



MOTION SENSOR ASSEMBLY UVT-CS-MSA

DESCRIPTION

UVTronix is proud to introduce yet another building block for the UV industry. Our new highly adaptable motion sensing electronic switch fills a gap in the industry at an affordable cost and with unparalleled detection range.

The motion sensing system consists of one controller and up to four sensing points that can be used to monitor motion in one to up to four areas, same or different rooms. Common uses include UVC disinfected areas, ambulatory UVC disinfection systems, HVAC areas where harmful UVC radiation is present, portable UVC disinfection units and more.

FEATURES

SENSOR

A highly sensitive motion sensor coupled with proprietary embedded software monitors an area in three dimensions and up to 10 meters from the sensor. Sensors are interfaced to the controller via a low-cost four conductor wire terminated with RJ-11 connectors (sold separately).

Each sensor can be ordered in either a single or dual configuration. When ordered in dual configuration, two motion sensing elements are electrically OR'd for redundancy and to satisfy integration into UL-redundancy-required systems. The temperature differential between the human body's radiated heat and its surroundings is low (4°C, -7.2°F). The sensor's usable ambient temperature of -20°C to +60°C (-4°F to +158°F no condensation) allows human movement detection in the winter where large differential temperatures are common, as well as the summer where smaller temperature differentials occur.

CONTROLLER

A reliable, state of the art microcontroller is used to minimize false triggers. The number of sensors used do not need to be predefined, as the system automatically detects and identifies which of the motion sensor(s) have detected motion. The controller is capable of interfacing one, two, three or four sensors using the same controller board.

The controller accepts a wide range of operating voltages from 10VDC to 32VDC max, allowing the use of readily existing 24VDC systems (HVAC) or off-the-shelf 9VDC, 12VDC etc. power supplies. Built-in polarity protection guards the controller in case that the power supply polarity is incorrectly wired.

The controller's usable ambient temperature is 0°C to +50°C (32°F to +122°F) with no condensation.

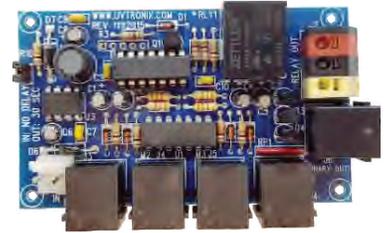
PROGRAMMABLE DELAY

A jumper allows for selection of a delay of 0 seconds (instant arm) or 30 seconds (delayed arm), allowing the controller to instantly monitor the area or delay the monitoring to allow personnel to leave the room. For other factory programmed delays contact UVTronix.

OUTPUT COLLECTOR STATUS PORT

The output collector's binary state output port allows easy interfacing from the controller to any other automated system such as PLCs, data loggers, computers, building management systems, BACnet, etc. The output collectors allow interfacing to a multitude of digital levels such as CMOS, TTL, PLC (24V) and any other voltage systems up to 40VDC. It also allows the connection of three LEDs to display the different states.

CONTROL BOARD



SENSOR BOARD



Due to a program of continuous improvement, the product specifications may change at any time.

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FEATURES

DRY CLOSURE OUTPUT

A push-in terminal C-NO-NC closure is available to control loads up to 10A 277VAC / 12A 125VAC / 5A 250VAC. Push-in terminals ease the connection to an external system and field wiring.

THEORY OF OPERATION

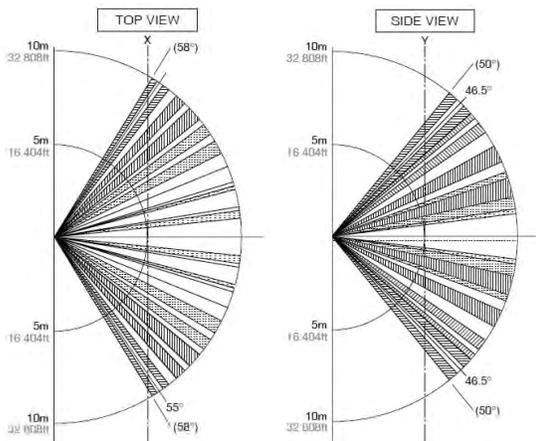
Once the (normally open) input receives a momentary closure at the trigger port via PLC, local pushbutton, Wi-Fi contact etc, the controller determines the programmed delay (instant or delayed) and triggers the C-NO-NC closure upon the end of that delay. The dry closure can then energize the UVC system. All connected sensors are then monitored. If any one or multiple sensor(s) detect motion, it will immediately disable the dry closure, effectively disabling the UVC system(s) interfaced to it. When motion is detected, the controller will trigger the relay and remain in that state until the controller receives a reset signal.

OPEN COLLECTOR TRUTH TABLE

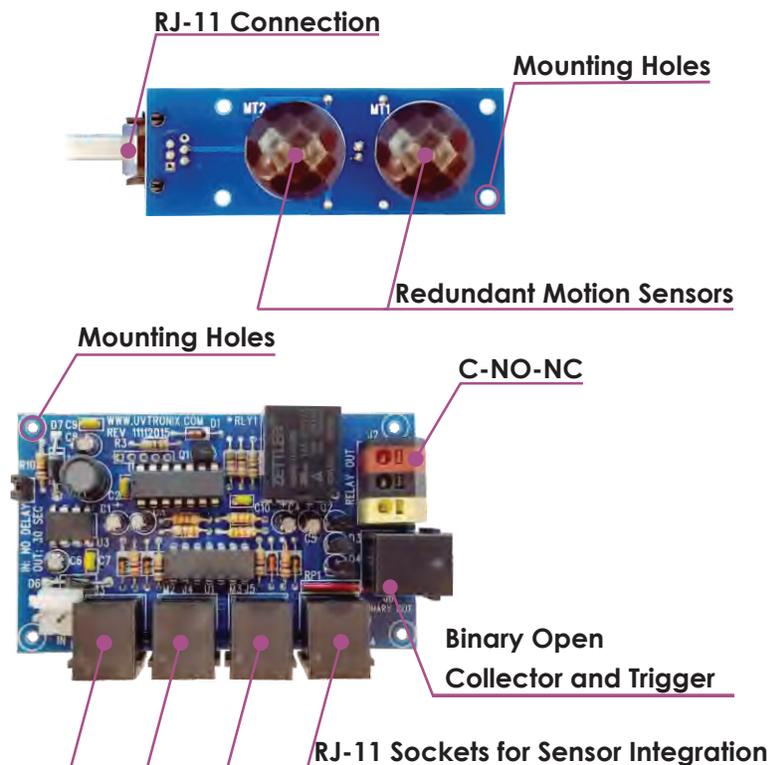
Binary open collector status indicates in real time the states:

LSB		MSB	
0	0	0	OPERATION ABORTED BY SENSOR 1
0	0	1	OPERATION ABORTED BY SENSOR 2
0	1	0	OPERATION ABORTED BY SENSOR 3
0	1	1	OPERATION ABORTED BY SENSOR 4
1	0	0	COUNTING DOWN - TRIGGER RECEIVED
1	0	1	WATCHING FOR MOTION
1	1	1	IDLE - WAITING FOR TRIGGER

ANGULAR AND LINEAR DETECTION FIELDS



SYSTEM OVERVIEW



PART NUMBERS:

- Full Assembly: UVT-CS-MSA
- Control Board: UVT-CS-MSA-CB
- Sensor Board: UVT-CS-MSA-SA