Diamond Controls®
Leak Detection & Trace Heating Systems

Datasheet

WATER LEAK DETECTION

AT-OFC

PIR Occupancy Flow Controller

The AquiTron Occupancy Flow Controller (AT-OFC) is a BREEAM Wat 03 Part 2 compliant controller (BREEAM credit available: 1). The system is used as a flow control device that isolates the water supply to WC's and other areas when they are not in use, thereby limiting the risk of water wastage and damage from undetected water leaks. The AT-OFC connects to Aquilar's PIR sensors and WRAS approved water solenoid valves. Flexible connection options mean compatible third party PIR's and valves can also be used if required.

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Application

The system comprises of a main controller, ceiling mounted recessed or surface mounted PIR sensor (maximum of 10 PIR sensors) and a range of 6Vdc brass and plastic latching solenoid valves 15mm to 42mm (½" to 1½"). Up to 3 valves can be powered by the controller.

The AT-OFC is ideally suited to projects where PIR control is required for water shut off in commercial buildings: WC's, tea points, kitchens, utility rooms and shower areas. This system helps towards compliance with BREEAM WAT 03 Part 2. It can also be combined with all AquiTron or TraceTek leak detection systems to act as a master valve controller. The AT-OFC can provide an important element for a complete leak detection and prevention solution.

The AT-OFC will detect movement via the attached PIR sensor(s), while movement is detected the AT-OFC will activate any AquiTron solenoid valves and allow water to flow. When no further movement is detected a user selectable countdown time period will start (adjustable between 6 seconds to 20 minutes). After this time has expired the controller will close the valves and reset the two volt free relays which can be used to control third party equipment such as lighting or valves.

The AT-OFC system can be supplied with high quality AquiTron PIR sensors, however, customers can choose to use existing/alternative brands of compatible PIR lighting switches. Multiple controllers or PIR's can be daisy chained to suit most applications.

Technical Information

Power supply	100 - 240 Vac 50/60Hz
Input Control Types	PIR (230Vac) or N/O volt free trigger
Power Cable Size	3 Core Flex 1.0mm² to 1.5mm²
Maximum Number of 6Vdc Latching Solenoid Valves	3
Module housing	ABS 180 mm x 130 mm x 64 mm (L x W x D) IP 65
Maximum Number of PIR sensors	10
Outputs	3 x 6Vdc Pulse for AT-V-XX Latching solenoid valve outputs 2 x SPDT volt free relay contacts. Max load 3A @ 230Vac
Timer adjustment	6 sec to 20 minutes
Indicator	Power on LED (visible when enclosure cover is removed)
Maximum Distance to 6Vdc Valves from controller	50m
PIR sensor location	Ceiling or Wall mounting (Flush, recessed or Surface)

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PIR Technical Information

				
Product Code	AT-OFC-PIR-F	AT-OFC-PIR-S	AT-OFC-PIR-W	AT-OFC-PIR-M
Mounting	Flush (Recessed)	Surface	Wall	Semi-Flush
Dimensions (mm)	Ø 78 x D54	Ø 115 x D51	L55 x W78 x H120	L64 x W94 x H94
Mains Power	230Vac / 50 – 60Hz	230Vac / 50 – 60Hz	230Vac / 50Hz	230Vac / 50 – 60Hz
Sensor Technology	Passive Infrared	Passive Infrared	Passive Infrared	High Frequency
Installation Position	Ceiling	Ceiling	Ceiling, Corner	Wall, Ceiling, Corner
Optimum Mounting Height	2,2 – 4m	2 – 4m	1,8 – 4m	2 – 4m
Reach Radial	Ø 4m (13m²)	Ø 3m (7m²)	r = 1.5m (4m²) / r = 3m (14m²)	Ø 8m (50m²)
Reach Tangential	Ø 8m (50m²)	Ø 7m (38m²)	r = 5m (39m²) / r = 12m (226m²)	Ø 8m (50m²)

PIR Applications - PIR vs Microwave

PIR sensors are neither objectively better or worse than microwave sensors. Both sensor types have their own advantages and are better for different spaces and tasks.

PIR sensors detect heat and only pick up movement from living things, meaning they will give fewer false alarms. They do this by measuring the ambient temperature of the room using several detection beams. When a difference in temperature is detected by one of the beams, the sensor is activated, triggering the AT-OFC.

Microwave High-frequency motion detectors detect moving objects regardless of temperature, HF-sensor technology also detects movement through adjacent glass, wood and stud walls. High-frequency technology is the perfect alternative in areas that can pose problems for temperature-based infrared sensors such as odd shaped rooms. These motion detectors emit microwave signals and measure the time taken for the signal to be reflected back to the sensor. A person moving into the detection zone causes a disruption in the microwave signal, triggering the AT-OFC.

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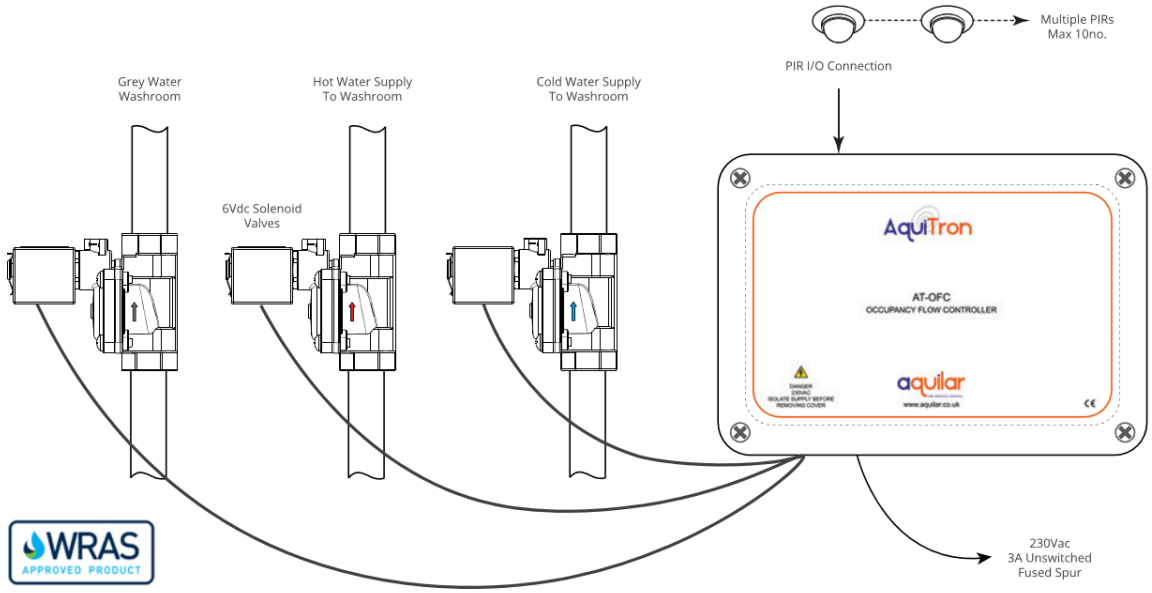
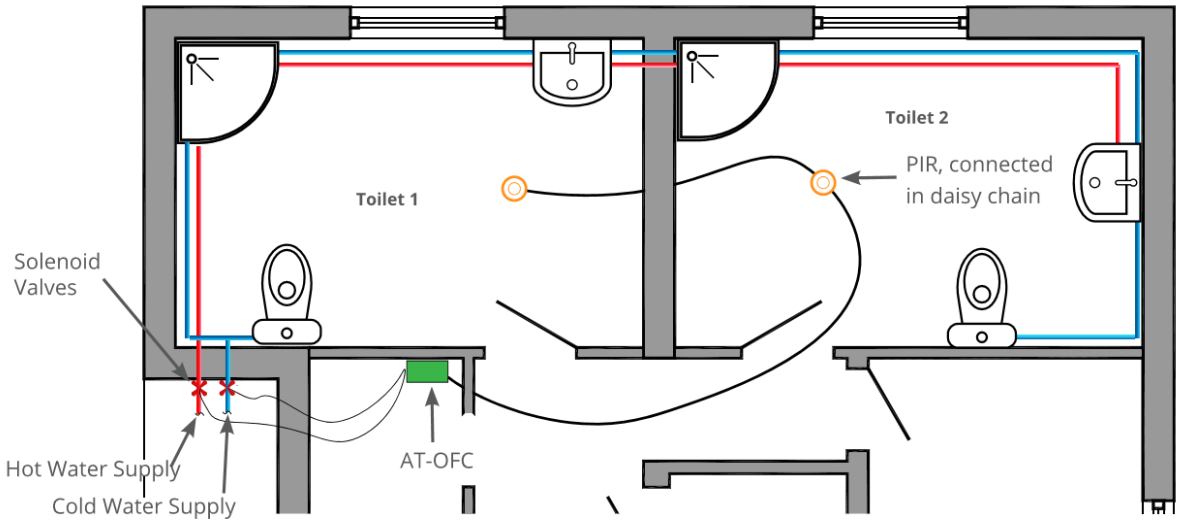
Typical Configuration





Approvals

Electromagnetic compatibility (EMC) 2014/30/EU:		
CE UKCA	Compliant with standards for emissions Compliant with standards for immunity	BS EN61000-6 3:2007+A1:2011 BS EN IEC 61000-6 1:2019

Ordering Information

Catalogue Number	Product Description
5725	AT-OFC Aquitron Occupancy Flow Controller, 230VAC
5726	AT-OFC-PIR-S Ceiling Mount Surface PIR, White, 230Vac
5727	AT-OFC-PIR-F Ceiling Mount Flush (Semi-Recessed) PIR, White, 230Vac
5724	AT-OFC-PIR-W Wall Mount Surface PIR, White, 30Vac
5723	AT-OFC-PIR-M Ceiling Mount Flush (Semi-Recessed) Microwave PIR, White, 230Vac

Ancillary Products

Product Description	Product Description
LL-MBV-15/24V	15mm Motorised Ball Valve 24V
LL-MBV-22/24V	22mm Motorised Ball Valve 24V
LL-MBV-28/24V	28mm Motorised Ball Valve 24V
LL-MBV-35/24V	35mm Motorised Ball Valve 24V
LL-MBV-40/24V	40mm Motorised Ball Valve 24V
LL-MBV-54/24V	54mm Motorised Ball Valve 24V
LL-VT	Valve Terminal
12V-DC-TXA	Transformer
12V-DC-TXB	Transformer
DC-VCU	Valve Control Unit

Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application.