

AUTOMATIC POWER FACTOR CONTROLLERS

Three Phase Sensing-Multifunction Parameters

UNO

New



- ➡ 3 Phase Sensing Intelligent Power Factor control algorithm.
- ➡ Advance sensing and detection of any capacitor size.
- ➡ Multi parameter measurement as a Load Manager.
- ➡ Measurement of all 4 quadrant voltages and currents.
- ➡ Accuracy 1.0%(IEC 1036/CBIP 88),0.5%(Optional)
- ➡ RS 485 port with modbus-RTU Protocol (Optional)

AUTOMATIC POWER FACTOR CONTROLLERS

NIPPEN Model UNO+ is used for measurement and control of PF using Reactive power compensation. Capacitor banks are suitably switched ON and OFF automatically to provide necessary compensation. An intelligent switching algorithm (Wear leveling) ensures uniform aging of the capacitors used to achieve the target PF. The Alarm function ensures protection of capacitor banks against abnormality in voltage & current and sets value of capacitors whenever these are beyond the higher and lower threshold limits.

FEATURES

- 3phase sensing Intelligent POWER FACTOR control algorithm .
- Intelligent POWER FACTOR control based on capacitor bank, on time switching, history(No of operations) improves capacitor life.
- Phase wise Auto CAPACITOR kVAr detection.
- Capable of 4-quadrant operation.
- Phase Sequence Error Indication.
- CT polarity Reverse Indication.
- Indication of THD % for Voltage & Current phase wise & Total up to 31harmonics.
- Provision of 2 relays to set off alarms for any of 6 condition as shown.
- Monitors export & import of energy.
- Target PF user Programmable for Unity & Lead/ Lag values.
- Individual CAPACITOR MODE can be programmed ON-OFF-AUTO.
- Automatic disconnection of all caps in case of Mains failure.
- Reliable performance at Low Current(>5% of load).
- Password Protection for Set Values.
- Potential free contact for driving contactors to switch Capacitor. (5A/230V AC Relay With NO Contact).
- Programmable Capacitor Reconnection time.
- User Configurable,1 or 2 relay outputs for alarms.
- Auto scaling into kilo, Mega, Giga & decimal point.
- Optional Real Time Clock.
- Optional Temperature Sensor.
- Optional RS 485 Port Communication Interface.

ELECTRICAL SPECIFICATION

- Operating Voltage: 110-550 V AC 50/60 Hz.
- Current: 50mA-6A AC.
- Auxiliary supply: 80-300V ACDC (+20%) 50/60Hz.
- CT Ratio: 5-9999A AC (only primary to be set).
- Power Consumption:<0.1VA in Current Circuit,< 0.1 VA in Voltage.
- ON/OFF Relay rating: 5A/250VAC - NO Contact.
- PF Setting: 0.5 Lag - 0.8 Lead,0.5 Lead.
- Functions accurately from above 5% load.
- **KEY PAD:**4 keys for scrolling through display pages and programming functions.

PARAMETERS DISPLAYED

- Line to neutral(VLN) & Average ,Line to Line (VLL) & Average
- Ampere(ILN) & Average ,Frequency (Hz.)
- Active Power(kW) & Total,Reactive Power(kVAr) &Total.
- Apparent Power(kVA) &Total,Power Factor (PF) & Average.
- kWh & import ,export ,kVArh & inductive, capacitive, kVAh.
- Load hours, ON hours, THD% (Voltage, Current).
- Phase sequence error(PSE),Alarm status(ALR).

MODELS

- UNO+6R(Basic+Optional Temperature sensor)
- UNO+6RS(Basic+RS 485+ Energy+Optional Temperature sensor)
- UNO+12R(Basic+Optional Temperature sensor)
- UNO+12RS(Basic+RS 485+ Energy+Optional Temperature sensor)

ALARM CONDITION

- Voltage VLN(Over/Under),Current(Over/Under),Hz(Over/Under),
- PF compensation(Under),THD%(Over),Temperature(Over).
- 2 Options of APFCRs are available,
 - 1)If any alarm is triggered, all capacitor will put OFF.
 - 2)If any alarm is triggered, all capacitor will remain ON, for User to decide switching OFF.

PROGRAMMABLE SETTINGS

- CT Ratio,PT Ratio, Meter ID, Password, Alarm.
- User programable Target PF Unity ,Lead, Lag.
- Number of relays 6/12.
- kVAr of each capacitor (Auto detect using Auto Sense).
- Reconnection time (upto 999 Sec).
- Auto/Manual ON & OFF Mode for each CAPACITOR.

DISPLAY

- LED Segment 3display in 3 rows.
- Energy: 8 digits.
- Viewing area: 44x68mm.
- LCD 12 Segment in single column.

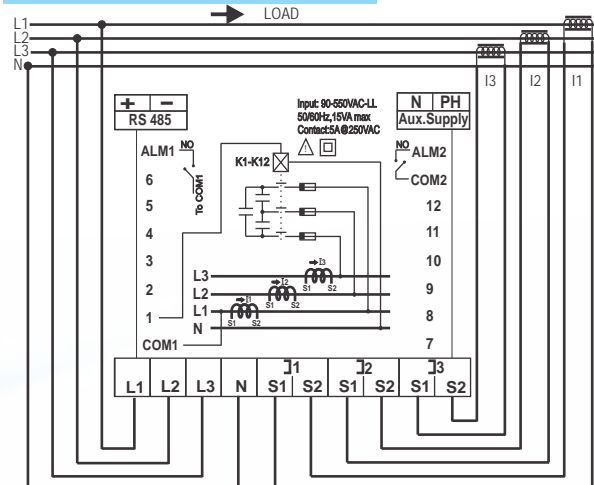
MECHANICAL DIMENSIONS

Front	96 x 96mm (Depth 84 mm)
Panel Cut out	91 x 91mm (±0.1mm)
Casing	Flame retardant ABS
Connectors	Terminal block ABS
Protection	IP 52 front IP 20 Terminal block

RELEVANT STANDARD

EMC	IEC 61326
Immunity	IEC 61000-4-3
Safety	IEC 61010-1-2001

WIRING DIAGRAM OF UNO+12RS



- UNO-L144-6R
- UNO-L144-6RS
- UNO-L144-12R
- UNO-L144-12RS