Introduction

The Elevator Control Unit (ECU) is an option in the Millenium™ for Windows® systems. Once you add an elevator in the software, each elevator relay represents an access point, and each access point can be controlled just like a door.

This packet includes both installation instructions and Millenium for Windows software instructions to get your elevator access control up and running.

INSTALLATION INSTRUCTIONS

- Parts List
- Components & Specifications
- Illustration—Typical ECU Layout drawing
- Illustration—ECU Wiring and Settings
- Connections tables
- Wiring Checklist

SOFTWARE INSTRUCTIONS

- Planning Elevator Relay Groups
- Programming Millenium for Windows Software

Parts List

The Elevator Control Unit (ECU) comes complete in a metal enclosure with pre-wired internal power. Other parts involved in elevator access control appear separately.

- ECD(s) must be ordered separately.

<table>
<thead>
<tr>
<th>Parts List – Elevator Control Unit (ECU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC2-101190   ECU, 120 VAC</td>
</tr>
<tr>
<td>-OR-</td>
</tr>
<tr>
<td>EC2-101191   ECU, 240 VAC (export model)</td>
</tr>
</tbody>
</table>

Following are required and/or optional accessories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>149-101179</td>
<td>ECD (Elevator Car Control Device)</td>
</tr>
<tr>
<td>000-000000</td>
<td>Reader Device(s) — same type per site</td>
</tr>
<tr>
<td>003-101391</td>
<td>(optional) Plug-in 9 VDC 500 mA Transformer for ECDs</td>
</tr>
<tr>
<td>- - -</td>
<td>(optional) Override Key Switch, single pole, normally closed</td>
</tr>
</tbody>
</table>
Components & Specifications

- **Millenium for Windows software** release 1.5 or higher.

- **Elevator Control Unit (ECU)**
  - Maximum of four (4) ECUs per Site Controller. Each ECU has sixteen (16) 5-AMP, Form-C relays for a total of 64 possible relays per Site Controller. ECUs are available in either 120 VAC or 240 VAC (export) models, and are normally located in an elevator control room and wired to external control room power. Each ECU comes with its own internal power supply.

  NOTE: An ECU can control different combinations of elevators and floors. Since Millenium software treats each ECU relay like a door, the number of ECUs you install directly affects the number of DCDs you can have per Site Controller. Each Site Controller handles up to 100 DCDs, but the number decreases depending on how many ECUs are required, as illustrated in the following examples:

<table>
<thead>
<tr>
<th>Site Controller</th>
<th>ECUs</th>
<th>Floors</th>
<th>ECDs</th>
<th>DCDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1-16</td>
<td>1-10</td>
<td>84</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>17-32</td>
<td>1-10</td>
<td>68</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>33-48</td>
<td>1-10</td>
<td>52</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>49-64</td>
<td>1-10</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>1-4</td>
<td>1-64</td>
<td>1-10</td>
<td>36-84</td>
</tr>
<tr>
<td>(*)</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>84</td>
</tr>
</tbody>
</table>

  (*): The last example will appear in this packet as a reference. The example only uses eight (8) of the ECU’s 16 relays (as you will see in upcoming sections.) Notice the number of relays in use does not change the reduction in DCDs when one ECU is installed. Controlling 16 floors with one ECU reduces maximum DCDs to 84. Controlling 8 floors with one ECU also reduces maximum number of DCDs per Site Controller to 84.

- **Elevator Car Device (ECD)**
  - Maximum of ten (10) ECD/Reader combinations per Site Controller. An ECD controls an elevator in the same way a DCD controls a door. Wiring connections are the same. ECDs mount in or on top of the elevator car. Power can come from a 8-to-13.8 VDC Power Supply or through an optional, small plug-in DC supply (from the 120 volts normally available in the elevator car.) The ECD connects to a reader mounted in the car, and wires back to the ECU with a twisted shielded communications pair.

- **Reader Device**
  - Connects to ECD and mounts in the elevator control panel for use by the elevator passenger. The passenger uses this reader to validate elevator access the same way a user validates door access. NOTE: Each Site Controller must use the same type of readers—for example, all key or all keypad. You must also set the J1-Reader Select jumper cap on the ECD either ON or OFF, based on the type of reader used.
Typical ECU Layout

The ECU connects to the Millenium for Windows network using twisted pair wiring. Elevator master control connections to ECU relays are generally made by the elevator company.

System Communications to Millenium Network
2-pair, 22 AWG twisted and SHIELDED cable (Alpha # 5482C or equivalent)
*** Must connect ECU communications GROUND to Power Supply with Line Conditioner GROUND.***

**Figure 1: Sample Layout of Millenium Plus Elevator Control System**

The first of the four possible ECUs (ECU ∅) is called the “master” and the remaining ECUs (up to 3) are referred to as “slaves.” The Master ECU communicates to the Slave(s) by connections between the J5 terminal on each ECU circuit board. The Master ECU naming convention requires that the first ECU be numbered as ∅ in the Millenium software, as you’ll see later in this packet.
ECU Wiring and Settings

The ECU consists of a metal enclosure with a power supply and a circuit board. The unit contains all intelligence needed to provide access control for its elevators.

Local communication to ECDs, readers & "slave" ECUs

2-pair, 22 AWG twisted and SHIELDED cable. Use second pair as GROUND.

Connections ECU-to-ECU:
See next page for more on Main Terminal & Local communications connections.

Always connect cable shield to GND, and tape unterminated end of cable shield to prevent shorting.

Figure 2: ECU Wiring Diagram

Manual Override Switch: Notice the ECU includes a jumper connection for an external, manual override switch (normally closed –N.C.) for local fire code requirements.
Connections

Main Terminal Block on ECU:

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>TO:</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HOT</td>
<td>120/240 VAC</td>
<td>Power supply in elevator</td>
</tr>
<tr>
<td>2</td>
<td>Neutral</td>
<td>120/240 VAC</td>
<td>Power supply in elevator</td>
</tr>
<tr>
<td>3</td>
<td>Earth</td>
<td>GND</td>
<td>Power supply with line conditioner</td>
</tr>
<tr>
<td>4</td>
<td>Key Switch</td>
<td></td>
<td>Override Key Switch</td>
</tr>
<tr>
<td>5</td>
<td>Key Switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>System Communications</td>
<td></td>
<td>Power Supply with Line Conditioner</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>(GND must connect to Power Supply with line conditioner GND.)</td>
</tr>
</tbody>
</table>

J5—Local Communications from ECU to "slave" ECUs and to ECDs

<table>
<thead>
<tr>
<th>ECU (master)</th>
<th>ECU (slave)</th>
<th>ECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>J5 Local COMM</td>
<td>J5 Local COMM</td>
<td>J3 Terminal Block</td>
</tr>
<tr>
<td>No.</td>
<td>Function</td>
<td>No.</td>
</tr>
<tr>
<td>1</td>
<td>RX/TX +</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>RX/TX –</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>RX/TX +</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>RX/TX –</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>8</td>
</tr>
</tbody>
</table>

SLAVE ECUs only apply when more than one ECU exists per site.

NOTE: J1 Reader Select jumper must be OFF for Keylocks/Keyreaders and ON for all other types of reader devices.

J3—Alarms

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alarm 1</td>
</tr>
<tr>
<td>2</td>
<td>Alarm 2</td>
</tr>
<tr>
<td>3</td>
<td>Alarm 3</td>
</tr>
<tr>
<td>4</td>
<td>Alarm 4</td>
</tr>
<tr>
<td>5</td>
<td>Alarm 5</td>
</tr>
<tr>
<td>6</td>
<td>Alarm 6</td>
</tr>
<tr>
<td>7</td>
<td>Alarm 7</td>
</tr>
<tr>
<td>8</td>
<td>Alarm 8</td>
</tr>
</tbody>
</table>

J2 & J4 Terminals—pre-wired
Wiring Checklist:

For details, refer to previous illustrations and connection tables.

__1. Mount the ECU metal enclosure__ in elevator master control room.

__2. Set the S2–ECU Address Switch__ based on which ECU you’re connecting. Use only the first two switches, as follows.

- ECU 0 (first) = Switches 1-8 are all in the OFF position (UP)
- ECU 1 (2nd) = Switch 1 is in the ON position (DOWN)
- ECU 2 (3rd) = Switch 2 is in the ON position (DOWN)
- ECU 3 (4th) = Switches 1 & 2 are in the ON position (DOWN)

__3. If you’ll be using an Override Key Switch, REMOVE the jumper cap from the “Override Key Switch Select” jumper. Connect the switch cables to pins 5 & 6 on the main ECU terminal.__

__4. Connect power__ (Main ECU terminal pins 1, 2, 3,) but keep power off.

__5. Connect SYSTEM communications__ (Main ECU terminal pins 8, 9, 10) to Millenium Power Supply at Gnd, –TxRx, & +TxRx. System communications MUST ground to a power supply with line conditioner. If you have subsequent ECUs, make system communication connections between ECU’s at Main Terminal pins 8, 9, & 10.

__6. Connect LOCAL communications__ (ECU J5 terminal) to ECD J3 at pins 1, 2, & 5. Remember to set ECD J1 Reader select jumper OFF for Keylok/Keyreader and ON for all types of reader devices. If you have more than one ECU, make local communication connections to subsequent ECUs at J5 terminal.

__7. If applicable, connect alarm devices to terminal J3–Alarms. ECU alarms are the unsupervised type, Normally Closed.__

__8. Power up__ to test the connections. LEDs for each of the 16 relays in the ECU should illuminate. (Relays are normally energized.) When in use (from a valid access,) the LEDs turn off for the amount of time programmed through the software. (Relays become de-energized.)

The 16 relays on the ECU are 5-AMP, Form-C type. Each relay has three terminals for the following circuit types:

- N.O. (Normally Open)
- N.C. (Normally Closed)
- Common

Relays are normally energized to provide fail safe operation. Relays are connected to the elevator controls (usually by the elevator company) to either ENABLE or SELECT a floor, as follows:

⇒ **AN ENABLED FLOOR** means the relay de-energizes. The ECU tells the elevator to allow the floor button(s) to function. Through the software, you enable a floor just like you enable a door—based on valid user and the user’s access group assignment.

⇒ **(optional) TO SELECT A SINGLE FLOOR,** the relay de-energizes or opens. The elevator company can connect the ECU relay to send the elevator to a specific floor, based on the user’s access code. This mode only allows the passenger access to one floor.
9. **Program the ECU into the Millenium software and create floor relay** access points as described under “Software Instructions” next in this booklet.
SOFTWARE INSTRUCTIONS:

Planning Elevator Relay Groups

When you finish making and testing connections, use Millenium for Windows software to program elevator access control. Assign ECDs in each elevator to relays or to groups of relays on the ECU. As a result of your relay grouping, a single set of 16 relays can control:

- four (4) separate elevators (ECDs) each going to four (4) controlled floors (first example, below) – OR –
- one (1) elevator (ECD) going to 16 controlled floors (last example, below.)

Table 2: Examples of some ECU relay groupings (through programming in Millenium for Windows software.)

For the upcoming exercise, assume one ECU will be controlling two elevators (ECDs) in a building with four floors, as shown in the following figure:

- Relays 1-4 in ECU 0 control four floors for CAR “A” (first elevator.)
- Relays 5-8 in ECU 0 control four floors for CAR “B” (second elevator.)
- Elevators are represented as ECDs in the software.
Programming Millenium for Windows Software

**Exercise**—One ECU to control two elevators going to four floors:

1. **Create the ECU (Elevators dialog)**

   In Millenium for Windows software, click the Elevator button to program the first ECU into the software.

   (a) Select the site under which this ECU is installed.

   (b) Type a name for the new Elevator Controller (ECU.)

   **NOTE:** The first Elevator Control Unit MUST be number 0 because the first ECU under a Site Controller is the “master.”

   The above example shows the maximum number of ECUs (4) that can be under one Site Controller. In this exercise, the second elevator will also come under ECU 0, but will use different relays.

   (c) Click the ECD Reader Setup... button to choose the type of reader to be used by all ECDs under this site controller.
NOTE: All ECDs under one site must use the same type of reader. The reader validates a passenger’s access to the elevator floor in the same way a reader validates a user’s access to a door.

(d) Press the save button.

Alarms and Events are described in an upcoming section and may be set up later. Use the Notes section to record any information that might be helpful to software operators.

2. **Name Elevator Cars** (Elevators dialog)

The next step is to name elevators (Elevator car Control Devices—ECDs) and select the floors that will be served by a given elevator car’s reader.

(a) In the ELEVATOR dialog, click to select the Elevator Car tab.
(b) The currently selected SITE NAME appears highlighted if you already selected the site on the main Elevator tab. If no site has been selected, highlight a SITE NAME where you want to define and name the elevator floor relays.

(c) In the ECD section, type a NAME for the elevator car (ECD) that operates under the given Site Controller. You can have as many as ten (10) elevator cars for one site. The name can be up to 19 characters long.

Site Floors:

The Site Floors listbox will show all ECU floors programmed under the given Site Controller. Notice the ECU that controls each floor relay will appear in parentheses after the floor name.

(d) The Site Floors listbox would appear empty at this point in an initial installation. The above example shows the listbox after you complete step 3 (Access Points dialog/ECD Floor Relays tab.)

Selected floors will be served by the given elevator car reader. That is, when a valid passenger uses their key or card in the elevator reader, corresponding button(s) on the elevator control panel will light according to that passenger's access group rights. Passenger then chooses the desired floor.

Summary: You can make the same programming setting in two different locations in the software.

- **Select what floor relays can be activated by an elevator car reader** in the **Site Floors** listbox (Elevator Car tab), and

- **Select the reader that will be active for a particular floor** (ECU Floor relay) in the following **Floor Readers** listbox: (ACCESS POINTS dialog —ECD Floor Relays tab is covered in more detail under step 3 below.)
The Floor Readers example shows Elevator Car A’s reader is active for the “Lobby” floor.

The **Floor Readers** dialog and the **Site Floors** listbox both show identical data in two different ways.

- (e) Type in any notes to provide more description of the given Elevator car Control Device (ECD), if desired.
- (f) Press the save button. Repeat the process to name additional ECDs and select the floors they serve.

3. **Program ECU Floor Relays** *(ACCESS POINTS dialog)*

Since the software handles elevator floors like doors (as access points), you can assign the following controls to the elevator for the given floor:

- Each floor can be set for **Auto activate** or **First user auto activate**, just like a Millenium door. *(RELAY MODE field in the ECU Floor Relays tab/ACCESS POINTS dialog.)*
- Amount of time an elevator control relay is available to the passenger *(de-energized)* is adjustable through the software from 1-255 seconds, just like a normal door. *(ACTIVE TIME field in the ECU Floor Relays tab/ACCESS POINTS dialog.)*

- (a) Click the ACCESS POINTS toolbar button, and select the ECU Floor Relays tab. *(The following sample is already filled in.)*
(b) Select the ECU for which you want to name and define up to 16 relays (floors.)

(c) Press the **New** button or move to the blank ECU Name field.

(d) Type a NAME to identify/describe the floor for a given relay. The name you type will appear in the ELEVATOR dialog's Elevator Car tab (Site Floors listbox.) From the Site Floors listbox, you will select those floors an elevator car will serve.

NOTE: Elevator floors correspond to the 16 possible relays on an ECU. Floor NUMBERS for the 16 relays range from zero (0) to 15. The ECU Relay Number must accurately reflect the relay wiring. Relay 1 on the ECU must be wired to activate the button for the floor in the elevator car’s passenger control panel.

(e) Click the **Readers** button to select the Elevator car Control Device (ECD) reader(s) that will control access to the given floor. The reader device attached to a selected ECD will receive a user’s key or card and grant or deny elevator floor access based on the user’s Access Group. You can also select readers in the Site Floors listbox (ELEVATOR dialog’s Elevator Car tab, covered under Step 2 (b) above.)

(f) Program the floor reader to control access to the given floor:

**Relay Mode**  
Select the mode that will control how the reader controls access to the elevator floor.

<table>
<thead>
<tr>
<th>RELAY MODE options</th>
</tr>
</thead>
</table>
| **No action**  
Elevator relay does not activate for this floor. |
| **Auto activate**  
Elevator relay activates during a certain period of time based on the ACTIVE TIMEZONE. |
| **First user auto activate**  
Elevator relay activates on first valid user during the ACTIVE TIMEZONE, and remains activated until the end of the timezone period. |
| **Valid user**  
Elevator relay activates for a valid user, for the ACTIVE TIME (seconds), but only during the ACTIVE TIMEZONE. |
| **Rejected user**  
Elevator relay activates for a rejected user, for the ACTIVE TIME, but only during the ACTIVE TIMEZONE. |
| **Any user**  
Elevator relay activates for any user, for the ACTIVE TIME, but only during the ACTIVE TIMEZONE. |

**Active Timezone**  
If appropriate, select the TIMEZONE during which the given floor relay will be available to valid users. The Active Timezone is commonly used with the *Auto activate* and *First user auto activate* relay modes.

**Seconds Active**  
Time-related relay modes let you set the number of seconds you want the elevator control relay to remain active (de-energized.) Maximum is 255 seconds with 5 seconds being an average setting.
(g) Type any extra description/information in the free-form NOTES box that might be helpful to operators when this dialog appears.

(h) Press the save button.

(i) Send the new programming data to the Elevator Control Unit (ECU.) Use the Execute… button to display a menu of special operator actions.

Highlight the **Update** action to send all elevator programming data to the ECU for all relays. This update action is identical to the update that appears on the main Elevator dialog under the Execute button.

**Update Elevator**

The Update action from the main Elevator dialog will manually send all data you’ve just programmed in the Elevator and ECU Floor relays dialogs to the ECU circuit board. This update action does the same thing as the update that appears on the Access Points dialog – ECU Floor Relays tab, under the Execute button.

- If the elevator control option is being installed in an existing Millenium system, you must use the Update option under Execute button in the main Elevator dialog.

- If the elevator control system is being installed as part of an overall system installation, the elevator data will be updated along with all other Millenium data when you update the site.

After installation, this action is only used in special circumstances when the PC does not automatically update an ECU. (Example—after an ECU has been off-line for installation or repair.)

You can also update the elevators by performing an **Update** from the Site dialog.

4. **Assign users, events, and alarms**

Assign users to floors in the same way you assign users to doors.

- ACCESS GROUP dialog in Millenium for Windows software displays elevator floors along with doors.

- Operator can set up a desired TIMEZONE for each floor, through the TIME dialog.

Set up Events and Alarms for ECUs, just as you would for doors.

- A Millenium operator can set up alarms and events for elevator floors through the two buttons on the main Elevator Controller (ECU) tab. NOTE: The Manual Override Switch actions in Millenium for Windows' history appear as *Bypass* and *Bypass Reset*. 
Elevator Alarms setup

Up to four alarm devices may be wired to the ECU at terminal J3–Alarms. If you have alarm devices wired to the ECD, setup up those alarms as described below.

NOTE: Once you have set up elevator alarms to use one or more of the four possible ECU alarms wired for the given elevator controller, the name you give to each alarm appears in that elevator's Device Events setup dialog.

(a) Open the main Elevator dialog, and select the Site and the ECU.

(b) Click the Alarms… button.

(c) ALARM NAME: Type a description which will identify the alarm. Notice the alarm number corresponds to one of the four available alarm inputs on the ECU circuit board.

(d) IGNORE TIMEZONE: Select a timezone during which the alarm is to be ignored.

**IGNORE options**

- **Never**: Alarm is always in effect—never ignored.
- **User-defined**: Any timezones you set up under the TIME menu will appear in the drop-down selection listbox. You may create a special timezone through the Timezone dialog during which the elevator will ignore an alarm.
- **Always**: Alarm is never in effect—always ignored.
e) **SHUNT DELAY (IN SECONDS):** Type (or use the arrow buttons to increment to) the amount of time you want to allow before the alarm sounds. Options are 1-255 seconds.

f) **PRIORITY:** Use the mouse to click and drag the pointer to the priority level you want to set for the given alarm.

g) Press the save button to keep the alarm programming as it appears.

### Elevator Events setup

Scroll through the list of Millenium for Windows event actions. Select those actions that you want to assign to each ECU. Assign events for which you want optional relay devices (RCDs) to respond as well as those events for which you want each site on a DialUp communications system to call the main PC.

In addition to the four available alarms, an ECU has a tamper and a manual bypass alarm along with their resets. Any of the four possible alarms you wire and program appear below the tamper and bypass options in the Events listbox.

(a) Open the main Elevator dialog, and select the Site and the ECU.

(b) Click the Events… button.

(c) **EVENTS:** Click the checkbox in front of each event to select those events for the given site and ECU. Notice that the tamper
and manual override bypass events appear by default. Any other events appear with the name you gave to the corresponding ALARMS you set up for the given site and ECU.

The events you select will be sent when you click the OK button. Include both the event and its complementary event in cases of “on-and-off” type actions.

- If you have any alarms wired in the given ECU, select both the alarm and its corresponding reset event. For example: Bypass / Bypass Reset.

(d) Press the OK button to have the selections be among the events for the given ECU.

### Remote Floor Unlock

Just as Millenium Plus doors have a remote unlock feature, so elevator floors can be unlocked by all pre-defined Millenium Plus operators.

![Remote Unlock Image]

Scroll to the name of the floor to be released. The elevator will release for the amount of time the elevator relay is set to be active in the Assign Floors (relays) data box, ACTIVE TIME field.

For elevator cars (ECDs) with a Marlok Keylok reader, two people must be involved in the remote unlock process. A user must insert and turn a key in the lock cylinder while the operator performs the Remote Unlock function at the computer.

History reflects “Operator Unlock,” and identifies the elevator floor, site, and operator ordering the action. After the remote lock actually opens, history reflects “Remote Unlock,” and identifies the floor and site.

### Override floor

Just as Millenium doors have an override strike feature, so elevator floor relays can be overridden by all pre-defined Millenium Plus operators.

![Override Floor Relay Image]

Scroll to the name of the floor to be overridden. An OVERRIDE MODE field displays. Use <F4/F3> key to scroll between options.
OVERRIDE MODES

None

No floor override is in effect. Elevator floor relay will function as programmed in the software. Normal resting state is energized as a fail safe precaution.

Locked

Elevator relay for the selected floor changes from de-energized to energized, meaning the floor is temporarily restricted or disabled for the number of hours set in the OVERRIDE TIME field.

Unlocked

Elevator relay for the selected floor changes from energized to de-energized, meaning the floor is temporarily released or enabled for the number of hours set in the OVERRIDE TIME field.

The elevator relay will change state (from energized to de-energized or from de-energized to energized) for the amount of time, in hours, set in the OVERRIDE TIME field. At the end of the override time, the relay will return to its normal state.

Summary: How the elevator control process works

1. User enters elevator car and inserts his/her key or card.
2. If user is valid, the green LED on the ECD reader illuminates.
3. In the ECU, the floor relay(s) designated in the software de-energize.
4. When the ECU relay opens, those buttons that correspond to the de-energized relays will function for the user. The user then presses the button for the desired floor.

NOTE: The elevator can be set to go to one specific floor based on the user’s access. This single-floor option involves the way the ECU relays are wired to the elevator controls. Refer to Wiring Checklist under “Power up.”

What Releases Elevators?

Relays release (de-energize) elevators in the following situations:

- Valid user inserts a key/card into reader.
- Timezone is active based on a valid user’s access group assignment.
- ECU loses AC power.
- Optional external override switch is manually used.
- Remote Floor Unlock action is used.
- Override floor action is used (Unlocked mode.)
Environmental Specifications

- Temperature range for Millenium Plus Elevator control electronics: 14 to 104°F (-10 to +40°C)
- Millenium Plus Elevator control electronics are designed to tolerate non-condensing humidity up to 90%.

Electrical Specifications

- ECU power: (external, from elevator control room)
  - 120 VAC, ½ AMP, 50-60 Hz (domestic)
  - 240 VAC, ¼ AMP, 50-60 Hz (export)
- ECU has 16 relays, 120 VAC and 30 VDC, 5 AMPs each.
- ECD power:
  - Power Supply, 8 to 13.8 VDC with line conditioner, or
  - Plug-in transformer, 9-12 VDC at 500mA