

Operational Description: HA04 – Outdoor Module

Power is supplied to the HA04 power Printed Circuit Board (PCB) via a NEUTRAL blade contact and a LINE VOLTAGE blade contact. The 125VAC input voltage is reduced, rectified, and regulated to supply 3.3VDC to the RF module. The relay for applying disconnecting voltage from the light load plugged into the device is controlled by an ASIC control output with a transistor.

The RF module PCB is a separate PCB that houses the Z-wave ASIC, crystal, EEPROM, various supporting components, and the RF front end. This entire PCB is completely enclosed by a metal shield connected directly to circuit ground. The RF module PCB is attached to a second mounting PCB via headers. The 908.42MHz antenna measuring approximately 3.25” in length, exits the metal shield via a small hole. The RF module mounting PCB interfaces with the power PCB via a 5-wire ribbon cable.

A third LED/Pushbutton PCB contains the LED and the pushbutton traces. This PCB interfaces with the RF module mounting PCB via a 4-wire ribbon cable. The single LED provides feedback function for displaying ON, OFF, or receiving transmission (FLASHING). Local control of the device is achieved via a single pushbutton input directly into the Z-wave ASIC. The pushbutton trace is printed on the bottom side of the LED/Pushbutton PCB.

Other interfaces to the power PCB include the 3-prong plug receptacle used for connecting lamp or appliance loads to the output, and the 3-prong plug blades used for plugging the device into a 125VAC grounded receptacle.

The basic functions of the HA04 include turn ON or turn OFF. A momentary press and release of the pushbutton will toggle the state of the device ON or OFF.