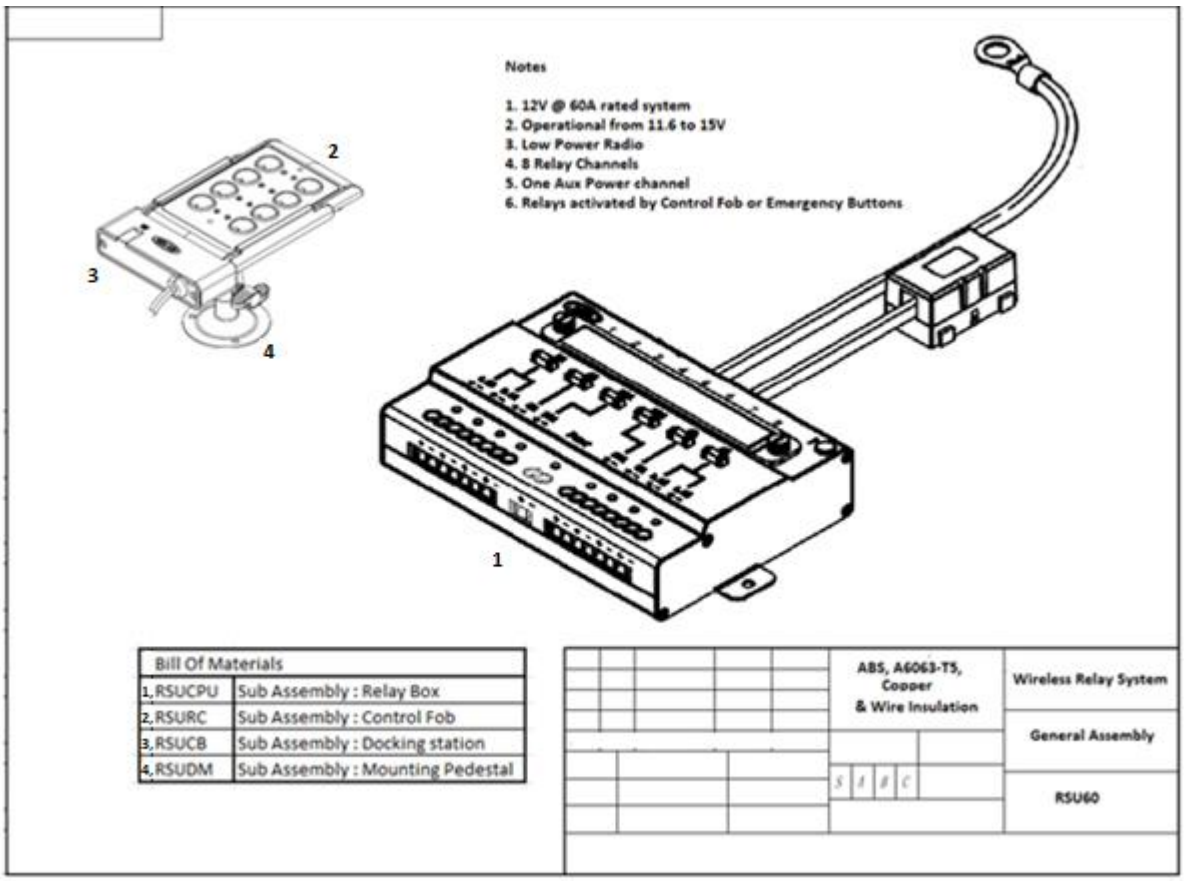
12V Wireless Switching System

RSU60



Instructions

1. Overview

The Wireless relay system is a low power radio system, designed to operate with 12 Volt DC systems. This system allows remote control/relay operation of 8 relay channels. These relay channels are fused to allow connections to components of various amperage. The maximum current draw of the system is 60A. The system has been designed to reduce the requirement for hard wired switches and will also help reduce installation time.

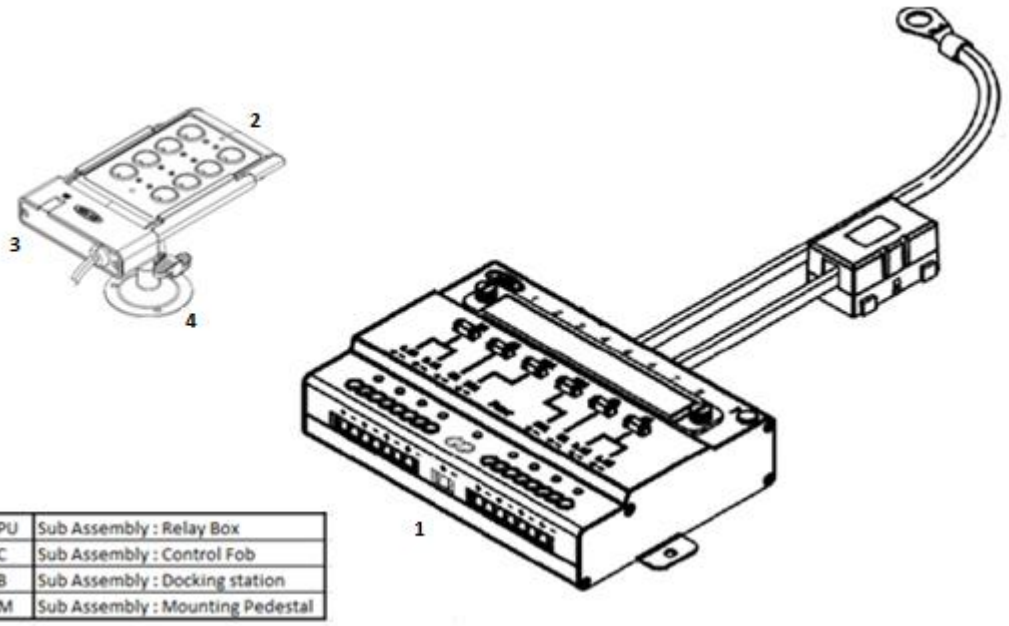
In order to be able to use this product correctly, please read this instruction manual carefully.

The installation of this product must be carried out by professional / qualified personnel

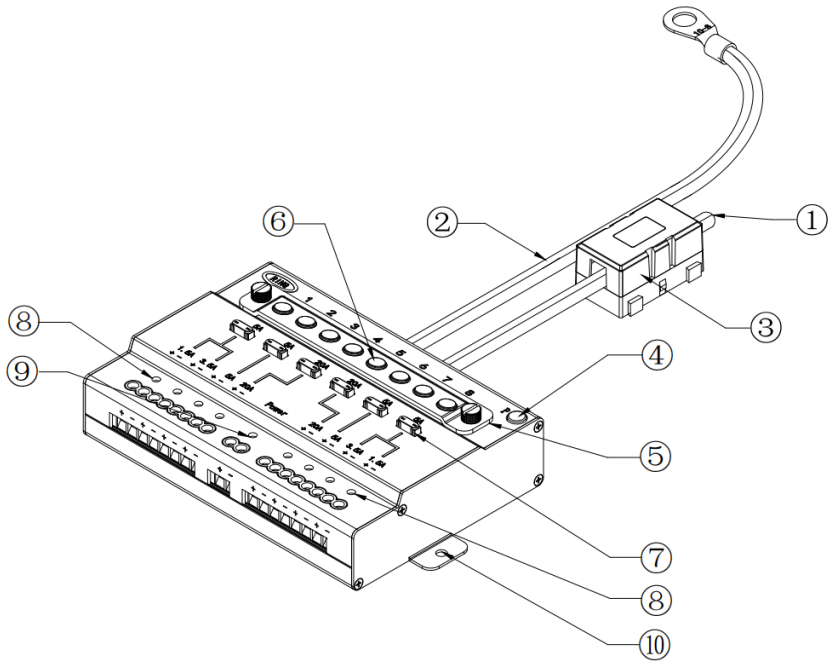
2. Contents

The system compries the following elements

RSUCPU – Relay Box (see fig 1)
RSURC – Remote Control Fob (see fig 2)
RSUCB – Docking Station for the Remote Control Fob (see fig 3)
RSUDM – Mounting Pedestal
Icon / Decal stickers and an Overlay Label for the RSURC

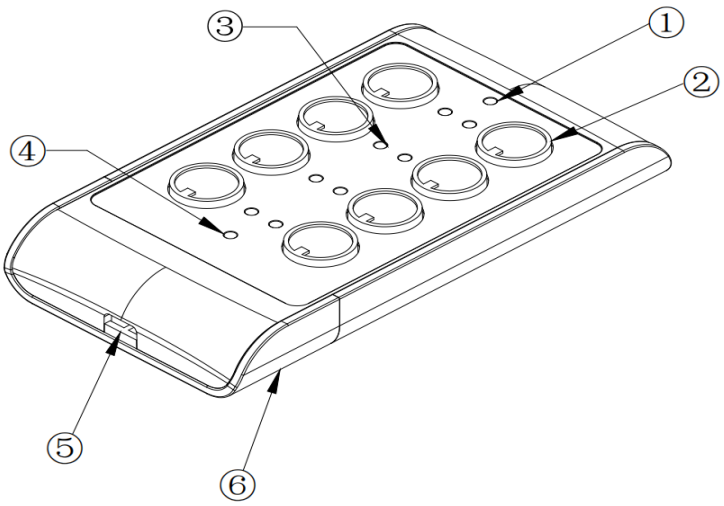


1.RSUCPU	Sub Assembly : Relay Box
2.RSURC	Sub Assembly : Control Fob
3.RSUCB	Sub Assembly : Docking station
4.RSUDM	Sub Assembly : Mounting Pedestal



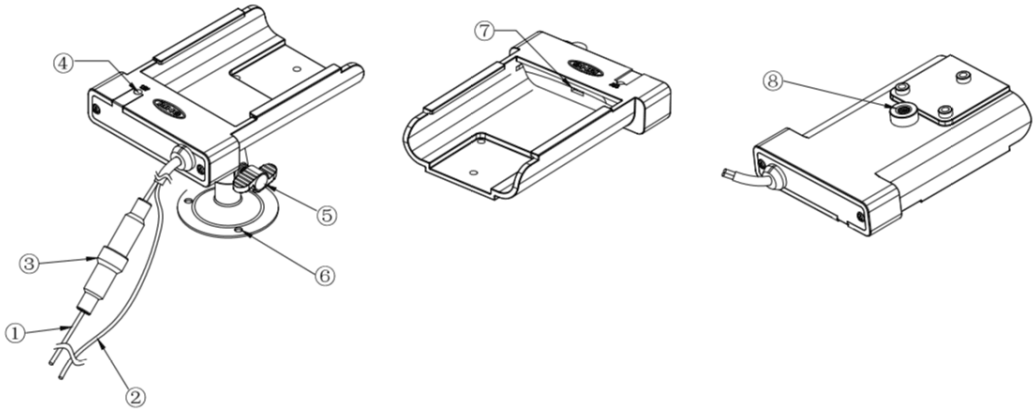
①Positive
②Negative
③Blade Fuse
④Pair Button
⑤Emergency Switch Cover
⑥Emergency Switch
⑦Mini Fuse
⑧Work Status Indicator
⑨Power/Failure/Pairing Indicator
⑩Mounting Hole

Fig 1 RSUCPU, Relay Box



①Button operation LED
②Button（Total of 8 Buttons）, each button has a LED for Backlight illumination
③Relay Box Status LED（Total of 8 LED）
④Battery Charge indication LED
⑤Charging Input
⑥Battery Cover

Fig 2 RSURC, Remote Control Fob



①Red Input Positive
②Black Input Negative
③Fuse
④Power Indicator
⑤Angle adjustment screws
⑥Fixed Hole
⑦Charging output port
⑧Pedestal Fix Hole

Fig 3 RSUCB, Docking Station for Remote Control Fob

3. Connections & Controls

3.1 RSUCPU, Relay Box

1. For the power feed to the Relay box, a copper cable with a cross sectional diameter of 10mm2 is required. Please ensure this cable length does not exceed 3 meters! The power feed to the relay box is fused at the input with a 60A fuse, placed in a holder.

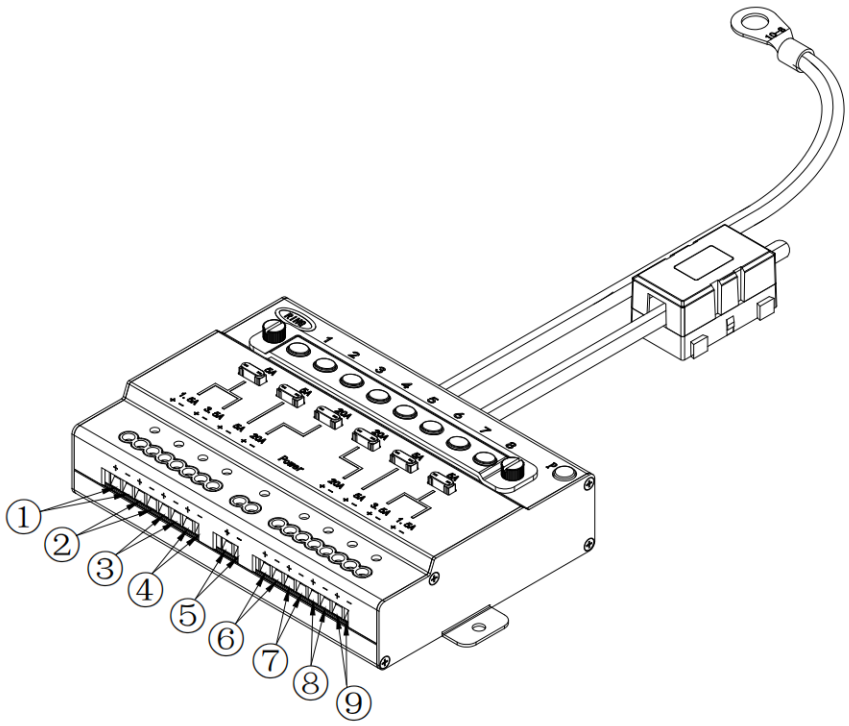
2. System is only rated for 12V DC systems. AC power must not be connected to input supply line or relay output channels. On Relay output channels, do not connect power into these channels, they are outputs only.

3. When connecting outputs from the relay channels to a specific device please ensure the following
    a) Device is rated for current output of relay channel
    b) Ensure voltage polarity connections are connected per device specifications i.e. positive relay output to positive input pin of device, negative relay output to negative pin of device
    c) Wiring cables are rated for relay current output.
    d) Each individual relay output is connected to a single device.

4. Supply voltage to relay box must not exceed 15.5V DC @ 60A.

5. The maximum current per set of output ports of this product is labelled upon the surface of the relay box. Please see fig 4 for current ratings.

Installation of the RSU60 system should be carried out by Proffesional / Qualified personnel only.



①1.5A, Blade Fused
②3.5A, Blade Fused
③5A, Blade Fused
④20A, Blade Fused
⑤1.5A, Built in self resetting fuse
⑥20A, Blade Fused
⑦5A, Blade Fused
⑧3.5A, Blade Fused
⑨1.5A, Blade Fused

Fig 4 RSUCPU Relay Control Box

3.2 RSUCB, Docking station

The purpose of the docking station two fold. It allows the Remote Control Fob to be placed in a safe postion and it supplies power to the Remote Control Fob, to recharge the supplied Lithium ion battery. The power to the Docking sation can be connected from

1. Vehicle power, ensure the feed is via the Ignition Switch, i.e Power is only available during engine Running conditions.
2. Auxilary Power channel on Relay box
3. Ensure Power to the Docking Station is connected by cables supplied and via fused connection block

Docking station can be mounted via fixings supplied. This can be via the Mounting pedestal, or the unit can be fixed to a suitable mounting plate, using the screw points provided (see fig 3).

3.3 RSURC, Remote Control Fob

The Remote Control Fob, allows control of the individual output channels of the Relay box. The Relay Box outputs can be switched on or off via the Remote Control Fob. Each push button switch on the Remote Control Fob allows the user to control one Relay channel on the Relay box. The Remote Control Fob requires a Lithium Ion AAA battery* (supplied with the RSU60 System), in order to operate when not connected/placed in the Docking Station. The battery is installed into the Remote control Fob, via the back access panel (this is located near the micro USB and is retained in position by two screws). When installing the battery, please ensure correct orientation of the battery!

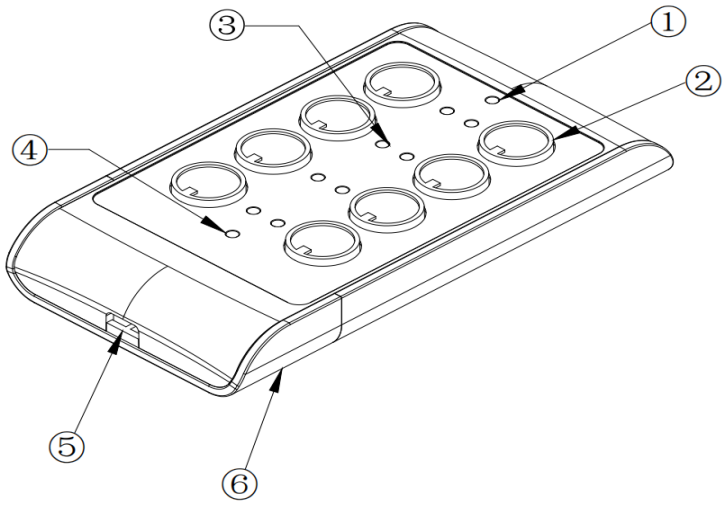
When Battery has been installed, please place Remote Control Fob into Docking Station and allow battery to charge.

***NOTE ONLY A LITHIUM ION, AAA, 3.7V @ 600mAh BATTERY MUST BE USED WITH THE REMOTE CONTROL FOB & DOCKING STATION.**

4. Operation of System

Once RSU60 has been installed. System can be operated using the Remote Control Fob. The Remote Control Fob can be operated when placed in the docking station or out of the docking station (provided the battery is installed). When a push button on the Remote Control Fob is pressed. The following items will be observed.

1. LED 1 will Flash red when button is pressed (see fig 5)
2. LED 3 located next to the button pressed will turn green
3. Relay box Channel LED will also turn on green, if relay channel LED does not illuminate. Switch relay channel off and check Fuse for that channel.
4. Relay channel will now provide power to device connected
5. LED 4 will show charging status
    a. Flashing Green – Battery Charging
    b. Flashing Red – Battery low Charge
    c. Solid Green – Battery fully charged
6. Each button will be illuminated when Remote Control Fob is in Docking station. Note when remote Control Fob is out of the Docking station, these backlight LED's will be off. To conserve battery power.



①Button operation LED
②Push Button（Total of 8 Buttons）, each button has a LED for Backlight illumination
③Relay Box Status LED（Total of 8 LED's）
④Battery Charge indication LED
⑤Charging Input

Fig 5 RSURC, Remote Control Fob

5. Additional Features

5.1 RSURC, Remote Control Fob, Sleep Mode

The Remote Control Fob, has a built in sleep mode function, which becomes active when the Fob is not placed in the Docking Station. The Remote Control Fob will continue to display which Relay Channels are active on the Relay box, but if no user activity is detected in a 5 minute period the Fob will go into sleep mode. All LED lights will be off. To wake the Fob up, the user will have to push a button and the Fob will wake up and commence full operation. In sleep mode the Fob will provide 5 days of full operation, from a fully charged battery.

5.1.1 RSURC, Pairing Function

Additional Control Fobs can be paired with the RSUCPU, Relay Box. The process is described in section 5.2.3

5.2RSUCPU, Relay Box,

5.2.1 Operational Voltage

The Relay Box has been designed to provide full operation between the input supply voltage range of 11 to 15.5V. The Relay box outputs will become inactive for voltages outside this voltage input range. The Power LED on the Relay box will also turn from Green illumination to a Red illumination, if the supply voltage is outside the design range.

5.2.2 Emergency Buttons

In the event the Remote Control Fob fails. The relay Box output channels can be operated via the emergency buttons. These are located underneath a metal cover labelled Emergency Use only see fig 1, item 6.

5.2.3 Pairing Function

If an additional Remote Control Fob is required, or the existing Control Fob becomes faulty. The following process can be used to add additional Control Fobs or to replace a faulty Control Fob.

1. Ensure Fob has battery installed and the battery is fully charged.
2. Ensure power is available to RSUCPU, Relay Box
3. On the RSUCPU Relay Box, push and hold down the Pairing button (see fig1, item 4)
4. Once Power LED on RSUCPU Relay Box (see fig 1, item9) begins to flash slowly. Pairing Button can be released. Relay Box is now ready for pairing to Remote Control Fob
5. On the RSURC, Remote Control Fob. Push and hold down one of the 8 buttons. When the Top LED turns red (see fig5, item1), button can be released.
6. Pairing process will take approximately 60 seconds to complete
7. If pairing is successful, LED in step 4 will stop flashing and be illuminated Green.
8. If pairing is unsuccessful, LED in step 4 will stop flashing and be illuminated Red!
9. If pairing is unsuccessful, carryout steps 1 to 6 one more time.

6. Icon / Decal Stickers and Overlay Label

Once the System has been wired up to control the various ancillaries. The Control Fob can be customised to indicate, what items have been wired to each individual relay channel. The system comes with a sheet of icons / decals which can affixed to individual buttons. There is also an additional label overlay, which will cover the entire front face of the Fob. See figs 6 , 7 & 8.

Fig 6 Icon / Decal Sheet

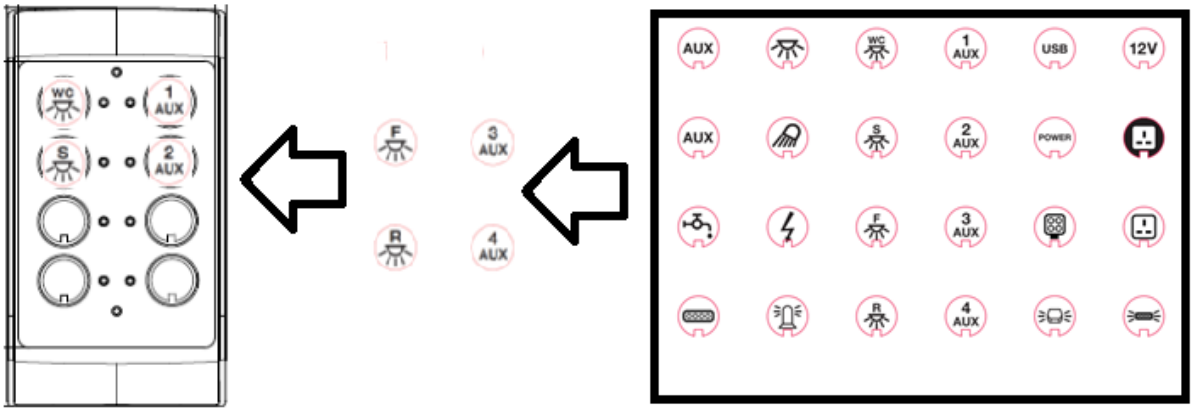


Fig 7 Example showing Icons / Decals affixed to Control fob

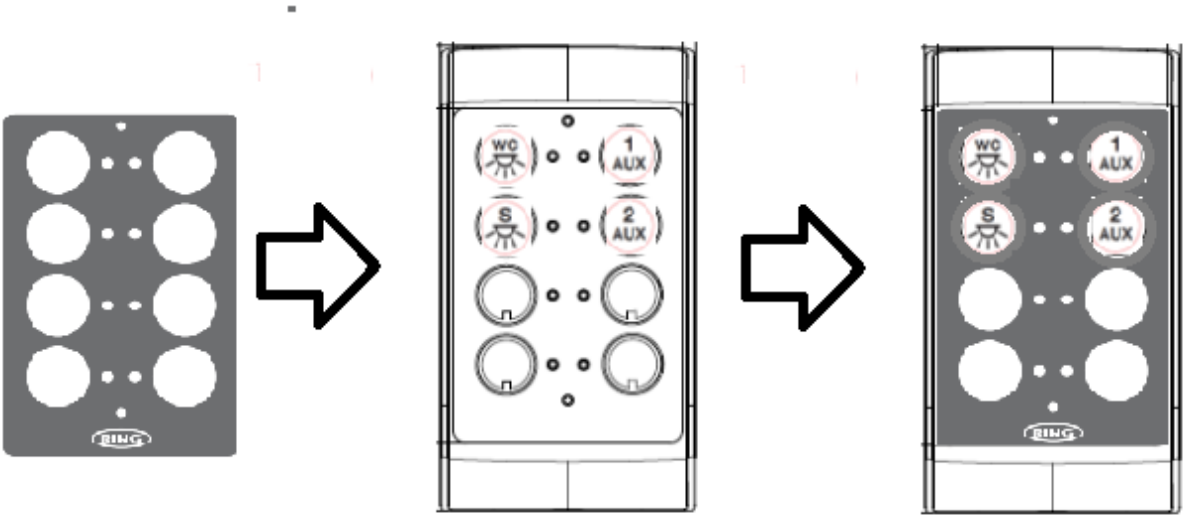


Fig 8 Example showing Overlay attached to control fob