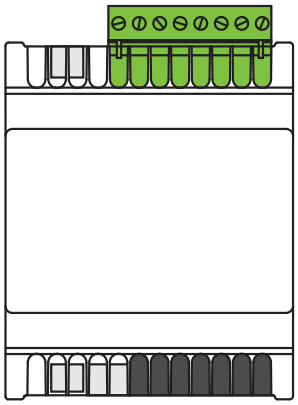
3691130b 1 11.19.20

myRoom Fan Coil Unit Controller



The Fan Coil Unit (FCU) Controller is designed for control of 2-pipe and 4-pipe fan coil units. The Fan Coil Unit Controller interfaces with the myRoom Palladiom QS Thermostat.

Model Numbers

SMC53-MYRM – Basic fan coil unit controller
5 relay output

SMC55-MYRM – Advanced fan coil unit controller
5 relay and (3) 0–10 V⎓ output

Features

- Use with the myRoom Palladiom QS thermostat.
- Controls 2-pipe and 4-pipe fan coil units
  - On/Off valves
  - 0–10 V⎓ valves (SMC55-MYRM only) — requires a separate 24 V⎓ power supply such as a Lutron MQSPS-DH-1-30 or equivalent[1] to power the SMC controller[4]
  - 3-speed fan control
  - 0–10 V⎓ fan control (SMC55-MYRM only)— requires a separate 24 V⎓ power supply such as a Lutron MQSPS-DH-1-30 or equivalent[1] to power the SMC controller[4]
- Supports a supply water temperature sensor for auto cool/heat changeover with 2-pipe FCU.
- Supports an optional wired return air temperature sensor to allow for flexibility regarding thermostat installation location. The wired return air temperature sensor is used instead of the internal thermostat sensor.

Model Number	Operating Voltage	Relay Output		0–10 V⎓ Rating
		General Purpose	Fan Motor	
SMC53-MYRM	12–24 V~/24 V⎓[1]; 4 W/6 VA or 5 power draw units (PDU) on the QS link.[2]	24 V~/100 V~/ 120 V~/220–240 V~ 2 A maximum	100 V~/120 V~/ 220–240 V~ 2 FLA/ 12 LRA maximum[3]	Not Supported
SMC55-MYRM				Maximum 28 mA at 10 V⎓ outputs[4,5]

[1] A listed Class 2, LPS, or SELV <15 W limited energy supply should be used.
[2] For complete information, see the Power Draw Units on the QS Link Spec (Lutron P/N 369405) at www.lutron.com
[3] If the fan exceeds these ratings, interposing relays must be used between the FCU controller and the HVAC unit. Do not connect directly to capacitive loads.
[4] When controlling a 0–10 V⎓ fan or valve, if the fan or valve's 0–10 V⎓ common is connected to the FCU's 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCU's 24 V~ transformer. For more information, see Application Note #651 (048651) at www.lutron.com
[5] All three 0–10 V⎓ outputs cannot deliver more than 40 mA combined.

Job Name:	Model Numbers:	
Job Number:		

Model Compliance

Use the table below to identify which model(s) supports the HVAC system features. **All models currently only support Fan Coil Units. Contact Lutron if using a different HVAC system.**

System Configuration	Valve/Element Control	Fan Control (Fan Type)	2-Pipe/Single Thermal Type (2-pipe mode)	Basic Configuration Number	Basic Configuration Supported Models	
					SMC53x	SMC55x
• 4-pipe • 2-pipe cooling with resistive heating element	Two On/Off relays or floating point relays[1]	H/M/L Relays	N/A	01	✓	✓
		0—10 V⎓ Signal[2]	N/A	02		✓
	Two 0–10 V⎓ signals or one relay and one 0–10 V⎓[2]	H/M/L Relays	N/A	03		✓
		0—10 V⎓ Signal[2]	N/A	04		✓
• 2-pipe heating only • 2-pipe cooling only • 2-pipe with a changeover sensor	One On/Off relay or floating point relay[1]	H/M/L Relays	Changeover Sensor	05	✓	✓
			Heating only	06	✓	✓
			Cooling only	07	✓	✓
		0—10 V⎓ Signal[2]	Changeover Sensor	08		✓
			Heating only	09		✓
			Cooling only	10		✓
	One 0–10 V⎓ signal[2]	H/M/L Relays	Changeover Sensor	11		✓
			Heating only	12		✓
			Cooling only	13		✓
		0—10 V⎓ Signal[2]	Changeover Sensor	14		✓
			Heating only	15		✓
			Cooling only	16		✓

[1] Floating point valve control requires SMC55x. See App Note #630 (048630) on www.lutron.com

[2] When controlling 0–10 V⎓ fan or valve, if the fan or valve's 0–10 V⎓ common is connected to the FCU's 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCU's 24 V~ transformer.

Job Name:	Model Numbers:	
Job Number:		

Specifications

Regulatory Approvals

- cULus Listed
- CE Certified
- NOM certified
- RoHS compliant
- FCC 15/ICES-003 Class B

Input Characteristics

- Power supply (not isolated): 12–24 V~ 50/60 Hz ±10% or 24 V⎓ ±10%, listed Class 2, LPS, or SELV limited energy supply <15 W
- Maximum power consumption: 4 W/6 VA/5 PDUs [1]
- Analog Inputs: (2) Thermistor inputs [4]
  - Type: NTC (103 AT)
  - Value: 10 K at 77 ˚F (25 ˚C)
  - Range: -58 ˚F–212 ˚F (-50 ˚C–100 C)
  - Resolution: 0.18 ˚F (0.1 ˚C)
  - Accuracy: 1% full scale

Output Characteristics

- Relay Outputs: (5) SPST relays Normally Open rated for:
  - 2 A at 24 V~/100 V~/120 V~/220–240 V~ general purpose
  - 2 FLA/12 LRA at 100 V~/120 V~/220–240 V~ motor load
- Analog Outputs: (3) 0–10 V⎓ outputs [2]
  - Maximum 28 mA at 10 V⎓ per output [3]
  - Resolution: 1%
  - Accuracy: 2% full-scale

[1] See **Power Draw Units on the QS Link** (P/N 369405) at www.lutron.com for more information.

[2] When controlling a 0–10 V⎓ fan or valve, if the fan or valve's 0–10 V⎓ common is connected to the FCU's 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCU's 24 V~ transformer. For more information, see Application Note #651 (048651) at www.lutron.com

[3] All three 0–10 V⎓ outputs, together, cannot deliver more than 40 mA.

[4] The FCU controller is compatible with model THTDPG06 by Tasseron Sensors®. Contact Sales@TasseronUSA.com for order inquiries.

Environment

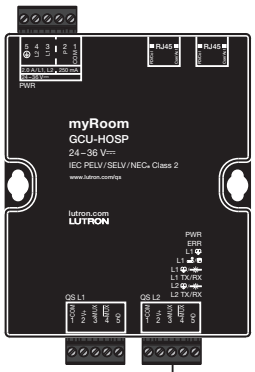
- Ambient operating temperature: -4 ˚F to 122 ˚F (-20 ˚C to 50 ˚C)
- Storage temperature: –40 °F to 185 °F (–40 °C to 85 °C)
- 0% to 90% relative humidity, non-condensing
- Indoor use only
- Product rated for IP20
- Pollution degree 2

Enclosure

- Controller must be installed in a listed NEMA Type-1 enclosure or IP20 rated enclosure with conformance to IEC 61439-3 (or equivalent standard)
- Enclosure should be secured by a keyed or tooled locking mechanism
- Enclosure must comply with spacing listed in the **Mounting** section

Job Name:	Model Numbers:	
Job Number:		

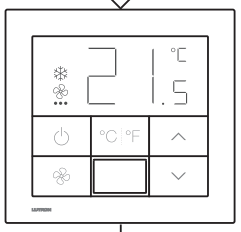
System Diagram



GCU-HOSP

QS Link

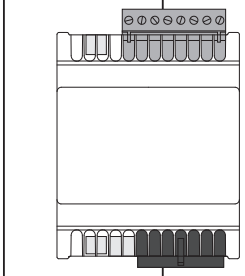
To Other QS Devices



Palladiom QS Thermostat

Thermostat Communication Link

Listed NEMA® Type-1 enclosure or IP20 rated enclosure with conformance to IEC 61439-3 (or equivalent standard)[1]



Fan Coil Unit Controller

Valve and Fan Control Signals

Fan Coil Unit (by others)

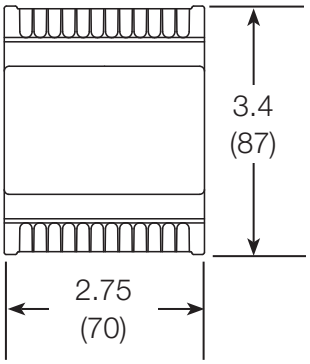
[1] Enclosure must meet the minimum clearance requirements and should be secured by a keyed or tooled locking mechanism.

Job Name:	Model Numbers:	
Job Number:		

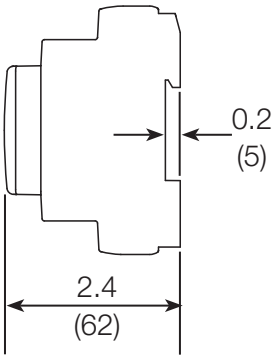
Dimensions

Measurements shown as: in (mm)

Front View



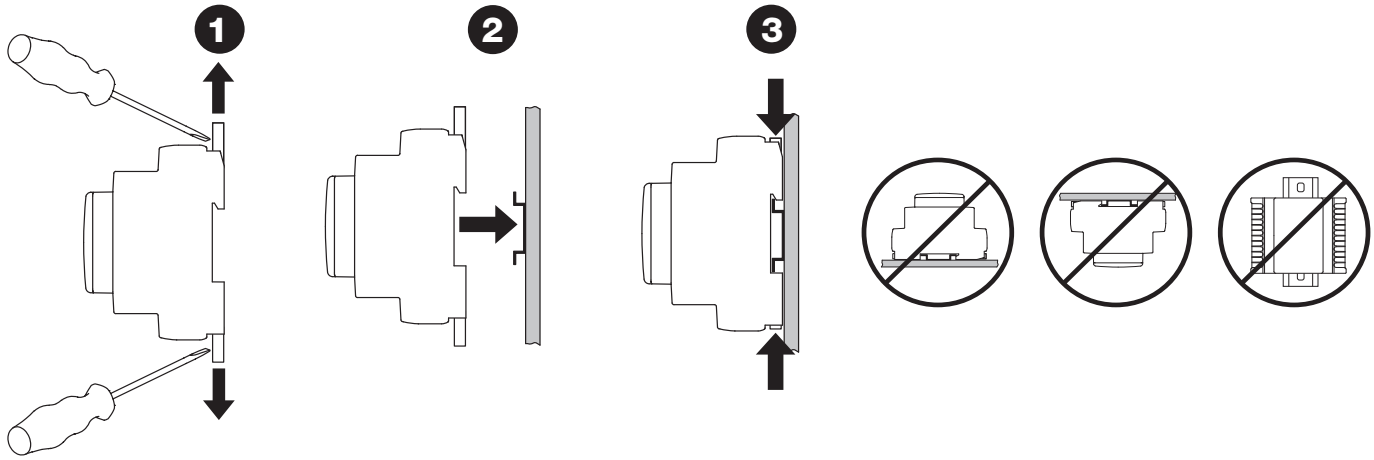
Side View



Job Name:	Model Numbers:	
Job Number:		

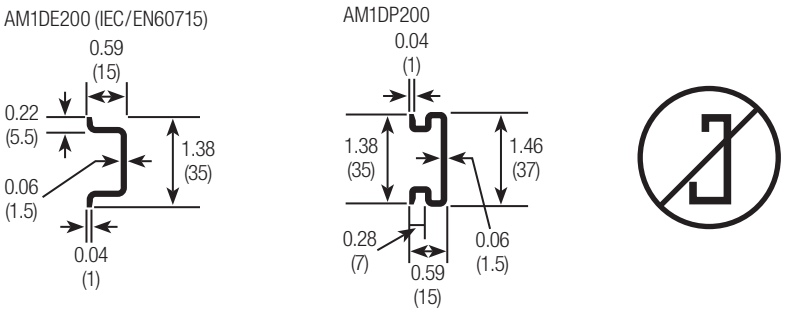
Mounting

The FCU controller is to be installed in any listed NEMA® Type-1 enclosure or IP20 rated enclosure with conformance to IEC 61439-3 (or equivalent standard). Enclosure must meet the minimum clearance requirements. Enclosure should be secured by a keyed or tooled locking mechanism. All pertinent state, regional and local safety regulations must be observed when installing and using this product. Use metal enclosures to improve the electromagnetic immunity of the controller system.



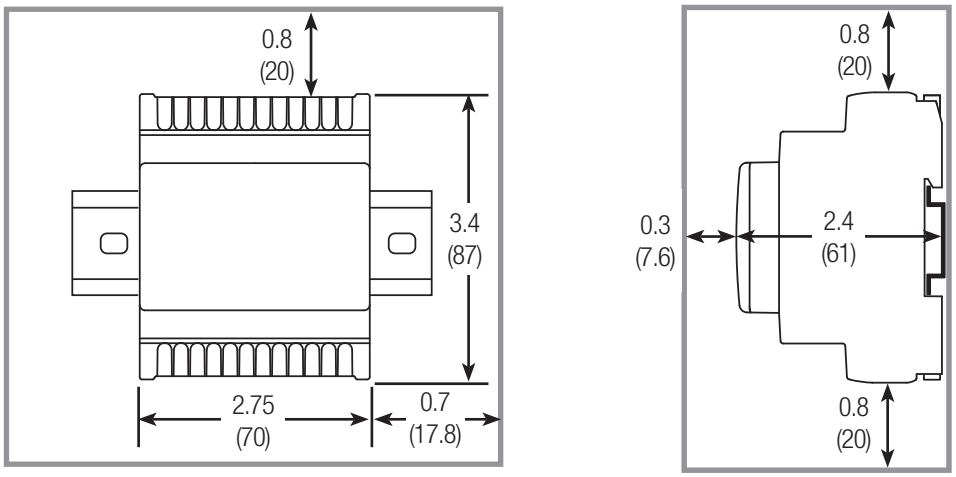
Acceptable DIN Rail Dimensions

Measurements shown as: in (mm)



Minimum Clearances

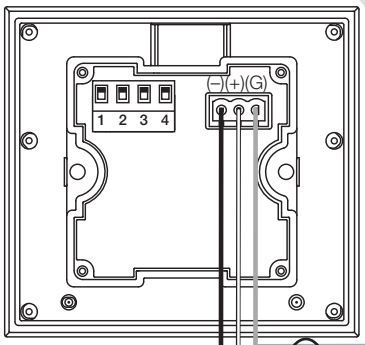
Measurements shown as: in (mm)



Job Name:	Model Numbers:	
Job Number:		

Connections

		Cable Type					
Wire Size	AWG	24 to 14	22 to 14	2 x 24 to 18	2 x 24 to 16	2 x 22 to 18	2 x 20 to 16
	mm^2	0.2 to 2.5	0.25 to 2.5	2 x 0.2 to 1.0	2 x 0.2 to 1.5	2 x 0.25 to 1.0	2 x 0.5 to 1.5



Recommended torque for terminals:
4.4 to 5.3 in-lb
(0.5 to 0.6 N•m)

Gray (G) (Com)
White (+) (MUX)
Black (–) (MUX)

Wire harness for thermostat communication link (included in wire harness kit)

Note: The thermostat communication link wire harness can be extended up to 500 ft (152.5 m) using 18 AWG (1.0 mm^2) and a pair of 22 AWG (0.25 mm^2) twisted pair, shielded cable. Analog I/O wire harnesses can be extended up to 100 ft (30.5 m) using 18 AWG or 22 AWG (1.0 mm^2 or 0.25 mm^2) twisted pair, shielded cable.

Relay outputs terminal:
Screw terminal blocks for On/Off valves and 3-speed fan

Controller Power
Listed Class 2, LPS, or SELV <15 W limited energy supply

Not used

Red 12–24 V~/24 V⎓

Gray/Red Common

White (heat)
Black (common)
Green (fan)
Yellow (cool)

Wire harness for 0–10 V⎓ valves and fan controls

Black
Black
Sensor isolated common connections (for changeover sensor, remote temperature sensor, etc.)

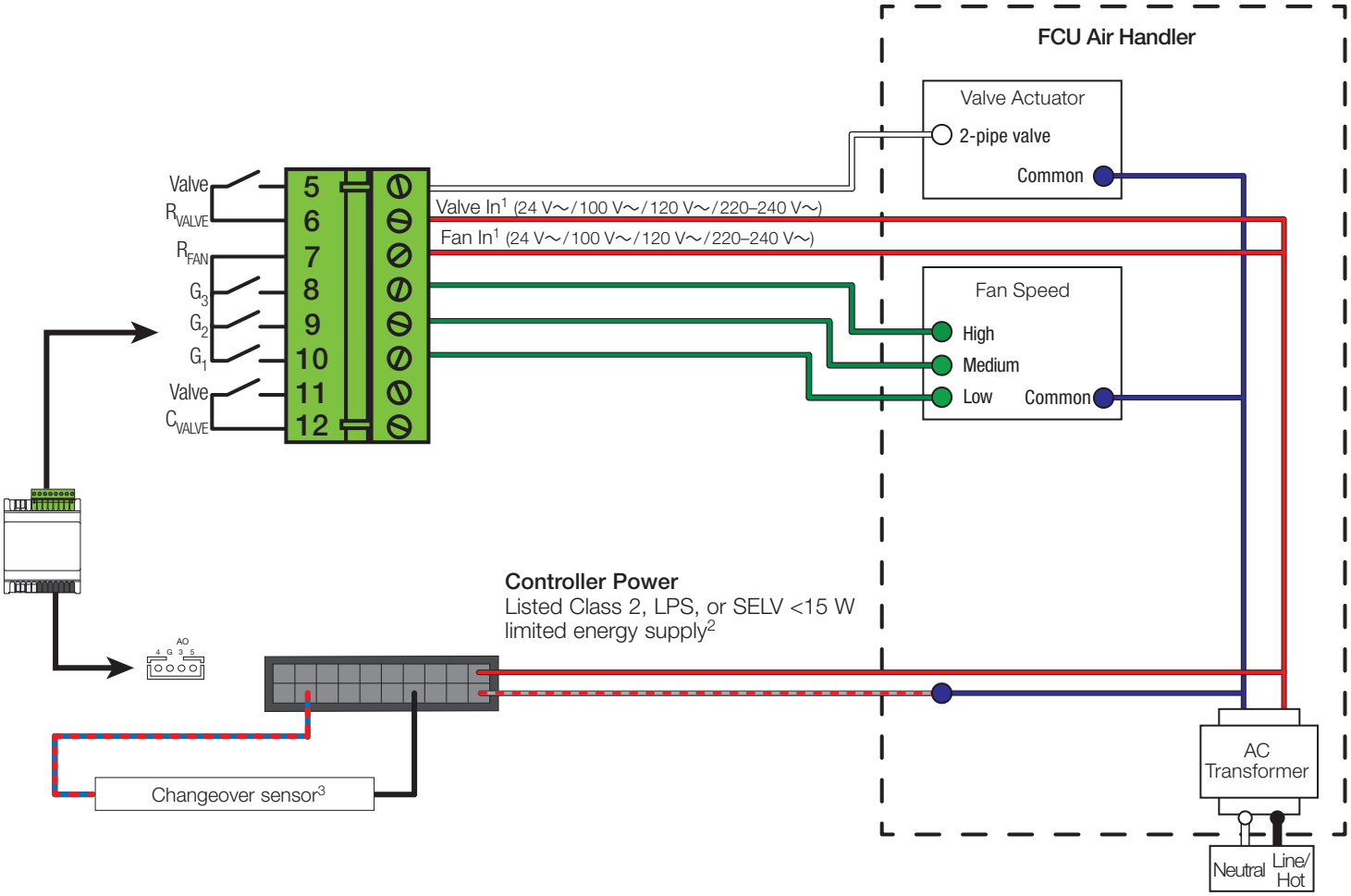
Blue/Red (changeover sensor)
Blue (remote temperature sensor)

Job Name:	Model Numbers:	
Job Number:		

Wiring

Wire the controller according to the diagram below that corresponds to the system, valve, and fan type of the FCU. To extend relay life, each inductive load, driven by the relay contacts, must include a suppression device such as a peak limiter or RC circuit.

Typical Wiring Diagram 1 (SMC53-MYRM or SMC55-MYRM)
2-pipe System
On / Off Valve
3-speed Fan
Changeover Sensor



1 24 V~ relay fan control application is shown.

2 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

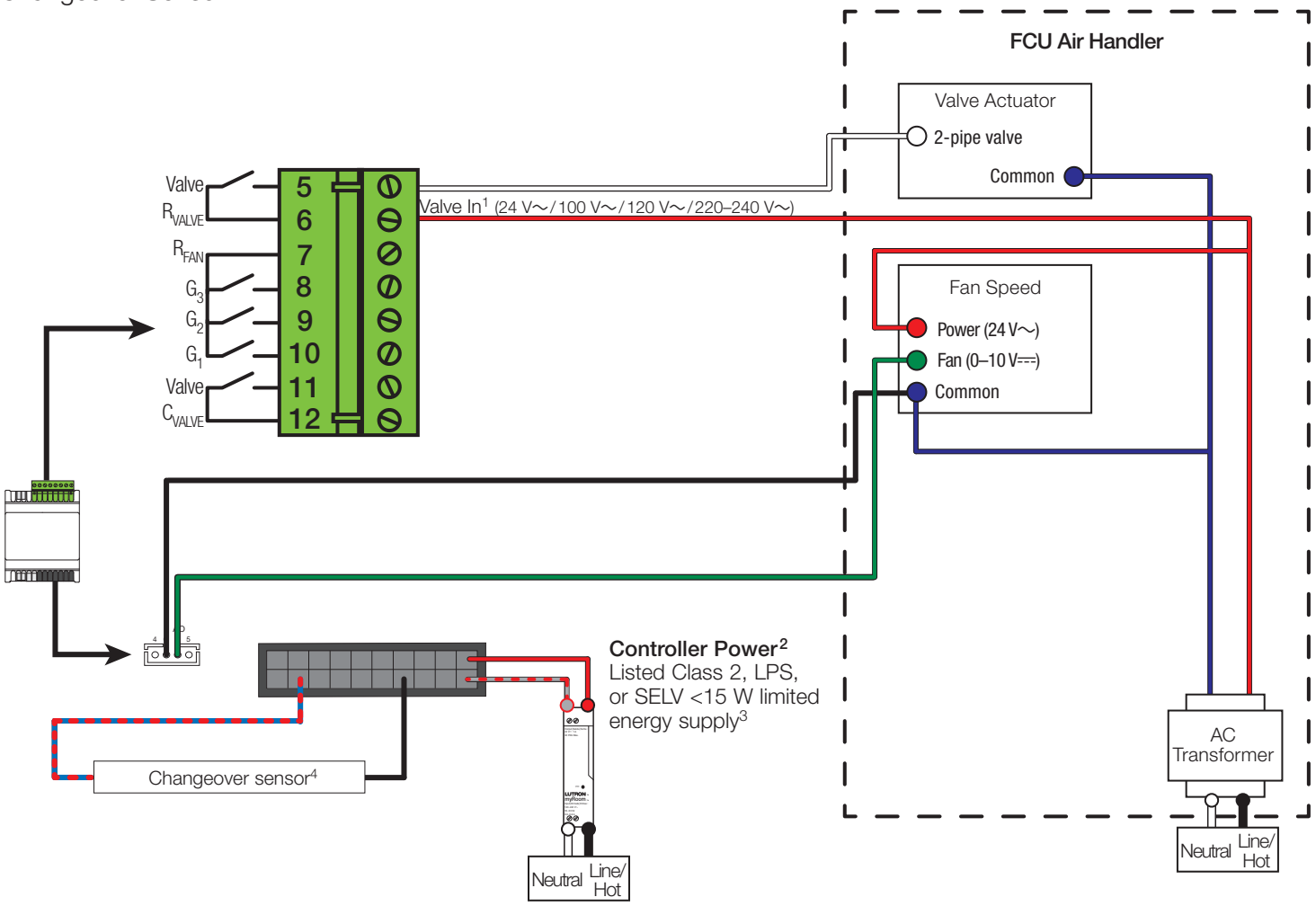
3 Sensor is optional. Tasseron THTDPG06, Semitec 103AT or equivalent – NTC 10 k at 25 °C.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 2 (SMC55-MYRM only)
2-pipe System
On/Off Valve
0–10 V⎓ Controlled Fan
Changeover Sensor



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

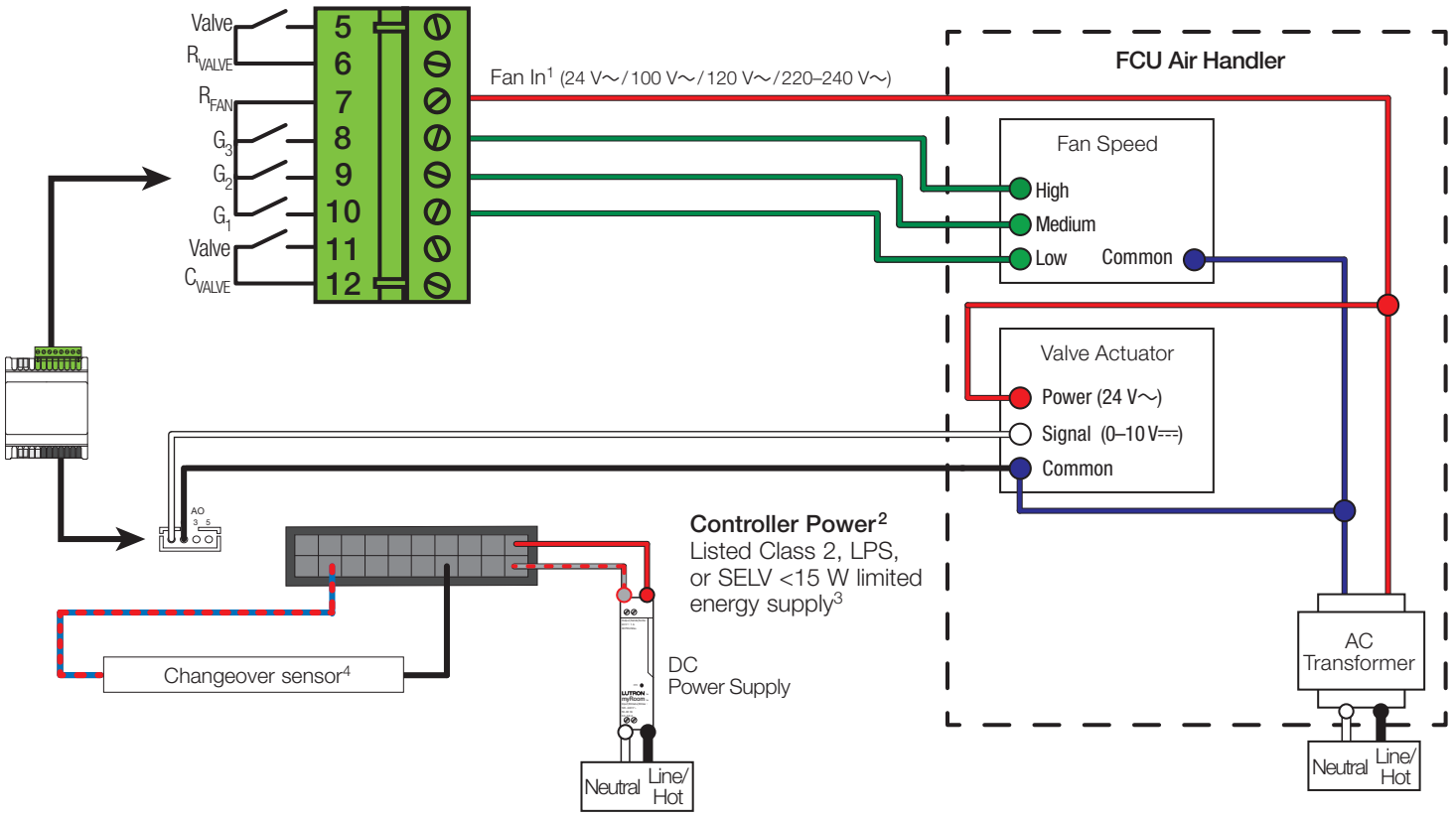
4 Sensor is optional. Tasseron THTDPG06, Semitec 103AT or equivalent – NTC 10 k at 25 °C.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 3 (SMC55-MYRM only)
2-pipe System
0–10 V⎓ Valve
3-speed Fan
Changeover Sensor



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

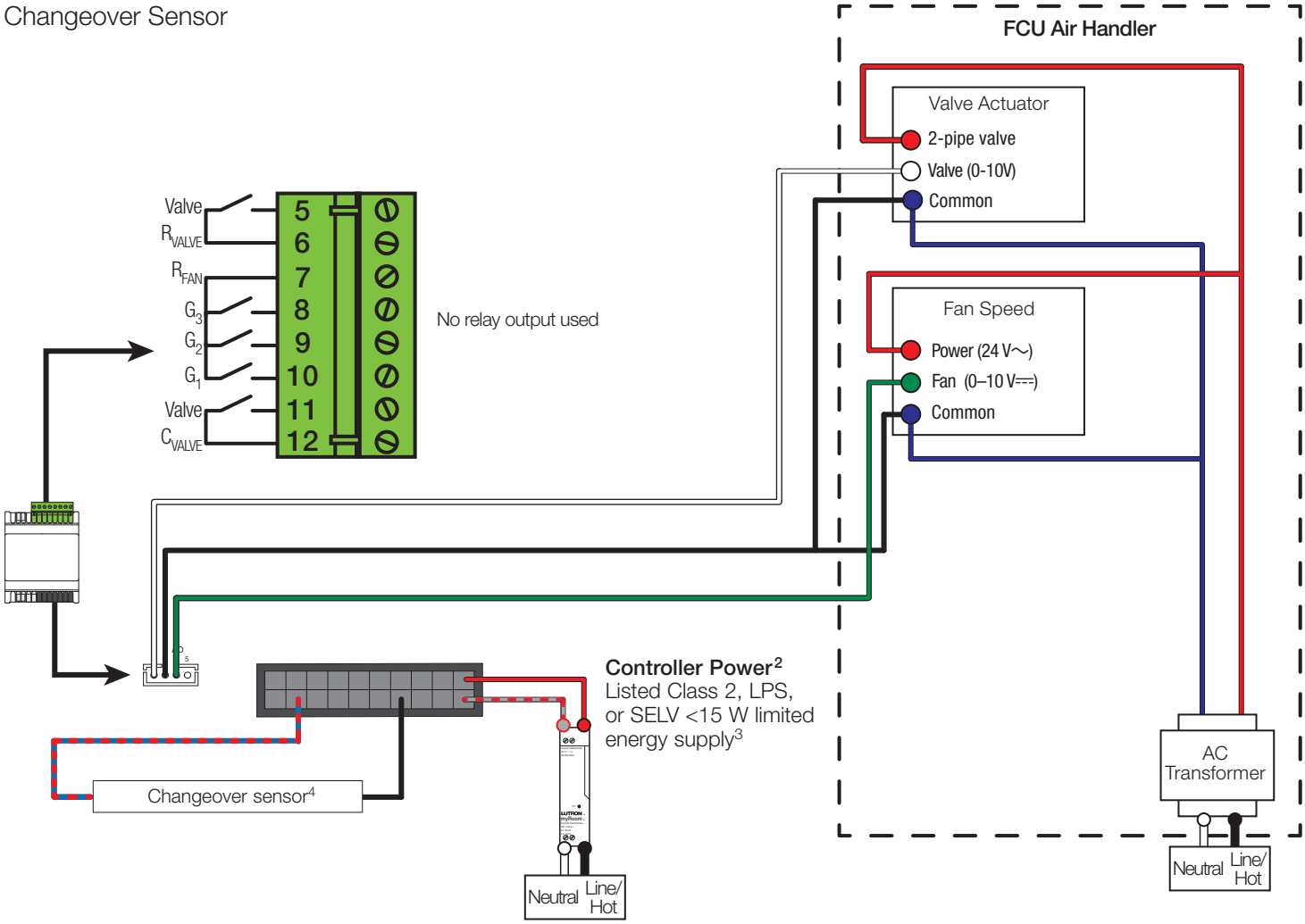
4 Sensor is optional. Tasseron THTDPG06, Semitec 103AT or equivalent – NTC 10 k at 25 °C.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 4 (SMC55-MYRM only)
2-pipe System
0–10 V⎓ Valve
0–10 V⎓ Controlled Fan
Changeover Sensor



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

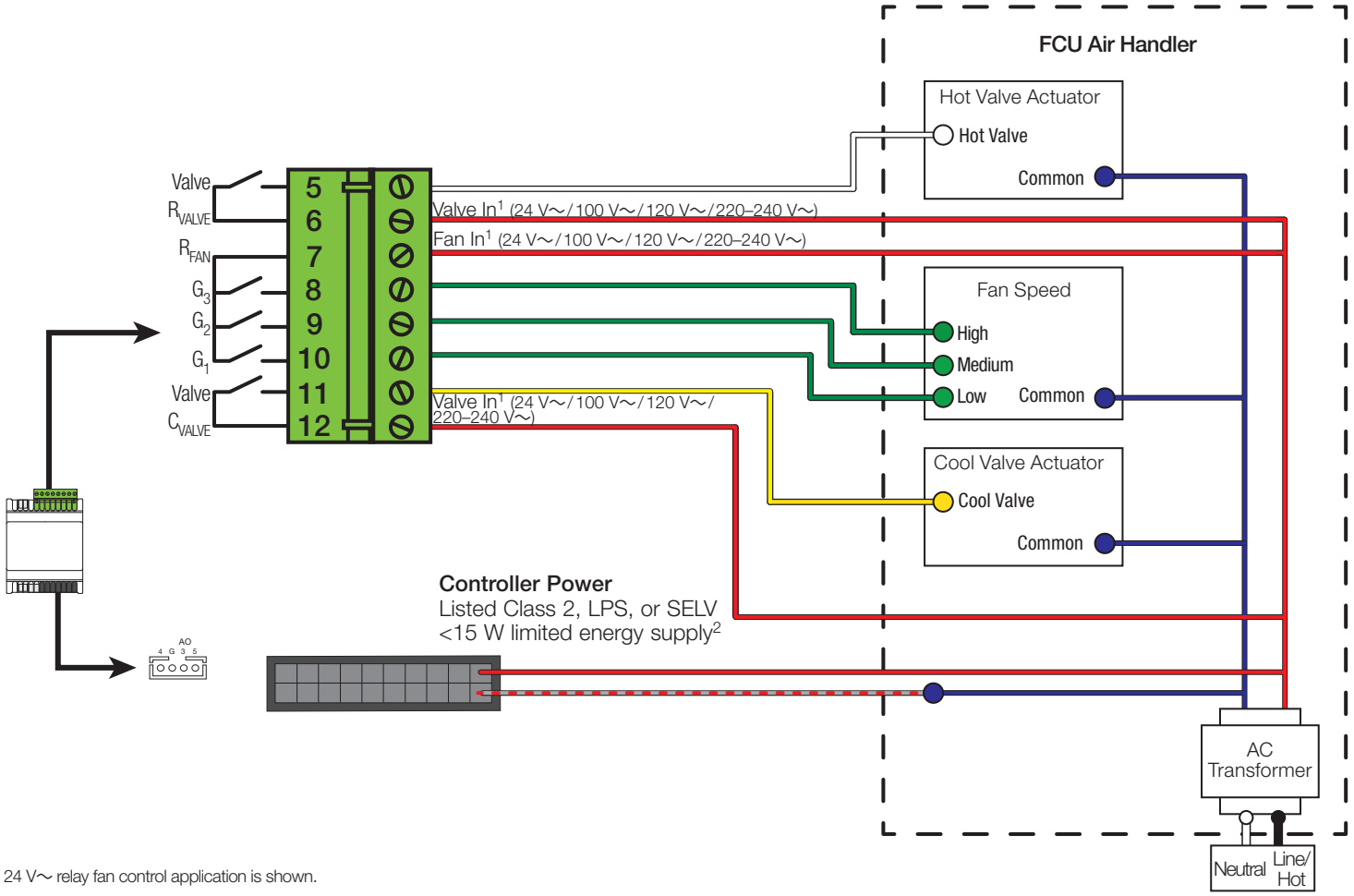
4 Sensor is optional. Tasseron THTDPG06, Semitec 103AT or equivalent – NTC 10 k at 25 °C.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 5 (SMC53-MYRM or SMC55-MYRM)
4-pipe System
On/Off Valve
3-speed Fan



1 24 V~ relay fan control application is shown.

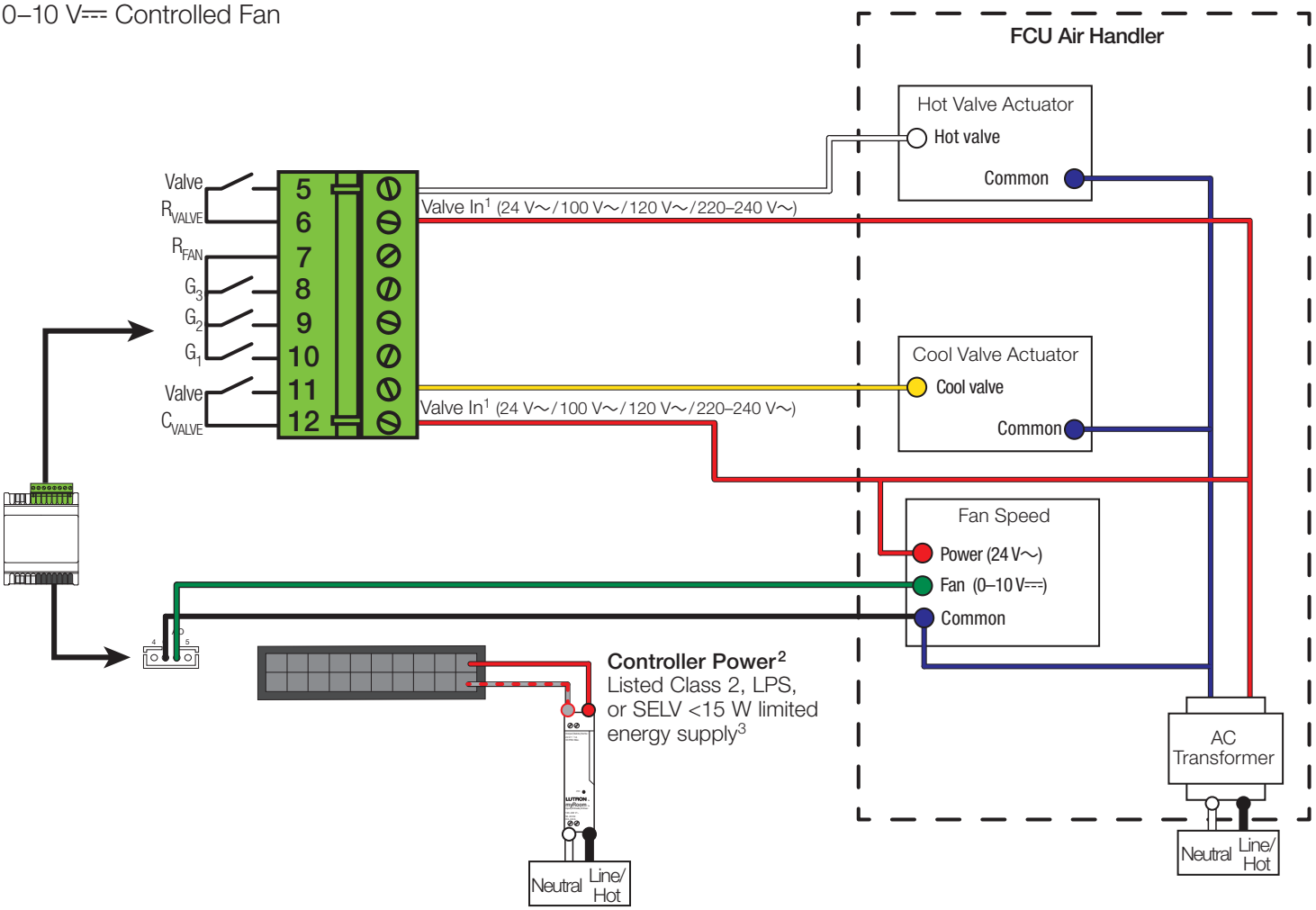
2 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 6 (SMC55-MYRM only)
4-pipe System
On/Off Valves
0–10 V⎓ Controlled Fan



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

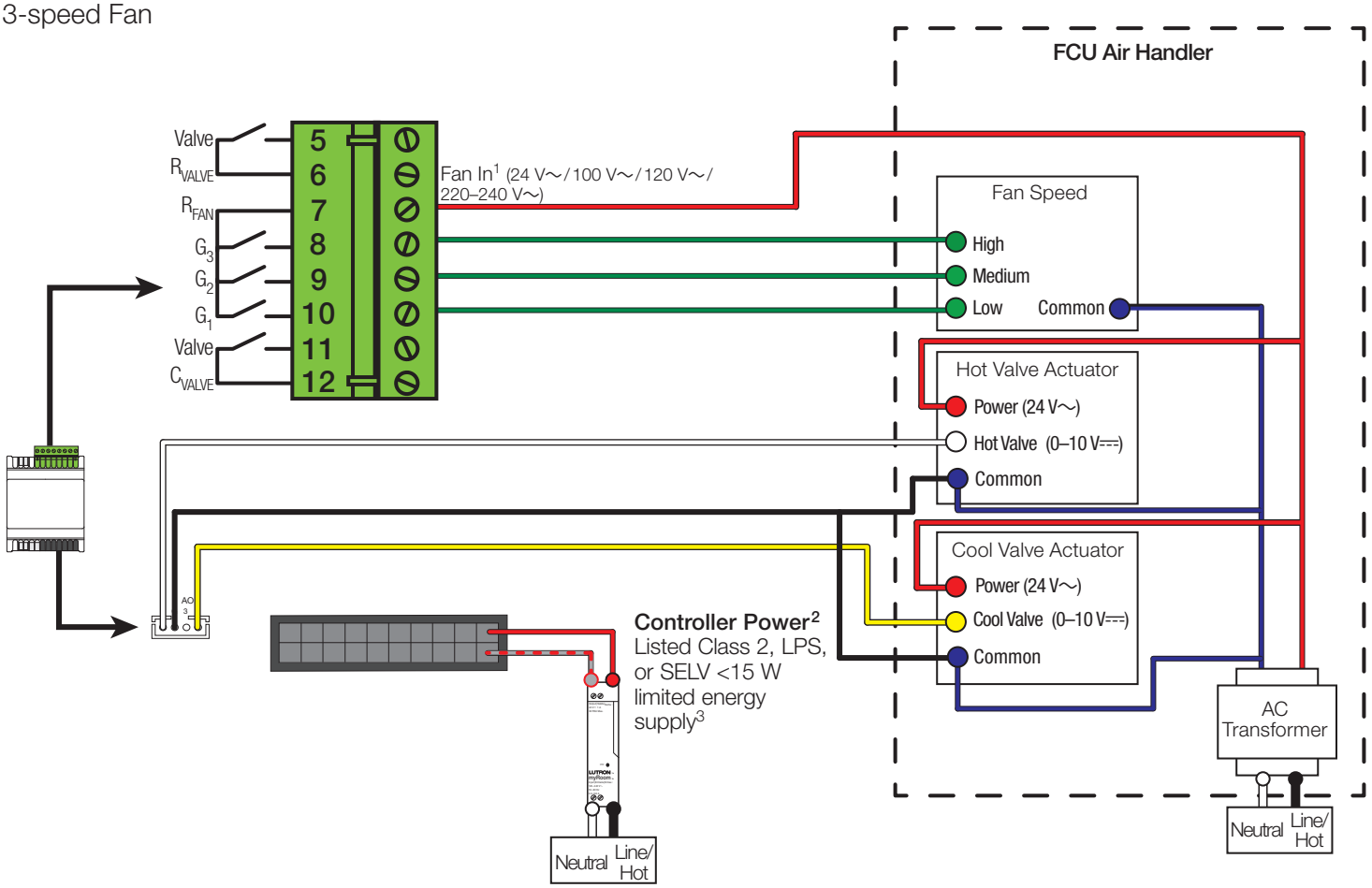
3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 7 (SMC55-MYRM only)
4-pipe System
0–10 V⎓ Valves
3-speed Fan



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

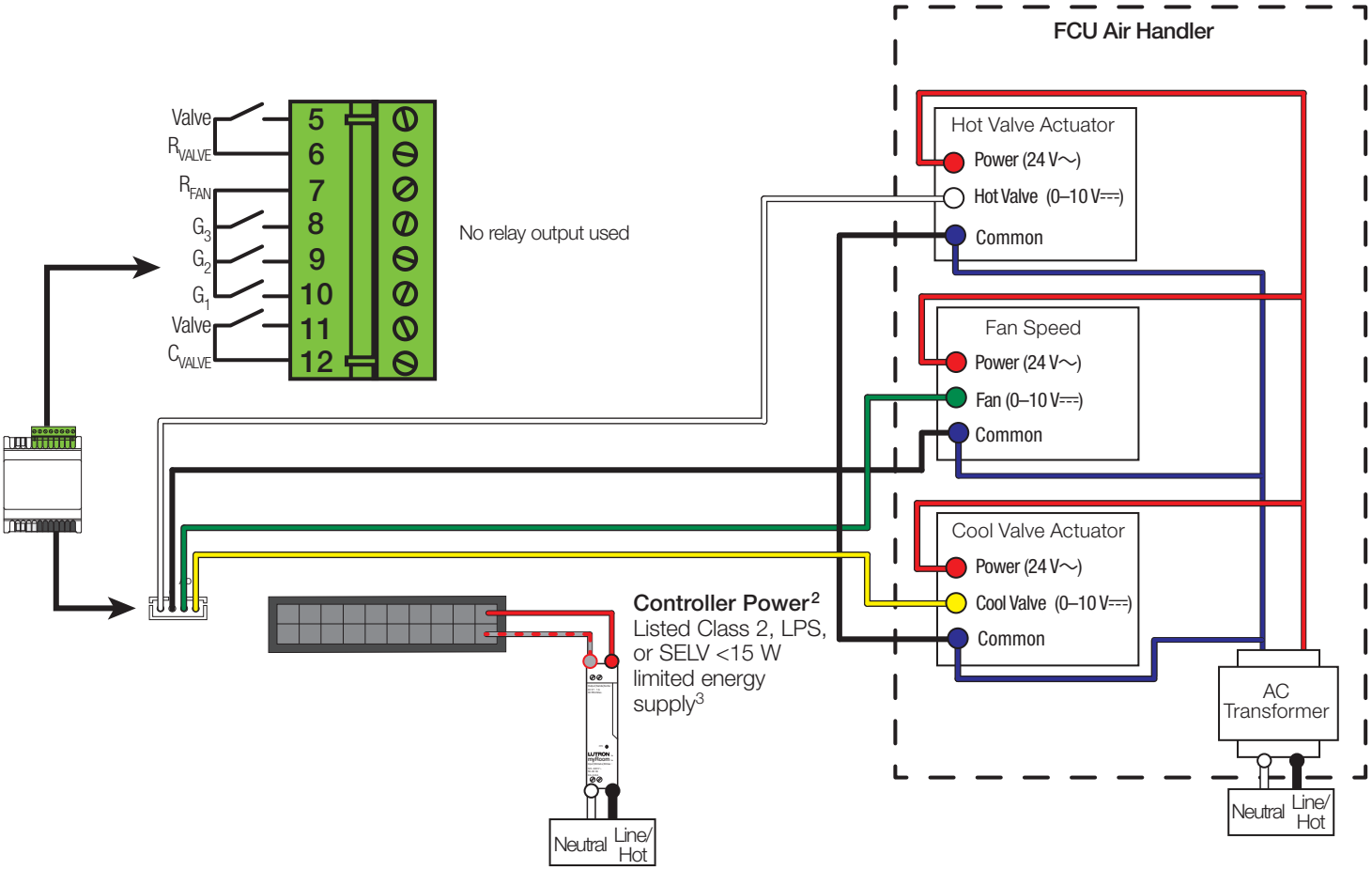
3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

Continued on next page...

Job Name:	Model Numbers:	
Job Number:		

Wiring *(continued)*

Typical Wiring Diagram 8 (SMC55-MYRM only)
4-pipe System
0–10 V⎓ Valves
0–10 V⎓ Controlled Fan



1 24 V~ relay fan control application is shown.

2 When controlling a 0–10 V⎓ fan or valves, a separate supply must be used to power the SMC controller if the 0–10 V⎓ common is connected to the FCUs 24 V~ transformer common, the SMC controller must be powered by a power supply other than the FCUs 24 V~ transformer. For additional wiring options refer to App Note #651 (048651) at www.lutron.com.

3 When powering the SMC using a Lutron DC power supply that powers the QS link, the SMC consumes 5 PDUs.

Job Name:	Model Numbers:	
Job Number:		