battery voltage).



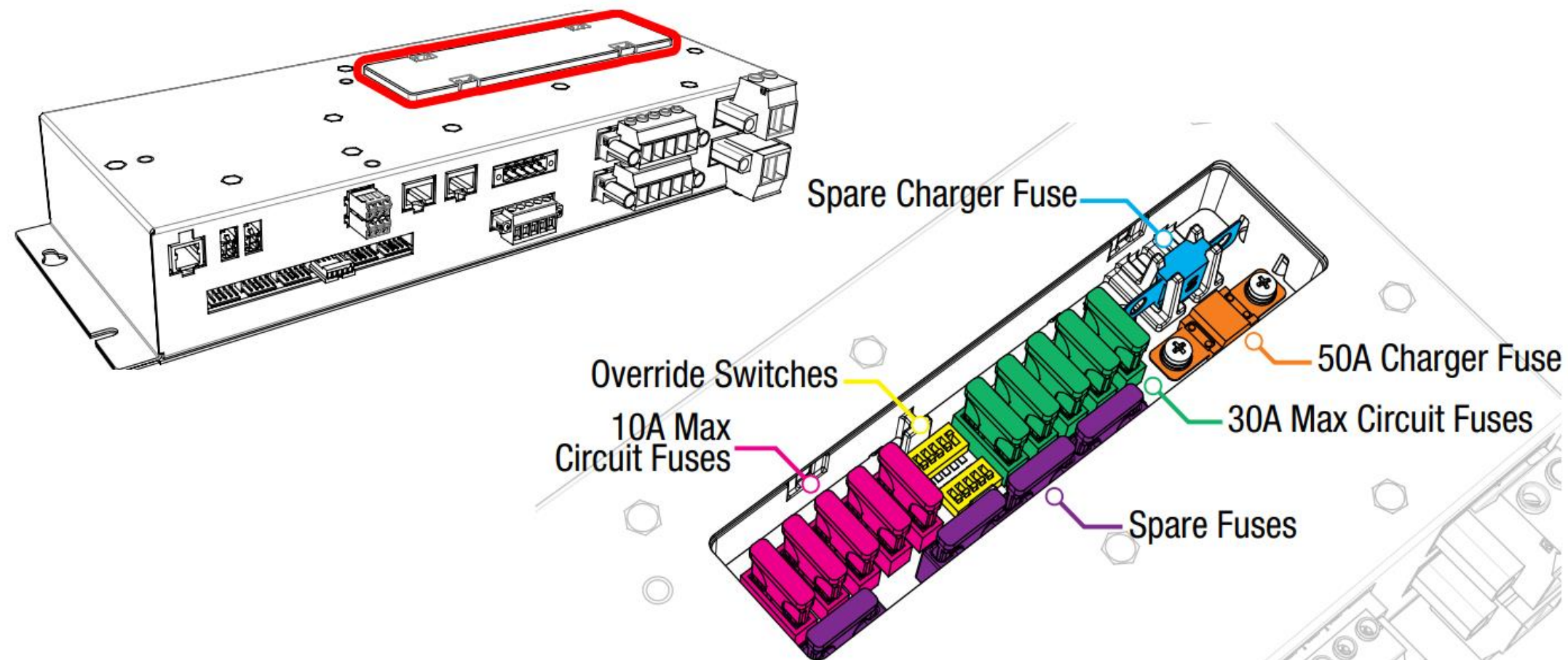
FUSES AND OVERRIDE SWITCHES

Fuse Locations

The Distribution Box load output channels are protected by standard blade fuses located in the fuse panel:

Qty	Part	Type	
5	10A Max Loads	Blade Fuses	Not Supplied
5	30A Max Loads	Blade Fuses	Not Supplied
4	Spare Fuse Holders	Blade Fuses	Not Supplied
1	50A Charger	Fuse MIDI	Supplied
1	Spare Fuse Holder	MIDI	Supplied

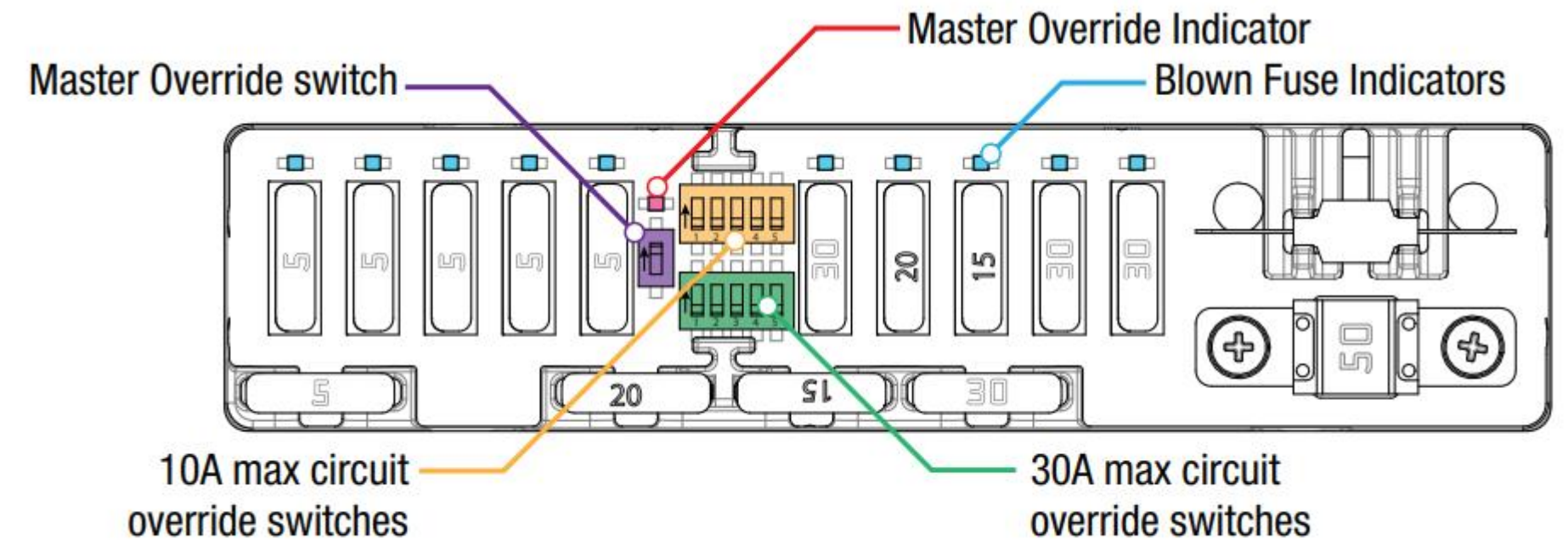
Additionally a 1 x 80A Battery Fuse and Fuse Holder are supplied. To protect the Distribution Box from harsh startup currents, inductive type loads (e.g. large fridges, pumps, motors) should be connected through the 30A Max circuits.



Override Switches

Under normal conditions each load output channel may be switched using the display, however should a load need to be manually switched on, the override switches (located between the two fuse banks) may be used.

Overriding is a two stage process - firstly override mode must be enabled using the master override switch (located to the left of the two switch banks). The master override indicator (red) will illuminate to denote that override mode is enabled. Once enabled, the individual load channels may be operated using the relevant switches. **During override the system cannot be controlled by the display or the app.**



Note: Fuse values may vary from those shown in this diagram, depending on individual system requirements

Blown Fuse Indicators

A blown fuse is indicated by an illuminated indicator (white) above the blown fuse.

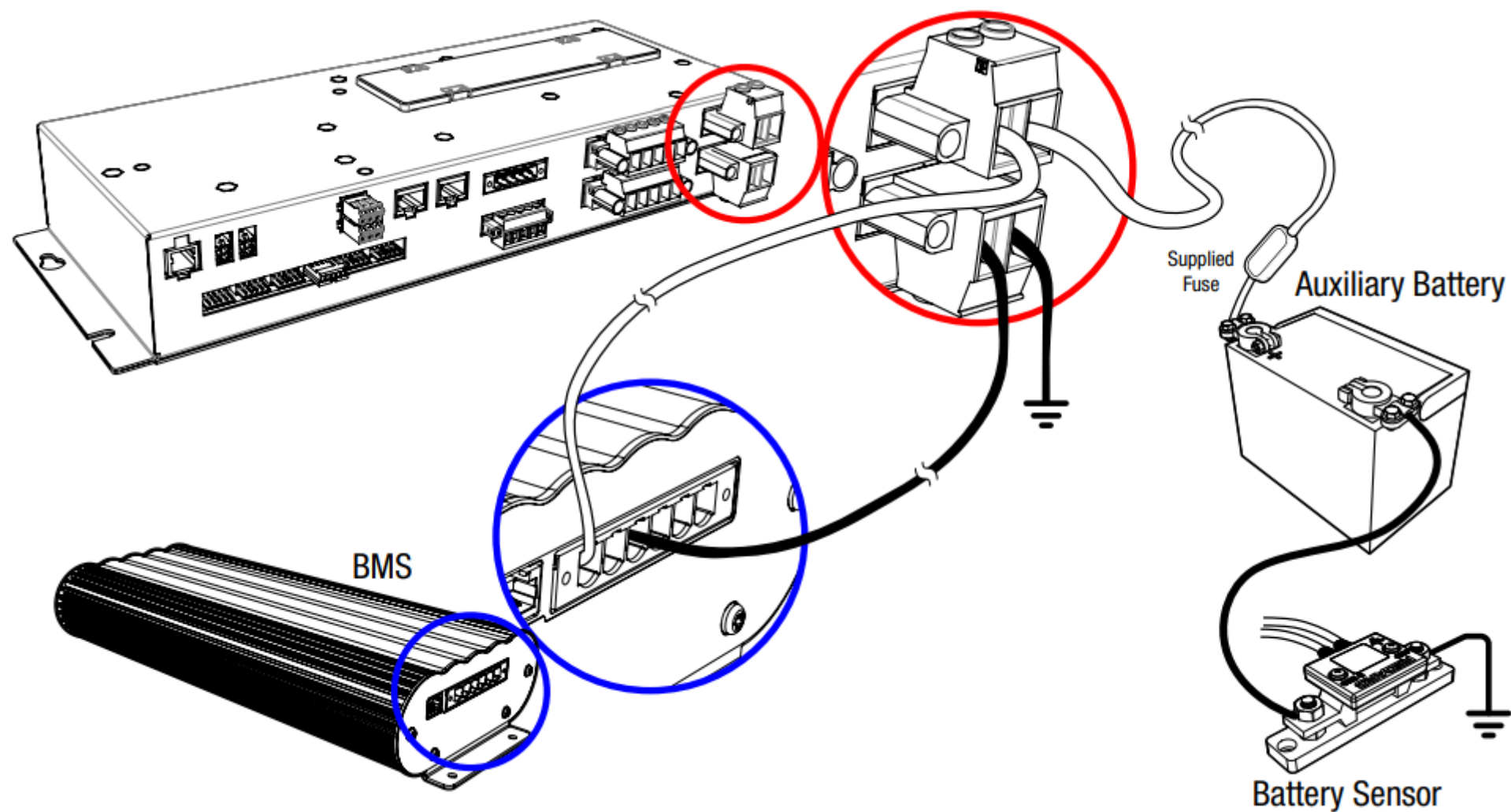
Investigate and rectify the cause of the failure before replacing with an appropriately sized fuse. The blown fuse will also be indicated by the icon on the display turning RED.

BATTERY & CHARGER CONNECTION

The RedVision is intended to be used in conjunction with the Manager30, but alternatively, it can be used with a REDARC BCDC charger.

Manager30 Connection

If using a Manager, it should be mounted as close as possible to the Distribution Box. Connect the Battery Management System's battery output positive (+) and Ground (-) to the Distribution Box Charger (+) and Ground (-) connections. The Distribution Box includes a 50A MIDI fuse to protect the charging circuit (the maximum charging current through the distribution box is 40A).

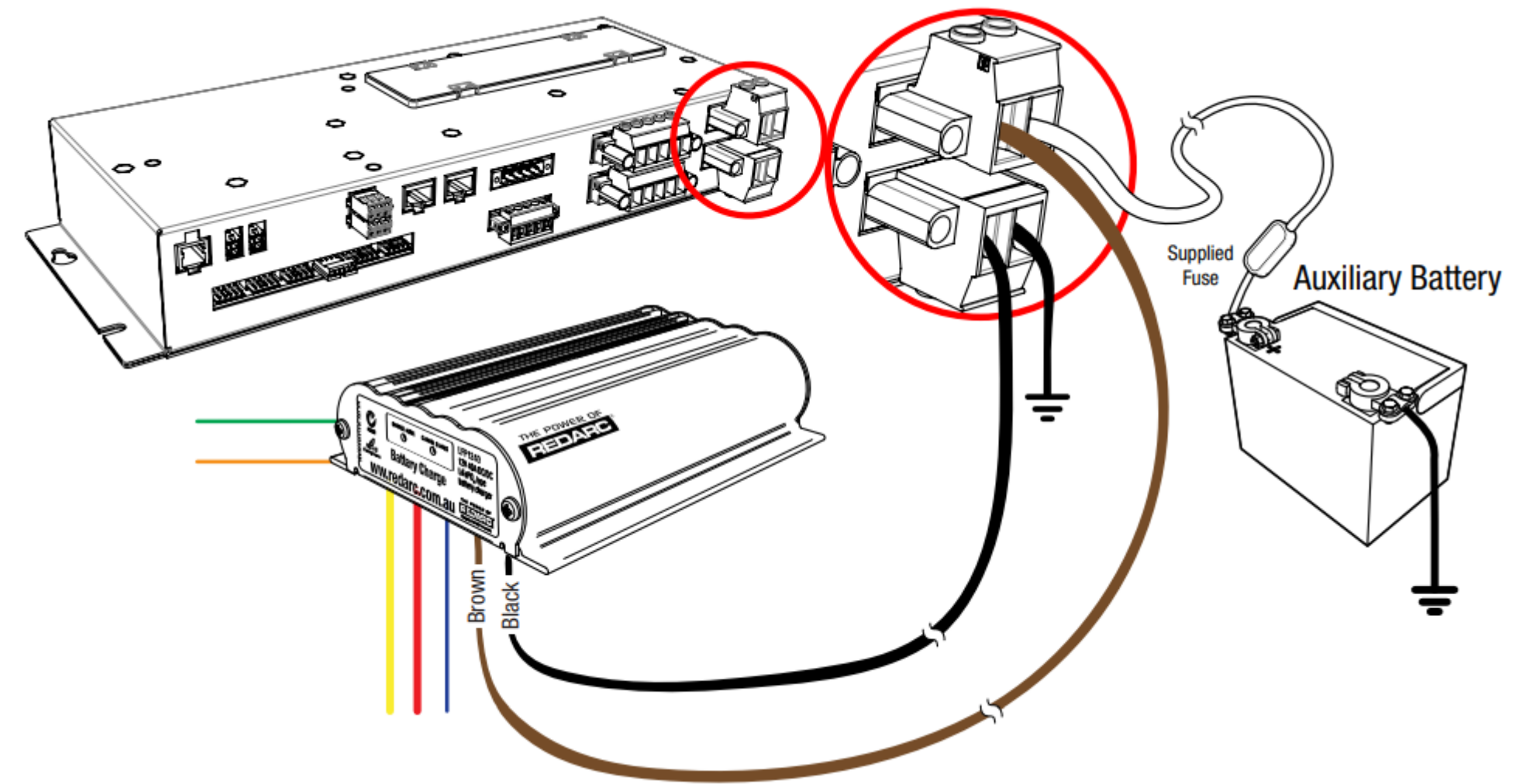


Battery Connection

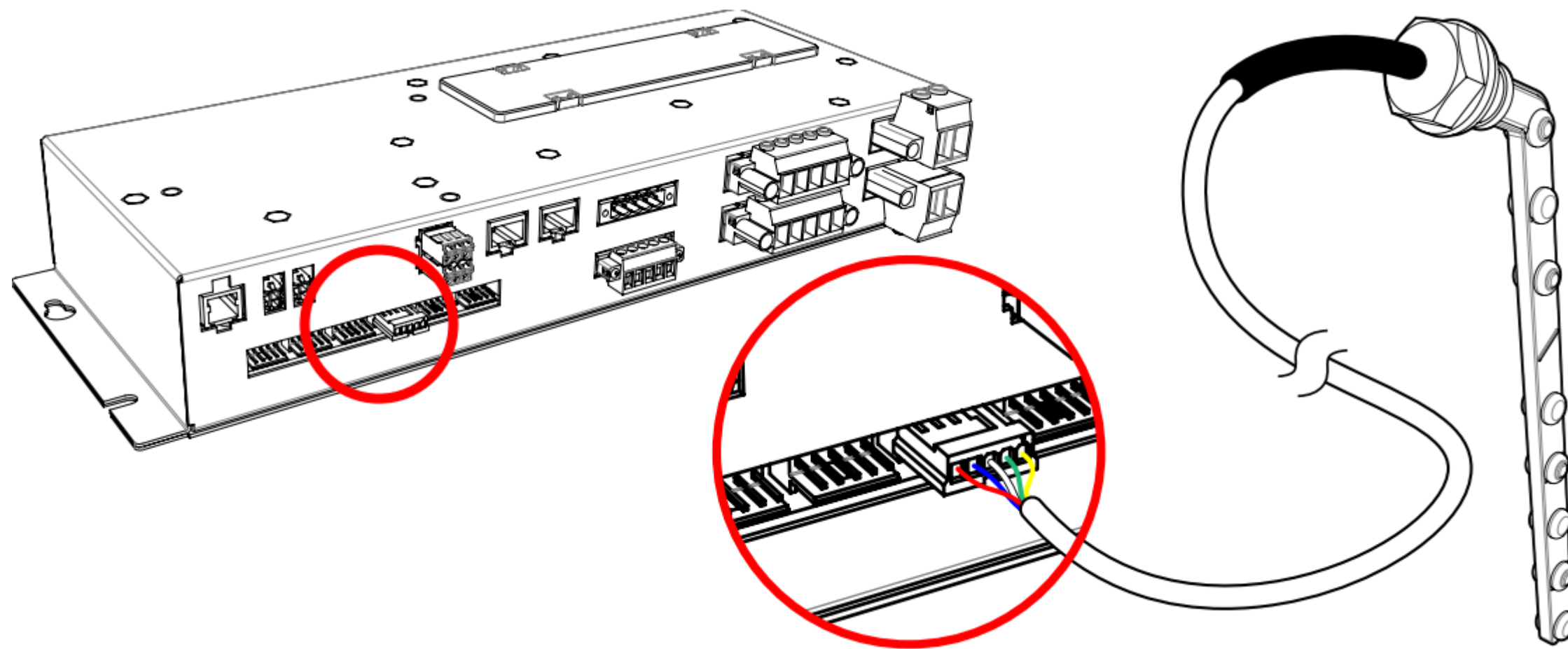
Wire the Auxiliary Battery Positive (+) to the Distribution Box through the supplied 80A MIDI fuse - this fuse should be mounted as close as practical the battery, wire the distribution box Battery Ground (-) to either a suitable grounding point (i.e. chassis or earth stud) or connect directly to the GND (-) terminal of the Manager's battery sensor.

BCDC Connection

If using a BCDC, it should be mounted as close as possible to the Distribution Box. Connect the BCDC's battery output positive (+) and Ground (-) to the Distribution Box Charger (+) and Ground (-) connections. *The following wiring diagram is applicable for BCDC chargers rated at 40A and below.



*Higher current chargers should be connected directly to the battery with appropriate fusing and not via the Distribution box



Compatible 5 pin tank senders

REDARC offer the TVMSDBWK-001, Perfect for any water tank, particularly irregular shaped tanks Pictured Right.

The Distribution Box also has direct compatibility with the following sensors from RV Electronics that are common in Australia:

- SP0004 • SP0011 • SP0028

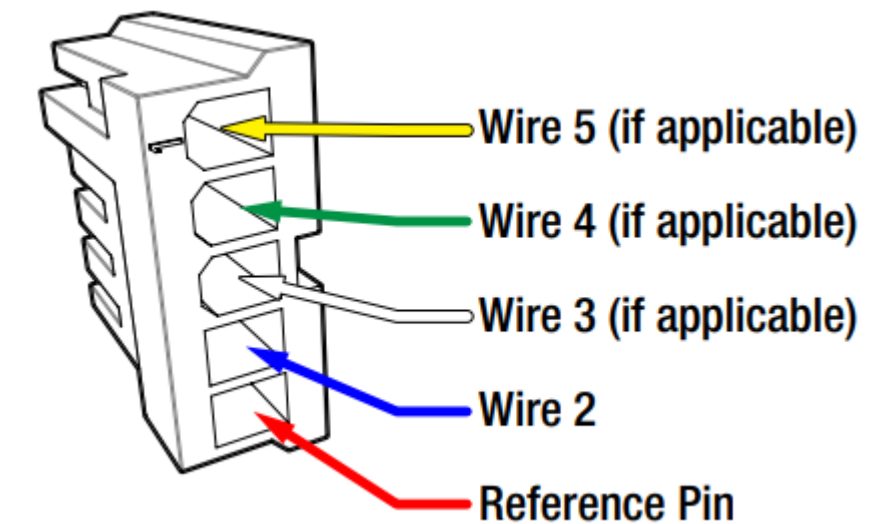
To use, simply connect the sender directly to the distribution box inputs. Ensure all wiring is firmly secured to the vehicle and not suspended from the water level sensor inputs or other connectors. Excessive loading on these pins may result in damage to the Distribution Box.

WATER LEVEL SENSORS

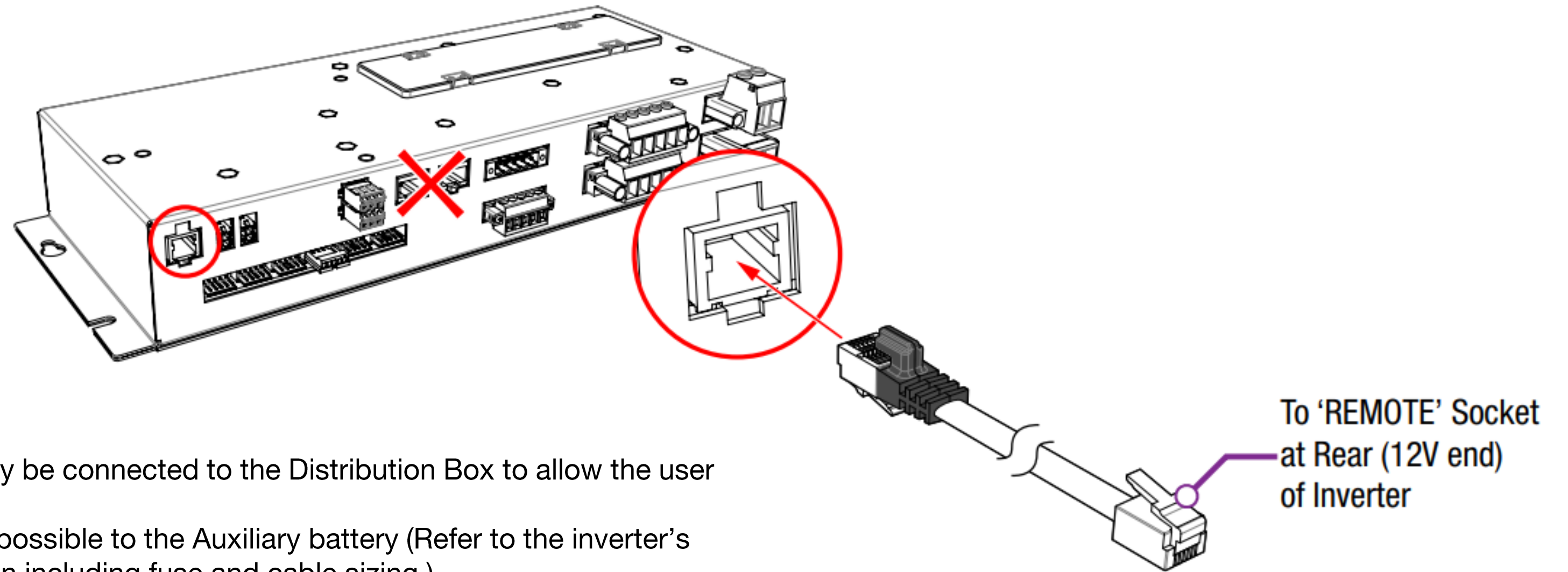
Up to six water level sensors may be connected to the Distribution Box.

2-5 pin tank senders

Most 2-5 pin conductive tank sensors can be used in conjunction with an AMP-171822-5 connector (not supplied). To use, wire as shown (noting that colours may vary - refer to the manufacturer's specification sheet):



OPTIONAL INVERTER CONNECTION



Only REDARC's RS/RS2-Series inverters may be connected to the Distribution Box to allow the user to switch the inverter on/off, via the Display.

The inverter should be mounted as close as possible to the Auxiliary battery (Refer to the inverter's

⚠ CAUTION further installation information including fuse and cable sizing.)

Risk of damage to the system. Do NOT connect to the 'TRC' socket at the front (mains end) of the inverter as this will cause damage to the RedVision system. Connect to the 'REMOTE' socket to avoid damage.

1. Connect the non-overmoulded end of the supplied RJ12 cable to the 'REMOTE' socket at the Rear (12V end) of the inverter.
2. Connect the over-moulded end of the supplied RJ12 cable to the to the inverter input of the Distribution Box.
3. Connect the Inverter DC supply to the battery, NOT a load output of the Distribution Box

THE POWER OF
REDARC

INSTALLATION VIDEO

