

ES 25[®]

Energy Saving Product & Wireless Monitoring & Control Devices



Reduces Energy Bills &
Operational Cost Upto **30%**

With Our **ES  25** &
GPRS Based System



ES Electronics (India) Pvt. Ltd.[®]

AN ISO 9001 Company

OVERVIEW

As the whole world races towards development, our finite conventional energy supplies continue to deplete and resulting in higher energy bills and environmental hazards.

ES Electronics (India) Pvt. Ltd. is an advanced energy conservation solutions company that specializes in energy and cost reduction technologies for commercial, industrial and service sectors.

ESEI is an ISO 9001:2008 certified company and incorporated in 1980s has established their presence across the globe by manufacture and supply of **ESN25** Energy Savers for Lighting and Mixed load applications and Energy Monitoring & Control device. ESEI is a professionally managed company having its own infrastructure spread over upto 10,000 Sq. Ft. with in-house Production, R&D, Testing Facilities etc. with the involvement of competent professionals. ESEI has installed more than 80,000 Energy Savers globally accounting to reduction of approximately 20MW power.

Innovation & Technological advancement has enabled individual to connect with each other and their physical surroundings at an unprecedented level & scale. In view of the Technological advancement and present day requirement, ESEI has ventured into manufacturing & supply of various IoT enabled devices which helps in improving the efficiency & reduce the operational cost upto 30% of Electrical usage. With the presence of strong team globally we offer effective after sales service and ensure total customer satisfaction. ESEI firmly believes in continuous improvement to meet International Standards.



PRODUCT 1 : ENERGY SAVER FOR LIGHTING & MIXED LOAD

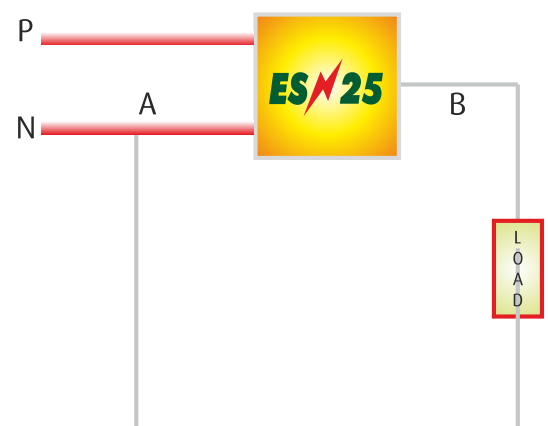
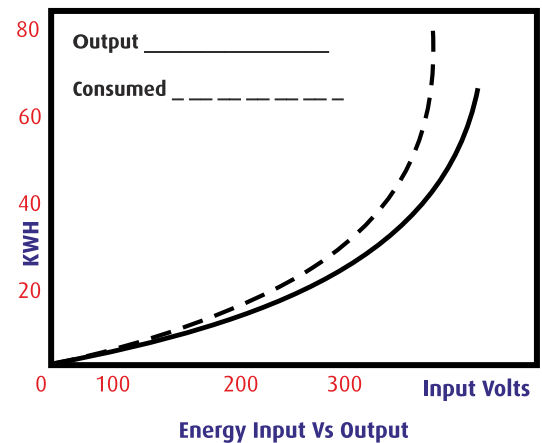
HOW **ESN25** WORKS

When in use, electrical equipments draw power and convert it into output energy. In the process of conversion, most gadgets draw more energy than required in the output demand. As such, the excess energy which cannot be utilized in anyway gets wasted.

ESN25 is a high efficiency device that optimizes the Voltage & Current (Static or Dynamic). As the energy consumed increases in approximately square of input voltage, here by, the output energy would reach to an optimum level.

ESN25 WORKING PRINCIPLE

The Energy Saver is a high efficiency system. The diagram shows the main winding A and secondary winding B, which is the inverse phase energy saving winding. When the supply current passes through winding A, magnetic restriction occurs in Winding B, as B is connected in series to the load. The energy induced due to magnetic restriction in the inverse phase energy saving winding B, results in Voltage and Current optimization to reduce energy consumption upto 30%.



Note : Saves Energy on variable watage LED Lighting (driver) upto 25% by using energy saver.

BENEFITS OF **ES/25**

- Guaranteed savings upto 25% in Lighting and Mixed load on 240 volts AC
- Reduction in carbon footprint
- Extends the life of discharge lamps and reduces replacement of chokes
- Centralised installation without relamping or delamping
- Guards the circuit from high voltage spikes and surges
- Improves power quality
- Maintenance free with 20 years life span
- Payback period as low as one year
- Eligible for 80% depreciation in the first year of its investment under Income Tax act
- Marginal improvement in the Power Factor



ES/25 Indoor Model

SPECIFICATION & CONSTRUCTION OF **ES/25**

- **ES/25** is built with 16 gauge SWG CRCA sheet steel enclosure duly powder coated conforming to shade 631 of IP 54 / 55
- Rated in KVA, ranging from 1.5-1200 KVA single phase (230V) and three phase (415V / 220V phase to phase) AC circuits
- High efficient **ES/25** coils
- Incoming and outgoing protection by SFU/MCB/ MCCB of reputed make
- On-load bypass and Tap changing switches*
- Metering provision for recording and monitoring*
- Under voltage automatic bypass system*
- Forced air circulation to keep the system cooler
- Available both indoor and outdoor models

*Optional - on demand only



ES/25 Outdoor Model



Schematic Diagram

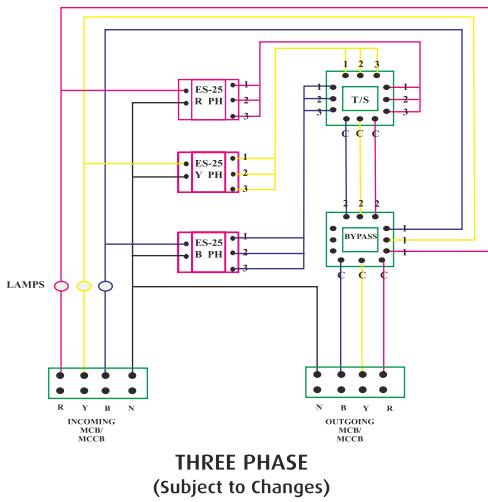
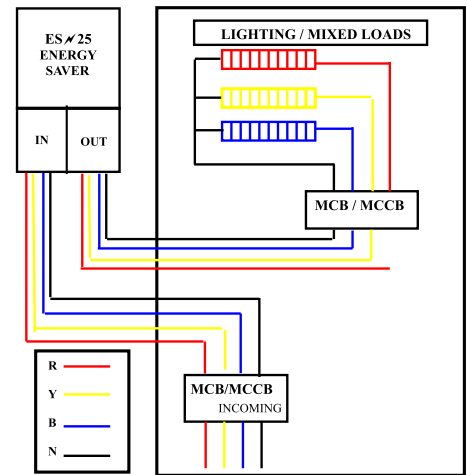


TABLE SHOWING RESULTS OF ES-25 ON LIGHTING / MIXED LOAD (APPROX. VALUES)

Parameters	Without ES-25	With ES-25
Kw	10	7.5
Current	40A	30A
Frequency	50 Hz	50 Hz
Harmonics (Current)	20%	12%
Harmonics (Voltage)	5%	3%
Lamp Temp. Rise	60° C	45° C
Power Factor	0.85	0.90

Installation Diagram



PRODUCT 2 : NEXT GENERATION SOLID STATE VOLTAGE REGULATION (AUTOMATIC THYRISTOR TECHNOLOGY)

ES Electronics has developed thyristor controlled technology and incorporated in **ES-25** system without moving parts for power regulation and faster electronic switching ensuring greater reliability and durability of electrical load parameters.

The primary function is to intelligently understand the variable in coming voltage topology and automatically adjust the **ES-25** tap position by means of power thyristor switching exactly crossing at zero through control card without disturbing the load parameters during change over cycle for optimum correction of out put voltage in conjunction with set voltage limit.

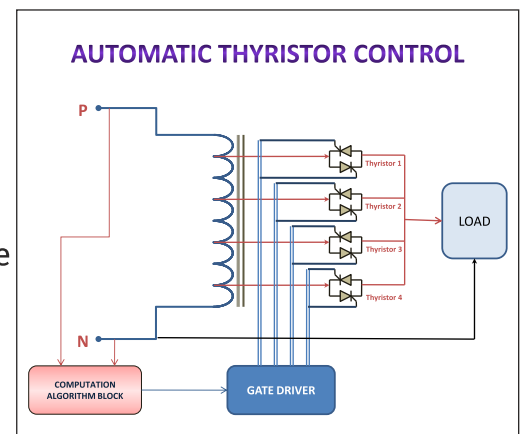
The system has phase computer built with zero cross methodology to decide the required voltage level as per the user's settings to ensure stiff voltage regulation and greater energy savings during high voltage levels.

The Power Thyristor turns on / off to the appropriate voltage tap position and **ES-25** low impedance device as per the settings in phase computer through driver circuit and power thyristor which are in synchronous operation to the load circuit which will respond and corrects voltage levels in a fast pace without effecting the load parameters to the desired voltage topology requirement. The challenge in this design is to decide the zero crossing which needs be completed before the cycle change.



FEATURES

1. Steady current and greater energy savings achieved
2. Startup ignition voltage settable (1-30 minutes) for warm up of luminaries
3. Password protected
4. Individual phase voltage correction during imbalance in phase
5. Provision for manual or automatic voltage correction
6. Over voltage / under voltage protection (settable)
7. Product has been tested by Govt. laboratory (ETDC)
8. Available in 2/3/4 tap change over based on customer requirement



PRODUCT 3 : **ES 25** ENERGY SAVERS FOR CENTRALIZED INDOOR AND OUTDOOR VARIABLE WATTAGE POWER LEDs

Using LED for lighting is becoming popular application due to high efficiency and long life. The ever-growing challenge in industrial / street light / commercial establishments is of usage of power LED's over illuminating due to high power dissipation and difficulty in matching the exact requirement of illumination at specific workplaces and none of the establishments accept lower illumination. The technology we introduce for dimmable power LEDs will intelligently optimizes the voltage levels and protect the LED driver failure due to high voltage and saves electrical energy between 10 to 30%.



BENEFITS

- Save electricity bills with payback period lower than 18 months
- Reduce the failure of LED drivers due to high surge voltage
- No de-lamping or re-lamping the existing circuit
- Energy savings are adjustable based on the voltage conditions
- Reduces voltage and current harmonics
- Reduction in Carbon emission and environmental hazards

PRODUCT 4 : **IoT WIRELESS MONITORING AND CONTROL SYSTEM**

The **Internet of Things (IoT)** is the network of physical devices & involves extending Internet connectivity. IoT enabled devices can be embedded with electronic, Internet & other forms of hardware for communicating & Interacting with others over the internet and can be remotely monitored & controlled.



ESEI has designed and implemented state-of-the-art IoT based artificial intelligence equipment for Environment, Water, Energy, Waste monitoring and control system to improve the operational efficiency.

ESEI has dedicated embedded team to custom build all products based on customers requirements. The company has also got Web and App developed to numerous IoT devices to cloud servers.

APPLICATION AREAS



Smart City



Smart Parking



Waste Management



Transportation & Logistics



Industries



Health & Fitness



Smart Agriculture



Domotics & Home Automation

PRODUCT 5 : GPRS BASED ENERGY MONITORING SYSTEM



We have installed GPRS based energy downloading device for existing third party energy meter manufacturers which has RS232/485 port. The energy Monitoring System downloads the data and send to cloud and App for monitoring all the parameters to decide and control the electrical energy requirement and save energy.

The Energy Monitoring System is a cost effective device manufactured by ES Electronics & installed more than 1000 devices worldwide.

KEY FEATURES

- Complete Energy Parameter Monitoring on in one screen
- Individual Parameters like Voltage, Current, PF
- Phase Wise Reading
- RMS Values
- Daily Log Sheet Downloading Facility
- Unit Consumption Report can be Created by yourself
- Every two to three minutes reading capture facility
- Generator parameter monitoring facility
- 60 days data archive in our server to download any time
- SMS Alert for 80% Load reached
- SMS Alert for PF load & Units consumed by monthly reports
- Other SMS Alerts based upon Customer request



ADVANTAGES

- Remote monitoring
- Worldwide roaming and secured data
- Extensive spectrums available
- Call back and SMS facility for Alerts
- Helps commercial and industrial organizations use and manage Energy Consumption efficiently
- Reduction in investment for Energy procurement and cash flow generation
- Stop misuse of utilities
- Save Energy, reduce pollution and carbon emission

PRODUCT 6 : SMART ENERGY METER

Smart Energy Meter - ALPHANSO make is a latest technology capable of controlling and monitoring electrical parameters and time event settings through App and Web Services.

The System is Capable of sensing energy consumption at 99% Accuracy. The data will be sent over secured GPRS / 4G Networks to servers for analytics and prediction purpose, which further can be exported as CSV, JSON and XML Formats.

The Energy Meter hosts resistive touch display to display live performance of your system, Set Load Parameters, Street light timer controller settings, 3 phase settings and Notification LEDs.

FEATURES

- Hassel Free Installation
- Compact in Size
- Over Voltage Protection
- Over Load Control up to 98A.
- 3 On Board Smart Timer Controls
- Notification Dashboard
- M2M Communication via GPRS / 4G.
- Online Portal and Android App for Monitoring, Analytics and Controlling Appliances.

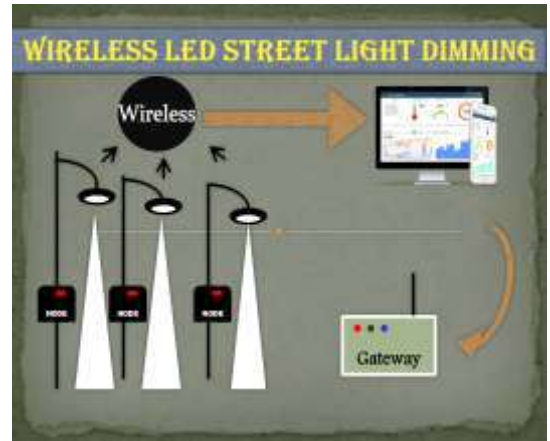
APPLICATIONS

- ATMs
- Street Light Lighting
- Airport Lighting
- Parking Lighting
- Motors
- Any other electrical equipment for switching On / Off



PRODUCT 7 : \$av€Light Intelligent Centralized Control & Monitoring System for Street light LED's

Right amount of Light are needed on street to save electricity and reduce Light Pollution. \$av€Light manufactured by ES Electronics is an Intelligent On/Off targeted progressive Dimming and Tracking Electrical Operations remotely helps to save energy upto 50%. \$av€Light uses state of the art Zigbee wireless protocol with GPRS based centralized gateway to provide proper light level for Pedestrians, Vehicles and represent a greater improvement to the architectural to restrict and commercial output. The increases in energy price and maintenance Cost is becoming a big challenge to stepup lighting budgets and safety of Public where Crime rate is increasing significantly which also common for municipal and smart city. \$av€ Light Control Effectively over come this Situation by automatically adjusting the light levels depending on the street.



BENIFITS

- Reduce Energy bills upto 50%
- Payback period as low as 1 Year
- Reduce maintenance cost of led street lighting upto 50%
- Improves LED's Life span and reduce LED driver failure
- Remote Monitoring and Control of LED Street Light
- Street Light Timing Can be set from mobile App
- Dimming level can be set remotely as per street requirements.

INFRASTRUCTURE



CNC Machine Shop



R & D - Testing



Assembly

TESTED & CERTIFIED BY



Conformity European



SIRIM Berhad, Malaysia



FCA, USA



Scientific Research of Gulf



Central Power Research Institute, India



Electronics Test & Development Centre, India



Central Electricity Authority, India



Saudi Standards, Metrology & Quality Org.



Slovak Technical University

AWARDS & APPRECIATION

- 🏆 Rajiv Gandhi Excellence Award
- 🏆 Energy Conservation Award from CSD



- 🏆 CII Innovative Product Award
- 🏆 Rajiv Gandhi Rashtra Nirman Award

RECOMMENDED BY



MORE THAN 800 SATISFIED CLIENTS WORLD WIDE



GLOBAL PRESENCE

- SAUDI ARABIA
- SINGAPORE
- NEPAL
- MALAYSIA
- KUWAIT
- THAILAND
- JORDAN
- SRI LANKA
- UNITED ARAB EMIRATES
- KENYA
- NIGERIA
- UK (UNITED KINGDOM)



- ITALY
- CZECH REPUBLIC
- UNITED STATES
- FRANCE
- SPAIN
- AUSTRIA
- NORWAY
- GERMANY
- FINLAND
- POLAND
- ROMANIA
- HUNGARY

OTHER PRODUCTS

- Control & Distribution Panel
- Automatic Power Factor Controller & Harmonic Filter Panel
- CCTV Surveillance System
- Servo Voltage Stabilizer & LED Lighting



OFFICE & WORKS :

Site No.34, Sy. No.191, Kumbalagodu Village,
Kengeri Hobli, Ramohalli Main Road,
Bangalore South Taluk, Bangalore - 560 060.
Contact : +91 98441 36209, +91 98863 07360
E-mail: eleindia@energysaversindia.com
Website: www.energysaversindia.com