

# PS SERIES PROGRAMMABLE POWER SUPPLY



**MODEL NUMBER: PS-94-444-29 Series**  
**U.S. PATENT NO. 6,178,101**

## INPUT:

Voltage	115/200 VRMS
Voltage Tolerance	±10%
Configuration	3Ø
Frequency Range	30 to 800 Hz
Power Factor	≥ 0.99
Input Current	≤ 5% at nominal input
Distortion	voltage and full rated load
Protection	Over/undervoltage, loss of phase, and overcurrent
Phase Rotation	Any
Ride-Through <sup>(a)</sup>	50 ms at full rated load

## OUTPUT:

Programmable Voltage <sup>(b)(c)</sup>	See Table 1 115 VRMS, 115/230 VRMS or 115/200 VRMS
Voltage Tolerance	±1.0%
Configuration	1Ø or 3Ø
Frequency	50 Hz, 60 Hz or 400 Hz
Frequency Tolerance	± 0.1%
Power/Overload	See Tables 2 and 3
Short Circuit	180% for 10 seconds
Distortion	2% THD maximum
Output Voltage Transients	IAW MIL-STD-704F Fig. 3 or 8 for all conditions of load change or input voltage transients IAW MIL-STD 704A Fig. 3, limits 1 & 3
Power Factor Range	0.8 lagging to 0.8 leading (not damaged by any power factor load)
Efficiency	89% typical at full load
Protection	Over/undervoltage, overload, short circuit

**\*\*This product was manufactured in a plant whose quality management system is registered to ISO 9001:2008.**

## APPLICATION:

Since its beginning in 1960, Unitron has focused on the design and development of reliable solid-state power systems. The PS Series is the sixth generation in a family of frequency converters, which has seen extensive military and commercial use. The product line is used in research laboratories, production line testing, onboard aircraft and ships, and in many other applications where precise AC power is required. The PS Programmable Power Supply operates from any standard worldwide power frequency, and provides 50, 60, or 400 Hz output power in various 1Ø and 3Ø configurations, depending on which field-replaceable programming plug is selected. Additionally, it can be operated in conjunction with Unitron's Programming Paralleling Control Box (PCB Series) as an N+1 redundant, Hot-Swap System rated up to 14.0 kVA. This unit is capable of providing MIL-STD-704F power while operating off of legacy aircraft (MIL-STD-704A).

## FEATURES:

Low Input Current Distortion • Wide Input Frequency Range • Programmable 50, 60, or 400 Hz Output Frequencies • High Input Power Factor • StopLite BITE™ Self Diagnostic System • Paralleling Option for Power Grid Expansion • High Reliability • Light Weight • Remote Control • (N+1)/Hot-Swap System • 36 Month Warranty

## MECHANICAL:

Size	6" height, 9" width, 18" depth
Weight	30 lbs. dependent on options
Mounting	Hard mount or ATR mount
Connectors	Input: MS3102R18-11P Output: MS3102R20-15S Control: D38999/20WD35SN
Cooling	Self-contained fan (slow speed for low ambient noise)

## ENVIRONMENTAL: (Contact factory for details)

	MIL-STD-810	RTCA-DO-160
Temperature	✓	✓
Altitude	✓	✓
Explosion Proof	✓	✓
Shock	✓	✓
Vibration	✓	✓
Humidity	✓	✓
Fungus	✓	✓
Salt Spray	✓	✓
Sand and Dust	✓	✓
	MIL-STD-461	RTCA-DO-160
EMI	✓	✓

(a) Other ride-through options available, contact factory.  
(b) Factory voltage adjustment of ±10% (specify).  
(c) IAW MIL-STD-704F, fig. 3 or 8.

**TABLE 1: Output Plug Selection (PP Series)**

Plug Number	kVA	Hz	Voltage VRMS	Phase
PP-050-C	3.0	50	115/230	1
PP-060-S	3.5	60	115	1
PP-060-T	3.5	60	115/200	3
PP-060-C	3.0	60	115/230	1
PP-400-S	3.5	400	115	1
PP-400-T	3.5	400	115/200	3

**TABLE 2: Power/Overload Ratings**

kVA	Overload					
	%	Time	%	Time	%	Time
3.0	110	2 hr.	125	5 min.	135	10 sec.
3.5	110	2 hr.	125	5 min.	175	10 sec.
3.5	110	2 hr.	125	5 min.	175	10 sec.
3.0	110	2 hr.	125	5 min.	135	10 sec.
3.5	110	2 hr.	125	5 min.	175	10 sec.
3.5	110	2 hr.	125	5 min.	175	10 sec.

**TABLE 3: PS-94-444-29 Series Configurations**

MODEL NUMBER	Multi Unit	EMI		Input Circuit Breaker
		MIL-STD-461E	RTCA/DO-160F	
PS-94-444-29A	See Notes	X		
PS-94-444-29B		X		X
PS-94-444-29C			X	
PS-94-444-29D			X	X

**NOTES:**

- Two units paralleled for grid expansion only, up to 7.0 kVA, require one programming parallel cable (PPC Series) only.
- Three or more units paralleled for grid expansion only, up to 17.5 kVA, require a programming parallel box (PB Series) in addition to one programming parallel cable (PPC Series) for each unit.
- Two or more units paralleled for (N+1) redundancy/Hot-Swap, up to 17.5 kVA, require a paralleling control box (PCB Series) in addition to one paralleling box cable (PBC Series) and one interconnect power cable (IPC Series) for each unit.

