



Relay-8

User Manual

Contents

1.	Relay-8 introduction.....	3
2.	Warnings and Notices	4
2.1	Must be part of a You.InControl system to work	4
2.2	You.InControl System Warnings	4
2.3	Relay-8 limitations	4
3.	Specifications	5
3.1	Key Specifications	5
4.	Relay-8 Hardware Overview	6
4.1	Device Front.....	6
4.2	Device Back.....	6
4.3	Supply Voltage	7
4.4	Relay Outputs (1 to 8)	7
4.5	Power LED.....	7
4.6	Status LED	7
4.7	System Button (SYS)	7
4.8	Reset Button (RST)	7
4.9	Audio Speaker.....	7
4.10	Device Pairing Code	7
5.	Wiring up the Relay-8.....	8
5.1	Power supply	8
5.2	Device Induction Status	9
6.	Pairing the Relay-8	10
6.1	Notices.....	10
6.2	The Paring Process video	10
6.3	The Pairing Process.....	10
6.4	If pairing is successful	13
6.5	If pairing failed	15
7.	The Relay-8 Page (on the Controller)	16
7.1	Navigating to the 'Devices' page	16
7.2	[DEVICE PAGE] The Relay-8 Page	17
7.3	Row 1 Page Header.....	18
7.4	Row 2 [DEVICE] Enabled / Disabled	18
7.5	Rows 3 to 10 Outputs	18
7.6	Row 11 [DETAILS]	19
7.7	Row 12 Device Number	19
7.8	Row 13 Device Type.....	19
7.9	Row 14 Device Name.....	19
7.10	Row 15 [OPTIONS]	19
7.11	Row 16 Show Transmissions	19
7.12	Row 17 [TAGS]	20
7.13	Row 18 Space Tag	20
7.14	Row 19 Zone Tag.....	20
7.15	Row 20 Group Tag	20
7.16	Row 21 [NETWORK]	20
7.17	Row 22 Network	20
7.18	Row 23 Keypad.....	21
7.19	Row 24 Tx Power	21
7.20	Row 25 Rx Power	21

7.21	Row 26	Ping Device.....	21
7.22	Row 27	[LOCATE]	22
7.23	Row 28	Locate by Sight.....	22
7.24	Row 29	Locate by Sound.....	22
7.25	Row 30	[DELETE]	22
7.26	Row 31	Unpair Device (Linked).....	22
7.27	Row 32	Delete Device	23
8.	Resetting the Relay-8		24
8.1	Resetting the Relay-8.....		24
8.2	Factory Reset		24
9.	Relay-8 applications		25
9.1	Power Control.....		Error! Bookmark not defined.

1. Relay-8 Introduction

- (a) The Relay-8 is a wirelessly controlled 8-way switching power device that enables the control and automation of thousands of different types of devices and objects.
- (b) It allows the control of electrical devices, lighting, AC power, DC power, heaters, valves, pumps, irrigation solenoids, garage doors, auto gates, front doors, sirens, indicator lights, and much more.
- (c) It can turn devices on, turn them off, toggle them on and off, turn them on for a period of time and more.
- (d) The Relay-8 is part of the You.InControl system, which provides affordable, powerful and easy to use wireless control and automation.
- (e) The Relay-8 is paired and setup using a You.InControl Controller. Mobiles, tablets and computers are **not** required. There's also no need for Wi-fi, Bluetooth, the routers, the Internet, software, programs, apps, accounts, logins, cloud hosting services or anything! All that's needed is a You.InControl Controller and the Relay-8.
- (f) And, when you're ready to really unleash the power, add other devices to the system or add this device to an existing system.
- (g) Once part of a system, the Relay-8 can be controlled by other You.InControl devices such as Remotes, Switches and UniSwitches. It can also be controlled by time, Arduinos and Raspberry Pis and lots of other devices.
- (h) Grab a front seat and strap in because the Relay-8 and You.InControl system is just getting started!
- (i) We really hope you enjoy your new Relay-8.

2. Warnings and Notices

2.1 Must be part of a You.InControl system to work

- (a) The Relay-8 is not a stand-alone device. It must be successfully paired to a You.InControl System for it to work.

2.2 You.InControl System Warnings

- (a) The You.InControl System is a powerful and highly capable wireless control and automation system that enables the control of devices and objects in the real world.
- (b) The system can activate electrical loads, motors, move things and create hazards that can cause severe injury and/or death.
- (c) You must exercise caution when using the system and must adopt safe working practices.
- (d) Here are a few notes for when using the system:
 - (i) You.InControl Systems must not be used to isolate electrical supplies for safety. Circuit breakers and other appropriate isolation devices must be used.
 - (ii) You.InControl Systems must not be used to enact emergency functions such as emergency cut-off switches.
 - (iii) You must not assume that someone or something is unable to trigger an action on the system. You must assume the worst.
- (e) Relevant industry best practices, standards, regulations and laws must be adhered to when using a You.InControl System.

2.3 Relay-8 limitations

- (a) The Relay-8 has limitations.
- (b) Read the specifications to understand the limitations of this Device.

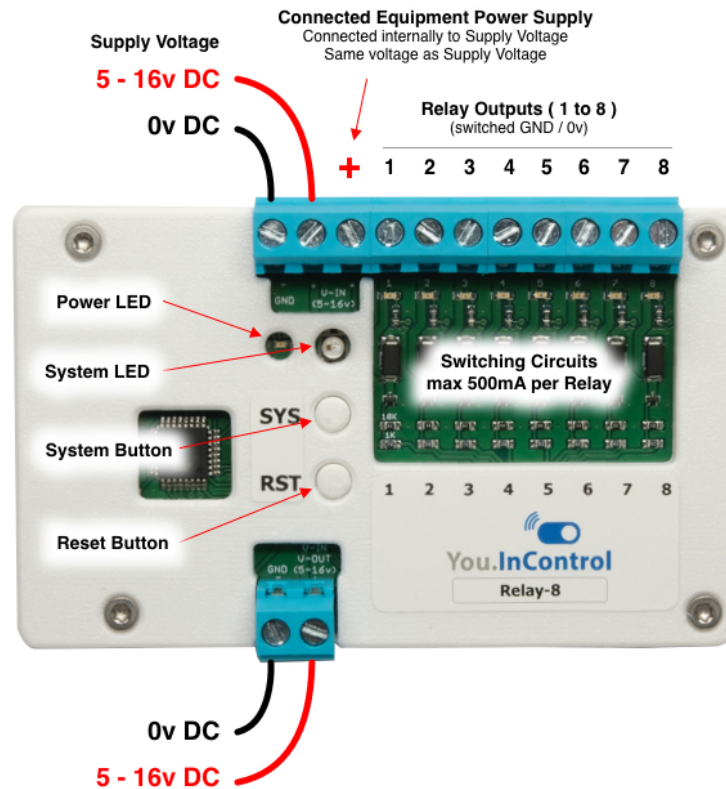
3. Specifications

3.1 Key Specifications

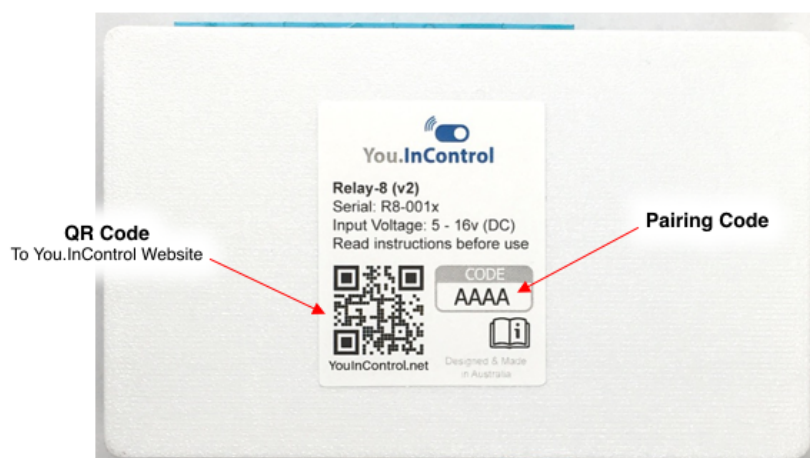
Number of Relays:	8
Supply Voltage:	5v to 16v DC
Switched Relay Supply:	Same as Supply Voltage
Max Current per Relay:	500mA
Transmission Range:	Over 1km, adjustable
IP Rating:	TBC
Temperature Rating	TBC
Indoor / Outdoor use:	Indoors Outdoors in waterproof enclosure

4. Relay-8 Hardware Overview

4.1 Device Front



4.2 Device Back



4.3 Supply Voltage

- (a) The Supply Voltage to the Relay-8 must be between 5 to 16v DC. Only supply DC voltages within this range.
- (b) The Supply Voltage is also referred to as Voltage-In or V-IN.
- (c) The supply voltage can be connected to the Supply Voltage terminals at either the top or bottom of the Relay-8. The top and bottom terminals are connected internally.

4.4 Relay Outputs (1 to 8)

- (a) There are 8 Relay Outputs on the Relay-8, labelled 1 to 8.
- (b) Any Relay Outputs can be used at any time – once paired.
- (c) The maximum current per Relay Output is 500mA. Currents higher than 500mA can damage or destroy the switching MOSFET.

4.5 Power LED

- (a) The Power LED will illuminate when power is supplied to the Relay-8.

4.6 Status LED

- (a) The Status LED is a multicolour LED used to display the status of the Relay-8.
- (b) It is also used for the Find by Sight function.

4.7 System Button (SYS)

- (a) The System Button (SYS) is used for pairing and future functionality.
- (b) The System Button can also be used to test communications and connectivity to the Controller.
- (c) The System Button can also be used to Factory Reset the Relay-8.

4.8 Reset Button (RST)

- (a) The Reset Button (RST) is used to reset the Relay-8.

4.9 Audio Speaker

- (a) There is a concealed speaker on the Relay-8 to assist with pairing, alarms and to help find the device.

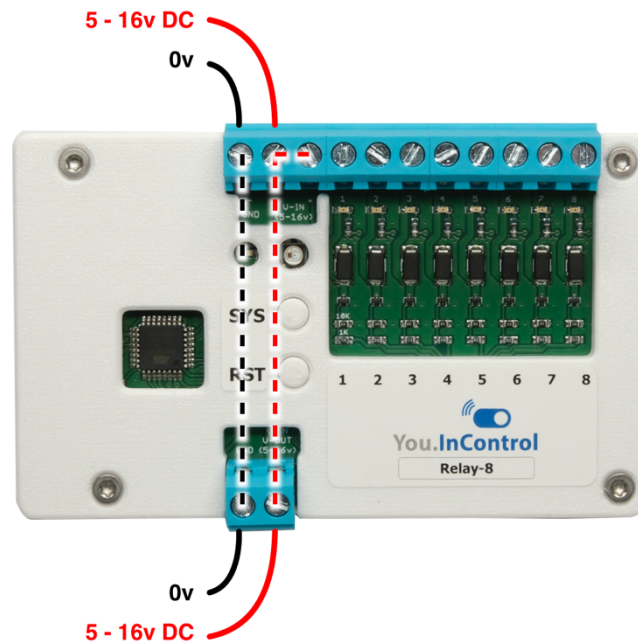
4.10 Device Pairing Code

- (a) The Device Pairing Code is printed on the back of the Relay-8 in the box titled 'Code'. This is the code to use when pairing the device.

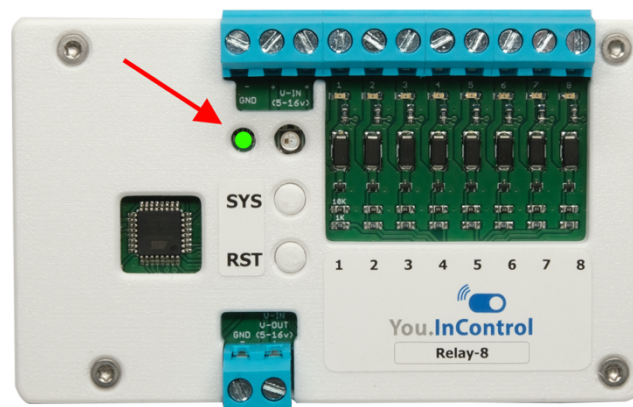
5. Wiring up the Relay-8

5.1 Power supply

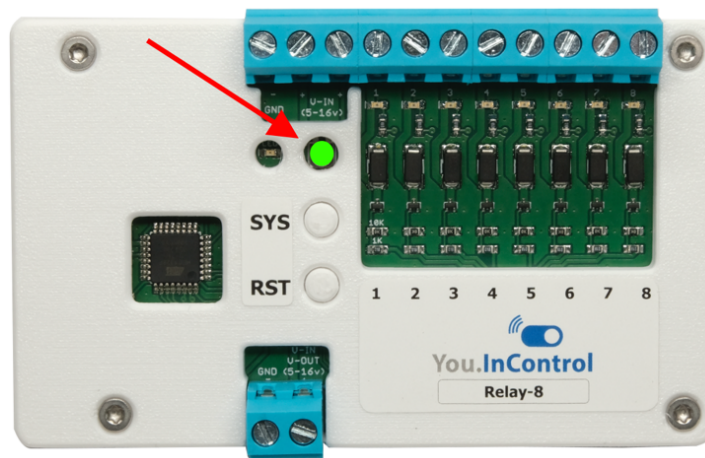
- (a) The Relay-8 can be powered from the top or the bottom of the device using the 5 to 16v DC Supply Voltage screw terminals. This is demonstrated in the image below by the solid Red and Black lines.



- (b) Ensure the power is off when connecting the Device. Turn the power on only once properly connected.
- (c) The top and bottom Supply Voltage screw terminals are connected internally – this is demonstrated by the dotted lines in the above image.
- (d) Once powered the Power LED will illuminate Green.

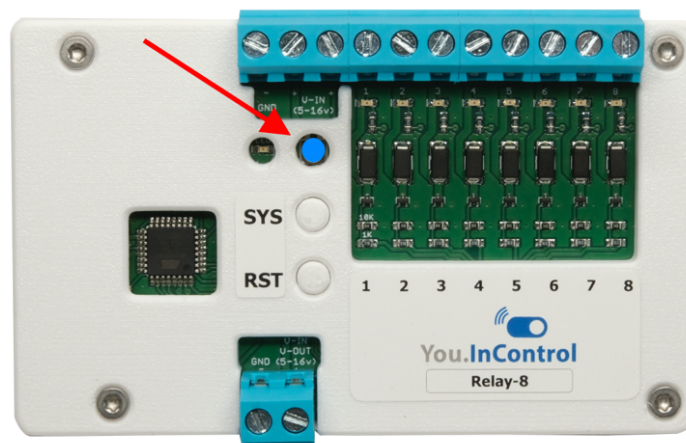


- (e) On power up the Status LED will flash Green twice and stop. The internal speaker will also sound a start-up tone. This indicates that the device has correctly booted up.



5.2 Device Induction Status

- (a) Following the boot up sequence the Status LED will or will not flash Blue - depending on whether the device is paired to a Controller.
- (b) If the device is not paired, the Status LED will flash Blue continuously, every two (2) seconds.



- (c) If the device is paired, the Status LED will not flash.

6. Pairing the Relay-8

6.1 Notices

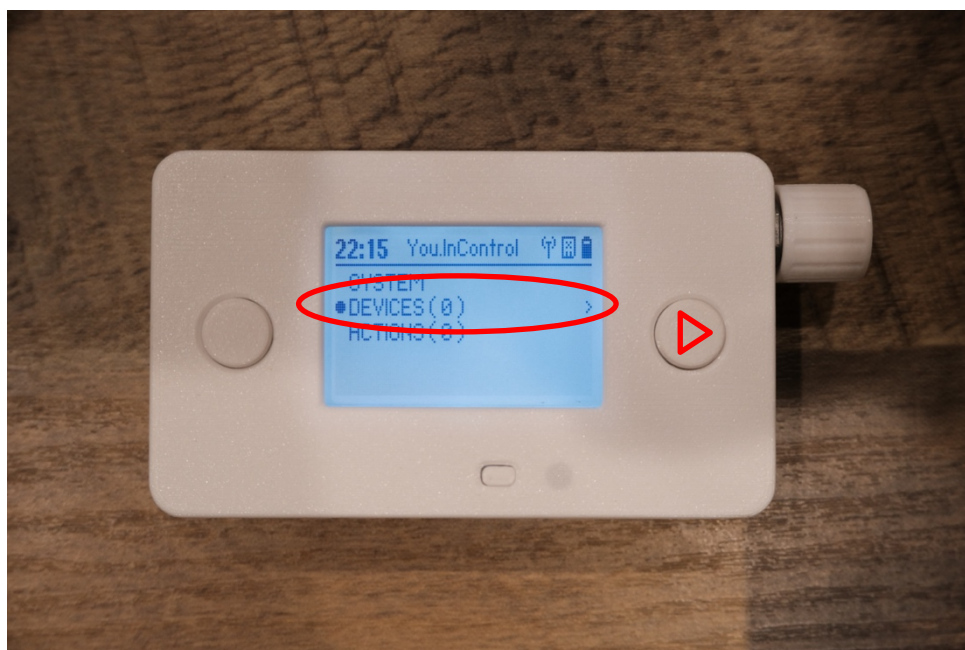
- (a) The Relay-8 must be paired to a You.InControl Controller to use it.
- (b) A Relay-8 can only be paired if it is not currently paired.
- (c) A Relay-8 that is powered on and not currently paired will flash Blue continuously, every two (2) seconds.

6.2 The Paring Process video

- (a) A pairing process video is available here: [How to pair a device](#)

6.3 The Pairing Process

- (a) On the Homepage, go to Devices and press the Right Button.



- (b) On Devices Page, select Add Device and press the Right Button.



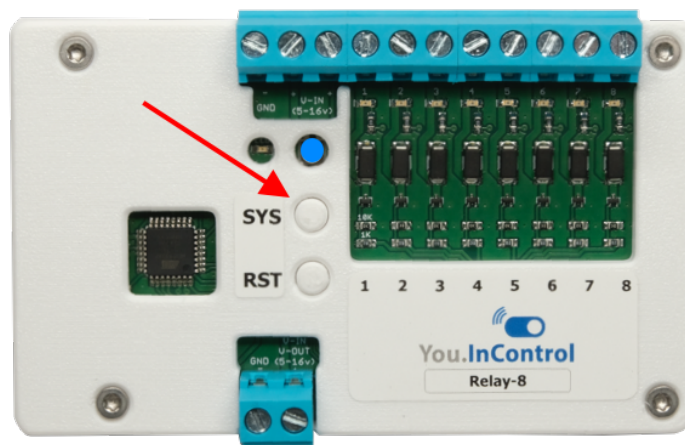
- (c) Enter the Device Code (shown on the back of the Relay-8) into the four boxes on the Controller's display. Navigate left and right using a Single Press of the Left and Right Buttons. You can select the correct letters and numbers using the Rotary Dial.



- (d) When the correct Code is entered, Double Press the Right Button.
(e) The second 'Add New DEVICE' page will now be shown.



- (f) Ensure the Relay-8 is powered on and the Status LED flashes Blue continuously, every two (2) seconds.
- (g) Press the SYS Button. The Status LED will now start flashing twice per second and it will be accompanied by a speaker beep each flash.



- (h) The Relay-8 is now ready to pair and will only remain in this mode for 10 seconds.
- (i) On the Controller, you can now start the induction process with a Single Press of the Right Button.



- (j) The Controller will wirelessly pair the Relay-8 using a series of encrypted communications.
- (k) The process will only take a few seconds.

6.4 If pairing is successful

- (a) If pairing is successful, the Relay-8 will make a welcome beep, the Status LED on the Relay-8 will flash Green and the following screen will be shown on the Controller.



- (b) You can now Single Press the Left Button to go to the Home Page; or, Single Press the Right Button to go to the Device Page.

- (c) This is the end of the Induction Process.
- (d) Once a Device is successfully paired it will also be listed on the Devices Page (the image does not show a paired Relay-8).



- (e) Once added, a Relay-8 is given a default system name. This will be similar to the following:

#. (R8) R8.1.D.1

- (f) The first part of the line was generated as follows:
 - (i) **#.** (R8) R8.1.D.1 - This is the Device Number on the system
 - (ii) **#. (R8)** R8.1.D.1 - It's a Relay-8 device (in short hand)
- (g) The name was generated as follows:
 - (i) **#. (R8) R8.**1.D.1 - It's a Relay-8 device
 - (ii) **#. (R8) R8.1.**D.1 - The Relay-8 number on the system
 - (iii) **#. (R8) R8.1.D.**1 - Short for Device Number
 - (iv) **#. (R8) R8.1.D.1** - The Device Number on the system
- (h) You can change the Device's name at any time on the Device Page.

6.5 If pairing failed

- (a) If the pairing process failed, you will see the following screen on the Controller.

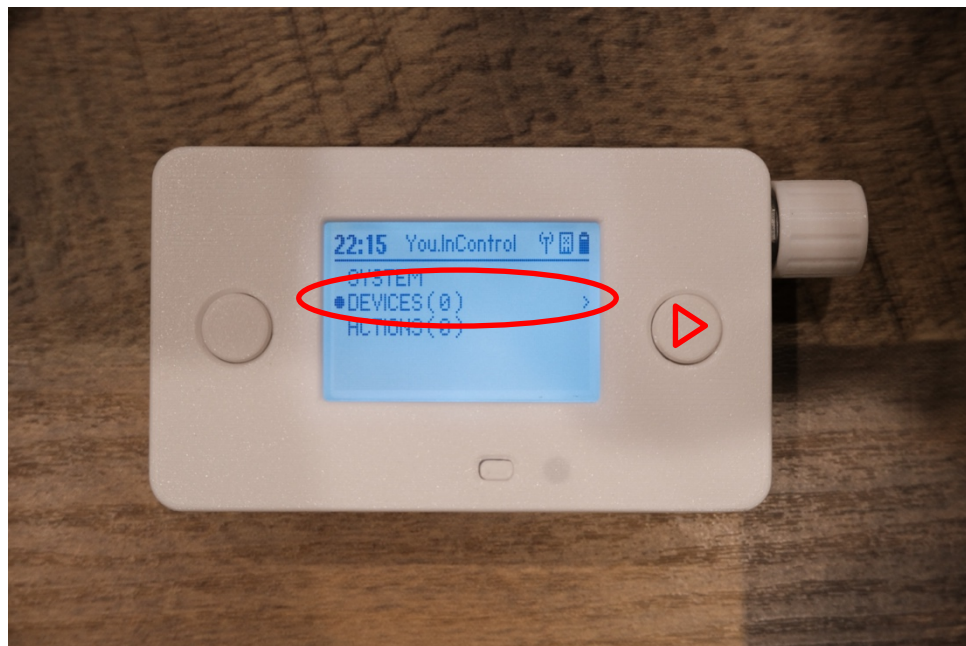


- (b) This doesn't happen much, however, here are a few causes:
- (i) **Wrong code.** Sometimes the wrong code is entered. Simply try again and enter the correct Code from the back of the Relay-8.
 - (ii) **Too slow.** The pairing is only available for 10 seconds once you press SYS on the Relay-8. This time limit is for security purposes and to limit system disturbance. If you wait too long before pressing Induct on the Controller, the pairing process will time out. Simply try again.
 - (iii) **Trying to pair an already paired Relay-8.** If the Relay-8 is already paired you cannot pair it without firstly performing a Factory Reset. You can tell if it's already paired – the Status LED will not flash Blue every two seconds and it does not flash blue rapidly or beep when you press the SYS Button.
 - (iv) **Other transmissions.** Sometimes, the process is interrupted by non-system transmissions or other radio artifacts. For security reasons, this will cause the Controller to abort the pairing process. Simply try again.
 - (v) **Intermittent Bug.** Sometimes the Controller doesn't receive the correct transmission and continues to wait too long – it will look like the Controller has frozen. Simply press the Reset Button on the Controller. The Relay-8 may have paired and may not. Check on the Device list. If it has, the Device will be on the list, and you can use the Device. If not, try the pairing process again. We will endeavour to root out this slippery issue.

7. The Relay-8 Page (on the Controller)

7.1 Navigating to the 'Devices' page

- (a) Once paired or inducted, each Device is listed on the 'Devices' page.
- (b) From the Homepage, you can get to the 'Devices' page by selecting DEVICES and then Single Press the Right Button.



- (c) The 'DEVICES' page enables you to Add Devices and navigate to any already paired Device's Page.



- (d) To navigate to a particular Device's Page, select the Device and Single Press the Right Button.

7.2 [DEVICE PAGE] The Relay-8 Page

- (a) Once paired each Device has a dedicated page on the Controller. This page is what you use to configure and interact the Device. Each Device type has a different page structure.
- (b) The Relay-8 page on the Controller has the following page structure:

ROW	
1	< § Device Name
2	• [DEVICE] Enabled ☒
3	1. Output 1 << ☒
4	2. Output 2 << ☒
5	3. Output 3 << ☐
6	4. Output 4 << SETUP
7	5. Output 5 << SETUP
8	6. Output 6 << SETUP
9	7. Output 7 << SETUP
10	8. Output 8 << SETUP
11	[DETAILS]
12	Device 8
13	(R8) Relay 8
14	" Device Name " >
15	[OPTIONS]
16	Show Tranmissions ☐
17	[TAGS]
18	Space: 0. Default >
19	Zone: 0. Default >
20	Group: 0. Default >
21	[NETWORK]
22	Network: 0. Default >
23	Keyset: 0. Default >
24	Tx Power: 13 >
25	Rx Power: 13 >
26	Ping Device >
27	[LOCATE]
28	by Sight ☐
29	by Sound ☐
30	[DELETE]
31	Unpair Device (Linked) >>>
32	Delete Device <<<

- (c) The functionality of each row and how to use it is contained in the following clauses.

7.3 Row 1 Page Header

- (a) The Page Header for the Relay-8 shows several items:
 - (i) **Navigation Arrows.** Navigation Arrows are displayed when you can use the corresponding buttons to navigate away from this page.
 - (ii) **Relay-8 Symbol.** There is a Relay-8 symbol. This reminds you that the Device is a Relay device.
 - (iii) **Device Name.** The header also shows the Device Name. The Device name can be changed at any time on Row 14.

7.4 Row 2 [DEVICE] Enabled / Disabled

- (a) This is where the Device is Enabled or Disabled.
- (b) When Disabled, some of the Device's functions will be hidden and the Outputs cannot be switched on.
- (c) When Enabled, all of the Device's functions are shown and the Outputs can be setup, interacted with, controlled and automated by the Controller and system.
- (d) When the Row Selector is on this row, Single Press the Left and Right Buttons to change the Enabled or Disabled status.

7.5 Rows 3 to 10 Outputs

- (a) There are eight (8) Outputs.
- (b) Using these, the Outputs can be setup, controlled and interacted with.
- (c) Each Output needs to be setup (activated and enabled) before it can be used.
- (d) If the Output needs to be setup, the row will look similar to Outputs 4 to 8 above - ending with '<< setup'. This is telling you that the Output needs to be activated and enabled.
- (e) The quickest way to activate and enable an Output is to Long Press the Right Button when on the desired Output row. The activation and enable is done without entering the Output Settings page.
- (f) The alternate way to do this is to Double Press the Left Button and you will enter the Output Settings page. Activate the Output if it has not been activated. The Output has to be activated and enabled to use it.
- (g) The Output Settings page contains a number of settings. The Output can be enabled and disabled, the output name can be changed and it can even be deactivated.

- (h) The Output Settings page can be accessed at any time to make changes by a Double Press of the Left Button when on the desired Output row.
- (i) Once activated and enabled, Outputs will display a switch icon – similar to Outputs 1 to 3 on the example Device Page above.
- (j) To turn the switch on, and the corresponding Output on the Relay-8 on, Single Press the Right Button.
- (k) To turn the switch off, and the corresponding Output on the Relay-8 off, Single Press the Left Button.

7.6 Row 11 [DETAILS]

- (a) This is the heading for the section providing the Device's details.

7.7 Row 12 Device Number

- (a) This provides what the Device's number is on the system.

7.8 Row 13 Device Type

- (a) This provides what the Device's Type is on the system.
- (b) For a Relay-8 it will show '(R8) Relay-8' as the Device Type.
- (c) The '(R8)' in brackets is short hand for the device; and, 'Relay-8' is the long hand.

7.9 Row 14 Device Name

- (a) This row displays the current Device Name; and, also allows you to rename the Device.
- (b) To rename the Device, Single Press the Right Button when on this row – this will take you to the Text Tool. The name can be changed using the Text Tool.
- (c) Once renamed, the new Device Name will show on this row and on the header row.
- (d) For more information on the Text Tool, and how to use it, refer to the Controller instruction manual.

7.10 Row 15 [OPTIONS]

- (a) This is the heading for the section providing misc. options for the Device.

7.11 Row 16 Show Transmissions

- (a) This row provides the ability to show incoming transmissions from the Device on the Controller display.

- (b) If 'Show Transmissions' is Off, no incoming transmissions will be displayed.
- (c) If 'Show Transmissions' is On, the incoming transmissions will be displayed in a Popup Box. This is a very useful tool to view what transmissions are being sent from the Device. It also allows you to play with the Device and see what's being transmitted.
- (d) To acknowledge and hide the transmission Popup Box Single Press either the Left or Right Button or turn the Rotary Selector.

7.12 Row 17 [TAGS]

- (a) This is the heading for the section providing the ability to Tag devices.
- (b) Applying a Tag assigns a Device to a particular Space, Zone and/or Group.
- (c) Using Tags, Devices can be more rapidly located through the Device search functionality. Tags will also provide powerful future capabilities.
- (d) For more details on Tags, and how to use them, refer to the Controller User Guide.
- (e) Tags are more and more useful the more Devices you have paired to your Controller.

7.13 Row 18 Space Tag

- (a) This row allows you to assign a 'Space' Tag to the device.

7.14 Row 19 Zone Tag

- (a) This row allows you to assign a 'Zone' Tag to the device.

7.15 Row 20 Group Tag

- (a) This row allows you to assign a 'Group' Tag to the device

7.16 Row 21 [NETWORK]

- (a) This is the heading for the section providing the ability to change network and communications settings; and, pinging the Device.

7.17 Row 22 Network

- (a) The Network row allows alternate networks to be selected and used.
- (b) Following any change, the Controller will send a transmission to the Device. The setting will only remain if the Controller receives an acknowledgment message from the Device.
- (c) For more details on Networks and changing them for a particular Device, please refer to the Controller User Guide.
- (d) This item should only be used by Advanced Users.

7.18 Row 23 Keypset

- (a) The Keypset row allows alternate keysets to be selected and used.
- (b) Following any change, the Controller will send a transmission to the Device. The setting will only remain if the Controller receives an acknowledgment message from the Device.
- (c) For more details on Keypsets and changing them for a particular Device, please refer to the Controller User Guide.
- (d) This item should only be used by Advanced Users.

7.19 Row 24 Tx Power

- (a) The Tx Power row allows the transmission power from the Controller to the Device to be changed.
- (b) To make a change, Single Press the Right Button – this will enable changes. Use the rotary selector to increase or decrease the transmission power setting. Once done, Single Press the Left Button to confirm.
- (c) The power can be set between 5 (lowest power) and 23 (highest power).
- (d) You should always select the lowest power setting that enables good communications.

7.20 Row 25 Rx Power

- (a) The Rx Power row allows the transmission power from the Device to the Controller to be changed.
- (b) To make a change, Single Press the Right Button – this will enable changes. Use the Rotary Selector to increase or decrease the transmission power setting. Once done, Single Press the Left Button.
- (c) Following the change, the Controller will send a transmission to the Device. The setting will only remain if the Controller receives an acknowledgment from the Device.
- (d) The power can be set between 5 (lowest power) and 23 (highest power).
- (e) You should always select the lowest power setting that enables good communications.

7.21 Row 26 Ping Device

- (a) Pinging a Device sends a test transmission from the Controller to the Device and then back to the Controller again – collecting useful information along the way.
- (b) The results of the Ping are displayed on a Popup Box. The Popup Box shows:

- (i) The transmission power from the Controller
- (ii) The signal strength received by the Device
- (iii) The transmission power from the Device
- (iv) The signal strength received by the Controller
- (v) The return trip time
- (c) The Ping function is particularly powerful as it allows users to ascertain transmission strengths and times. This helps to optimise transmission settings.

7.22 Row 27 [LOCATE]

- (a) This is the heading for the section providing Device locating functionality.
- (b) The locate functions allow the Device to be easily located and identified.

7.23 Row 28 Locate by Sight

- (a) Use this to turn the high-intensity white LED on the Device on and off.

7.24 Row 29 Locate by Sound

- (a) Use this to turn the audible locating beep on the Device on and off .

7.25 Row 30 [DELETE]

- (a) This is the heading for the section providing unpairing and device deleting functions.

7.26 Row 31 Unpair Device (Linked)

- (a) This provides the ability to unpair a paired Device when it's powered on, awake and in range.
- (b) Warning: All settings on the Controller, relating to a particular Device, will be lost when it's unpaired.
- (c) To unpair the Device, Triple Press the Right Button and confirm when prompted.
- (d) The Unpair Device function does the following:
 - (i) Factory resets the Device including erasing all memory, network details, network codes, transmission keys, encryption keys, session keys and any previous settings.
 - (ii) Deletes all details, settings and any trace of the Device from the Controller.
- (e) Following the Unpair Device function, the Device can again be paired to this system or to a different You.InControl system.

7.27 Row 32 Delete Device

- (a) This provides the ability to delete a Device from the Controller.
- (b) Unlike the unpair function, the Delete Device function does not communicate with the Device and is good for removing lost Devices, Devices that are sleeping or are out of range.
- (c) Warning: All settings on the Controller, relating to a particular Device, will be lost when it is unpaired.
- (d) To delete the Device, Triple Press the Left Button and confirm when prompted.
- (e) The Delete Device function does the following:
 - (i) Deletes all details, settings and any trace of the Device from the Controller.
- (f) Following the Delete Device function, the Device won't know that it was deleted from the system, as the function does not communicate with the Device. However, the Device will no longer be able to decrypt any transmissions on the system, as the encryption keys etc. are no longer valid. And, any communications from the Device to the Controller will be ignored.
- (g) Once the Delete Device function has been performed, the Device will need to be Factory Reset using the System Button (SYS) on the device. Following that it will be able to be re-paired to this system or to a different You.InControl system.

8. Resetting the Relay-8

8.1 Resetting the Relay-8

- (a) To reset the Relay-8 and restart it, press the Reset Button (RST) on the Relay-8.
- (b) In normal operation, this is never needed; however, the reset ability is there should the Device ever become unresponsive or act up in any way.
- (c) Once reset, the Device will immediately restart, connect with the Controller, get session keys and will be ready to go in a lickety split.

8.2 Factory Reset

- (a) Factory resetting a Device will completely wipe everything from the Device and return it back to the original factory settings. It will also delete all pairing information from the Controller, so the Controller will no longer be able to communicate with it.
- (b) The Factory Reset function also does not communicate with the Controller, so the Controller will not be aware that the Device was Factory Reset.
- (c) To perform a Factory Reset, simply press the Device's System Button (SYS) five (5) times and hold the fifth press for ten (10) seconds. You will hear a beep, the System LED will flash Green twice and the System LED will then start flashing Blue every two (2) seconds to indicate the Device is ready and able to be paired with a You.InControl system.

9. Relay-8 applications

TBC