

# AquiTron

# AT-PIR-SOV

Water Shut-Off System



**INSTALLATION  
INSTRUCTIONS**



**aquilar**  
leak detection solutions

# AT-PIR-SOV

## PIR Auto Shut-Off System

Please read these instructions carefully and keep them in a safe place (preferably close to the module) for future reference. These instructions must be followed carefully to ensure proper operation. The AT-PIR-SOV is designed to operate with the supplied 6vdc solenoid valves only

### A. GENERAL INFORMATION

The AT-PIR-SOV is a BREEAM Wat 03 compliant controller, PIR sensor and water solenoid valve system used to isolate the water supply to WC's when they are not in use, thereby limiting the risk of water wastage and damage from minor water leaks.

#### INSTALLATION ITEMS (NOT SUPPLIED)

- Recessed or surface mount single gang electrical backing box
- Cable glands
- Power cable

#### TOOLS REQUIRED

- Drill or hole punch for electrical conduit entries
- Cable cutter / strippers
- Small flat-head screwdriver

### B. PRODUCT INFORMATION

#### PIR

230Vac **This controller Must Be Earthed**

#### VALVE OUTPUTS

6Vdc 1.2A

#### CABLE

2 core copper 0.75mm<sup>2</sup> (for cable runs over 50m use 1mm<sup>2</sup>)c

#### RELAY RATINGS

Max 3A @ 230Vac°F)

#### EXIT TIMER

**Minimum:** 6 seconds,  
**Maximum:** 20 minutes

#### PIR POSITIONING

Wall or ceiling fixing. Within 9 metres of the entrance (2 to 3 metres is recommended)

#### BACKING BOX RECESS DEPTH

Master PIR – 47mm. Secondary PIR – 30mm

#### SECONDARY PIR CONTROLLER

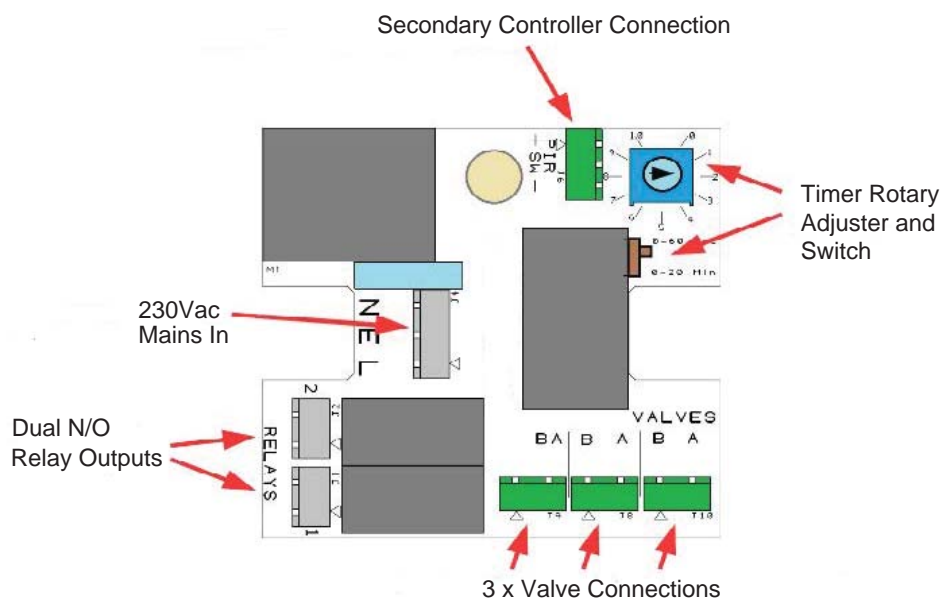
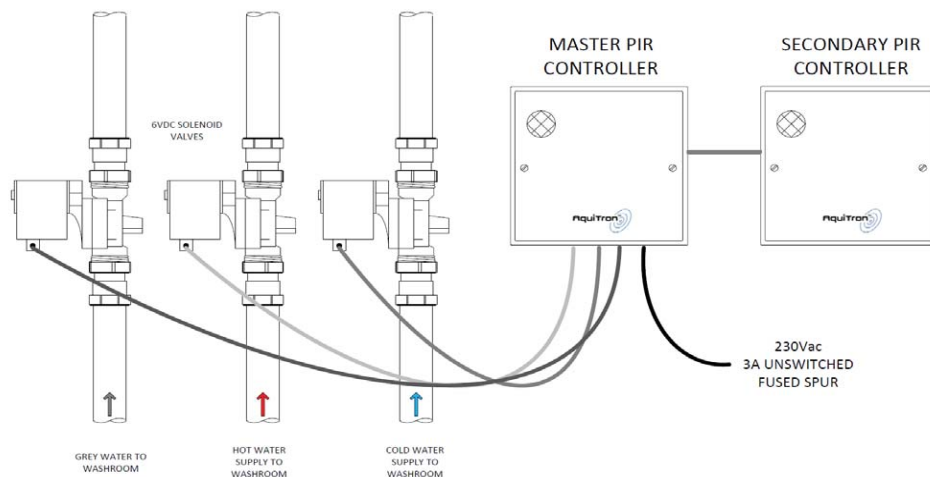
Screened pair with .2mm<sup>2</sup> copper conductor  
N/R

### C. WIRING INSTRUCTIONS

This product must be installed by a suitably qualified person in accordance with the current building and IEE regulations. Before installation isolate the mains supply.

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**D. SCHEMATIC WIRING DIAGRAM**



**Note: This device must be earthed**

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**E. CONNECTING THE VALVES AND RELAYS**

**RELAY SWITCH OUTPUT**

The controller has two relay switch outputs. Each output is capable of switching the following :

**Voltage:** 277V AC / 30V DC

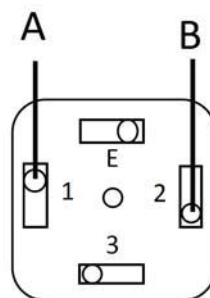
**Current:** 5A (resistive load)

The minimum load that can be switched reliably is 100mA at 5 volts DC. When the timer is activated (e.g. by the PIR sensor detecting movement) the contacts of both relays will close (switch on) and when the timer reaches its set time period they will both open (switch off), see Timer section.

**VALVE WIRING**

The diagram shows the wiring of the valves connector block. Valves should be checked for correct operation during commissioning and the wiring reversed if required.

When using Nylon/Plastic Valves –  
A=Red B=Black.



Valve Connector Block

**VALVE DRIVER OUTPUTS**

There are three valve driver outputs that will open with a pulse of electricity in one direction and close with a pulse of electricity in the opposite direction. All outputs are designed to drive the supplied 6v bipolar valves only. They will not drive a standard valve. When the timer is activated (e.g. by the PIR detecting movement) all three valve drivers will produce a pulse of electricity with contact A as positive. When the timer reaches its set time period then all three valve drivers will produce a pulse of electricity with contact B as positive.

**Note:** The three drivers do not all operate at the same time, they operate one after the other, with 2 - 3 seconds gap in between.

**F. TIMER**

There are two controls for the timer, a switch and a rotary adjuster. The switch selects one of two ranges for the rotary adjuster as follows- 0 to 60 seconds 0 to 20 minutes Simply adjust the switch to the required range. The rotary adjuster allows the specific timer period to be set, the adjuster has numbers 0 to 10 around its sides to help with setting the required timer period, the following is a guide to the periods that can be set.

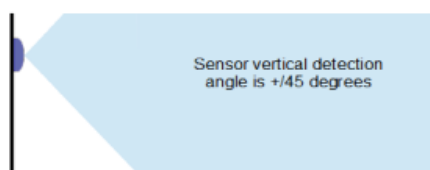
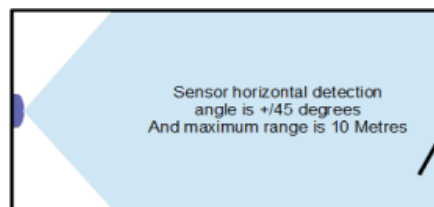
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Adjuster Value	Switch at 0-60 seconds	Switch at 0-20 minutes
1	6 seconds	2 minutes
2	12 seconds	4 minutes
3	18 seconds	6 minutes
4	24 seconds	8 minutes
5	30 seconds	10 minutes
6	36 seconds	12 minutes
7	42 seconds	14 minutes
8	48 seconds	16 minutes
9	54 seconds	18 minutes
10	60 seconds	20 minutes

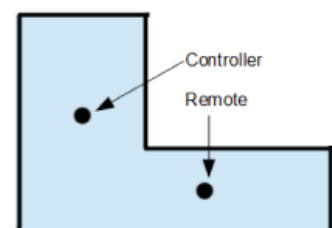
When the timer is first activated (e.g. by the PIR sensor detecting movement) it will run for the period set by the adjuster and switch. If movement is again detected before the controller time cycle has expired then the timer will reset to run for the whole period again. This means the valves remain open and the relays stay on for the complete phase while movement is being detected, once movement has ceased to be detected then the timer will expire after the set time and the valves will close and the relays will switch off.

### G. PIR SENSOR

The internal PIR sensor has a range of 9 Metres. The device must be located so the sensor will detect movement within its field of view.



If the PIR controller can not be located where all movement will be within its field of view then additional secondary PIR remote sensors may be used. The diagram below shows a controller and remote being used to provide full coverage of an L shaped room.



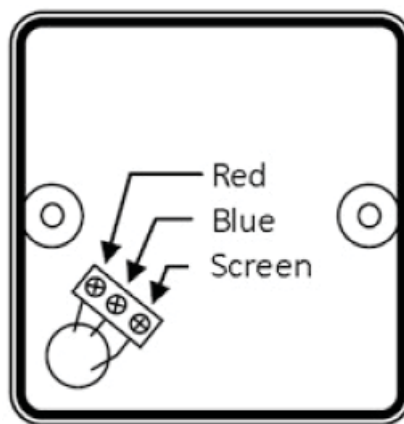
### PIR SENSOR POSITION

Locate the sensor on the ceiling or high on a wall opposite and with a clear view, to the entrance. Keep away from areas that may be affected by damp, steam and water splashes. If you are unsure, test that the unit operated correctly before fixing permanently.

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**H. USING A REMOTE SECONDARY PIR CONTROLLER**

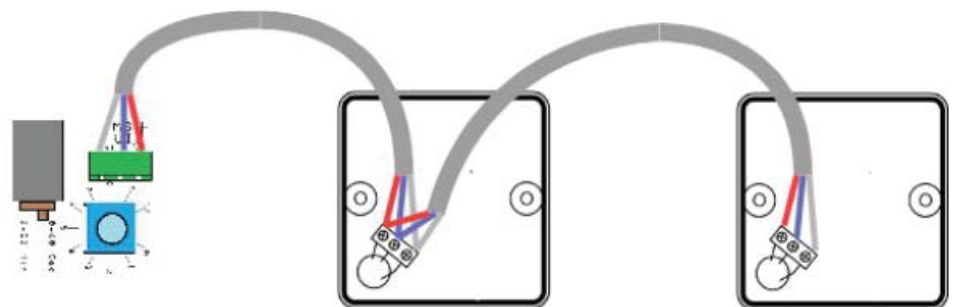
Up to 6 remote secondary PIR units may be connected to a single master PIR controller. The minimum specification cable used to connect then should be a twin cored screened cable with conductor diameter 0.2mm. Aquilar 3550 TTSIM-CC-100 (other lengths available) communications cable is suitable. On the PIR controller, the cable should be connected to the remote secondary PIR connector as follows-



**CONNECTIONS**

- Red:** + (positive)
- Blue:** SW
- Black:** - (negative)

If more than one secondary PIR unit is used then it is recommended that they are connected one after the other daisy-chain fashion rather than all being connected to the controller.



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