Axium
Home Audio Control

OVERVIEW

Quad Sensor has four detection modes.
1) AC Current detection.
2) Analog Audio signal detection
3) Digital Audio signal detection
4) Composite (CVBS) and Component Video (YPbPr) signal detection.

The Sensor directly interfaces with the Axium R4 Router, providing a Boolean contact state i.e. On / Off or Present / Absent status.

The IR/Sensor port on the R4 Router is conveyed through the Sensor to an IR output port.

The Sensor has adjustments for 'Off' Delay, and Gain or Sensitivity.

When an input threshold is exceeded the Sensor output is set to a low resistance or 0V. The 'Detect' LED is illuminated when the output is set low.

The output remains low until the sensed input reduces below the thresholds hysteresis plus the preset time delay, after which the output is set to high resistance (>1MΩ) or open circuit.
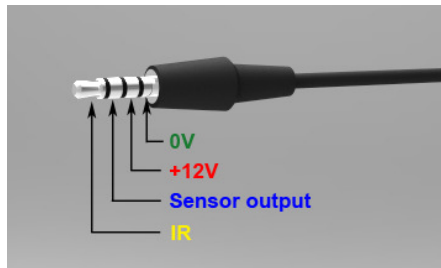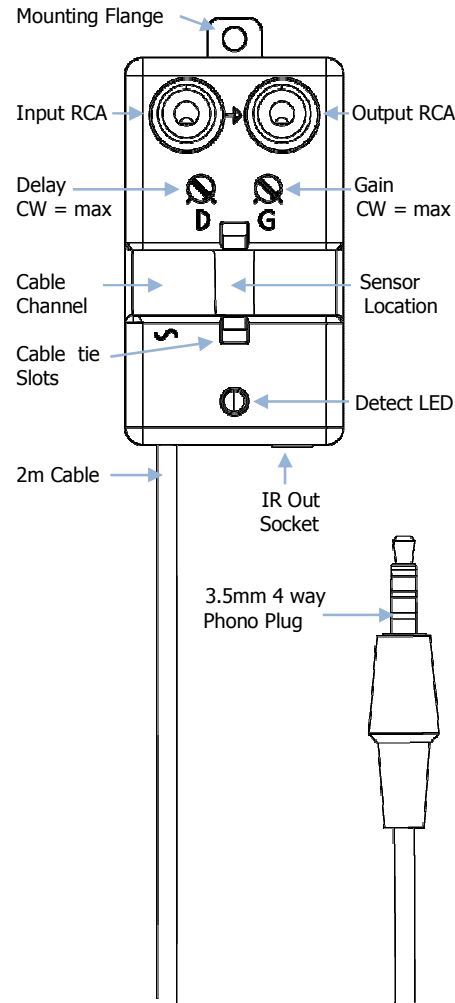
FEATURES

- Power requirement: 12VDC 10mA
- Switch 'On' Resistance: 3.5Ω
- Switch Current: 0.22A continuous
  0.8A pulsed <300μs
- Detect LED indicator – Orange.
- RCA input resistance: 200KΩ
- Delay adjustment: 2 – 20 seconds
- Gain: adjustment range suitable for detecting a minimum of:
  - 0.1A current in Mains conductor (must be firmly seated & optimally rotated in the sensing channel)
  - 1.0V CVBS composite video or Y component video signal
  - 0.5V SPDIF Digital Audio signal
  - 05V RMS analog audio signal
- Cable length: 2m
- Isolation
  - RCA: 200VDC (50VAC)
  - Current: > 5KV~
- IR emitter output socket
- Permanent Mounting flange
- Woodscrew and Cable Tie supplied
- Dimensions: Width 32mm (1.24")
  Depth 55mm (2.18")
  Height 14mm (0.55")
- Weight: 32g (1.1oz)
- Ambient Operating Temperature: 0 - 50°C
- Ambient Operating Humidity: 5 – 95% non-condensing
- Approvals: C-Tick CISPR22, FCC, RoHs.

TERMINATION

The cable termination is via a 4 way 3.5mm Phono plug, and may be directly connected to the Axium R4 router IR/Sensor port.
Function colours = cable's conductor colours

- 0V
- +12V
- Sensor output
- IR

PART IDENTIFICATION

- Mounting Flange
- Input RCA
- Output RCA
- Delay CW = max — D
- Gain CW = max — G
- Cable Channel
- Sensor Location
- Cable tie Slots
- 2m Cable
- IR Out Socket
- Detect LED
- 3.5mm 4 way Phono Plug

MODE 1 – AC Current

The Sensor incorporates a highly sensitive magnetic field strength detector.

Power cords carrying current to an appliance have a source conductor (Phase) and a return conductor (Neutral). The current in these conductors is equal and opposite, which means the magnetic field created by the current flowing in one direction is cancelled by the current flowing in the opposite direction. However the Sensor can detect current in the cable when one of the cable conductors is **closer** to the sensor than the other. Note the sensor is centrally located at the base of the sensing channel

Close conductor proximity is achieved in several ways.
1) For Round cables the conductors are usually internally twisted, therefore rotate or slide the sensor along the cable to find the best position for optimal 'ON' and 'OFF' response.
2) For flat cables install the cable so that the conductors are vertically stacked : see image below.
   The cable should **not** be laying flat in the channel.
3) Ensure the cable is secured rigidly in the base of the channel using the supplied cable tie.

Some appliances have minimal differences between the ON & Standby power consumption, alternative methods must be used to sense the power status on these products.

MODE 2 – ANALOG AUDIO

This mode requires > 0.5V RMS (line level) analog signal to trigger the Sensor. The nature of analog music is such that the average signal level is very low.
So to achieve good detection it is necessary to increase the Delay and Gain significantly.
This mode should be viewed as an Audio 'Present' function.

Analog Audio

It should be understood that if the audio source is muted, or preamplifier level set very low, or the audio source has widely varying dynamic range, then the minimum RMS voltage may not be met and the sensor will deactivate after the delay time.

For best results some experimentation may be required with the Gain and Delay trimmers.

MODE 3 – DIGITAL AUDIO

This mode requires 0.5V signal on the Digital Audio Coaxial connector
Most source devices output a signal even if there is no audio track being played.
This mode should be viewed as a Device 'ON' function.

Digital Audio

MODE 4 – VIDEO

This mode requires 1.0V sync signal on the Analog Video to activate.
Both the Composite (CVBS) signal and the Y Component Video signal can be detected.
Most source devices constantly output a sync signal, even when no source is playing.
This mode should be viewed as a Device 'ON' function.

Composite Video

Component
YPbPr Video
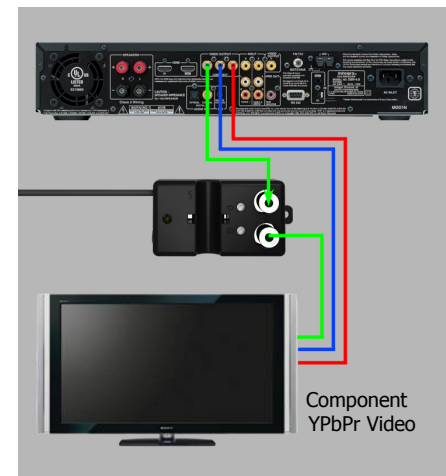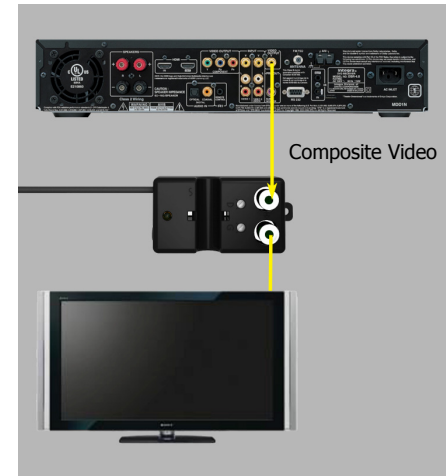
PRECAUTIONS

- Never expose the unit to moisture
- Ensure that the unit is correctly powered by a suitable DC supply.
- The Gain and Delay trimmers have a maximum turn angle of 270°, never force the trimmer past the stops or the unit will be damaged.
- The device is only capable of detecting line levels (1V – 2V max). Never plug speaker level audio into the RCA input damage will result.
- If there is a significant difference between the source and control system earth potentials then there is a risk that false triggers may result.

LIMITED WARRANTY

Audio Engineering Ltd warrants its products to be free of material and construction defects. The warranty is for One Year from the date of purchase by the original consumer.
Any products returned to either Audio Engineering Ltd or the Axium Distributor and found to be defective within the warranty period will be repaired or replaced at no charge. The warranty does not cover costs relating to installation or removal of the product or consequential damages.