LUTRON

Application Note #717
Revision C
March 2022

Window/Door and Condensation Overflow Sensors in myRoom Systems to Turn Off a Fan Coil Unit

This application note explains how to lock the myRoom Palladiom thermostat into OFF mode with a wired condensate overflow or window/door contact sensor (i.e., “CCO Sensor”).

Important Note

Lutron’s myRoom system is not responsible for turning off the HVAC equipment if an overflow occurs. The Lutron system will only provide alerts to the myRoom Vue software and lock out the Palladiom thermostat into OFF mode. The overflow sensor should have a direct way to turn off the HVAC equipment.

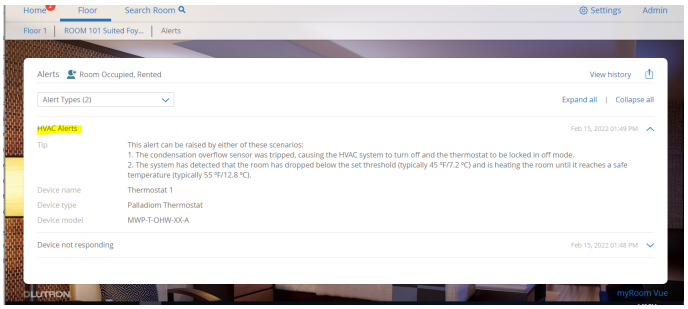
Applications

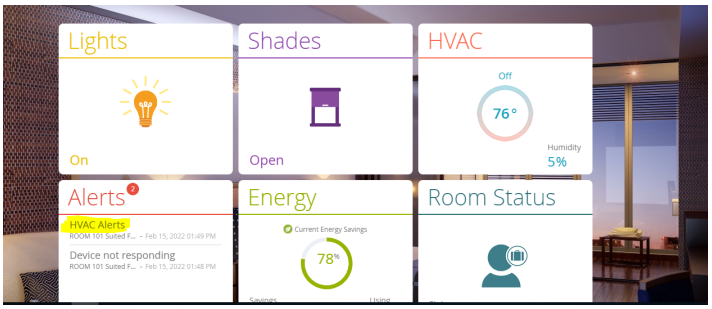
Both applications below are described further in this document.

1. Connecting to an FCU controller: Connect the Contact Closure Output (CCO) sensor to the FCU controller’s Contact Closure Input (CCI) (See Required Software). Applicable for both myRoom Prime and Plus systems.
   Note: The window/door sensor is only able to be connected to the SMC in myRoom Prime systems. Connect the window/door sensor to a QSE-IO in myRoom Plus systems.
2. Connecting to a QSE-IO: This is applicable for when the FCU controller is not part of the system or not as accessible as a QSE-IO. Applicable to myRoom Plus systems only.

Sequence of Operations

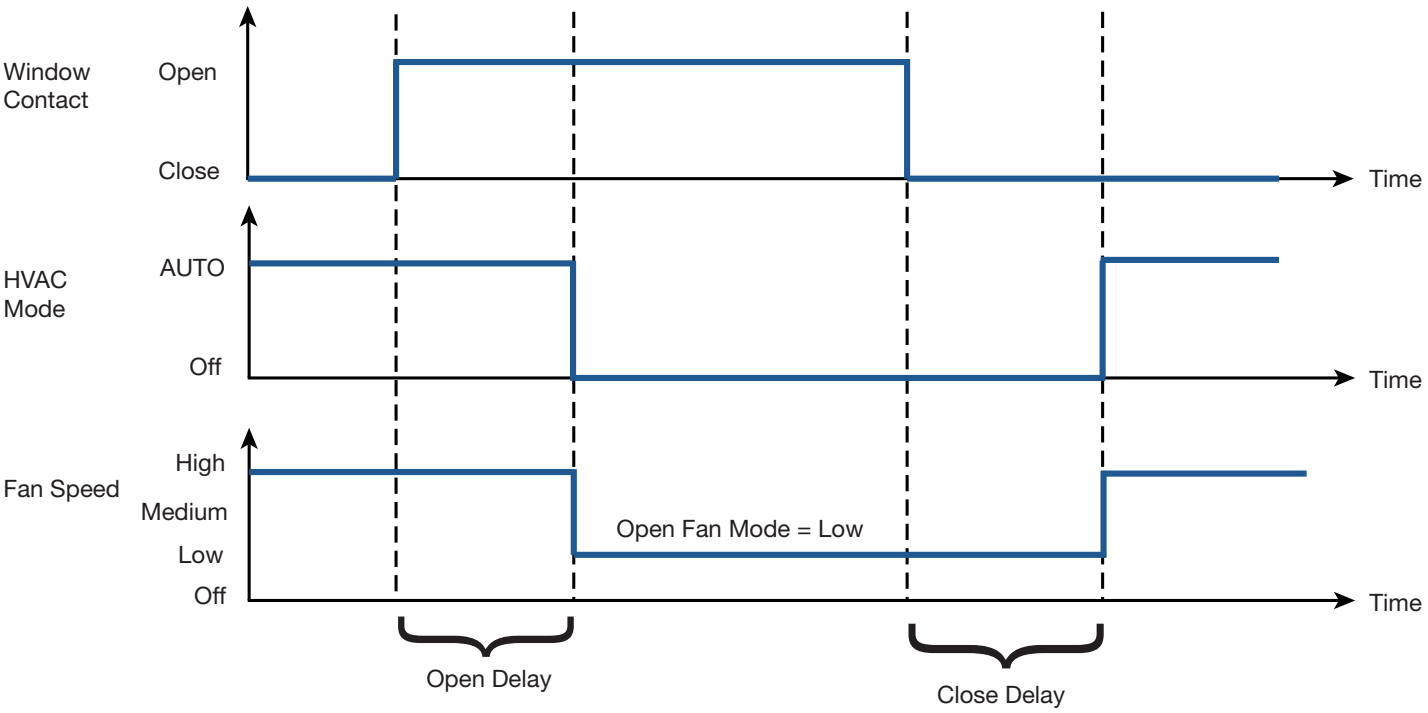
1. When the CCO sensor opens, the FCU turns off (done directly by the sensor).
2. After a pre-configured delay (to prevent false-trips), the Palladiom thermostat locks to OFF mode.
   a. The fan may operate at a pre-configured speed.
   b. The myRoom Palladiom thermostat locks out any button presses and system commands.
      i. The Main Palladiom thermostat’s backlights flash with each button press to indicate the thermostat is locked.
   d. Button presses made on any companion myRoom thermostats will be ignored and changed back on the thermostat.
3. An alert displays in myRoom Vue in the Alerts section.
   a. No configuration is required to display the alerts in myRoom Vue.
   b. An example of the alert in myRoom Vue:





4. The FCU’s ability to heat or cool remains disabled, and the Palladiom thermostat will remain locked until the CCO sensor closes.
5. After the CCO sensor closes, the Palladiom thermostat unlocks into normal mode after a preconfigured delay to prevent false-trips.
6. The alert in myRoom Vue clears when the Palladiom thermostat unlocks.

Sequence of Operations (continued)



Required Software

Thermostat compatible versions:
- Gen 1 myRoom Palladiom thermostat: Version 4.012 or newer. Alerts will not appear in myRoom Vue with this Palladiom thermostat version.
- Gen 2 myRoom Palladiom thermostat: Version 5.014 or newer.

FCU controller compatible versions:
- SMC53-HOSP: V1012 or later.
- SMC55-HOSP: V5011 or later.
- SMC53-MYRM & SMC55-MYRM: All versions.

If a software upgrade is required, please contact Lutron Customer Support.

Connecting the CCO sensor to the FCU Controller's CCI

CCO Sensor Installation

Connect CCO sensor to the FCU controller, as described below:

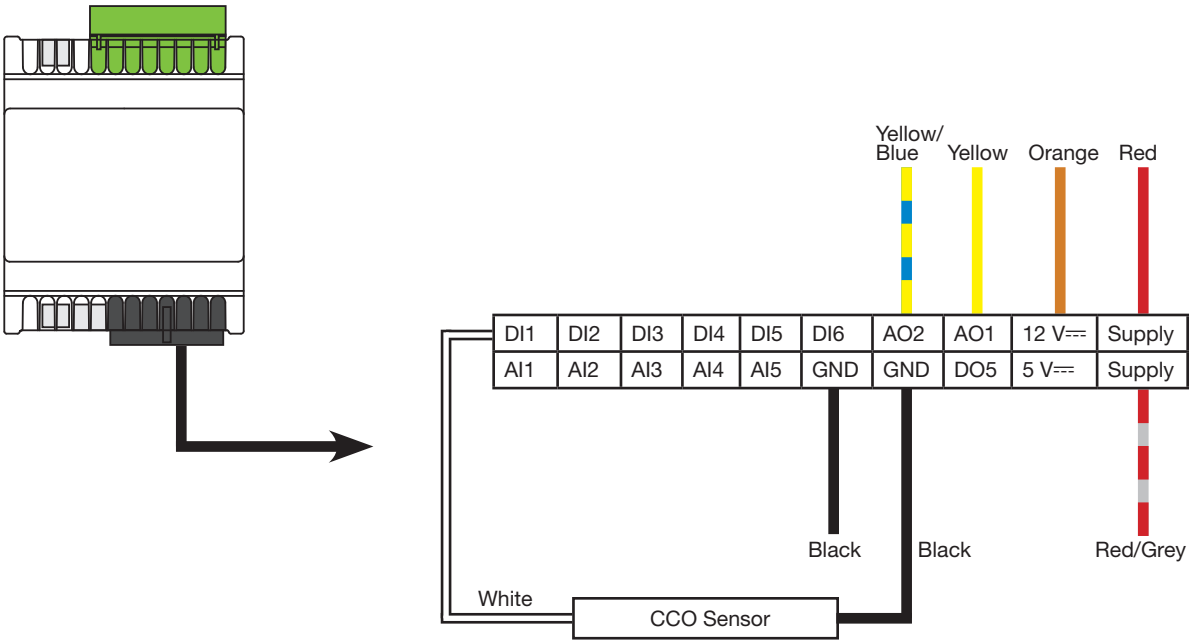
Step 1: Acquire a wired magnetic CCO sensor (type SPST or SPDT).

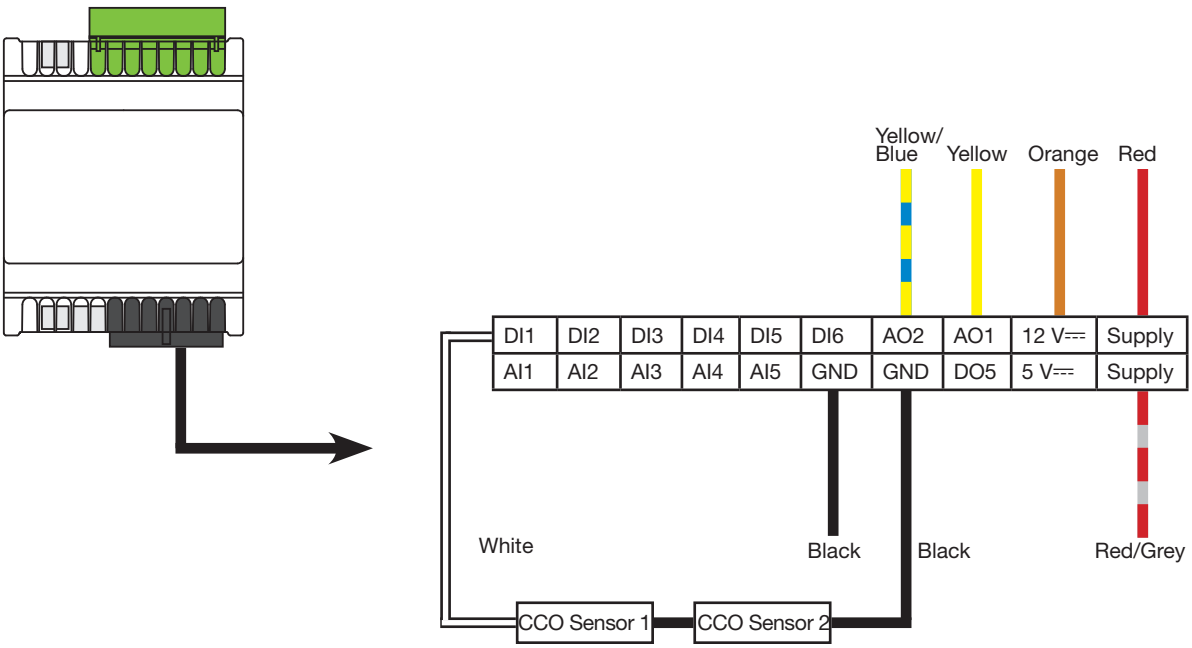
Step 2: If using a window/door CCO sensor, install the sensor to the window or door per the manufacturer's instructions.

Step 3: Connect either lead of CCO sensor to the white wire on the FCU controller harness as shown in the first image below.

Step 4: Connect the other lead to either of the 2 black wires on the FCU controller harness.

If multiple CCO sensors are used, wire the leads in series, so that any break in the line breaks the entire circuit as shown in the second image below.





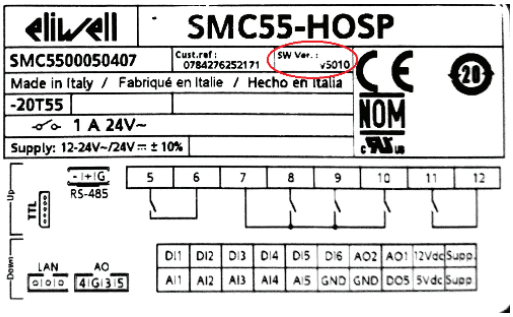
Connecting the CCO sensor to the FCU Controller's CCI (continued)

Configuring the FCU Contact Closure Input (CCI)

Follow the "Thermostat and FCU controller Configuration Instructions" at www.lutron.com to set the following parameters. Refer to the Advanced Configuration Parameters.

1. Set advanced config parameter 64 (CCI type) to either 1 (Normally open) or 2 (Normally closed).
   a. By default, it is set to 0 (disabled).
2. (Optional) Set advanced config parameter 65 (Open delay) in seconds to desired value. This value specifies the required time in seconds after which the HVAC turns off when the window or door is opened.
   a. By default, it is set to 10 seconds.
3. (Optional) Set advanced config parameter 66 (Closed delay) in seconds to desired value. This value specifies the required time in seconds after which the HVAC turns on when the window or door is closed.
   a. By default, it is set to 1 second.
4. (Optional) Set advanced config parameter 67 (Open fan mode) to desired value. This value specifies the fan mode or speed for the FCU's fan after the time mentioned in advanced config 65 is elapsed.
   a. By default, it is set to 0 (OFF)

If the above values aren't available on thermostat or the CCI isn't working as expected, please check if the firmware requirement mentioned above is met by looking at the label on the top-right corner of FCU controller as shown in image below.



Connecting the CCO sensor to the FCU Controller's CCI (continued)

Testing

Once the FCU CCI is wired and configured, it is recommended to test the setup.

Action	Expected result	Pass/Fail
Close the door or window to which the CCI sensors are attached and wait for the time specified in advanced config parameter 66.	No observable result.	
On the myRoom Palladiom thermostat press the fan button to toggle the fan speed.	On the palladiom thermostat screen, we can observe that the fan speed icon cycles from low speed, medium speed, to high speed. **Note:** Certain speeds may not be supported by the equipment and the equipment may remain in the supported fan speed.	
On the myRoom Palladiom thermostat press the Power button to turn on the FCU.	Depending on the room temperature and the set point, the FCU will start to either cool or heat.	
Open the door or window to which the CCI sensors are attached and wait for the time specified in advanced config parameter 65.	The FCU operation will switch to off from its previous state and fan speed will get switched to the speed specified in advanced config parameter 67.	
On the myRoom Palladiom thermostat press the fan button to toggle the fan speed.	The Palladiom thermostat display flashes and doesn't allow the fan speed to be changed.	
On the myRoom Palladiom thermostat press the Power button to turn on the FCU.	The Palladiom thermostat display flashes and doesn't allow the Op Mode to be changed.	

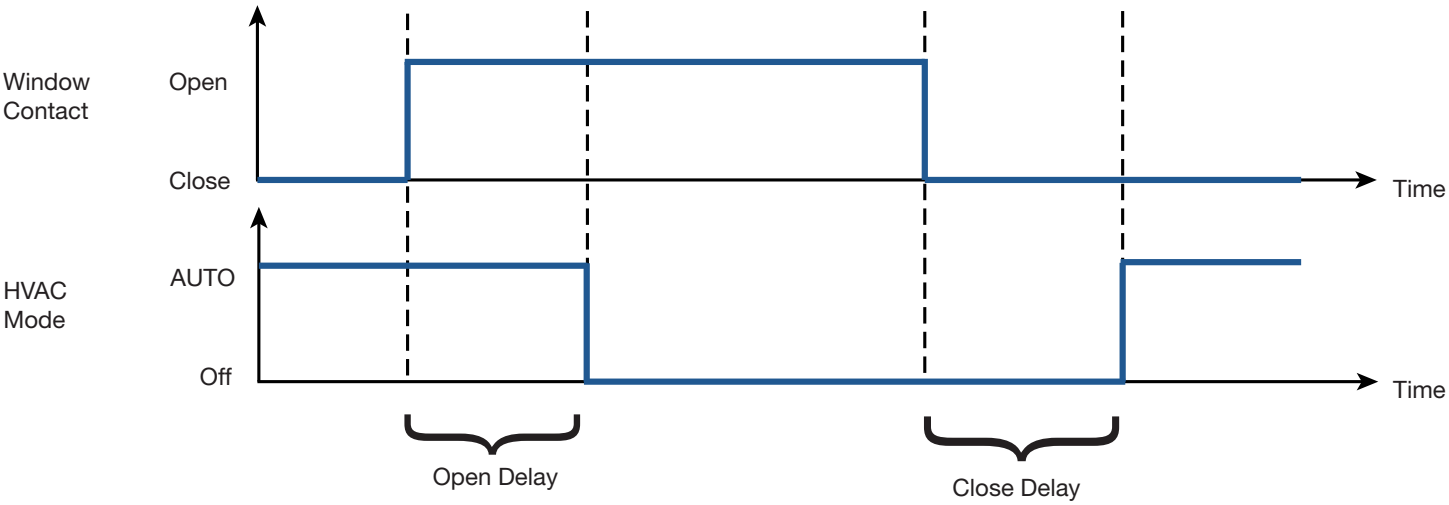
Troubleshooting

- If the Palladiom thermostat display flashes and doesn't allow changes, or if the HVAC doesn't turn on while the door is closed, ensure the correct CCI sensor type is programmed in advanced config parameter 64.
- If the HVAC does not turn off when the door is opened, ensure the correct CCI sensor type is programmed in advanced config parameter 64.

Connecting the CCO to a QSE-IO Control Interface's CCI

Operation

When the door or window contact sensor wired to the CCI of the QSE-IO is opened, the HVAC equipment connected to the myRoom Palladiom thermostat will turn off and the thermostat will lock. The HVAC will remain off and the Palladiom thermostat will remain locked until the door/window contact sensor has been closed.



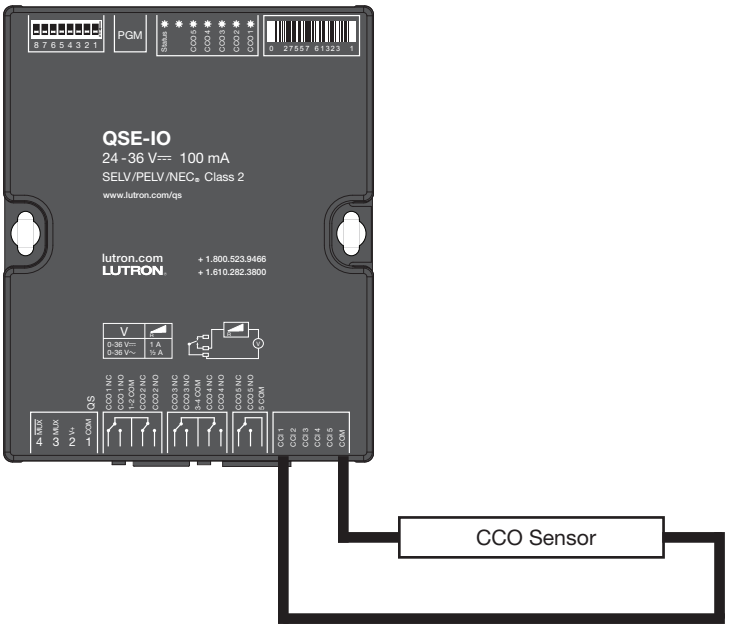
Connecting the CCO to a QSE-IO Control Interface's CCI (continued)

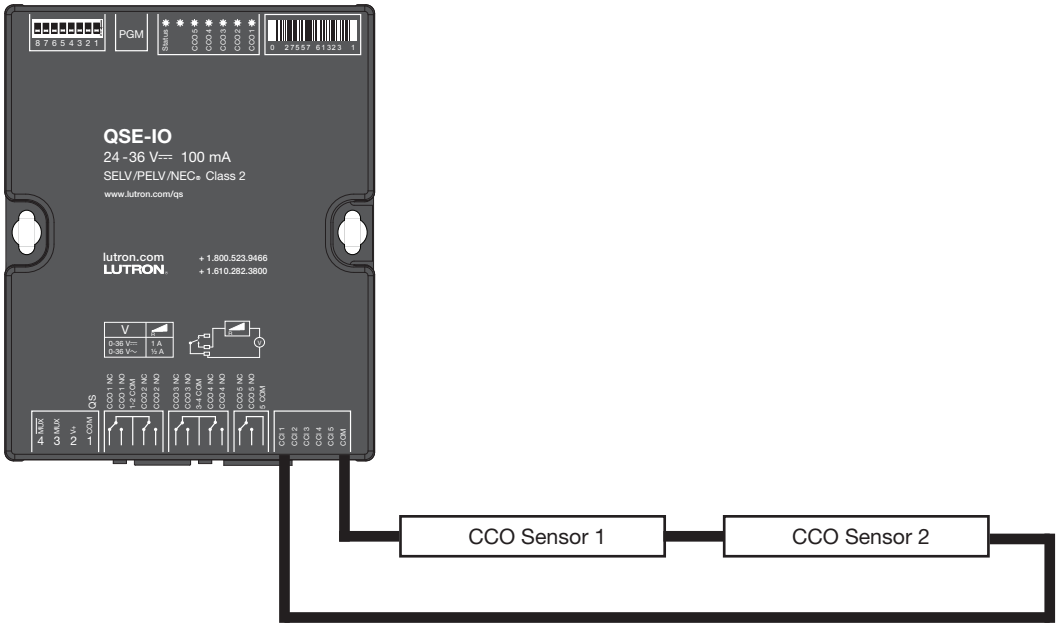
Window/Door Contact Sensor Installation

The window or door contact sensor must be connected to a QSE-IO CCI to use this feature. Follow the steps below.

- Acquire a wired magnetic contact sensor (type SPST or SPDT).
- Install the sensor to the window or door per the manufacturer's instructions.
- Connect either lead of contact sensor to the COM of the QSE-IO as shown in the figure below.
- Connect the other end to any of the available CCI inputs as shown in the image below. The selected input will have to be configured correctly to control the HVAC and lock/unlock the thermostat based on the CCI input.

If multiple door or window sensors are used, wire the leads in series, so that any break in the line breaks the entire circuit as shown in the second image below.





Connecting the CCO to a QSE-IO Control Interface's CCI (continued)

Configuring the contact closure inputs of QSE-IO using myRoom GUI

Confirm the thermostat is assigned to the correct zone. Perform the following steps and then transfer the database to the GCU-HOSP.

- In tab Design -> Controls tab, add the master "thermostat 1" to area "Floor1"
- In tab Design -> Equipment tab, add a "Guestroom Control Unit" and "Digital IO/ QSE-IO" to area "Floor1"
- In tab Design -> Link assignment tab, assign both the thermostat and the QSE-IO to the GCU processor link
- In tab Design -> Subsystem, add the Floor1 GCU1 to the subsystem
- Activate the processor, devices and other devices added to the system
- In tab Program -> Devices, switch to HVAC zones as shown in Figure 1 below

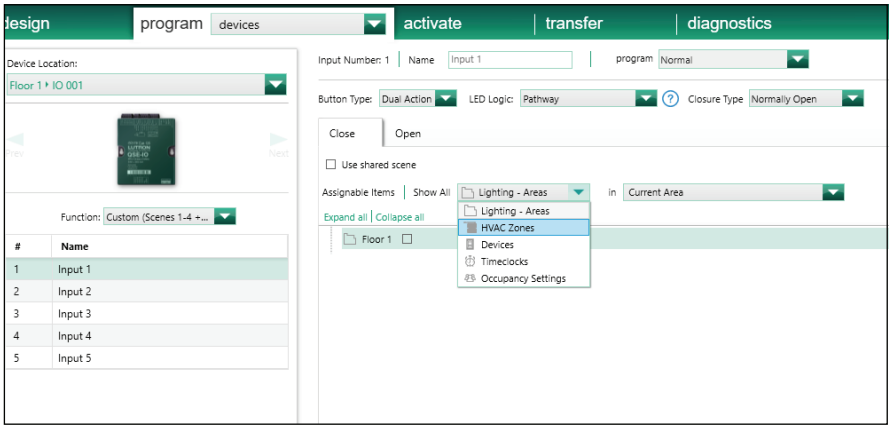


Figure 1

- Select Input "n" where n is the CCI to which the door/window sensor is wired.
- In the Close tab, select the desired settings to apply when the door/window is Closed as shown in Figure 2. For the purpose of this app note, it is desired to leave the thermostat in Auto mode of operation when the door is closed.

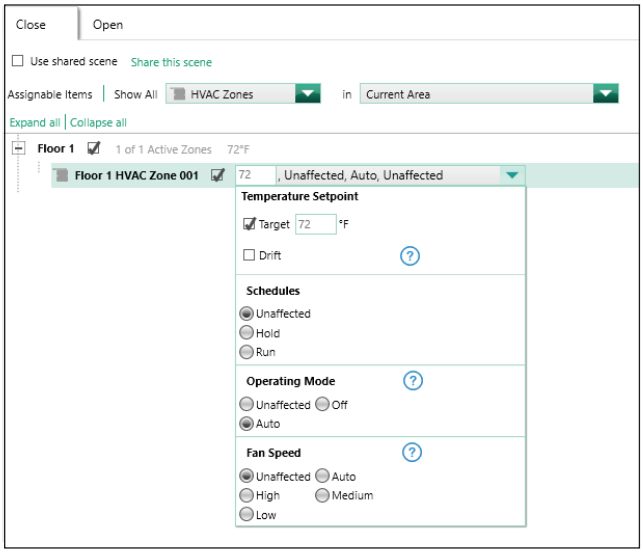


Figure 2

Connecting the CCO to a QSE-IO Control Interface's CCI (continued)

Configuring the contact closure inputs of QSE-IO using myRoom GUI (continued)

- In the Open tab, select the desired settings to apply when the door/window is Opened as shown in Figure 3. For the purpose of this app note, it is desired to leave the thermostat in Off mode of operation when the door is open.

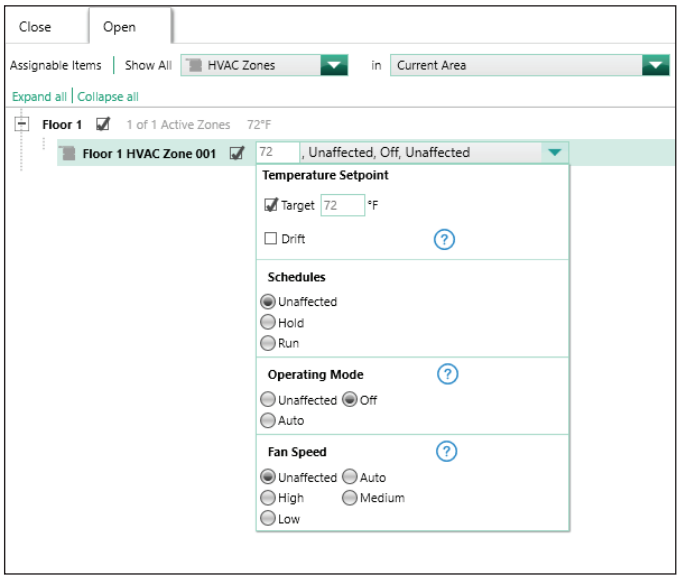


Figure 3

If it is desired to lock out the thermostat when the door/window is opened, so the guest/user isn't allowed to change the settings, follow the below steps.

- Select Devices as shown in Figure 4.

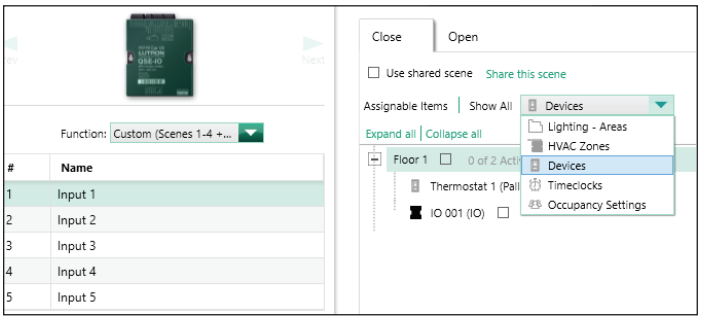


Figure 4

Connecting the CCO to a QSE-IO Control Interface's CCI (continued)

Configuring the contact closure inputs of QSE-IO using myRoom GUI (continued)

- Set the thermostat to be Unlocked when the door/window is Closed as shown in Figure 5.

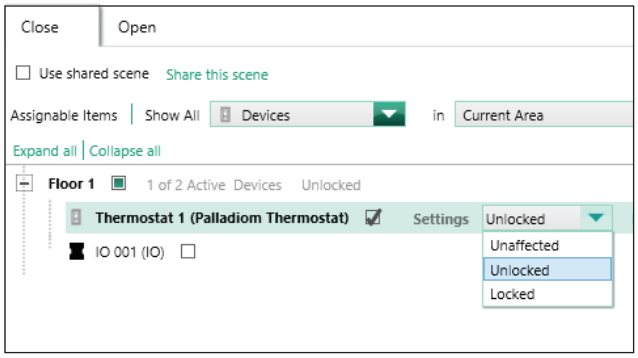


Figure 5

- Set the thermostat to be Locked when the door/window is Opened as shown in Figure 6.

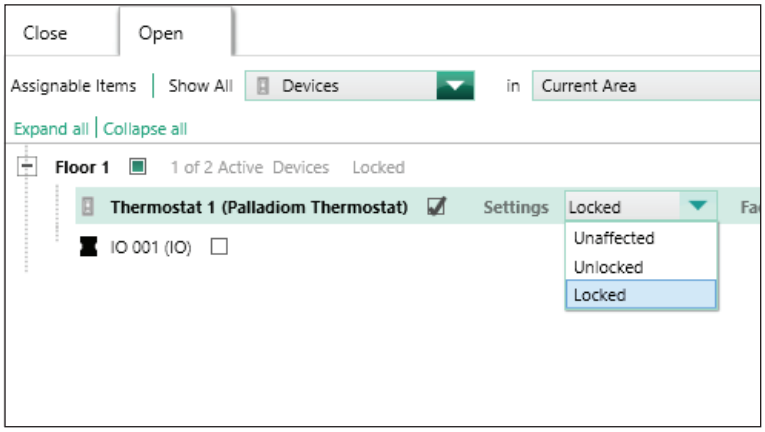


Figure 6

- Transfer the database and perform complete system testing as explained on the next page.

Connecting the CCO to a QSE-IO Control Interface's CCI (continued)

Testing

Once the FCU CCI is wired and configured, it is recommended to test the setup.

Action	Expected result	Pass/Fail
Close the door or window to which the CCI sensors are attached and wait for the time specified in advanced config parameter 66.	No observable result.	
On the myRoom Palladiom thermostat press the fan button to toggle the fan speed.	On the palladiom thermostat screen, we can observe that the fan speed icon cycles from low speed, medium speed, to high speed. **Note:** Certain speeds may not be supported by the equipment and the equipment may remain in the supported fan speed.	
On the myRoom Palladiom thermostat press the Power button to turn on the FCU.	Depending on the room temperature and the set point, the FCU will start to either cool or heat.	
Open the door or window to which the CCI sensors are attached and wait for the time specified in advanced config parameter 65.	The FCU operation will switch to off from its previous state and fan speed will get switched to the speed specified in advanced config parameter 67.	
On the myRoom Palladiom thermostat press the fan button to toggle the fan speed.	The Palladiom thermostat display flashes and doesn't allow the fan speed to be changed.	
On the myRoom Palladiom thermostat press the Power button to turn on the FCU.	The Palladiom thermostat display flashes and doesn't allow the Op Mode to be changed.	

Troubleshooting

- If the Palladiom thermostat display flashes and doesn't allow changes, or if the HVAC doesn't turn on while the door is closed, ensure the correct CCI sensor type is programmed in "Closure Type" as shown in Figure 7 below.
- If the HVAC does not turn off when the door is opened, ensure the correct CCI sensor type is programmed in "Closure Type" as shown in Figure 7 below.

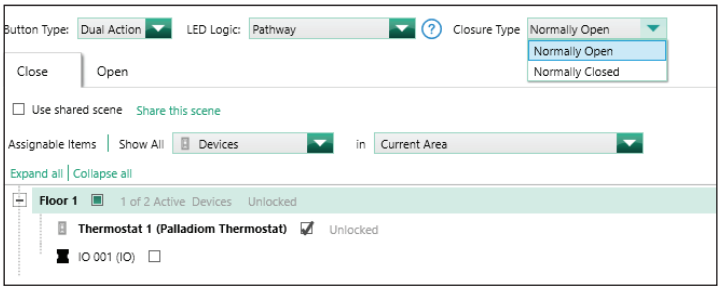


Figure 7

Lutron Contact Numbers

WORLD HEADQUARTERS
USA
Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299
TEL: +1.610.282.3800
FAX: +1.610.282.1243

support@lutron.com

www.lutron.com/support

North & South America
Customer Assistance
USA, Canada, Caribbean:
1.844.LUTRON1 (1.844.588.7661)
Mexico:
+1.888.235.2910
Central/South America:
+1.610.282.6701

EUROPEAN HEADQUARTERS
United Kingdom
Lutron EA Limited
125 Finsbury Pavement
4th floor, London EC2A 1NQ
United Kingdom
TEL: +44.(0)20.7702.0657
FAX: +44.(0)20.7480.6899
FREEPHONE (UK): 0800.282.107
Technical Support: +44.(0)20.7680.4481

lutronlondon@lutron.com

ASIAN HEADQUARTERS
Singapore
Lutron GL Ltd.
390 Havelock Road
#07-04 King's Centre
Singapore 169662
TEL: +65.6220.4666
FAX: +65.6220.4333
Technical Support: 800.120.4491

lutronsea@lutron.com

Asia Technical Hotlines
Northern China: 10.800.712.1536
Southern China: 10.800.120.1536
Hong Kong: 800.901.849
Indonesia: 001.803.011.3994
Japan: +81.3.5575.8411
Macau: 0800.401
Taiwan: 00.801.137.737
Thailand: 001.800.120.665853
Other Countries: +65.6220.4666