

PS SERIES PROGRAMMABLE POWER SUPPLY



MODEL NUMBER: PS-94-444-21
U.S. PATENT NO. 6,178,101

INPUT:

Voltage Range	115/200 VRMS \pm 10%
Configuration	3-Phase, wye
Frequency Range***	30 to 600 Hz
Power Factor	\geq 0.99
Input Current	\leq 5% at nominal input
Distortion	voltage and full rated load
Protection	Over/undervoltage, loss of phase, and overcurrent
Phase Rotation	Any
Ride-Through****	50 ms at full rated load

OUTPUT: (PROGRAMMABLE)*/ ****

Plug Number	Hz +/- 0.1%	Voltage VRMS +/-1.0%	Phase	kVA	Overload			
					%	Time	%	Time
PP-050-C	50	115/230	1	3.0	125	5 min.	135	10 sec.
PP-060-S	60	115	1	3.5	125	5 min.	175	10 sec.
PP-060-T	60	115/200	3	3.5	125	5 min.	175	10 sec.
PP-060-C	60	115/230	1	3.0	125	5 min.	135	10 sec.
PP-400-S	400	115	1	3.5	125	5 min.	175	10 sec.
PP-400-T	400	115/200	3	3.5	125	5 min.	175	10 sec.

Distortion	2% THD maximum
Power Factor Range	0.8 lagging to 0.8 leading (not damaged by any power factor load)
Efficiency	89% typical at full load rating
Protection	Over/undervoltage, overload, short circuit

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 wherever precise AC power is required. The PS Programmable Power Supply operates from any standard worldwide power source, and provides 50, 60, or 400 Hz output power in various 1 \emptyset and 3 \emptyset 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 17.5 kVA. This unit also has a unique 50 ms input ride-through capability to withstand MIL-STD 704A voltage deviation while still maintaining its regulated output.

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 • 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:

Temperature	MIL-STD-810E, Method 501.3, 502.3 (-25°C to +55°C operating; -40°C to +71°C storage)
Altitude	MIL-STD-810E, Method 500.3 (15,000 ft. operating, 45,000 ft. rapid decompression)
Explosion-Proof Shock	MIL-STD-810E, Method 511.3 MIL-STD-810E, Method 516.4 (10g operational, 20g crash)
Vibration Humidity	MIL-STD-810E, Method 514.4 MIL-STD-810E, Method 507.3 (95% RH max at 30°C)
EMI**	RTCA DO-160D, Section 20, 21

* Paralleling options available for power grid expansion.

** EMI option available IAW MIL-STD-461D/MIL-STD462D.

*** Input frequency up to 800 Hz with \leq 10% input current distortion.

**** Alternate voltages available, contact factory

***** Other ride-through options available, contact factory.

ADDITIONAL PROGRAMMABLE PS SERIES CONFIGURATIONS

INPUT FREQUENCY	OUTPUT FREQUENCY (Hz)			OUTPUT VOLTAGE		EMI		PARALLEL OPTION	NOTES	MODEL NUMBER
	50	60	400	VOLTS	CONFIG.	MIL-STD-461E	RTCA/DO-160D			
30 Hz to 600 Hz****	X	X	X	Selectable		X		X	1,2,3	PS-94-444-16
	X	X	X	Selectable			X	X	1,2,3	PS-94-444-14
	X	X	X	Selectable		X		X	1,2	PS-94-444-18
	X	X	X	Selectable			X	X	1,2	PS-94-444-17
	X	X	X	Selectable		X		X	1,3,7	PS-94-444-21
	X	X	X	Selectable			X	X	1,3,7	PS-94-444-22
	X	X	X	Selectable			X	X	1,7	PS-94-444-23
	X	X	X	Selectable		X		X	1,7	PS-94-444-24
	X	X	X	Selectable		X		X	1,3,7,10	PS-94-444-25
	X	X	X	Selectable			X	X	1,3,7,10	PS-94-444-26
	X	X	X	Selectable			X	X	1,7,10	PS-94-444-27
	X	X	X	Selectable		X		X	1,7,10	PS-94-444-28

NOTES:

1. Programming plug (PP Series) or programming parallel cable (PPC Series) required to determine output frequency and phase configuration.
2. Two paralleled units require one programming parallel cable (PPC Series) only. Three or more paralleled units require a programming parallel box (PB Series) in addition to one programming parallel cable (PPC Series) for each unit. Paralleling for grid expansion up to 17.5 kVA only.
3. Unit does not include circuit breaker.
4. Requires one PC-P1 type parallel cable (PC Series) for each unit.
5. Requires one PC-P3 type parallel cable (PC Series) for each unit. (Limit 3 units)
6. Portable power supply and distribution system.
7. Two or more paralleled units 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. Paralleling for common output bus grid expansion (up to 17.5 kVA) or for N+1 redundancy/hot swap system configuration.
8. Units meet EMI requirements per MIL-I-6181D.
9. Other output frequency and voltage options available. Contact factory.
10. Includes 100 ms ride-through option.

