Elite-S Wiegand Interface Board

Introduction

This board is designed as an interface between the ELITE-S control panel and devices that output data in Wiegand format. It can also be configured to read the Dallas I-Button access tags or read the data from Presco keypads.

Connecting and setting up the Wiegand Interface Board

The Wiegand interface connects to the ELITE-S control panel via the standard keypad buss using the POS, NEG, CLK & DAT connections (see board drawing below). The board must also be set to a spare keypad address using the DIP Switches on-board. It is important to set the Wiegand interface board to an unused keypad address otherwise buss conflicts will occur. The keypad addressing is done as per the chart below.

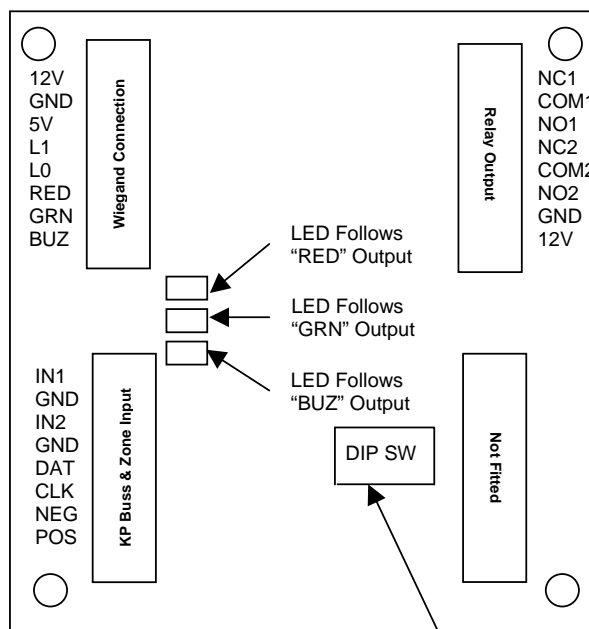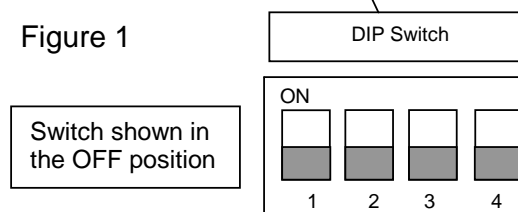| Keypad Address #	DIP Switch Number			
	1	**2**	**3**	**4**
KP # 1	ON	ON	ON	-
KP # 2	ON	ON	OFF	-
KP # 3	ON	OFF	ON	-
KP # 4	ON	OFF	OFF	-
KP # 5	OFF	ON	ON	-
KP # 6	OFF	ON	OFF	-
KP # 7	OFF	OFF	ON	-
KP # 8	OFF	OFF	OFF	-
PRESCO MODE				ON

Figure 1

DIP Switches 1-3 (Keypad Address)
In the drawing above the DIP Switches are indicating that the Wiegand Interface board is set to keypad number 8 (Switches 1, 2 & 3 all OFF).

DIP Switch 4 (Presco Mode)
Presco mode is selected when Switch 4 is in the "ON" position. When Switch 4 is "OFF" the board is in standard Wiegand mode. Note the board can accept up to a maximum of 9 digit codes from the PRE/PSE keypad. Valid digits are 0-9. The * & # characters from the PRE keypad are ignored by the Wiegand board. When Presco mode is selected the RED & GRN LED's and associated outputs are inverted to match the operation of the PRE & PSE keypads.

Dallas I-Button Mode

Shorting inputs "L1" & "L0" together before powering up the board puts it into Dallas I-Button mode.

Interface Board Zone Input

The terminals "IN1" and GND" (see "KP Buss & Zone Input" terminal block on figure 1) can be used as a Zone input on the panel.

The zone input number is related to the keypad address set on the board.

For example;

If the keypad address was set to number 8 (as per figure 1), the zone input can be associated with either zone 8 or zone 16.

Keypad Address #	1	2	3	4	5	6	7	8
Associated Zone Number	1 or 9	2 or 10	3 or 11	4 or 12	5 or 13	6 or 14	7 or 15	8 or 16

The chart above lists the zones that can be associated with the board based on the keypad address used.

For the interface board input to work as a zone it must be made active (P122E option 1 ON) and assigned as a keypad zone (P122E option 4 ON).

When the zone is set as a keypad zone (P122E option 4 ON) the EOL settings at P125E and the response times at P126E don't apply.

When Option 2 at P122E is turned OFF (zone is normally closed), the zone input is sealed when the "IN1" terminal is shorted to the "GND" terminal.

An open circuit between "IN1" & "GND" will result in the zone being unsealed at the panel.

If Option 2 is turned ON at P122E (zone is Normally Open) the zone input is sealed when it is open circuit and unsealed when "IN1" is shorted to "GND".

If you change the setting at P122E option 2 you may have to open and close the zone to allow the panel to get in sync with the new state of the input.

Keypad Zone Program Summary

P122E Option 1 must be ON (zone is active)
P122E Option 4 must be ON (zone is a keypad zone)
P122E Option 2 OFF (zone is normally closed)
P122E Option 2 ON (zone is normally open)
NOTE: Option 5 at P122E must be off for the keypad zone to work (ie not set as a radio zone).

Interface Board Relay Output

The Wiegand interface board is fitted with a relay that can be used to operate a door lock or similar device. The relay contacts are available at the "Relay Output" terminals (see figure 1`) on "NC1" (Normally Closed), "COM1" (Common) and "NO1" (Normally Open).

The relay will follow one of the outputs 1-8.

The output that the relay follows is related to the keypad address assigned to the Wiegand board.

For example;

If the keypad address was set to number 8 (as per figure 1), the relay output will follow output 8 options. If the Wiegand board was set to keypad address 4 the output will follow the options programmed for output 4.

Option 6 at P25E10E must be turned ON for the Wiegand output to work.

<u>"RED" Output</u>
On the Wiegand connector block there is a terminal labelled "RED". There is also a corresponding LED (red Led) on the board (see figure 1).

The "RED" output should be connected to the Red LED wire on the Wiegand reader (see following wiring diagrams).

The RED output can indicate two things.

1- When the ELITE-S control panel is in program mode the RED output will repeatedly flash out the keypad address number. This can be useful for determining the keypad address assigned to the reader without having to look at the DIP Switches on the Wiegand interface board (which may be installed out of view in a ceiling space or some other inaccessible place).
2- The RED output can be programmed to follow the state of an output from 1-8. This can be used to turn on the LED while an output is on (to show that the door has been unlocked) or used to indicate the Arm/Disarm state at the reader, etc. Associating the RED output with one of the panel outputs is done at location P98E.

<u>"GRN" Output</u>
On the Wiegand connector block there is a terminal labelled "GRN". The terminal labelled "GRN" and its associated on-board LED (see figure 1) will follow the buzzer output. This allows an LED on a keypad or reader to be able to visibly indicate entry/exit beeps, alarm beeps, etc.

<u>BUZZER ("BUZ") Output</u>
The Buzzer (BUZ) output can be connected to the Buzzer wire on a reader if available.

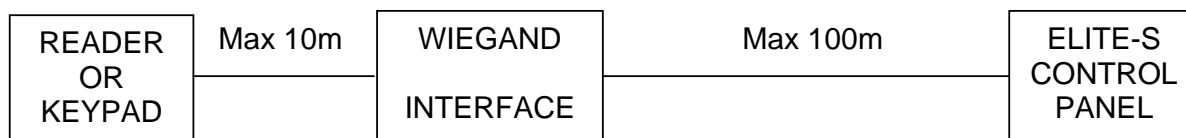The Buzzer output follows all of the programmed keypad beep options assigned to that keypad number.
For example;
If the keypad address was set to number 8 (as per figure 1), the buzzer output will follow all of the keypad beep options assigned to keypad 8.
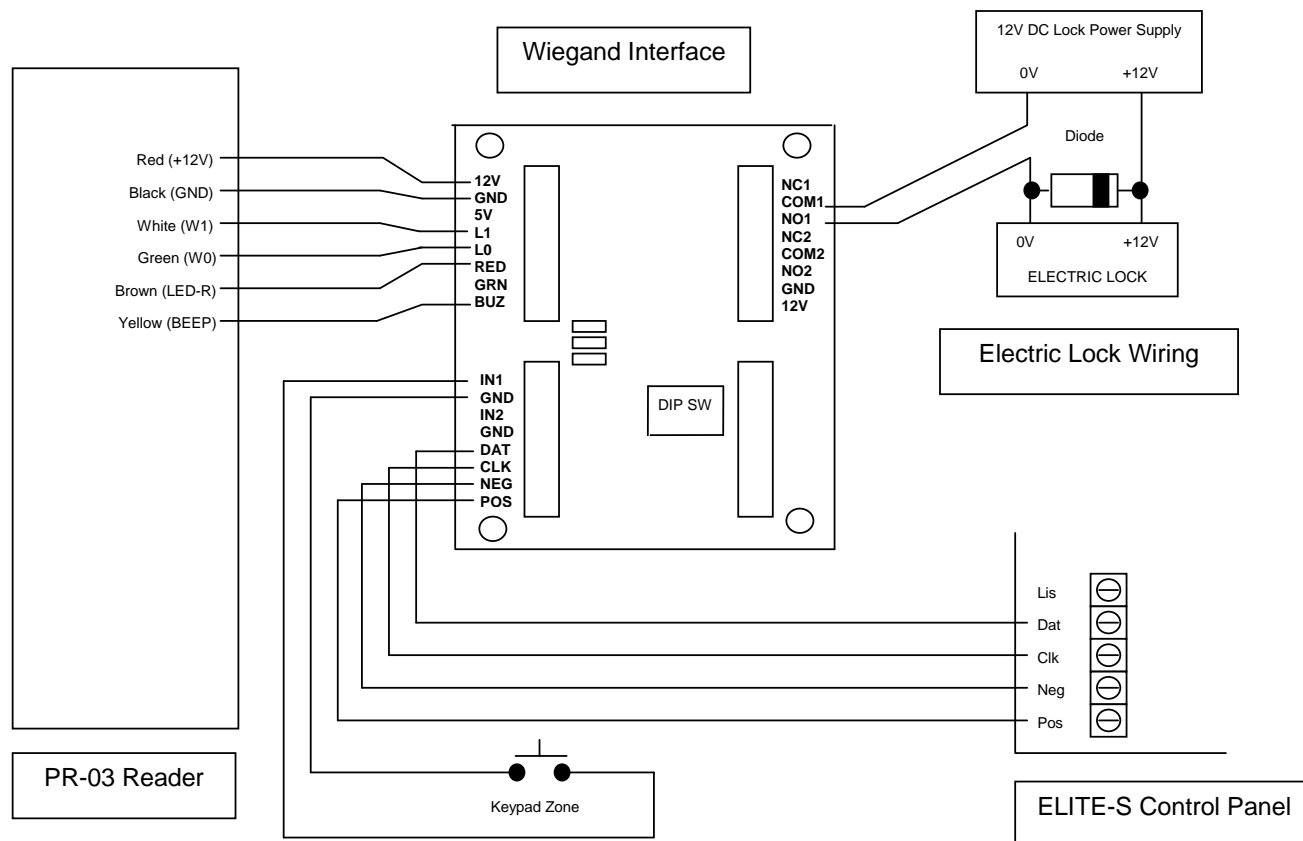
The beep options include entry/exit beeps, alarm beeps, keypad acknowledge beeps (3 short beeps) and keypad error beeps (one long beep).

<u>INSTALLATION DETAILS</u>
It is intended that the cabling distance between any keypad or reader connected to the wiegand interface board should be no more than 10m. The wiegand board can be up to 100m away from the ELITE-S control panel.

READER OR KEYPAD	Max 10m	WIEGAND INTERFACE	Max 100m	ELITE-S CONTROL PANEL

Wiegand Interface

Red (+12V) — 12V
Black (GND) — GND
White (W1) — L1
Green (W0) — L0
Brown (LED-R) — GRN
Yellow (BEEP) — BUZ

5V
RED

IN1
GND
IN2
GND
DAT
CLK
NEG
POS

DIP SW

NC1
COM1
NO1
NC2
COM2
NO2
GND
12V

PR-03 Reader

Keypad Zone

12V DC Lock Power Supply
0V   +12V

Diode

0V   +12V
ELECTRIC LOCK

Electric Lock Wiring

Lis
Dat
Clk
Neg
Pos

ELITE-S Control Panel

PR-03 Operation and programming

For the PR-03 to work properly DIP Switch 4 must be OFF at power up and DIP Switches 1-3 should be set to an unused keypad address number.

While the panel is in program mode the on-board Red LED and the RED terminal will show the keypad address as explained above.
By connecting the "RED" output on the weigand terminal block to the brown wire (LED-R) an installer can view the interface board address from the PR-03 reader by simply putting the control panel in program mode.
By connecting the Yellow (BEEP) wire to the "BUZ" output on the weigand terminal block the internal PR-03 buzzer will follow all of the keypad beep options programmed at the panel for that keypad number.

To program an access card/tag using the PR-03 reader the control panel must be in program mode (typically installer program mode).

The following program addresses apply to the PR 03-Wiegand Interface;

P21E 1-100E   Learn a card/tag as user 1-100
P22E 1-100E   Delete a card/tag user 1-100
P23E   Find a card/tag user number
P25E 10E Opt. 6   Option 6 must be ON to allow the relay to follow the associated output
P98E 1-8E   Associate "RED" output to one of the 8 outputs
P122E1-16E Opt.4 If option 4 is ON the wiegand input becomes a zone input (see description of input above)

Please refer to the ELITE-S installation manual for further details on programming at the above locations.

WIRING THE PRESCO PRE or PSE KEYPAD TO THE WIEGAND INTERFACE BOARD
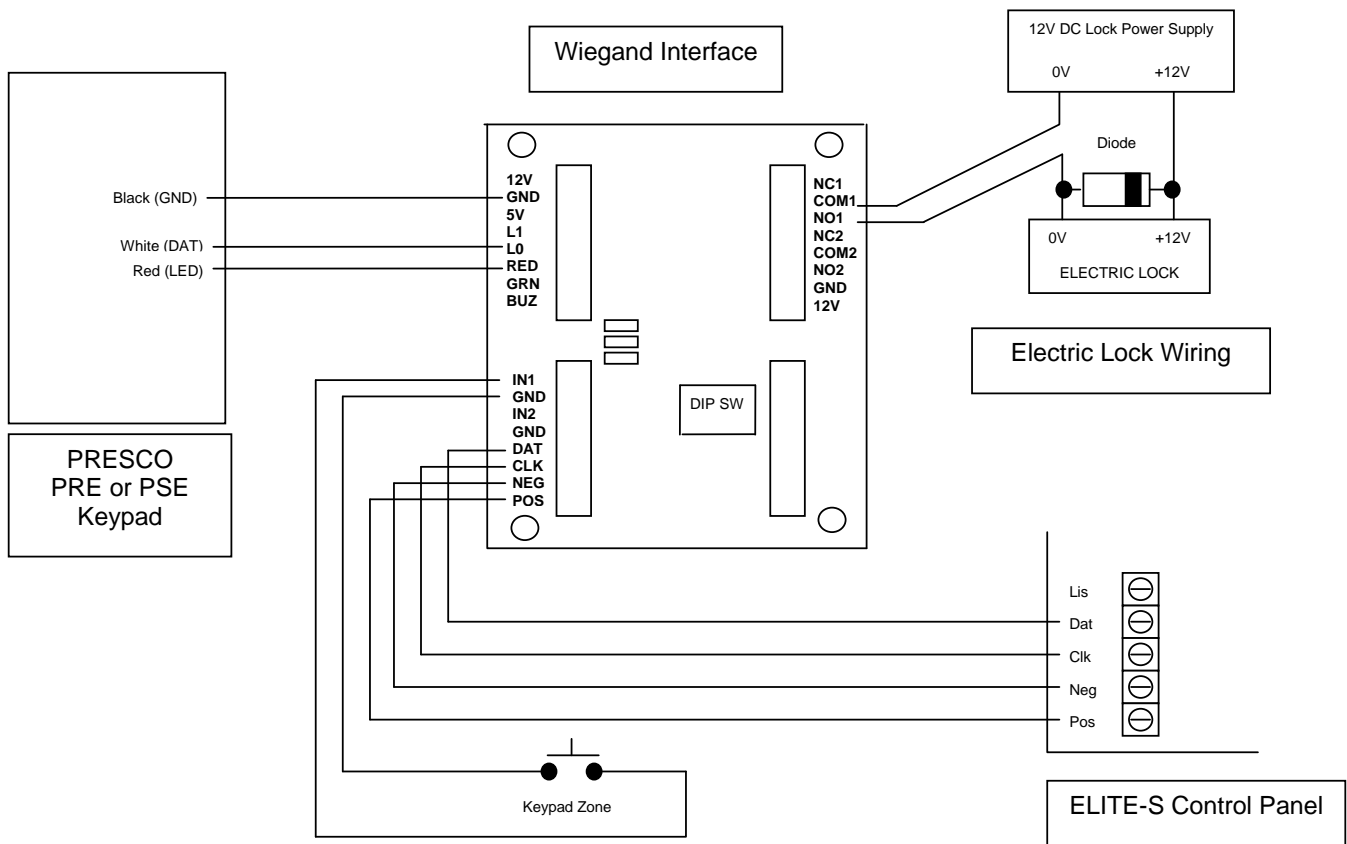
PRE & PSE Operation and programming

For the Presco PRE & PSE keypads to work properly DIP Switch 4 must be ON at power up and DIP Switches 1-3 should be set to an unused keypad address number.

By connecting the Red PRE/PSE wire to the "RED" output on the weigand terminal block the RED LED on the keypad can be controlled by the wiegand board as per the PR-03 operation. **NOTE**: The Red and Green LED's on the PRE/PSE keypads are inverted to the normal prox reader LED operation. When the Red LED on the PRE/PSE keypad is off the corresponding Red LED on the wiegand board will be on. The same inversion applies to the Green LED. This inversion happens automatically when the board is powered up with DIP Switch 4 ON. When a code is entered at the PRE/PSE keypad it is sent to the panel as an access card/tag code once the "E" button (PRE) or "#" button (PSE) is pressed. You can enter up to 9 digits at the PRE/PSE keypad before pressing either the "E or #" button.
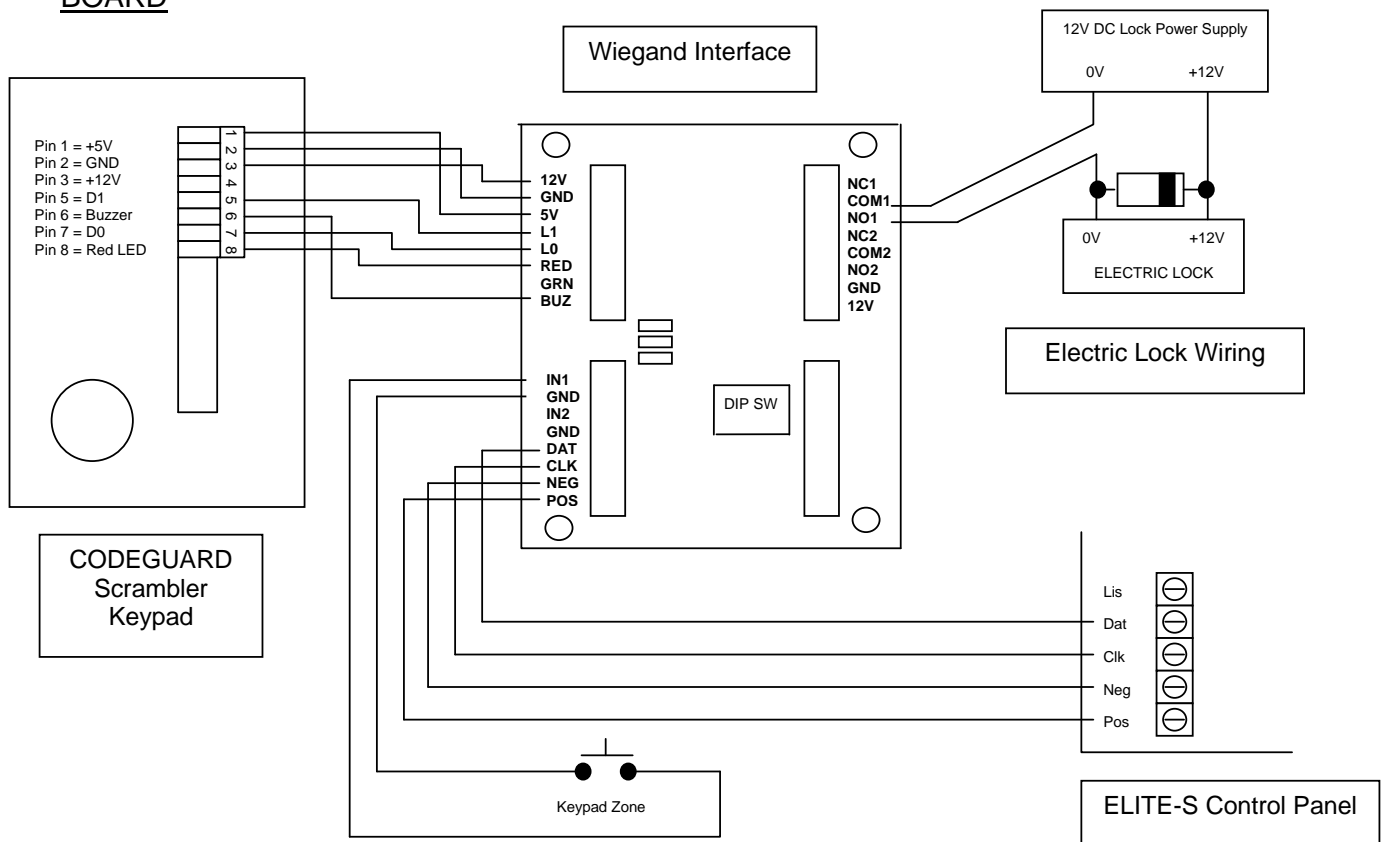
The following program addresses apply to the PRE/PSE-Wiegand Interface;
P21E 1-100E   Learn a card/tag as user 1-100
P22E 1-100E   Delete a card/tag user 1-100
P23E   Find a card/tag user number
P25E 10E Opt. 6   Option 6 must be ON to allow the relay to follow the associated output
P98E 1-8E   Associate "RED" output to one of the 8 outputs
P122E1-16E Opt.4 If option 4 is ON the wiegand input becomes a zone input (see description of input above)

To learn a code as an access card/tag user (eg User 50) press P21E50E at a normal keypad (that is in program mode) then go to the PRE/PSE keypad and enter in your 1-9 digit code followed by the "E" or "#" button.

Please refer to the ELITE-S installation manual for further details on programming at the above locations.

WIRING THE CODEGUARD SCRAMBLER KEYPAD TO THE WIEGAND INTERFACE BOARD

Wiegand Interface

12V DC Lock Power Supply

0V   +12V

Pin 1 = +5V
Pin 2 = GND
Pin 3 = +12V
Pin 5 = D1
Pin 6 = Buzzer
Pin 7 = D0
Pin 8 = Red LED

1 2 3 4 5 6 7 8

12V
GND
5V
L1
L0
RED
GRN
BUZ

NC1
COM1
NO1
NC2
COM2
NO2
GND
12V

0V   +12V

ELECTRIC LOCK

Electric Lock Wiring

IN1
GND
IN2
GND
DAT
CLK
NEG
POS

DIP SW

CODEGUARD
Scrambler
Keypad

Lis
Dat
Clk
Neg
Pos

Keypad Zone

ELITE-S Control Panel

CODEGUARD Operation and programming

For the CODEGUARD keypad to work properly DIP Switch 4 must be OFF at power up and DIP Switches 1-3 should be set to an unused keypad address number.

By connecting Pin 8 of the CODEGUARD to the "RED" output on the weigand terminal block the RED LED at the bottom of the keypad can be controlled by the wiegand board as per the PR-03 operation.

Connecting Pin 6 of the CODEGUARD to the "BUZ" output the buzzer on the codeguard will follow all of the keypad beep options programmed for that keypad number.

When a code is entered at the CODEGUARD keypad (by pressing "*", "CODE", "#") it is sent to the panel as an access card/tag code once the "#" button is pressed. The number of digits you can enter is set by the Mode switch on the CODEGUARD keypad (see manufacturers instructions for details). In general the default Mode 0 is the best setting as it allows for a variable code length from 1-9 digits.
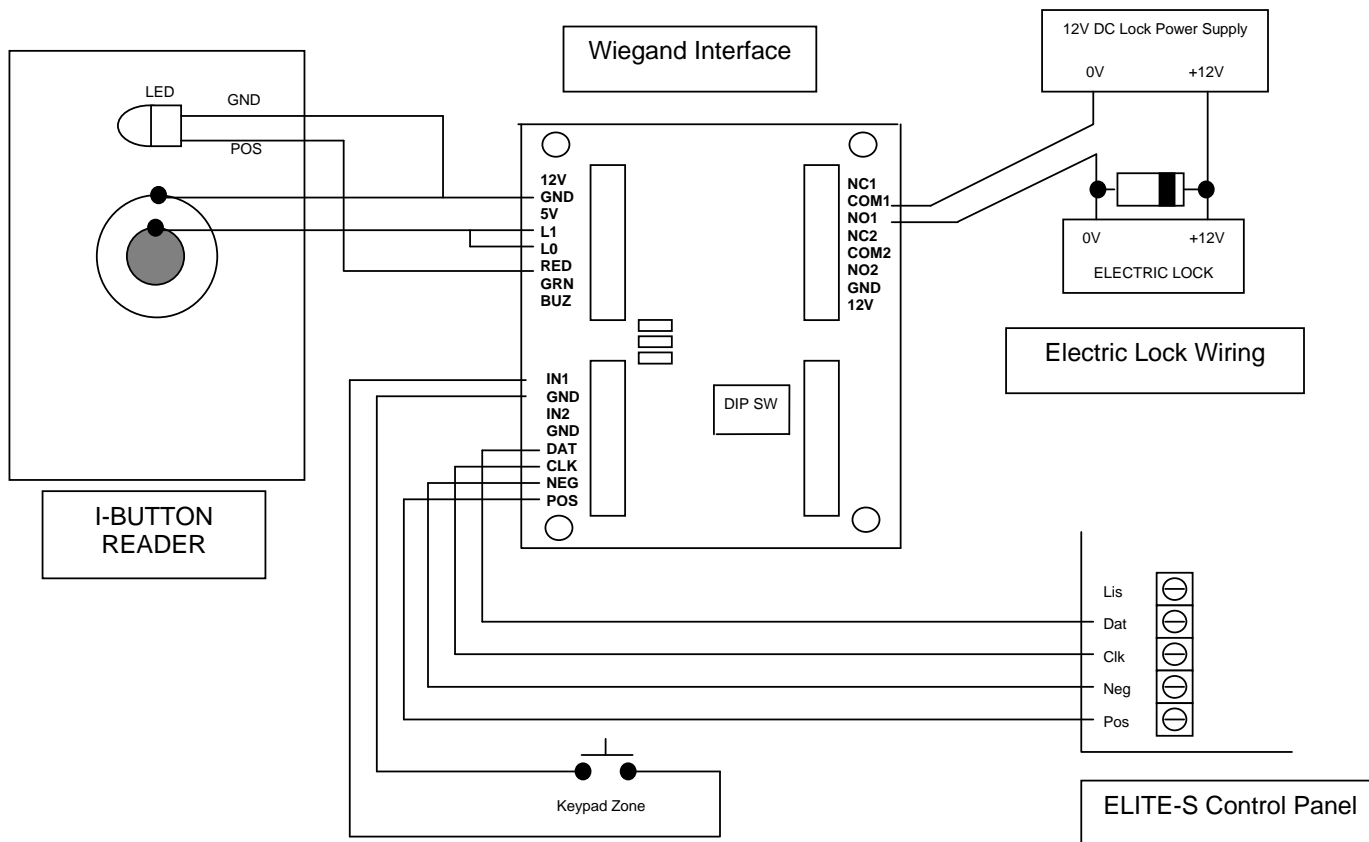
The following program addresses apply to the CODEGUARD-Wiegand Interface;

P21E 1-100E   Learn a card/tag as user 1-100
P22E 1-100E   Delete a card/tag user 1-100
P23E   Find a card/tag user number
P25E 10E Opt. 6   Option 6 must be ON to allow the relay to follow the associated output
P98E 1-8E   Associate "RED" output to one of the 8 outputs
P122E1-16E Opt.4 If option 4 is ON the wiegand input becomes a zone input (see description of input above)

To learn a code as an access card/tag user (eg User 50) press P21E50E at a normal keypad (that is in program mode) then go to the CODEGUARD keypad and enter in your 1-9 digit code followed by the "#" button.

Please refer to the ELITE-S installation manual for further details on programming at the above locations.

WIRING AN I-BUTTON READER TO THE WIEGAND INTERFACE BOARD

Wiegand Interface

12V DC Lock Power Supply
0V   +12V

LED   GND
POS

12V
GND
5V
L1
L0
RED
GRN
BUZ

NC1
COM1
NO1
NC2
COM2
NO2
GND
12V

0V   +12V
ELECTRIC LOCK

Electric Lock Wiring

IN1
GND
IN2
GND
DAT
CLK
NEG
POS

DIP SW

I-BUTTON
READER

Lis
Dat
Clk
Neg
Pos

Keypad Zone

ELITE-S Control Panel

I-BUTTON Operation and programming

For the I-BUTTON reader to work properly DIP Switch 4 must be OFF at power up and DIP Switches 1-3 should be set to an unused keypad address number.
Also the L1 & L0 terminals MUST be wired together at power-up to put the interface board in I-Button mode.

By connecting the LED on the I-Button reader to the GND and RED terminals an installer can view the interface board address from the I-Button reader by simply putting the control panel in program mode.

To program an access card/tag using the I-BUTTON reader the control panel must be in program mode (typically installer program mode).

The following program addresses apply to the I-BUTTON-Wiegand Interface;

P21E 1-100E   Learn a card/tag as user 1-100
P22E 1-100E   Delete a card/tag user 1-100
P23E   Find a card/tag user number
P25E 10E Opt. 6   Option 6 must be ON to allow the relay to follow the associated output
P98E 1-8E   Associate "RED" output to one of the 8 outputs
P122E1-16E Opt.4 If option 4 is ON the wiegand input becomes a zone input (see description of input above)

Please refer to the ELITE-S installation manual for further details on programming at the above locations.