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Welcome and congratulations on your purchase of the Card Access™ InHome™ Heavy-Duty Power Controller. The Installation Guide and Reference is designed to provide to you, the installer, with detailed information about the operation of the product. The manual assumes that device installers are locally qualified and licensed electricians. It also assumes that if the device is added to the Control4® home automation system that you are a qualified and trained Control4 dealer. An electronic version of this guide can be downloaded from the Card Access support site at: http://www.cardaccess-inc.com/support/inhome/hpc10a. Card Access values your time and comments. If you have suggestions for improvements to this manual or to the product we welcome your input.

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Introduction

The Card Access InHome™ Heavy-Duty Power Controller (HPC10A) is a Control4®-Certified wirelessly controlled power controller specifically designed for use with the Control4® home automation system. This device gives the Control4-automated homeowner the ability to turn high-voltage items on or off based on the time of day and device management from a remote location using Control4’s 4Sight™ service.

The InHome Heavy-Duty Power Controller also allows installers to setup up a stand-alone configuration that doesn’t require integration with the Control4 home automation system. This option requires “hard-wiring” low-voltage dry contact switches to the device.

The device consists of two, high-voltage, 100-240VAC 30 Amp independently configurable relays that can control the following types of loads in residential or commercial applications:

- motors
- resistive loads
- ballast type loads

The control and configuration of these relays can occur through the Control4 Composer application (Control4 Operating Mode) or directly on the device (Stand-Alone Operating Mode).
Becoming Familiar with the Product

This section of the manual will familiarize you with the basic components of the HCP10A product, the component names used in this manual, and the function associated with the different components. This basic understanding will help you set up and configure the device for proper use.

Enclosure

The HPC10A provides a metal Type 1 electrical enclosure for easy wiring and product mounting. There are ½” and ¾” knock-out ports on the side of the enclosure to allow for conduit connectors and/or feedthrough cable clamp connectors. The enclosure has a paint-ready black powder coated textured finish. Loosening the four side-mounting screws releases the lid, exposing the electronics inside and allowing for generous room to attach high-voltage load wires and low-voltage control lines. A 2.4 GHz Zigbee radio controls the device if used in the Control4 Home Automation System. If used as a stand-alone device, the radio is disabled.

Figure 1. Outer Enclosure
**DIP Switch Setting**

The device includes a single, four position DIP switch located on the product as shown in **Figure 3**. Card Access recommends you remove power from the unit prior to making DIP switch setting changes. However, if this scenario isn’t an option, the installer needs to know that DIP switch changes will cause the product to reset, similar to how the device responds when turned on initially. This response is normal operation.
When changing a DIP switch setting with power applied, the LED next to the ID button will respond in sequence:

1. The LED will blink yellow, indicating a detected switch change.
2. The LED will blink red, indicating the device will go into a power reset.
3. The device will then perform a power up reset sequence as described in the Power Up/Reset Sequence section of this manual.

This reset cycle occurs with each switch change, placing the device into the selected mode of operation.

**Relay Enable/Disable Switch**

*Figure 4* shows the location of the single position switch on the product. This switch provides the installer with functional device testing that doesn't require the high-voltage relays. The switch proves helpful for repeated testing after wiring the device for loads to ensure correct setup and program operation. The relay enable/disable switch can be moved at any time during operation.

**NOTE:** Ensure that the relay enable/disable switch is in the “enable” position for normal product operation. The “disable” switch position is only used during product setup and testing.
There are two LEDs on the board labeled A and B as shown in Figure 4. These green LEDs correspond to the operation of each high-voltage relay. After supplying power to relay A or B, the corresponding LED will glow green to indicate the state of the relay (ON when powered or closed, OFF when not powered or open). If the relay enable/disable switch is in the “disable” position, the ID LED will flash yellow, indicating the device is in Relay Disable Mode. The device will now function as normal with the LEDs indicating relay operation. However, the high-voltage relays will NOT energize. This mechanism gives the installer a way to test device operation without engaging the high-voltage load. After completing device setup and testing, the installer must return the switch to the “enable” position for proper operation.

**Input Switches 1–4**

For setup and testing convenience, you’ll find four switches mounted to the board. They are directly wired in parallel to the four (4) input devices that can be wired into the low-voltage connector. These switches make testing device functionality and operation easy during the initial set up, configuration, and troubleshooting. Refer to Figure 2 for the location of the input switches.

**ID Button**

This button allows for automatic device identification in the Control4 Home Automation Zigbee Network. It is also used as a type of enter button during the programming of the Maximum Motor Travel Time Limit. Refer to Figure 2 for the location of the ID button.

**Low-Voltage Connector**

The low-voltage connector consists of four (4) dry contact input pairs and two (2) inputs for a Class B 12VDC power supply input. These inputs are wire-screw, clamp-type connectors which require a small, flat blade screwdriver to loosen and tighten the connections. For installer convenience, the PC board shows markings identifying the different inputs.
High-Voltage Connector

The high-voltage connector consists of eight (8), 30Amp, screw clamp-style, terminal lug capable of supporting up to 8-gauge copper wire. Four of the terminals are used for the two relay connectors, and four terminals are used to connect to power and to provide additional power connection points for the installer. For installer convenience, the PC board shows markings identifying the different high-voltage inputs.

Setting the Operational Modes

The default operational mode of the device is set for Control4 Mode (default). In this mode, the four (4) DIP switches on the board are all set to the OFF position. This mode indicates that the operation of the device is 100% configurable through the Card Access Driver installed in the Control4 Composer project. If this driver is not included in your current Control4 project, please contact Card Access for instructions on installing this driver into your project. Instructions can be found at http://www.cardaccess-inc.com/support/inhome/hpc10a. You can find a summary of the operational mode settings on the inside of the device lid. A more detailed description of each operational mode, and the associated DIP switch setting, is described below.

NOTE: Please note that the positioning of the DIP switches, in conjunction with the operation of the four (4) dry contact switch inputs, determine the operation of the two high-voltage load switching relays.

Getting Back to Factory Default Settings

To restore the default setting on the Card Access InHome Heavy-Duty Power Controller, you can do the following.

1. With the device powered, tap the ID button nine (9) times in a row without pausing between taps and taking no more than four (4) seconds.
2. The LED near the ID button will rapidly flash red, green, red, green pattern, indicating receipt of a factory default request.
3. The device then performs a power up reset sequence as described in the Power Up/Reset Sequence section of this document.

Resetting to factory default restores the following settings:

- Zigbee Radio set to Channel 14
- Button input mode set to one button momentary Normal Mode for both relays
- Travel Limit Time set to 15 seconds
- Relay Delay Time set to 0.5 seconds
- Radio Check-in interval set to one (1) minute

Explanation of Operational Mode Table

The HPC10A offers 13 operational modes. The DIP switch settings and the input mode name identify the operational modes. The 13 operating modes fall into four (4) categories summarized on the inside lid sticker (see Figure 5). Any DIP switch setting selected by the user that does NOT correspond to one of these 13 operational modes will default to the Control4 Mode (DIP switch setting 1–4: OFF; OFF; OFF; OFF).
Figure 5. Operational Mode Table

The four (4) mode categories include:

- **Default Settings** (1 mode)
- **Normal (Independent Relay) Modes** (4 input modes)
- **Linked (Motor Control) Modes** (5 input modes)
- **Simulated SPDT Modes** (3 input modes)

The table breaks out each mode using the following designators:

- **Dip Switches**—Indicates the DIP switch settings required to enter the category input mode
- **Input Mode**—The operational mode name.

Example 1: Normal Mode—2 Button, Latched with DIP switch settings (1-4): OFF; OFF; OFF; ON. "Normal Mode" would indicate the mode category while "2 Button, Latched" indicates the input mode describing the input type and configuration used to control the device.

Example 2: Simulated SPDT Mode—1 Button, Toggle with DIP switch settings (1-4): OFF; ON; OFF; OFF. "Simulated SPDT Mode" indicates the mode category while "1 Button, Toggle" (the input mode name) indicates that the input type is going to be a single button input that operates as a toggle switch.

- **Input 1**—Indicates what occurs when Dry Contact Input #1 is closed (or on board input switch #1 is pressed) while in a particular input mode
- **Input 2**—Indicates what occurs when Dry Contact Input #2 is closed (or on board input switch #2 is pressed) while in a particular input mode
- **Input 3**—Indicates what occurs when Dry Contact Input #3 is closed (or on board input switch #3 is pressed) while in a particular input mode.
• **Input 4**—Indicates what occurs when Dry Contact Input #4 is closed (or on board input switch #4 is pressed) while in a particular input mode.

Take a moment to familiarize yourself with the Operational Mode Table. Going forward, the table can provide a reminder for future product setup without requiring the more detailed manual.

**Default Settings Mode (Control4)**

The product ships in the Control4 mode with the DIP switch settings (1-4): OFF; OFF; OFF; OFF. This mode means that device configuration happens in the Control4 Home Automation System. See the Control4 Operating Mode section below for a more detailed explanation.

**Normal (Independent Relay) Modes**

In Normal Mode, the high-voltage relays do not rely on any programming logic to validate or check their operation. The relays operate based on what you tell them to do without regard to other input. In Normal Mode, the relays act individually and normally, like an independent dumb relay. The relays will respond based on the type of switch connected to the input. The electronics perform no relay activation or deactivation protection, no relay timing considerations, or any other specialized relay operation. The relays act independent of each other. The four (4) dry contact inputs can be wired to different types of closure devices and are set up to control the individual relays in the following configurations:

**Two Button, Latched (Normal Mode)**

(DIP switch settings 1–4: OFF; OFF; OFF; ON) Hooking up a toggle switch between inputs 1 and 2 will open and close relay A as you flip the toggle switch. Pressing the onboard switch #1 will close relay A while pressing the onboard switch #2 will open relay A, toggling between the closed and open state. Hooking a toggle switch between inputs 3 and 4 will open and close relay B (same as pressing switches 3 and 4). "Latched" in the mode title refers to the switch (and the relay) staying in the last position until the user moves switch.

**One Button, Momentary (Normal Mode)**

(DIP switch settings 1–4: ON; OFF; OFF; ON) This configuration allows the user to wire a momentary pushbutton switch to control the relays as described in the tables input columns. The first push and hold of a momentary pushbutton switch wired into input 1 will close relay A. Releasing the pushbutton switch will open relay A. This could be used to raise (using relay A) and lower (using relay B) a movie screen or other bi-directional device using two momentary pushbuttons or a two position momentary pushbutton toggle switch. The same scenario applies to input 3 for relay B. Momentary refers to the “momentary” contact of the input switch to provide the function and the function stopping when the input switch is released.

**One Button, Toggle (Normal Mode)**

(DIP switch settings 1–4: OFF; ON; OFF; ON) This configuration allows the user to wire a single switch, usually a momentary contact switch, and then to toggle through the relay conditions defined in the table after activating switch closure. As noted in the Operational Mode Table, the first press of a momentary input switch on input 1
will close relay A. The relay will stay closed until a second input 1 switch closure occurs, which will open relay A. The same scenario applies to input 3 for relay B. Toggle refers to the closure of a single input switch and “toggling” or cycling through the different states using that one input switch.

**One Button: Toggle Relay A, Momentary Relay B (Normal Mode)**

(DIP switch settings 1–4: ON; ON; OFF; ON) This configuration offers the option of a single operational mode that uses two different kinds of input switch control. Input switch 1 could be used to toggle on and off the overhead fluorescent lights with a single button, while the second button (input 3) could control a momentarily activated device such as a turntable, window shutters, or a projection screen.

**Linked (Motor Control) Modes**

In this mode, referred to as “Linked Mode,” the high-voltage relays operate inter-dependently. The relays are also subject to certain relay operation timing characteristics that relate to each other. This mode is generally used for controlling motors without built-in motor controllers.

Many motor assemblies already have a built-in motor controller that governs motor operation. If your motor assembly has a built in motor controller, Card Access recommends using Normal Mode to control your motor assembly. If your application doesn’t have a built-in motor controller, you can use this mode to control your motor.

In Linked Mode, the two relays operate such that both relays cannot be activated at the same time. This functionality protects a single motor assembly from attempting to operate in opposing directions simultaneously. The relays are also governed by a Motor Travel Time value. This value allows the motor to be turned off automatically, after initial activation, in a preset amount of time. The preset factory default Motor Travel Time is 15 seconds. In Linked Mode, the two relays also have a default Relay Delay Time setting of 0.5 seconds.

These settings mean a relay can be energized (or closed) 0.5 seconds after de-energizing the opposite relay and no sooner. This lag provides a minimum pause time between relay activation. The Delay Learning Mode Section describes how to adjust the Default Motor Travel time. The default Relay Delay Time can only be adjusted from the Control4 driver properties page. Typical applications for Linked Mode use include: gate open/close control, screen up/down control, window blinds open/closed control, or other applications that require two motor direction operations without a built-in motor controller. The features of the various Linked Modes can also be adapted to control non-motorized devices as well.

**NOTE:** All the operational modes within the Linked (Motor Control) Mode category are subject to the Motor Travel Time and the Relay Delay Time. There is never an instance when relay A and relay B can be energized at the same instance in time while in these operational modes. The Motor Travel Time limit will always automatically de-energize the engaged relay after the relay has reached the Motor Travel Time limit value. Operation of relay A and B will always be separated by the Relay Delay Time.
One Button, Toggle (Linked Mode)

(DIP switch settings 1–4: OFF; OFF; ON; OFF) This mode links the two relays together keeping one relay from closing while the other is closed and visa versa (both relays cannot be closed at the same time). A single momentary button connected to input 1 can control motor direction.

For example, to control a projection screen press the input 1 button once and relay A closes (screen travels down until the Motor Travel Time limit value is reached and then relay A opens automatically). Press the input 1 button again and both relays open (screen stops moving). Press the input 1 button again and relay B closes (screen goes up until Motor Travel Time limit is reached). Press input 1 button again and the screen stops. Press again and the cycle repeats. This mode allows for one button control of a bi-directional motor. This same configuration can control motorized blinds and monitor lifts, etc.

Two Button, Momentary (Linked Mode)

(DIP switch settings 1–4: ON; OFF; ON; OFF) This mode allows motor control of the high-voltage relays using two momentary contact switches. Pressing and holding a momentary switch connected to input 1 will close relay A. Releasing the momentary switch will open both relays. The same functionality occurs with a momentary switch connected into input 3 for relay B.

Controlling a projection screen, for example, illustrates a potential use for this mode. The screen’s up and down movement can be controlled by a single, two-pole momentary rocker switch. First, you connect one side of the rocker switch into input 1 and the other into input 3, wiring the projection screen motor down motion to relay A and up motion to relay B. Then, pressing and holding the rocker switch down, the projection screen will roll down until the Motor Travel Time limit is reached. If the user quickly changes the switch position from down to up (to change the direction of the screen movement) the upward movement will be delayed by the Relay Delay Time before changing motor direction.

Three Button, Latched (Linked Mode)

(DIP switch settings 1–4: ON; ON; ON; OFF) This mode allows the user to connect a three-button switch system to control the two high-voltage relays. This mode can also control a projection screen. Connect a momentary pushbutton “Up” switch into input 1, a momentary pushbutton “Stop” switch into input 2, and a momentary pushbutton “Down” switch into input 3. Connect relay A to the up motion of the projection screen motor, and connect relay B to the down motion of the projection screen motor.

A single press of the down button will close and latch relay B, triggering the projection screen to drop. The screen will drop until the Motor Travel Time limit is reached and then relay B will open automatically. Pressing the stop button at any time will open both relay A and B, stopping all movement. Pressing the up button will close and latch relay A, telling the screen to close. The screen will move up until reaching the Motor Travel Time limit, and then relay A will automatically open, stopping the upward movement. As with all linked modes, the minimum time between relay A and relay B operation is defined by the Relay Delay Time. This Three Button, Latched Mode configuration can
be used in a variety of scenarios (other than controlling motors) to obtain desired functional results.

**Travel Time Limit Adjust (Linked Mode)**

(DIP switch settings 1–4: OFF; OFF; ON; OFF) This mode allows you to set or change the maximum Motor Travel Time limit. The factory default Motor Travel Time limit is set to 15 seconds. A new time limit, once permanently stored in the device by the user, will then be used in all future Linked Mode operations. After entering this mode with the proper DIP switch setting, the user sets this time by pressing and holding the input 1 switch for the desired time delay (if you want a 30 second delay, then hold the switch engaged for 30 seconds).

This adjustment is accomplished as follows:
1. After pressing and holding the input 1 switch, relay A closes and the LED near the ID switch turns yellow and will begin blinking at a one (1) second rate (imagine the screen is going down).
2. When the input 1 switch is released, relay A opens, and the LED turns red (imagine the screen stops), temporarily saving the delay time in the device. The Motor Travel Time can then be permanently stored in the device by pressing and holding the ID switch for four (4) seconds. Holding the ID button for four (4) seconds causes the LED to flash yellow three (3) times, indicating that the device permanently stored a new default time value. The maximum Motor Travel Time is limited to 255 seconds.
3. The user can now switch to any other Linked (Motor Control) Mode DIP switch setting. The newly saved time then applies to all relay operations. Card Access recommends that you set the Motor Travel Time limit to a value appropriate for your application. Doing so provides a safeguard for your motor assembly in case of limit switch failure or other control system failures.

Setting the value to zero can **disable** the Motor Travel Time limit. Pressing and holding the ID button for four (4) seconds without previously setting any delay time (not pressing and holding input switch 1 for a preset amount of time) will disable the Motor Travel Time limit. This action permanently stores a value of zero (or no time) in the device.

**NOTE:** Card Access discourages disabling the Motor Travel Time limit. The time limit feature provides a degree of safety for your motor device in case of a limit switch failure. If the Motor Travel Time limit causes early power shutoff problems, we recommend that you set the limit value high enough to avoid interference, but still provide a safety cutoff feature.

**Simulated SPDT Modes**

Referred to as “Simulated SPDT Mode,” this mode simulates a **Single Pole Double Throw** relay when the two separate high-voltage relays function together. The two independent relays operate in such a way that, when activated, relay A closes and relay B opens. When relay B closes, relay A opens. In this mode, the relay switch positions stay opposite of each other as illustrated in Figure 6. Simulation refers to how the two relays are not in a physical SPDT relay configuration, but the electronics cause them to act in that way.
NOTE: Simulated SPDT Mode only functions if the HPC10A receives power.
On power up, as shown in Figure 6, the default relay switch positions are relay A open and relay B closed. Loss of power will result in both relays moving to the normally open position.

One Button, Momentary (Simulated SPDT Mode)
(DIP switch settings 1–4: ON; OFF; OFF; OFF) This mode allows the user to link the two high-voltage SPST relays together using a single momentary switch to simulate a single SPDT relay. When powered, the default state of relay A is open and relay B is closed. When the input 1 switch is momentarily closed, relay A closes and relay B opens (relay switch positions are swapped). Upon release of the input 1 switch, the relays return to their default state. If the device loses power, both relays default to the normally open position.

One Button, Toggle (Simulated SPDT Mode)
(DIP switch settings 1–4: OFF; ON; OFF; OFF) This mode allows the user to link the two high-voltage SPST relays together using a single momentary toggle switch to simulate a single SPDT relay. When powered, the default state of relay A is open and relay B is closed. When the input 1 switch is momentarily closed, relay A closes and relay B opens (relay switch positions are swapped). Upon release of the input 1 switch, the relays stay latched in their last positions. Each time the input 1 switch is pressed, the two high-voltage relay switch positions will swap places. Toggle refers to the fact that each time input 1 is pressed, the relays “toggle” position. If the device loses power, both relays default to the normally open position.

Two Button, Latched (Simulated SPDT Mode)
(DIP switch settings 1–4: ON; ON; OFF; OFF) This mode allows the user to link the two high-voltage relays together using two switches to control the simulated single SPDT relay. When powered, the default state of relay A is open and relay B is closed. When the input 1 switch is momentarily closed, then relay A closes and relay B opens (relay switch positions are swapped). Upon release of the input 1 switch, the relays stay latched in this position until the input 3 switch momentarily mates, causing the relay switch positions to swap places. The simulated SPDT relay is then toggle controlled by using input 1 and input 3. If the device loses power, both relays default to the normally open position.
Control4 Operating Mode:
To operate in Control4 mode, the device must appear in the Control4 project. Device identification requires tapping the ID button (the method common to other devices in Control4 projects). Once identified, the device’s four (4) contact inputs and two (2) independently controlled high-voltage relays are available within the Control4 project for configuration and control. Any unused contact inputs are available for use in the Control4 project. However, each operational mode is configured differently.

Identify unused contact inputs by referring to Figure 5 and noting any blank input boxes corresponding to the device’s operating mode. For example, if you operate in “Linked Mode—One Button, Toggle,” then input 2, input 3, and input 4 are available for contact switch input by the Control4 system.

Device control is accomplished through one of two methods or a combination of the two:
- an IEEE 802.15.4 ZigBee-based wireless radio signal
- the four local dry contact switch inputs

A combination of both methods (Control4 ZigBee operation PLUS local operation through the dry contact switch inputs) provides home automation system control as well as local failsafe operation. For example, the Heavy-Duty Power Controller can control sports court lighting through a ZigBee signal from the home automation system or by completely bypassing the home automation system and using the local dry contact switch for on/off control.

The InHome Heavy-Duty Power Controller’s software driver supports complete device configuration and operation through user selected options. The device utilizes Control4’s proxies for control of blind motors, lift motors, screen motors, gate motors, fountain and pool pump motors, high current lighting loads, and appliance loads, etc. The device also includes several easy-to-use diagnostic modes to help installers set up the device for proper operation.

Stand-Alone Operating Mode:
In Stand-Alone Operating Mode, the device uses the four (4) dry contact closure inputs to control the two (2) high-voltage power relays in a one (1), two (2), or three (3) button control configuration. This mode allows for a wide variation of configurations and operation.

The InHome Heavy-Duty Power Controller’s onboard switches provide easy setup, diagnostics, and troubleshooting for installers while LEDs indicate relay status and radio functionality. A relay disable switch is provided to allow functional testing by the installer without sending power to connected high-power devices, allowing easy testing of the system. To enter Stand-Alone Mode, you must select an Operational Mode other than the default setting of Control4 Mode (DIP switch setting 1–4: OFF; OFF; OFF; OFF). In Stand-Alone Mode, unless the radio detects a recognized Zigbee Mesh network, the control radio is disabled. If no radio signal is recognized, the radio is disabled automatically.

Powering the Device:
The InHome Heavy-Duty Power Controller is powered by one of two methods:
1. Connecting a 100-240VAC line power to the high-voltage terminals of the device as illustrated in Figure 10, Figure 11, and Figure 12; OR
2. Connecting a 12VDC power supply to the + - power inputs of the low-voltage terminal connector as shown in Figure 7.

**NOTE:** Only supply power to the device from one power source. If using a 12VDC source, ensure that the polarity (+ / -) of the DC Power Supply is observed when connecting to the device.

**Low-Voltage (12VDC) Power Option**

The device includes the low voltage diagram shown in Figure 7 to help the installer identify the proper inputs. Figure 8 indicates the board location for connecting the low voltage power supply. Device power should come from a safety-listed, tested, and certified Class B 12VDC power supply.

Using the low voltage input to power the device provides increased product. For example, if you use the device to control a 277VAC Ballast load, you should power the device with the 12VDC supply and connect the 277VAC load to the high-voltage relay inputs for load control. You can then use the dry contact inputs (shown in Figure 7) to control the load as defined by the different operational modes.

**High-Voltage (100-240VAC) Power Option**

Figure 9 illustrates the board location for wiring the high-voltage power lines. Using a 100-240VAC source, the installer will connect a neutral and a power line. These connections will
supply power to the board electronics. A nearby earth-ground lug ensures the grounding of the enclosure. Two additional line power lugs provide additional wiring convenience. Selecting voltages or power sources requires no additional jumpers or settings. You need connect only **one OR the other** (100-240VAC line power or external 12VDC power supply). Once the device receives power, it goes through a power up/reset sequence before beginning operation.

**Power Up/Reset Sequence**

After receiving power or during a power reset, the LED next to the ID button will respond in sequence as follows:

1. The LED turns a solid yellow, indicating power detection, verification, and validation.
2. The LED turns to blinking red, indicating device initialization and operation readiness.
3. The LED turns green for a brief moment, indicating the device is ready for operation.
4. The LED turns off. The device is now ready for use.

**Location and Mounting Requirements**

The device is designed for permanent mounting in a fixed location. Device placement requires a safe, moisture-free location as specified in accordance with all local and national electrical codes for a type 1 electrical device. The device's fixed wiring must also include the appropriate accessible disconnect devices (circuit breaker). After setup and configuration, ensure that the device lid fits securely on the enclosure. Power cables can be connected to the device using conduit or by connecting flexible power lines to the device with feed-through cable clamps.

![NOTE: The device should be treated as a type 1 electrical device for mounting and installation. Refer to local electrical codes for proper installation instructions.]

**Enclosure Wiring Options**

**High-Voltage Wiring Diagrams**

There are several ways to connect the high-voltage relays to the various load types. Below are three of the most common options for connecting your load in the Card Access InHome Heavy-Duty Power Controller. Please note that an external, accessible disconnect device (circuit breaker) must be used with this device.

!!! WARNING !!!: Ensure that LOAD A and/or LOAD B **DO NOT** exceed the Relay Contact Load Ratings.

!!! WARNING !!!: **An accessible disconnect device shall be installed into the fixed wiring. The device must be wired by an authorized electrician in accordance with the National Electrical Code, ANSI/NFPA 70. In the European Community, the unit must be wired by an authorized electrician in accordance with all applicable European codes.**

**Option 1: Single Power Breaker**
Applicable where a single external breaker to the device is used and the load is powered from this power source:

![High-Voltage Wiring Option 1: Single Power Breaker](image)

!!! WARNING !!!: Ensure that LOAD A and/or LOAD B DO NOT exceed the Relay Contact Load Ratings. Ensure that no more than 20A total for loads A, B, and Power Supply.

**Option 2: Individual Load Breakers**

Applicable where each load uses its own external circuit breaker:

![High-Voltage Wiring Option 2: Individual Load Breakers](image)

!!! WARNING !!!: Ensure that LOAD A and/or LOAD B DO NOT exceed the Relay Contact Load Ratings.
Option 3: Load and Power Breaker

Applicable where a combination of power sources are used; load “A” is powered by an external breaker in the load path, and load “B” is powered by the device’s external breaker or power source:

!!! WARNING !!!: Ensure that LOAD A and/or LOAD B DO NOT exceed the Relay Contact Load Ratings. Ensure that no more than 20A total for loads A, and Power Supply.

Low-Voltage Wiring Diagrams

The low voltage input connector consists of four (4) dry contact inputs. Connecting any type of dry contact switch to these inputs will control the device. Examples of dry contact switches include:

- magnetic reed switches,
- relays,
- or mechanical switch contacts etc.

For installer convenience, the PC board also includes dry contact switches that correspond to the four (4) dry contact inputs. Pressing these onboard switches can simulate the external switch activity. Figure 13 illustrates how any externally connected dry contact switch, used as an input, can control the device.

Each of the four (4) labeled inputs (1-4) has a corresponding ground connection. All ground connections are connected together on the PC board and are provided for wiring convenience. The labels 1-4 on the PC board correspond to the four (4) individual switch inputs and also correspond to the onboard button switches wired directly in parallel on the PC board. These onboard switches provide convenience in setup and testing to simulate operation of the external wired in switches. Figure 14 shows a picture of the low-voltage connector for reference.
!!! WARNING !!!: DO NOT attach a wire that has an electrical source of any kind (either battery or from power supply) to the dry contact inputs. These inputs are only for non-energized contact switches used to control the Heavy-Duty Power Controller’s relays. Device damage will result.

Product Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td><strong>InHome Heavy-Duty Power Controller (Model No. HPC10A) Specifications</strong></td>
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</tr>
<tr>
<td>Dimensions</td>
<td>4.6” x 10.5” x 2.2”</td>
<td>(117mm x 267mm x 56mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.78 Lbs</td>
<td>(1.26Kg)</td>
</tr>
<tr>
<td>Maximum Ambient Operational Temperature</td>
<td>140°F</td>
<td>(60°C)</td>
</tr>
<tr>
<td>Power Input</td>
<td>100-240VAC at 50/60Hz, 0.1 A Or 12VDC, 200mA</td>
<td></td>
</tr>
<tr>
<td>Relay Contact Load Ratings (per relay)</td>
<td>Voltage</td>
<td>Load Type</td>
</tr>
<tr>
<td></td>
<td>240VAC</td>
<td>General Purpose</td>
</tr>
<tr>
<td></td>
<td>240VAC</td>
<td>UL Resistive</td>
</tr>
<tr>
<td></td>
<td>120VAC</td>
<td>Motor</td>
</tr>
<tr>
<td></td>
<td>240VAC</td>
<td>Motor</td>
</tr>
<tr>
<td></td>
<td>277VAC</td>
<td>Ballast</td>
</tr>
<tr>
<td><strong>High-Voltage Wiring</strong></td>
<td>8—14 AWG gauge wiring depending on Load*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* An accessible disconnect device shall be installed into the fixed wiring. The device must be wired by an authorized electrician in accordance with the National Electrical Code, ANSI/NFPA 70. In the European Community, the unit must be wired by an authorized electrician in accordance with all applicable European codes</td>
<td></td>
</tr>
<tr>
<td><strong>Low-Voltage Wiring</strong></td>
<td>20—28 AWG gauge wire— Dry Contact Only</td>
<td></td>
</tr>
<tr>
<td><strong>Operational Environment</strong></td>
<td>Type 1. Device shall be mounted in a dry, moisture-protected location in accordance with National Electrical Code. For use in pollution degree #2 environments.</td>
<td></td>
</tr>
<tr>
<td><strong>Linked Mode</strong></td>
<td>Default Motor Delay Time: 15 seconds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Relay Delay Time: 500m seconds (0.5 sec)</td>
<td></td>
</tr>
</tbody>
</table>
Control4 Software Installation & Operation

Installers can add the InHome Heavy-Duty Power Controller to a Composer project in a process similar to other Control4 devices. When prompted to identify the unit, press the ID button located on the PC board four (4) times. The InHome Wireless Contact Relay LED will blink the green LED twice to confirm sending the ID to the Control4 system. To set up the two (2) relay outputs and the four (4) contact inputs in the Composer project, refer to your system setup documentation.

If your current Control4 project does not include the InHome Heavy-Duty Power Controller Driver, please contact Card Access for instructions on installing this driver into your project. Figure 15 shows a reference screen capture of the driver properties page.

**Figure 15. Control4 Driver Properties Page**

The Control4 driver provides configuration flexibility for operating the InHome Heavy-Duty Power Controller. In the Status section seen in Figure 15 at the top of the properties page, you'll see the status of the two high-voltage relays as well as the status of the four (4) contact switches. The last check-in time of the device to the driver is also shown as is a quick link to the Card Access support page for this product.

In the Programming section of the properties page, the user can select the desired operational mode. The Motor Travel Time and Relay Delay times may also be adjusted from the properties
The relay power-up states may be changed as well. When any adjustment is made in the properties page, you must press the *Apply Programming Changes* button to send those changes to the device before they take effect.

**NOTE:** If the device DIP switches are set to the Default Control4 Mode (OFF; OFF; OFF; OFF), then all options will be available for selection in the properties page of the driver. However, if the DIP switches on the device are set to a particular operation mode, the properties page will show that mode of operation and will **NOT** allow the user to change from that mode. All other options will be grayed out.

### Product Registration

Please visit [http://www.cardaccess-inc.com/inhome/registration](http://www.cardaccess-inc.com/inhome/registration) to register your new product. Along with your contact information, you must provide the following additional information:

- Product Name (Card Access InHome Heavy-Duty Power Controller)
- Model Number (HPC10A)
- Date of Purchase
- Place of Purchase
- Serial Number (this is the “MAC ID” number located on the sticker attached to the radio/logic board inside the metal enclosure)

Please refer to the One-Year Limited Warranty for complete warranty information.

### Product Warranty

This product is warranted to be free of defects in material and workmanship for one year from date of original purchase from Card Access, Inc. (“Card Access”).

Card Access will, at its election and as the purchaser’s or end user’s sole and exclusive remedy for any breach of the limited warranty set forth above, repair or replace this product if a defect in material or workmanship is identified and communicated to Card Access within the one-year period described above. Card Access is not responsible for removal or reinstallation costs. This warranty is not valid in cases where damage to this product is the result or arises out of misuse, abuse, incorrect repair or improper wiring or installation.

To notify Card Access of any breach of the foregoing limited warranty and to obtain warranty service, contact Card Access Customer Support by e-mail to inhomesupport@cardaccess-inc.com or by calling 801-748-4900, extension 15, to obtain a Return Materials Authorization (“RMA”) number and instructions for returning your defective product to Card Access.

**IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED, EXCEPT WHERE SUCH DISCLAIMER IS PROHIBITED BY APPLICABLE LAW. CARD ACCESS AND/OR THE SELLER DISCLAIM(S) ANY AND ALL LIABILITY FOR SPECIAL, INCIDENTAL AND CONSEQUENTIAL DAMAGE IN ANY WAY ASSOCIATED WITH OR RELATED TO THE PURCHASE, INSTALLATION AND/OR USE OF THIS PRODUCT.**

Some states/provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of special, incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state/province to state/province.

This is Card Access’ exclusive written warranty.

### Regulatory Statements

The Card Access InHome Heavy-Duty Power Controller complies with standards established by the following regulatory bodies: Federal Communications Commission (FCC), Conformité Européenne (CE), and Restriction of Hazardous Substances (RoHS). The product is also safety listed under the ETL mark for the United States and Canada and has been safety tested to comply with the appropriate CE Sub-Directives.

**FCC ID: MHIHPC10**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT! Changes or modifications not expressly approved by Card Access, Inc. void the user’s authority to operate the equipment.

CE – Declaration of Conformity

We, Card Access, Inc. of 11778 South Election Road, Suite 260, Salt Lake City, Utah, 84020 USA, declare under our sole responsibility that the Card Access™ InHome™ Heavy-Duty Power Controller Model Number HPC10A, to which this declaration relates, is in conformity with the following standards and/or other normative documents:

EN 55022, EN 60950, EN 61000-3-2,3-3, ANSI/UL 508-2005, and EN 60669-2-1

We hereby declare that the above named product is in conformity with the essential requirements and other relevant provisions of Council Directives 1999/5/EC (Radio & Telecommunication Terminal Equipment – R&TTE), 2006/95/EC (Low Voltage Equipment Safety), 2004/108/EC (Electromagnetic Compatibility), and 93/68/EEC (CE Marking Directive).

The conformity assessment procedure referred to in Article 10(3) and detailed in Annex II of Directive 1999/5/EC as well as other like procedures defined in the other declared Directives have been followed.

Safety Listing (ETL Mark)

The Card Access InHome Heavy-Duty Power Controller (HPC10A) is a safety listed product with Intertek Corporation. Intertek is a Nationally Recognized Test Lab (NRTL) that owns and maintains the ETL mark which is legally equivalent to the UL and CSA Listing Marks for standards compliance. A representative sample of the HPC10A product has been evaluated by Intertek Labs and found to comply with the applicable requirements of the Standard for Industrial Control Equipment, ANSI/UL 508-2005, 17th Edition with Revisions 2005 and per the Standard for Industrial Control Equipment, CSA C22.2 No. 14-05.

RoHS Compliance

All parts in the Card Access™ InHome™ Heavy-Duty Power Controller Model Number HPC10A, meet the material restrictions of RoHS (Restriction of Hazardous Substances) as proposed by the RoHS Technical Adaptation Committee. This is based upon information provided by suppliers of the raw materials used by Card Access, Inc. to manufacture this product. As such, Card Access, Inc. makes no independent representations or warranties, expressed or implied, and assumes no liability in connection with the use of this information.

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