

2 Door Access Control Module

The EC-A2 connects directly to the keypad bus of the ESX or ESL control panel using the ARR-14 quick connect loom provided or via the on board keypad bus terminals

This allows access control keypads &/or readers to be connected to the ESL or ESX control panels for alarm & access control integration

Each EC-A2 supports:

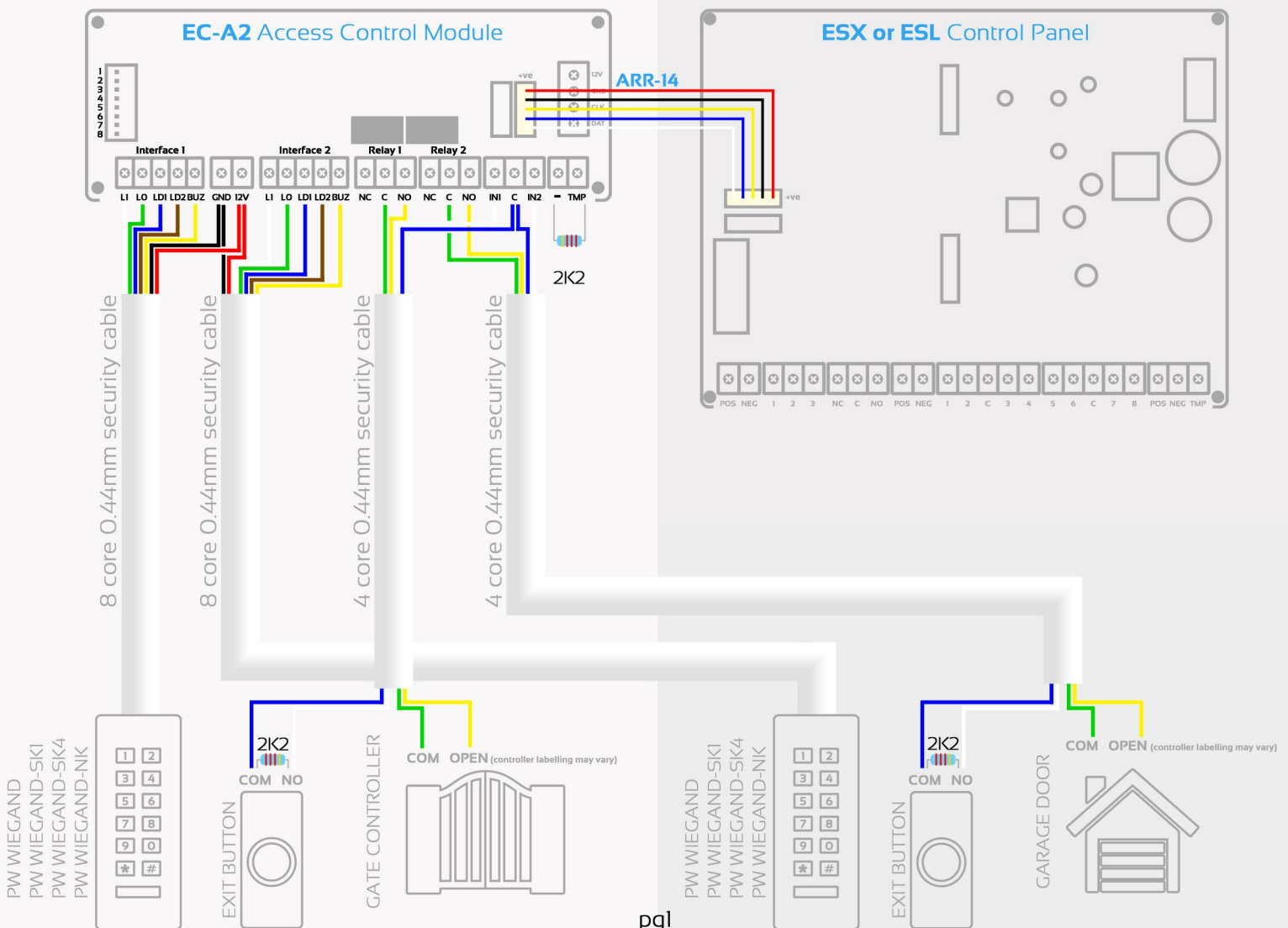
- **2 x Access keypad/readers** (proprietary wiegand)
- **2 x Outputs** for control of doors, garages, gates & more
- **2 x Inputs** for use with request to exit buttons (default) or for door, lock or exit button monitoring
- **1 x Keypad bus screw down terminals** - 12V - GND - CLK - DAT
- **Sockets** for EC-PSU plug in power supply module

Recommended Readers: PW WIEGAND-NK - PW WIEGAND - PW WIEGAND-SKI - PW WIEGAND-SK4

2 Door Wiring Schematic for Garage Doors & Gates

This example shows connection of 1 x ESX or ESL control panel, 1 x EC-A2, 2 x reader/keypads & 2 x exit buttons controlling 1 x garage door & 1 x gate.

Note: Locks are configured differently. See next page for electric lock configuration

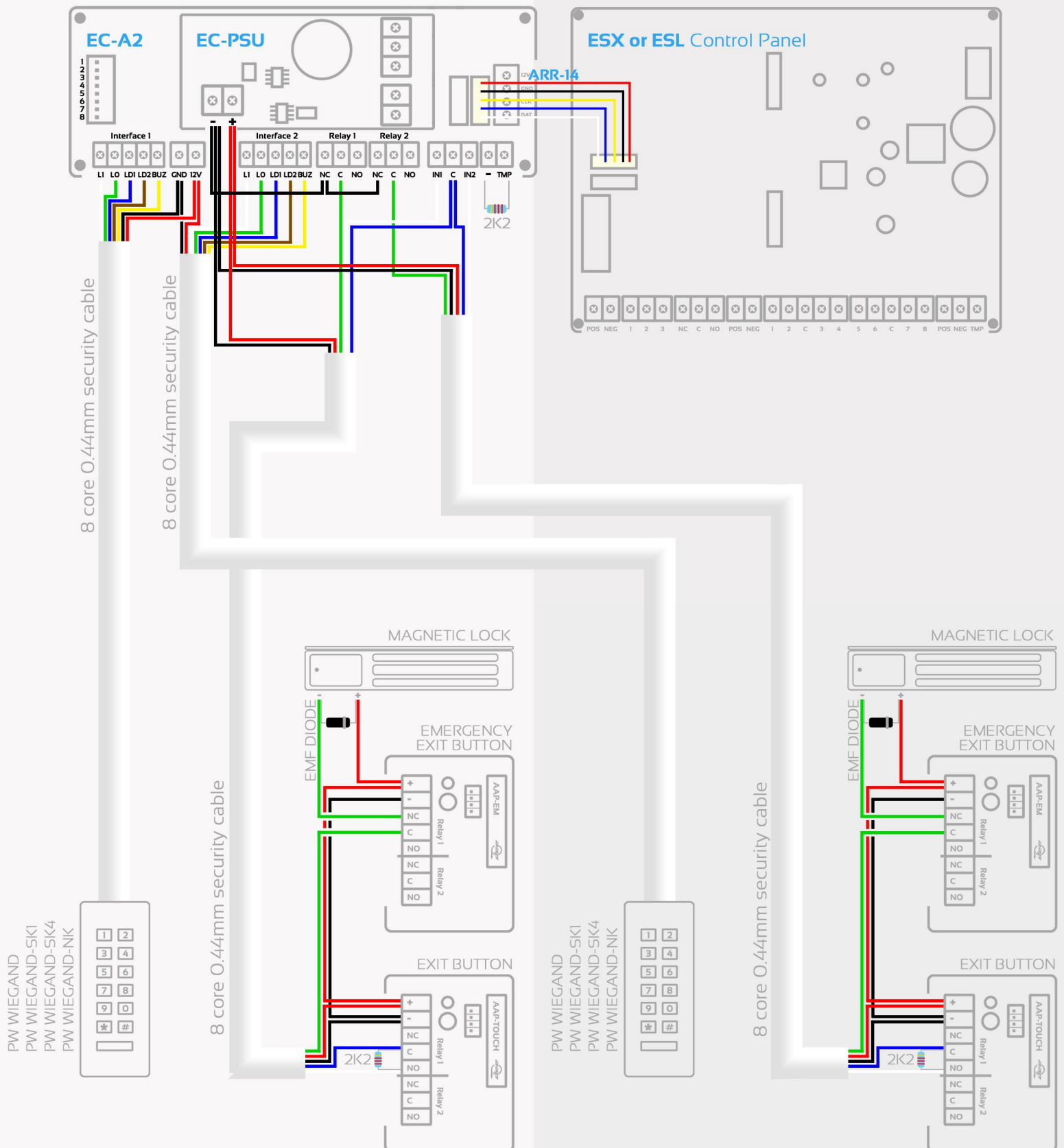


2 Door Wiring Schematic for Electronic Locks

This example shows connection of 1 x ESX or ESL control panel, 1 x EC-A2, 2 x reader/keypads, 2 x exit buttons, 2 x emergency exit buttons & 2 x magnetic locks (fail safe/power to lock)

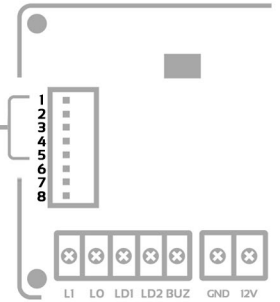
EC-PSU - Monitored battery back up power supply

This example uses the ESX-PSU to power & back up the locks & exit buttons. The ESX-PSU plugs into the EC-A2 module to save real estate & also provides battery & power supply monitoring to the control panel



Dipswitch Addressing

The ESL supports a maximum of 8 keypads & the ESX supports a maximum of 32 keypads. These can be alarm &/or access control keypads & must be individually addressed on the system. This is done using dipswitches 1 to 5 shown here



Use the chart below to select the desired EC-A2 keypad address:

Important:

Dipswitch 6 determines whether the EC-A2 is a 1 or 2 door controller. See example below:

Dipswitch 6 Off = 1 Door Controller

'KP Interface 1' becomes the address from the table below. In this scenario, 'KP Interface 2' becomes inactive

Dipswitch 6 On = 2 Door Controller

'KP Interface 1 & 2' both become active. This means that 'KP Interface 1' becomes the address from the table below & KP Interface 2 becomes the address following

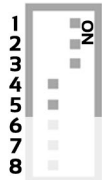
i.e. If 'KP Interface 1' is set to address 6 then 'KP Interface 2' becomes address 7 (ESL & ESX)

If 'KP Interface 1' is set to address 24 then 'KP Interface 2' becomes address 25 (ESX only)

1 Door Example

(Dipswitch 6 OFF)

KP Interface 1 becomes keypad address 8 & KP Interface 2 becomes inactive

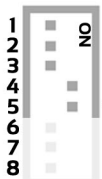


KP Address	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Relay mapped to	ESX Only	ESL Only
							Input mapped to	Input mapped to
KP Address 1	OFF	OFF	OFF	OFF	OFF	Output 1	Input 1 or 33	Input 1 or 9
KP Address 2	ON	OFF	OFF	OFF	OFF	Output 2	Input 2 or 34	Input 2 or 10
KP Address 3	OFF	ON	OFF	OFF	OFF	Output 3	Input 3 or 35	Input 3 or 11
KP Address 4	ON	ON	OFF	OFF	OFF	Output 4	Input 4 or 36	Input 4 or 12
KP Address 5	OFF	OFF	ON	OFF	OFF	Output 5	Input 5 or 37	Input 5 or 13
KP Address 6	ON	OFF	ON	OFF	OFF	Output 6	Input 6 or 38	Input 6 or 14
KP Address 7	OFF	ON	ON	OFF	OFF	Output 7	Input 7 or 39	Input 7 or 15
KP Address 8	ON	ON	ON	OFF	OFF	Output 8	Input 8 or 40	Input 8 or 16
KP Address 9	OFF	OFF	OFF	ON	OFF	Output 9	Input 9 or 41	
KP Address 10	ON	OFF	OFF	ON	OFF	Output 10	Input 10 or 42	
KP Address 11	OFF	ON	OFF	ON	OFF	Output 11	Input 11 or 43	
KP Address 12	ON	ON	OFF	ON	OFF	Output 12	Input 12 or 44	
KP Address 13	OFF	OFF	ON	ON	OFF	Output 13	Input 13 or 45	
KP Address 14	ON	OFF	ON	ON	OFF	Output 14	Input 14 or 46	
KP Address 15	OFF	ON	ON	ON	OFF	Output 15	Input 15 or 47	
KP Address 16	ON	ON	ON	ON	OFF	Output 16	Input 16 or 48	
KP Address 17	OFF	OFF	OFF	OFF	ON	Output 17	Input 17 or 49	
KP Address 18	ON	OFF	OFF	OFF	ON	Output 18	Input 18 or 50	
KP Address 19	OFF	ON	OFF	OFF	ON	Output 19	Input 19 or 51	
KP Address 20	ON	ON	OFF	OFF	ON	Output 20	Input 20 or 52	
KP Address 21	OFF	OFF	ON	OFF	ON	Output 21	Input 21 or 53	
KP Address 22	ON	OFF	ON	OFF	ON	Output 22	Input 22 or 54	
KP Address 23	OFF	ON	ON	OFF	ON	Output 23	Input 23 or 55	
KP Address 24	ON	ON	ON	OFF	ON	Output 24	Input 24 or 56	
KP Address 25	OFF	OFF	OFF	ON	ON	Output 25	Input 25 or 57	
KP Address 26	ON	OFF	OFF	ON	ON	Output 26	Input 26 or 58	
KP Address 27	OFF	ON	OFF	ON	ON	Output 27	Input 27 or 59	
KP Address 28	ON	ON	OFF	ON	ON	Output 28	Input 28 or 60	
KP Address 29	OFF	OFF	ON	ON	ON	Output 29	Input 29 or 61	
KP Address 30	ON	OFF	ON	ON	ON	Output 30	Input 30 or 62	
KP Address 31	OFF	ON	ON	ON	ON	Output 31	Input 31 or 63	
KP Address 32	ON	ON	ON	ON	ON	Output 32	Input 32 or 64	

2 Door Example

(Dipswitch 6 ON)

KP Interface 1 becomes keypad address 25 & KP Interface 2 becomes keypad address 26



EC-A2 Dipswitch Functions

1 Door OR 2 Door Settings

The EC-A2 can be configured as a 1 door or 2 door controller using dipswitch 6. Dipswitch 6 off sets the module to a 1 door controller, meaning keypad 2, input 2 & output 2 are completely disabled. Dipswitch 6 on sets the module to a 2 door controller, meaning all functions are enabled for 2 doors

Dipswitch 6 Off = 1 Door Controller (disables KP2, input 2 & output 2)

Dipswitch 6 On = 2 Door Controller (enables all functions)

Input Functions

The EC-A2 inputs can perform multiple functions. These functions are not only dictated by panel programming (as per the next page) but also by the position of dipswitch 7 detailed below:

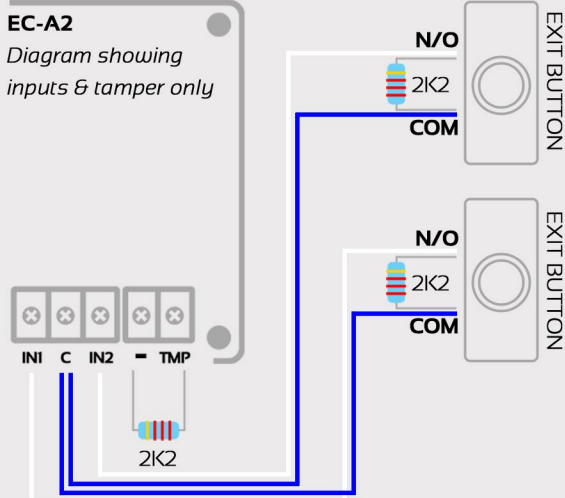
Dipswitch 7 Off = REX (request to exit) function - No programming required

Dipswitch 7 On = Standard input function - Requires programming, see next page

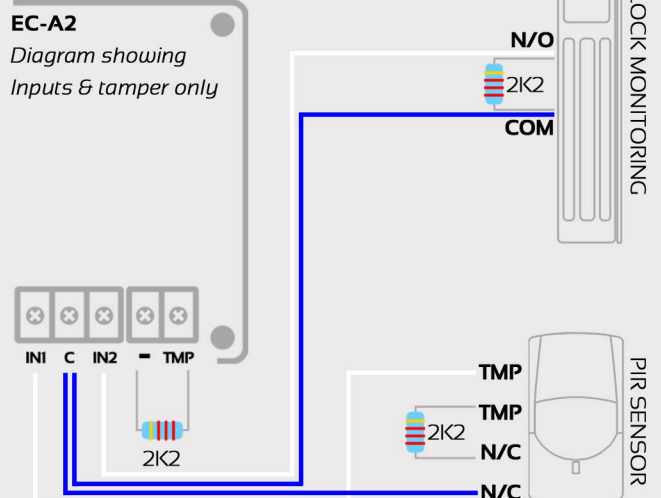
Note:

The dipswitch settings above affects both input 1 & 2 of the EC-A2 module. I.e. If dipswitch 7 is off, both input 1 & 2 will perform a REX function. If dipswitch 7 is on, both inputs are standard inputs and require programming. **A 2K2 resistor is required for either configuration**

Dipswitch 7 Off = REX function



Dipswitch 7 On = Standard input function



Tamper On/Off (ESX Only) **Dipswitch 8 Off** = Enables tamper

Dipswitch 8 On = Disables tamper

The tamper input can be enabled or disabled depending on whether the EC-A2 enclosure is installed in high or low security applications. If the tamper input is enabled then a 2K2 resistor must be used as shown below:

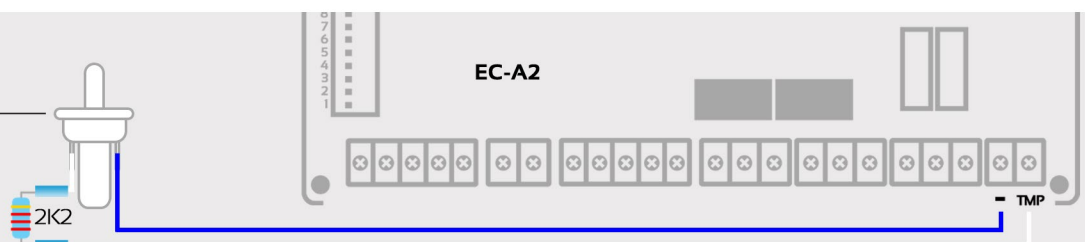
Note: Tamper function **DOES NOT** work on ESL-2. ESL-2 dipswitch 8 operates as follows:

Dipswitch 8 Off = 2 second REX

Dipswitch 8 On = 10 second REX

Cabinet Tamper

This wiring is for tamper switches with N/C contacts only



Access Control Programming (Basic)

Important:

- Programming is not available via any keypad connected to 'KP Interface 1 or 2' of the EC-A2 module. I.e. A compatible alarm keypad must be used that is connected directly to the keypad bus
- The ESL system supports up to 100 users & 8 outputs
- The ESX system supports up to 2000 users & 32 outputs
- Before programming you must first enter installer mode. This is done by pressing PROG followed by your installer code, then ENTER. The default installer code is 000000

Adding A User Code (PIE)

Press PROG 1 ENTER (user slot) ENTER (new user code) ENTER. The new code should flash back or display on the screen

If there is an existing code in the user slot it will flash back or be displayed. If there is no code in this user slot nothing will flash back or be displayed

Push the right arrow to go to the next user or continue to another programming address

Overview

P 1 E 1-100 E 123 ENTER
└─┬──────────┬──────────┬───┘
└─ Address └─ Select User Slot └─ User Code

Adding A User Tag (P2IE)

Press PROG 21 ENTER (user slot) ENTER followed by ENTER again to start the learn process. The keypad should start beeping. Now swipe your tag or card over the reader connected to the EC-A2 module. The keypad should stop beeping, indicating the learn was successful

On the alarm keypad, press the right arrow, followed by the Enter button to learn the next user or continue to another programming address

Overview

P 21 E 1-100 E (swipe tag) ENTER
└─┬──────────┬──────────┬──────────┘
└─ Address └─ Select User Slot └─ Keypad Beeps While Waiting For Tag

Assign A User To A Door/Output (PI3E)

Press PROG 13 ENTER (user slot) ENTER then turn on the outputs you want this user to operate followed by ENTER to confirm. At this point, outputs can be toggled on or off using the keypad followed by ENTER to save

Push the right arrow to go to the next user or continue to another programming address

Overview

P 13 E 1-100 E 05,06,07 ENTER
└─┬──────────┬──────────┬──────────┘
└─ Address └─ Select User Slot └─ Door/Output Number - This example is assigning a user to door or output 5, 6 & 7

Door Open Time/Output Reset Time

Press PROG 40 ENTER (output number) ENTER (reset time in seconds) ENTER. The new time entered should flash back or display on the screen

Push the right arrow to go to the next output reset time or continue to another programming address

Overview

P 40 E 1-8 (ESL) or 1-32 (ESX) E 10 ENTER
└─┬──────────┬──────────┬──────────┘
└─ Address └─ Select Door/Output Number └─ Door/Output Open Time In Seconds

Mapping A Keypad To A Door/Output

Press PROG 82 ENTER (Keypad address) ENTER then turn on the outputs you want this keypad to operate followed by ENTER to confirm. At this point, outputs can be toggled on or off using the keypad followed by ENTER to save

Push the right arrow to go to the next keypad address or continue to another programming address

Overview

P 82 E 1-8 (ESL) or 1-32 (ESX) E 05,06,07 ENTER
└─┬──────────┬──────────┬──────────┘
└─ Address └─ Select Keypad Number/Address └─ Door/Outputs This Keypad Can Control

Input Programming

Dipswitch 7 Off = REX (request to exit) function (no programming required)

Dipswitch 7 On = Standard input function (requires programming, see below for more information)

Important:

- When dipswitch 7 is on, inputs 1 & 2 on the EC-A2 will follow the address set as per the table on page 3
- The EC-A2 will automatically use the high inputs (ESL input 9-16 or ESX input 33-64) if the low input is already in use. See the table on page 3 for more information
- A 2K2 resistor must be fitted across each input as shown on the diagram on page 4

Enabling EC-A2 Inputs (by default inputs 1 & 2 on the EC-A2 are inactive when dipswitch 7 is on)

To enable EC-A2 inputs, first address the EC-A2 as per the table on page 3, then follow programming below:

Press PROG 122 ENTER followed by the input number you wish to enable then press ENTER. Now press 4 (number 4 should appear on the screen) followed by the ENTER button to confirm.

Push the right arrow to go to the next input to program or continue to another programming address

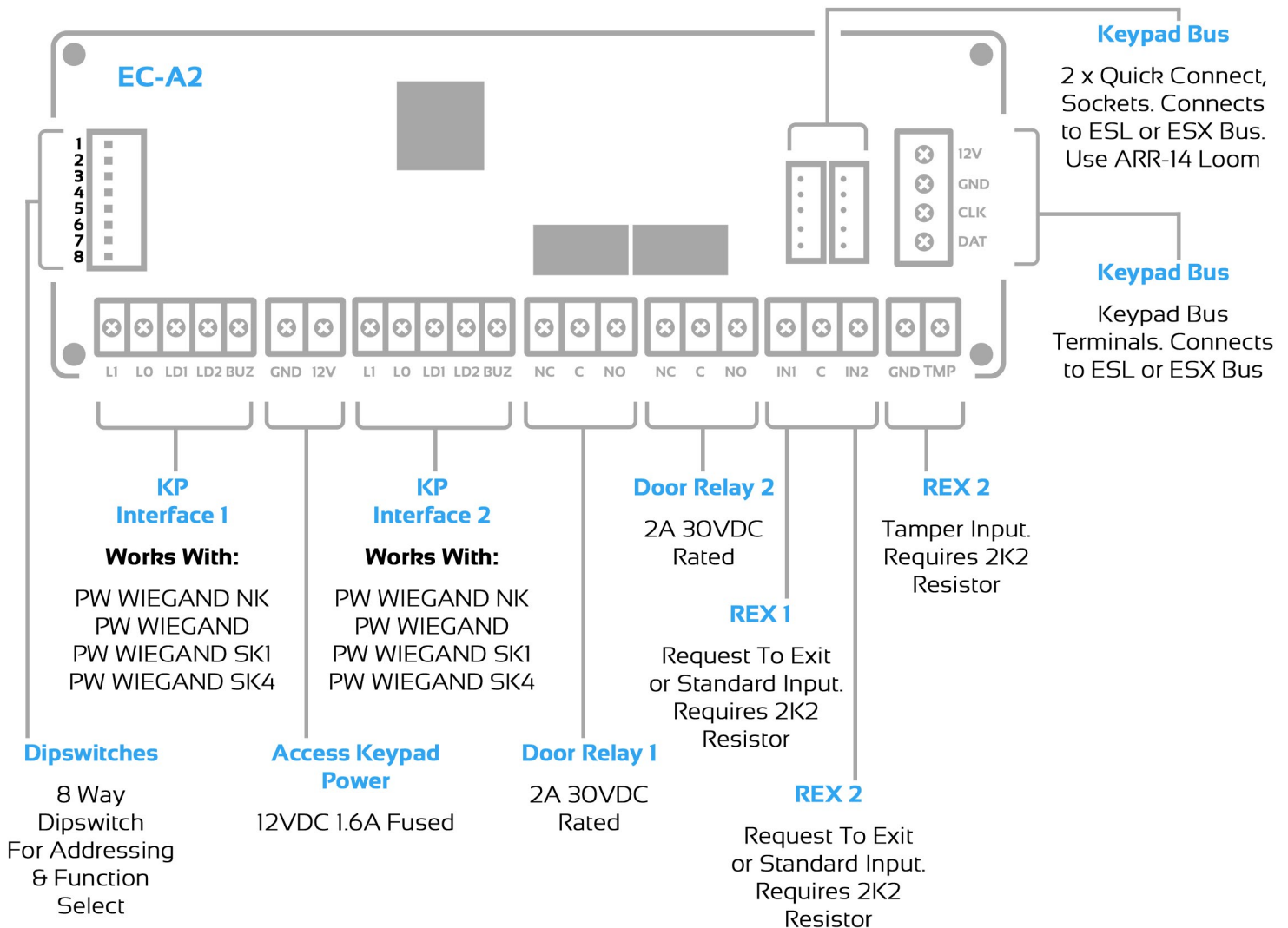
Overview



Hardware Overview

Below is an overview of the EC-A2 terminals & their purpose

Note: The EC-A2 is to be powered via the ESL or ESX keypad bus, or EC-PSU plug in power supply



Input Power Supply

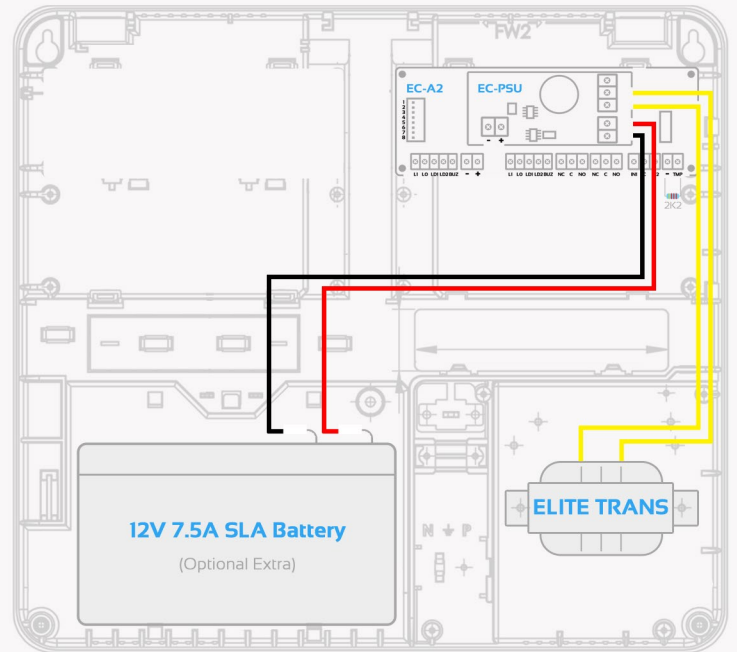
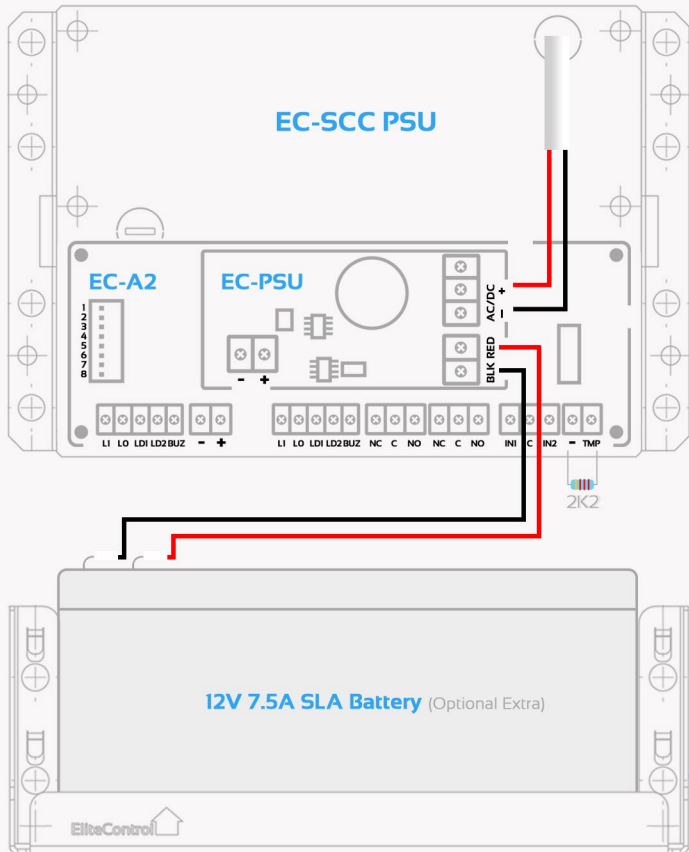
We recommend the following supplies to power the EC-A2 & EC-PSU modules depending on the enclosure that is used

EC-SCC PSU

- Input: 240VAC
- Output: 24VDC 2.2A
- Ideal for structured cabling cabinets
- Powers up to 2 x EC-PSU modules

ELITE TRANS

- Input: 240VAC
- Output: 17VAC 1.4A
- Ideal for EC-PLAS 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. Note: Electric lock power requirements will vary. Refer to the lock technical data relating to your specific lock for an accurate calculation. We also recommend allowing a 30% overhead to your calculation as a safeguard

Product	Current Draw	Quantity Used	Current
EC-A2	100mA		
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	140mA		
EC-LCD	100mA		
KP-TOUCH	250mA		