



ComEC

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

- Installs after the main switch of the entire facility or at a specific electric board
- Dynamically controls and stabilizes the voltage provided to all loads in the facility generating immediate energy savings
- Improves power quality and reduces maintenance costs

Voltage Regulation and Optimization

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 dynamically controls the voltage level, ensuring the right level of supplied voltage, preventing equipment failures and extending their lifetime.

Energy Savings

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 regulates the supplied voltage, improving overall energy efficiency by reducing the voltage by up to 20V and stabilizing it at the level where equipment will work most efficiently. Operating electric equipment at reduced and stabilized voltages generates 18% energy savings. In addition ComEC lowers losses, decreases reactive energy and provides a quick return on your investment.

Next Generation Technology and Design

ComEC is the next generation in a line of energy efficiency, field-proven solutions from PowerSines. The ComEC system is built around a patented technology that enables dynamically controlling 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 multi-tap autotransformer systems, ComEC 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 a 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. Regulating voltage for inductive loads such as air conditioners, compressors and pumps helps reduce reactive power (KVAR), contributing to the environment and minimizing the risk of utility penalties.



UNIVERSAL ENERGY CONTROLLER for all electric loads

IMMEDIATE SAVINGS of up to **18%**

FIELD PROVEN core technology

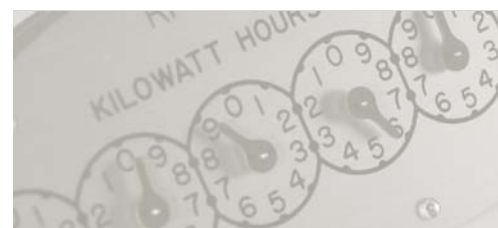
Small footprint **EASY TO INSTALL** wall-mountable

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'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 includes built-in protection mechanisms, internal and manual Bypass and output circuit protection.

Easy and Quick Installation

ComEC is installed after the main circuit breaker of the facility, 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; e.g. a floor in an office building. The specification and selection of the right ComEC model is simple, requiring only matching ComEC's rating to the incoming circuit breaker. The ComEC installation does not require any changes of existing electric infrastructure or wiring.

Supports All Loads

Since ComEC reduces and stabilizes 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 reduces the electric operating current and improves the power factor, resulting in a decrease in the electric infrastructure losses.

ComEC Product Models

Product Name	Catalog Number	A	KVA	Dimensions (mm)	Weight (kg)
ComEC 80A	0C2A-000800-380	3x080	55	610 x 255 x 400	45
ComEC 100A	0C2A-001000-380	3x100	69	645 x 320 x 540	62
ComEC 160A	0C2A-001600-380	3x160	110	780 x 305 x 590	117
ComEC 250A	0C2A-002500-380	3x250	173	1500 x 455 x 800	235
ComEC 350A	0C2A-003500-280	3x350	242	1500 x 455 x 800	265

Technical Specifications

Input Voltage	3x230V VAC ± 10%
Output Voltage	Reduction of up to 20V
Frequency	50Hz
Efficiency	99%

IP Class	IP 20 (with covers)
Ambient temperature	-20°C : +45°C
Humidity	Up to 90%
THD	3%

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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