



Energy Conservation Unit

APFC Panel

Servo Controlled Voltage Stabilizer

Transformers

Safety Hand Lamp

Inspection Hand Lamp

The **SHEPHERD**[®] Center

- Energy Conservation Unit for Lighting Load (ECU)
- 24V Safety Hand Lamp Unit
- Inspection Hand Lamp Set
- Servo Controlled Voltage Stabilizer
- Single Phase & Three Phase Air Cooled, Dry Type, Oil Cooled, Step-up, Step-down, 1:1 Transformers
- Lighting Transformers
- Control Transformers
- Auto Transformers
- 3 Phase to 1 Phase Transformers
- Furnace Transformers
- Constant Voltage Transformers (CVT)
- Motor Starting Transformers (MST)
- Continuously Variable Auto Transformers (Variat)
- Ultra Isolation Transformers (UIT)
- High Current Loading Transformers
- Ignition Transformers
- Inductors & Chokes
- APFC Controllers with Panel

Approved & Certified By:-



Products from **SHEPHERD**[®] are covered with



Why Shepherd ?

SHEPHERD® TRANSFORMERS INDUSTRIES is an Indian business organization in the field of design, manufacturing and selling of Energy Conservation products, Power Electronic products, Transformers and Safety Hand Lamp units in wide range and varieties since 1980.

Our products have wide acceptance across the country and also overseas from OEM, consultants, new projects and expansions. We have our own state of the art facility for R&D, Designing, Manufacturing, Testing and Q.C. We also have team for site survey, installation, commissioning and sales after service. Our U.S.P not only has glorious 33 years track record of 'SHEPHERD' Brand, but also includes Quality control, Endurance testing and Committed service to customers which deserves us preference from our esteemed clients.

Transformer is a static device which transforms electrical energy from one circuit to another without any direct connection and with help of mutual induction between two winding. It transforms power from one circuit to another without changing its frequency but may be in different voltage level. It works on "Faraday's law" of Electromagnetic Induction.

We at Shepherd Manufacture :



- Single Phase, 3 Phase, Step-up, Step-Down, Air Cooled, Oil Cooled, Resin Cast & Forced Air Cooled Transformers.
- Control Transformers.
- Buck Boost Transformers.
- Lighting Transformers.
- L.T. Power Transformers.
- Furnace Transformers.
- Mining Transformers.
- Extra low voltage High Current Loadings Transformers.
- Auto transformer.
- Ultra Isolation Transformers.
- Motor Starting Transformers (MST)
- Ignition Transformer.
- Three Phase to single Phase Transformer.
- Continuously Variable Auto Transformer (Variat).
- Current Transformers (CT).
- Inductor / Choke Iron Core, Input-Output Side for VFD.
- Fix Taped Auto Transformer.
- Booster Transformers.

All above mentioned custom built – tailor made Transformers are wound with high grade, dual cored, class F insulated electrolytic grade super enameled copper wire/strips and fitted with prime quality CRGO low loss stamping (lamination). Windings are insulated with class F/H insulations, Varnished with class F/H insulation varnish, double vacuum impregnated and Oven Baked. All Transformers are coated with Moisture Protection varnish. These Transformers are generally confirming to IS 2026, BS171 specifications. These Transformers are supplied either in open execution type for incorporating inside panel or housed in sheet metal enclosure suitable for Indoor/Outdoor operation, as per customer's specifications. Our Transformers are tested and approved by Nation's recognized most prestigious test labs, CE Certified for Safety and approved by many leading Consultants & Institutions.

At 'Shepherd' all Transformers are Designed and Manufactured as per Customer specification: Following tests are conducted on our Transformers:

Test Reference	Quantum Documents	Acceptance	Applied Norms
Visual check	—	100%	Must be free from any blemish
Insulation Resistance	Design Sheet	100%	Must be > 50 Meg ohms at 1000VDC By Magger.
Applied High voltage test.	IS 2026/11171	100%	Pri. to earth 3.0 KV withstand Sec. to earth 3.0 KV withstand Sec. To earth 3.0 KV withstand
Induced Double voltage - frequency test	IS 2026/11171	100%	Double voltage double frequency. There shall be no disruptive discharge. Use frequency converter
Measurement of voltage ratio & check voltage	IS 2026/11171	100%	As per customer's specifications. Within specified limits at the specified voltages as per IS.
Temperature rise	IS2026	100%	By short circuit method
No load current	IS2026	100%	At specified voltage, specified by client. Confirming to IS.
Measurement of impedance voltage at principal tapping	IS 2026/11171	100%	As per client's specifications within specified limits at the specified voltages as per IS.
Measurement of load Losses by short circuit method.	IS 2026/11171	Random	As per client's specifications within specified limits at the specified voltages as per IS.
Measurement of winding resistance	Design sheet	100%	Resistance of both windings generally < maximum specified.
Checking of voltage vector relationship	IS2026	100%	As per client's specifications
Name plate(label) & terminals	Clients specification		100% Correct type & material of labels, as specified. Transformer data mentioned in the label must be same as in the order confirmation As specified by client, if any.

"Shepherd - Where Quality doesn't Cost more"

Shepherd Lighting Energy Conservation Unit

Working Principal of Shepherd Energy Conservation Unit

SHEPHERD ENERGY Conservation is simple but incorporated with latest technology, and is one- step centralized solution. It reduces the power demand of HID (High Intensity Discharge) lamps, fluorescent lamp fittings by reducing the load voltage and current, with resultant improvement in power factor. The simple formula for an AC circuit is:

Power = Voltage x Current x Power Factor

Power saving is achieved by modest optimizing voltage which results in reduction of power consumed by theoretically 12% to 15% on mix – lighting + A.C. load and 15% to 30% on lighting load (of course this reduction is entirely depends on various conditions prevailing at site, and user's electrical net work). An over-proportional drop in energy loss across the ballast occurs as a result of the same over-proportional current drop when supply voltage is reducing. Variations in performance do occur depending on the type of lamp fitting, type of ballast and type/age of tubes. Load current reductions achieved are generally higher for older ballasts (i.e. Class C) where the rated nominal ballast loss is higher, an advantage for existing buildings.

Auto Under Voltage Bypass Arrangement:

The Shepherd Energy Conservation units are available with manual By-pass facility & also with microprocessor controlled auto undervoltage bypass arrangement. This is unique facility which ensures super safety. During save By-pass auto operation prevents from flickering, momentary blackout/ supply cut off etc., Thus Shepherd Energy Conservation unit delivers seamless performance even under adverse circumstances and entire operation is unmanned.

Salient Features of Shepherd Energy Conservation Unit



- Reduce lighting power consumption by 20% to 30% typically. On AC + lighting load, by 10% to 15% (However, Savings are linked with supply voltage condition at site).
- Suitable to work for balance / unbalance load.
- Extends the life of all luminaries by 200% and Ballasts by 75% & Reduce Greenhouse Gas Emission. (CO2)
- Reduces the overall lighting Power Density (watts/m2).
- Simple payback of 6 to 10 Months.
- Auto and manual By-pass facility is in- built.
- A single unit is able to manage multiple lighting circuits.
- Reduce Peak Power Demand while improving power factor and power quality.
- Works with most types of fluorescent tubes (standard tubes, compact and most energy saving models) and HID lamps (mercury, sodium, metal halide and all type of luminaries) and mix load (lighting + A.C.).
- Specially designed street light model save as high as 35% to 40% on energy bill
- 80% depreciation available, during 1st year as a Tax Advantage As per Section 32 of the Income Tax Act 1961.



- Increasing the safety of Electrical net work & system.
- Completely user friendly & suitable to work continuously round the clock at even full load.
- No rotating device, no carbon brush technology adopted, hence no breakdown. Absolutely maintenance free, silent, static.
- Provided with over load, short circuit protections, Indications for all function, Provided with digital true RMS meters and Multifunction meter with large size digital display screen to read ph to ph V. Ph to Ph Current, KVA, KW, KWH, Frequency, PF, KVAR, KVAH. Optionally, available with RS 232 port, RS 485 & PC net work.
- Efficiency >99.2%.
- Absolutely silent operation as it is humming, vibration, EMI/RFI and Harmonics generation free. It has no Wave form distortion
- Product self- life is 15 to 18 years.
- Marketing and after sales service network available all over India along with 3 years of Warrantee.
- No need for expensive or non cost effective lighting upgrades to be energy efficient (such as replacing magnetic ballasts with electronic ballasts, replacing T8 fitting with T5 fittings).

**"NO Energy Conservation KNOW Monetary Loss
KNOW Energy Conservation NO Monetary Loss"**

Shepherd 24V Safety Hand Lamp Unit

The Shepherd Hand Lamps are designed for the maintainence team of plants like Steel, Cement, Fertilizer, Power Automibile, Heavy Engineering Textile, Shipping etc... The equipment is light weight, portable, compact and convenient yet sturdy, robust and durable considering arduous arc of operation. Shepherd safety hand lamps are bearing CE Mark for safety and meeting Indian standard specifications IS 1416-1972.

Model - AA11



Model - MS11



Description of inbuilt Accessories & Fittings for Model A11 & MS11.

INPUT SIDE
LED type Mains on Indicator Lamp (Piri Make)
DPMCB (Legrand Make)
Slow Blow Fuse (Elcom Make)
Earthing Bolt
OPTIONAL ACCESSORIES
1.5 sq mm X 3 Core Cable connected with Industrial Plugtop

OUTPUT SIDE (24V)
SPMCB (Legrand Make)
Industrial Sockets (Schneider Make)
Lifting Handle (on enclosure)
Wall Mounting Brackets (behind enclosure)
OPTIONAL ACCESSORIES
Industrial Plugtop (suitable to above mentioned socket)

Model - A11



24V Inspection Hand Lamp



Accessories & Fittings For 24V Inspection Hand Lamps

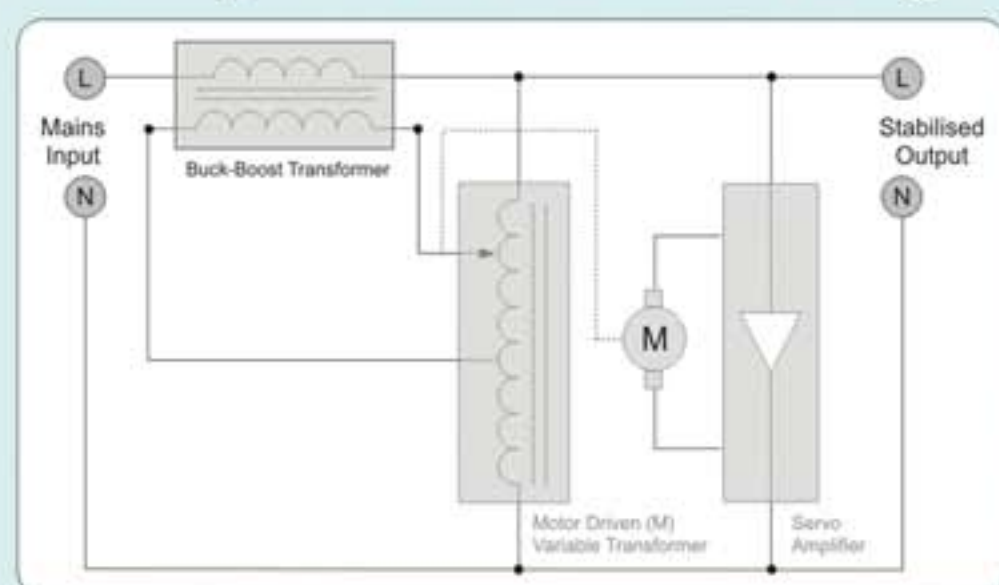
1. Halogen / Incandescent /LED Lamp (selectable by customer)
2. 1.5 / 2.5 sq mm X 2 / 3 Core Polycab Cable (requirement of length to indicate by customer)
3. Hand Lamp consisting Rubber Handle, Reflector, Glass Dome, Protector Wire mesh Jali and Screw Type / Pin Type Socket for 24V Lamp
4. Schneider make / Industrial Plugtop.

Shepherd Servo Controlled Voltage Stabilizer

Principle of Servo Stabilizer

The principle of operating Servo Stabilizer involves comparing the output voltage with built in stable reference voltage source. The solid state control circuit operates the motor whenever the output voltage falls or rises beyond the preset voltage

Working of Servo Controlled Voltage Stabilizer



Servo voltage stabilizers save the life of costlier appliances, CNC machines, electrical equipment, medical equipment, motors lab equipment etc. through connecting AC voltage which is not stabilized, and dips at one point of time and at other point of time rises to very high value. The principle of operating Servo Stabilizer involves comparing the output voltage with built in stable reference voltage source. The solid state control circuit operates the motor whenever the output voltage falls or rises beyond the preset voltage.

Precisely engineered to perfection, our servo voltage stabilizer features a solid state circuit to control the servo

motor. The motor is mechanically attached to the arm of a continuously variable auto transformer which feeds to the Primary of a series control buck boost transformer. The stabilizer output voltage is compared with the reference voltage & resultant error signal controls the Servo Motor providing true proportional control systems rather than on/off circuit.

Following are Built-in Features of Shepherd Servo Controlled Voltage Stabilizer

- Regulation: + / - 1%
- Efficiency: > 98%
- Frequency Variation: 46 to 53Hz
- Effect on Power Factor: Nil
- Responses Time: 14V/Second
- MCB/MCCB For protection against Overload / Short Circuit
- Timer 5 secs time delay built in to avoid nuisance tripping.
- Single phasing preventer & phase reversal protection.
- Auto Manual Control in each phase
- Output Voltage can set in each phase, manual mode suitable for unbalance load/voltage
- LED Indication for under voltage / over voltage in each phase
- LED Indication to Indicate Input / Output 'ON'
- Trip LED indication to indicate the equipment is in Trip condition

- Introduces no wave-form distortion.
- Un-affected by load power factor condition.
- Large short-time overloads handling capacity. This is very necessary for taking the starting surge of induction Motors.
- Step-less continuous voltage correction.

Controller Features:

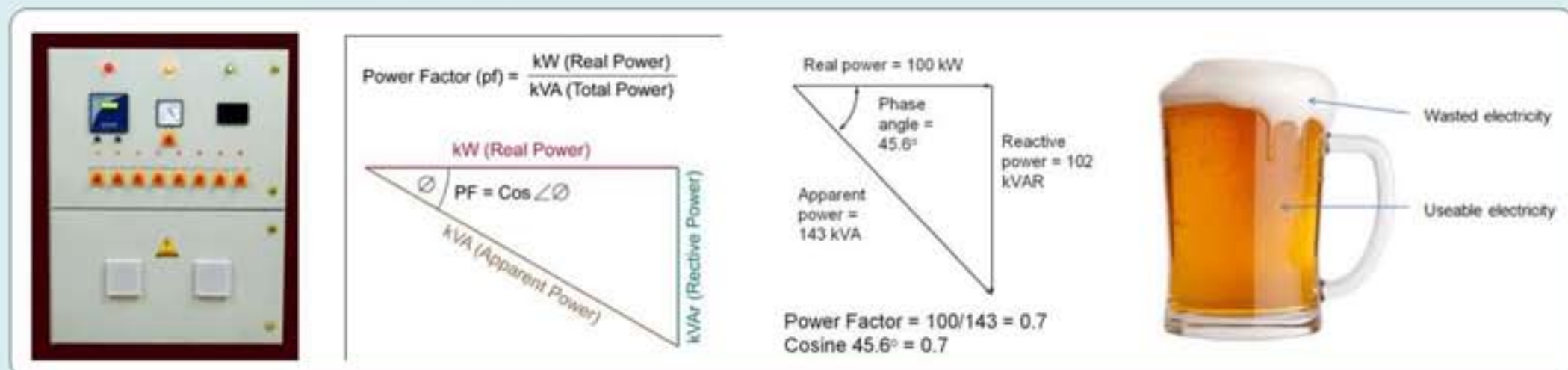
- 16 Bit Controller
- User friendly LCD frames for easy maneuverability
- Settable Trip, Fault, Output on load Delay
- Line to Line & Line to Neutral R Y B Voltage and ph to ph Current & frequency digital Display
- Universal Controller for any range of Servo Controlled Voltage Stabilizer
- All readings can read by scrolling a button provided on the panel.



Shepherd APFC Panel

What is Power Factor?

Power factor is the ratio between the KW (Kilo-Watts) and the KVA (Kilo-Volt Amperes) drawn by an electrical load where the KW is the actual load power and the KVA is the apparent load power. It is a measure of how effectively the current is being converted into useful work output and more particularly is a good indicator of the effect of the load current on the efficiency of the supply system.



Benefits of Power Factor Correction

Technical Benefits

The connection of a capacitor capable of "correcting" half of the reactive power of a load leads to a reduction in the demand on the supply of approximately 15%. This results in the following:

- The load on the cables and switches is reduced
- The supply is now able to support additional load
- The charges made by the electricity supply company are likely to be reduced
- By reducing the load on cables and switches, power loss is reduced and life is extended.

Commercial Benefits

By maintaining the power factor at or above 0.95 lagging under all load conditions:

- Any charges for excess reactive power are avoided
- System losses are reduced
- Distribution equipment runs cooler and lasts longer

Environmental Benefits

Every KVAR of Power Factor Correction reduces CO² emissions by 116kg per annum.

"Reactive Power Compensation by Power Factor Correction"

Partner With Us
To Promote
Our Mission



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