VRp

Fail-safe | Automatic voltage regulator | with PWM precision

VRp model

7500

7.5 kVA
7.5 kW
input: 208/220/230 or 240 vac
output: 208/220/230 or 240 vac +/-3%

10000

10 kVA
input: 208/220/230 or 240 vac
output: 208/220/230 or 240 vac +/-3%

Power with a Precision Attitude™

Precision, Light-weight, No-break PWM Automatic Voltage Regulator Line Conditioner with Automatic Bypass

Precision fast-PWM ac mains voltage correction

TSi Power's VRp automatic precision regulator line conditioner provides output voltage within plus/minus 3% of nominal, for input voltage that varies between 185 to 265VAC.

There is no switching of taps or otherwise a break in the power path thanks to continuous PWM switching of a buck-boost transformer.

Typical applications

Designed for applications that require absolutely stable, high-reliability power, without switching components in the power path.

Applications include, but are not limited to: analytical equipment, radio and TV broadcast equipment, mobile broadcast vans, industrial controllers (PLC), milking machines, lithographic equipment, recording studio equipment and electrolysis equipment.

Key benefits

The low-weight, high efficiency VRp is easy to install in any environment. The automatic bypass assures that connected equipment will not shut down, even if VRp fails. VRp is compatible with all loads as it does not switch any components in the power path. VRp's ultra-low impedance assures stability even with the most demanding loads.

How the VRp Series works

The high frequency IGBT driven converter takes the incoming ac power, measures against the nominal voltage and adds or subtracts voltage, 20,000 times per cycle, to achieve the nominal output voltage +/-3%.

The Automatic Bypass will be activated when there is a fault condition. Green LED indicates Normal (regulating mode operation), Yellow LED indicates Bypass (non-regulated output), and the Red LED indicates a Fault condition.

Key features of the VRp Series

- Outstanding voltage regulation: under normal input range of 185 to 265V (47 to 63Hz), output regulation will be: single phase 208/220/230 or 240V +/-3%.
- Failsafe: no switching of power path
- Fast regulation
- Automatic bypass
- Low-impedance
- Low weight
- Quiet operation
- Two year warranty

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Voltage regulation with precision

Specification	VRp-7500	VRp-10000
Electrical		
Capacity in VA (watts)	7.5kVA (7.5kW)	10kVA (10kW)
Regulator engine	High frequency 20kHz IGBT driven voltage regulation converter	
Input		
Nominal voltage	208/220/230 or 240 volts ac, single phase	
Operating voltage	185 to 265 volts ac	
Maximum operating range	160 to 300 volts ac (with reduced capacity, wider output regulation)	
Nominal frequency	47 to 63 Hz	
Overcurrent protection	Input circuit breaker	
Circuit breaker rating	40 amps	60 amps
Input wire size	AWG 8 (8 square mm)	AWG 6 (13 square mm)
Ac connection	Terminal block (for L1, L2, and ground wires) is provided.	
Output		
Nominal voltage	208/220/230 or 240 volts ac, single phase. (factory adjusted)	
Power efficiency	Better than 96% (under all load conditions)	
Voltage regulation	Nominal +/-3% maximum under 0 to 100% load and 185 to 265 vac input	
Relaxed voltage regulation	192 to 240 volts ac over wider input range of 160 to 300 vac	
Automatic bypass	Automatic bypass will be activated when there is a fault condition	
System status indicators	System status LED's provided as follows: Green LED (blinking) indicates Normal (regulating mode operation); Yellow LED (blinking) indicates Bypass (non-regulated output); Red LED indicates Fault condition.	
Surge test conditions	Per ANSI/IEEE C62.41-1991 6kV normal-mode injection	
Surge let-through voltages	Category A3, Ring wave, 200A: L-N: 30V. L-G: 30V Category B3, Combination wave, 3000A: L-N: 200V,L-G: 200V 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 (ILc) is recommended for installations where distance exceeds above, or for grounding systems without a neutral-to-ground bond. (customized built-in ILc option is available).	
Ac connection	Terminal block (for L1, L2, and ground wires) is provided.	
Physical		
Dimensions	330mm(13")wide x 216mm(8.5")high x508mm(20")deep	
Weight	36.3 kg(80 lbs)	40.8kg(90 lbs)
Safety		
Agency approvals	Designed to meet UL/cUL1950 and IEC 60950 standards.	
Environmental		
Ambient temperature	0° to +40°C(32° to +104°F). 10 to 90% RH non-condensing.	
Warranty		
Warranty	Two year limited warranty, parts and labor.	

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VRp system architecture