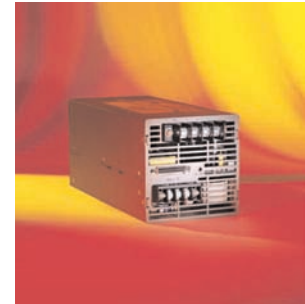


Section 2

## MID VOLTAGE 12V TO 60V AC TO DC SINGLE OUTPUT

Pioneer's introduces a new breed of High Efficiency Mid Voltage PFC Models that provide full output power with Single or Three Phase AC Input. Designed to support both standalone and parallel configurations, these models are configured in standard Non-Plug and Hot Plug I/O interfaces. The Premium Quality front ends are rugged, reliable, designed for high performance and come in the traditional 5" x 5" package. With power density up to 25.8watts/in<sup>3</sup>, these units are featured with internal forced air-cooling and built-in protection from electrical over-loads.

A single module provides continuous full power over operating temperatures of 0°C to +50°C, from a Single or Three Phase AC Input line.



5" x 5" x 11.25"  
Up to 2000W  
AC & DC Terminal Block  
Option Connector DB25

### Product Matrix

MODEL	PM3326	PM3327	PM3328	PM3329	PM33211	PM3329	PM33210	PM33215	PM36217	PM36218	PM36219	
<b>MAX POWER</b>	1000W	1200W	1500W	2000W	3000W	2000W	2500W	5000W	6000W	8100W	10000W	
<b>Vout</b>	lout	lout	lout	lout	lout	lout	lout	lout	lout	lout	lout	
<b>12V</b>	83A	100A	125A	166A	250A	166A	208A	416A	500A	675A	833A	
<b>15V</b>	67A	80A	100A	136A	200A	136A	167A	363A	400A	540A	665A	
<b>24V</b>	42A	50A	63A	83A	125A	83A	104A	208A	271A	367A	416A	
<b>28V</b>	36A	43A	54A	71A	107A	71A	89A	179A	232A	289A	357A	
<b>32V</b>	30A	38A	47A	63A	94A	63A	78A	156A	203A	253A	312A	
<b>40V</b>	25A	30A	37A	50A	75A	50A	63A	125A	150A	202A	250A	
<b>48V</b>	21A	25A	31A	42A	63A	42A	52A	104A	135A	169A	208A	
<b>54V</b>	18A	22A	28A	37A	56A	37A	46A	93A	111A	150A	185A	
<b>60V</b>	17A	20A	25A	36A	50A	36A	42A	83A	108A	135A	167A	
<b>Non-Plug</b>	5"	5"	11.25"	5	5	11.25"	5" 5"	15.5"	5"	5"	15.5"	
<b>Hot Plug</b>	5"	5"	11.5"	5	5	11.5"	5" 5"	17.5"	5"	5"	17"	
<b>AC Input</b>	90V	to	264V	180V	to	264V	90V	to	264V	180V	to	264V
									or	365V	to	528V

- Notes:
- All Models are available with wide input range 90 to 264VAC (option -6) or high input 180 to 264VAC (option -5)
  - All Models are available in Single Phase or Three Phase AC Input.
  - Input Current formula:  $1\phi I_{in} = P_{out}/(V_{in} \times \text{Efficiency} \times 0.99\text{PF})$   
 $3\phi I_{in} = P_{out}/(V_{in} \times \text{Efficiency} \times 0.95\text{PF} \times \sqrt{3})$
  - 1000W & 1200W are also available in 2U packages. See section on 1U and 2U Power Supplies

### Features:

- ◆ Power Factor Correction
- ◆ 0°C to +50°C at Full Load
- ◆ De-rated @ 70°C
- ◆ Standard 5" x 5" Case
- ◆ Outputs Fully Floating
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Remote Sense
- ◆ Over Temperature Protection
- ◆ Internal Forced Air Cooling

### Options:

- ◆ (-128L) DC OK with LED Indicator
- ◆ (-1CL) AC Fail with LED Indicator
- ◆ (-2T) Unit Enable/Disable
- ◆ (-5LO) ±10% Output voltage adjust
- ◆ (-6B) Single wire current sharing
- ◆ (-6D) Slope/Droop current sharing
- ◆ (-20C) Isolation diodes
- ◆ (-25) Constant current limit
- ◆ (-33) Current monitor

Note: Refer to Section 26 for list of all standard options



5" x 5" x 11.5"  
Up to 3000W  
Elcon lower Drawer  
Hot Plug Connector

## SPECIFICATION

### Inputs

**RANGE:** 90 to 264 VAC, 1 $\phi$  or 3 $\phi$ . 365 to 528 VAC, 3 $\phi$ .  
**FREQUENCY:** 47 to 63 Hz. 400Hz also available as an option.  
**POWER FACTOR:**  
 0.99 @ Full Load for 1 $\phi$   
 0.95 @ Full Load for 3 $\phi$   
**INRUSH CURRENT:** < 25/40A when averaged over 1/2 cycle, depending on output power.  
**HARMONIC CURRENT:** < 5% for 1 $\phi$  only  
**INTERNAL FUSE:** One or three depending on 1 $\phi$  or 3 $\phi$

### Environmental

**AUDIBLE NOISE:** 63dBA/70dbA max at 1 meter  
**TEMPERATURE:** Operating: 0°C to +50°C at full load. Storage: -55°C to +85°C.  
**HUMIDITY:** 20% to 95% non-condensing.  
**ALTITUDE:** Operating: 5,000 feet. De-rates to 70% at 15,000 feet. Non-Operating: To 30,000 feet.  
**VIBRATION:** Operating: From 5 to 27 Hz, 0.02 in double amplitude; from 27 Hz to 500 Hz, 0.75G, 3 Axes, 3 min per octave sweep, dwell 15 min at resonance. Non-operating: From 5 to 17 Hz, 0.10 in double amplitude, from 17 to 500Hz, 1.5G peak; 3 axes, 5 min per octave sweep; dwell 15 min at resonance.  
**SHOCK:** Operating: 5G, half sine, 11msec, 3 axes. Non-Operating: 15G, half sine, 11msec, 3 axes.  
**COOLING:** Forced air, internal fan. Airflow exits at connector end. Reverse airflow available.

### Safety

**SAFETY:** UL1950, CSA22.2 No 950 and TUV to EN60950. CE Mark (LVD)  
**EMI:** Conducted & Radiated: EN55022 Level A  
 CE Certification is Optional

### Output

**ADJUSTMENT RANGE:**  $\pm 10\%$  of nominal output voltage.  
**POLARITY:** Output is isolated. It may be referenced plus/minus as required.  
**REMOTE SENSE:** Compensates for up to 0.5V total loop drop, in the output line.  
**STATIC REGULATION:**  
 Line:  $\pm 0.25\%$  over full line range.  
 Load:  $\pm 0.25\%$  zero load to full load.  
**VOLTAGE STABILITY:**  $\pm 0.1\%$  for 24 hour period after 30 minute warm up.  
**TEMP COEFFICIENT:**  $\pm 0.02\%/^{\circ}\text{C}$  from 0°C to +50°C.  
**P-P RIPPLE AND NOISE:**  
 1% (20Hz to 50MHz Bandwidth).  
**MINIMUM LOAD:** Not Required.  
**TURN ON DELAY:** 1sec max from application of AC line.

### Internal Protection

**OVER VOLTAGE PROTECTION:** 125%  $\pm 5\%$  of nominal. OVP shutdown is latched until the input line is removed for 30 seconds and then reapplied. OVP sensing is done at the output terminals.  
**OVER CURRENT PROTECTION:** Current Limit Point: 110% to 120% of full load.  
**SHORT CIRCUIT CURRENT:** Fold back type to 40%-80% of full rated current. Unit will recover when overload is removed.  
**REVERSE VOLTAGE PROTECTION:** Protected to rated load with the fan running.  
**OVER TEMPERATURE PROTECTION:** The unit automatically shuts down in the event of an over temperature condition. After cool down, power must be recycled to restart unit. Optionally, non-latchable protection is also available.



5" x 5" x 17"  
 Up to 5000W  
 Elcon Top Drawer  
 Hot Plug Connector



5" x 5" x 11.25"  
 Up to 3000W  
 DC Bus Bars  
 AC Terminal Block  
 Option Connector DB25



5" x 5" x 15.5"  
 Up to 8100W  
 DC Bus Bars  
 AC Terminal Block  
 Option Connector DB25