



Draper Commissioner User Manual



Table of Contents

Table of Contents.....	i
1. Getting Started.....	1
1.1 Initial Startup.....	1
1.2 Draper Commissioner Startup.....	1
1.3 Top Panel.....	1
2. Configuration Screens.....	2
2.1 Controllers Screen.....	2
2.2 Shades Screen.....	6
2.3 Switches Screen.....	11
2.4 Sensors Screen.....	14
2.5 Schedules Screen.....	16
2.6 IR Remotes Screen.....	19
2.7 AV Groups Screen.....	21
3. Commissioning Process.....	23
4. Troubleshooting.....	25
4.1 Generic Troubleshooting Steps.....	25
4.2 Controllers Screen (Step 1).....	26
4.3 Shades Screen (Step 2).....	28
4.4 Switches Screen (Step 3).....	29
4.5 Sensors Screen (Step 4).....	30
4.6 Schedules Screen (Step 5).....	31
4.7 IR Remotes Screen (Step 6).....	31
4.8 AV Groups Screen (Step 7).....	32



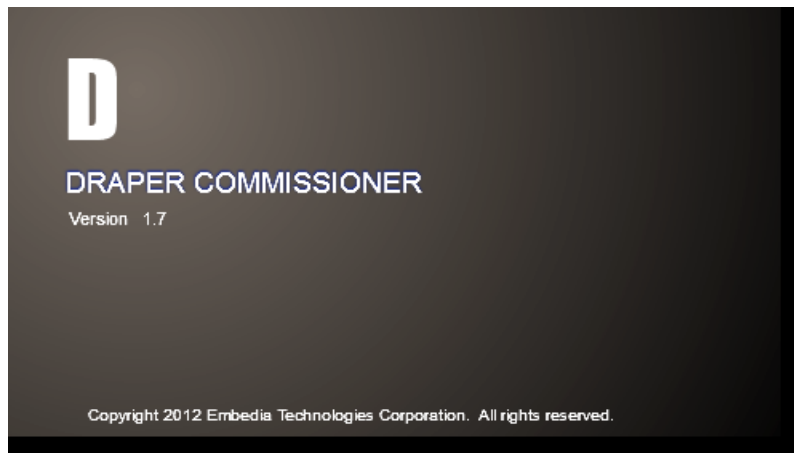
1. Getting Started

1.1 Initial Startup

After installing the Draper Commissioner software for the first time on a computer, it is necessary to connect the computer to a controller or programming kit via USB to allow the installation of Windows drivers. Please allow 2 minutes for this to occur, then reboot the computer to finish the installation process. This only has to be done after the initial installation.

1.2 Draper Commissioner Startup

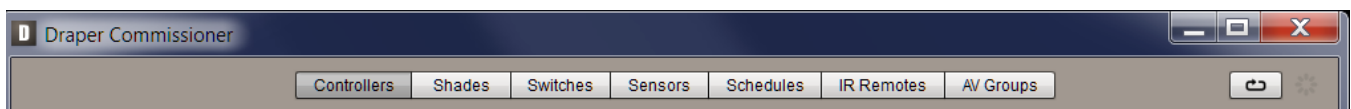
During startup a splash screen is shown.



This shows the current version of the software that is installed. If connected to the Internet the software will check and notify the user if a new version of the software is available.

1.3 Top Panel

Along the top edge of the interface is the Top Panel. The top panel has buttons that are used to navigate between the different configuration screens. The button with a circular arrow is used to restart the commissioning session. The circular progress wheel spins when the software is writing or loading properties, or searching for controllers.



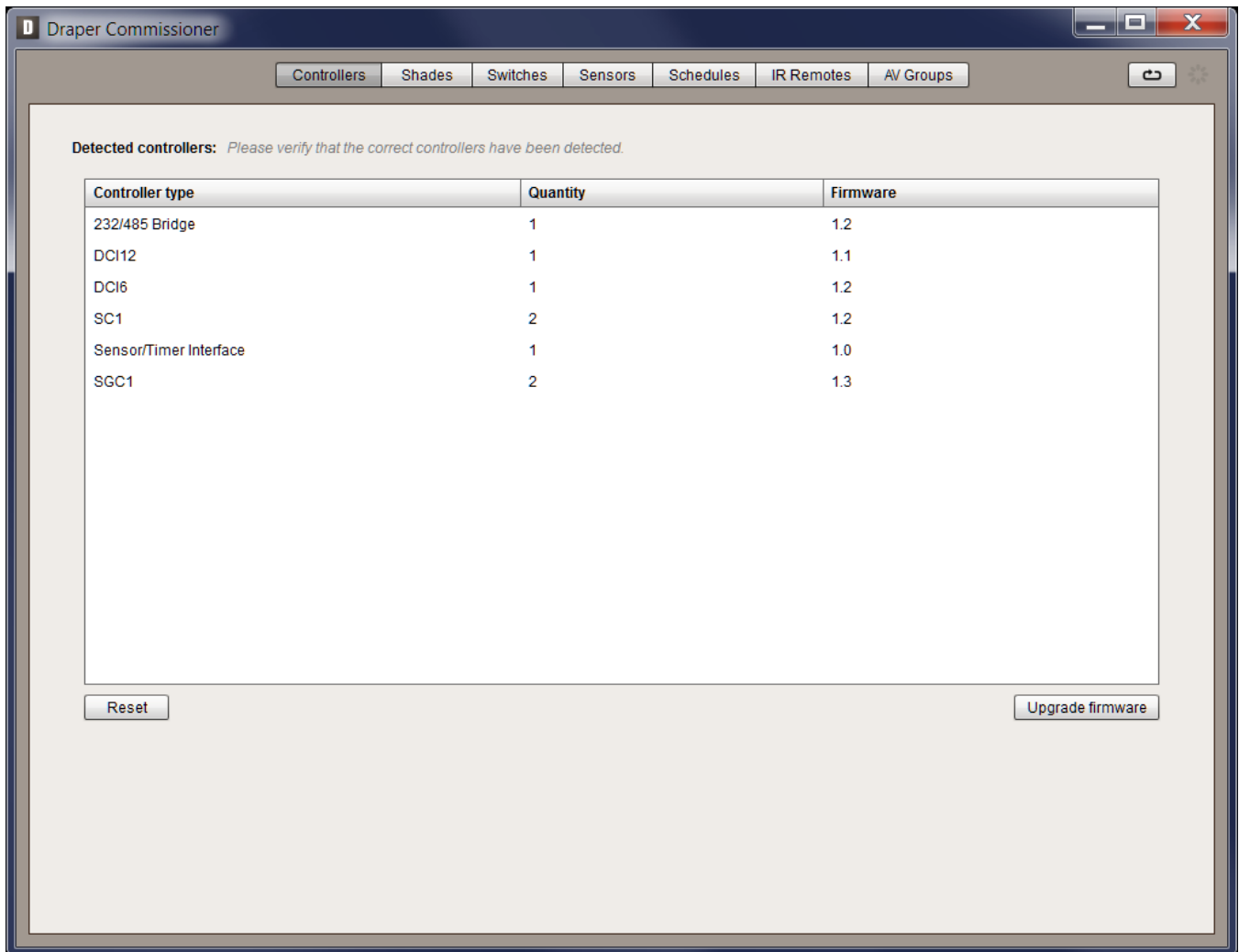
The software starts up with the Controllers screen selected. This screen, as well as all other configuration screens, are described in the following section.



2. Configuration Screens

2.1 Controllers Screen

To navigate to the Controllers Screen, click the Controllers button in the Top Panel (see section 1.3).



This screen gives an overview of all of the devices that are on the network, and allows the resetting of the network and firmware upgrades. The controllers will appear in the list as they are discovered, which shouldn't take longer than 30 seconds.



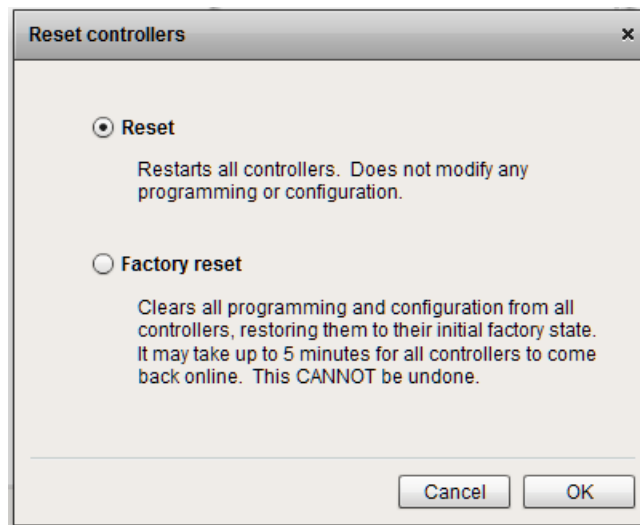
2.1.1 Detected Controllers

All of the detected controllers are listed in the table with the following columns:

1. **Controller Type** – This is the type of controller that has been detected. All shade controllers as well as input modules will be listed. IR receivers will not be shown in this list.
2. **Quantity** – This is the total quantity of the listed controller type that has been discovered. Note that even though some controls are sold in configurations with multiple units per box, they will appear as individual units in this list. For example an SPGC4 is made up of four SC1 controllers in a single box. This unit will appear as four SC1 controllers in the list.
3. **Firmware** – This is the version of firmware that the detected controllers have. If the controllers have a old version of firmware the user will be prompted to perform a firmware upgrade (see section 2.1.3).

2.1.2 Reset

Clicking the Reset button brings up the following two options:

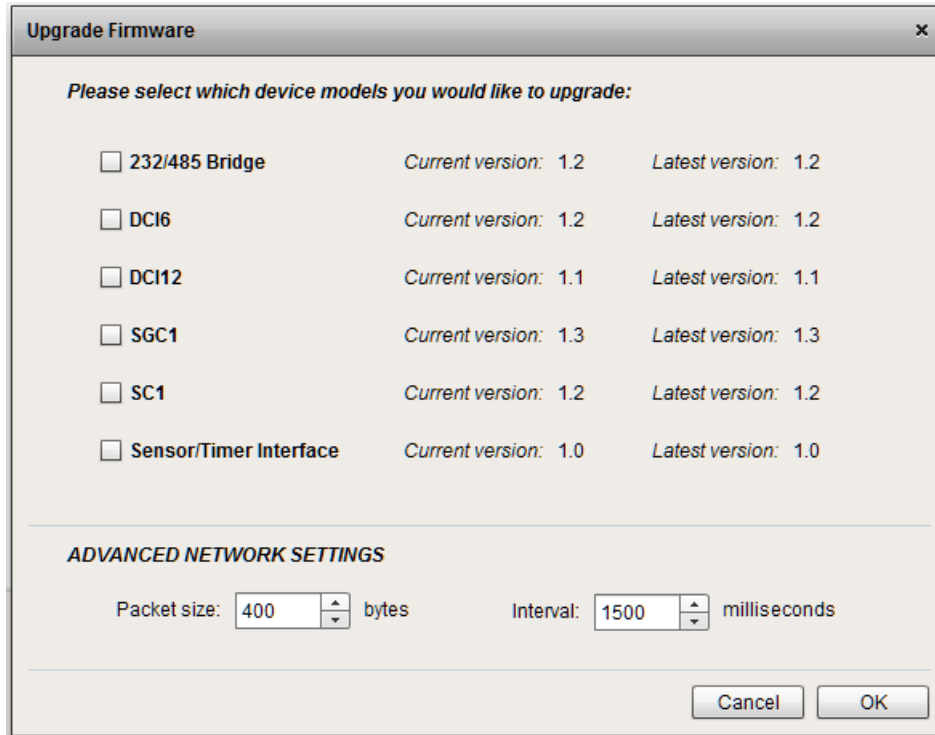


1. **Reset** – This option can be used to reset all of the controllers on the network without affecting any programming that has been done.
2. **Factory Reset** – This option restores all controllers to the factory state, clearing any programming that has been done.



2.1.3 Upgrade Firmware

Clicking on the Upgrade Firmware button brings up a screen that allows the user to perform a firmware upgrade on controllers in the network.



2.1.3.1 Selecting Devices to Upgrade

The upper section of the window shows a list of all the controller types that are compatible with the Draper Commissioner. The devices that have been discovered and have an older version of firmware will automatically be selected. Other device types can be manually selected to upgrade by clicking the check box beside the name.

2.1.3.2 Advanced Network Settings

There are two advanced network settings that can be adjusted.

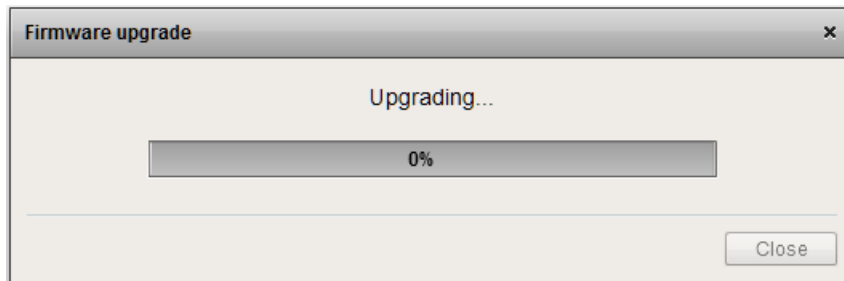
1. **Packet Size** – This is the size of each upgrade packet that is sent on the network. Decreasing the packet size will increase the time required for the upgrade, but may improve the success rate of the upgrade on some networks. The maximum size of the packets is 400 bytes.



2. **Interval** – This is the amount of time to wait between sending upgrade packets. Increasing this value will increase the time required for the upgrade, but may improve the success rate of the upgrade on some networks.

2.1.3.3 Performing the Upgrade

After clicking the OK button, the firmware upgrade will begin. A progress bar shows the current progress of the upgrade.

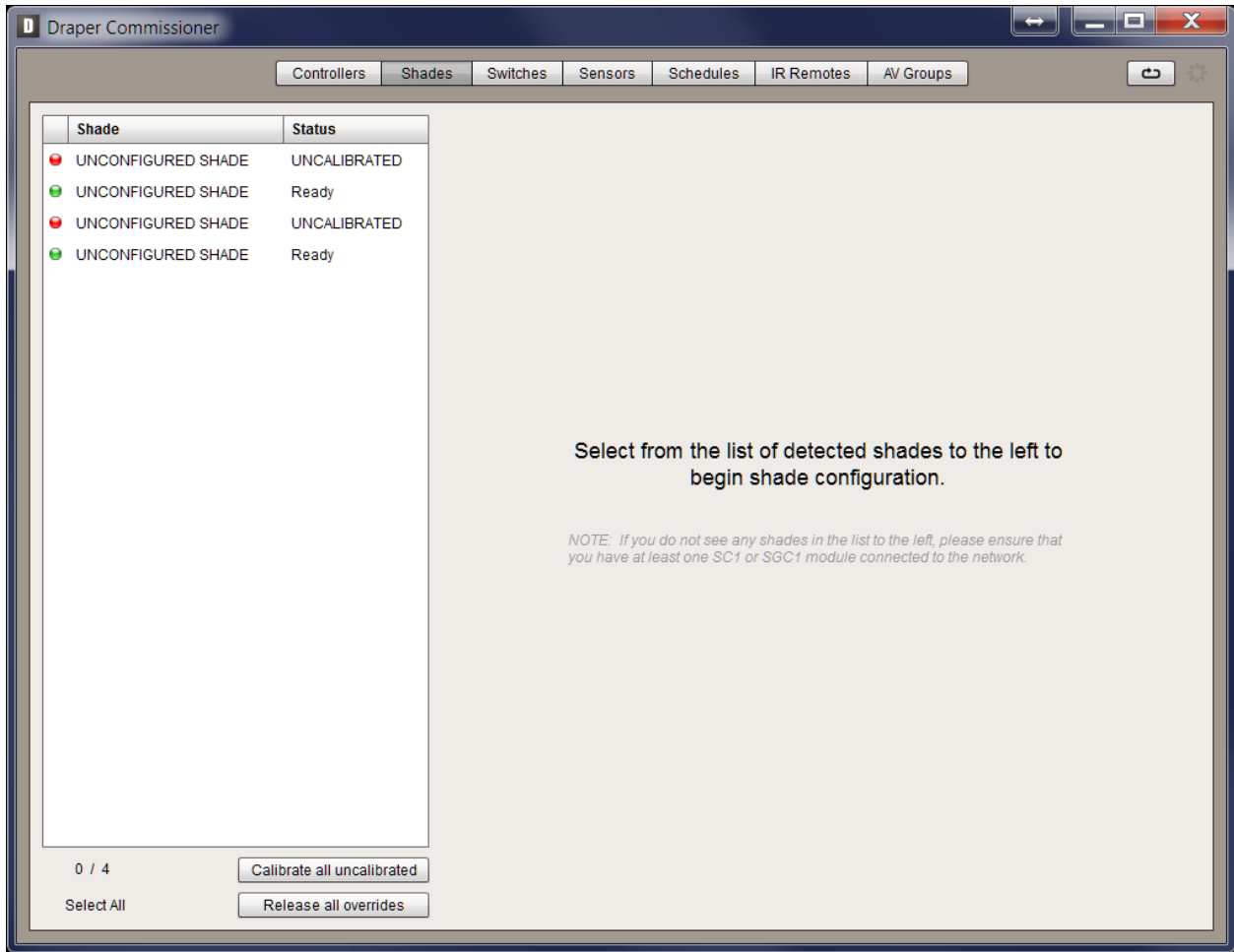


The upgrade will take between 10 and 15 minutes for each device type selected, depending on the Advanced Network Settings used. The controllers should remain powered on throughout the process and the Draper Commissioner should not be closed before the upgrade is finished.



2.2 Shades Screen

To navigate to the Shades Screen, click the Shades button in the Top Panel (see section 1.3).



This screen is used to configure all of the settings related to the shades. The following sections describe the properties that can be configured.

2.2.1 Shade List

All of the shades that have been discovered are shown in the list on the left side of the screen. Shades can be selected in this list for manual operation and for configuration. Holding down Ctrl while selecting allows the user to select multiple shades. All of the shades in the list can be quickly selected using the link at the bottom of the screen. The numbers at the bottom of the list show the number of shades that have been selected and the total number shades in the list. The columns show the following information:



1. **Shade** – This is the name of the shade. By default the shade is called UNCONFIGURED SHADE. This name can be changed on the property side of the screen as described in section 2.2.4.
2. **Status** – This is the current status of the shade. It can have one of the following values:
 - UNCALIBRATED – This is the default state of shades connected to SC1 controllers and indicates that the shade hasn't been calibrated.
 - Calibrating – Indicates that the SC1 controller is in the process of calibrating the shade.
 - OVERRIDDEN – Indicates that the shade has been moved using the buttons as described in section 2.2.2.
 - Ready – Indicates that the shade is ready to operate with the rest of the devices in the network.
3. **Color Indicator** – The colored circle gives a quick indication of the state of the shade as follows:
 - Red - The shade is not ready to operate with the rest of the system. Corresponds to the UNCALIBRATED and OVERRIDDEN states.
 - Yellow – The shade is in the process of becoming ready to operate with the rest of the system. Corresponds to the Calibrating state.
 - Green – The shade is ready to operate with the rest of the system. Corresponds to the Ready state.

2.2.2 Manual Shade Operation

Shades can be selected and moved manually to ensure correct operation. There are variations in the available operations depending on what controllers are operating the shades selected in the list. The following table describes the buttons and their functions.

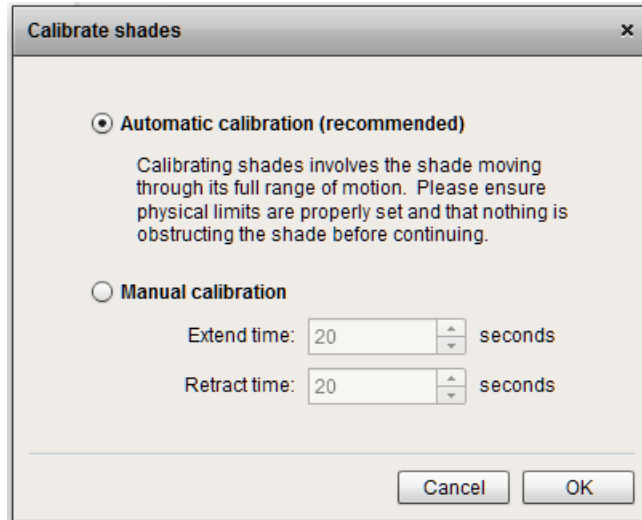
Button	Function	Available For
Open or Up	Move shade to the retracted position	All
Previous Stop	Move shade to the previous preset stop	Calibrated SC1
Next Stop	Move shade to the next preset stop	Calibrated SC1
Close or Down	Move the shade to the extended position	All
Stop	Stop the shade at its current position	All
Release Override	Return the shade to normal operation	Calibrated SC1 or SGC1
Identify	Jog the shade up and down for 40 sec.	All

Note: Once a calibrated SC1 or an SGC1 have been manually operated it will be in the OVERRIDDEN state until the Release Override command is sent. The Release All Overrides button at the bottom of the shade list can be used to easily release all of the overrides on the system without having to select shades.



2.2.3 Calibrating Shades

Shades connected to SC1 controllers must be calibrated before they are ready to be used in the control system. Shades can be calibrated individually by selecting them in the shade list and clicking the Calibrate (or Recalibrate if it has been previously calibrated) button in the left side of the screen, or all at once by clicking the Calibrate All Uncalibrated button at the bottom of the shade list. There are two calibration methods available.



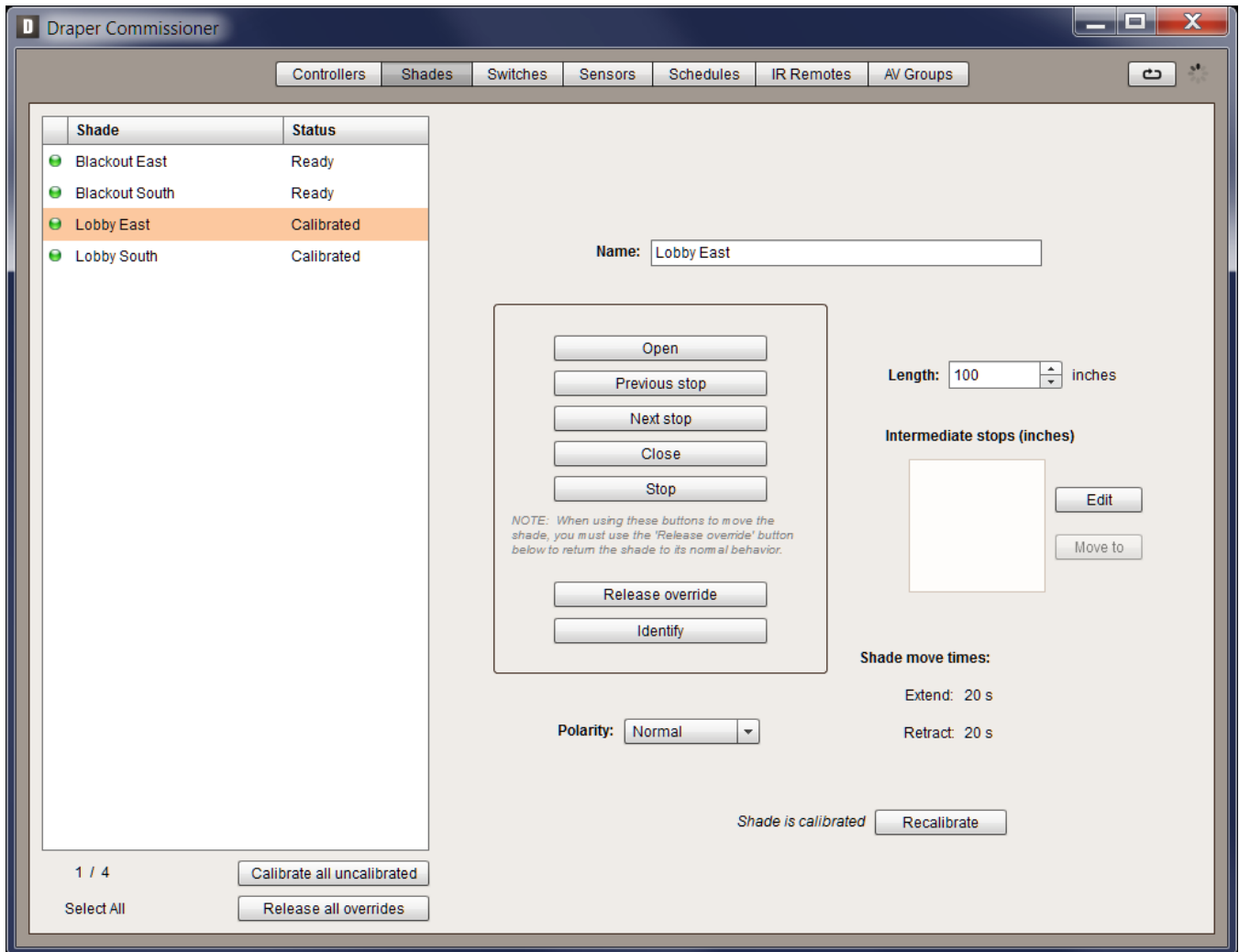
- **Automatic Calibration** – This method of calibration moves the shade through one full cycle of operation, using current detection to accurately measure the movement times for the shade. This is the recommended method of calibration as it results in more accurate intermediate stops and allows the controller to use current detection to more accurately track the shade position.
- **Manual Calibration** – This method requires the user to enter in the extend and retract times for the shade. When this method is used, current detection is disabled for the shade. This method is useful in cases where current detection is not able to be used due to the type of shade or wiring methods.

Note: After a shades has been calibrated the shade move times are shown with the rest of the shade properties on the right side of the screen.



2.2.4 Configuring Properties

The left side of the screen shows all of the properties that can be configured for the selected shades.



The following properties are available for SC1 and SGC1 controllers:

- **Name** – The name used to identify the shade
- **Polarity** – Used to set the direction for operating the shade motor. If set to Reversed the motor will operate reverse from how it was wired. This is useful for correcting reversed motor wiring without having to physically change the wiring on the controller.



The following properties are available only on SC1 controllers:

- **Length** – This is the length of the shade in inches. This only needs to be set when accurate intermediate stops are required. It should be set before the intermediate stops to ensure that the stops are set in the proper range.
- **Intermediate Stops** – This is a list of stops between the upper and lower limits that can be used in the operation of the shade. They are shown in inches and are set with the following dialog when the Edit button is clicked:

There are four methods for adding stops to the list.

1. Add current position as stop – Use the Up, Down and Stop buttons to position the shade where the stop should be added. When at the desired position, click the Add button to add the position as an intermediate stop.
2. Add by percent extended – Enter the percent extended to use as a stop and click the Add button.
3. Add by length extended – Enter the position in inches to use as a stop and click the Add button.
4. Add a number of equally distributed stops – Enter the number of intermediate stops and click the Add button. This will add that number of stops equally distributed through the range of the shade movement.

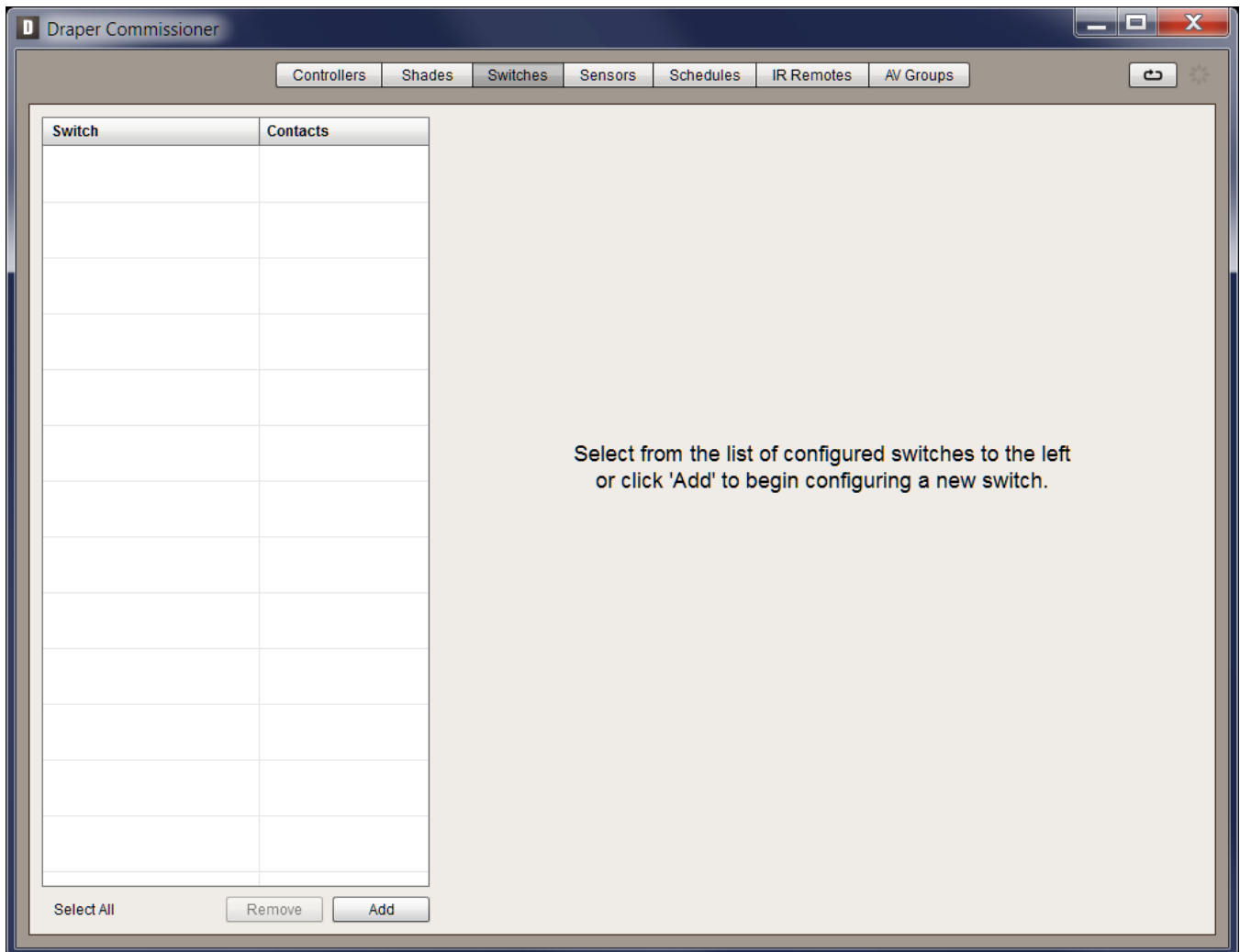


The following advanced properties can also be set in this window to improve the accuracy of the intermediate stops when required:

- **Fabric Thickness** – The thickness of the fabric for the shade.
- **Roll Tube Diameter** – The diameter of the roll tube for the shade.

2.3 Switches Screen

To navigate to the Switches Screen, click the Switches button in the Top Panel (see section 1.3).



This screen is used to add and configure the switches for the system.



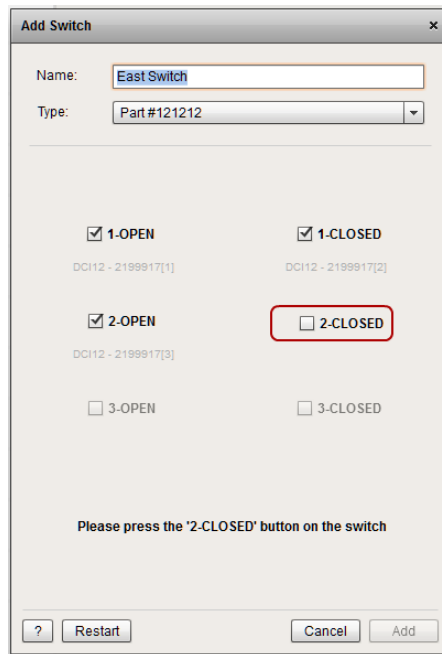
2.3.1 Switch List

The switches that have been configured for the system are listed on the left side of the screen with the following columns:

- **Switch** – The name of the switch. Some switch types can control multiple groups of shades from a single switch. In these cases, each group is treated as a separate switch in the list. By default they will all have the same name followed by the group number.
- **Contacts** – These are a representation of the contact inputs that the switch is wired to. The number in the box shows the contact numbers of the input device. The color of the box indicates the following:
 - Clear – The contact has not been closed since the controller was last reset.
 - Green – The contact has been closed since the controller was last reset.
 - Red – The contact is currently closed.

2.3.2 Adding Switches

A switch can be added to the system by clicking the Add button at the bottom of the Switch List.



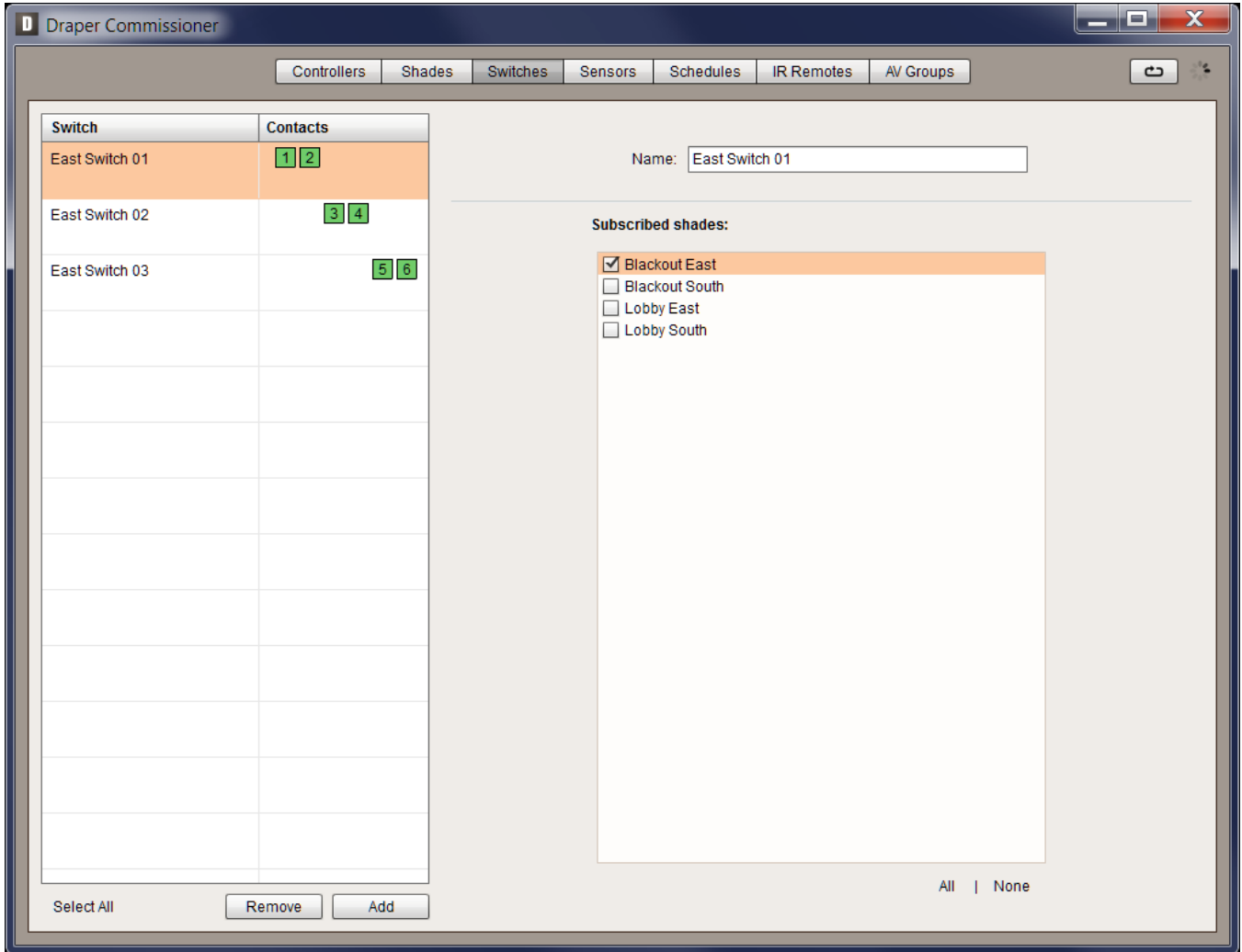
The name of the switch is entered and the Draper part number is selected from the drop down list. The ? button at the bottom of the window can be used to bring up a drawing of all the switches if the part number isn't known.

Once that information has been entered, each button on the switch must be pressed as prompted by the software. A check mark in the associated box indicates that the signal was correctly received. Once all of the buttons are checked the switch can be added by clicking the Add button.



2.3.3 Mapping Switches to Shades

Once a switch has been added, shades can be programmed to respond to the switches.

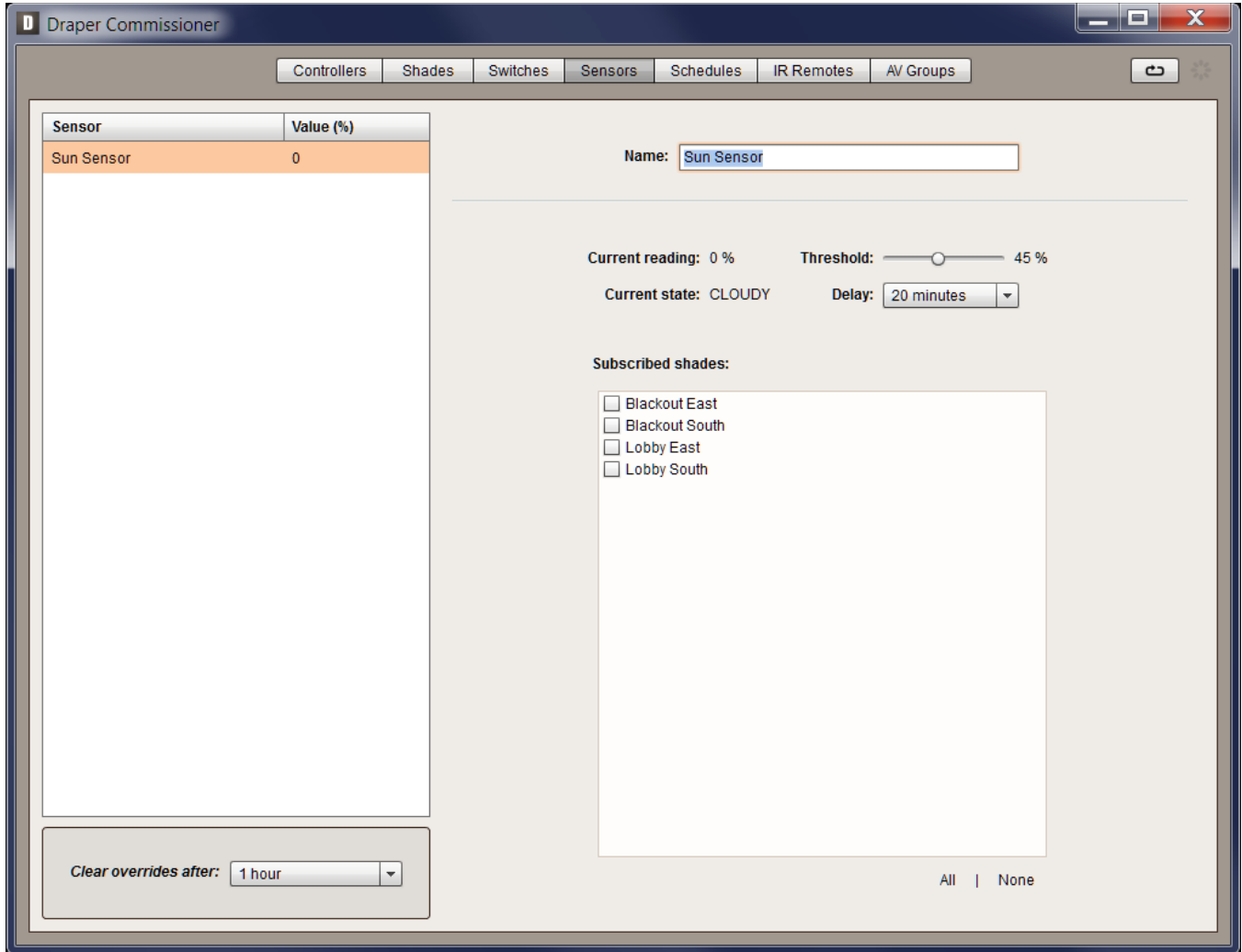


Selecting a switch from the Switch List brings up the switch properties on the right side of the screen. Here the switch name can be modified and shades can be configured to respond to the switch presses. Select all of the shades in the list that should respond to the selected switch or switches. Only shades that have been named in the Shades Screen will appear in this list.



2.4 Sensors Screen

To navigate to the Sensors Screen, click the Sensors button in the Top Panel (see section 1.3). Sun sensors can be used to move shades to the extended position when a threshold is reached.



2.4.1 Sensor List

The sensors that have been discovered are shown in the list on the left side of the screen. Sensors can be selected in this list to be configured. The columns show the following information:

- **Sensor** – This is the name of the sensor. By default the sensor is called UNCONFIGURED SENSOR.
- **Value** – This is the current reading of the sensor represented as a percentage of the maximum reading.



2.4.2 Configuring Sensors

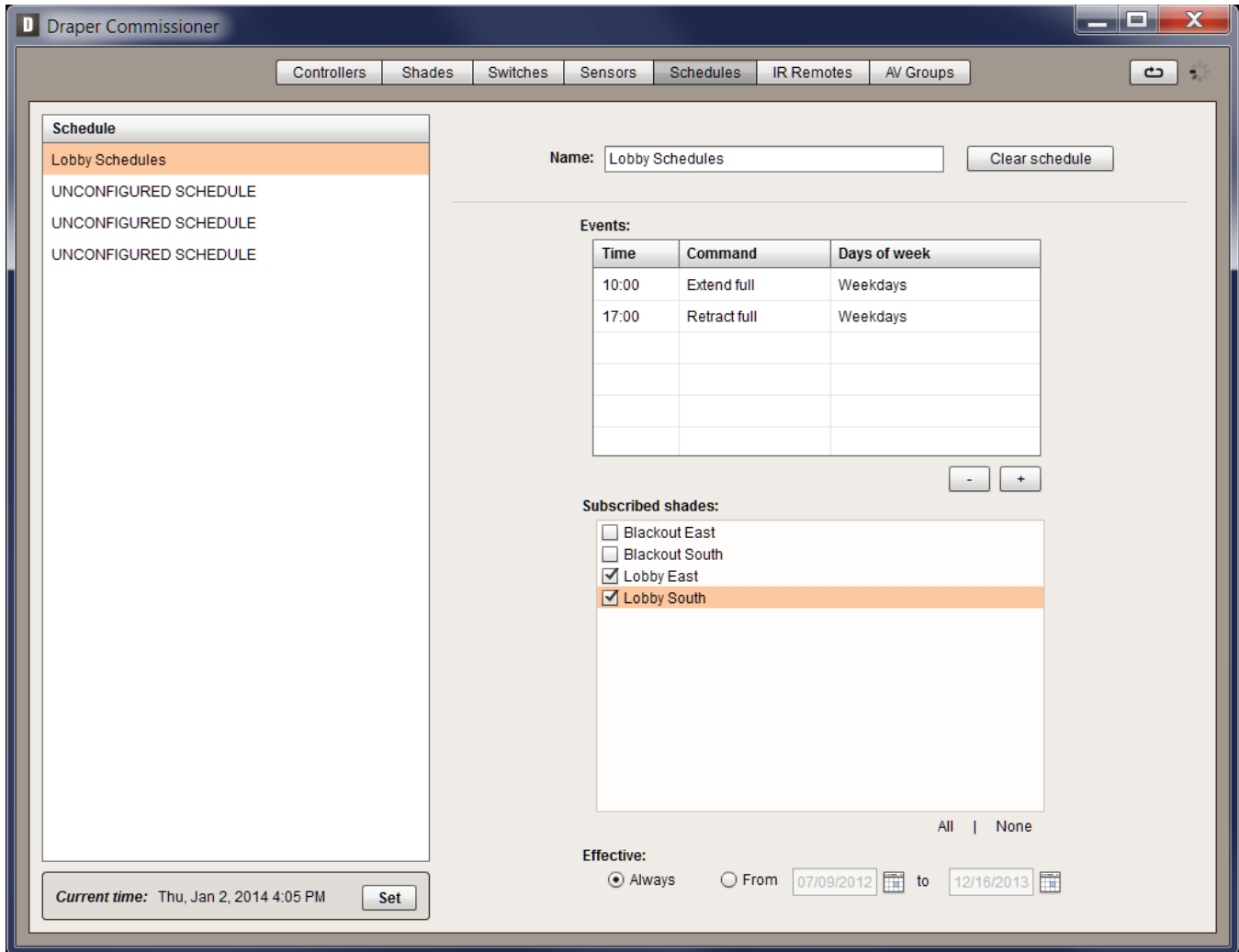
Selecting a sensor from the Sensor List brings up the configuration parameters for that sensor on the right side of the screen. The following properties can be set:

- **Name** – The name that identifies the sensor.
- **Current Reading** – For information only, this shows the current reading of the sensor.
- **Threshold** – The threshold for the sensor operation. When the sensor reads a value above the threshold the shades mapped to the sensor will extend fully closed.
- **Current State** – For information only, this describes the current state of the sensor. CLOUDY indicates that the sensor reading has been below the threshold for the delay time, while SUNNY indicates that the sensor reading is above the threshold.
- **Delay** – The length of time to wait once the sensor reading goes below the threshold before the state is changed to CLOUDY and the mapped shades are retracted. This is used to prevent the shades from frequent movements on partly cloudy days.
- **Subscribed Shades** – Check all of the shades that should respond to this sensor. Shades can be mapped to more than one sensor. If that is done then the shades will extend if any of the sensors are in a SUNNY state and retract when all of the sensors are CLOUDY.
- **Clear Overrides After** – This is the amount of time that sensor control should be overridden by system overrides such as switches, AV inputs and IR remotes. If no overrides are received for the specified amount of time, the system will revert back to sensor control.



2.5 Schedules Screen

To navigate to the Schedules Screen, click the Schedules button in the Top Panel (see section 1.3). Schedules can be used to move shades at specific times of day and days of the week or year.



2.5.1 Schedules List

The available schedules for the system are shown in the list on the left side of the screen. Schedules can be selected in this list for configuration. Schedules that have not been named are listed as UNCONFIGURED SCHEDULE by default.



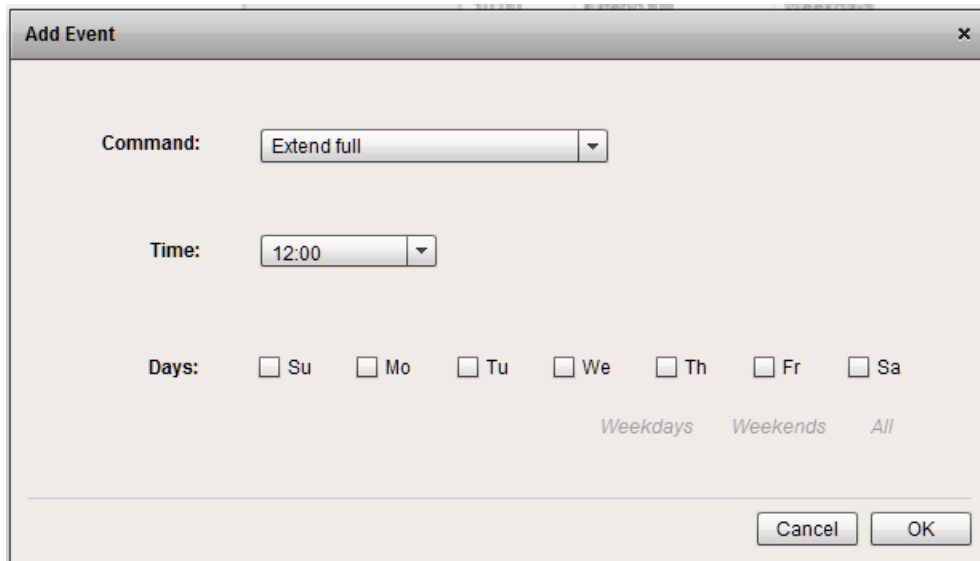
2.5.2 Configuring Schedules

After selecting a schedule to configure, the properties for that schedule are shown on the right side of the screen. The following properties can be configured for each schedule:

- **Name** – The name of the schedule
- **Events** – The list of scheduled events. The columns show the time that the event happens and what days of the week it is active.
- **Subscribed Shades** – Shades can be checked to perform the scheduled events.
- **Effective** – The date range for which the schedules should be active.

2.5.3 Adding a Scheduled Event

A new scheduled event can be added by clicking the + button below the Events list.



The user can configure the following properties in the pop up window:

- **Command** – The action to take at the scheduled time.
- **Time** – The time of day for the event to happen.
- **Days** – The days of the week when the scheduled event should be active. Links under the list of days can be used to quickly select weekdays, weekends or all days.

2.5.4 Removing a Scheduled Event

Users can remove a scheduled event by selecting the event from the Event list and clicking the – button. The entire schedule can be deleted by clicking the Clear Schedule button beside the schedule name.



2.5.5 Setting the System Time

The system time is shown under the Schedule List. To modify the time and daylight savings settings click the Set button.

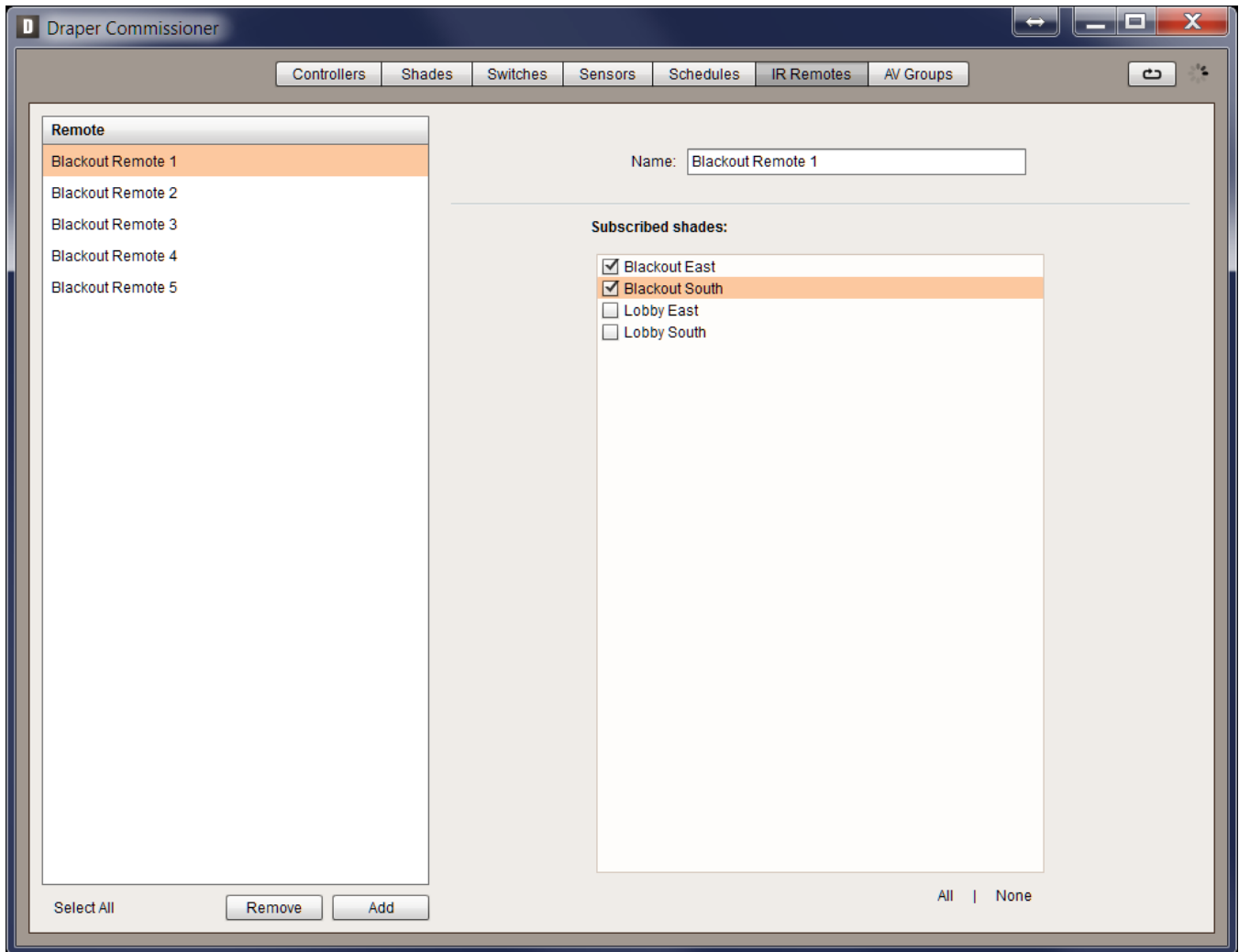
A screenshot of a "Set system time" dialog box. The dialog has a title bar with "Set system time" and a close button (x). It contains two radio button options: "Synchronize to this computer's current date and time" (which is selected) and "Set to specified date and time:". Below the second option, there is a date input field showing "01/02/2014" with a calendar icon, and two time input fields showing "16" and "18" with dropdown arrows. At the bottom, there is a checked checkbox for "Use daylight savings" and a "SYNC" button. A "Done" button is located at the bottom right of the dialog.

In this window the system time can either be set to the time of the computer being used to run the Draper Commissioner software, or it can be set to a different date and time. Check the Use Daylight Savings box if corrections for daylight savings should be used for the project. Click the SYNC button to send out the time information to the system. When finished, click the Done button to exit the dialog.



2.6 IR Remotes Screen

To navigate to the IR Remotes Screen, click the IR Remotes button in the Top Panel (see section 1.3). IR Remotes can be used to manually override shades.



This screen is used to add and configure the IR remotes for the system.

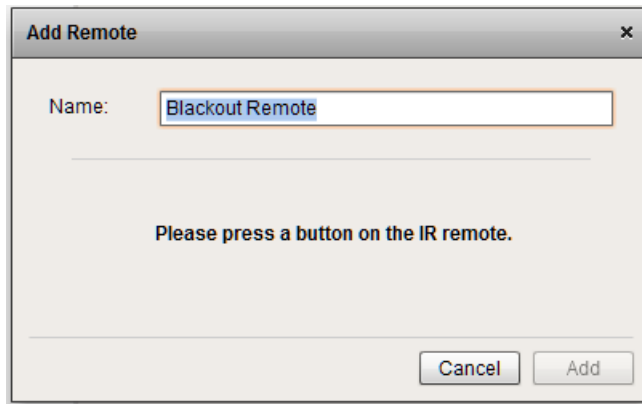
2.6.1 IR Remotes List

The IR remotes that have been configured for the system are listed on the left side of the screen. Each remote can control up to five groups of shades and appears as five separate entries in the list.



2.6.2 Adding an IR Remote

An IR remote can be added to the system by clicking the Add button at the bottom of the IR Remotes List.



In this window, the user gives the receiver a name, then identifies it by pressing any button on the IR remote. Once the receiver has been identified it can be added to the list.

Note: When the remote is added it will appear as five separate entries in the list. These will have the user provided name followed by the group number.

2.6.3 Mapping IR Remotes to Shades

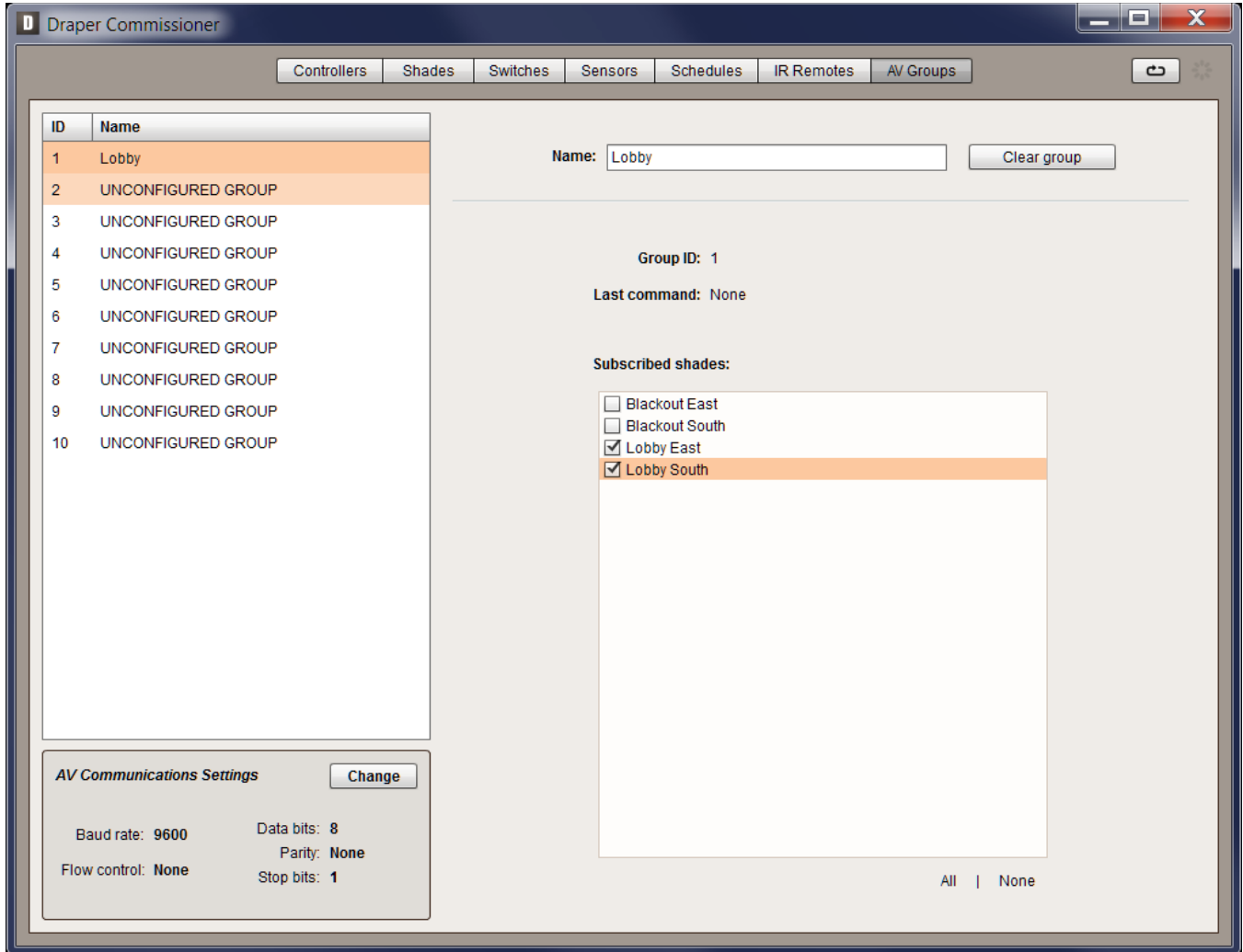
Once an IR remote has been added, shades can be programmed to respond to one or more of the IR remote groups in the list.

Selecting an IR remote group from the list brings up the remote properties on the right side of the screen. Here the remote group name can be modified and shades can be configured to respond to the remote commands. Select all of the shades in the list that should respond to the selected IR groups. Shades can be mapped to multiple IR groups. For example, the first four groups could be used to control individual shades and the fifth group could be a master group that controls them all.



2.7 AV Groups Screen

To navigate to the AV Groups Screen, click the AV Groups button in the Top Panel (see section 1.3). AV groups can be used to integrate with other systems using RS-232 serial communications.



2.7.1 AV Groups List

The available AV groups for the system are shown in the list on the left side of the screen. AV groups can be selected in this list for configuration. AV groups that have not been named are listed as UNCONFIGURED GROUP by default.



2.7.2 Configuring AV Groups

After selecting an AV group to configure, the properties for that group are shown on the right side of the screen. The following properties can be configured for each group:

- **Name** – The name of the group
- **Group ID** – For information only, this is the group address that the AV system will use to control this group.
- **Last Command** – For information only, this is the last command received from the AV system for this group.
- **Subscribed Shades** – Shades can be checked to respond to commands sent to this group.

2.7.3 Modifying the AV Communication Settings

The communication settings are shown under the AV Groups List. To modify these settings click the Change button.

A screenshot of a software dialog box titled "AV Communications Settings". The dialog box has a standard Windows-style title bar with a close button (X) in the top right corner. Inside the dialog, there are five rows of settings, each with a label and a dropdown menu:

- Baud rate: 9600
- Flow control: None
- Data bits: 8
- Parity: None
- Stop bits: 1

At the bottom right of the dialog box, there are two buttons: "Cancel" and "OK".

In this window each of the communication parameters can be set to meet the integration requirements for the project.



3. Commissioning Process

The Draper Commissioner is designed to help the user take a step by step approach to commissioning the project. In general the user should proceed from screen to screen completing the tasks on one before proceeding to the next. The following process can be followed as a guideline for commissioning a project. Refer to section 4 for troubleshooting information if issues are encountered during this process.

1. On the Controllers screen (Section 2.1):

- Verify that the correct number of each controller is shown in the Detected Controllers list
- Perform firmware upgrades if recommended at the bottom of the screen

2. On the Shades screen (Section 2.2):

- For each shade in the list do the following:
 - Identify and name the shade
 - Use the Up, Down and Stop buttons to verify that the shade is running properly
Change the Polarity property if necessary
- For each shade controlled by an SC1 controller do the following additional steps:
 - Calibrate the shade (2.2.3)
 - If intermediate stops are required, set the Length and Intermediate Stops properties (2.2.4)
 - Verify that the shades are accurately hitting the intermediate stops using the Previous Stop and Next Stop buttons
- Release all overrides on the shades

3. On the Switches screen (Section 2.3):

- For each switch in the system do the following:
 - Add the switch
 - Subscribe the shades that should respond to the switch
 - Verify that the switch is operating the shades correctly

4. On the Sensors screen (Section 2.4):

- Brightness sensors should be commissioned during the day when readings would be expected from the sensor. For each sensor in the system do the following:
 - Identify the sensor by covering it, or unplugging it from the Sensor/Timer Interface module and watching for fluctuating values
 - Name the sensor
 - Set the threshold to deploy the shades and the delay to retract them
 - Subscribe the shades that should respond to the sensor
- Set the clear overrides time



5. On the Schedules screen (Section 2.5):

- Set the parameters for each required schedule (2.5.2 and 2.5.3)
- Test the schedules by setting the system time to the different event trigger times (2.5.5)
- Set the correct time and daylight savings settings

6. On the IR Remotes screen (Section 2.6):

- For each IR remote do the following:
 - Add the remote (2.6.2)
 - Subscribe the shades that should respond to the remote
 - Verify that the remote is operating the shades correctly

7. On the AV Groups screen (Section 2.7):

- Set the parameters for each required AV group (2.7.2)
- Ensure that the communication settings match what the AV system is using (2.7.3)
- Test the AV integration in coordination with the AV contractor to ensure that the shade groups are responding as expected



4. Troubleshooting

This section outlines some troubleshooting procedures that can be used to resolve problems that commonly occur in the field. This section will be added to as other issues are encountered and resolved. For the purposes of this section, SC1 and SGC1 devices are referred to as controllers and all other devices are referred to as input devices.

To use this guide, first determine where the user is in the commissioning process outlined in Section 3, then go to the associated below to look for a description of the issue.

4.1 *Generic Troubleshooting Steps*

These steps are not the starting point of for troubleshooting an issue, but will be referenced from other troubleshooting sections below.

4.1.1 Network wiring issues

1. Check the network connection both at the last controller that you can see and the first controller that is missing.
2. Extend that check to the next controller and previous controller in the chain.
3. Check or replace the cable between the last controller that is visible and the first one that is missing.
4. Starting at the first missing board, disconnect the chain going away from the controllers that are visible. If that brings up that controller then continue to move down the chain adding a chunk of boards at a time until you have narrowed down the location of the wiring issue.
5. Bypass the first board that is not communicating by either running a cable directly between the board before and after it, or by removing power from the controller. If this allows the rest of the network to function then the controller is probably faulty and should be replaced.

4.1.2 Check if controller is in bootloader mode

1. Is there a red light blinking on the controller about once per second?
 - YES – The controller is in bootloader mode.
 - NO – The controller is not is bootloader mode.

4.1.3 Check that the controller is properly powered

1. Is there a green light on the controller (either solid or flashing)?
 - YES – the device is properly powered.
 - NO – Are there power wires connected to the board?
 - NO – Connect power wires to the board.



- YES – Do you measure the correct input voltage to the controller?
 - NO – Correct the electrical issue so that the correct voltage is measured at the input of the controller.
 - YES – The controller is defective and should be replaced.

4.1.4 Check that the controller is operational

1. Are the green or red lights flashing on the controller?
 - YES – The controller is operational.
 - NO – Continue to the next step.
2. Short the first two pins of the on board contact inputs. Does a red light turn on for as long as the button is pressed?
 - YES – the EB2 is operational.
 - NO – Cycle power to the controller and go through section 4.1.4 again. If still not operational then the controller should be replaced.

4.2 Controllers Screen (Step 1)

This section includes issues that can occur while completing step 1 of the commissioning process described in section 3.

4.2.1 Nothing appears in the detected controllers list on a computer that has not been used successfully with the Draper Commissioner before

1. Ensure that a controller or programming kit is connected to the computer via USB and is powered on.
2. Is the version of operating system on the computer Windows XP/Vista/7/8?
 - NO – These versions of Windows are required for the Draper Commissioner.
3. Check that the logged in user is an administrator on the system. If they are not, or unsure if they are, uninstall the software and reinstall, this time right clicking on the installer executable and choosing Run as Administrator. After installation try running the software again.
4. Reboot the computer. After the reboot try running the software again.
5. Disable all anti-virus software and the Windows firewall and try running the software again.
6. Unplug the controller. Repeat step 3. Plug in the controller and wait for all of the drivers to finish installing. This might take 2 minutes. After that is done, reboot the computer. Repeat step 5, then try running the software again.
7. Try replacing the USB cable, repeating step 4 if controllers are discovered right away.
8. If using a programming kit, try plugging directly into a controller, repeating step 4 if controllers are discovered right away.
9. If none of these steps work, consider using a different computer.



4.2.2 Nothing appears in the detected controllers list on a computer that has been used successfully with the Draper Commissioner before

1. Disable all anti-virus software or firewalls that may have been enabled since the last time using the computer.
2. Try each of the USB ports on the computer, restarting the software each time after moving to a new USB port.
3. Go to section 4.1.2. If in bootloader mode, upgrade the controllers as outlined in section 2.1.3. If not in bootloader, continue to the next step.
4. If using a direct USB connection to a controller, or if the red light is flashing on the programming kit, go to section 4.2.1.
5. If the red light is not flashing on the programming kit go to section 4.1.1.

4.2.3 Only some controllers are missing from the detected controllers list

1. For each missing controller go to 4.1.3 to ensure that they are properly powered.
2. For each missing controller go to 4.1.2. If in bootloader mode, upgrade the controllers as outlined in section 2.1.3. If not in bootloader, continue to the next step.
3. Perform a factory reset as described in section 2.1.2. Wait for 5 minutes then continue to the next step if there is no change.
4. If the boards are at the end of the network chain go to section 4.1.1.
5. For each missing controller go to 4.1.4 to ensure that they are operational.

4.2.4 An input device is missing

1. Does the device have a green light (solid or flashing)?
 - NO – Ensure that the cable to the controller is secure and that the right angle connector is plugged into the controller. Replace the USB cable. If this doesn't make a change then the device should be replaced.
 - YES – Continue to the next step.
2. Perform a normal reset as described in section 2.1.2. Wait for 1 minute then continue to the next step if there is no change.
3. If the green light is flashing and the red light is solid perform a firmware upgrade for that device type as described in section 2.1.3.
4. Try replacing the USB cable to the controller.
5. Replace the device.

4.2.5 Firmware upgrades are not working

1. It is recommended to always use the programming kit when performing upgrades. If there is a controller that is stuck in the bootloader state (see section 4.1.2) then it is OK to plug directly into that controller to do the upgrade. In other cases the upgrade may not work.



2. During a firmware upgrade the green light should blip in addition to the red light flashing. If there is no green light blips that start about 20 seconds after initiating the upgrade then go through the steps in section 4.2.2 until there is.
3. If the green light blips throughout the upgrade, but the upgrade doesn't change the version number, then make sure that you have the correct device type selected in the upgrade firmware dialog box (2.1.3).
4. If the green light stops blinking partially through the upgrade try the following:
 - Replace the USB cable.
 - Adjust the advanced parameters for the upgrade. Try reducing the packet size to 300 bytes and increasing the interval to 1800. Further decreasing the packet size and increasing the interval may allow the upgrade to work, however it will increase the amount of time required to perform the upgrade.
 - If the controllers are stuck in the bootloader state, try plugging in directly with the USB cable into a controller.

4.3 Shades Screen (Step 2)

This section includes issues that can occur while completing step 2 of the commissioning process described in section 3.

4.3.1 Shade will not move using the up or down buttons

1. Check the wiring from the controller to the shade. Make sure everything looks correct and that the shade is plugged in correctly.
2. If a multimeter is available, check the output from the controller. If the polarity for the shade is set to normal, then line voltage should be measured between the Down and Ground pins on the motor output when the down button is pressed and between the Up and Ground pins when the Up button is pressed. If the polarity is reversed then the signals will be reversed. Does the controller output the correct voltage?
 1. YES – The issue must then be in the wiring between the controller and the motor, or an issue with the motor itself.
 2. NO – Test or replace the fuse on the controller. If that doesn't fix the issue, then replace the controller.

4.3.2 Shade will not calibrate

1. Make sure the the shade moves correctly using the Up and Down buttons. If it does not then see section 4.3.1.
2. Check the wiring to make sure that the Ground and Common are not swapped on the output of the controller or in the motor plug.
3. If the problem can not be resolved in wiring, use the manual calibration procedure outlined in section 2.2.3.



4.4 Switches Screen (Step 3)

This section includes issues that can occur while completing step 3 of the commissioning process described in section 3.

4.4.1 The Add button is disabled when trying to add a switch

1. Make sure you have entered a name for the switch.
2. Make sure that all of the contacts are showing check marks.

4.4.2 Nothing happens when a button is pressed on a switch while trying to add it

1. Make sure that the input device that the switch is wired into is in the discovered device list as outlined in step 1 of the commissioning process. If it is missing go to 4.2.4.
2. Does a red light come on the input device when the switch button is pressed?
 - YES – Check for an Invalid Contact message at the bottom of the add switch window. If it is there then go to 4.4.3. If not, try restarting the software and try adding the switch again.
 - NO – There is most likely a wiring issue between the switch and the input device. To make sure that this is the case you can manually short a connection between the contact in question on the input device and a common. If the red light comes on then you know the device is good and it is a wiring problem. If the red light doesn't come on then replace the device.

4.4.3 “Invalid contact” message appears when trying to add a switch

These messages indicate a wiring issue between the switch and the input device. Use the help below to determine the issue and try adding the switch again. You can use the restart button at the bottom of the add switch dialog to begin the mapping over without closing the window.

1. “Invalid contact - this button must be mapped to another contact in sequence on this controller”
 - This indicates that the switch is wired incorrectly. Specifically the last button pressed on the switch has been wired into a contact position on the DCI6 or DCI12 that is before a contact already mapped.
2. “Invalid contact - contact must be on same controller and in sequence relative to previously mapped contacts”
 - This indicates that the switch is wired between two different devices, when it needs to be all on the same device. In the case of a 8-12 button switch being split across two DCI6 devices, this indicates that the wiring is incorrect.
3. “Invalid contact - must start with contact 1 (or 2) on this controller” or “Invalid contact - this button cannot be mapped to last contact”



- This indicates that the switch is wired incorrectly. Specifically the first contact on the switch has been wired to something other than the first contact position on the DCI6.
- 4. “Invalid contact - not enough contacts on this controller for this switch type”
 - This message indicates that the user is attempting to map a switch with more than two buttons to the contacts on board an SC1 or SCG1. Move the switch to a DCI6 or DCI12.
- 5. “Invalid contact - that contact already belongs to a switch”
 - This message indicates that the user is attempting to reuse a contact that has already been mapped to another switch. Delete the other switch before adding this switch or make sure that two switches aren't wired in parallel to the same device.

4.4.4 Shade will not operate off of a switch

1. Check that the shade has been subscribed to the switch (2.3.3)
2. Check that the shade is calibrated, if not then calibrate the shade.
3. Check that the shade is not overridden, if it is then release the override.
4. Restart the session (1.3) and go through this section again.

4.5 Sensors Screen (Step 4)

This section includes issues that can occur while completing step 4 of the commissioning process described in section 3.

4.5.1 The sensor has a reading of 0%

1. The sensor may not show a reading from indoor lighting only, it is intended to measure direct sunlight. Make sure that the sensor is facing outside on a reasonably bright day and that it isn't in shadow.
2. Check the wiring to the sensor.

4.5.2 The sensor is stuck on a reading of 82%

1. The sensor has been wired in reverse. Swap the wires on the Sensor/Timer Interface.



4.6 Schedules Screen (Step 5)

This section includes issues that can occur while completing step 5 of the commissioning process described in section 3.

4.6.1 Schedule does not operate a shade

1. Check that the shade has been subscribed to the schedule (2.5.2)
2. Check that the shade is calibrated, if not then calibrate the shade.
3. Check that the shade is not overridden, if it is then release the override.
4. Check to make sure that the time, day of week and effective period is the correct time for the event to occur.
5. Restart the session (1.3) and go through this section again.

4.7 IR Remotes Screen (Step 6)

This section includes issues that can occur while completing step 6 of the commissioning process described in section 3.

4.7.1 Remote is not recognized in the Add Remote dialog

1. Check that the IR eye is correctly plugged into the controller with the correct cable.
2. Check the batteries in the IR remote.
3. The IR receiver might have to be reprogrammed, call Embedia for support with this.

4.7.2 Shade will not operate from the remote

1. Check that the shade has been subscribed to the correct remote group
2. Check that the shade is calibrated, if not then calibrate the shade.
3. Check that the shade is not overridden, if it is then release the override.
4. Restart the session (1.3) and go through this section again.



4.8 AV Groups Screen (Step 7)

This section includes issues that can occur while completing step 7 of the commissioning process described in section 3.

4.8.1 AV system can not operate the shades through the serial interface

1. Does the red light blink on the 232/485 Bridge device when the AV system sends a command?
 - NO
 1. Ensure that a straight through serial cable is being used between the AV system and the input module.
 2. Check to make sure that the AV Communication Settings (2.7.3) match what the AV system is using.
 3. Ensure that the AV system is using the exact strings as outlined in the documentation. Every character in the strings is required to be correct.
 - YES
 1. Check the last command (2.7.2) for the group to make sure that the expected command is getting through. If the wrong command is shown, correct the AV string as shown in the documentation. If no command is shown, make sure that the AV string is using the correct group address.
 2. Check that the shade has been subscribed to the correct AV group.
 3. Check that the shade is calibrated, if not then calibrate the shade.
 4. Check that the shade is not overridden, if it is then release the override.
 5. Restart the session (1.3) and go through this section again.