User Manual
Nature Switch Smart Timer

About

The 'Nature Switch - Smart Timer' is an automa c switch that can be set to operate in mul ple opera on modes. A dedicated mobile applica ons suitable to both Android and IPhone versions can be downloaded from Google Play store and IOS app store. These apps will enable to connect with 'Nature Switch-Smart Timer' devices manufactured by 'Kaka ya Energy Systems Pvt. Ltd.' each device comes with a unique serial number.

The Nature Switch - Smart Timer Physical Construc on



Input Power:

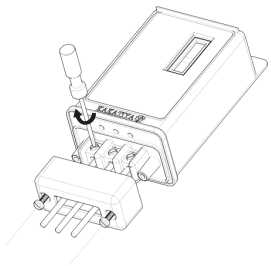
1. Connect the AC input supply (Live/Phase) wire to the terminal marked 'LIVE IN' (1st terminal from the le).

2. Connect the AC input neutral wire to the terminal marked 'NEUT' (2nd terminal from the le).

Output Power:

Connect the load to terminal marked 'LIVE OUT' (3rd terminal from the le).

The **'NEUT'** terminal (2nd from the le) can also act as a common neutral for the output load and input power supply.

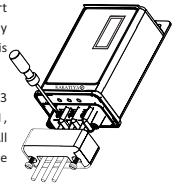


Note: Ensure that the cables are connected to the terminal in a firm manner and there is no loose connection to avoid failures.

Electrical Connec on

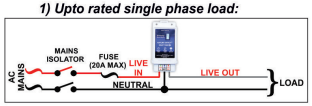
Nature Switch - Smart Timer is powered by 110/230 Vac and output is rated for 16A.

The Smart mer has 3 terminals (Live IN, Neutral, and Live OUT). All are marked on the terminal cover.

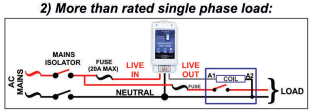


Refer to the below images for reference to connect cables in 1-phase and 3-phase configura ons.

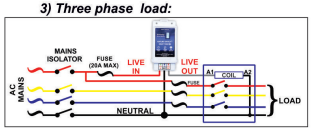
1) Upto rated single phase load:



2) More than rated single phase load:

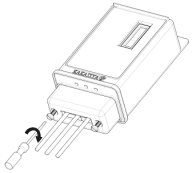


3) Three phase load:



III. Close Terminal Cover

A er comple on of cable connec ons fix the terminal cover and ghten the screws firmly. This will prevent exposure of voltage to operator and also prevent entry of dust, water and external environmental factors to the current carrying terminals of the device.



IV. Check LEDs

Switch ON the power supply and check for the below LED condi ons.

Item	LED Colour	Status	Indication
Input Power	Green	ON	Input Power Available
		OFF	NO Input Power
Bluetooth	Blue	ON	Device ready to pair with App
		Blinking	Device communicating with App
Output Power	Red	ON	Output ON
		OFF	Output OFF



Technical Specifica ons

Operating Voltage Range	120 - 440 VAC
Frequency	50 - 60 Hz
Maximum Output Load	16 Amps
Switch endurance	> 5,000 cycles
Device Power Consumption	< 1Watt
Switching ON Options (Auto Mode)	I. Digital Timer II. Astronomical Timer III. Light Sensor IV. Sensor assisted Astro Timer
Switching OFF Options (Auto Mode)	I. Digital Timer II. Astronomical Timer III. Light Sensor IV. Sensor assisted Astro Timer
Manual Override	ON/OFF
Program Schedule	Day wise/common Schedule for 7days
Enclosure Rating	IP 65
Auto high voltage trip	Selectable from 110% to 130% of nominal voltage
Auto low voltage trip	Selectable from 90% to 70% of the nominal voltage

Installa on

Nature Switch - Smart Timer is designed to be installed both in indoors or outdoors as per the choice and need at the field level.

Outdoor installa on

If user would like to use the sensor mode, the device needs to be installed outdoors to ensure exposure to sunlight.

Indoor installa on

If user does not wish to use the sensor mode but s ll adapt to the sunrise, sunset mes based on astronomical clock OR a pure digital mer-based schedule, the device can be installed indoors as part of the distribu on box or separately by using DIN rail or screw method as per the choice.

Note: The sensor mode cannot function if the device is installed indoors

Opera on

Nature Switch - Smart Timer can be set to switch ON/OFF based on me/lux level/local (astronomical) sunset, sunrise mes. These se ngs can be programmed to the device using the **"Nature Switch"** mobile applica on installed in any Blue tooth and GPS equipped mobile phone. There is no need of any internet connec on or data connec vity for the interac on between the App and the device.

Note: Before a emp ng to communicate with the device please ensure that the **"Nature Switch"** mobile app was downloaded via Play store (For Android Phones) or App store (For IPhones).

"Nature Switch"
Mobile App

GET IT ON Google Play

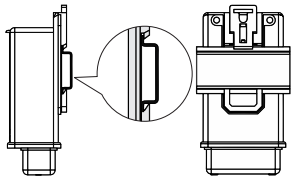
Available on the App Store

Moun ng Methods

Nature Switch-Smart Timer can be mounted on DIN rail with the help of the spring-loaded clip a ached to the back side of the device or on a flat surface with the help of the screws.

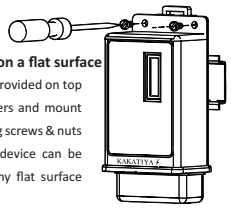
1. DIN Rail Moun ng

Use the moun ng structure provided behind the Smart Timer to install the device on any standard DIN rail.

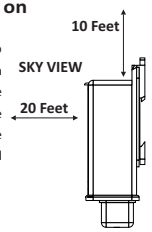


2. Moun ng on a flat surface

Use the holes provided on top of the controllers and mount the device using screws & nuts provided. The device can be mounted on any flat surface like a wall.

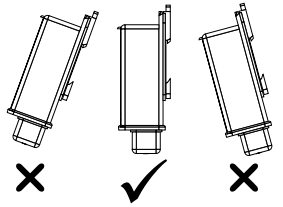


Outdoor Installa on

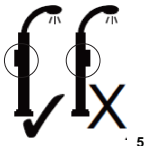


i. Please ensure there is no obstruc on within 10 feet in front or 10 feet above the device. This allows the device to capture the sunlight effec vely and operate in 'sensor' mode.

ii. Ensure the device is installed in ver cal posi on only without any ver cal or horizontal lt.



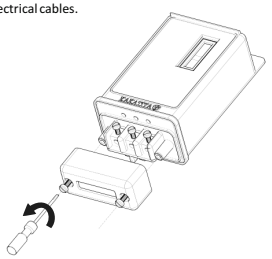
iii. Ensure the device is not directly installed under a lamp to avoid false switching OFF.



The Process of Electrical Integra on

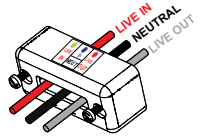
I. Open Terminal Cover:

Open the terminal cover at the bo om by removing the screws on le and right sides of the terminal cover. This will provide access to the live terminals to connect the electrical cables.



II. Cable Connec ons:

You will no ce 3 terminals available for connec on.



WARNING: Ensure the incoming power supply is switched OFF before handling the live wires.

The mobile app offers below menu op ons:

1. Home:

View the list of Nature Switch - Smart Timers available within the range. You can choose to connect to only 1 device at a me using the reference of the serial number. Note: The serial number of the device is printed on the device and the same will be displayed in the app if the device is in the near range. If more than one device is in the range the mobile app will display the serial numbers of both the devices and you can choose the device to be interacted before proceeding further.

2. Device Info:

You can change the details of a specific device such as name & passkey.

3. Switching On/Off se ngs

Change opera on mode, schedule and number of cycles.

4. Voltage trip se ngs

To select the desired over/low voltage trip levels.

5. Share log files

Share data when requested by 'Nature Switch' support team.

6. Support

Informa on on how to use the device.

7. Discover Nature Switch

Latest updates from **'www.natureswitch.com'**

8. Disconnect

Disconnect with the exis ng device.



Sequence of Opera on:

Step1.

Open mobile applica on "Nature Switch". Please ensure your Bluetooth and Loca on se ngs are turned ON.

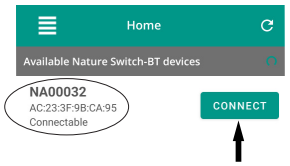
Step 2.

Check device serial number

The screen will display the serial numbers of the available devices in the range.

Step 3:

Select the device to be connected by clicking on the Connect bu on against that device. The sl. no printed on the Device will help iden fying the par cular device and the same Will be shown on the screen for your convenience.



Step 4.

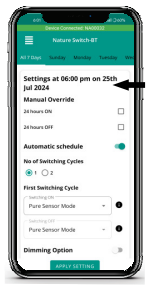
Enter Passkey Enter device password for the selected device for connec on.

The default password for first me connec on is '1234'. The password can be changed at any mea er connec on.



Note:

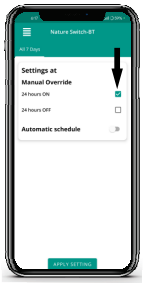
Once the password is entered correctly the device will indicate by way of flashing of Blue LED and the information is fetched and displayed on the mobile screen as shown below. The time and date already loaded in the device will also appear.



Switching on/off Se ngs

Available opera on Modes

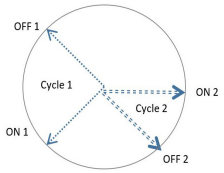
Manual Override - This opera on mode can be used to switch ON or OFF the circuit for tes ng or maintenance purposes. This will bypass all automa c schedules un l changed.



Automa c Schedule

Upto 2 ON-OFF cycles can be set for a nature switch - smart mer device.

The device offers the user two independent schedules in a 24 hour period. The combina on offers users the highest flexibility to choose the ON and OFF func ons as per the applica on.



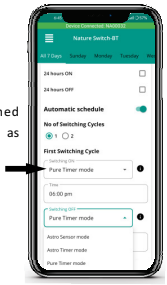
Opera on Modes:

Nature Switch - Smart Timer offers users the dynamic flexibility of choosing between 4 modes of opera on for deciding the ON, OFF schedule of output. Here's a brief descrip on of each opera on mode.

Note: that ON and OFF events can be selected independently with unique mode of operation based on your needs.

a. Pure Timer mode:

Output shall be switched ON/OFF at selected me as per the clock.



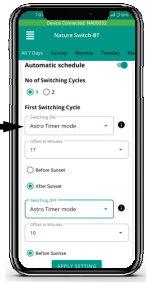


For example, switch ON at 6:15PM and switch OFF at 5:30AM.

b. Astro Timer mode:

Output shall be switched ON/OFF as per the local sunrise, sunset mes. The device stores the la tude and longitude of the device loca on and based on a algorithm can calculate the sunrise, sunset mes for that loca on for each day of the year. The device will automa cally adjust the actual switching mes to the changing sunrise, sunset mes throughout the year.

User can select how many minutes (upto 30) before or a er the sunset, the output shall be switched ON. Similarly the user can also select how many minutes (upto 30) before or a er the sunrise, output shall be switched OFF.



For example,

If device is located in Delhi, the device will gather the astronomical calcula ons to understand the sunrise, sunset mes for that loca on for a par cular day.

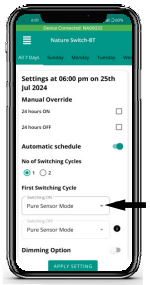
Date	Sunset	Sunrise
10th April - 11th April,	6:45 pm	6:00 am
20th November - 21st November	5:26 pm	6:49 am

If user selects the switching ON as “10 minutes a er sunset” and switching OFF as “10 minutes before sunrise”, the output will be **ON at 6:55pm on 10th April and OFF at 5:50 am on 11th April**.

Similarly, the output will be **ON at 5:36pm on 20th November and OFF at 6:39am on 21st November.**

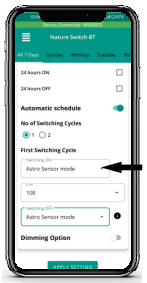
c. Pure Sensor Mode:

Output shall be switched ON/OFF as per the lux level of ambient light. The device will switch ON at dusk (evening) and switch OFF at dawn (early morning). The output shall be switched ON whenever lux level is below 60 lux for more than 30 seconds. Similarly, the output shall be switched OFF whenever lux level is above 10 lux for more than 30 seconds.



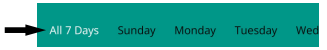
d. Astro Sensor mode:

This unique, innova ve opera on mode combines the principles of astronomical me (local sunrise, sunset) and ambient light lux level. User can select the lux level threshold for the output to switch ON or OFF.

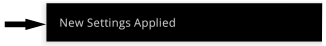


The output will be switched ON when ambient light falls below set lux and within 30 minutes of local sunset me. (Lux or sunset me + 30 minutes which ever is early). Similarly, the output will be switched OFF when ambient light level rises above the set lux level within 30 minutes of sunrise me. (Lux or sunrise me plus 30 minutes whichever is early)

Day wise schedule: The top bar of the app offers the func on of selec ng independent schedule for each day of the week. If desired, the schedule can be made common for all 7 days of the week.

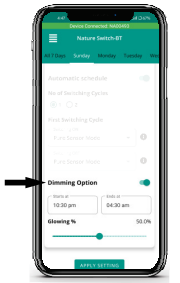


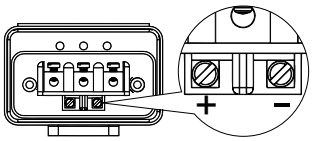
Apply Se ng: Click on 'Apply Se ng' bu on to load the selected se ngs to the device. You will no ce a flash message confirming the se ngs have been applied.



Dimming Facility: (ON Selected Models*)

This op on if enabled will apply 0-10Volt DC signal to the LED Driver as per the selec on on the screen. You can select any percentage of glowing from 1 to 100% . The device also facilitates dimming start me and end me.





There are two mini terminals marked +/- to be connected to +/- terminal of Dimming port of LED driver.

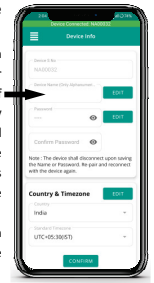
Device Info:

Device S. No. - represents the unique serial number of the device.

Changing the Device Name:

Device Name - each device can be provided with a name for easy iden fica on. Name of the device can be changed by clicking the 'edit' bu on and entering new name (Maximum 9 Alphanumericals allowed). For example Board1, Shop2 etc.

User should reconnect with the device a er a name change.

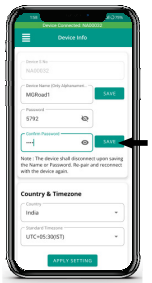


Changing the Device Password:

The 4-digit code required to connect the app and device can be edited here.

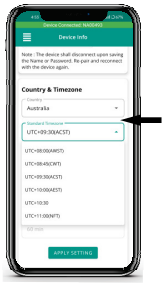
Click ‘Edit’. Enter your new 4-digit password in both 'Password' and 'Confirm Password' sec ons and click 'SAVE'

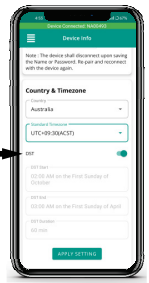
Check your new password in the 'Password' sec on to verify.



Country & Time Zone Selec on:

Nature Switch Smart Timer provides for selec on of your country by the drop down menu. Once you select your country all applicable me zones will appear as a drop down menu, depending on your loca on in your country select the applicable me zone.



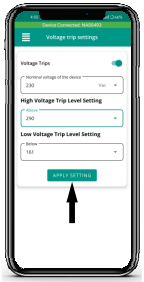


The screen will also offer the op on to disable or enable the DST. If you enable the same you may select the suitable DST correc on from the drop down menu.

Voltage Trip Se ngs:

Nature Switch - Smart Timer can be programmed to protect the output load from voltage fluctua ons. The device can be programmed to trip (switch OFF the output) whenever input supply voltage crosses the set limit and automa cally resume opera on when the supply voltage falls below the set limit with a hysteresis of 10 volts. The device can also trip when the voltage falls below the selected limit and automa cally resume when the supply voltage increases beyond the selected limit by 10 volts.

NOTE: Depending on the country the privileges LT Voltage level will be selected the system more then 1 voltage system is prevalent the op on.





Contact Us

For any further informa on, please visit the 'Support' page on the mobile applica on or our website.

www.natureswitch.com

KEY PRECAUTIONS

A. Select your country and me zone correctly.

B. Ensure that the electrical load in the output should be below 16 Amps.

C. Ensure that the electrical terminals do not have any loose contacts.

D. Outdoor installa on shall be asper guidelines.

CONTAINS

1. NS Smart Timer - 1Nos.
2. Screws - 2Nos.
3. Plas c Wall Plugs - 2Nos.
4. User Manual - 1Nos.

WARRANTY

Nature Switch Smart Timer is warranted against defects arising from manufacture or material defects to the first owner. The warranty is for one year from the date of sale.

This warranty shall not apply to defects caused by misuse, neglect, accidental damage or unauthorized service.

This warranty is limited to product replacement only and shall not cover loss or damage caused directly or indirectly on account of use or misuse of the product.

Manufactured by:
KAKATIYA ENERGY SYSTEMS PRIVATE LIMITED
D-2, Industrial Estate, Moula-Ali,
Hyderabad, INDIA - 500 040.
marketing@natureswitch.com