

MODEVA Product Guide

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Overview and General Concepts

MODEVA™ is an elegantly designed and easy to use guest interface system used to control temperature, lighting, drapes, and guest annunciation. The user interface brings all guestroom control features into a sleekly designed, backlit, capacitive glass surface module. The user interfaces, low- and line-voltage power, wired and wireless communications, TRIAC and MOSFET dimmers, and wall box switches operate within INNCOM's Integrated Room Automation System. The American gang style MODEVA switches take full advantage of INNCOM's Load Assembly (WBI) technology for maximum application flexibility, while the compact British gang units use in-room low voltage load centers to provide an unparalleled control platform. The MODEVA thermostats present guests with comfort and control over HVAC functions in a sleek, capacitive glass form.

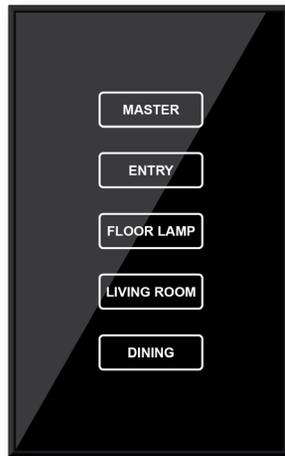


Figure 1. US Single Gang MODEVA Switch With 5 Buttons

Application

The MODEVA system's flexibility proceeds from the highly configurable architectural mix of touch user interfaces, logic board, and actuators and mounting brackets (Load Assemblies). MODEVA PCBAs contain all of the hardware components (including logic operations, communications, and user interface functionality) necessary to operate as a low voltage controls interface within a thin (8mm thick) assembly that rests outside of the wall box cavity. Therefore, British Gang devices and the MODEVA thermostats can perform without the use of the Load Assemblies, communicating only by wired S5bus.

Coupling MODEVA PCBAs with Load Assembly actuators in American style switches allows even more flexible capabilities. Each input located on the logic board can control any one of the individual actuators located within the local gang box or can remotely control other actuators as part of the guestroom

network IRAS. This allows the designer to locate actuators with specifically designed functions throughout the guestroom network and to have control over that actuator from any MODEVA user interface in the guestroom network.

The MODEVA platform uses magnets located on the back side of the logic board to adhere to the large flat metal surfaces of the wall brackets, allowing for screw-less mounting that adds to the aesthetic product design.

Within the standard design guidelines, the designer has relatively full control over the look and feel with the exception of the physical location of the sensors and LEDs. For instance, the following items can be customized:

- Number of sensors^{*}
- Sensor / slider functionality
- Sensor / slider artwork
- Text font, size, and location
- Background color scheme
- Framing plate color
- Hotelier logo

** The number of sensors can only be changed when existing sensors and LEDs in the hardware layout are not used in the artwork. Therefore, sensors and LEDs can only be removed when unnecessary*

The designer cannot customize the following:

- Location of sensors
- Location of LEDs
- Addition of sensors and LEDs
- Mechanical dimensions

Features

MODEVA Switch

- Single, double, or triple American gang assemblies; British single gang and double gang (oversized) assemblies
- Up to 6 buttons or 1 slider per assembly
- Nightlight/Backlight
- S5bus and RF communications capabilities

MODEVA Thermostat

- Vertical or horizontal American gang styles
- Up to 8 buttons, including Privacy/Make Up Room and ecoMODE® notification

Load Assembly

- Aesthetic screwless (magnetic) mounting
- TRIAC or MOSFET dimming
- 12 VDC relay switched power output
- Parallel power supply operation
- Master Contactor application
- Low voltage adapter for as a remote, +12VDC powered device only

Installation Requirements

MODEVA Thermostat

1. Attach the appropriate metal mounting bracket for the MODEVA Thermostat (American gang PN 251-104, British gang PN 251-106, Oversized British gang PN 251-115) to the wall box using the 2 supplied screws. Note the arrows and the text “Top” indicating the orientation of the metal wall mounting bracket. Ensure the side with the text and the countersink screw holes is facing away from the wall. Loosely screw the bracket to the mounting posts—**DO NOT OVER TIGHTEN SCREWS!** Over tightening the screws will bend the mounting bracket, thereby preventing a flush installation of the MODEVA assembly.
2. Make the necessary wire connections to a 3-wire S5bus header on the back of the MODEVA assembly. **NOTE:** the second 3-pin connector is used for S5bus, 12VDC, and GND daisy-chaining. Both headers have the same pin assignments.
3. Allow the magnets of the MODEVA Assembly to snap to the metal mounting bracket.

MODEVA Switch and Load Assembly

The Load Assembly is designed to operate in a Service Mode without the MODEVA user interface during installation and maintenance. When installing the Load Assembly, make all wire connections and verify proper operation before installing the MODEVA user interface.



Locate the fuse panel and remove fuses or ensure the breaker is OFF before installing the Load Assembly.

1. Pull the class-2 wires for Ground (Brown), +12VDC (Red) and S5bus (Orange) and digital inputs into the wall box (See Wiring Diagrams). Make the connections using a dolphin DC-1000P Super B connector or equivalent type connector to the S5bus or digital input harnesses and connect them to the appropriate header on the Load Assembly.
2. Prepare the line voltage wiring by stripping back the insulation 16mm (5/8th inch).
3. Connect the Green (Earth) Cable attached to the Load Assembly Strap to Earth.
4. Wire the Load Assembly as described in the Wiring Diagrams. Depending on gang assembly, use the appropriate 10, 12, 14, 16, or 18 AWG wire nut.
5. Push all wires back into the wall box and fasten the control to the wall box using the supplied mounting screws. Be sure not to pinch or disconnect any of the wires. **DO NOT** connect the MODEVA User Interface at this time.
6. Ensure the intended load(s) are connected to the circuit.
7. Replace the fuses in the fuse panel or move the breaker to ON before continuing.
8. Allow the Load Assembly to power up. To verify power, the green Service Mode LED will blink rapidly for 2 seconds.
9. To test the Load Assembly, slide the Service Mode switch to the ON position (LED will light). Confirm the intended lighting load is turned on. *NOTE: In Service Mode, the TRIAC and MOSFET Dimmers will only switch on and off the load (no dimming).*

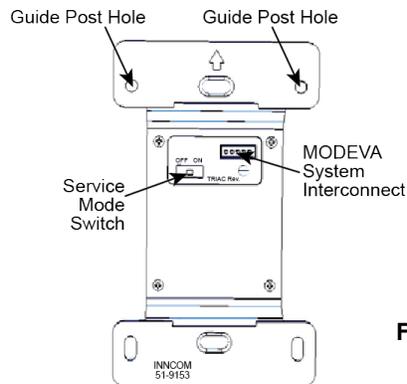


Figure 2. Service Mode

Environment

Ambient operating temperature for the MODEVA/ Load Assembly is 0-40°C (32-104°F), 0-90% humidity, non-condensing. This equipment is intended for indoor use only. The TRIAC and MOSFET dimmers will feel warm to the touch under normal operating conditions.

Load Specifications

The following table provides the load ratings at absolute maximum based on the load type in a single gang wall box.

ACTUATOR	RATINGS			
	Voltage	Frequency	Power/Amperes	Load Type
Relay Actuator	120-240 Vac	50/60 Hz	4.1 A	Resistive
	120-240 Vac	50/60 Hz	4.1 A	General Purpose
	120-240 Vac	50/60 Hz	500 W	Tungsten / ELV
	120-240 Vac	50/60 Hz	250 VA	Electric Ballast
TRIAC Dimmer	120 Vac	60 Hz	2.9 A	Resistive
	120 Vac	60 Hz	2.9 A	General Purpose
	120 Vac	60 Hz	500 W	Tungsten / ELV
	120 Vac	60 Hz	250 VA	Electric Ballast
MOSFET Dimmer	120 Vac	60 Hz	2.9 A	Resistive
	120 Vac	60 Hz	2.9 A	General Purpose
	120 Vac	60 Hz	350 W	Tungsten / ELV
	120 Vac	60 Hz	250 VA	Electric Ballast

Network Communication

If a MOSFET or TRIAC Dimmer is continuously overloaded, a thermal shut down will occur to protect the solid state circuitry.

The MOSFET Dimmer is equipped with an additional overload detection circuit that detects a catastrophic overload / short and shuts down the dimmer to protect the solid state circuitry.

Air Gap Switch

The TRIAC and MOSFET Load Assemblies are equipped with an air gap switch (relay) to ensure that the load is safely turned off and that there is no leakage current to the fixture during routine lamp maintenance. The air gap switch engages each time the load is dimmed completely off under normal operation. It can be engaged manually for routine maintenance by removing the MODEVA user interface and sliding the Service Mode switch to the OFF position.

Class-2 Output

The Load Assembly has been designed to provide +12VDC power to devices connected to the S5bus. The Load Assemblies can operate in parallel to supply a higher total load capacity than that achievable by a single Load

Assembly. However, the total output is de-rated as per the table below for accommodating the stability of the power supply circuitry. The total available output power must be shared with the MODEVA User Interface. Refer to the following table for Class-2 Output ratings.

Number of Load Assemblies	Nominal Voltage	Voltage at Maximum Load	Output Rating
1	+12VDC	+11.0VDC	200mA
2	+12VDC	+11.0VDC	400mA
3	+12VDC	+11.0VDC	600mA
4	+12VDC	+11.0VDC	700mA
5	+12VDC	+11.0VDC	800mA
6	+12VDC	+11.0VDC	900mA

If the class-2 output is overloaded and the power supplies go into fold back mode (power supplies will constantly reset), remove power from the system and then remove the load. Double check that the load does not exceed the maximum output power. If the power cannot be removed from the system first, disconnect the offending load. The Load Assemblies will take up to 30 seconds to fully recover from the overload condition and return to normal operation.

Start-Up Behavior

Upon start-up the LEDs on the User Interface will cycle 5 times. During the first 20 seconds after start-up, the MODEVA will be in self-test mode. Any intended input to the user interface will produce a toggle on and toggle off of all LEDs and load.

After the MODEVA completes the self-test mode, it will resume its intended programmed application.

Mounting Diagram

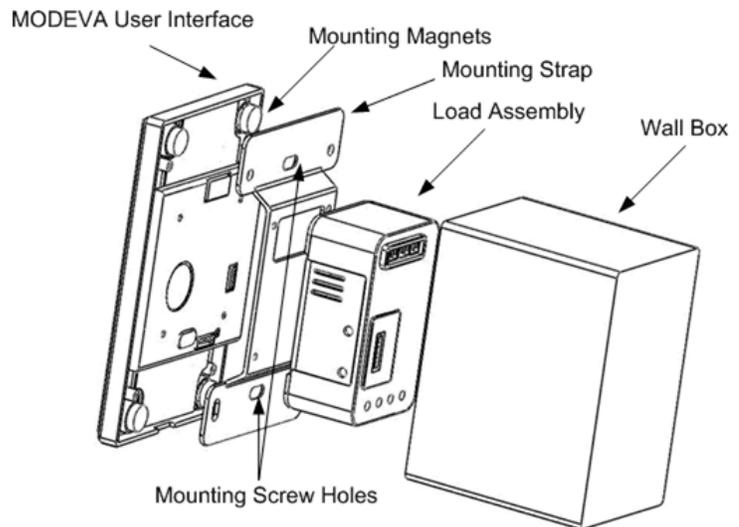


Figure 3. MODEVA and Load Assembly Exploded

Wiring Diagrams

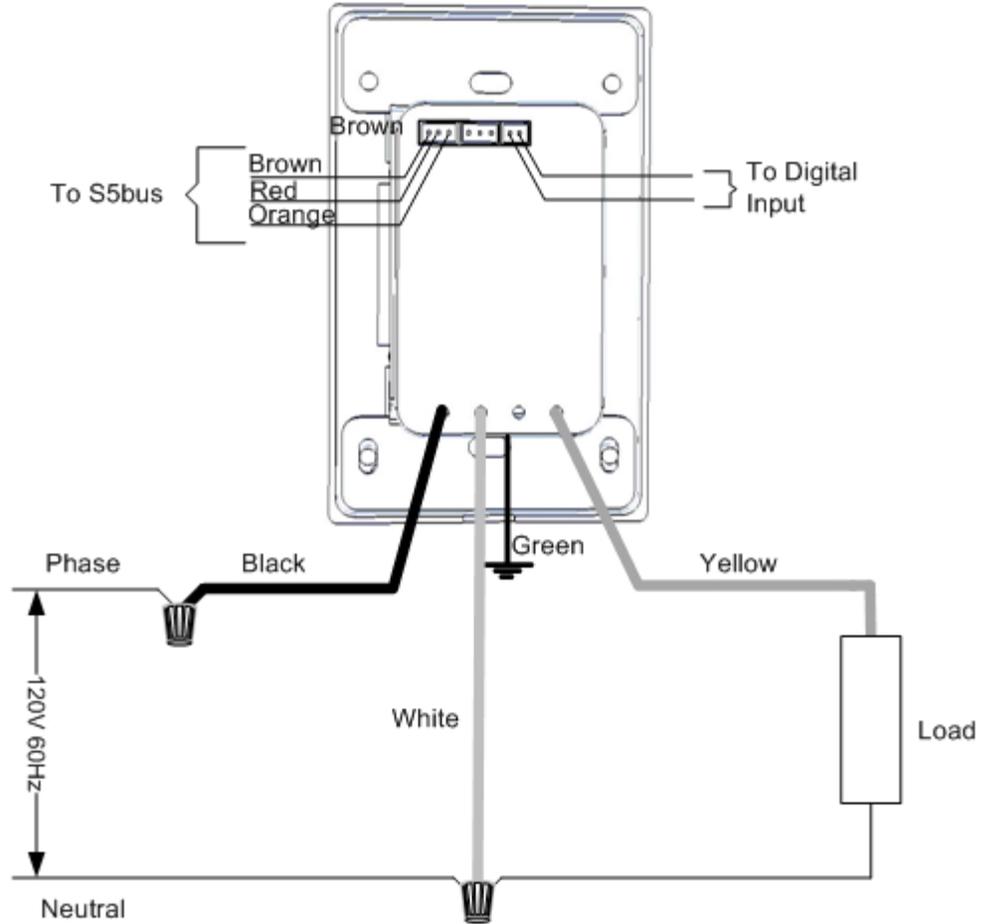


Figure 4. Single Gang Wiring Diagram

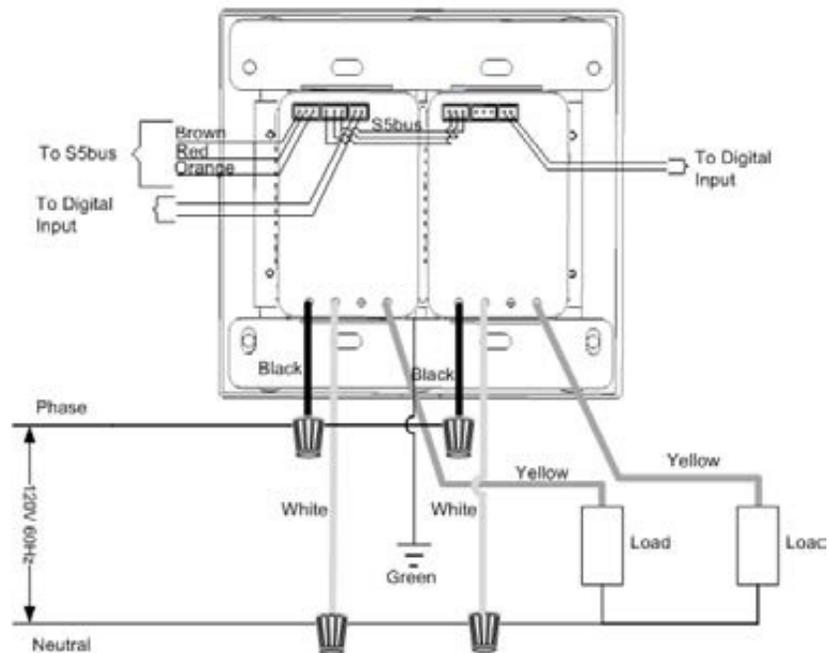
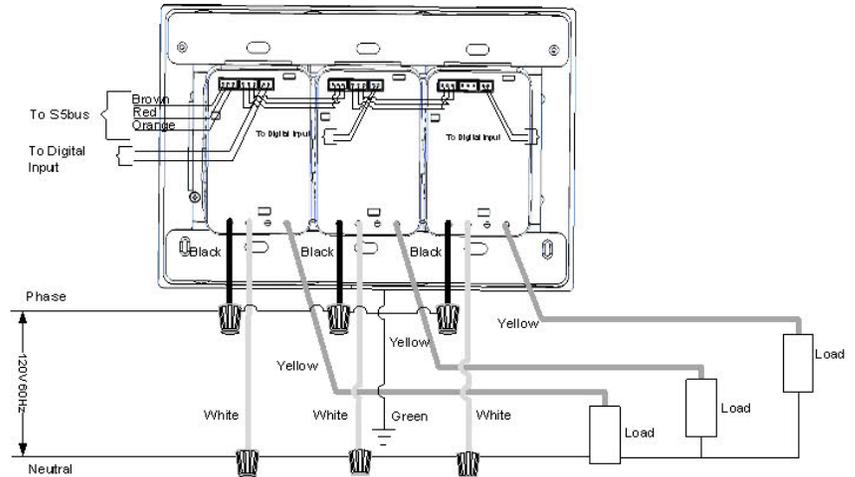


Figure 5. Double Gang Wiring Diagram

Figure 6. Triple Gang Wiring Diagram

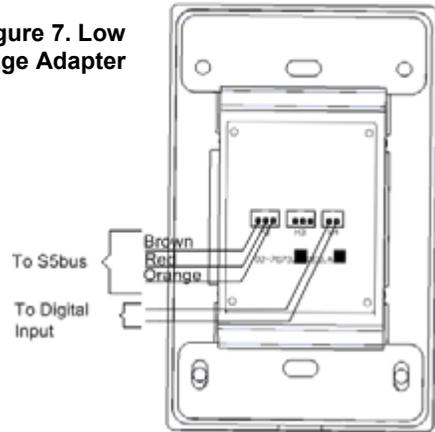


In double and triple gang configurations, refer to the wiring diagram for S5bus and digital input connections. It is not necessary to connect each Load Assembly on the S5bus in all cases.

Low Voltage Adapter

The MODEVA can be equipped with the Low Voltage Adapter (LVA). This allows the MODEVA to act as a remote, +12VDC powered device only.

Figure 7. Low Voltage Adapter



FCC ID: GTC027060TXR.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Master Contactor

Use for master contactor applications up to 30A. This assembly requires an external +12VDC source.

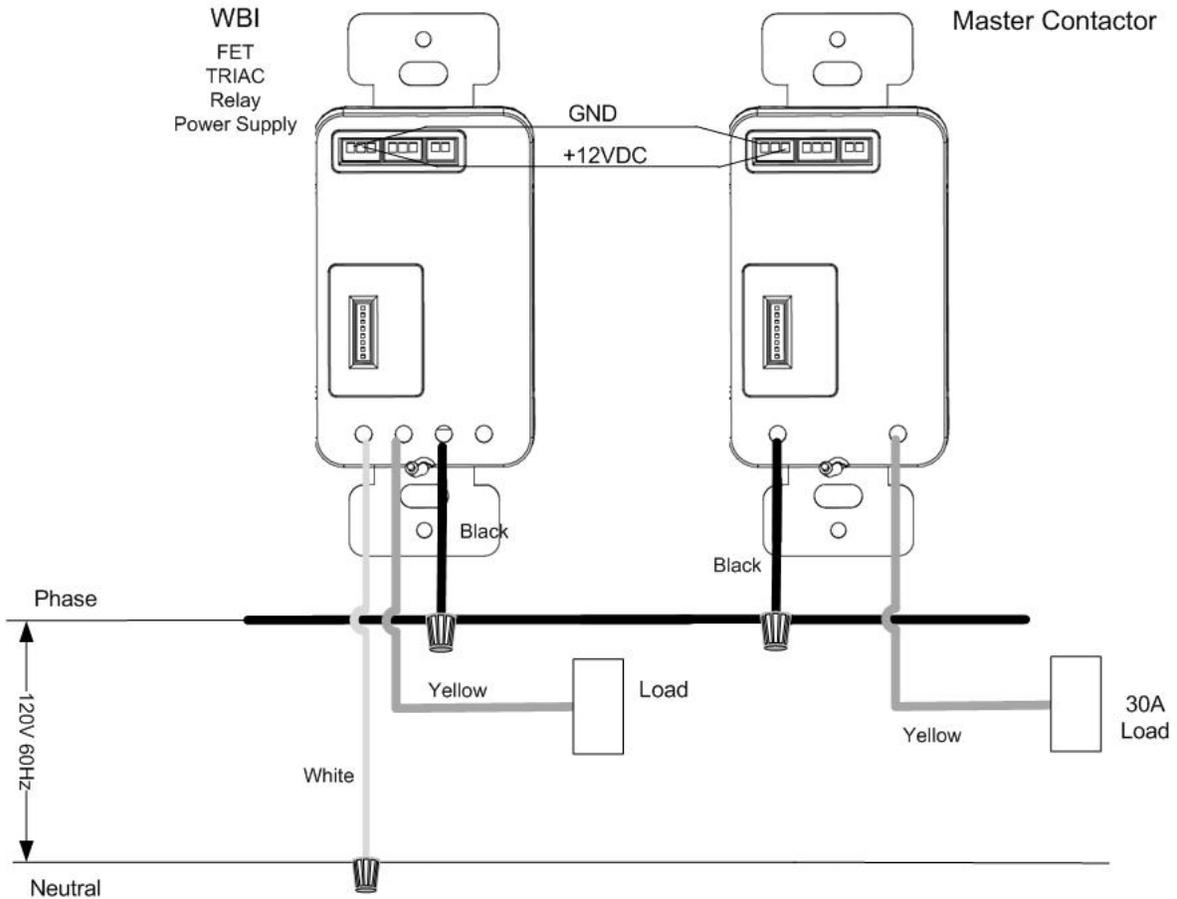


Figure 8. MODEVA WBI Master Contactor Wiring

WBI Power Supply

Use for applications where MODEVA must be line powered but does not require load dimming or switching. 200mA DC output.

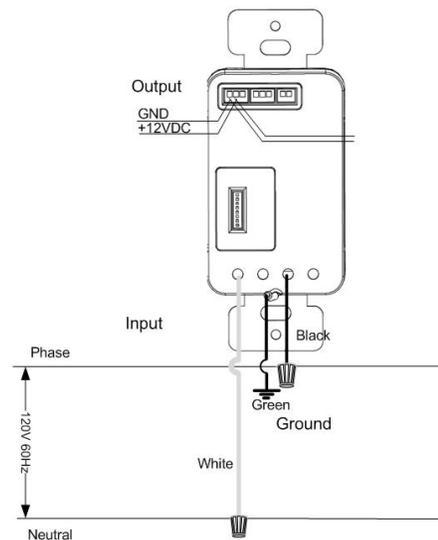


Figure 9. WBI Power Supply Wiring

Technical Specifications

Dimensions	American Single Gang	American Double Gang	American Triple Gang	British Gang	British Oversized
Height	119mm	119mm	119mm	86mm	86mm
Width	74mm	124mm	174mm	86mm	172mm
Depth	8.0mm	8.0mm	8.0mm	10.8mm	10.8mm

	American MODEVA Switch	American MODEVA Thermostat	British MODEVA Switch	British MODEVA Thermostat
User Interface	Capacitive Touch Sensor/Slider	Capacitive Touch Sensor	Capacitive Touch Sensor/Slider	Capacitive Touch Sensor
Maximum # of Outputs	1–6 discrete inputs or 1 slider per gang	1–7 discrete inputs	1–6 discrete inputs or 1–2 sliders	1–8 inputs
Communications	S5bus 2.4 GHZ RF	S5	S5	S5

Document Revision History

Document Revision	DATE ISSUED	REASON FOR CHANGE
V0.1	04-Jun-2010	Initial Draft
V0.2	09-Jun-2010	Change GS2/WBI to MODEVA and Load Assembly as needed
V0.3	17-Jun-2010	Add load ratings et al. from install guide
V0.4	17-Jun-2010	Incorporated Review Changes
V1.0	11-Apr-2011	No further review comments tendered; released to library
V1.01	06-Jul-2012	Added master contactor and power supply illustrations
V1.02	17-Jul-2012	Added British MODEVA data, added MC and PS tech info
V1.03	31-Jul-2012	Added info on MODEVA thermostats
V1.04	30-Aug-2012	Formatted for consistency
V2.0	28-Sep-2012	Changed Master Contactor information
V3.0	27-Feb-2017	Rebranded to Comply with Honeywell Guidelines

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