



Point of Use Network Controlled Electrical (POUNCE®) System

Installation, Configuration, Operation and Maintenance Manual

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Instructions for adding comments to this document

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1 Scope

Congratulations! You are about to enjoy the energy savings provided by the control of a POUNCE® System. The key benefits of the POUNCE® System are reduced energy consumption, payback on the investment, and ease of installation, maintenance, and utilization. Less power consumed means lower operating expense in the form of utility bills, and lower carbon emissions.

Please read this entire manual before running the system in order to gain the most benefit from it. Follow the instructions step by step to insure proper installation.

1.1 POUNCE® System

The POUNCE® System comprises of intelligent receptacles and switches that are wirelessly linked to a central System Control Unit (SCU). The POUNCE® system is configured and monitored through a web browser based Graphical User Interface (GUI), referred to as the “POUNCE® Dashboard”. The POUNCE® Dashboard may be accessed in a variety of ways including direct computer access, by smart phone and tablet, or remotely via the internet.

The devices are drop-in replacements for existing common outlets and switches built into the electrical infrastructure of a building. The devices monitor and control the use of electrical appliances and report information to the SCU, which may be used and displayed in a variety of ways to aid in understanding and optimizing the electrical consumption in the building. The information provided is collected using real time, non-invasive methods thus providing the most accurate and up to date information possible. The devices have integrated communications, antennas, data converters, electromagnetic components, and other discrete functions into compact designs.

The POUNCE® Dashboard is the GUI that is contained in the SCU but executed in a remote browser. The SCU also performs the functions of the network server, data processor and data storage. It also acts as the radio network controller for the wireless devices. The SCU contains the web server, data processing and database functions of the system. It interfaces with the POUNCE® Dashboard as the user input and the radio network controller for the devices

1.2 System Access

POUNCE® Systems allow multiple individuals the ability to view and control the system. There are 4 levels of access classified as Observer, Maintainer, Administrator, and Designer. All users are required to have user names and passwords in order to access the system through their web browsers. There can be up to 3 Observers connected to the POUNCE® Dashboard display at once. The Observer can view the most recent data and historical data acquired by the system. Observers cannot control the system or refresh the status of individual devices.

The next level of access is the Maintainer. A person can only access the system as a Maintainer if no other Maintainers or Administrators are currently logged into the system. A Maintainer can view and clear alerts and latches. A Maintainer can update the system clock, if necessary. A Maintainer can update Time of Day (TOD) rules and other stimulus rules and perform other basic configuration functions. An Administrator can perform all of the functions of an Observer and a Maintainer. The



Administrator also configures the system parameters for initial installation. This includes entering parameters such as the network radio channel and the system IP address.

An optional category of user is the Designer. The Designer is normally a person that is setting up the system configuration during the design phase of the project. The Designer does not need direct live access to the system. They fill in a template ahead of the actual installation. This saves time during installation when configuring the system. The Administrator will upload this preconfigured file without needing to know the instructions for each device. The Administrator then matches the 4-digit IDs from each fielded device to the descriptions provided in the Designer file. For details on each level of access to the system, refer to Table 1-1, User Access and Control.

Table 1-1, User Access and Control

LEVEL	OBSERVER	MAINTAINER	ADMINISTRATOR	DESIGNER
Multiple Users Logged In	X			NA
Only Single User Logged In		X	X	NA
View Most Recent Stored Data	X	X	X	NA
View Alert Indicator		X	X	NA
Clear Alert Indicator		X	X	NA
View Connected Device List	X	X	X	NA
Created Plots on Stored Data	X	X	X	NA
Query Status		X	X	NA
Operate Device Relays		X	X	NA
Remove Latch		X	X	NA
Modify TOD Rules		X	X	X
Modify Threshold Rules		X	X	X
Update Utility Costs		X	X	X
Update System Time		X	X	NA
Initial Configuration			X	X
Update Configuration (limited for maintainer)			X	NA
Add/Remove Devices			X	NA
Set Operating Channel			X	X
Set IP Address			X	
Configure Groups			X	X
Change Device RF Power			X	
Set User Access Levels/ Maintain Passwords			X	X

2 References

Document	Date	Source
NFPA 70, National Electrical Code 2011 Edition	2011	NFPA
FCC Part 15 – Radio Frequency Devices	10-1-09 Edition	USGPO

3 Warnings

3.1 FCC

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

NOTE: 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.

The SCU contains a radio module having the following pertinent information.

Contains Transmitter Module FCC ID:
OA3MRF24J40MC

-or-

Contains FCC ID: OA3MRF24J40MC

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.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

3.2 Industry Canada

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb.

The SCU contains a radio module having the following pertinent information.

Contains transmitter module IC: 7693A-24J40MC

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

4 Installation

4.1 The Components

Each system includes a System Control Unit, which we call by its initials, SCU. The other components are the Leo Series outlets and Ariel Series switches. Special SCU installation requirements are captured in the warnings section above and can be installed by anyone that can read and follow instructions. The

outlets and switches must be installed by a qualified, experienced electrician. The main software component of this system resides on the SCU. It is called the POUNCE® Dashboard and it is for configuring, and operating the system.

4.1.1 System Control Unit

The SCU is where the central point of communications exists between the devices and the user. Before mounting the SCU, record the 6-digit alphanumeric code found on the label. See the first rows of the example table. Securely wall-mount the SCU at least 7' off the floor and centrally located with the associated devices. Orient the box upright so the front label can be read and the antenna is on the top of the enclosure. Locate the SCU away from metal objects and structures in order to reduce blind spots in the radio antenna coverage area.

The AC adapter that comes with the SCU can be plugged into any outlet that maintains power 24 hours per day, since the SCU provides instructions to the devices in the system. If the power should go out at the SCU, it contains a small rechargeable battery for the sole purpose of safely powering itself down.

When possible, wait until the devices have all been installed before powering on the SCU. The DC connector on cord extending from the AC adapter can be plugged into the bottom of the SCU. Powering up the system is discussed in later sections of this manual.

If the system will be remotely controlled through the Internet or an Intranet, consider mounting the SCU in close proximity to an access point of the internal computer network. Connect the SCU to the internal network with a CAT-5 Ethernet cable. Connect one end to your internal system and the other to the RJ-45 connector on the bottom of the SCU enclosure. Instructions for communicating to the SCU through the network are included later.

4.1.1.1 Subsystem Power Outage

Should the SCU be powered down while the devices remain operating, the devices will perform their own set of instructions, but will not communicate system changes for device interactions. They will track of the time of day with their own clocks. If the devices return from a loss of power and cannot communicate with the SCU, they will go into the Plain Old Device (POD) operation. The outlets will simply remain on (like the old fashioned outlets) and the switches will require button presses to activate the connected appliance or lighting load.

Once the SCU has returned to service, it will re-establish communications with the original devices in the system. The system will then begin operating as configured, once the devices have been automatically updated with the correct time.

4.1.2 Computer Enhanced Wiring Devices

When installing the devices, be sure to record the 4-digit code for each one in a list. The list should contain the code, the type of device, switch or outlet, and a good description of the location of the device. Use the Installation Template in the appendix of this document. The following table is a basic representation.

Table 4-1, Example Device List

SCU ID Code	<u>D4B82F</u>	Location	<u>West wall/ front hallway</u>	
IP address	<u>169.254.x.x</u>	MAC Address	<u>XXXX-XXD4-B82F</u>	
Item No.	Device Code (4 digits)	Outlet Switch	Location	Description
1	2D7F	O	Suite 5, front office	west wall, left outlet (printer)
2	974B	O	Suite 5, front office	west wall, right outlet (PC plug strip)
3	68DD	O	Suite 5, front office	north wall
4	430E	S	Suite 5, front office	ceiling lights
5	A2A1	O	Suite 5, front office	south wall, coffee pot
6	EAF8	O	Suite 5, front office	east wall, phone
7	BB2B	S	Suite 5, front hallway	north switch, hall lighting
8	1324	O	Suite 5, front hallway	north wall

Before installing the devices, be sure that all of the circuits are turned off at the distribution panel (circuit breaker box). Never attempt to install a device with the circuit powered on!

4.1.2.1 Switches

The device switches are wired just like all ordinary switches using the current NEC 2011 code as a guideline, where a neutral wire is present. Refer to article 404.2 C of the NEC 2011 code. The green wire is connected to the grounding conductor, black wire out of the switch is connected to line, the white wire is connected to neutral and the red wire is connected to the load.



Figure 1, POUNCE Switch

For retrofitting switches into older buildings, it may be necessary to modify the installation slightly. The electronics inside device switches require a neutral conductor. Where the building wiring is installed inside conduit, it might be necessary to pull a neutral conductor into the switch box. The alternative is to add another device in the circuit near the load, and rewire the switch leg in the switch box to become the neutral conductor.

When replacing 3-way and 4-way circuits in new construction, the travelers between the switches are no longer needed. The radios in each switch communicate to indicate when the lighting or other load should be turned on or off. It might be necessary in existing buildings to modify the wiring to rewire a traveler to become the neutral conductor.

4.1.2.2 Outlets

Outlets are wired in the same manner as all common outlets. For retrofit projects, the existing outlets may be wired the using the screw terminals for connection to the circuit. In this case, remove the wires from the old device and simply splice them to the POUNCE device leads.



Figure 2, POUNCE Outlet

4.2 Initial Power-up Sequence

With all of the devices and the SCU properly installed, turn on the circuit breakers that supply power to the system. When power is applied to the SCU and devices, the SCU will begin communicating to the individual devices, creating its own radio network list.

The LEDs on the front of the SCU are indicators for DC Power, Status, Alerts, and Device Network. When the wall adapter is providing power to the SCU, the DC Power LED is lit green continuously. If the DC Power LED is blinking, the power is provided by the internal battery. When the battery is powering the SCU, it enters a safe mode and is not fully operational.

Like any computer, it is not good to remove power inadvertently. To eliminate problems caused by immediate loss of power, the battery will power the SCU for a few minutes to ride out brief AC power interruptions. It will allow a graceful shut down of the SCU if the AC power does not return within 8 to 10 minutes. To turn the power off to an SCU without waiting up to 10 minutes, press the reset button through the small hole near the bottom of the cover.

The SCU Status LED is used to indicate the operational state of the SCU. If the LED is on solid green, then the SCU is in the normal operational state, and configuration is complete. During configuration, all 4 LEDs will sequentially turn on and off until the SCU enters normal operation. If the SCU IP address resorts to the default IP address because it could not acquire one from the network, the Status LED will blink at a low duty cycle. It will also blink red if the Ethernet cable is removed.

This will indicate that the IP address may not be the same as expected. If necessary, use the POUNCE® Dashboard to enter the desired IP address. Follow the instructions found in section 4.2.2.2

The Alert LED is red whenever the SCU or one of the devices issues an alert. There are many conditions that create alerts. Refer to the appendix for more information on alerts. When the Alert LED is red, you can access the Alert Log File to see what caused the alert. Until the system is configured, this LED will be green.

The Device Network LED will be lit green after the system is operational. If one of the devices in the system loses connectivity, the LED will blink red. As with the Alert LED, you can find which device is lost from the network through the POUNCE® Dashboard. Refer to the troubleshooting section for devices that lose radio link.

4.2.1 Default State

The SCU has two states: default, and operational. The SCU is in the default state when shipped from the factory. Once configuration settings for the appropriate devices are applied and the system transitions to the operational state, the SCU will no longer be in the default state. Wiring devices are also shipped from the factory in the default state. The devices do not carry out instructions when in the default state, but are set up to receive certain instructions from the SCU.

4.2.2 SCU Configuration

When the SCU is turned on for the first time, it enters the default state. Once it has been moved to the operational state, it returns to the operational state on successive power-cycles.

4.2.2.1 SCU Direct Connection to Your Computer

If the computer that you are using to configure the system is cabled directly to the Ethernet port of the SCU, you can connect to the SCU by opening an Internet browser and entering the host name of the SCU. From the example in Table 4-1, Example Device List, type *http://POUNCE - D4B82F.local* into the address bar. The SCU will resort to a default IP address when connected this way.

When you have accessed the SCU the POUNCE® Dashboard will appear in the browser. Until the system is configured and set into operation, each time the POUNCE® Dashboard is opened from the SCU, the only tab available is the configuration tab. This is where the operational settings are entered into the

system. If necessary, change the IP address of the SCU, along with the subnet mask, default gateway, and Domain Name System (DNS) server settings. These are found by clicking on SYSTEM on the toolbar and then on PREFERENCES.

To access the SCU remotely using the IP address in the future, record the IP address on the worksheet. The new settings will not take effect until the SCU has been rebooted. Before rebooting, enter the system time. An important setting is the system clock. Since the SCU is only connected to your computer, it needs to have the time and date manually entered. This entry is found by clicking on SYSTEM and then on PREFERENCES.

4.2.2.2 SCU Network Connection to Your Computer

If the SCU is cabled to the internal network through a hub or router, you will need to include the name of the internal network in the address bar. For example, a network listed address will look like this. <http://internalnetwork/POUNCE-D4B82F.local>. Replace *internalnetwork* with the name of the network your computer and the SCU are connected to.

Once you have connected to the SCU, the POUNCE® Dashboard will open in the browser window. The next step is to configure the system. The SCU will have been assigned an IP address if the network provides that functionality. If not, you should assign an IP address to the SCU and record it for future reference. The SCU will initialize with a default IP if one is not assigned. To update the IP address, go to SYSTEM> PREFERENCES>IP ADDRESS and enter the IP address.

Some networks provide NTP service, which sets the time and date clock to connected devices. The SCU is programmed to update its own clock to match the one provided. Open the clock setting display. If the time is accurate, then the network provided the time. If it is not accurate, you must manually enter the date and time. Follow the instructions from the second paragraph in section 4.2.2.1.

4.2.3 Radio Network Configuration

The SCU device radio network defaults to a single channel that is only used during device configuration. This allows the SCU to communicate with the non-operational devices and bring them into the network. You need to assign a radio channel and a PAN ID for the system for operation. This is selected by clicking on the SYSTEM > PREFERENCES>OPERATING CHANNEL and choosing a channel, 1 through 14. If there are other systems nearby, be sure to use a different operating channel. The Personal Area Network (PAN) identification number (ID) setting can be a 4 digit number that is unique from other systems in the area and not the default PAN ID of 1111.

4.2.4 Device Configuration

There are 2 ways to enter the device configuration settings into the system. If you have the basic system tools and are entering the device IDs manually, proceed to section 4.2.4.1 Manual Configuration Entry. If you have a preconfigured device list, that includes the operating parameters for each device, jump ahead to section 4.2.4.2 Preconfigured File Load.

4.2.4.1 Manual Configuration Entry

Minimize the POUNCE® Dashboard. With the list that was created during installation as described in section 4.1.2 Computer Enhanced Wiring Devices, open the electronic version on your laptop or PC and manually enter the same information that was recorded for each device. Refer to Table 4-1, Example Device List. When the list is complete, save the file to the desktop and give it a name that makes sense. An example might be “605 West Street” or some other identifier for the system location.

In the POUNCE® Dashboard, open the configuration wizard in the web browser. You will be asked if you want to upload the device list. Select YES and a file browser will open. Click the BROWSE button, navigate to the desktop and select the file you just saved. The POUNCE® Dashboard will put the information into a table. While it is doing this, it is also comparing the uploaded list with the list of devices that are communicating to the SCU. The first devices that show up in the table are devices that are in the list you uploaded and in the list of devices in the radio network that the SCU has identified.

Confirm your handwritten list with the Dashboard list by reviewing the ID numbers. Starting at the top of the Dashboard list, if the number matches your handwritten list, select the SUBMIT button by that device number. The system will automatically ask the device if it is an outlet or a switch. Once it replies, compare the reply with your handwritten list. Continue this for each device until the list is complete or the next submit button is not available. This is an indication that the device did not communicate with the SCU. If there are devices like this, click on the REFRESH button to see if it has since joined the network.

Once the Dashboard list has been refreshed, continue comparing the 2 lists and submitting the devices that match. If there are any ID numbers in the list after refreshing once more, inspect the installed devices. If the device is not supposed to be in this radio network, select the DELETE button next to it and move to the next device. If the device’s LED is not lit, the power to the device has been removed. Return power to the device. If the LED is lit, confirm the ID number with your list. If the ID number is correct, be sure that there is nothing interfering with the radio signal. Refresh the list again to bring in the last devices. Submit the ones that are supposed to be in the system. These will have a background color of yellow in the Dashboard display window.

When all of the devices have either been submitted or deleted, the submitted ones can be set up for operation. Start at the top of the list. In the columns to the right of the IDs, enter the room location and description. When all of the devices in the list have a room location, select submit. Now go to SYSTEM>LOCATIONS> and located the devices in each room that you entered. At the far right is the CONFIGURE link. Click on each one and complete the operating parameters for each device. Continue this until all of the devices have been configured. Submit each device configuration before moving to the next device.

When the last configuration has been submitted, go back to the main screen to SYSTEM> PREFERENCES> SEND CONFIGURATIONS and select go. Any devices that did not reply to the message will appear in a list after several minutes. Troubleshoot the devices that did not reply. If all devices successfully received their configurations, the system is ready to transition to the operational channel.

Go to SYSTEMS > PREFERENCES > MODE and select OPERATIONAL. All of the devices will transition to the operational **channel**.

4.2.4.2 Preconfigured File Load

[Future Capability]

4.3 User Input and Access

The Administrator can now provide other users access at the appropriate level as described in section 1.2 System Access. Each user needs to enter a password and user name for the level assigned to them. Once new users have logged in the first time, the system will automatically allow access to the level of control assigned to them.

The Administrator can now input the system information such as electrical energy costs per kilowatt hour (kWh). Many of the categories for billing items are included on this page. Fill in the monthly amount or enter the rate being charged for each item. If the electric bill has categories that do not appear in this list, you can add them. Be sure to select the correct function when creating the item. For example, if the item on the bill is the same every month, such as a fee or a monthly meter charge, then choose the MONTHLY category. If the item is charged based on kWh usage, then choose the RATE category. If the item is a tax, choose the TAX category.

5 Operation

With the system in the operational state, different levels of users can access the information in the system as described in section 1.2 System Access.

5.1 Observe

5.1.1 Status

To observe the most recently recorded status of a device, select the Device Status icon from the Operation Tool bar. Begin typing the 4-digit code for the device. The entry will begin auto-filtering the selection based on the codes that exist within this system. Select the device from the list and the latest recorded state of the device will be displayed. The display will include the contactor state, the amount of power if the contactor is closed, the occupancy detection and the temperature reading during the last recording. If any programmed thresholds were crossed, they will also be displayed.

5.1.2 Graphs

To view historical data recorded by the system, select the graph icon from the Operation Tool bar. This will open up a selection box that allows an observer to choose the type of graph the type of data to be reviewed. All graphs are plotted as a function of time and the span of time for each graph is variable, from 1 hour to multiple years, depending on the length of time the data has been stored.

Graphing selections can be made for individual devices or groups of devices. The information that can be plotted includes power, energy, energy cost, occupancy detections, temperature and device on/off status. First choose the devices, or the predefined group of devices. Then select the parameter that you wish to see plotted. Finally, select the time span. Click on the Display Graph icon and the available information will be presented. You can save the plot as a Bitmap (or other format).

When viewing energy costs, each device only includes the charges per kWh and taxes. Other recurring fees are not included in this calculation.

5.2 Maintenance

The viewing features that are available to an Observer are also available to a Maintainer, as well as other information and controls that allow for daily operation.

5.2.1 Alerts

If an alert has been issued by a device or by the SCU, the type and location of the alert will be indicated. Once the alert has been addressed, the Maintainer can clear the alert. The same goes for latches that occurred from crossing programmed thresholds. The ability to view the alerts is automated by the confirmation of the user name and password that is associated with the Maintainer level.

5.2.2 System Updates

The Maintainer can also update system information such as the system time and utility costs. To access and update the stored cost information, click on the CONFIGURE tab in the MAIN toolbar. On this page,

select the ENERGY COST link. A page will open showing the cost for each item from the original entry. To update those values, select the EDIT key, make the updates and then SAVE the new entries.

5.2.3 Controls Updates

Controls available to a Maintainer include refreshing the status of devices to see their current status. Observers can view the most recent data that was saved in the SCU database. Maintainers can manually request real time status from a device, including contactor state and PIR detections. Select the Operation tab on the menu bar. Select the device you wish to see the status for and click on the UPDATE button. The system will request the information and display it when the device replies.

The device can also be controlled from the web browser. If you would like to change the state of the contactor, select the ON or OFF button, which will be displayed depending on the last known state. Keep in mind that if the preprogrammed instructions for the device are to change the contactor state based on a configured rule, it may not maintain the commanded change that you give it for very long. Here is an example. A switch connected to room lighting is programmed to close the contactor when motion is detected to turn the lights on. You remotely shut the lights off. When detection occurs any time after the switch received the remote command, the lights will immediately come back on again.

One way to keep the lights out is to use the CONFERENCE/DORM mode (also referred to as the Override mode). This tells the switch to turn the lights on if there is motion under normal operation. It also tells the switch to turn the lights off if the button is pressed and ignore future motion to keep the lights off. In this mode, occupants can keep the lights off to view videos. It is also useful for dorm rooms or other sleeping quarters. To turn the lights back on, simply press the switch again.

Other controls that can be modified by the Maintainer include the TOD rules. When devices are programmed to turn off at a certain time of day, the Maintainer can alter the time or remove the TOD rules and replace with stimulus rules. For example, if outlets in an office area are originally programmed to turn on at 8:00am and turn off on at 5:00pm weekdays, they can be reprogrammed to turn on only when occupancy is detected and stay on for a delayed length of time. Many combinations of on/off control using TOD and occupancy are possible.

When entering TOD rules, there can be up to 4 times per day selected. Assume the first TOD is to turn devices on. This allows for a scenario where activity detected shortly before the first "off" time can be extended to the second "off" time. This is a way for someone to continue working after normal hours without losing power to their appliances. The second "off" time can perform the same function. The final "off" time won't be extended, so it should be a time well past any likelihood of someone being on site.

5.2.4 Groups

Devices can be grouped together for common functions. An example of a group is a cubicle or office that has several outlets. If any of the outlets detects occupancy, they can be programmed to all turn on and stay on so long as the delay for any of the devices in the group extended based on detection.

6 System Maintenance

6.1 Defrag Memory

Run the program to optimize memory usage every 6 months. A reminder will show up in the Alerts Log.

6.2 Offload Data

A typical system can operate for 3 years on the amount of internal memory. The length of time can vary depending on how the system is used. An alert will appear when the system reaches 10% capacity left. At this time, or more often if preferred, create a folder in the POUNCE® System directory of your computer that relates to the time span of the data on the SCU. Save the entire contents of the SCU to a file in the desired folder. Open the folder and confirm that the file is there and that the size of the file is appropriate.

Then select “Purge Memory” from the Maintenance heading in the Operation Toolbar. Be sure to have a safe location for the stored data, because it is permanently removed from the SCU and cannot be retrieved.

7 Appendix

7.1 Installation Template

SCU ID Code		Location	
IP Address		MAC Address	
Item No.	Device Code	Outlet / Switch	Location Description
1			
2			
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SCU ID Code		Location	
IP Address		MAC Address	
Item No.	Device Code	Outlet / Switch	Location Description
37			
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44			
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SCU ID Code		Location	
IP Address		MAC Address	
Item No.	Device Code	Outlet / Switch	Location Description
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8 Glossary

Default contactor state is the state that the device will drive its contactor to upon processor initialization, and can be either “On” or “Off”.

Delay window is a value, in minutes, that defines the duration of time that an occupancy detection or manual switch press event will cause a device contactor to remain in a non-default state before the device will automatically return to the default state. Subsequent occupancy detection or manual switch press events will extend the delay window such that a device will only return to the default state when the number of minutes configured in the delay window has passed since the last occupancy detection or manual switch press event. Delay window does not apply to instantaneous power consumption thresholds, energy consumption thresholds, or ambient room temperature thresholds. As an example, consider a device controlling a light that has a default state of “Off”, an occupancy detection stimulus configured to turn the light “On”, and a delay window of 10 minutes. When occupancy is detected at that device, the light will turn “On”, remain on for 10 minutes, and then turn “Off”. If additional occupancy detections occur within the initial 10 minute period, the light will remain “On” until 10 minutes have passed since the last occupancy detection. Delay window is an optional device configuration item, though if selected will apply to both occupancy detection and manual switch press events.

Latch condition or **latch** is a device state, initiated by a stimulus event, where the contactor cannot be changed until a user manually acknowledges and clears the condition through the POUNCE® Dashboard. A user must explicitly select the latch option for a stimulus event to generate a latch condition; no stimulus events will cause a latch condition by default. A latch can only be cleared if the stimulus that caused the latch condition is no longer present. For example, if a device was configured to latch when a maximum ambient room temperature was exceeded, the latch condition cannot be cleared through the POUNCE® Dashboard until the temperature drops below that threshold. A latch always generates a visual alert on the POUNCE® Dashboard.

Switch override is a device state where a manual switch press causes a device contactor to change to its default state and other stimulus that would normally cause the contactor to transition to the non-default state are ignored. A user must explicitly select the switch override option for a manual switch press to cause a switch override condition; it is not enabled by default. A subsequent manual switch press that causes the device contactor to change to the non-default state will remove the switch override condition. As an example, consider a conference room with a projector where a switch device controlling the overhead light has a default state of “Off” and both occupancy detection and manual switch press stimulus configured. A detection of occupancy would cause the overhead light to turn “On”. However, in order to view the projector, a manual switch press will cause the lights to turn “Off” and the switch device to enter a switch override state. In this state, the detection of occupancy detection will be ignored and the lights will remain “Off”. At the end of the presentation, pressing the manual switch will cause the overhead light to turn “On” and the switch device will respond to occupancy detection as before.

9 Acronyms

ASCII	American Standard Code for Information Interchange
CE	Conformité Européenne, meaning "European Conformity"
dBm	Decibels in milli-volts
DC	Direct Current
DHCP	Dynamic Host Control Protocol
DNS	Domain Name Server
EOS	Enhanced Occupancy Sensing
FCC	Federal Communications Commission
HTTP	Hypertext Transfer Protocol
IC	Industry Canada
ID	Identifier
IP	Internet Protocol
IPC	Inter-process Communication
IPv4	Internet Protocol Version 4
LRU	Line Replaceable Unit
MAC	Media Access Control
MTBF	Mean Time Between Failure
NTP	Network Time Protocol
PAN	Personal Area Network
PIR	Passive Infrared
POUNCE® System	Point Of Use Network Controlled Electrical System
PRIDE	POUNCE® Recorded Information Display Engine
RTC	Real Time Clock
SCU	System Control Unit
SSH	Secure Shell
TCP	Transmission Control Protocol
TOD	Time Of Day
UL	Underwriters Laboratory