RINGWAY
Control & Automation

Head Office
Ringway Control & Automation
ABN 47 087 315 179
4 Lady Penrhyn Dr,
Unanderra, NSW 2526
products@ringway.com.au
Ph 02 4255 4300 Fax 02 42718990

Mackay Office
Ringway Materials Handling
Unit 10 Woodman Pde,
Mackay, QLD 4740
products@ringway.com.au
Ph 07 49524001 Fax 07 49522216

LIGHT ACTIVATED SWITCH

P/N's – LIGHTSW, LITESWWC, LITESWFP, LITESWPBS

DESCRIPTION:

The Ringway Light Activated Switch range uses a light sensitive resistor to detect incident light above a user-set level and operate a one-shot output. Four light switch options are currently available: 'LIGHTSW' designed to work in Ringway's proprietary traffic control system; 'LITESWWC' and 'LITESWPBS' which are general purpose switches providing a 24V output when activated, while 'LITESWFP' is a general purpose 24V switch fitted in a flameproof enclosure for use in Group 1 explosive atmospheres.

The LIGHTSW and LITESWWC are housed in a PVC enclosure with dimensions 77 x 77 x 54 mm. The enclosure is fitted with a 50mm snout that limits the incident light. The enclosure is designed to meet IP55 as required by AS/NZS 4871 for electrical equipment for use underground. On the LIGHTSW model an external red/green bi-colour LED indicates the current state of the traffic control system. The LITESWPBS is housed in a 235mm x 130mm x 100mm orange polycarbonate enclosure to IP55 with a 50mm snout. The LITESWFP unit is housed in an A.T. Flameproof Series 351 enclosure which has a window through which the sensor can be activated.

A number of parameters are available for adjustment by the user. This includes the light sensitivity threshold that determines the level of light considered a request to operate, which is adjusted via a trimpot accessible under the lid. A LED is provided next to the light sensor to indicate when the incident light is above the sensing threshold. The sense-time setting determines how long the light source must be continuously present before being acknowledged and is set at either 1 or 2 seconds by an internal dip-switch. When a valid switch request is registered the output is turned on for 1.5 seconds then turned off (pulsed). The input sensor is disabled for 1 or 2 seconds (same as sense-time selection) after an output pulse to prevent unintentional double switching of the device. The activating light source must be removed from the sensor before another operation of the switch can be instigated (one-shot).

FEATURES:

- **Simple**, **robust** and **functional**.
- Convenient cap-lamp switch activation
- Built in one-shot functionality to prevent inadvertent double switching
- Switch operation through glass for Ex ‘d’ applications
- IP55 design
- Easy connection

APPLICATIONS:

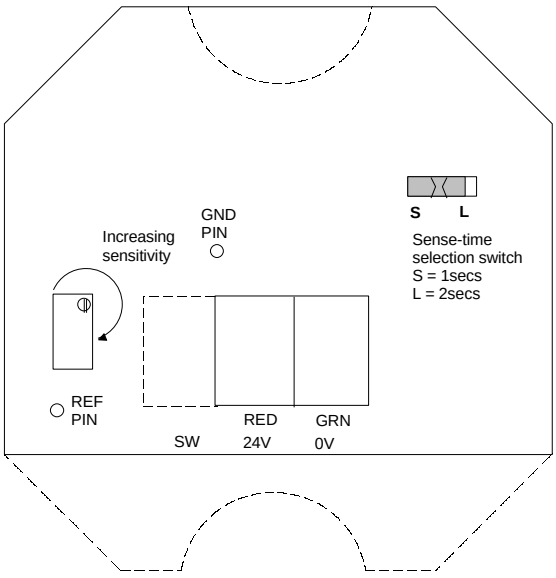
The light activated switch provides a useful alternative to the traditional chain switch in operating traffic lights underground. The light switch eliminates the need for human contact with the switch mechanism. With a light switch mounted at the entrance points of the roadway under control, operators can switch the traffic system using their cap lamp. The light switch is also viable in situations where a chain switch or limit switch are not easily mounted or accessed. Additionally, the light switch has found application in hazardous areas mounted in a flameproof enclosure enabling operators to activate a PLC input inside the flameproof enclosure via a cap-lamp or torch.

BRIEF TECHNICAL SPECIFICATIONS:

Power Supply: LIGHTSW – 20 to 27V dc @ 21mA + output current
LITESWWC – 20 to 30V dc @ 22mA + output current
LITESWFP/LITESWPBS – 20 to 30V dc @ 32mA + output current

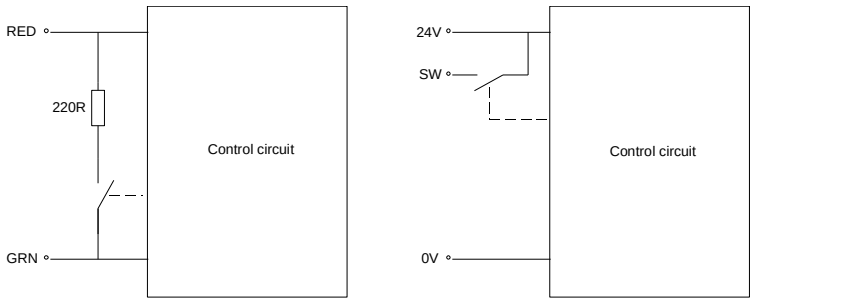
Output Current: LIGHTSW – Standard current load to operate Ringway Traffic System (100mA)
LITESWWC / LITESWFP/LITESWPBS – Relay output can switch up to 2A inductive @ 24VDC

Body Dimensions: LIGHTSW / LITESWWC - 77 (l) x 77 (w) x 54mm (h) Box, 50 x 32mm Snout
LITESWFP – A.T. Flameproof Enclosure 351 Series with Window.
H = 107mm, Dia = 136mm
LITESWPBS - 235mm (l) x 130mm (w) x 100mm (h), 50 x 32mm Snout



Sensitivity Adjustment and Sense-time selection

NOTE: On LITESWFP/LITESWPBS model, the sensitivity trim pot may be adjusted through a hole in the top board but to access the Sense time selection switch the top board will need to be unscrewed and moved out of the way.



(a) LIGHTSW (b) LITESWWC / LITESWFP / LITESWPBS

Output Stage Configuration for Light Switch models