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Introduction of Environmental Friendly Energy saver

Why Save Energy

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- You can save energy, money and the environment. By reducing the power consumption in your home.

- Every Ringgit you save can be used for other investment purpose.

Product Features

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Extra Layer of
Life protection

Lightning Surge
protection

Earthing Protection

Current Stabilizer

100% Plug & Play

Benefits of E-Saver

- E-Saver reduced the power consumption without affecting the equipment performance
- E-saver continuously optimizing the power usage (50 Hz) without manual intervention
- E-Saver reduced the power consumption therefore reducing your electricity bill charges without your notice
- E-Saver quality assured tested and certified by SIRIM

Sales of Energy (GWh) in Peninsular Malaysia

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S/N	Sales of Energy	1998	1999	2000	2001	2002
1	Domestic	8,516	8,507	9,093	10,315	10,939
2	Commercial	13,151	13,821	14,747	16,196	17,032
3	Industrial	24,447	27,051	29,818	30,754	31,371
4	Public Lighting	358	498	527	590	629
5	Mining	68	64	69	67	64
6	Export	26	11	7	5	19
	Total	46,566	49,940	54,254	57,442	60,054

Source : Statistics of Electricity Supply Industry in Malaysia, Year 2003 Edition
Energy Commission, Malaysia

No. of Energy Users in Peninsular Malaysia

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S/N	No. of User	1998	1999	2000	2001	2002
1	Domestic	**3,909,911**	**4,092,106**	**4,186,799**	**4,354,125**	**4,569,628**
2	Commercial	**718,232**	**764,480**	**792,887**	**821,801**	**862,826**
3	Industrial	**18,689**	**20,584**	**21,235**	**21,483**	**21,382**
4	Public Lighting	**22,406**	**25,127**	**26,158**	**26,439**	**27,793**
5	Mining	**51**	**49**	**49**	**42**	**45**

Source : Statistics of Electricity Supply Industry in Malaysia, Year 2003 Edition
Energy Commission, Malaysia

TNB Electricity Charges

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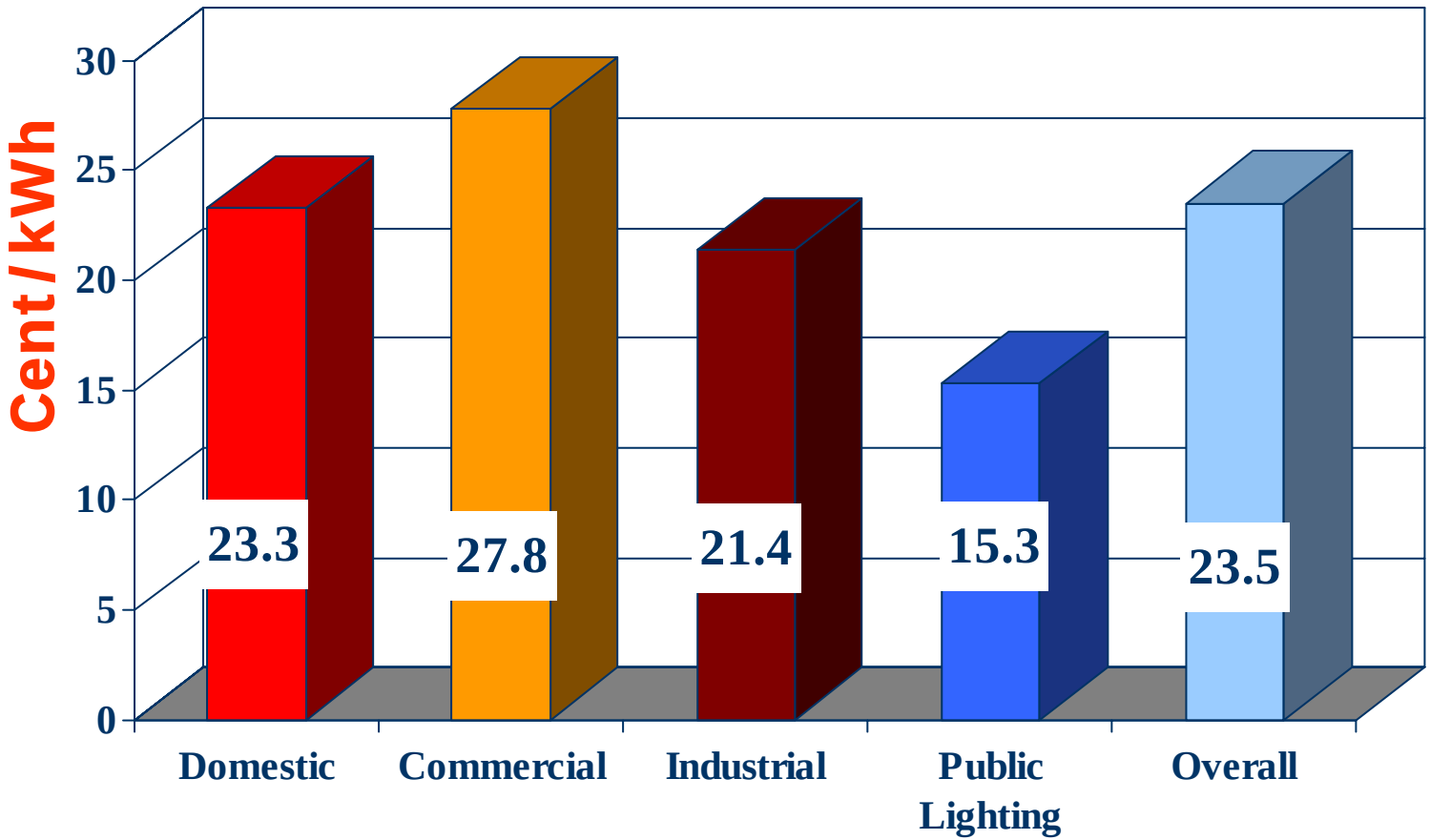

Source : Statistics of Electricity Supply Industry in Malaysia, Year 2003 Edition
Energy Commission, Malaysia

Method Calculation I

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1. 10 pcs fluorescent lights (Theoretical Power Factor = 1)
   Electrical consumption 18W or 0.75Amps/pc

180 Watt	=	0.75 Amp	X	240 Volt	X	PF = 1	Theoretical Scenario
360 Watt	=	3.10 Amp	X	240 Volt	X	PF = 0.48	Practical Scenario
288 Watt	=	1.50 Amp	X	240 Volt	X	PF = 0.80	With Focus E-Saver

Method II

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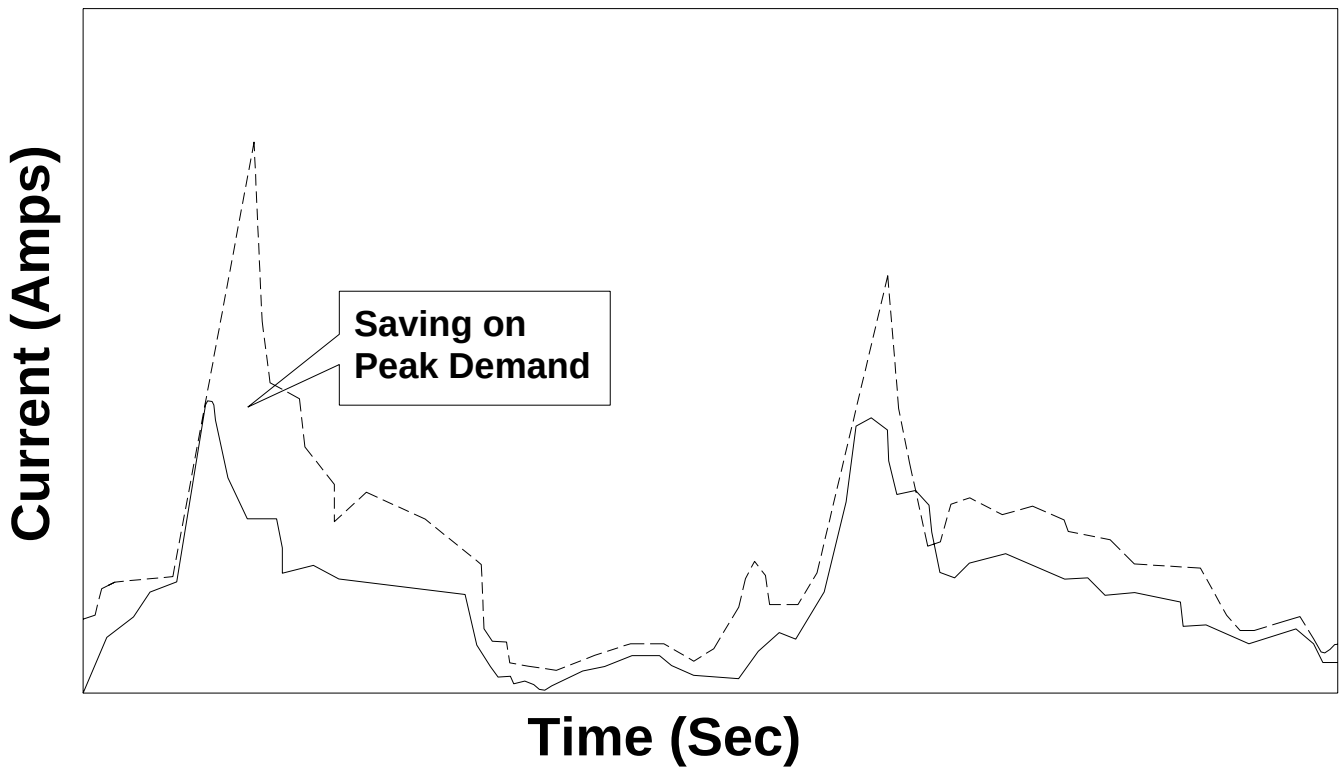
Reduce “Peak” demand of current each time the electric drive Start-ups



Heating Equipments

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E-Saver does not save power consumption on heating equipment

This is to avoid interruption the heat generation

Iron

Water Heater

Electric Oven

Rotation Equipments

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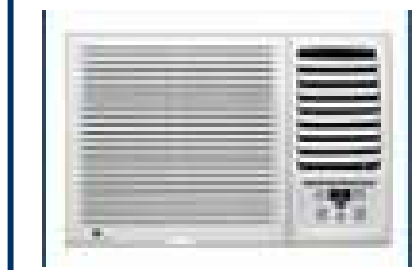
E-Saver reduced energy wastage when power Is use to produce STRENGTH

Example :-

Fan

Motor

Air-cond



3-Phase Input Power System

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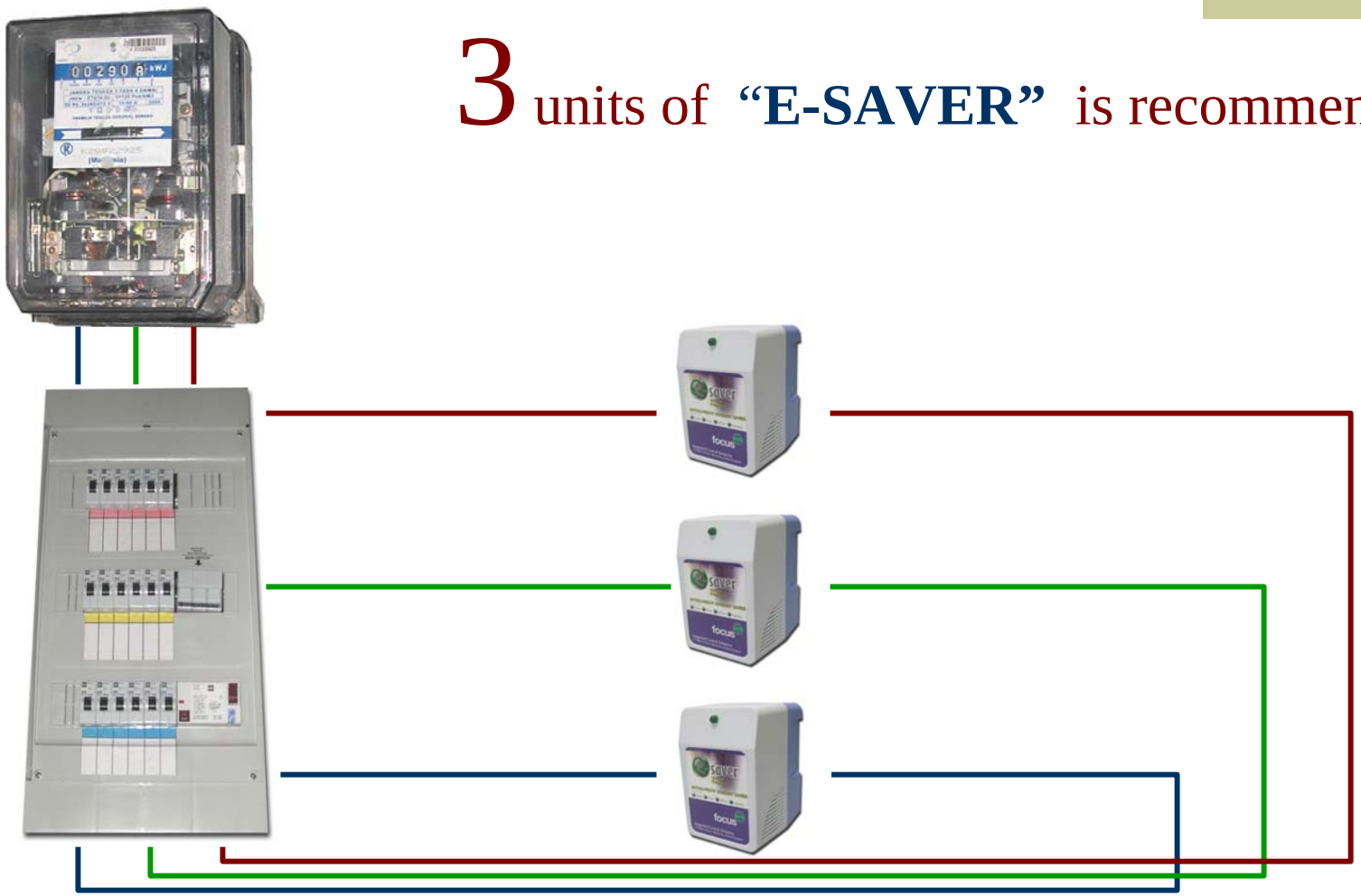
3 units of "**E-SAVER**" is recommended



Performance Characteristic of E-Saver

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- Double Layer Protection

  E-saver helps reducing the overloading current in your house which normally Lead to fire-break-out, explosion and other form of circuit overload incident. Overloading of current arise from incremental use of electrical appliances Without expanding the size of wire and circuit protection devices.

- Enjoy Life

  E-saver ensures users comfort and lifestyle are not compromised, by maintaining The voltage range between 220 ~ 240 V AC at all times and not anyway the voltage Pattern of the power profile.

- Save Money

  It is cost effective mean to reduce incoming power. Hence, paying less electrical bill. The saving range up to 40%, subject to applications.

- Enhance Life Span of the Home Appliances

  Protect home appliances against lightning surge up to 2000 V. Reduction in START-UP Current demand and operating current, lessen heat generation which is the major cause Of metal fatigue.
  Drastic and excessive change to the permitted voltage range is harmful and will cause Damages to the home appliances.

Product Features and Benefits

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S/N	Features	Function	Benefits
1	Plug & Play	Fit right into power socket of universal pin-style	◆ No additional cost of wiring, hacking and workmanship ◆ Hassle-free applications ◆ Ensures maximum convenience and mability
2	Intelligent microchip controller	Optimum power management	◆ Improve life-span of electrical equipments by stabilized current level ◆ Optimum energy saving at all time ◆ Less maintenance
3	Operating Light Indicator	Indicate **ON / OFF** status	No manual interference
4	Lightning Surge Protection	Voltage surge up to 2000 V at 1 KHz	◆ Protect household appliances ◆ Ensure safety

Product Features and Benefits

S/N	Features	Function	Benefits
5	Compact in Size	Minimum space constraint	◆ Convenience
6	SIRIM tested and approved	Legal	◆ Product Quality ensure

What is Power Factor (Pf) ?

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- It is one of the quality element of power
- It is the θ, the angle between leading and lagging power.
- Good Pf reduces power losses
- Bad Pf consumes more energy
- Perfect efficiency of Pf is 1
- Hence, improve Pf will save energy consumption

System before E-Saver

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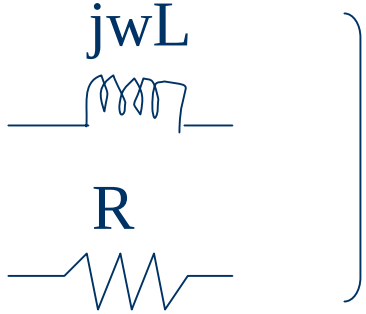

System in the house before installing E-Saver

$$System = R + jwL$$

System in the house After installing E-Saver

$$System = R + jwL - jwC$$
$$= R + jw(L - C)$$

Compensate

How E-Saver Work

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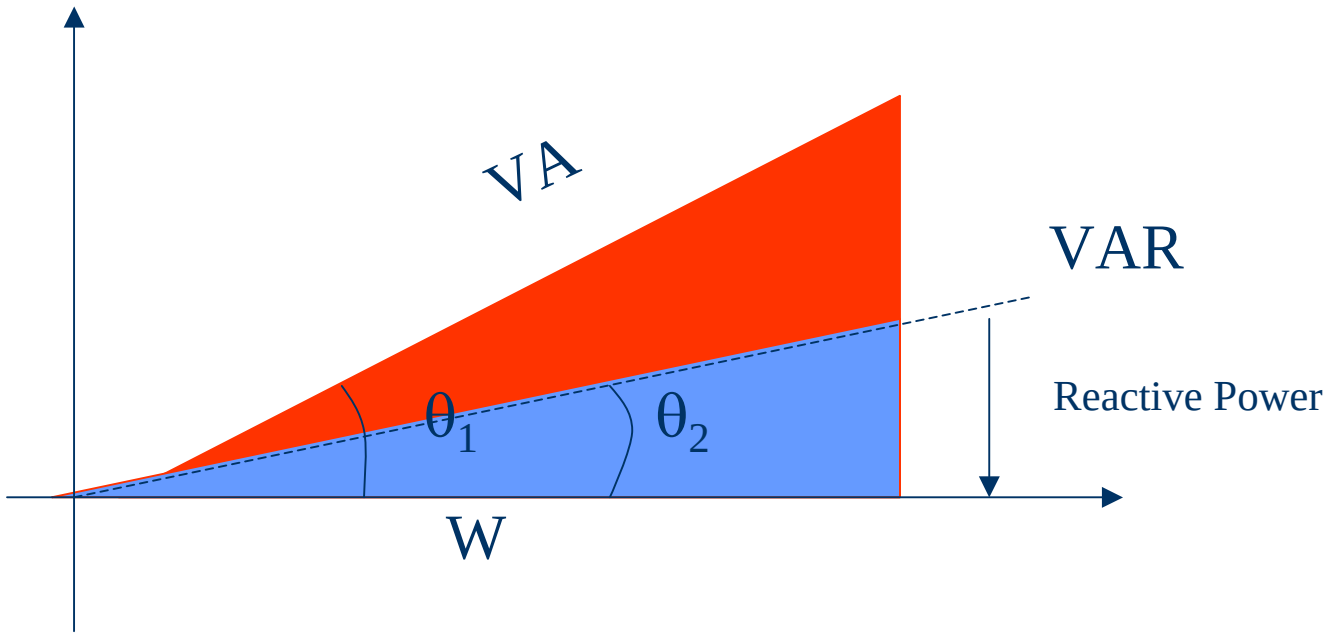
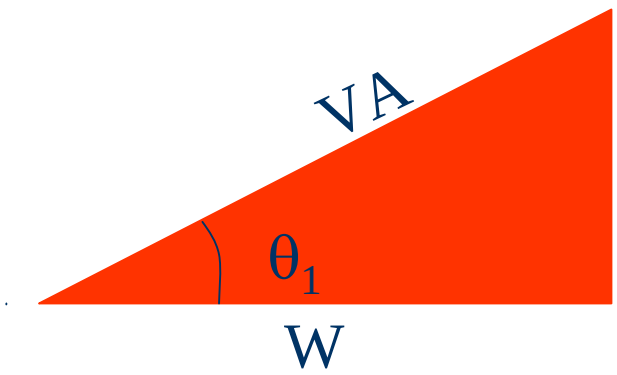
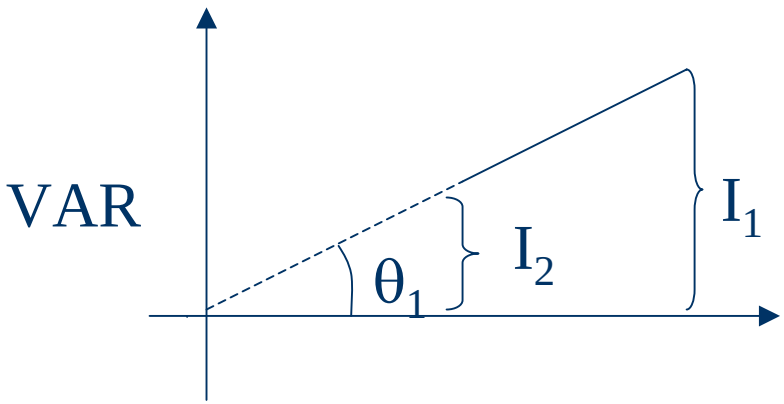


W = kVA cosθ

How E-Saver Work





Assume reducing VAR^2 (reduce Reactive L)

$$W = kVA \cos\theta$$

$$VA^2 = W^2 + VAR^2$$

$$VA = \sqrt{W^2 + VAR^2}$$

Billing Calculation

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Billing :-

$$\frac{V \times I}{1000} \times H$$

$$\frac{240 \times I\ (\downarrow)}{1000} \times H = \underline{\downarrow \text{ unit}}$$

E-Saver Performance

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