DRAWING_NO.

Whitecroft Solo Specific Information

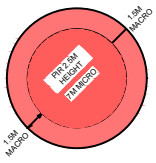
Whitecroft Solo is a comprehensive range of control devices; occupancy sensors, Dali rotary dimmer switch, Dali tunable white rotary dimmer switch, Dali retractive switch interface control unit.

The Solo range brings simple controls for use in stand alone room applications using the following control methods: Occupancy control, daylight control, manual control.

- Achieve optimal energy savings through occupancy and daylight detection.
- Short time delays can be set with micro detection PIRs and microwaves for greater energy saving.
- Our low levels of quiescent power consumption also deliver further energy savings.
- Mid-bay and Hi-bay sensor versions available for greater mounting heights, 12m and 16m.
- Note: to create surface mount sensor order a recessed with SLPSMK surface mount kit. To create a wall mount sensor order a recessed with SLMWMK2 wall mount kit.

PIR Macro and Micro Occupancy Detection Zones

Luminaires will be triggered by someone walking into the macro detection zone which is attuned to large movements. Once they are at their workstation then smaller movements will sustain illumination within the micro detection range. Typical mounting height of A PIR at 2.5m gives a micro range of 7m and a further macro range of 10m.



Microwave Occupancy Detection Zones

Microwaves have a high occupancy detection sensitivity throughout their detection zone.

230V Mains Cable Specification

Recommend cable size 1.0mm to 2.5mm wire section due to terminal size.

Dali Cable Specification

DALI Cable: 2 Core 1.5mm² radial. Maximum length = 300m. When DALI and mains cable share containment, DALI cable to be rated at same potential voltage as mains (although the DALI cable operates at ELV potential it is not classified as SELV). All wiring and connections are the responsibility of the customer

Ease of Install

- Locking rings (ceiling tiles) and spring clips (plasterboard) for installation flexibility.
- Pluggable colour coded connectors (PIRs).
- Quick and simple commissioning via hand held programmer SLHP.
- Sensors with 230V AC switching outputs can be wired in parallel. Do not exceed the maximum load rating of the lowest rated sensor in the circuit.
- Solo digital dimming sensor dimming outputs must not be connected in parallel.

Commissioning made simple

- Hand-held infrared programmer SLHP, press download button for the newly installed sensor. Change parameters as per your requirements then press upload to sensor, luminaires blink to confirm upload.
- Copy and Paste parameters between similar sensors, you can easily download from existing sensor and upload to a new one.
- The SLHP hand-held programmer is backwards compatible with our legacy stand-alone sensors.
- Please refer to our website www.whitecroftlighting.com for SLHP user manual.

General Occupancy Information

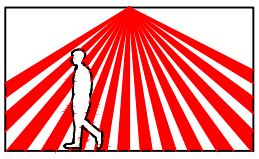
Technology

Passive Infrared (PIR) sensors work by detecting the presence of heat energy in confined spaces. Microwaves operate differently to PIR sensors, by projecting microwaves using dopplar effect, which bounce off surfaces and return to a sensor within the detector within a given time, movement within the detection zone interrupts this time. By analysing this information the sensor can detect any movements within its range and do all this in less than a microsecond.

There are specific differences between microwave sensors and PIR sensors.

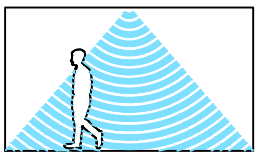
- Generally, microwave sensors have much better sensitivity than PIR sensors.
- Generally, microwave sensors have higher coverage range than PIR sensor by application.
- Microwave sensors have a continuous field of detection where as PIR sensors have slotted detection field. PIR sensor may miss small movement if mounted higher than recommended. Hence microwave sensors are better in security applications compared to PIR.
- Microwave sensors have a higher false triggering rate than PIR sensors.
- Microwave sensors are slightly more expensive when compared to PIR sensors.
- Microwave sensors consume more energy than PIR sensors. PIR sensors consume about 0.8 to 1.0 Watt electricity and microwave sensors consume about 1.1 to 1.5 Watt.
- Typically microwave sensors are suitable for larger areas of high sensitivity whereas PIR sensors are suitable for smaller areas.
- PIR sensors perform inefficiently when the ambient temperature exceeds 35°C.
- Due to their increased sensitivity microwaves need to be mounted to a stable surface, away from unwanted moving objects and air currents. Avoid mounting too close to glazing as they could then detect movement outside.

PIR Detection



Technology: Infrared

Microwave Detection

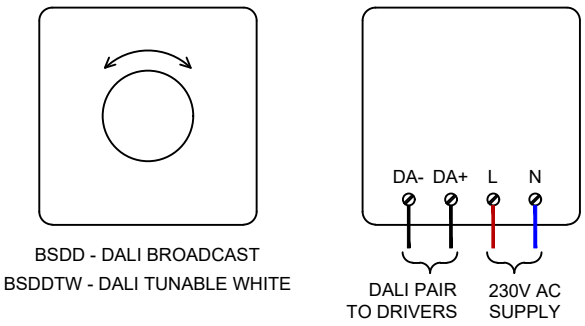


Technology: Doppler Effect

Occupancy Detection and Photocell Modes

- Occupancy presence detection: whereby luminaires are switched on and off automatically.
- Occupancy absence detection: whereby luminaires need to be switched on manually and then off either automatically.
- Photocell passive mode: will inhibit turn-on of the controlled load if sufficient natural light is available. It will not turn the load off whilst an area is occupied.
- Photocell active mode: will turn the controlled load on and off as required whilst natural light levels fluctuate during a period of occupancy.
- Photocell daylight hold off will turn off luminaires when the ambient light level influenced by daylight exceeds required lux level using the threshold set when commissioned.
- Photocell regulation via Dali dimming functionality. Via maintained illuminance this will achieve the optimum light level for comfort, security and energy saving. The light level of luminaires can be adjusted to compensate for an adjustment in natural daylight, this will allow the optimum light level to be achieved using both natural and artificial light at any given time in the day. The optimum light levels should be set once the building has been decorated and fully furnished.

BASIC ROTARY DIMMERS



BSDD - DALI BROADCAST

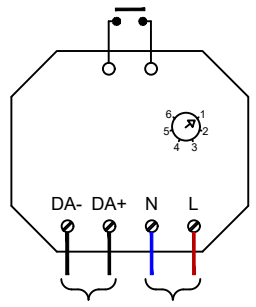
BSDDTW - DALI TUNABLE WHITE

DALI PAIR TO DRIVERS

230V AC SUPPLY

DALI SWITCH INTERFACE

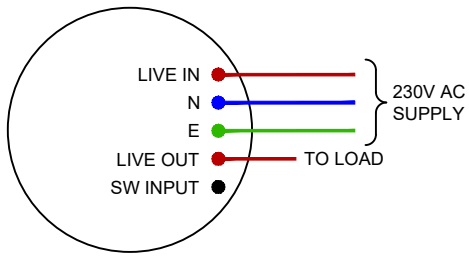
RETRACTIVE SWITCH SUPPLIED BY OTHERS MAX CABLE LENGTH 1M



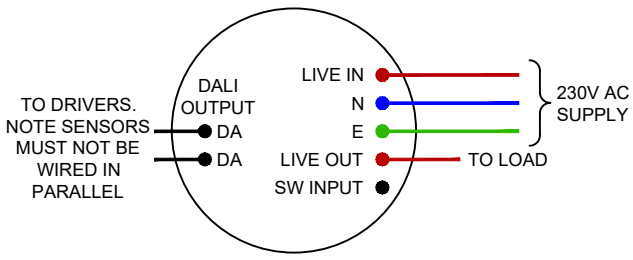
DALI PAIR TO DRIVERS

230V AC SUPPLY

230V SWITCHING OCCUPANCY DETECTOR

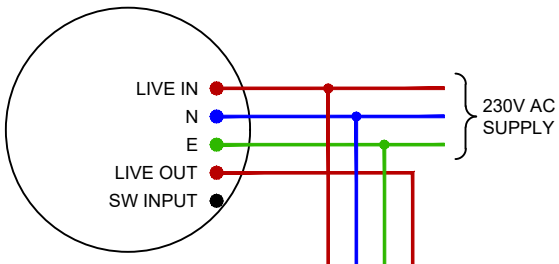


DALI DIMMING OCCUPANCY DETECTOR

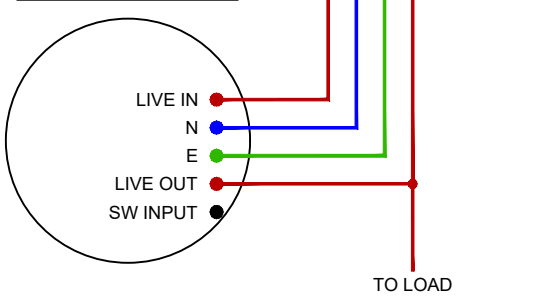


230V SWITCHING WIRED IN PARALLEL

230V SWITCHING OCCUPANCY DETECTOR



230V SWITCHING OCCUPANCY DETECTOR



Whitecroft Solo Technical Wiring Application Notes
Rev 3 - 17/08/22

Note :- All information detailed in this document is **not** project specific, and is provided as a typical example only. Whitecroft Lighting reserve the right to make changes to Equipment and Specification as required. It is the customers responsibility to verify the required specification on a project by project basis.

Whitecroft Lighting Ltd
Burlington Street
Ashton - under - Lyne
Lancashire
OL7 0AX
United Kingdom

Telephone: +44 (0)161 331 6811
Facsimile: +44 (0)161 331 5855
email@whitecroftlight.com
www.whitecroftlighting.com