

# Intelligent POWER FACTOR CONTROLLER

User friendly - Three Phase Sensing - Multifunction Parameters



## The Elmeasure PFC ADVANTAGE

A powerful **micro processor based** power factor controller with built in intelligence. Unlike conventional power factor controllers that sense voltage from one phase and current from another phase, Elmeasure's iPFC is **three phase sensing** thus providing accurate measurement. The built in on board memory provides for **intelligent Power Factor Controlling** based on the capacitor bank switching history (ON/OFF Switches and total ON Hours), thereby increasing the life of each capacitor. Additionally it also functions as a full fledged **Multifunction Meter** that display VLL, VLN, Amps (Average & Phase wise), Frequency, W, PF, VAR (Total & Phase wise). This also comes with optional RS 485 communication port for integration with SCADA/ Energy Management software system.

## Intelligent Features

- Three phase sensing
- Intelligent Power Factor Controlling based on the capacitor bank switching history (No of operations, ON time) improves the capacitor life time
- 6 or 8 or 12 switching relay outputs
- Automatic or manual control (manual control with power backup option)
- User programmable:
  - Star/Delta
  - Lead and lag limits
  - PT and CT ratios
  - CT secondary
  - Minimum switching time (1-99 seconds)
  - Minimum discharge time (1-99 seconds)
  - Minimum capacitor on time (1-99 seconds)
  - Minimum sensing current for controlling operation 100mA - 500mA
  - User programmable capacitor value
- Fault detection (Over compensation, Under compensation, Over voltage, Over current, Under voltage, Over harmonics for voltage and current)
- Displays VLL, VLN, Amps (Average and phase wise) Frequency, W, PF, VAR(Total and Phase wise)
- Four quadrant operation
- RS 485 communication interface (Optional)

## Advantages

- Three phase sensing gives accurate measurement of PF
- Fault Detection (Over compensation, Under compensation, Over voltage, Over current, Under voltage, Over harmonics for voltage and current)
- Automatic or Manual Control (manual control with power backup option)
- Intelligent operation

## Applications

- In all Incomers
- Fixed power factor corrections individual (e.g. motor, transformers, lighting, etc.)
- Group fixed power factor correction (several equipments connected in a group)
- Capacitor banks of tuned and detuned
- Harmonic trap applications (e.g. UPS, Frequency Drives and Converters, etc.)



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Range of Products: EMS, Demand Controller, Multi-Function Meters, Load Manager, Electronic Energy Meters, Dual Energy Meter, Digital Panel Meters, Intelligent Earth Leakage Relay, Power Distribution Unit, Power & Energy Transducers, RS485 to RS232/Ethernet/Optic Fiber Converter, RF Modem and GSM Modem.

## Technical Specification

**Accuracy:** Class 1 (Default) IEC 61036, IS 13779, CBIP 88

### Sensing/Measurement:

True RMS, 1 Sec update time.  
4 Quadrant Power & Energy

### Input voltage:

4 Voltage inputs (VR, VY, VB, VN)  
Programmable 110 or 415V LL Nominal  
(Range 80 to 550V LL)  
Primary Programmable up to 999 kV.  
*Burden:* 0.2VA Max. per phase

### Input current:

Current inputs (AR, AY, AB) 50mA - 6A  
(Field configurable 1A or 5A).  
Primary Programmable up to 99 kA.  
*Overload:* 10A max continuous, 50A max for 3 Sec  
*Burden:* 0.2VA Max. per phase.

### Aux-Supply (Control Power)

150 - 300V AC/DC, 40-70Hz.  
*Burden:* 4VA Max

### Display Resolution:

1 row, 6 digits, (Integrated 6digits) 10mm

**CT PT Ratio Max:** 2000 MVA Programmable

### Communication - Master to PC

RS485 serial channel connection, Industry standard Modbus RTU protocol (RS232 optional).  
*Baud rate:* 2400 bps to 19200 bps. (Preferred 9600 bps)  
*Isolation:* 2000 volts AC isolation for 1 minute between communication and other circuits.

**Contact rating:** SPST, 2A @ 240V

### Weight:

*Unpacked:* 350 gms  
*Packed:* 450 gms

### Mechanical Specification:

Dimension Bezel: 96 × 96 mm (Depth 50mm behind bezel)  
Panel Cutout: 92<sup>+0</sup><sub>-2</sub> × 92<sup>+0</sup><sub>-2</sub> mm

*Note:* Additional error of 0.05% of full scale, for meter input current below 500mA

## Connection Scheme

