

# **AUTOMATIC VOLTAGE REGULATOR**

**THREE PHASE, MULTI-SHIELDED, COPPER-WOUND,  
VOLTAGE REGULATOR**

# **POWER REG**

**15 TO 2000 kVA**



## **APPLICATIONS**

**INDUSTRIAL  
SCHOOLS  
HOSPITALS  
CHURCHES**

**CITY HALL  
LIBRARY  
FIRE STATION  
SHOPPING CENTER  
MALLS**

**RESTAURANTS  
MEDICAL EQUIP.  
PRINTING EQUIP.  
MACHINE SHOP  
SERVICE STATION**



## **Exceptional Reliability**

The Power-Reg is highly reliable, and the primary reason is the zero current tap-switching technology. A tap-switching Power-Reg regulates the voltage by switching electrical taps to either raise or lower the output voltage. Since these tap changes are made when the current is at zero, there is virtually no component stress. This innovative zero current tap-switching technique results in exceptional system reliability.

Another high reliability technique utilized by the Power-Reg is our unique distributed leakage reactance protection system. The electrical taps of the computer grade transformer are located in the center of the primary winding. When a high energy impulse occurs, which would damage other tap-switching regulators, the distributed leakage reactance attenuates the impulse before it reaches critical limits.

## **Environmental**

The Power-Reg is convection cooled ( $\leq 300$  kVA) and equipped with circulation fan for units 400 kVA and above. The Power-Reg fits well into utility closets and other out-of-the-way places. Operable over a wide temperature range, and with high humidity tolerance, the Power-Reg will go places where other power conditioners can't go.

## **Compensates to Maintain Load Power Factor**

The power factors of most automated equipment (typ. 0.8 lagging) will lower the output voltage in a ferroresonant regulator by as much as 6%. OnLine Power-Regs are not affected by the load power factor.

## **Wide Input Frequency Range**

The Power-Reg operates within a broad input frequency range from 57 Hz to 63 Hz and is therefore unaffected by frequency fluctuations. Many other types of regulating devices are highly sensitive to routine input frequency variations.

## **Negligible Harmonic Distortion**

Harmonic distortion can adversely affect sensitive electronic equipment. Ordinary regulating devices can cause severe distortion of output waveforms and also on the input power line. The Power-Reg adds less than 1% total harmonic distortion to the line and load.

## **"ULTRA-REG" Version Combines Precision Regulation with Exclusive Shielding**

The Ultra-Reg version combines a wide regulation capability (+10% to -26% of nominal) and multi-shielding that achieves a minimum common-mode noise attenuation of -126 dB, with optional -140 dB, -146 dB, or -152 dB available.

**UL Listed**

**High Efficiency (>97%)**

**Low Distortion**

**Tight Output  
Voltage Regulation ( $\pm 3\%$ )**

**Exceptional Reliability**

**Single Point Grounding**

**Zero Current Tap Switching**

**Excellent Voltage Regulation**

**Common-Mode Noise  
Attenuation up to -152 dB  
(Ultra-Reg)**

**Small Foot Prints**

**\* 1 Year Warranty**

The manufacturer shall warrant the Power Regulator against defects in materials and workmanship for a period of twenty-four (24) months. The warranty shall cover all parts and labor for a 12-month period beginning with the factory startup, 13th through 24th months only valid with factory performed preventive maintenance, (extended warranty contract).

# POWER REG SPECIFICATIONS

<b>Sizes:</b>	15,30, 50, 75, 100, 125, 175, 200, 225, 250, 300, 400, 500, 750, 1000, 1250, 1500, and 2000 kVA
<b>Input Voltage*:</b>	208 or 480 VAC, **480Y/277
<b>Output Voltage*:</b>	208Y/120 or 480Y/277 VAC
<b>Frequency*:</b>	60 Hz $\pm$ 5%
<b>Response Time:</b>	1 cycle typical
<b>Harmonic Distortion:</b>	<1% max. added
<b>Input Voltage Regulation Range:</b>	+10% to -26% of nominal
<b>Output Voltage Regulation Range:</b>	$\pm$ 3% typ. $\pm$ 4% maximum
<b>Common-Mode:</b>	-120 dB (<300 kVA) -140 dB -146 dB or -156 dB available
<b>Normal-Mode:</b>	40dB/decade
<b>Overload(Inrush):</b>	200% of full load for 10 seconds 1000% of full load for 1 cycle
<b>Transformer:</b>	Dry, isolation, multi-shielded, copper wound, three phase computer grade.
<b>Efficiency:</b>	97% at full loads; 98.5% at light loads
<b>Load Power Factor:</b>	0.3 leading or lagging to unity
<b>Audible Noise:</b>	Meets or exceeds NEMA standard
<b>Environmental:</b>	
Operating Humidity:	10 to 90% relative humidity, without condensation
Operating Temperature:	32°F (0°C) to 104°F (40°C)
Storage Temperature:	-4° to 140°F
<b>Transformer Impedance:</b>	3 to 5%

## STANDARD FEATURES

- NEMA I Indoor Cabinet
- Three Phase Regulating, Dual-Shielded Computer Grade Transformer
- Common-Mode Noise Attenuation ( $\leq$ 300 kVA)  
Power-Reg; -120 dB standard,  
\*\*\*Ultra-Reg; -126 dB standard
- Regulating Assembly and Input Filter
- Regulation/Isolation Only Switch (Bypass Regulation Electronics)

## OPTIONS

- High Isolation Transformer with Harmonic Reduction (up to K-50)
- Controlled Impedance for Load Regulation (Application of No Load to Full Load)
- Monitoring Panels
- Remote Monitoring
- Secondary Surge Suppression
- Auto Bypass (100-20000 kVA)
- Input/Output Circuit Breaker (available for selected units only)
- Input/Output Filter (-60dB/decade Normal-mode)
- TVSS
- Outdoor Cabinet
- Special Paint
- Extended Warranty and Service Plans
- Spare Part Kits Available
- \*\*\*\*"Ultra-Reg" version:  
provides Common-Mode Noise Attenuation levels of -140dB, -146 dB, or -152 dB.

KVA SIZE	INPUT VOLTAGE	MODEL NUMBERS***		WEIGHT (LBS)	BTUs/HR	CABINET SIZES H" x W" x D"
		208Y/120 OUTPUT VOLT	480Y/277 INPUT VOLT			
15	208	PR015B0500T3	PR015B0900T3	400	2,040	38 x 26.5 x 17
	480	PR015H0500T3	PR015H0900T3			38 x 26.5 x 17
30	208	PR030B0500T3	PR030B0900T3	500	4,080	38 x 26.5 x 17
	480	PR030H0500T3	PR030H0900T3			38 x 26.5 x 17
50	208	PR050B0500T3	PR050B0900T3	700	6,800	40.5 x 31.5 x 21.5
	480	PR050H0500T3	PR050H0900T3			40.5 x 31.5 x 21.5
75	208	PR075B0500T3	PR075B0900T3	850	10,200	51.5 x 40.5 x 26.5
	480	PR075H0500T3	PR075H0900T3			40.5 x 31.5 x 21.5
100	208	PR100B0500T3	PR100B0900T3	1,250	13,600	66 x 50.5 x 32
	480	PR100H0500T3	PR100H0900T3			40.5 x 31.5 x 21.5
125	208	PR125B0500T3	PR125B0900T3	1,400	17,000	66 x 50.5 x 32
	480	PR125H0500T3	PR125H0900T3			51.5 x 40.5 x 26.5
150	208	PR150B0500T3	PR150B0900T3	1,500	20,400	66 x 50.5 x 32
	480	PR150H0500T3	PR150H0900T3			51.5 x 40.5 x 26.5
175	208	PR175B0500T3	PR175B0900T3	1,700	23,800	66 x 50.5 x 32
	480	PR175H0500T3	PR175H0900T3			66 x 50.5 x 32
200	208	PR200B0500T3	PR200B0900T3	2,000	27,200	66 x 50.5 x 32
	480	PR200H0500T3	PR200H0900T3			66 x 50.5 x 32
225	208	PR225B0500T3	PR225B0900T3	2,250	30,600	66 x 50.5 x 32
	480	PR225H0500T3	PR225H0900T3			66 x 50.5 x 32
250	208	PR250B0500T3	PR250B0900T3	2,450	34,000	66 x 50.5 x 32
	480	PR250H0500T3	PR250H0900T3			66 x 50.5 x 32
300	208	PR300B0500T3	PR300B0900T3	2,900	40,800	66 x 50.5 x 32
	480	PR300H0500T3	PR300H0900T3			66 x 50.5 x 32
400	208	PR400B0500T3	PR400B0900T3		40,944	Consult Factory
	480	PR400H0500T3	PR400H0900T3			90 x 88 x 50
500	208	PR500B0500T3	PR500B0900T3		51,180	Consult Factory
	480	PR500H0500T3	PR500H0900T3			90 x 88 x 50
750	208	PR750B0500T3	PR750B0900T3		76,770	Consult Factory
	480	PR750H0500T3	PR750H0900T3			90 x 106 x 60
1000	208	PR1000B0500T3	PR1000B0900T3		105,722	Consult Factory
	480	PR1000H0500T3	PR1000H0900T3			90 x 106 x 60
1250	208	PR1250B0500T3	PR1250B0900T3		127,950	Consult Factory
	480	PR1250H0500T3	PR1250H0900T3			Consult Factory
1500	208	PR1500B0500T3	PR1500B0900T3		153,540	Consult Factory
	480	PR1500H0500T3	PR1500H0900T3			Consult Factory
2000	208	PR2000B0500T3	PR2000B0900T3		240,720	Consult Factory
	480	PR2000H0500T3	PR2000H0900T3			Consult Factory

- \* Other voltages and frequencies available consult factory.
- \*\* Consult Factory. Input and Output voltage must be the same
- \*\*\* All model numbers represent the standard units without options
- \*\*\*\* For "Ultra-Reg" version, consult factory.

Specifications are subject to change without prior notification.