



**Elevator Connections**

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**Keyscan Access Control System**

**Keyscan Management System V**

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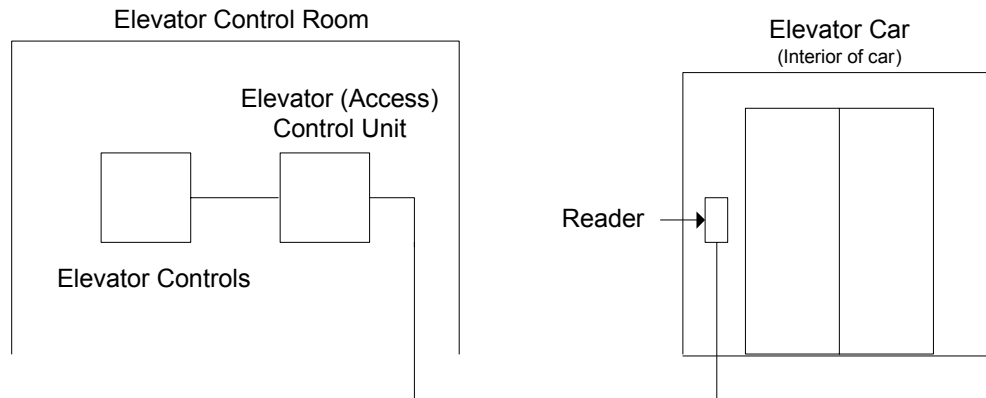
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# Keyscan Elevator Control Units

The following diagrams provide an overview on connecting Keyscan's elevator control units – EC1000 and EC 2000 – to an elevator car and elevator controls.

## Overview of Elevator Control Unit within Elevator System



## Cables

The following table outlines system cable requirements. Please be sure to review grounding guidelines for safe system operation. Avoid running access control system cables parallel with AC wires or across florescent light fixtures. This can cause AC induction or transmission interference.

### Cable Requirements

| Standard Device Wiring                            | Signal Protocol | Maximum Distance | Cable Type                 | Notes  |
|---|-----------------|------------------|----------------------------|--|
| Readers to ACU                                    | Wiegand         | 500'             | 3 pair shielded 18AWG      | Overall shielded cable accepted. CAT5 cable not acceptable with Wiegand signal protocol.     |
| ACU to ACU (9600 baud)                            | EIA/TIA-562     | 2000'            | 4 conductor shielded 24AWG | Overall shielded cable accepted. CAT5 cable not acceptable with EIA/TIA-562 signal protocol. |
| Relay Floor Wiring for floor control              | n/a             | 500'             | 1 pair 18AWG               | Shielded wire not required.  |
| ACU to PC, Modem, or NETCOM2                      | RS-232          | 100'             | 5 conductor shielded 24AWG | Overall shielded cable accepted. CAT5 cable not acceptable with RS-232 signal protocol.      |
| (Optional) Floor Input Wiring for floor reporting | n/a             | 1000'            | 1 pair 22AWG               | Shielded wire not required.  |

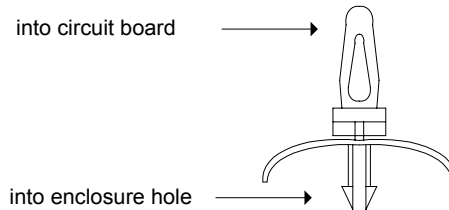
## Mounting Elevator Control Units

The following diagrams depict the positions for mounting circuit boards inside the elevator panel enclosures.

### Standoffs

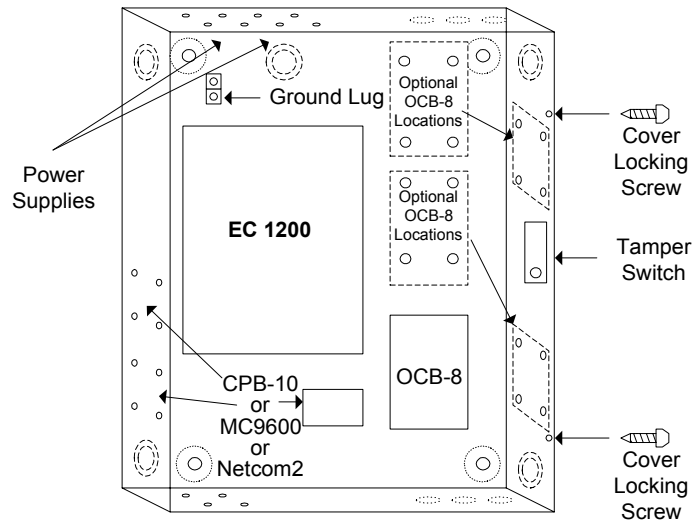
Use the stand offs when mounting power supplies and circuit boards to the ACUs. Stand offs are pre-mounted on most power supplies and circuit boards. In cases where stand offs are not pre-mounted, insert the double pronged end of the stand off in the enclosure hole first. Then mount the circuit board to the stand offs.

#### STAND OFF



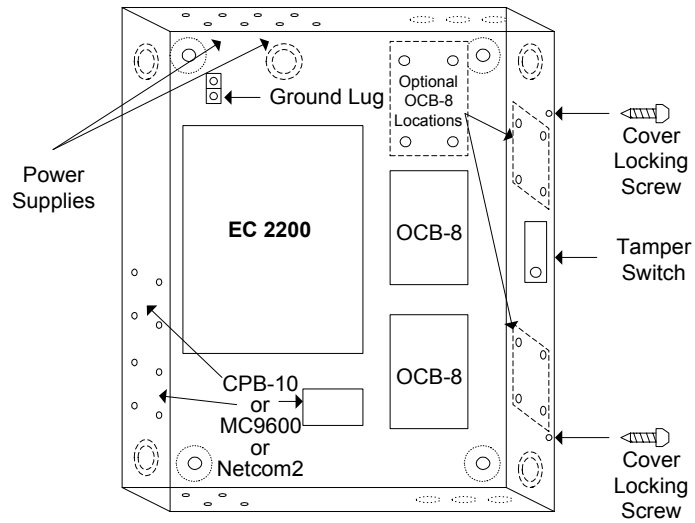
### EC 1000 – Circuit Board Mounting Positions

Front View - Cover not shown

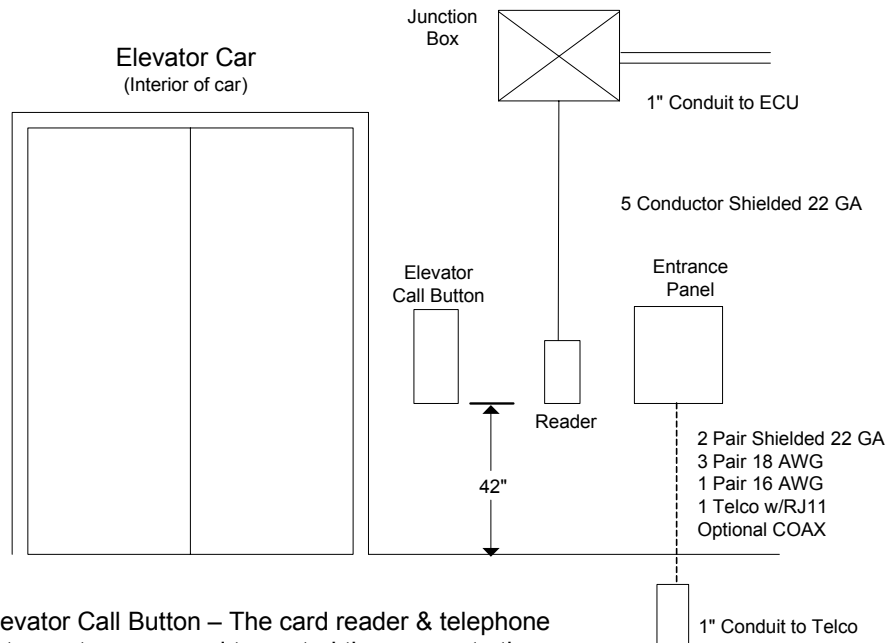


## EC 2000 – Circuit Board Mounting Positions

Front View - Cover not shown



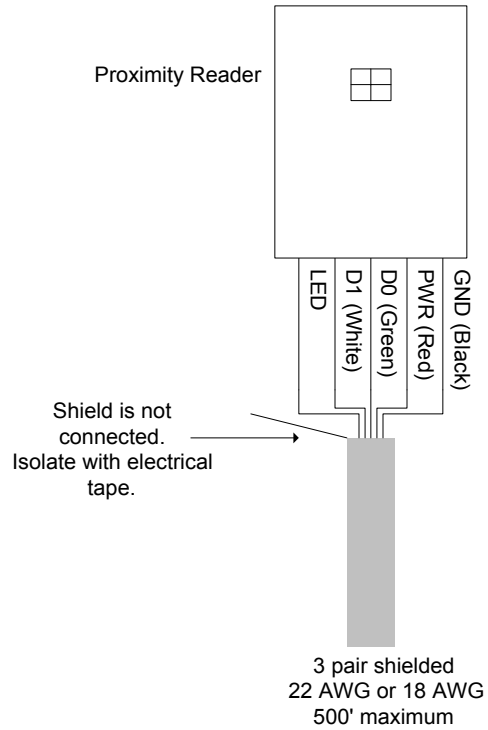
## Elevator Layout (Interior of Car)



Elevator Call Button – The card reader & telephone entry system are used to control the access to the elevator call button. Use a step-down relay between Keyscan on-board relay and elevator call button control.

## Reader Connection at Elevator

Never mount readers close to high voltage equipment. For mounting readers to a metal surface, consult with the manufacturer's documentation.



## Terminate Elevator Floor Wiring

If the elevator control unit (ECU) regulates more than 8 floors, multiple output control boards (OCB-8) are required. See the following table for ribbon cable elevator/floor assignments from the OCB-8 terminal to the ECU terminal.

### OCB-8 Jumper Settings

- J1 to J8 set to Reversed position
- J9 set to EXT PWR

### Note

Verify all floor hardware conforms to federal, state, provincial or municipal fire codes.

### EC 1000 - OCB-8 to EC 1200 Board Ribbon Cable Connections

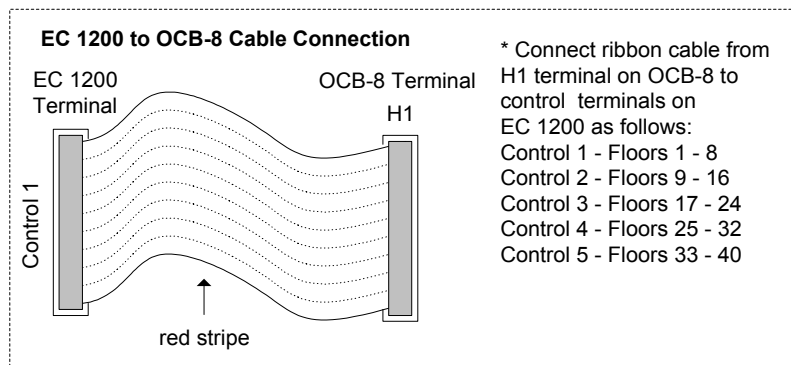
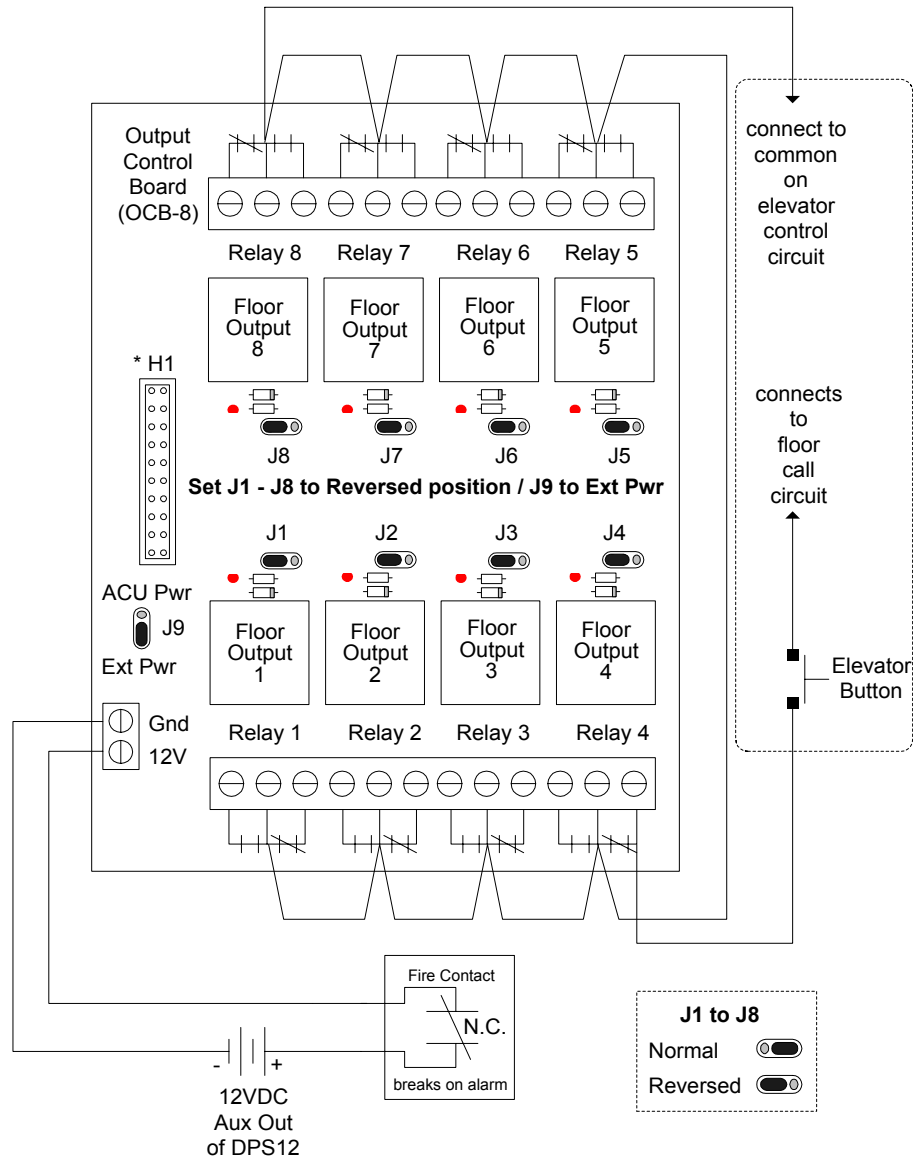
| OCB Terminal                | ECU Terminal | Elevator | Floors  |
|-----------------------------|--------------|----------|---------|
| 1 <sup>st</sup> OCB-8 – H1  | Control 1    | 1        | 1 – 8   |
| *2 <sup>nd</sup> OCB-8 – H1 | Control 2    | 1        | 9 – 16  |
| *3 <sup>rd</sup> OCB-8 – H1 | Control 3    | 1        | 17 – 24 |
| *4 <sup>th</sup> OCB-8 – H1 | Control 4    | 1        | 25 – 32 |
| *5 <sup>th</sup> OCB-8 – H1 | Control 5    | 1        | 33 – 40 |

### EC 2000 – OCB-8 to EC 2200 Ribbon Cable Connections

| OCB Terminal                | ECU Terminal | Elevator | Reader | Floors |
|-----------------------------|--------------|----------|--------|--------|
| 1 <sup>st</sup> OCB-8 – H1  | Control 1    | 1        | 1      | 1 – 8  |
| *2 <sup>nd</sup> OCB-8 – H1 | Control 2    | 1        | 1      | 9 – 16 |
| 3 <sup>rd</sup> OCB-8 – H1  | Control 3    | 2        | 2      | 1 – 8  |
| *4 <sup>th</sup> OCB-8 – H1 | Control 4    | 2        | 2      | 9 – 16 |

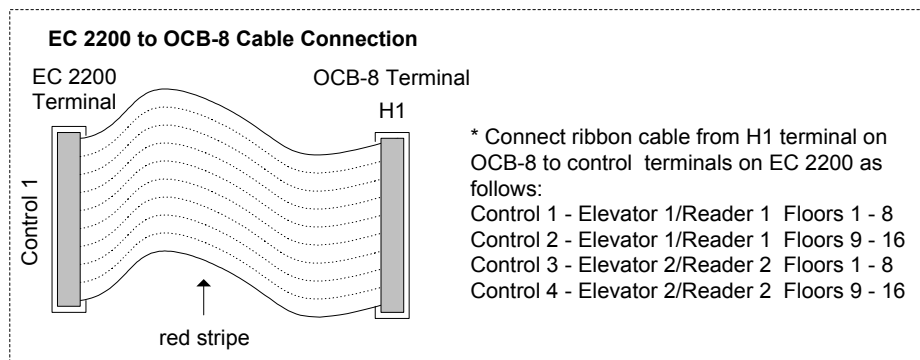
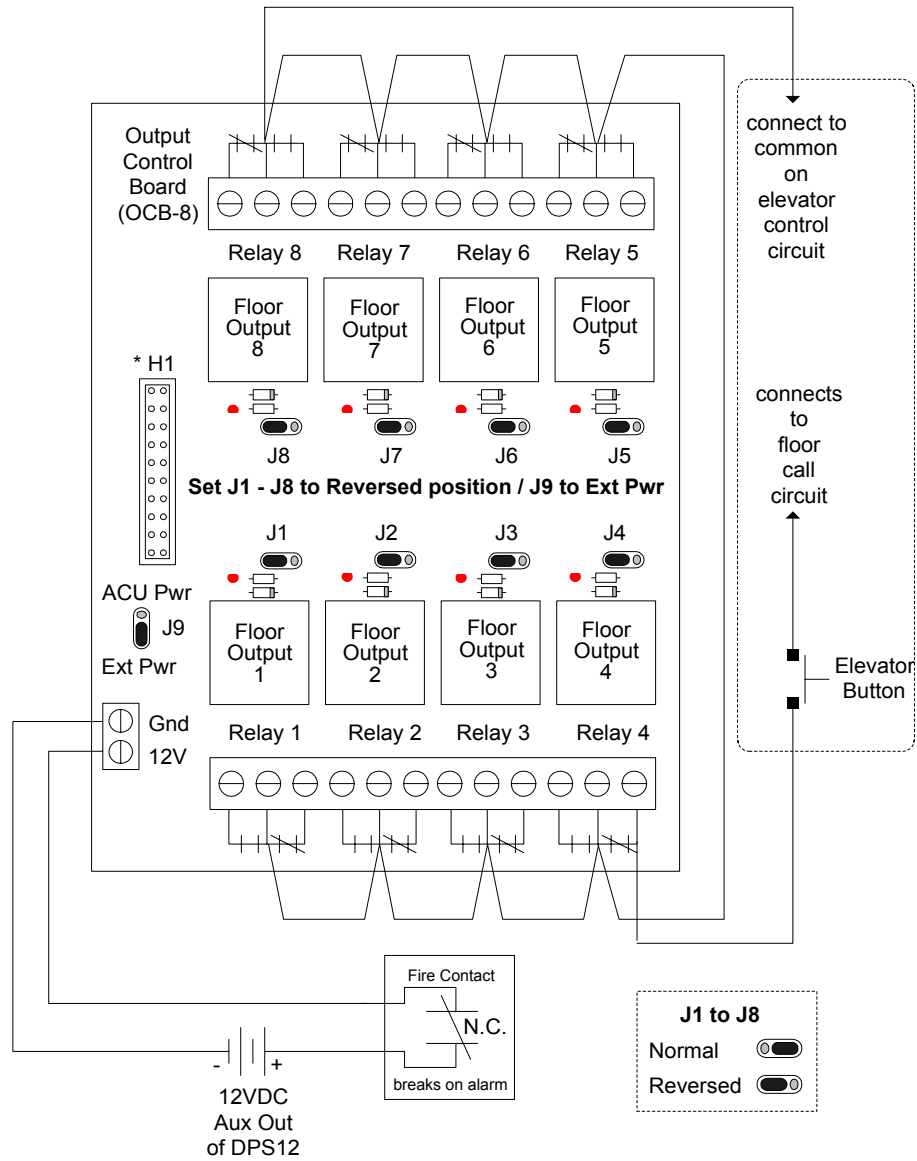
Optional OCB-8's must be purchased separately.

# EC 1000 - Terminate Floor Wiring EC 1200 Board for Floor Control





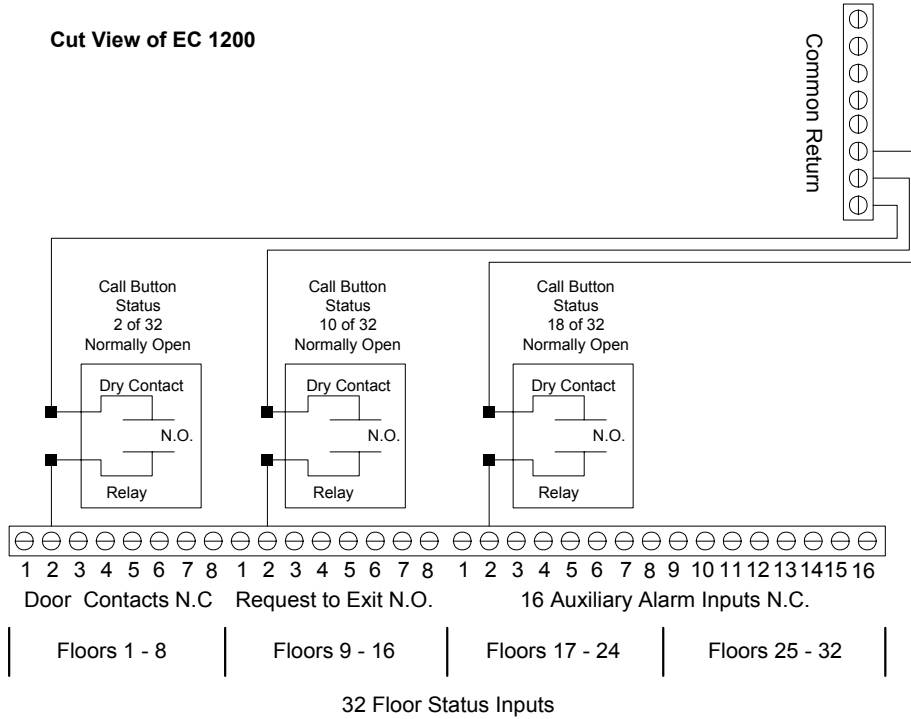
## EC 2000 - Terminate Floor Wiring EC 2200 Board for Floor Control



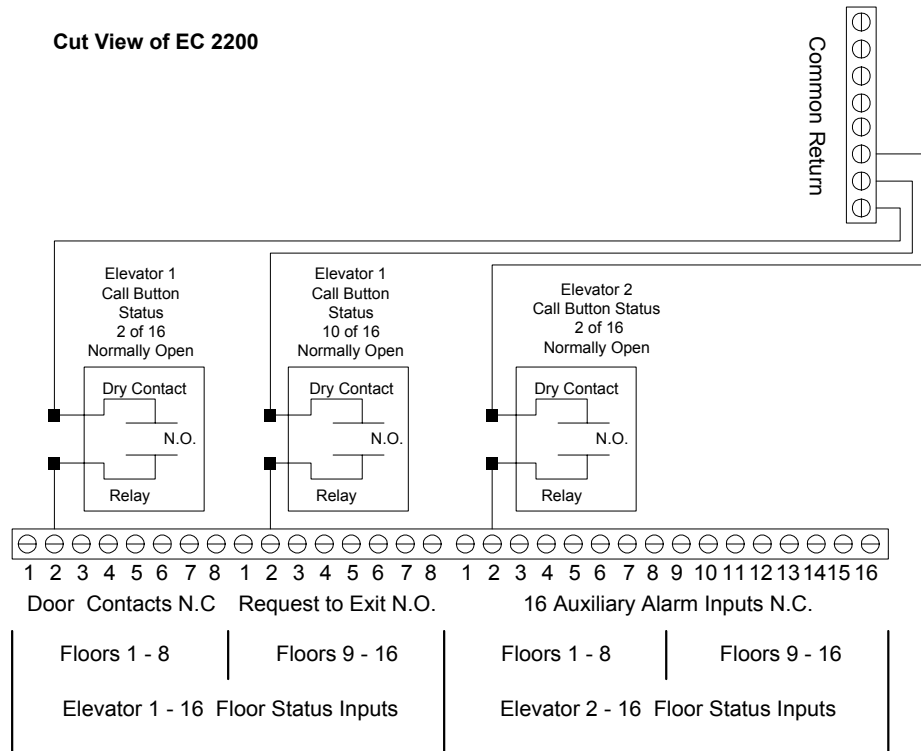
## Terminate Floor Input Wiring (Optional)

The EC 1000 with 5 output control boards can regulate up to 40 floors; however, the maximum number of floors monitored is 32.

### EC 1000 - Terminate Floor Input Wiring EC 1200 Board (Optional for Floor Monitoring)



## EC 2000 - Terminate Floor Input Wiring EC 2200 Board (Optional for Floor Monitoring)



## Terminate Reader Wiring at ACU

The reader cable should be 3 pair 22AWG shielded or a cable with overall shielding. 18 AWG is acceptable for current demanding readers such as the Indala PX620 or the HID5375. The shielding wire from each pair must be connected to the earth ground lug at the ACU and isolated and taped at the reader. The maximum reader distance is 500 feet from the controller when transmitting a Wiegand signal protocol. If the distance is greater than 500 feet, install one WIEEX per reader, which expands the distance to 4000 feet.

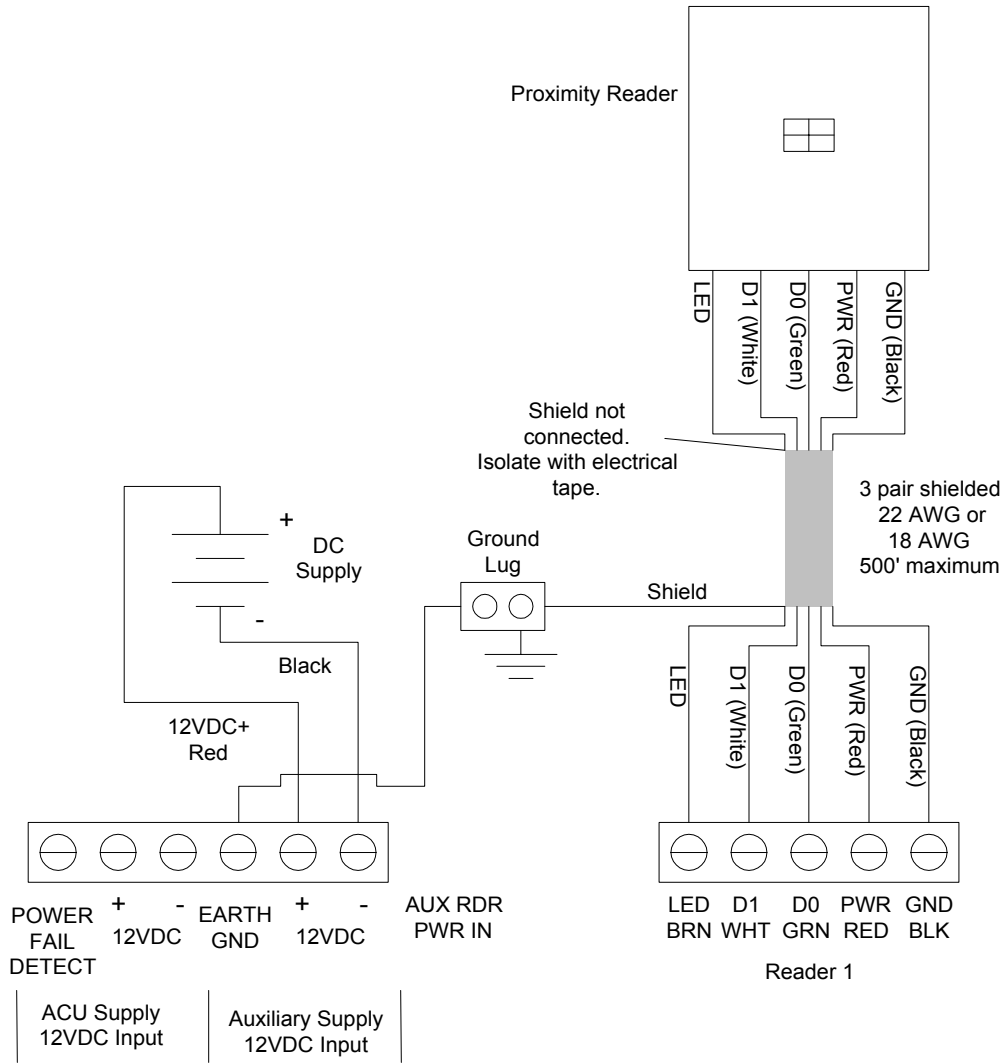
### Reader Wiring

Red – Positive DC Power. Each reader port is fused at 12VDC at 120 mA. For readers that draw more current, connect the red wire directly to the power supply.

- Black – Ground (GND)
- Brown – Light Emitting Diode (LED) on reader
- Green – Data output bit 0
- White – Data output bit 1

For specific reader wiring review the appendices listed in the Keyscan Technical Guide.

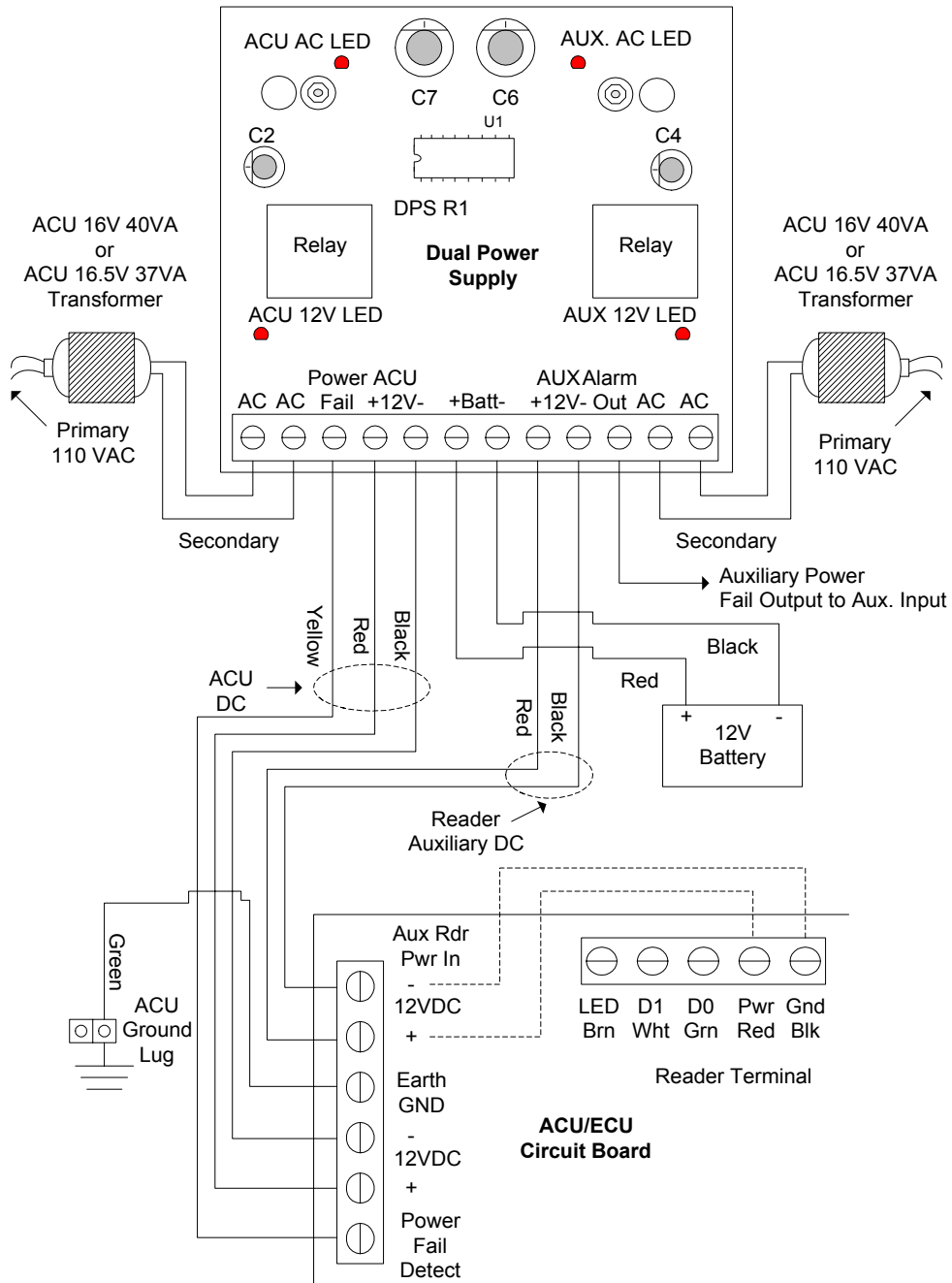
## Terminate Reader Wiring at Elevator Access Control Unit



## Power Supply Specifications

The power supply for the ACUs and ECUs is a dual power supply with 2 linear DC outputs. Each output is rated at 12VDC – 1.2 Amp.

## Power Supply Wiring

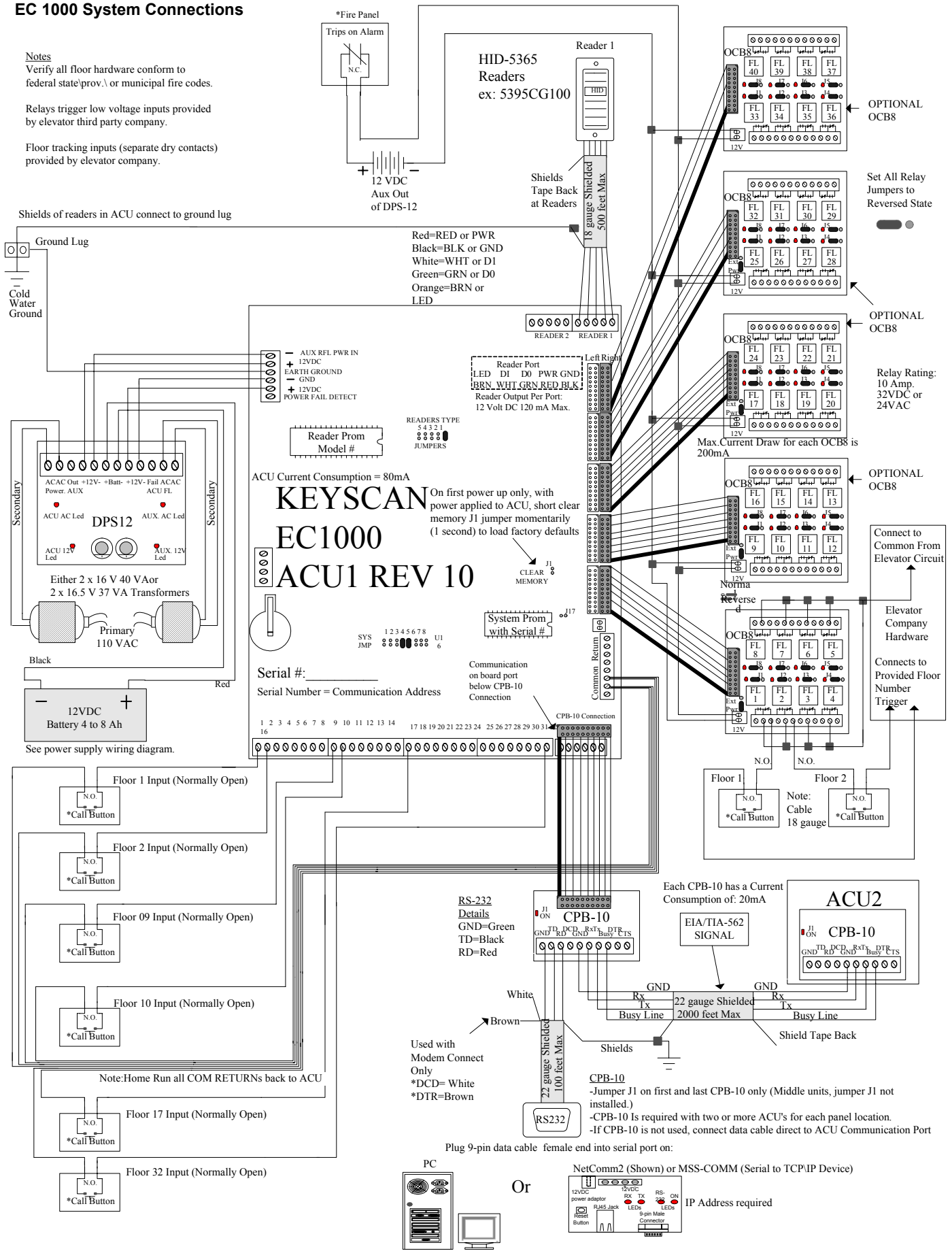


# EC 1000 System Connections

**Notes**  
Verify all floor hardware conform to federal state\prov.\ or municipal fire codes.

Relays trigger low voltage inputs provided by elevator third party company.

Floor tracking inputs (separate dry contacts) provided by elevator company.



# EC 2000 System Connections

**Note:**  
Verify all floor hardware conform to federal state/prov.\ or municipal fire codes

Relays trigger low voltage inputs provided by elevator third party company.

Floor tracking inputs (separate dry contacts) provided by elevator company.

