

VRP

Fail-safe

PWM automatic voltage regulator

With precision

VRP Model

9000-0369

9000 W
277/480 V \pm 3%
10.8 A
Three phase

15000-0369

15000 W
277/480 V \pm 3%
18 A
Three phase

22500-0369

22500 W
277/480 V \pm 3%
27 A
Three phase

30000-0369

30000 W
277/480 V \pm 3%
36 A
Three phase

45000-0369

45000 W
277/480 V \pm 3%
54 A
Three phase

60000-0369

60000 W
277/480 V \pm 3%
72 A
Three phase

100000-0369

100000 W
277/480 V \pm 3%
120 A
Three phase

Precision PWM voltage regulator

The VRP three-phase automatic precision AC voltage regulator allows trouble-free operation of electronic equipment over a wide mains AC voltage range of 208 - 332 V Line-Neutral, 360 - 576 V Line-Line.

Typical VRP applications

Typical equipment applications include, but are not limited to: CNC equipment, medical imaging, analytical / laboratory instruments, telecommunications, wireless sites, broadcast transmitters, semiconductor production, industrial automation and digital printing / graphics.

How the VRP works

The high frequency insulated gate bipolar transistor (IGBT) driven converter takes the incoming AC power, measures it against the nominal voltage reference and adds or subtracts voltage, 20,000 times per second, to achieve the nominal output voltage \pm 3%. The automatic bypass will be activated when there is a fault condition. Green LEDs are used to indicate Normal (regulating mode) operation.



Left side view showing the internal components (VRP-100000-0369 shown)

Features and Benefits

- Since the VRP does not switch components in the power path, it is compatible with most loads.
- Automatic bypass circuitry assures failsafe operation.
- Output voltage to within \pm 3 % is provided for superior regulation.
- Includes a two-year limited warranty.
- AC input/output DIN type wiring terminals facilitate wiring connections.
- Internal surge voltage protection assures trouble-free operation.
- AC input circuit breakers and load over current protection prevent costly equipment damage.
- Circuit board assemblies are connectorized for easy replacement.
- Display circuit board monitors each phase independently and displays operational status by means of colored LEDs.

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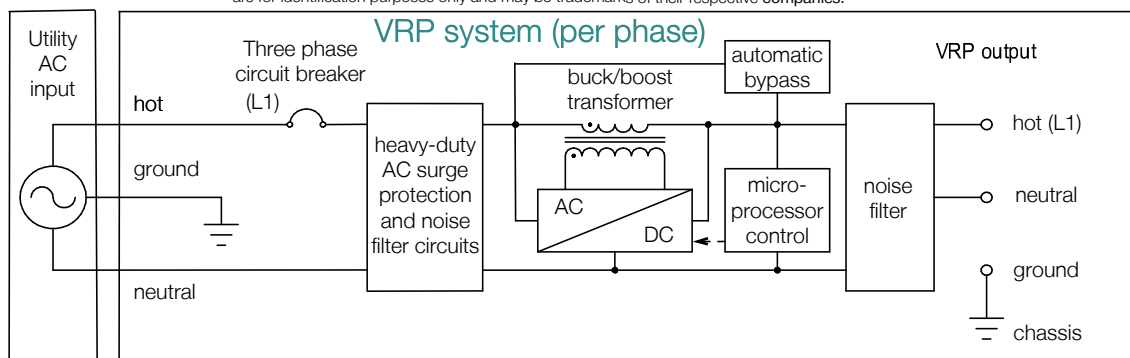
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SPECIFICATION	VRP-9000-0369	VRP-15000-0369	VRP-22500-0369	VRP-30000-0369	VRP-45000-0369	VRP-60000-0369	VRP-100000-0369
ELECTRICAL							
Capacity VA & Watts	9000	15000	22500	30000	45000	60000	100000
Switching Technology	High frequency 20 kHz IGBT chopper/inverter						
INPUT							
Nominal voltage & frequency	277 / 480 V -25 % / +20 % three-phase wye, 50 / 60 Hz						
Operating voltage	208 – 332 V L-N, 360 – 576 V L-L						
Current max	15 A	25 A	38 A	50 A	75 A	100 A	167 A
Circuit breaker	3-pole, 20 A	3-pole, 30 A	3-pole, 50 A	3-pole, 60 A	3-pole, 100 A	3-pole, 125 A	3-pole, 200 A
Surge voltage withstand	ANSI / IEEE: 6 kV, 1.2 x 50 μ s / 3 kA, 8 x 20 μ s; L-N: 450 V L-G: 300 V N-G: 300 V						
OUTPUT							
Voltage	277 / 480 V \pm 3 % three-phase wye, 50 / 60 Hz						
Output power	9000 W	15000 W	22500 W	30000 W	45000 W	60000 W	100000 W
Current Amps per phase	10.8 A	18 A	27 A	36 A	54 A	72 A	120 A
Overload protection	Circuit breaker	Circuit breaker	Circuit breaker	Electronic	Electronic	Electronic	Electronic
Automatic bypass	Transfer to unregulated AC in case of failure						
Harmonic distortion	Sinusoidal, < 5% THD						
Power efficiency @ 227 V nominal	98%						
Power efficiency in max boost mode	96%						
INDICATORS AND ALARMS							
LED System Status indicators	Regulation LED: Green (ON [solid] = Normal operation) – Bypass LED: Yellow (Flashing [~ once per second] = Bypass operation) – Fault LED: Red (ON [solid] = VRP is being overloaded, Slow Flashing [~ once per second] = VRP heat sink temp is too high, Fast Flashing [~ 4 times per second] = AC is out of frequency range)						
PHYSICAL							
Dimensions W x H x D inch (cm)	22.5" (57 cm) High x 24" (61 cm) Wide x 24" (61 cm) Deep					27.75"(70 cm) High x 32"(81 cm) Wide x 32"(81 cm) Deep	
Input / output connections	10 position terminal block						
	1.12"(28.3 mm) holes for 3/4" (21 mm) conduit connectors Recommended: 5 x min 12 AWG (Cross Sectional Area: 3.31 mm ²) wiring	1.12"(28.3 mm) holes for 3/4" (21 mm) conduit connectors Recommended: 5 x min 10 AWG (Cross Sectional Area: 5.26 mm ²) wiring	1.36"(34.6 mm) holes for 1"(27 mm) conduit connectors Recommended: 5 x min 8 AWG (Cross Sectional Area: 8.36 mm ²) wiring	1.70"(43.2 mm) holes for 1-1/4" (35 mm) conduit connectors Recommended: 5 x min 6 AWG (Cross Sectional Area: 13.29 mm ²) wiring	1.70"(43.2 mm) holes for 1-1/4" (35 mm) conduit connectors Recommended: 5 x min 4 AWG (Cross Sectional Area: 21.14 mm ²) wiring	1.95"(49.6 mm) holes for 1-1/2" (41 mm) conduit connectors Recommended: 5 x min 4 AWG (Cross Sectional Area: 21.14 mm ²) wiring	1.95"(49.6 mm) holes for 1-1/2" (41 mm) conduit connectors Recommended: 5 x min 2 AWG (Cross Sectional Area: 33.61 mm ²) wiring
Weight lbs (kg)	155 lbs (70.3 kg)	200 lbs (90.7 kg)	240 lbs (108.9 kg)	300 lbs (136.1 kg)	335 lbs (152 kg)	725 lbs (328.9 kg)	845 lbs (383.3 kg)
Mounting option	Lockable wheel casters						
ENVIRONMENTAL							
Ambient operating temperature	32° to +104° F (0° to +40° C): Humidity: 0 – 95% Non-condensing						
Cooling method	Forced air						
SAFETY							
Standards	Designed to conform to UL 60950-1 (IEC 60950-1) standards						
WARRANTY							
Warranty	Two-year limited warranty, parts and labor						

TSI Power's ongoing product improvement process makes specifications subject to change. Other companies product names herein are for identification purposes only and may be trademarks of their respective companies.



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