



# ENERGY SAVER



*Save lite*

## BENEFITS

- 10% - 20% direct energy savings on lighting loads
- Reduced heat - hence cooler lamp operation
- Reduced Air-conditioner cost - because of cooler lamp operation
- Increases the life of the lamp. Hence reduced maintenance and replacement cost
- Blackening of Florescent lamps and color shifting in metal halide lamps are reduced
- Reduction in maximum demand due to reduced energy consumption
- Improves the power factor
- Harmonics injected by electronic lighting ballasts to the line and spikes produced by lighting circuits are reduced, Hence power quality is improved
- Tax benefits available for energy saving investment
- Pay back period is normally less than 12 months

## OPTIONAL FEATURES

- RS485 port with MODBUS RTU protocol can be provided in the power and energy monitor to log the power , energy savings data through standard SCADA package
- GPRS modem can be interfaced with power and energy monitor and load control can be done from remote location through GSM network
- Load ON time and OFF time, fixed percentage saving during a particular interval can be programmed through SCADA package
- Power factor Improvement capacitors and passive harmonic filters can be provided depending on the load conditions



ES 9090

## FEATURES

MANUAL SELECTION MODEL	AUTO SELECTION MODEL
<ul style="list-style-type: none"> <li>■ Manual user selectable switch to select energy saving percentage (Approximately 10% - 20% according to site conditions)</li> </ul>	<ul style="list-style-type: none"> <li>■ Appropriate energy saving percentage is selected automatically depending on the site conditions</li> </ul>
<ul style="list-style-type: none"> <li>■ Power and energy meter provided for monitoring the output power and energy to check the savings</li> </ul>	<ul style="list-style-type: none"> <li>■ Power and energy meter provided for monitoring the output power and energy to check the savings</li> </ul>
<ul style="list-style-type: none"> <li>■ LED status indication with alarm relay output for low and high output voltage – useful in guiding the user to select the appropriate energy saving percentage</li> </ul>	<ul style="list-style-type: none"> <li>■ LED status indication with alarm relay output for low and high output voltage</li> <li>■ LED status indication to indicate the bypass and save modes - easy to identify the mode of running</li> </ul>
<ul style="list-style-type: none"> <li>■ Manual bypass provision available for direct connection without energy saver</li> </ul>	<ul style="list-style-type: none"> <li>■ Manual bypass switch available for direct connection without energy saver</li> </ul>
<ul style="list-style-type: none"> <li>■ Short circuit and over load protection provided through MCB or MCCB of suitable rating depending on the capacity</li> </ul>	<ul style="list-style-type: none"> <li>■ Short circuit and over load protection provided through MCB or MCCB of suitable rating depending on the capacity</li> </ul>

## TECHNICAL SPECIFICATION

## ENERGY SAVINGS & PAY BACK CALCULATIONS

Type	: ICD ENERGY SAVER
Model No.	: ES 9090
Voltage Input	: 220V AC – 260V AC L-N for single phase 380V AC – 450V AC L-L for three phases
Supply	: Single phase 2 wire / Three phase 4 wire
Ratings	: 5kVA – 100kVA for single phase 15kVA – 300kVA for three phases
Standards	: IS13947 (For major components used)
Protection	: Short circuit and over load protection through MCB / MCCB
Indication	: a) R, Y, B power ON LED indication b) LED status indication for Low, Normal and High output Voltage c) LED status indication for bypass and save mode
Power & Energy Meter	: MFM 9012 or PCM 9011 of ICD Make
Panel	: Sheet Metal Construction confirming to IP20
Cooling	: Forced Air Cooling
Cable Termination	: Back side with heavy duty terminals up to 75kVA Above 75kVA inside the panel bottom entry
Mounting	: Floor
Ambient Temperature	: 50° C Maximum

- Load => 50 kW of florescent Lamps and metal halide lamps
- Duration of load => 16 Hours in a day
- Number of days load operation in a year => 300 days
- Cost per unit => 4.50 Rupees
- Energy Savings on lighting => 15%
- Cost of 60 kVA Energy Saver => 1,15,000/- Rupees

- Units Consumed without Savelite Energy Saver => 50 kW
- Units Consumed with Savelite Energy Saver => 42.5 kW
- Energy Savings Units / hour = 7.5 kW (50 - 42.5)
- Energy Savings Units / day = 120 kW (7.5 x 16)
- Energy Savings Units / Annum = 36,000 kW (120 x 300)
- Total Savings = 1,62,000/- Rupees (36,000 x 4.50)
- Payback period =  $\frac{1,15,000}{1,62,000}$  (Less than 9 months)

**Note:** If the lighting loads are operated in Air-conditioned spaces, it will result in reduced Energy consumption of Air-conditioners which reduces the payback period to less than 6 months



RATING	OVER ALL DIMENSION (mm)		
	Height	Width	Depth
5 kVA 10 kVA	500	300	300
15 kVA 25 kVA	600	400	400
30 kVA 50 kVA	600	500	500

  

RATING	OVER ALL DIMENSION (mm)		
	Height	Width	Depth
15 kVA 30 kVA	600	300	600
50 kVA 75 kVA	700	400	700
100 kVA 150 kVA	1000	700	600

## APPLICATION

- Campus Lighting in Large Industries and Commercial Establishments
- Shopping Malls, Hotels, Hospitals, IT Parks and Commercial Complexes, Indoor and Outdoor Stadiums
- Educational Institutions, Auditoriums,
- Campus Lighting in Public Sectors like Railways and Power generation plants
- Textiles, Refineries and all major Process Industries



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