LG VRF – Lutron Palladiom Thermostat Integration

LG
Life's Good

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1.0 Overview

Lutron Electronics and LG, a leading supplier of Variable Refrigerant Flow (VRF) technology, have integrated the sleek, intuitive design of the Palladiom Thermostat for control of LG Systems. This integration is achieved by using a Palladiom Thermostat, a Lutron Fan Coil Unit (FCU) Controller (myRoom) or Palladiom HVAC controller (HomeWorks QS), and an LG Dry interface. This integration is available for Lutron projects in the United States.*

- LG PDRYCB**3**00 with a Lutron FCU controller or Palladiom HVAC controller and a Palladiom thermostat
- LG PDRYCB**5**00 with a HomeWorks QS or myRoom Palladiom thermostat

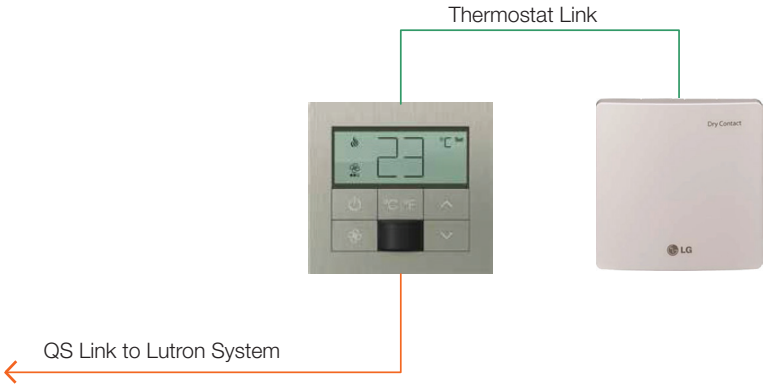
Notes:

1. This integration is only available if the indoor unit supports the PDRYCB500 controller. Contact LG technical support to confirm the LG PDRYCB500 interface is compatible with the LG VRF indoor unit.
2. When the Palladiom thermostat is connected to an PDRYCB500 controller to control LG VRF equipment, other thermostats may not be connected to the indoor unit. Any setting changes made using another thermostat (e.g., fan mode or temperature setpoint) will be overwritten by the Palladiom thermostat.
3. The Palladiom thermostat cannot display any HVAC errors or alerts from the LG unit.
4. The HomeWorks QS Palladiom thermostat requires the zone air temperature to be reported by the LG equipment. The HomeWorks QS Palladiom thermostat's internal temperature sensor is disabled when connected to the PDRYCB500. The inbuilt temperature sensor of the myRoom Palladiom thermostat can be used to report the zone temperature to the LG equipment. Requires myRoom Palladiom thermostat firmware v5.018 or later.

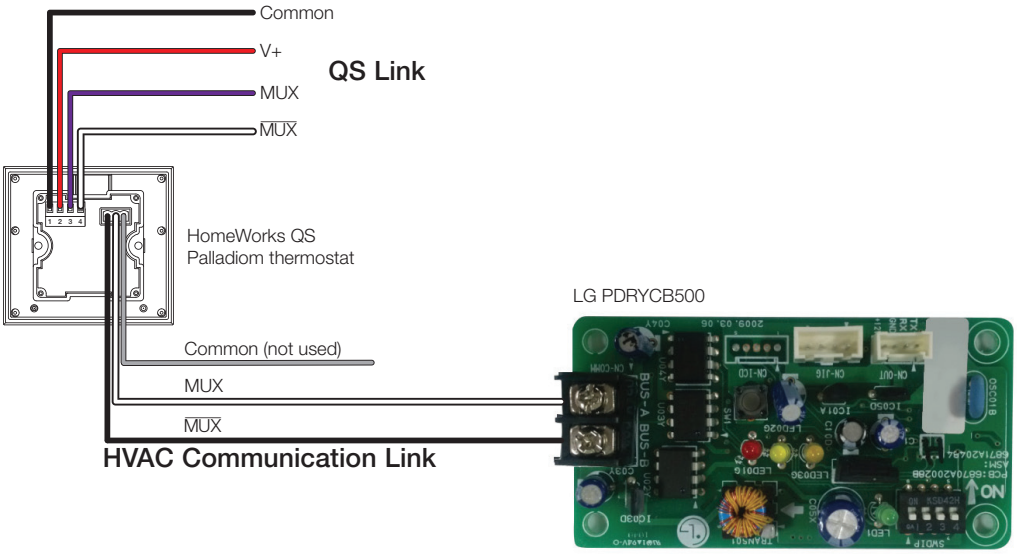
2.0 LG PDRYCB500 (Recommended)

2.1 System Topology

The system includes a Palladiom thermostat connected to the LG Dry Contact interface.



2.2 Wiring Diagram (myRoom or HomeWorks QS Palladiom Thermostat with LG PDRYCB500 Controller)



Terminal Connection Mapping

Palladiom Thermostat	LG-PDRYCB500 Interface
$\overline{\text{MUX}}$	BUS-B
MUX	BUS-A
COM	(Not Connected)

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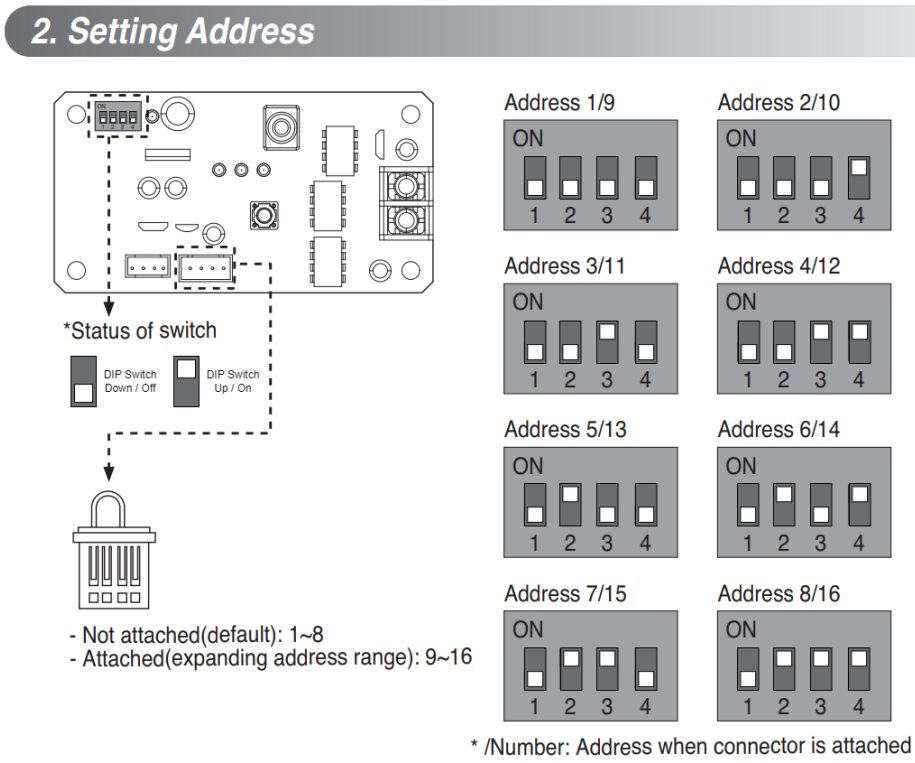
2.3 DIP Switch Configuration for LG PDRYCB500 to Set the Communication Address

The image below shows the DIP switch settings that must be set on the PDRYCB500 controller. If the wrong DIP switch settings are made, communication with indoor unit will fail.



* For address "1", all four DIP switches are down/off.

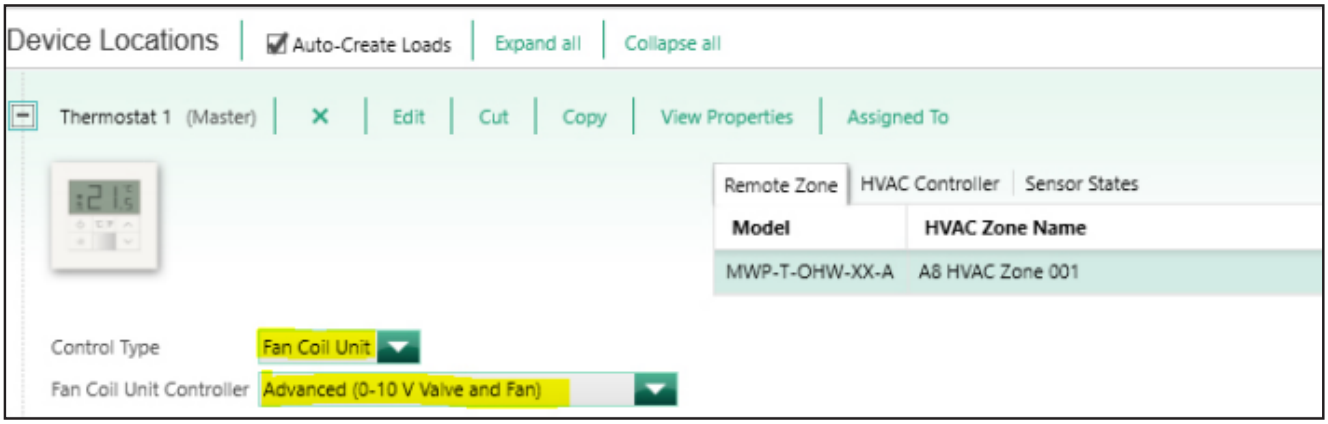
Note: After changing the DIP switch on LG-PDRYCB500, it must be power cycled for the address to take effect.

2.4 Configuring the Thermostat to Communicate with the PDRYCB500

Follow the directions on the thermostat install guide to enter the controller selection menu on the Palladiom thermostat and set the correct controller and controller address for the LG PDRYCB500. See "myRoom Palladiom Thermostat Install ", P/N 041670, on www.lutron.com

2.5 Configuring the myRoom Palladiom Thermostat in a myRoom Database

While the LG PDRYCB500 is not specifically identified in the design tab in the myRoom GUI commissioning software, it can still be integrated with the thermostat. To ensure the thermostat can communicate with the LG PDRYCB500 controller, select the **Control Type** and **Fan Coil Unit Controller** as shown below.



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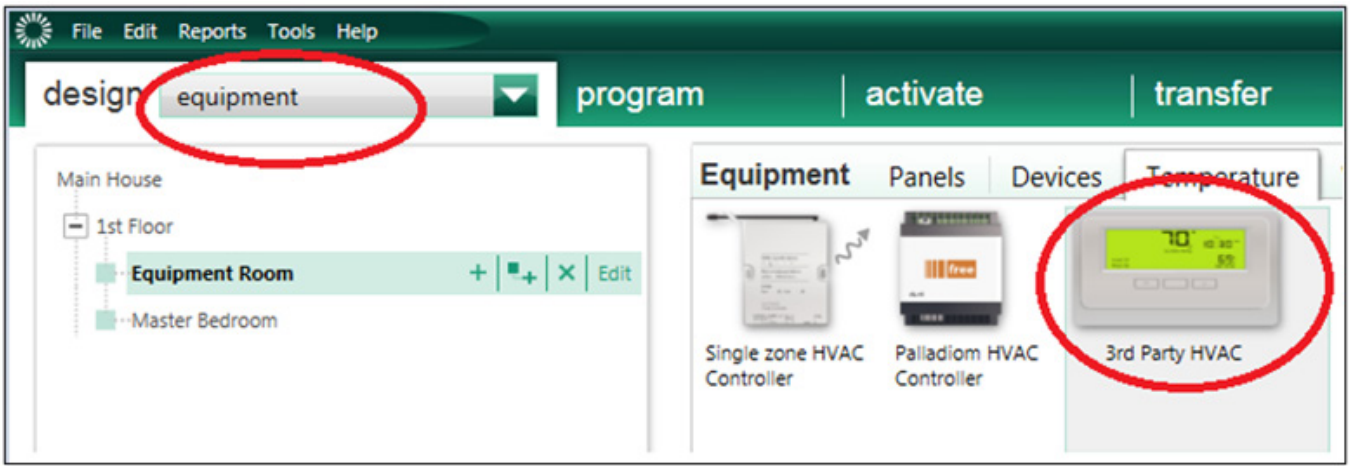
2.6 Implementing LG PDRYCB500 into a HomeWorks QS System

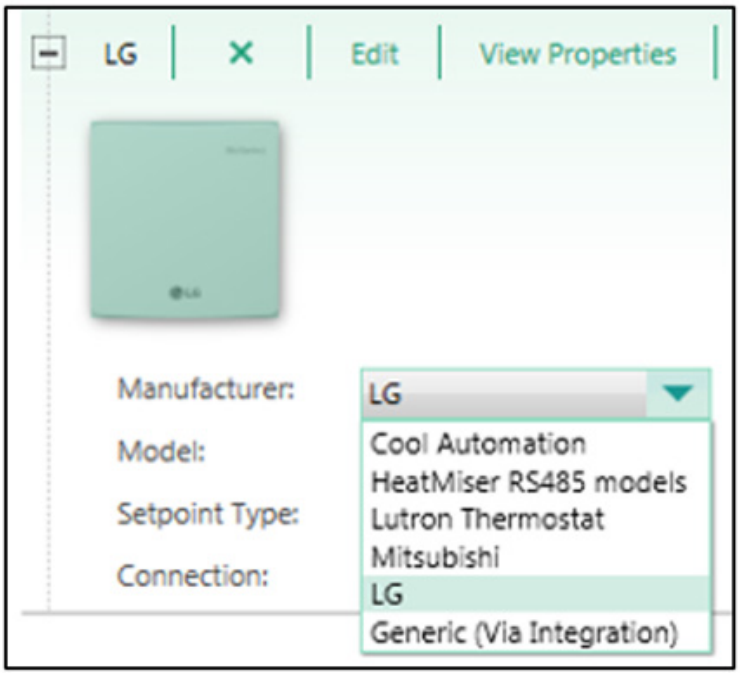
2.6.1 Adding PDRYCB500 to a HomeWorks QS Database

To add LG equipment to the database (HomeWorks QS software version 12.0 or newer required), go to the **design** tab of the software and use the drop-down menu to select **equipment**. Next, find the **3rd Party HVAC** device in the toolbox and click "**+**" to add the device using HomeWorks QS software version 12.0 or newer.

Note: The default toolbox does not contain this device by default, so it is necessary to edit or create a toolbox to include the 3rd Party HVAC device.



Once the 3rd Party HVAC control has been added to the **Equipment Locations** area, provide a name for the HVAC control and select **LG** as the **Manufacturer**.



When adding the 3rd Party HVAC device, a zone is automatically added by default to the area where the LG interface is located. To move that HVAC zone to the area where the PDRYCB500 is located, cut/paste the HVAC zone to the desired area.

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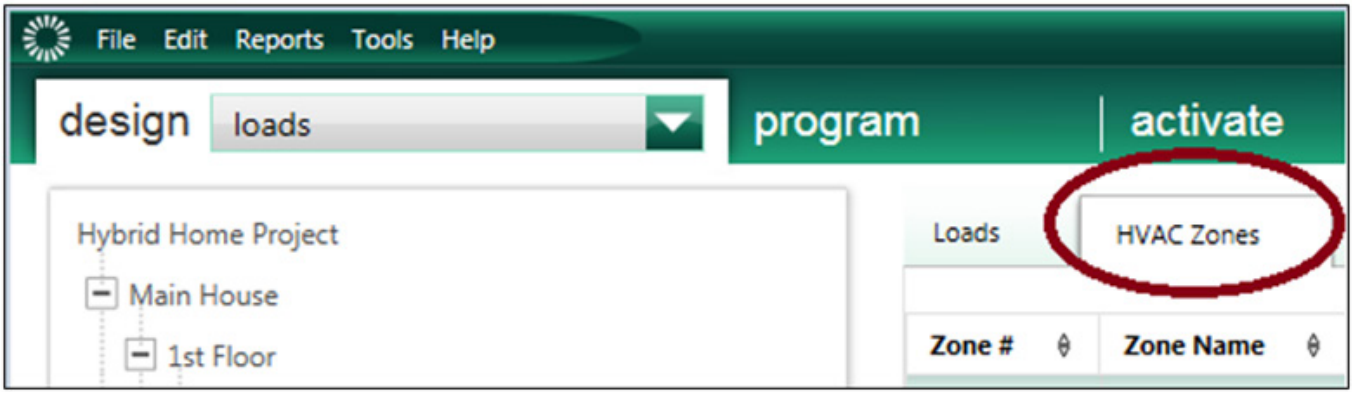
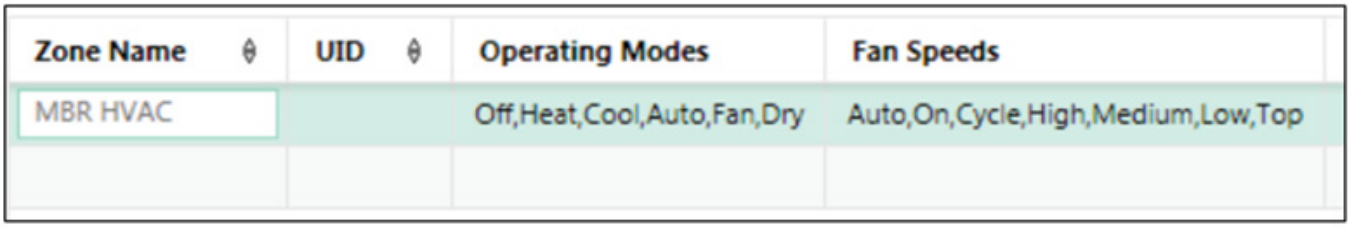
2.6.2 Editing the HVAC Zone

To edit a 3rd Party HVAC Zone in the database, go to the **design** tab of the HomeWorks QS software and use the drop-down menu to select **loads**. Next, find the **HVAC Zones** tab on the right-hand side of the screen.



For each HVAC zone added, provide a **Zone Name**, select **Operating Modes**, and select the **Fan Speeds** that are applicable. Unchecked modes will be hidden when using the Lutron Connect app. It is important to only check the modes that are necessary so that the app is simpler for the user. Choosing a user-friendly zone name is important for the sake of simplicity.



Zone Name	UID	Operating Modes	Fan Speeds
MBR HVAC		Off,Heat,Cool,Auto,Fan,Dry	Auto,On,Cycle,High,Medium,Low,Top

UID reflects the indoor unit address. All indoor units must be provided with addresses depending on specific AC system type. This can be done manually by the integrator. Addresses should be set by a HVAC contractor and the integrator should acquire the addresses from the contractor.

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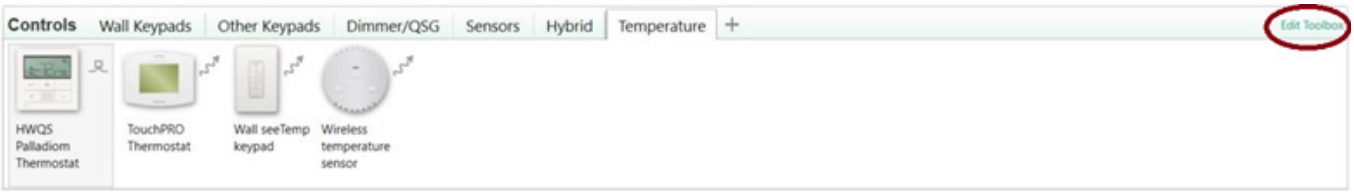
2.6.3 Assigning a Palladiom Thermostat to Control the HVAC Zone

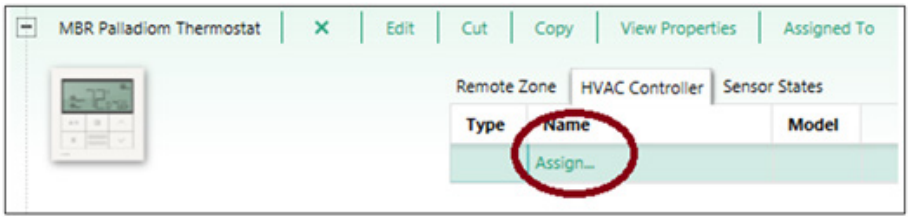
The Palladiom thermostat is a QS wired link device which can act as a remote thermostat control. It uses one address of the 99 available addresses on a QS link. There can be up to 32 Palladiom thermostats per QS link. When using a Palladiom thermostat with LG equipment, the sensor within the Palladiom thermostat is not used by the system.

The Palladiom thermostat can be added to the project by navigating to **design** > **controls** and selecting the desired item from the toolbox. If the items do not show in the default **Temperature** tab, they can be added by clicking **Edit Toolbox**.

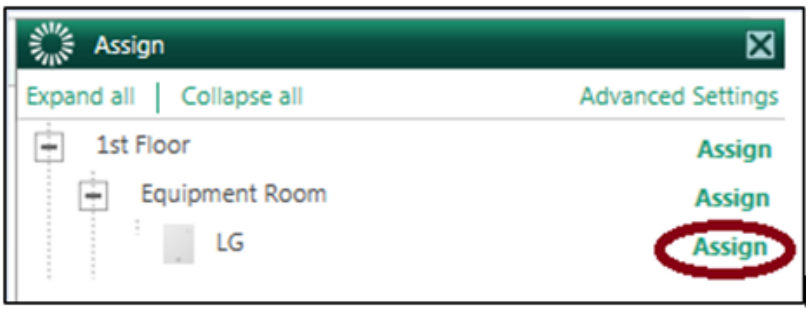


Select the correct device location from the Area Tree. Hover over the control and click "**+**" to add the control to the area.

Click **Assign...** under the **HVAC Controller** field.



Click **Assign** to assign the controller to the Palladiom thermostat



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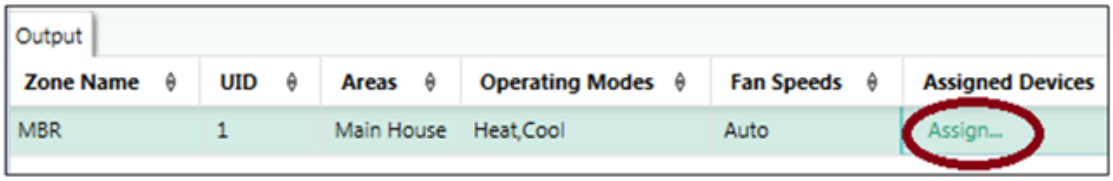
2.6.3 Assigning a Palladiom Thermostat to Control the HVAC Zone (continued)

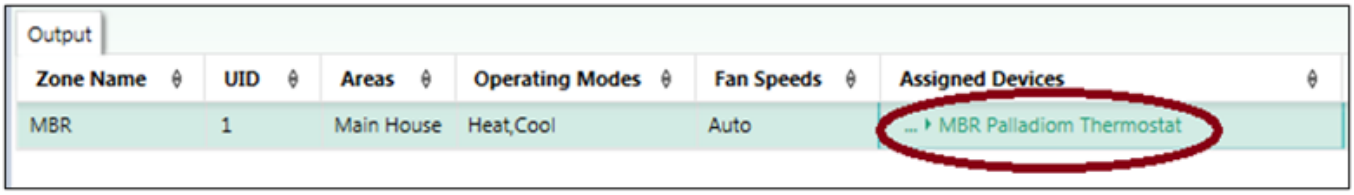
Navigate to **design** > **equipment** and select the LG controller to assign to the Palladiom thermostat.

Click **Assign...** under the **Assigned Devices** field.



Click **Assign** to assign the Palladiom thermostat to the LG controller.

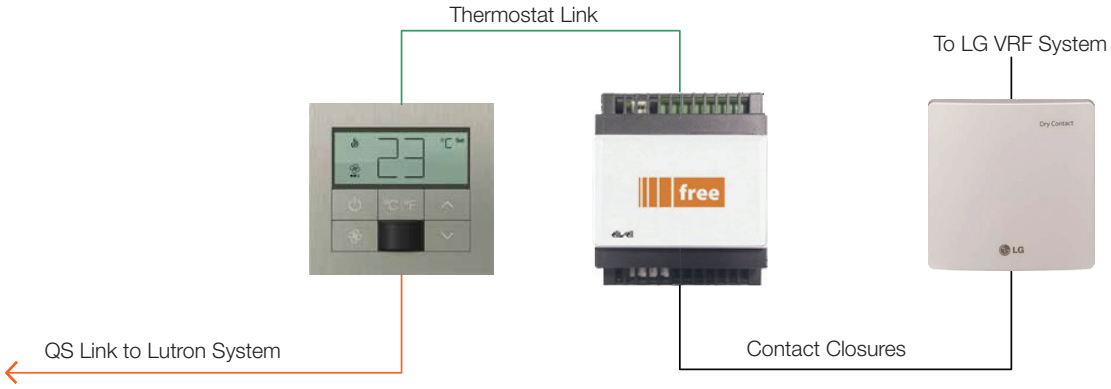
The name of the remote temperature control will now be visible in the **Assigned Devices** field.



3.0 LG PDRYCB300

3.1 System Topology

The system includes a Palladiom thermostat with the FCU controller (SMC55-MYRM) or Palladiom HVAC controller (SMC55-HWQS) connected to the LG Dry Contact interface.



* LG offers multiple other dry contact closure interfaces in International regions. The Lutron Palladiom thermostat has not been tested to work with these interfaces. Please contact LG for further information regarding compatibility.

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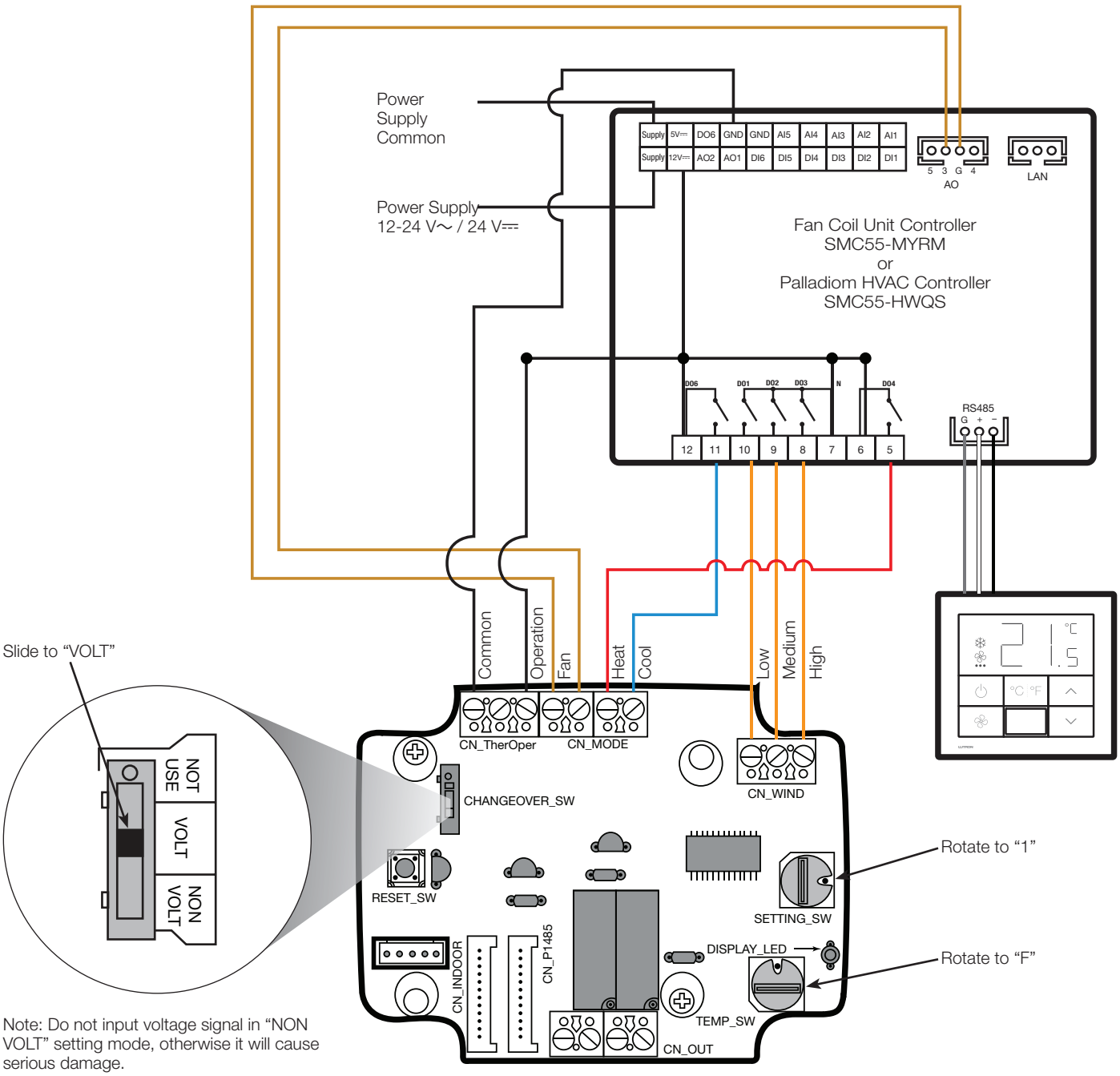
3.2 Wiring Diagrams

3-Speed Fan
Heat and Cool



Note: Do not input voltage signal in "NON VOLT" setting mode, otherwise it will cause serious damage.

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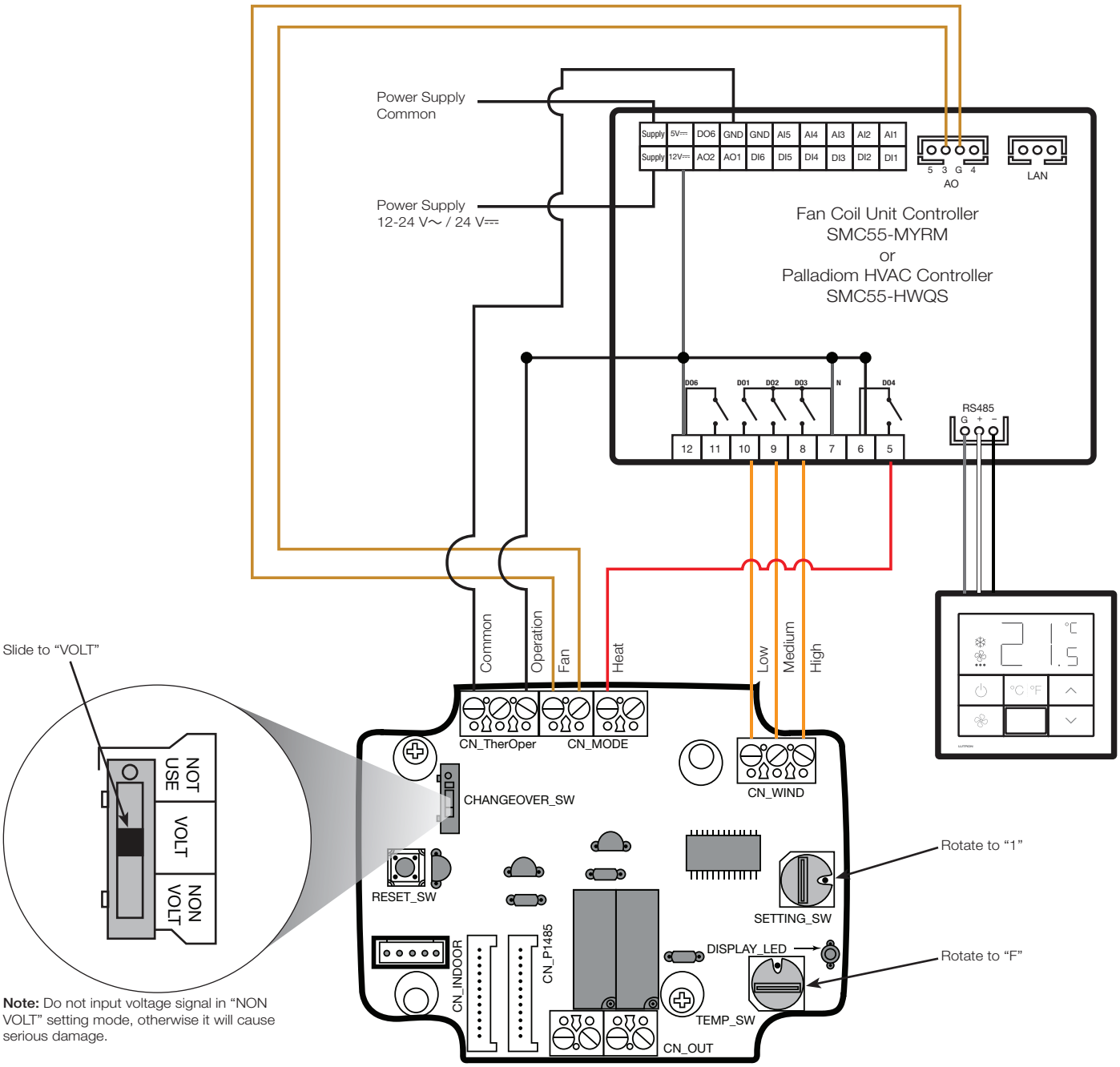
3.2 Wiring Diagrams (continued)

3-Speed Fan
Heat Only



Note: Do not input voltage signal in "NON VOLT" setting mode, otherwise it will cause serious damage.

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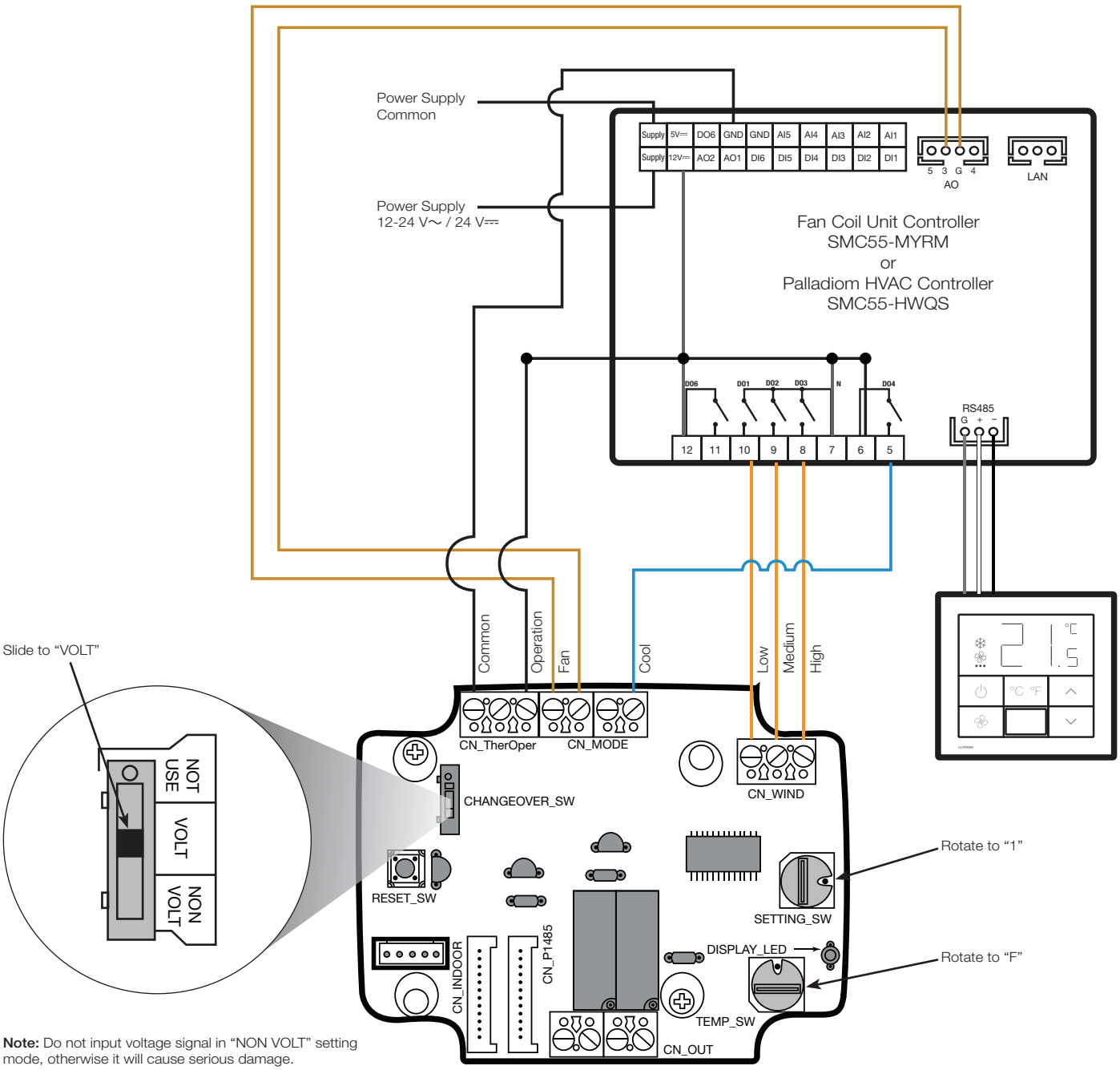
3.2 Wiring Diagrams (continued)

3-Speed Fan
Cool Only



Note: Do not input voltage signal in "NON VOLT" setting mode, otherwise it will cause serious damage.

3.3 Design Considerations

- In heat only or cool only applications, the FCU controller and Palladiom HVAC controller must be configured for heating only or cooling only.
- The Palladiom HVAC controller must be configured to control FCUs.
- The PDRYCB300 interface should be supplied by your local LG distributor.
- The FCU controller must be model SMC55-MYRM from Lutron.
- The Palladiom HVAC controller must be model SMC55-HWQS from Lutron.
- Use one PDRYCB300 interface per LG VRF system controlled by the Palladiom thermostat.
- Power supply is required and field supplied by others.
- Use 18 AWG (1.0 mm2) wire between PDRYCB300 and Lutron controller, maximum 500 ft (152 m).
- Lutron myRoom systems and Palladiom thermostat must be programmed by a trained Lutron service engineer or an authorized distributor.
- Lutron HomeWorks QS systems and Palladiom thermostat must be programmed by a qualified system programmer.
- A trained LG HVAC professional may change the PDRYCB300 configurations based on user preference.

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