EC-Z8 Manual

∞ infinity series
powered by EliteControl

8 Input Expander Module For EC & EC-i Control Panels

The EC-Z8 connects directly to the keypad bus of the control panel using the ARR-14 quick connect loom provided, or via the on board keypad bus terminals

Each control panel comes fitted with 8 on board inputs & can be expanded up to 248 inputs with the addition of our EC-Z8 expander modules. Each EC-Z8 module supports 8 inputs, allowing a maximum of 30 x EC-Z8 modules to be connected to 1 x EC or EC-i control panel.

Features

- **8 x Individual inputs.**
- **2 x 12VDC accessory power terminals** (each 12VDC 1.6A Fused).
- **1 x Tamper input** (designed for cabinet tamper alarms).
- **2 x Quick connect keypad bus sockets** (Use with 'ARR14' or 'ARR15' bus loom).
- **1 x Keypad bus screw down terminals** (12V - GND - CLK - DAT).
- **Sockets for EC-PSU plug in power supply module.**

Connection Overview

Below is a simple connection diagram using the ARR-14 quick connect looms provided.
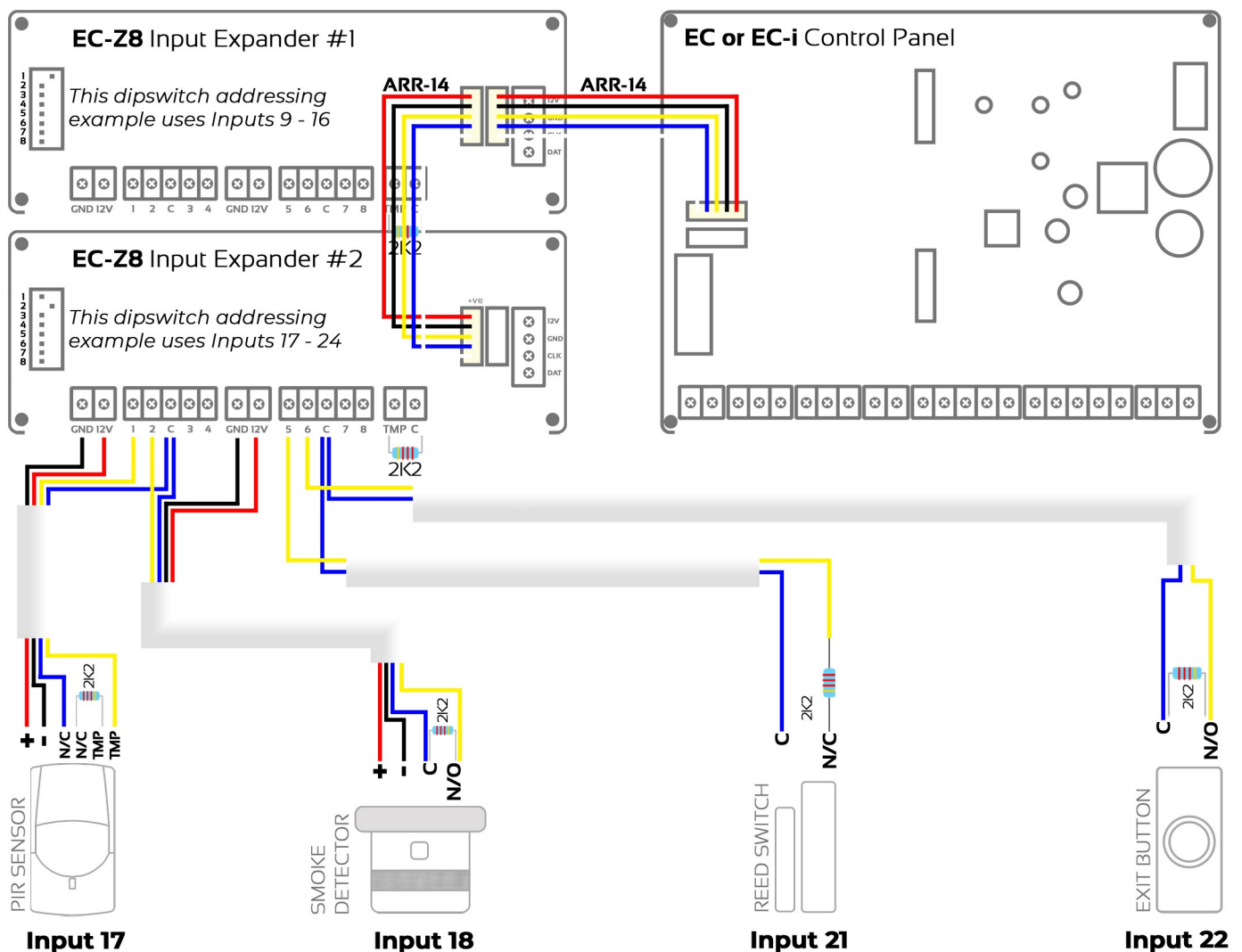

- The example above uses the default EOL configuration (Type 3) as programmed at addresses P119 or P125.
- **'EC-Z8 Input Expander #1'** dipswitch 1 is ON & therefore becomes inputs 9 - 16 on the control panel.
- **'EC-Z8' Input Expander #2'** dipswitch 2 is ON & therefore becomes inputs 17 - 24 on the control panel.

See next page for additional addressing information.

EC-Z8 Dipswitch Addressing & Tamper Input

- The EC-Z8 uses dipswitches 1 - 5 to address each module as shown here:
- Dipswitches 6 & 7 are unused on the EC-Z8 module
- Dipswitch 8 OFF enables the EC-Z8 on board Tamper Input
- Dipswitch 8 ON disables the EC-Z8 on board Tamper Input

- Every expander must be individually addressed to avoid any keypad bus clash. If 2 or more expanders share an address the 8 input LED's will cycle to indicate that there is a clash as follows: LED's 1 & 8, changing to 2 & 7, changing to 3 & 6, changing to 4 & 5, then all 8 LED's will flash twice & repeat until the clash is removed.

Programming Switches

GND 12V   1 2 C 3 4   GND 12V
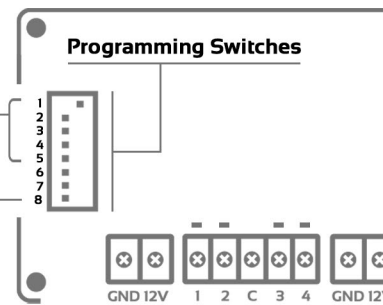
Single Input Addressing (default setting)

Table 1 shows the dipswitch settings to address each 'EC-Z8' expander for standard (single input) input configuration. The required EOL for this is configured at address P125 or from 'Inputs' > 'EOL & Wireless' within the web browser or dashboard.

Important: P119 (Global EOL) must be disabled to use the standard single input function (Global EOL option is disabled by default).

Doubling Input Addressing (not recommended)

Table 2 shows the dipswitch settings to address each 'EC-Z8' expander for input doubling. The required EOL for this is configured at address P119 **(Types 14, 15 & 16 only)** or from 'Inputs' > 'EOL & Wireless' within the web browser or dashboard.

Important: If 'Global EOL' is enabled, every input on the control panel is required to use this configuration. I.e. The EC-i will not support a mixture of standard single inputs along with zone doubled inputs.

Table 1 - Single Input Addressing (default/recommended)

Expander	EC-Z8 Follows:	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5
1	Inputs 9 - 16	ON	OFF	OFF	OFF	OFF
2	Inputs 17 - 24	OFF	ON	OFF	OFF	OFF
3	Inputs 25 - 32	ON	ON	OFF	OFF	OFF
4	Inputs 33 - 40	OFF	OFF	ON	OFF	OFF
5	Inputs 41 - 48	ON	OFF	ON	OFF	OFF
6	Inputs 49 - 56	OFF	ON	ON	OFF	OFF
7	Inputs 57 - 64	ON	ON	ON	OFF	OFF
8	Inputs 65 - 72	OFF	OFF	OFF	ON	OFF
9	Inputs 73 - 80	ON	OFF	OFF	ON	OFF
10	Inputs 81 - 88	OFF	ON	OFF	ON	OFF
11	Inputs 89 - 96	ON	ON	OFF	ON	OFF
12	Inputs 97 - 104	OFF	OFF	ON	ON	OFF
13	Inputs 105 - 112	ON	OFF	ON	ON	OFF
14	Inputs 113 - 120	OFF	ON	ON	ON	OFF
15	Inputs 121 - 128	ON	ON	ON	ON	OFF
16	Inputs 129 - 136	OFF	OFF	OFF	OFF	ON
17	Inputs 137 - 144	ON	OFF	OFF	OFF	ON
18	Inputs 145 - 152	OFF	ON	OFF	OFF	ON
19	Inputs 153 - 160	ON	ON	OFF	OFF	ON
20	Inputs 161 - 168	OFF	OFF	ON	OFF	ON
21	Inputs 169 - 176	ON	OFF	ON	OFF	ON
22	Inputs 177 - 184	OFF	ON	ON	OFF	ON
23	Inputs 185 - 192	ON	ON	ON	OFF	ON
24	Inputs 193 - 200	OFF	OFF	OFF	ON	ON
25	Inputs 201 - 208	ON	OFF	OFF	ON	ON
26	Inputs 209 - 216	OFF	ON	OFF	ON	ON
27	Inputs 217 - 224	ON	ON	OFF	ON	ON
28	Inputs 225 - 232	OFF	OFF	ON	ON	ON
29	Inputs 233 - 240	ON	OFF	ON	ON	ON
30	Inputs 241 - 248	OFF	ON	ON	ON	ON

Table 2 - Global/Input Doubling Addressing (not recommended)

Expander	EC-Z8 Follows:	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5
Not Used		ON	OFF	OFF	OFF	OFF
2	Inputs 17 - 32	OFF	ON	OFF	OFF	OFF
Not Used		ON	ON	OFF	OFF	OFF
4	Inputs 33 - 48	OFF	OFF	ON	OFF	OFF
Not Used		ON	OFF	ON	OFF	OFF
6	Inputs 49 - 64	OFF	ON	ON	OFF	OFF
Not Used		ON	ON	ON	OFF	OFF
8	Inputs 65 - 80	OFF	OFF	OFF	ON	OFF
Not Used		ON	OFF	OFF	ON	OFF
10	Inputs 81 - 96	OFF	ON	OFF	ON	OFF
Not Used		ON	ON	OFF	ON	OFF
12	Inputs 97 - 112	OFF	OFF	ON	ON	OFF
Not Used		ON	OFF	ON	ON	OFF
14	Inputs 113 - 128	OFF	ON	ON	ON	OFF
Not Used		ON	ON	ON	ON	OFF
16	Inputs 129 - 144	OFF	OFF	OFF	OFF	ON
Not Used		ON	OFF	OFF	OFF	ON
18	Inputs 145 - 160	OFF	ON	OFF	OFF	ON
Not Used		ON	ON	OFF	OFF	ON
20	Inputs 161 - 176	OFF	OFF	ON	OFF	ON
Not Used		ON	OFF	ON	OFF	ON
22	Inputs 177 - 192	OFF	ON	ON	OFF	ON
Not Used		ON	ON	ON	OFF	ON
24	Inputs 193 - 208	OFF	OFF	OFF	ON	ON
Not Used		ON	OFF	OFF	ON	ON
26	Inputs 209 - 224	OFF	ON	OFF	ON	ON
Not Used		ON	ON	OFF	ON	ON
28	Inputs 225 - 240	OFF	OFF	ON	ON	ON
Not Used		ON	OFF	ON	ON	ON
30	Inputs 241 - 248	OFF	ON	ON	ON	ON

Input Status LED's

The 'EC-Z8' has a blue LED directly above each zone input to indicate the zone state. These indicators are associated with the 'EC-Z8' directly and do not represent whether the input is active or inactive within the control panel programming.

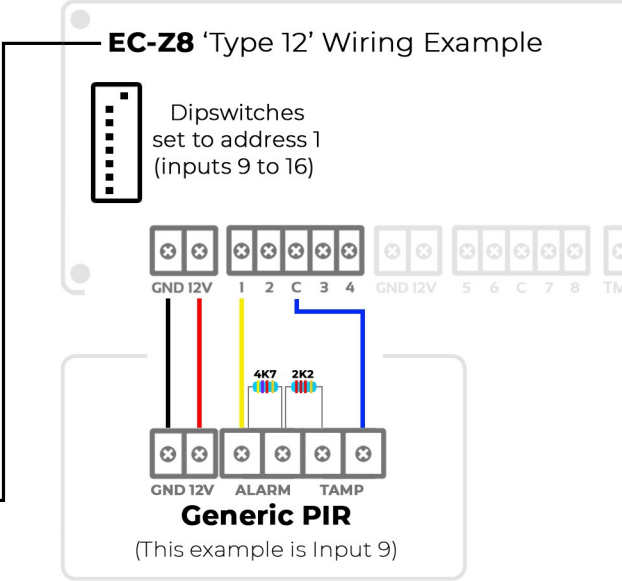**LED OFF** = Input is sealed   **LED ON** = Input is unsealed
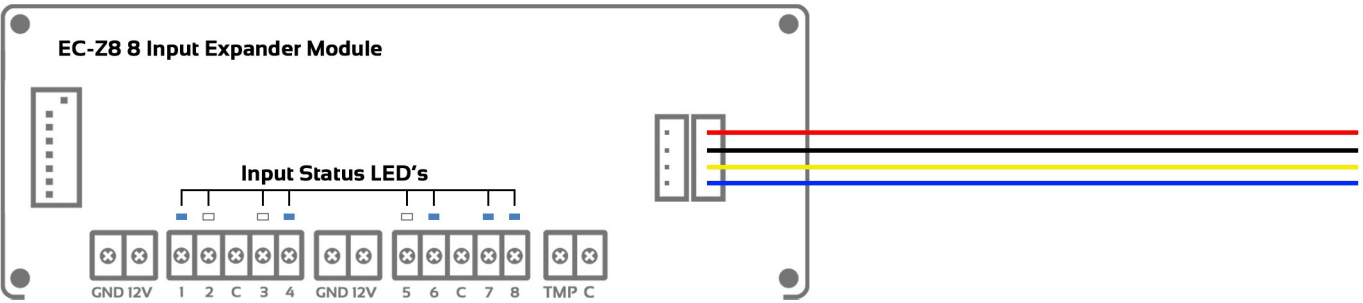
Standard Single Input EOL Programming & Wiring (recommended)

- Each input must be terminated with the appropriate resistor value **OR** turned off at address P122. Inputs can also be turned off from the 'Inputs' tab within the web browser or cloud dashboard.

- Input 'End of Line' resistor programming is configured at addresses P119 & P125 **OR** from 'Inputs' > 'EOL & Wireless' within the web browser or cloud dashboard.
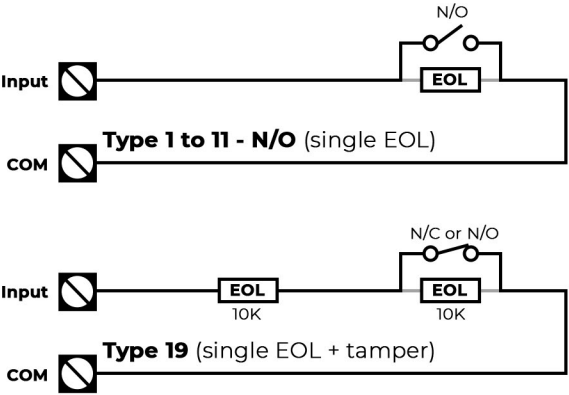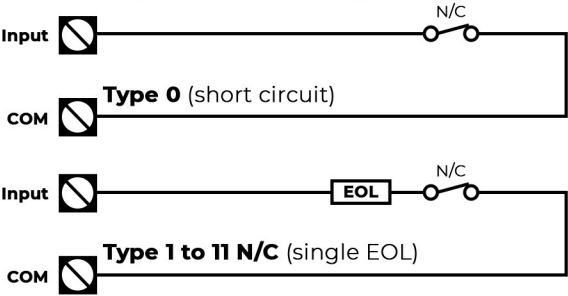
  Important: Global EOL (P119) must be disabled (set to 'Type 0') for individual input resistor values to be set. See next page for global (double input) wiring & programming.

Single Input EOL Programming Options *(configured at address P125)*

EOL Type	Input EOL Resistor Value	Comments
0	Short Circuit	Short Circuit
1	1K (Brown, Black, Red)	Single Input
2	1K5 (Brown, Green, Red)	Single Input
3	2K2 (Red, Red, Red, Gold)	Single Input (**Default**)
4	3K3 (Orange, Orange, Red)	Single Input
5	3K9 (Orange, White, Red)	Single Input
6	4K7 (Yellow, Violet, Red)	Single Input
7	5K6 (Green, Blue, Red)	Single Input
8	6K8 (Blue, Grey, Red)	Single Input
9	10K (Brown, Black, Orange)	Single Input
10	12K (Brown, Red, Orange)	Single Input
11	22K (Red, Red, Orange)	Single Input
12	2K2 Tamper, 4K7 Input	Single Input + Tamper
13	3K3 Tamper, 6K8 Input	Single Input + Tamper
17	5K6 Tamper, 5K6 Input	Single Input + Tamper
18	2K2 Tamper, 6K8 Input	Single Input + Tamper
19	10K Tamper, 10K Input	Single Input + Tamper

EC-Z8 'Type 12' Wiring Example

Dipswitches set to address 1 (inputs 9 to 16)

Generic PIR
(This example is Input 9)

Single Input EOL Wiring Examples

Type 0 (short circuit)

Type 1 to 11 N/C (single EOL)

Type 1 to 11 - N/O (single EOL)

Type 19 (single EOL + tamper)

Global Input EOL Programming & Wiring (Includes Zone Doubling)

- Each input must be terminated with the appropriate resistor value **OR** turned off at address P122. Inputs can also be turned off from the 'Inputs' tab within the web browser or cloud dashboard.

- Global 'End of Line' resistor programming is configured at addresses P119 **OR** from 'Inputs' > 'EOL & Wireless' within the web browser or cloud dashboard.
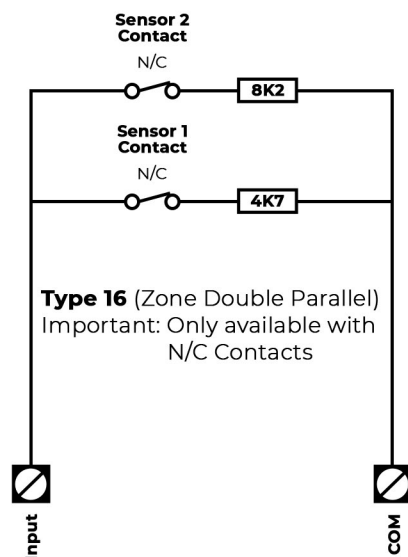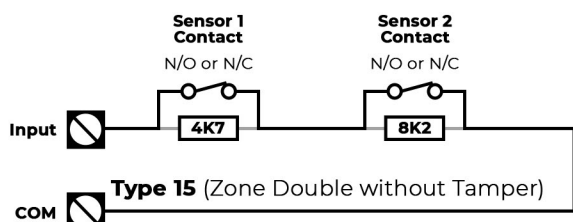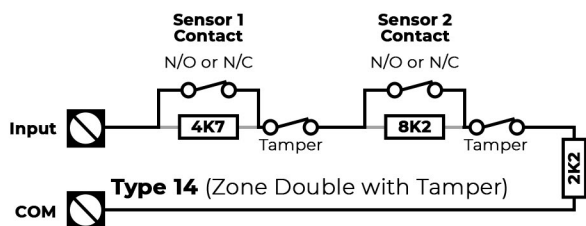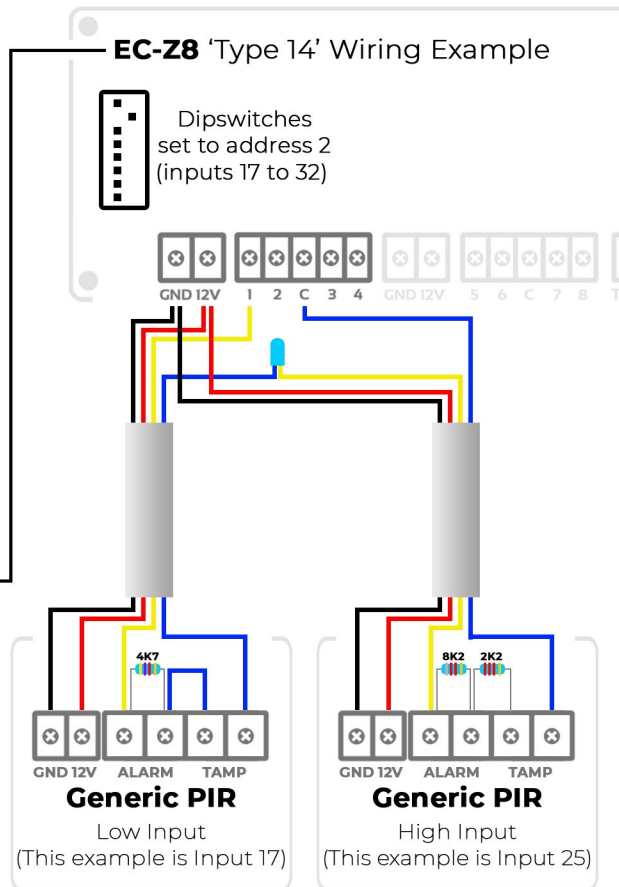
  Important: If a Global Input EOL is set, every input on the control panel must use this EOL setting. I.e. If Global Input EOL Type 15' is selected (as detailed in the table below), every input on the control panel must be wired in this 'zone double' configuration. See wiring example below:

Global Input EOL Programming Options *(configured at address P119)*

EOL Type	Input EOL Resistor Value	Comments
0	*Select option '0' for individual addressing only (P125)*	
1	1K (Brown, Black, Red)	Single Input
2	1K5 (Brown, Green, Red)	Single Input
3	2K2 (Red, Red, Red, Gold)	Single Input (**Default**)
4	3K3 (Orange, Orange, Red)	Single Input
5	3K9 (Orange, White, Red)	Single Input
6	4K7 (Yellow, Violet, Red)	Single Input
7	5K6 (Green, Blue, Red)	Single Input
8	6K8 (Blue, Grey, Red)	Single Input
9	10K (Brown, Black, Orange)	Single Input
10	12K (Brown, Red, Orange)	Single Input
11	22K (Red, Red, Orange)	Single Input
12	2K2 Tamper, 4K7 Input	Single Input + Tamper
13	3K3 Tamper, 6K8 Input	Single Input + Tamper
14	2K2 Tamper, 4K7 Low Input, 8K2 High Input	
15	4K7 Low Input, 8K2 High Input (series wiring)	
16	4K7 Low Input, 8K2 High Input (parallel wiring)	
17	5K6 Tamper, 5K6 Input	Single Input + Tamper
18	2K2 Tamper, 6K8 Input	Single Input + Tamper
19	10K Tamper, 10K Input	Single Input + Tamper

EC-Z8 'Type 14' Wiring Example

Dipswitches set to address 2 (inputs 17 to 32)

GND 12V 1 2 C 3 4   GND 12V 5 6 C 7 8 TM

4K7

8K2 2K2

GND 12V   ALARM   TAMP

Generic PIR
Low Input
(This example is Input 17)

GND 12V   ALARM   TAMP

Generic PIR
High Input
(This example is Input 25)

Zone Doubling Wiring Examples (Type 14, 15 & 16)

See single input wiring examples (Type 1 to 13 & 17 to 19) on previous page.

Sensor 1 Contact
N/O or N/C

Sensor 2 Contact
N/O or N/C

Input

4K7   Tamper   8K2   Tamper   2K2

COM

Type 14 (Zone Double with Tamper)

Sensor 1 Contact
N/O or N/C

Sensor 2 Contact
N/O or N/C

Input

4K7   8K2

COM

Type 15 (Zone Double without Tamper)

Sensor 2 Contact
N/C

8K2

Sensor 1 Contact
N/C

4K7

Input

COM

Type 16 (Zone Double Parallel)
Important: Only available with N/C Contacts

Input Programming (Basic)

- The default EOL setting for each input is a 2K2 resistor loop to 'seal' the input.

- 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).

Enable/Disable An Input in Programming(P122E)

Press PROG 122 ENTER (input number) ENTER (toggle option 1 on or off) ENTER. After entering the address & the input number as detailed above, you can toggle option 1 on or off. This enables or disables the input you are working on, then press enter to confirm.

Note: Options 4 & 5 at address 122 must be off if using EC-Z8.

Push the right arrow to go to the next input or continue to another programming address.
Overview
P 122 E 1-248 E 1 ENTER

Toggle 1 on or off (1 on enables the input, 1 off disables the input**)**

Input number you wish to work on

Address

24 Hour Fire Input (P123E) *Use for inputs that are connected to smoke or heat detectors*

Press PROG 123 ENTER (input number) ENTER (toggle option 5 on or off) ENTER. After entering the address & the input number as detailed above, you can toggle option 5 on or off. This enables or disables the 24 hour input function, then press enter to confirm.

Important: Make sure the input is also enabled as detailed above.

Push the right arrow to go to the next input or continue to another programming address.
Overview
P 123 E 1-248 E 5 ENTER

Toggle 5 on or off (5 ON enables 24 hour fire, 5 OFF disables 24 hour fire)

Input number you wish to work on

Address

EC-Z8 Inputs 1-4

Troubleshooting Inputs (Basic)

- 'Type 3' input (default) should read as follows:
  Sealed = 0.4 - 1.35VDC   **Input Alarm** = 0.0 - 0.4VDC OR 1.35 - 5.00VDC

- 'Type 12' input should read as follows:
  Sealed = 0.5 - 1.2VDC   **Input Alarm** = 1.2 - 2.5VDC   **Tamper Alarm** = 0.0 - 0.5VDC OR 2.5 - 5.0VDC

If the voltage is outside this range, check your wiring & also make sure the resistor(s) used matches the programming option selected at address P119 or P125 in the full manual.

EC-i Tamper Input

Sealing the EC or EC-i tamper terminal requires a 2K2 resistance between the 'TMP' & 'GND' terminals. This can be set to a short circuit at address P25E10E option 1 off or within the 'System' > 'Options' tab of the web browser or dashboard.

Refer to the full EC-i manual for more information.

Arrowhead
Alarm Products