



ComEC SL

The ComEC SL is a universal energy controller for commercial applications that saves up to 18% of electricity.

- Installed after the main switch of the facility or at a specific electric board
- Includes internal Automatic Bypass (non-disruptive) ensuring minimum voltage level is kept.
- Includes changeover and safety switchgear built in.
- Controls and optimizes the voltage provided to all loads in the facility generating immediate energy savings, improving power quality and reducing maintenance costs

Voltage Regulation and Optimisation

The main voltage supplied by utilities typically fluctuates in the range of $\pm 10\%$. Voltage level depends on demand for electricity, quality of the electric infrastructure and distance of the site from the main transformer. Voltage fluctuations, especially overvoltage, can negatively affect electric appliances, lighting equipment and electronic devices. ComEC SL optimizes the voltage level, ensuring energy efficiency, preventing equipment failures and extending their lifetime.

Energy Saving

Electric equipment and appliances available in the market are designed to work at the range of nominal voltages, which vary at different regions from over 240V and sometimes below 220V. High voltage causes inefficient use of equipment, increased losses and energy waste. ComEC SL regulates the supplied voltage, improving overall energy efficiency by reducing the voltage by up to 20V and ensuring a level where equipment will work most efficiently. Operating electric equipment at optimized voltage levels can generate up to 18% energy savings. ComEC SL also improves power-factor, filters harmonics, lowers losses, decreases reactive energy and provides a quick return on your investment.

Next Generation Technology and Design

ComEC SL is the next generation in a line of energy efficiency, field-proven solutions from PowerSines. The ComEC SL system is built around a patented technology that enables optimisation of the voltage supplied to electric circuits. The core of the system is based on a proprietary topology of power transformers controlled by a microprocessor. Unlike autotransformer systems, ComEC SL is a cost-effective, highly reliable, small footprint solution that does not compromise on power quality when providing energy efficiency.

Improved Power Quality

ComEC is a "Power Quality Friendly" system. ComEC supplies pure sinusoidal waveform to all electric circuits; it is harmonics-free and has next to zero THD. Even more, ComEC mitigates and filters out harmonics and voltage distortions, reducing electric equipment failures. Optimising voltage for inductive loads such as air conditioners, compressors and pumps helps reducing utility penalties.



UNIVERSAL ENERGY CONTROLLER for all electric loads

IMMEDIATE SAVINGS of up to **18%**

FIELD PROVEN core technology

AUTOMATIC BYPASS ensures min voltage level maintained

BENEFITS

- Energy Savings of up to 18%
- Typical ROI of 2 years
- Quick and easy installation
- No change to electrical infrastructure and wiring
- High reliability
- Zero maintenance
- Seamless EMS/BMS integration
- Improved Power Factor
- Reduced CO₂ emissions

APPLICATIONS

Hotels, Department Stores, Petrol Stations, Convenient Stores, Fast-Food & Restaurants, Coffee Shops, Fitness Centers, Clinics, Hospitals, Schools, Gyms, Office Buildings





High Reliability

Unlike systems based on solid state components that require special thermal management considerations, ComEC SL's durable design guarantees the highest degree of robustness; it can tolerate disturbed electric environments and sustain any harsh ambient conditions. To further eliminate any risk of failure, ComEC SL includes built-in protection mechanisms of internal automatic Bypass, and optional external manual Bypass and for output circuit protection.

Easy and Quick Installation

ComEC SL can be installed after the main circuit breaker of the facility or at any electrical room, supplying electricity for all circuits and loads. Due to its small footprint it can even be wall-mounted and connected to specific electric panels that supply electricity to certain parts of the site.

The ComEC SL installation does not require any changes of existing electric infrastructure or wiring.

Supports All Loads

Since ComEC SL reduces and optimises the supplied voltage, you benefit from immediate savings. Each load type generates a range of savings, for example:

Load Type	Savings
Discharge lighting systems: fluorescent and HID with electromagnetic ballast	18% – 21%
Time-based or continuously working heating equipment	10% – 16%
Refrigerators and freezers	6% – 14%
Kitchen appliances, coffee machines, tea kettles, toasters, microwaves	8% – 16%
Split air conditioner units and ventilation	4% – 7%
Inductive loads – motors, pumps, compressors, etc	2% - 4%
Electronic and computer equipment, lighting systems with electronic ballasts, inverters	1% – 3%

Total energy savings in facilities with the above equipment can average 10%-18% off their annual electric bill.

Voltage reduction will further improve performance of appliances with AC motors, such as air conditioners, compressors, pumps, etc. For these systems, ComEC SL reduces the electric operating current and improves the power factor, resulting in a decrease in the electric infrastructure losses.

ComEC SL Product Models

Product Name	Catalog Number	A	KVA	Dimensions (mm) HxDxW
ComEC SL 630A	0C2B-006300-380	3x630	450	1500x500x1000
ComEC SL 800A	0C2B-008000-380	3x800	540	1500x500x1000
ComEC SL 1000A	0C2B-010000-380	3x1000	720	1750x600x1000
ComEC SL 1450A	0C2B-014500-380	3x1450	1000	1750 x600x1000

Technical Specifications

Input Voltage	3x230V VAC ± 10%
Output Voltage	Reduction of up to 20V
Frequency	50Hz
Efficiency	99.75%

IP Class	IP 21 (optional outdoor cabinet)
Ambient temperature	-20°C : +45°C
Humidity	Up to 90%
THD	<1%

Communications & Controls

RS 232	MODBUS protocol for connectivity with EMS/BMS and SCADA systems
Input	Dry contacts terminals to control ComEC mode (Save or Bypass)
Output	Dry contacts terminals for a) Indicating alarm condition (over temperature, overload); b) Indicating Bypass status; c) Activation of lights according to the astronomic-clock

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