

# **SPECIFICATIONS OF NATURE SWITCH-03 FOR OUTDOOR LIGHTING**

**INTRODUCTION:** Outdoor lighting circuits consist of Street Lighting, Campus lighting and many others. While a majority of street lighting circuits need to be ON for the entire night a few of them can be operated for part of the night to save energy. While NATURE SWITCH-01 is to cater to lighting circuits which are ON for the entire night from Dusk to Dawn, NATURE SWITCH-02 is offered to cater to lighting circuits which are ON for a part of the night. NATURE SWITCH -03 offers two outputs. One OUTPUT will be ON for the entire night and the other output will operate as per the choice of the user.

This product is suitable to lighting circuits like High Masts and such similar circuits where a part of the load is ON for the entire night while the part of the load can be switched OFF after a few hours from DUSK.

The general specification of the switch follows:

- 1) The switch must be suitable for direct installation in single-phase AC supply.
- 2) The operation voltage range must be 180 to 290VAC. It should be able to withstand a fault voltage of up to 440 VAC for duration of 1 hour.
- 3) **OPTICAL SENSOR:**
  - a) The sensor used should be reliable for calibration stability
  - b) The sensing circuit should be sealed in a container meeting IP 65
  - c) The sensor should be located behind a vertical wall to avoid accumulation of dust etc.
- 4) **OPERATIONAL SPECIFICATIONS of OUTPUT-1:**

Operating Voltage	-	230VAC $\pm$ 10% 50 Hz
Maximum Continuous Current	-	16A
Illuminance for Switching ON	-	<60 lux for >30 seconds

***Illuminance for Switching OFF***

a) In Field	-	>10 lux for >30 seconds
b) In Lab	-	>60 lux for >30 seconds
- 5) **OPERATIONAL SPECIFICATIONS of OUTPUT-2:**

Operating Voltage	-	230VAC $\pm$ 10% 50 Hz
Maximum Continuous Load	-	15W (coil load of the contactor only)
Illuminance for Switching ON	-	<60 lux for >30 seconds (Default switching ON)
Selectable Switching OFF	-	4 to 8 hours with half-an-hour resolution.

Options for Continuous On and Continuous OFF provided.  
Additional option for switching OFF at Dawn is provided.
- 6) **AUTO OVER LOAD TRIP AND LATCH MECHANISM:**

Nature Switch is provided with Electronic Over Current Trip and Latch Mechanism on OUTPUT-1. LED flashes as an indication of this state. Electrical reset will restart the nature switch and the steps are:

  - a) Switch OFF the mains,
  - b) Remove overload, and
  - c) Switch ON the mains
- 7) **AUTO OVER/LOW VOLTAGE TRIP AND RESET:**

Auto Over Voltage Trip	-	>280 VAC
Auto Over Voltage Reset	-	< 265 VAC
Auto Low Voltage Trip	-	<150 VAC
Auto Low Voltage Reset	-	>165 VAC

**8) TERMINAL CONSTRUCTION:**

The terminals provision for connection to LIVE IN, NEUTRAL, Output-1 and Output 2.

- 9)** The switch must have an endurance of atleast 5,000 cycles at full rated load
- 10)** The switch must perform in an ambient temperature range of  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$
- 11)** The switch must perform in open air with RH upto 95% at  $25^{\circ}\text{C}$
- 12)** It must meet the drop and topple test from a height of 3 feet on any side atleast for 5 Drops.