2 Door Access Module

EC-A2 REX Manual V1.1

Connects directly to the 'EC' or 'EC-i' control panel keypad bus for integrated alarm & access control applications. Supports EliteCloud keypad/reader models.

'EC' or 'EC-i' must be Firmware Version 10.3.45 (or above)

Features

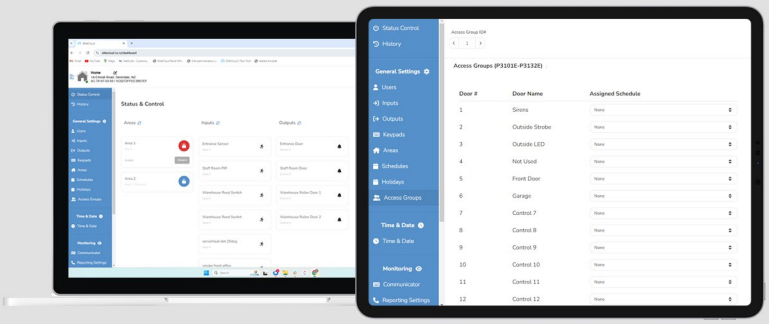
- 2 Door Outputs
- 2 Monitoring Inputs
- 2 REX Inputs
- Supports 'EC-PSU'
- Field Updatable
- 5 Year Warranty

Compatible Readers

'PW WIEGAND NK', 'PW WIEGAND',
'PW WIEGAND SK1' & 'PW WIEGAND SK4'

Programming

Access control functions for the 'EC-A2 REX' can be configured via traditional alarm keypad address programming, however the EliteCloud dashboard or 'EC-i' built in web browser is the preferred method for a more installer friendly experience.



EliteCloud Support Material

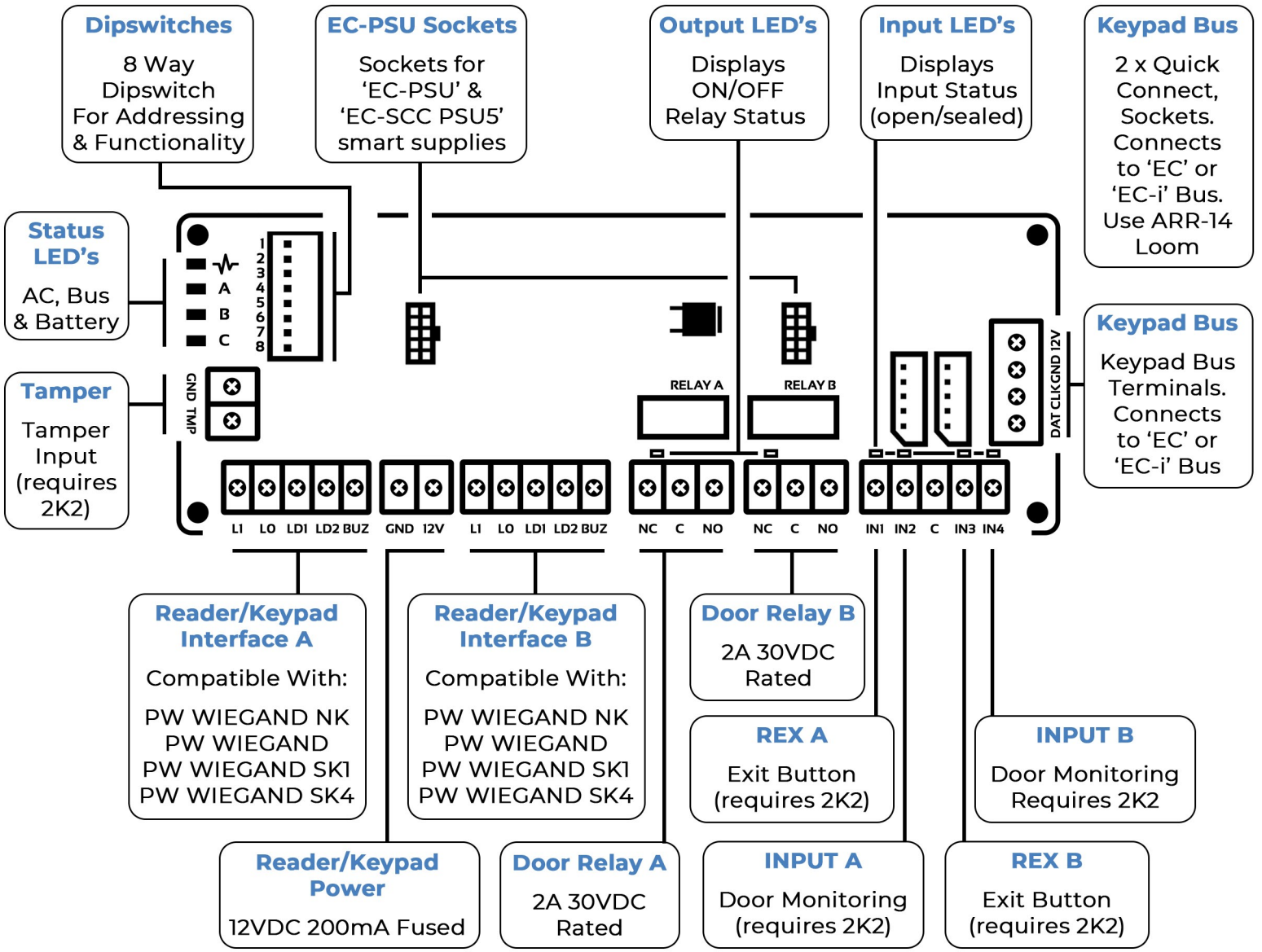
Videos

www.youtube.com/@elitecloudsystems

Installer manuals

www.elitecloud.co.nz/manuals/installer

Hardware Overview



Diagnostic LED's *(Status, Output & Input LED's)*

Keypad Bus conflict	**A, B & C** LED's flashing together
Battery Low	**B** LED ON Solid
AC Failure	**C** LED ON Solid
Door Relay 'A' or 'B' LED OFF	Relay/Control panel Output is OFF (or 'EC-A2 REX' not addressed correctly)
Door Relay 'A' or 'B' LED ON	Relay/Control Panel Output is ON
REX/Input 'A' or 'B' LED OFF	Input is sealed correctly with a 2K2 resistor
REX/Input 'A' or 'B' LED ON	Input is either open or short circuit (or input/REX button is currently active)

Input Information (see next page for wiring examples)

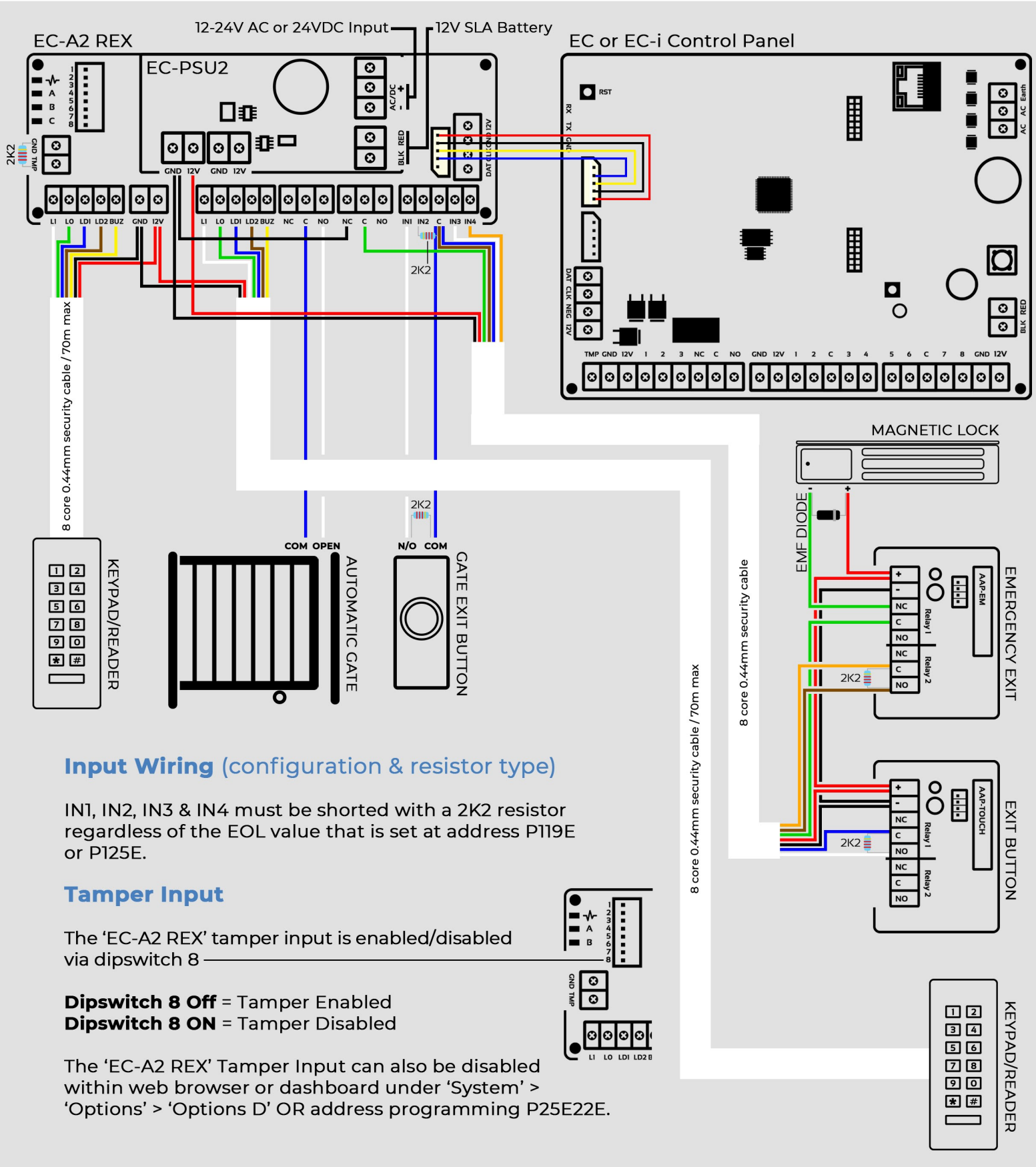
- REX A & REX B (IN1 & IN3) are always active. It is imperative to terminate both REX inputs (IN1 & IN3) to common with a 2K2 resistor, including when an exit button is not being used.
- IN2 & IN4 are commonly utilised for door or egress button monitoring. These inputs are not active by default and are required to be programmed as a 'Keypad Input' to make them active. Setting Input 'IN2' or 'IN4' to a 'Keypad Input' is configured via the web browser or dashboard within 'Inputs' > 'Options' > 'Options A' OR at address P122E (option 4) within keypad programming.

Wiring Examples

This example shows the 'EC' or 'EC-i' control panel, connected to an 'EC-A2 REX', controlling an automatic gate on 'RELAY A' & a 12VDC magnetic clamp on 'RELAY B'.

Power Supply

This example shows an 'EC-PSU2' plugged into the 'EC-A2 REX' to provide up to 1.5A @ 13.8VDC of monitored, battery backed up power to the magnetic lock. For security purposes, it is imperative to isolate the power between the keypad/reader & the electric lock as detailed below.



Input Wiring (configuration & resistor type)

IN1, IN2, IN3 & IN4 must be shorted with a 2K2 resistor regardless of the EOL value that is set at address P119E or P125E.

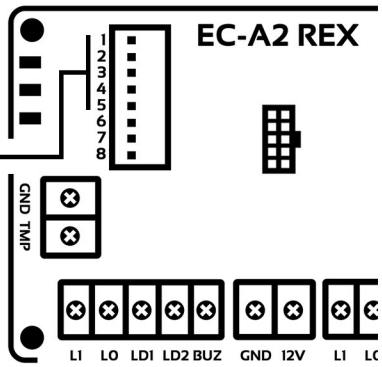
Tamper Input

The 'EC-A2 REX' tamper input is enabled/disabled via dipswitch 8

Dipswitch 8 Off = Tamper Enabled
Dipswitch 8 ON = Tamper Disabled

The 'EC-A2 REX' Tamper Input can also be disabled within web browser or dashboard under 'System' > 'Options' > 'Options D' OR address programming P25E22E.

Dipswitch Addressing



- The 'EC-i' supports a maximum of 32 keypads. These can be alarm &/or access control keypads. Access control reader/keypads must be individually addressed using dipswitches 1 to 5 shown here
- Use the chart below to set the address of each 'EC-A2 REX' module on your system.

Important:

- Dipswitch 6 determines whether the 'EC-A2 REX' is a 1 or 2 door controller.

Dipswitch 6 Off = 1 Door Mode

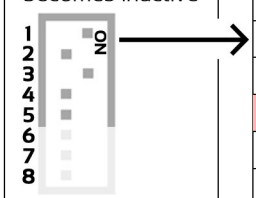
- 'KP Interface A' becomes the address set via dipswitches 1 to 5 (as per the table below)
- Setting the 'EC-A2 REX' to 1 Door Mode makes 'Interface B', 'Relay B', IN3' & 'IN4' inactive.

Dipswitch 6 On = 2 Door Mode
'KP Interface A' becomes the address set via dipswitches 1 to 5 (as per the table below)
'KP Interface B' automatically becomes the following address.

2 Door Mode Example:
If 'KP Interface A' is set to address 6 then 'KP Interface B' becomes address 7
If 'KP Interface A' is set to address 25 then 'KP Interface B' becomes address 26

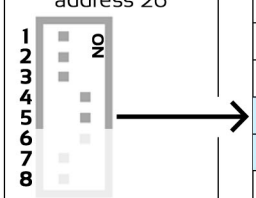
1 Door Example
(Dipswitch 6 OFF)

KP Interface A becomes keypad address 6 & KP Interface B becomes inactive



2 Door Example
(Dipswitch 6 ON)

KP Interface A becomes keypad address 25 & KP Interface B becomes keypad address 26



KP Address	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Relay mapped to	Input mapped to
KP Address 1	OFF	OFF	OFF	OFF	OFF	Output 1	Input 1
KP Address 2	ON	OFF	OFF	OFF	OFF	Output 2	Input 2
KP Address 3	OFF	ON	OFF	OFF	OFF	Output 3	Input 3
KP Address 4	ON	ON	OFF	OFF	OFF	Output 4	Input 4
KP Address 5	OFF	OFF	ON	OFF	OFF	Output 5	Input 5
KP Address 6	ON	OFF	ON	OFF	OFF	Output 6	Input 6
KP Address 7	OFF	ON	ON	OFF	OFF	Output 7	Input 7
KP Address 8	ON	ON	ON	OFF	OFF	Output 8	Input 8
KP Address 9	OFF	OFF	OFF	ON	OFF	Output 9	Input 9
KP Address 10	ON	OFF	OFF	ON	OFF	Output 10	Input 10
KP Address 11	OFF	ON	OFF	ON	OFF	Output 11	Input 11
KP Address 12	ON	ON	OFF	ON	OFF	Output 12	Input 12
KP Address 13	OFF	OFF	ON	ON	OFF	Output 13	Input 13
KP Address 14	ON	OFF	ON	ON	OFF	Output 14	Input 14
KP Address 15	OFF	ON	ON	ON	OFF	Output 15	Input 15
KP Address 16	ON	ON	ON	ON	OFF	Output 16	Input 16
KP Address 17	OFF	OFF	OFF	OFF	ON	Output 17	Input 17
KP Address 18	ON	OFF	OFF	OFF	ON	Output 18	Input 18
KP Address 19	OFF	ON	OFF	OFF	ON	Output 19	Input 19
KP Address 20	ON	ON	OFF	OFF	ON	Output 20	Input 20
KP Address 21	OFF	OFF	ON	OFF	ON	Output 21	Input 21
KP Address 22	ON	OFF	ON	OFF	ON	Output 22	Input 22
KP Address 23	OFF	ON	ON	OFF	ON	Output 23	Input 23
KP Address 24	ON	ON	ON	OFF	ON	Output 24	Input 24
KP Address 25	OFF	OFF	OFF	ON	ON	Output 25	Input 25
KP Address 26	ON	OFF	OFF	ON	ON	Output 26	Input 26
KP Address 27	OFF	ON	OFF	ON	ON	Output 27	Input 27
KP Address 28	ON	ON	OFF	ON	ON	Output 28	Input 28
KP Address 29	OFF	OFF	ON	ON	ON	Output 29	Input 29
KP Address 30	ON	OFF	ON	ON	ON	Output 30	Input 30
KP Address 31	OFF	ON	ON	ON	ON	Output 31	Input 31
KP Address 32	ON	ON	ON	ON	ON	Output 32	Input 32

Important
Keypad Address 8 is used for the EliteCloud app on the EC & EC-i control panels & therefore this address is not advised to be used as an alarm keypad or access control keypad/reader

Access Control Web/Dashboard Programming

Programming for the 'EC-A2 REX' is best performed via the 'EC-i' control panel built in web browser or the EliteCloud installer dashboard.

Keypad address programming is also available, however it is not recommended due to limited display/feedback.

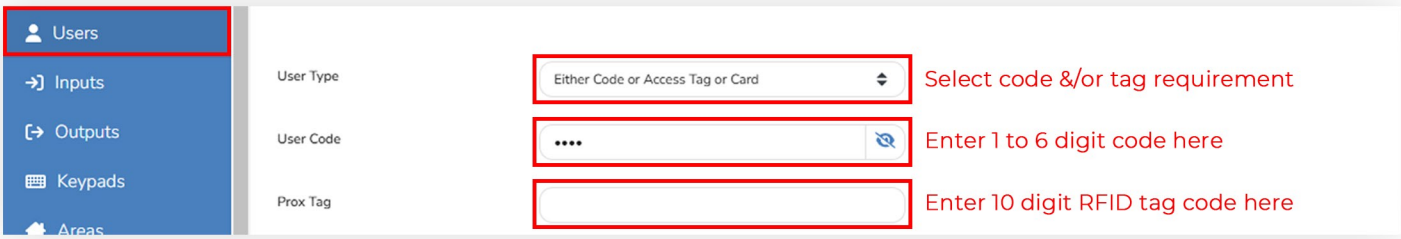
Important

All Users from 1 to 100 can Arm & Disarm by default & are mapped to Area 1 only.

Keypad addresses 3 to 32 are mapped to their associated output by default. I.e. Keypad 3 is mapped to output 3. Keypad 20 is mapped to output 20.

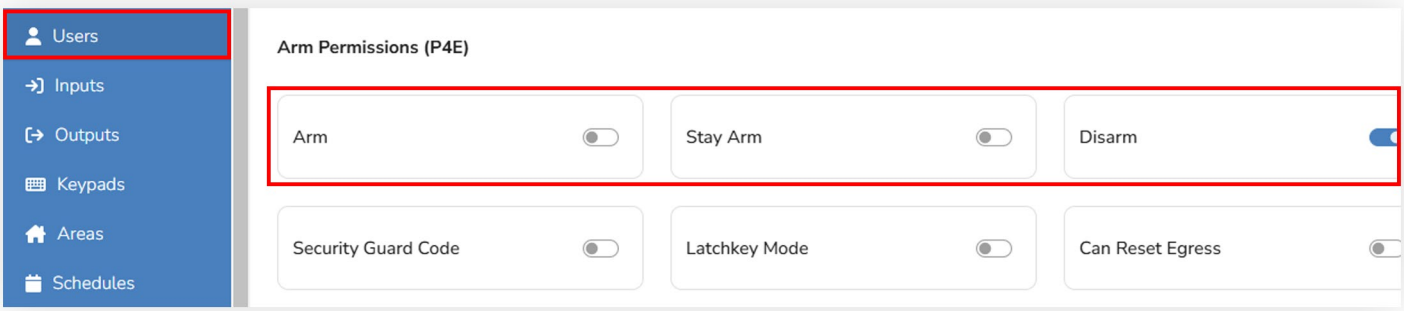
Adding User Codes & Proximity Tags

Codes or Tags are programmed into User slots 1 - 2000 within the 'Users' > 'General' tabs as shown below:



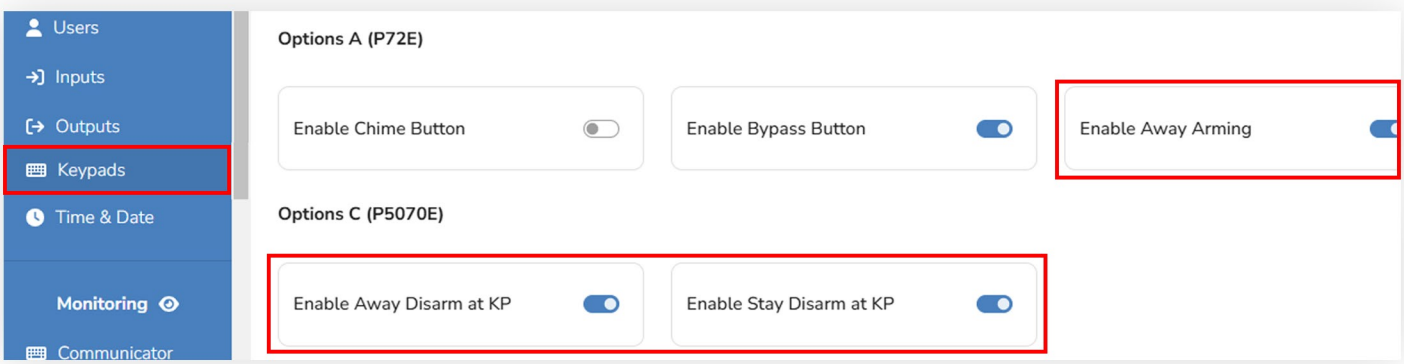
Arm/Disarm Permissions for User Codes & Proximity Tags *(incl Stay arm/disarm)*

Each User from 1 - 2000 can be allowed or denied arm or disarm or both from within the 'Users' > 'Options' tabs under 'Arm Permissions' as shown below:



Arm/Disarm Permissions for Keypads *(incl Stay arm/disarm)*

Each alarm or access keypad/reader (from 1 - 32) on the EC-i system can be configured to arm only, disarm only, arm & disarm or not arm or disarm within the 'Keypads' > 'Options' tabs under 'Options A' & 'Options C' as shown below:

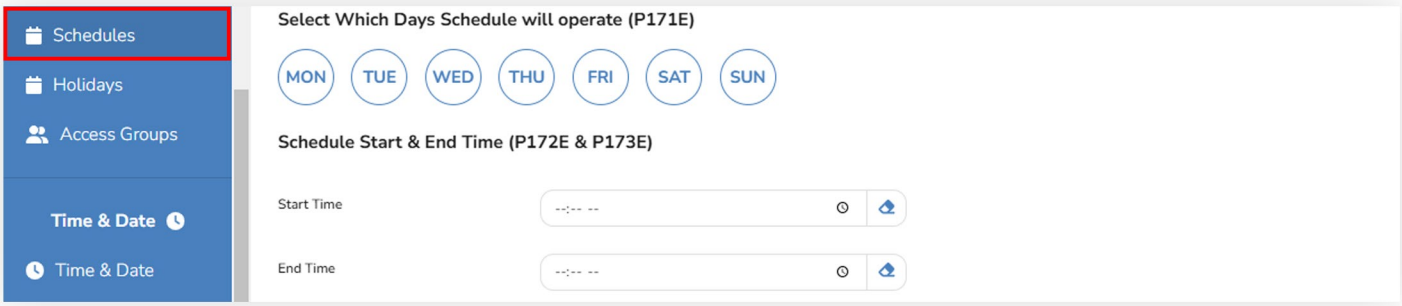


To complete the access control setup 'Access Groups' & 'Schedules' must be configured, then you must assign Users to an 'Access Group'. See next page for these & other configuration steps.

Schedules

From the 'Schedules' tab, set the day(s) & the start/end time that you wish for the Schedule to operate. Each Schedule (1 to 32) can be assigned to 1 or more doors within each 'Access Goup'.

Important: A Schedule start time must be before the end time in a 24hr period. I.e. Start Time 07:00 & End Time 18:00 is correct ,whereas Start Time 18:00 & End Time 07:00 is incorrect.



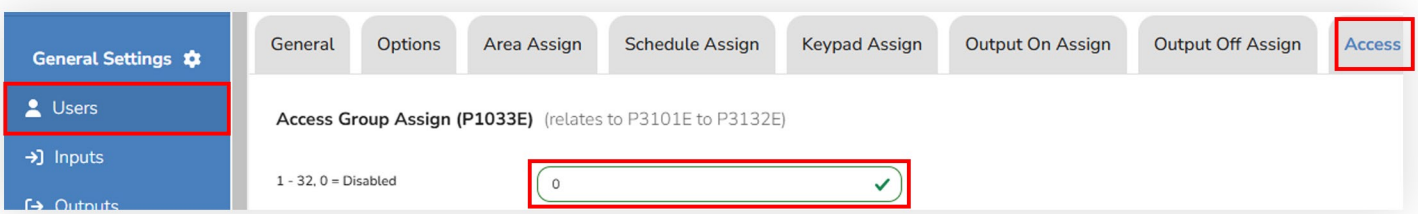
Access Groups

Up to 32 'Access Groups' can be configured within the 'Access Groups' tab. This allows installers to set selected schedules **OR** 24/7 access **OR** no access to each of the 32 doors within an 'Access Group'. 'Access Groups' allows owners, managers, staff, cleaners etc to be placed in different 'Access Groups' to allow or restrict access depending on user hierarchy.

Assign Users to Access Groups

Once 'Schedules' & 'Access Groups' have been configured, you can add any User (from 1 to 2000) to any 'Access Group' (from 1 to 32).

Example:
Owners can be placed into 'Access Group' 1, allowing access to all doors at all times (Enable 24/7).
Managers can be placed into 'Access Group' 2 with all access excluding the owners office.
Staff can be placed into 'Access Group' 3 with access to the showroom during 08:00 - 17:00 only.



Door Unlock Time

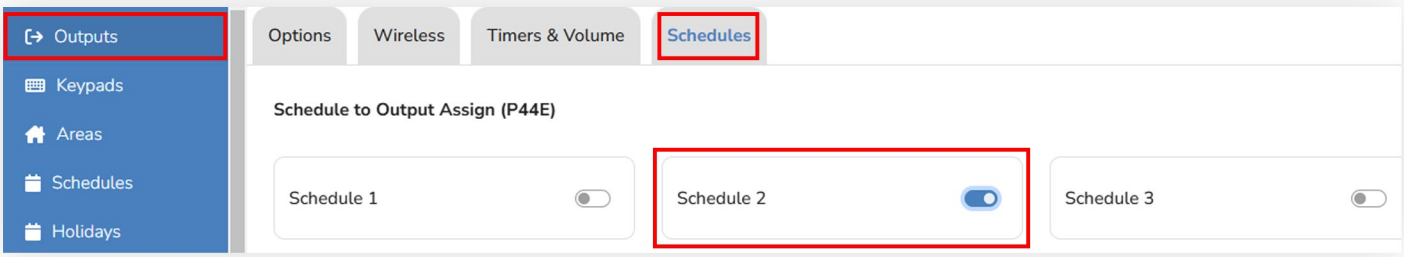
The unlock time for each door is configured from the 'Outputs' > 'Timers & Volume' tabs, within the 'Reset Time' field as shown below. The reset time for each door can be set from '1' to '65535' seconds (common practise) or toggle/latch when the 'Reset Time' is set to '0' seconds.

The following steps are not required for the EC-i/EC-A2 REX access control to operate, however these extra functions may help to further automate access door or user functionality on the site.

Directly Assigning Schedules to Doors

Schedules can be directly linked to lock/unlock doors at certain times. First the 'Schedule' must be configured in the same way as detailed at the top of the previous page, however assigning these directly to doors is done as follows:

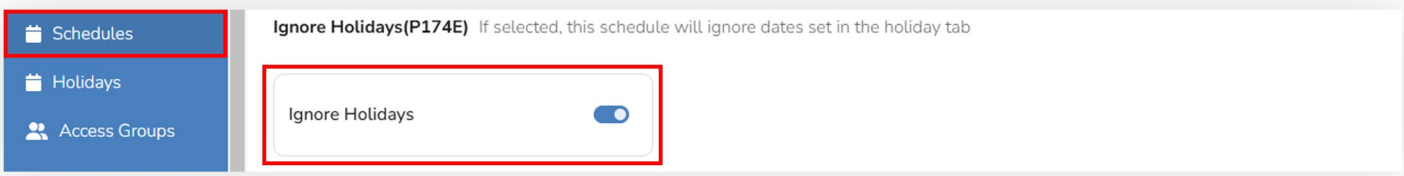
Go to 'Outputs' > 'Schedules', then turn on any 'Schedule' from 1 to 32 to directly assign it to the relevant 'Output/Door'. Make sure you have scrolled to the correct 'Output/Door' before assigning the 'Schedule'.



Holidays

Holidays can be programmed to turn off 'Schedules' that are assigned to automatically operate doors etc. The date of a public holiday can be programmed within the 'Holidays' tab & therefore doors that are scheduled to open at 08:00 (for example) will remain locked on this set day.

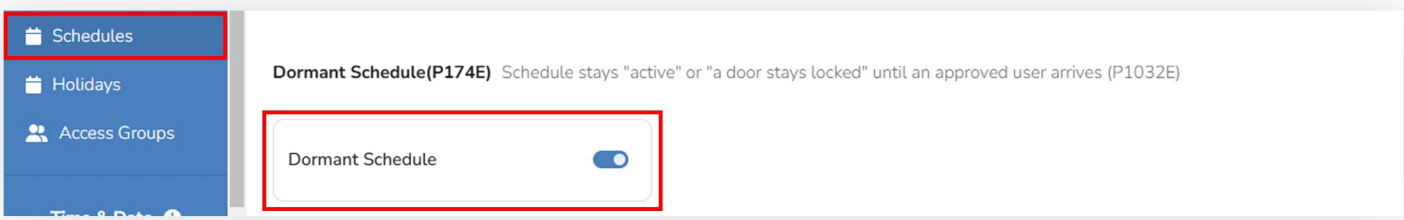
Up to 32 individual holiday dates can be programmed within the 'Holidays' tab (dd/mm/yy). Holiday dates will automatically apply to all 'Schedules', however if you would like any selected 'Schedule' to still operate during a holiday, you must select 'Ignore Holidays' as shown below:



Dormant Schedules

Any Schedule from 1 to 32 can be set as a 'Dormant Schedule'. A 'Dormant Schedule' will not 'wake up' until an authorised User presents their proximity tag (or user code) to open a door with a 'Schedule' that has been programmed as 'Dormant'.

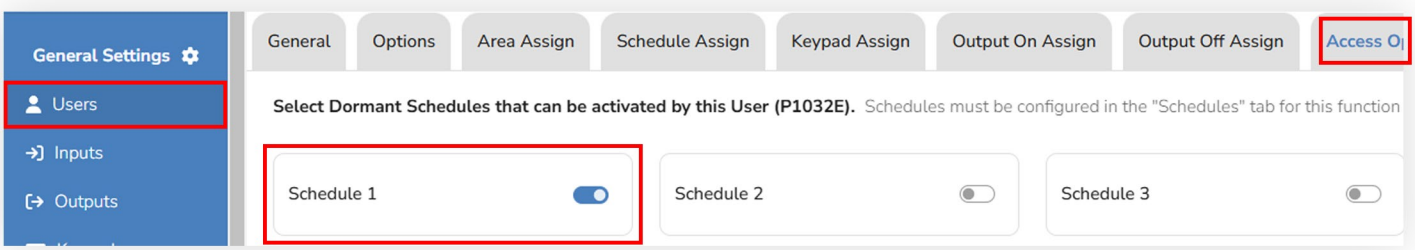
Example:
The front door of a shop is set to follow 'Schedule 1' and therefore automatically open at 08:00. However if 'Schedule 1' is set as a 'Dormant Schedule', then the front door will remain locked (even after 08:00) until an authorised user accesses the door (see Authorised Users below).



Authorising Users for Dormant Schedules *(Users who can 'wake' one or more Dormant Schedules)*

Any Users from 1 to 2000 can be programmed to 'wake' a 'Dormant Schedule' (see 'Dormant Schedules' above).

This is programmed within the 'Users' > 'Access Options' tabs. In the example below we are allowing this user to 'wake up/activate' 'Schedule 1', meaning that the 'front door' (from the example above) would open and remain unlocked (if after 08:00) until the next 'Schedule' cycle, where it will become 'Dormant' again.

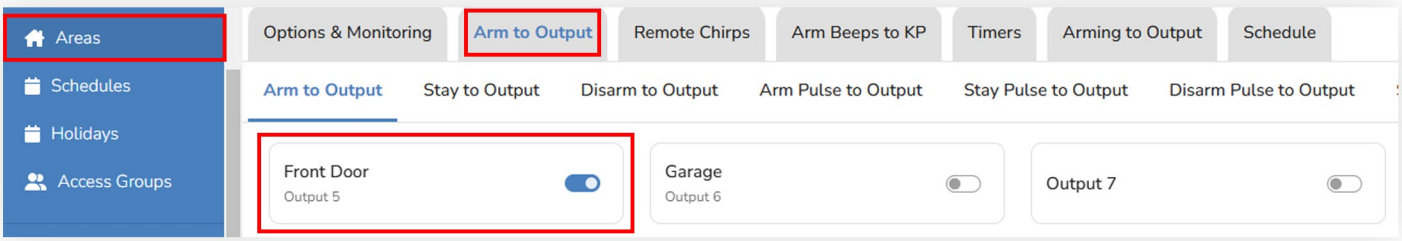


Door Follows Alarm Armed State

This function allows you to program one or more doors to lock (or unlock) when the system is armed & then unlock (or lock) when the system is disarmed.

This is programmed under 'Areas' > 'Arm to Output'. This example will turn 'Output 5' (Front Door) on when the system is 'Armed'. This 'Output' will turn off again when the system is 'Disarmed'.

Of course the door relay can be wired to the lock accordingly, however each door relay can also be inverted in programming under 'Outputs' > 'Options' > 'Invert'.

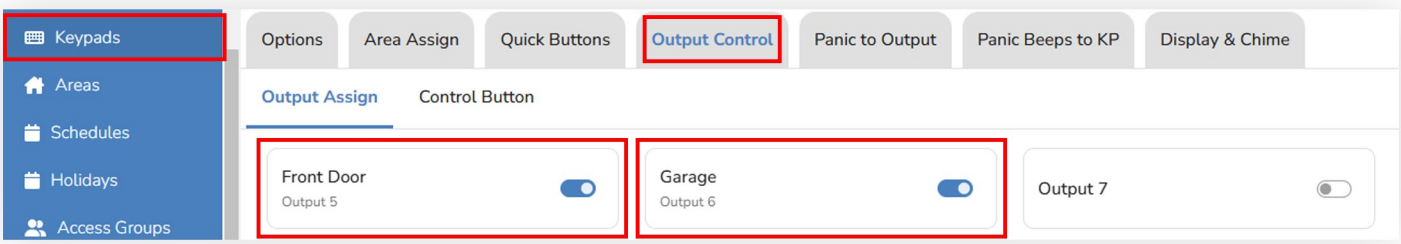


Assigning a Keypad/Reader to Doors

By default the EC-i control panel has 'Keypad 3' up to 'Keypad 32' assigned to its relative Output/Door. I.e. 'Keypad 3' is assigned to 'Output/Door 3', 'Keypad 20' is assigned to 'Output/Door 20', 'Keypad 25' is assigned to 'Output/Door 25' and so on.

In some cases one access keypad may need to operate more than one output/door. The example below shows one keypad assigned to the Front Door & also the Garage.

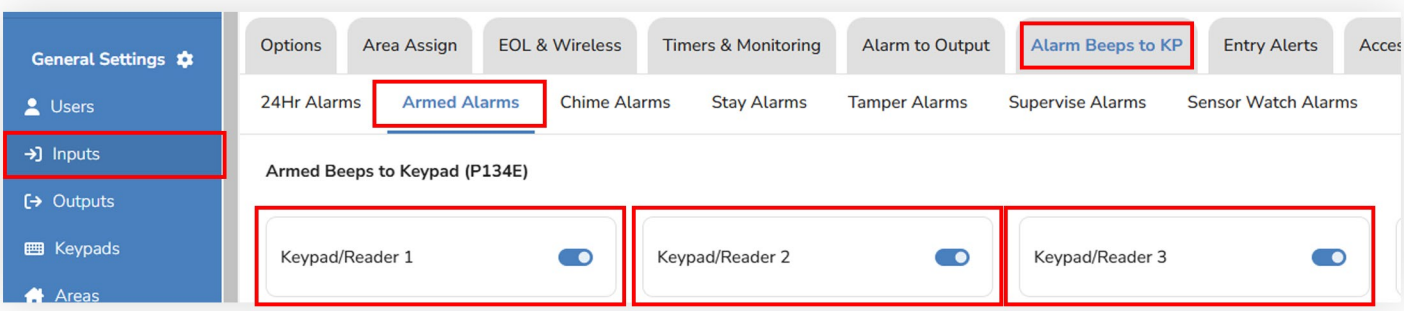
This is configured from 'Keypads' > 'Output Control' as detailed below:



Alarm Beeps &/or Entry Delay Beeps to Keypad

Depending on the installation you may or may not require alarm beeps or entry delay beeps to be sounding on certain access control readers or keypads. These beeps can be enabled or disabled for each reader/keypad within 'Inputs' > 'Alarm Beeps to KP' or 'Entry Alerts'. These settings are individually configurable for each 'Input' as shown below:

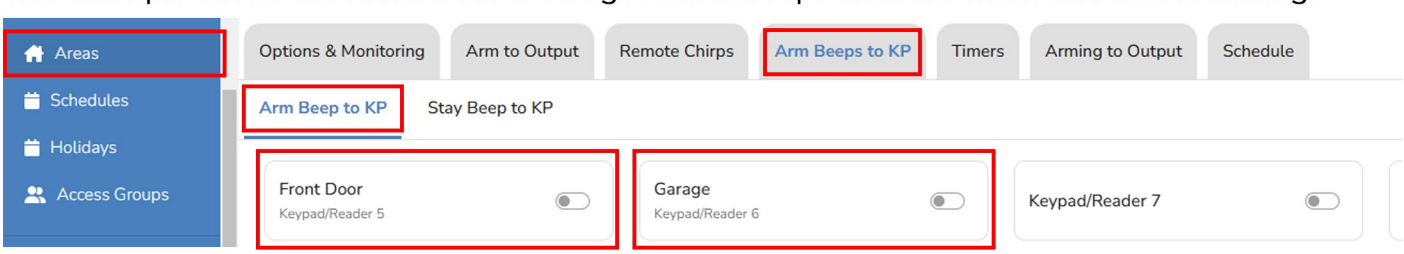
This example shows 'Armed Alarm Beeps to Keypad' from 'Input 1' mapped to Keypads 1, 2 & 3:



Exit Delay Beeps to Keypad

Often when the alarm is arming you will not want to hear the arming exit beeps on the perimeter access control reader/keypads. These are also customisable for each area & are configured at 'Areas' > 'Arm Beepd to KP'.

This example shows the Front Door & Garage reader beeps disabled when this area is arming.



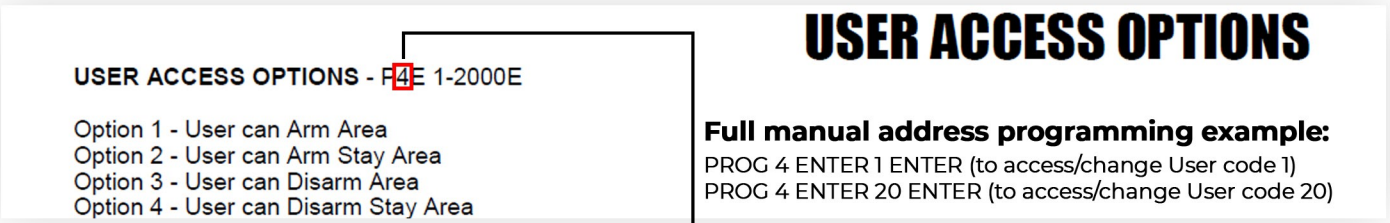
Access Control Keypad Address Programming Overview

Traditional keypad address programming is not the recommended method for configuring the EC-i control panel, however it is sometimes convenient or necessary for certain functions.

For this reason you can program & review almost any programming option that the EC-i control panel supports via the 'EC-LCD' or 'EC-TOUCH' alarm keypads.

Keypad Programming

Below are the programming addresses that are covered in the web/dashboard section of this manual. For more information, please reference these addresses in the full manual (or summary guide) & also information on accessing installer programming from an alarm keypad.



Adding User Codes (Address 1)

Adding Proximity Tags or Cards (Address 21)

User Arm/Disarm Permissions (Address 4)

Keypad Arm/Disarm Permissions (Address 72 & Address 5070)

Schedules (Address 171 to Address 173)

Holidays (Address 170)

Access Groups (Address 3101 to 3132)

Assigning Users to Access Groups (Address 1033)

Door Unlock Time (Address 40)

Directly Assigning Schedules to Doors (Address 44)

Dormant Schedules (Address 174)

Authorising Users for Dormant Schedules (Address 1032)

Door Follows Alarm Armed State (Address 47)

Assigning Keypads/Readers to Doors (Address 82)

Alarm Beeps to Keypads (Address 134)

Entry Delay Beeps to Keypads (Address 142)

Exit Delay Beeps to Keypads (Address 58)

Installer manuals

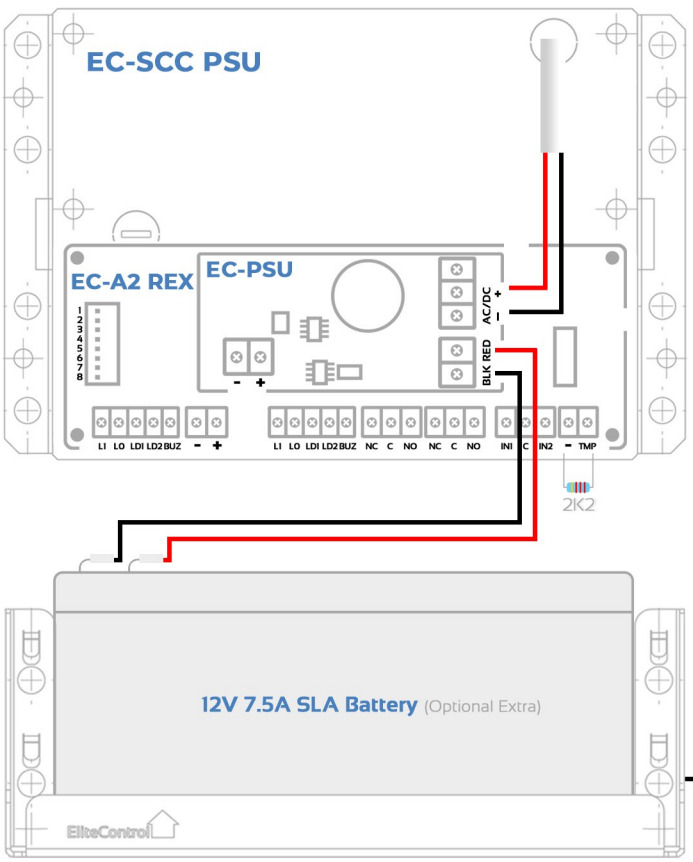
Scan QR code for support material on other accessories, or contact your local distributor for more information.
www.elitecloud.co.nz/manuals/installer

Power Supply Options

The following supplies are recommended for the 'EC-A2 REX' & 'EC-PSU' modules:

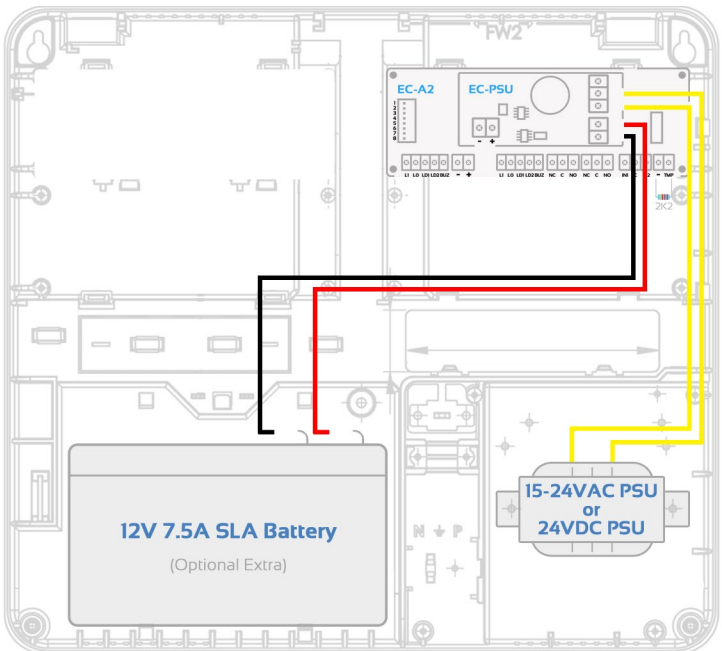
EC-SCC PSU

- Input: 230VAC
- Output: 24VDC 2.2A
- Ideal for structured cabling cabinets
- Powers up to 2 x EC-PSU modules



Transformer or Plug Pack

- Input: 230VAC
- Output: 15-24VAC 1.4A OR 24VDC 1A
- Ideal for EC-CAB enclosure
- Powers up to 1 x EC-PSU module



EC-SCC BATT - Optional battery holder for structured cabling cabinets. Ideal for mounting SLA batteries directly above or below the power supply

Current Draw Reference Table

Use the following current draw table to determine the amount of power required for your specific system.

Electric lock power requirements will vary. Refer to the lock technical data relating to your specific lock for an accurate calculation. Adding a 30% overhead to your calculation is also recommended.

Product	Current Draw	Quantity Used	Current
EC-A2	50mA		
PW WIEGAND (all models)	50mA		
AAP-EM	50mA		
AAP-TOUCH	50mA		
Magnetic Lock (estimate)	500mA		
Strike Lock (estimate)	250mA		
V-Lock (estimate)	1000mA		
EC-Z8	40mA		
EC-O4	100mA		
EC-LCD	100mA		
EC-TOUCH	250mA		
		Total Current Calculation →	

Also available: 'PSU6B SM' or 'EC-SCC PSU5' supplies for up to 6A of power, monitored by the EC-i control panel.