# Operating Manual

## OVERVIEW

This compact module provides serial control of twelve relays with isolated sets of voltage free contacts that close on operation.
The Redback® A 6510 can be used in three ways.

1. Direct connection via Cat5/6 UTP cable to the Redback® A 6500 wallplate, which is programmed to control relay activation.
2. As an expansion to the Redback® A 6505 hub, increasing the total number of relay contacts from 3 to 15. In this configuration, one of the serial outputs of the Redback® A 6505 would be used to control the Redback® A 6510.
3. As a standalone serial controlled relay hub for use with any third party system utilising RS232 or RS485.

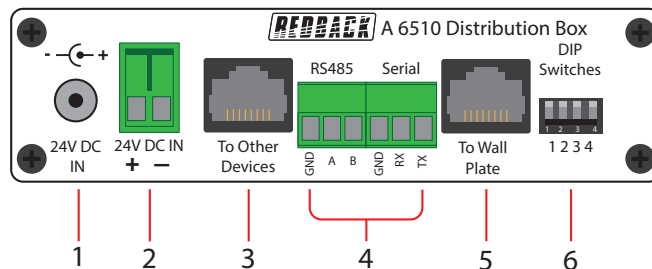Fig 1 shows the layout of the front of the A 6510.



**Fig 1**

**1    24V DC input**
Connects to a 24V DC Plugpack with a 2.1mm Jack (Please observe the polarity, centre positive).
**2    24V DC Input**
Connects to a 24V DC source via a euro block (Please observe the polarity).
**3    RJ45 interface**
This RJ45 port is for connection to other Redback® compatible devices.
**4    Serial Input**
This input takes either an RS232 or RS485 signal. This can be connected to one of the serial outputs of the A 6505 or to a third party system. Follow standard RS232 or RS485 wiring when connecting these terminals.
**5    RJ45 interface**
This RJ45 port is for connection to the A 6500 wall plate.
**6    DIP Switches**
1 ON: Accept serial codes through RS485 input.
2 ON: Accept serial codes through RS232 input.
3 ON: Accept serial codes from wall plate.
4: Not Used
NOTE: Only one of the DIP switches 1-3 can be on at any time.

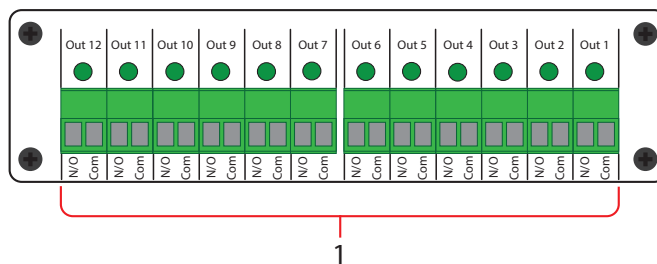Fig 2 shows the layout of the rear of the A 6510 12 Relay Distribution Box.



**Fig 2.**

**1** **Outputs 1-12**
These outputs provide a voltage free output with a set of normally open contacts. They are configured via the software as the relay 1-12 outputs (The maximum current rating of these contacts is 1A). The LED's above the terminals illuminate while the corresponding output is active.

## CONNECTIONS

**Control of the Redback® A 6510 by using the Redback® A 6500 Wallplate**

Figure 3 illustrates a typical connection diagram when using the Redback**®** A 6500 wallplate to control the Redback**®** A 6510 Relay Distribution Box.
The simple setup provides up to twelve output relays for switching, with no serial or IR outputs. The A 6500 Wall Plate is connected to the A 6510 via a CAT5e/6 cable. 24V DC power is connected to the A 6510 by a plugpack with a 2.1mm jack or through the euro block terminals. The A 6510 in turn powers the A 6500 Wall Plate through the Cat5e/6 cable. The relay contacts are rated at a maximum of 1A with a set of normally open contacts only.
Serial control of the Redback**®** A 6510 is provided by the A 6500 wallplate which is programmed with the serial codes using the PC software supplied with the Redback**®** A 6500. (Refer to the Redback**®** A 6500 programming guide and the Serial Codes section for details).
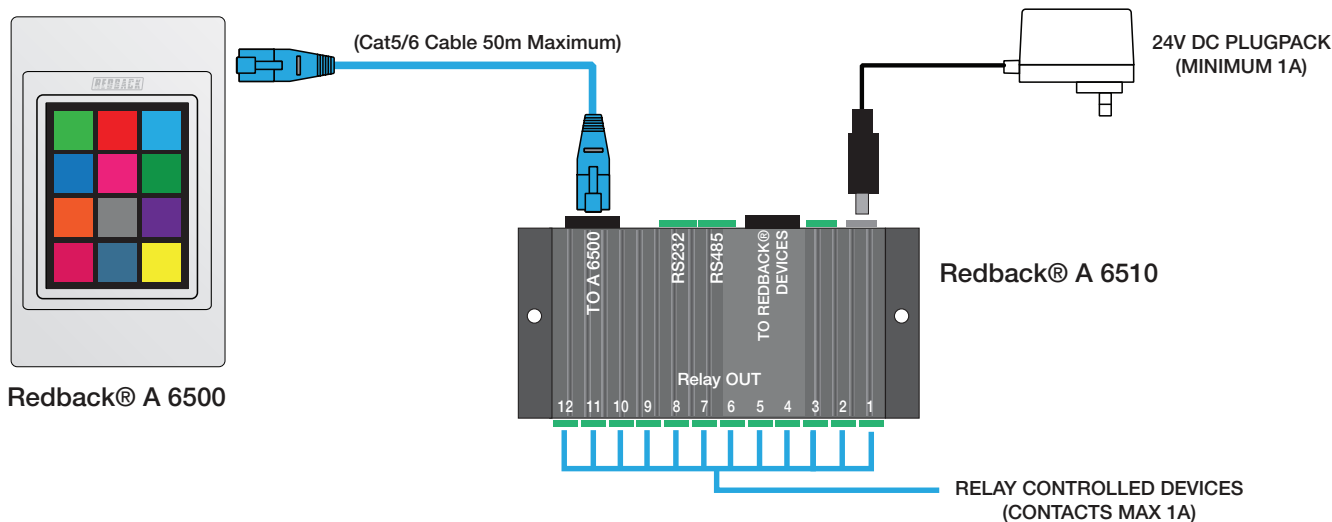


**Fig 3.**

**Control of the Redback® A 6510 by a third party controller**

Figure 4 illustrates a typical connection diagram when using a third party controller to control the Redback**®** A 6510 Relay Distribution Box.
The third party controller sends RS232 or RS485 codes directly to the corresponding RS232 or RS485 input connector of the Redback**®** A 6510.
The code must be sent in the correct format as outlined in the Serial Codes section.

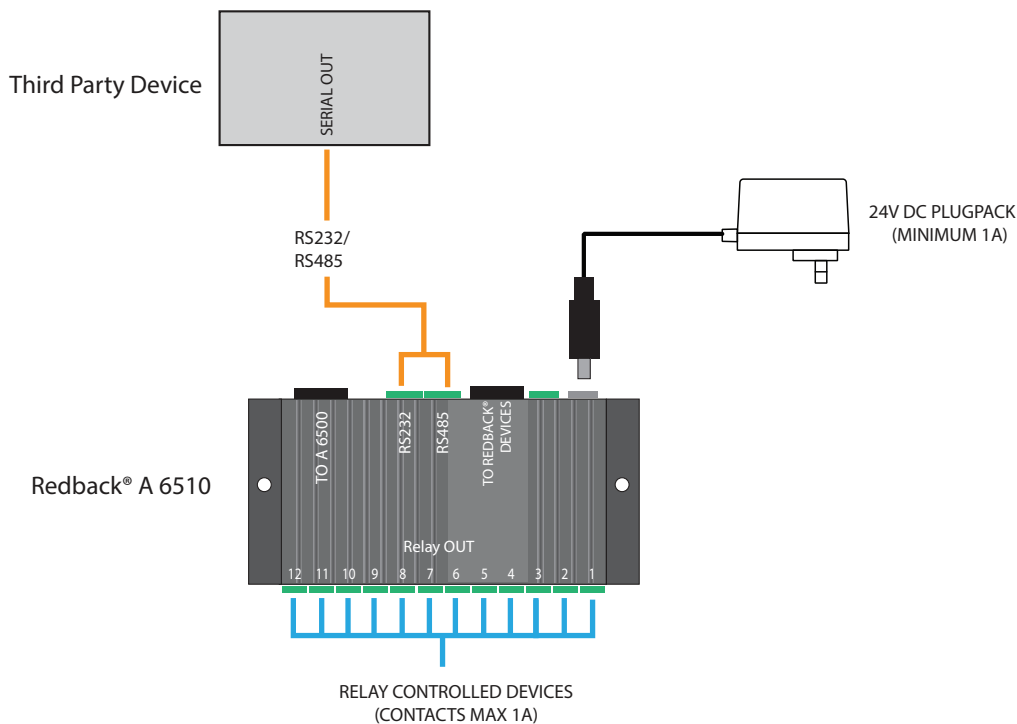*NOTE: The Redback® A 6510 will receive serial only. It will not transmit any serial data.*

**Fig 4.**

**Control of the Redback® A 6510 by using the Redback® A 6500 and Redback® A 6505 Serial Hub**

Figure 5 illustrates an example where not only does the Redback**®** A 6510 need to be controlled but also other devices require control from the Redback**®** A 6500 wallplate. In this example the Redback**®** A 6500 is connected to the Redback**®** A 6505 via the Cat5e/6 cable which then passes through serial codes to the Redback**®** A 6510 via the RS485-1 terminals or RS232-1 terminals.

The Redback**®** A 6505 can then control an extra three relays, the IR repeater and send serial codes out the second serial port to the Redback**®** A 6510 or other serial controlled equipment.
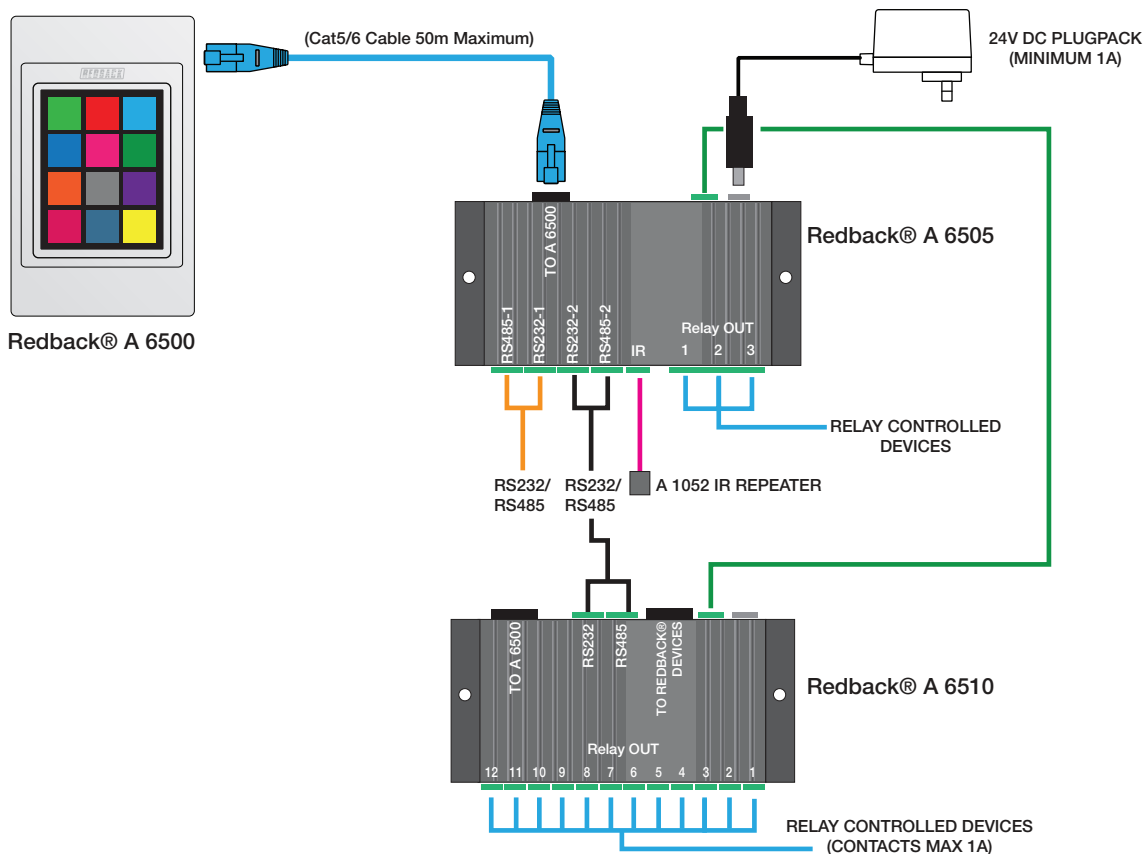


**Fig 5.**

## SERIAL CODES

The Redback® A 6510 Twelve Relay Distribution Box is controlled by programming the Redback® A 6500 Wallplate using the software supplied with the unit.

Third party control is achieved by sending serial commands to the RS232 or RS485 inputs of the Redback® A6510 as shown in figure 4.

The serial codes must be sent in the following format.

The serial data sent has to transmitted at 9600 baud, with the stop bit set to 1, data bits to 8 , parity to none and the format must be ASCII.

The code to be sent is quite simple.

The code starts with the word RELAY followed by

T for toggle (this alternates the state of the relay with each press).

O (capital o) for OFF (this turns the relay Off).

I (capital i) for ON (this turns the relay On).

followed by the relay number.

So for instance to turn on relay 12, the code would be RELAYI12. To toggle relay 4, the code would be RELAYT4 and so on.

It is also possible to turn all relays ON or OFF by using the standard format of O (capital o) for OFF, I (capital i) for ON and then by using the number 99 as the relay number.

So the command RELAYI99 will turn all relays ON and the command RELAYO99 will turn all relays OFF.

### RS485 - RJ45 cabling configuration for system components (586A 'Straight through')

System components are connected using "pin to pin" configuration RJ45 data cabling as shown below. When installing ensure all connections are verified with a LAN cable tester before switching any system component on.



**586A**
Straight Through
(both ends)

Pins Face Upwards
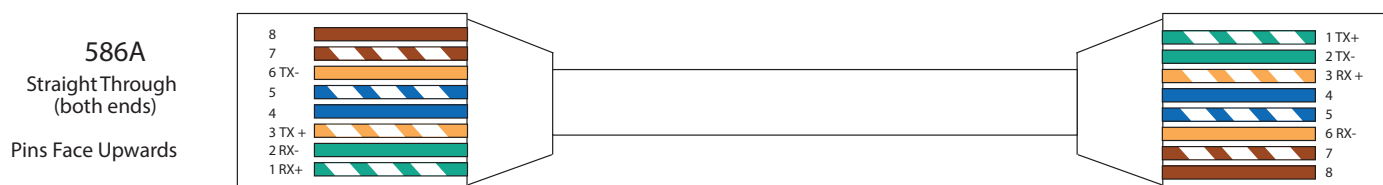
**Failure to follow the correct wiring configuration may result in damage to system components.**

All Australian made Redback products are covered by a 10 year warranty.

Should a product become faulty please contact us to obtain a return authorisation number. Please ensure you have all the relevant documentation on hand. We do not accept unauthorised returns. Proof of purchase is required so please retain your invoice.