

Operational Description: HA06 – 300W In-wall dimmer switch module

Power is supplied to the HA06 power Printed Circuit Board (PCB) via a LINE VOLTAGE wire lead and a LOAD wire lead output. The 125VAC input voltage is converted to supply 3.3VDC to the RF module. The LINE input is monitored for zero-cross with isolation circuitry feeding directly into the Z-wave ASIC. The triac, for varying the dimming of the light load plugged into the device, is controlled by the ASIC triac control output, further isolated by transistor circuitry and an optocoupler.

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 PCB via headers. A green LED is soldered to the second PCB, which is outside the RF shield. This single LED provides feedback function for displaying ON, OFF, dimming, or receiving transmission (FLASHING). The 908.42MHz antenna measuring approximately 3.25" in length, exits the metal shield via a small hole. Local control of the device is achieved via two pushbuttons interfaced to the Z-wave ASIC. The pushbutton trace is printed on the bottom side of the second PCB. The second PCB interfaces with the power PCB via a header.

Other interfaces to the power PCB include the LOAD wire used for hard-wiring lamp loads to the dimmer output, and the HOT wire used to hard-wire the device to a 125VAC power source.

The basic functions of the HA06 include turn ON, turn OFF, dim-up, and dim-down. A momentary press and release of the pushbutton will toggle the state of the device ON or OFF. A press and hold of the button will toggle either a dim-up or dim-down. Releasing the button and executing a press and hold a second time will toggle the opposite dim function (either dim-down or dim-up).