

Single Phase Precision Voltage Regulator (PvR)

High Frequency PWM Driven IGBT Controlled Line Voltage Conditioner



ETIPL's automatic precision line voltage Conditioner provides output voltage within $\pm 2\%$ of nominal, for input voltage that varies between 175-280 VAC*. PvR is compatible with all loads as it does not switch any components in the power path. There is no electrical motor used for slow correction of output voltage and possibility of over-voltage by system itself.

KEY BENEFITS

SINGLE PHASE MODELS:

- 3KVA
PvR- 3000 - 9111
- 5KVA
PvR- 5000 - 9111
- 10KVA
PvR- 10000 - 9111
- 15KVA
PvR- 15000 - 9111
- 20KVA
PvR- 20000 - 9111
- 25KVA
PvR- 25000 - 9111
- 30KVA
PvR- 30000 - 9111
- 40KVA
PvR- 40000 - 9111
- 50KVA
PvR- 50000 - 9111
- 70KVA
PvR- 70000 - 9111

- **Fast regulation:** corrects output voltage @ 2500 V/sec min.
- High power to weight ratio.
- High efficiency(>97%) at nominal voltage.
- **Fail safe design:** automatic bypass in over load & over temperature condition.
- No switching in power path.
- Continuous output voltage control.
- Cabinet are designed for low floor area.
- Low impedance & Quiet operation.
- Compatible for all kind of load.
- Protection against-Over/Under voltage, Over load / Short circuit & over temp.
- PvR is easy to install in any environment.

TYPICAL APPLICATIONS

Where highly unstable mains available and frequent voltage fluctuations are observed. Popular applications include, but are not limited to, air conditioners, textile machines, medical instrumentation, analytical / laboratory instruments, system calibrations labs, tele-communications, BTS units, wireless sites, broadcast transmitters, semiconductor production, industrial automation, CNC machines & PLC based machines. PvR's ultra-low impedance assures stability even with the most demanding loads.

HOW THE PvR WORKS

In this IGBT based PWM type static voltage stabilizer only the difference voltage is switched through IGBT and will be added or subtracted @2500 V/sec minimum from the mains. This is done electronically without any step changing in voltage which occurs when the system regulates. This is achieved by a feedback control system using digital signal processor (DSP). The input voltage is sensed by DSP and corrections are made by varying the duty cycle of PWM.

SPECIFICATIONS

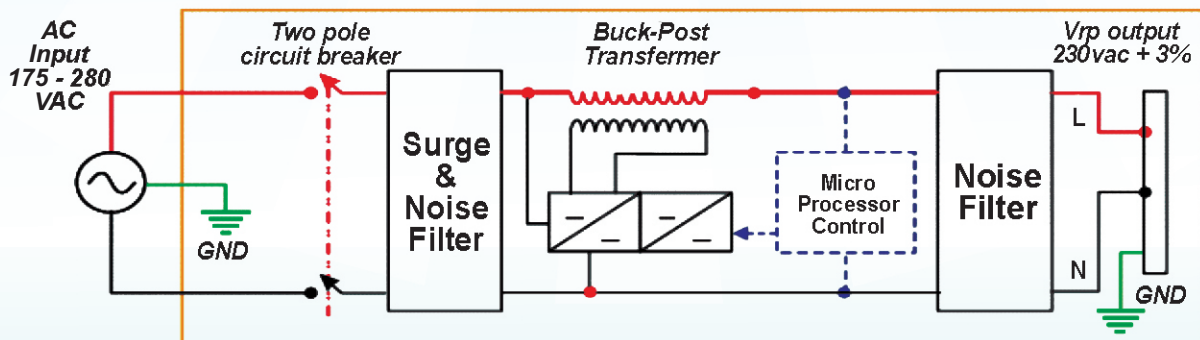
INPUT	
Input voltage range	175-280 VAC Nominal*
Input frequency	50Hz, $\pm 5\%$
Input MCB	upto 400 A
Class of insulation	Class H
Waveform	Sinusoidal
Input connection	(P, N, G) (L, N, G)
OUTPUT	
Output connection	(P, N, G) (L, N, G)
Output Voltage	230 vac (factory set) Nominal*
Line regulation	Output factory set voltage $\pm 2\%^{**}$
Load regulation	Output factory set voltage $\pm 2\%^{**}$
Frequency	Same as input
Correction Speed	2500V/Sec Minimum
Response time	50 microsecond
Capacity	upto 70 KVA
Efficiency at full load	> 97% at nominal voltage
TECHNOLOGY	High frequency PWM controlled IGBT driven Line Voltage Conditioner
PROTECTION AND DISPLAY	
Indication	LED Display, Showing system, Status
By Pass	Automatic bypass when over Load & over temp. condition Note : (Unit should be installed as close as possible (within 30') of the neutral-to-ground bond at the service entrance, in order to minimize potential difference between neutral and ground. A separate isolation transformer is recommended for installations where distance exceeds above, or for grounding system without a neutral-to-ground bound.
CONSTRUCTIONAL DETAILS	
Cooling	Forced Air cooled
Cabinet	IP 20
Weight	Approx 30 Kg for 5KVA
Dimensions	270mm(10.6")wide x 159mm(6.25") high x 368mm (14.5") deep upto 10 KVA
Paint Shade	Black/Gray
Ambient temperature	upto 50° C

* For different Input/Output voltage range consult factory/sales.

**For closer tolerance consult factory/Sales

Note: Minor changes in Dimension & look of cabinet may occur due to digital display etc.

PVR SYSTEM DIAGRAM



Note : ETIPL is continuously upgrading its products that may lead to change in specifications.



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