



# **SPECIFICATION**

For

SWITCHING POWER SUPPLY

**M/N: MPD-830R**



## 1.0 INTRODUCTIONS

MPD-830R is an off-line DC 110V input switching power supply. It's ideal for use in ATX personal computers, workstations, and equivalent systems; designed to meet UL, CSA, and TUV approvals.

## 2.0 INPUT SPECIFICATIONS

### 2.1 Input Voltage

The range of input voltage is from 72VDC to 136VDC.

### 2.2 Input current

The maximum input current is 5A at 110VDC input.

### 2.3 Inrush current

The inrush current will not exceed 10A at 110VDC input cold start, 25°C.

## 3.0 OUTPUT SPECIFICATIONS

### 3.1 The load range

	Output voltage	Min. load	Rated load	Max. load	Voltage accuracy
1	+5V	2A	25A	30A	4.80V to 5.20V
2	+12V	0.1A	10A	15A	11.40V to 12.60V
3	-12V	0A	1A	2A	-11.40V to -12.60V
4	-5V	0A	1A	2A	-4.75V to -5.25V
5	±3.3V	0A	8.0A	15A	3.13V to 3.4V
6	±5Vsb	0A	0.72A	1.2A	4.75V to 5.25V

At factory, all outputs in 60% rated load condition; the +5V output is set to between 4.80V and 5.20V. The other outputs are checked to be within the specified voltage accuracy range.

### 3.2 Output power

The total DC continuous power shall be kept within 300W ambient temperature of 40°C below, and input voltage at 110VDC.

The maximum, total combined output power on the 3.3V and 5V rails is 150W.

### 3.3 Ripple & Noise

The peak to peak ripple and noise for +5V, +3.3V outputs are less than 50mV, and for the other output are less than 100mV at rated load. Measuring is done by 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47 μF capacitor.

### 3.4 Line regulation

The output line regulation for each output is less than +-1% while measuring at rated load and -40V to -72VDC input voltage changing.

### 3.5 Load regulation

The output voltage load regulation is less than the values in the following table by changing each output load +-40% from 60% from rated load, and keep other outputs at 60% rated load.

Output	#1	+ -3%	#3	+ -2%	#5	+ -2%
	#2	+ -5%	#4	+ -2%	#6	+ -3%



## 4.0 GENERAL FEATURES

### 4.1 Efficiency

The efficiency is higher than 65% while measuring at nominal line and rated output.

### 4.2 Protection

#### 4.2.1 Over voltage protection

For some reasons the power supply might fail to control itself, the build-in crowbar circuit will automatically shut down the outputs to avoid damaging the external circuits.

The trip point of O.V.P. circuit is around 5.7V to 7.0V.

#### 4.2.2 Short circuit protection

The power supply will go into hiccup mode function against short circuit or over load conditions. If the faults condition removed, the power supply will restart automatically.

### 4.3 Power good signal

When power start-up, the power good signal will increase between 100ms to 500ms after all output DC voltages are within regulation limits.

### 4.4 Power fail signal

The power fail signal will fall at least 1ms before any of the output voltages lower than the regulation limits.

### 4.5 Power ON signal

This TTL compatible signal (active low) is use to switch ON the main output. When Power on is disconnected from secondary common, all outputs except +5Vsb shall turn off.

## 5.0 ENVIRONMENT SPECIFICATIONS

### 5.1 Operating temperature

0°C to 70°C (-20°C can start up, derating from 50°C)

### 5.2 Storage temperature

-40°C to +75°C

### 5.3 Operating humidity

The power supply can operate from 5% humidity to 95% humidity non-condensing at 40°C

### 5.4 Altitude

Will operate properly at any altitude between 0 to 10000ft.

## 6.0 INTERNATIONAL STANDARDS

### 6.1 Safety standards

Designed to meet the following standards:

IEC 60950

EN 50155: 2001 (Railway applications. Electronic equipment used on rolling stock)



## 6.2 EMI standards

Designed to meet the following limits:

FCC class "B"

EN 55022 class "B"

EN 55011 class "B"

## 6.3 EMS standards

Designed to meet the following standards:

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

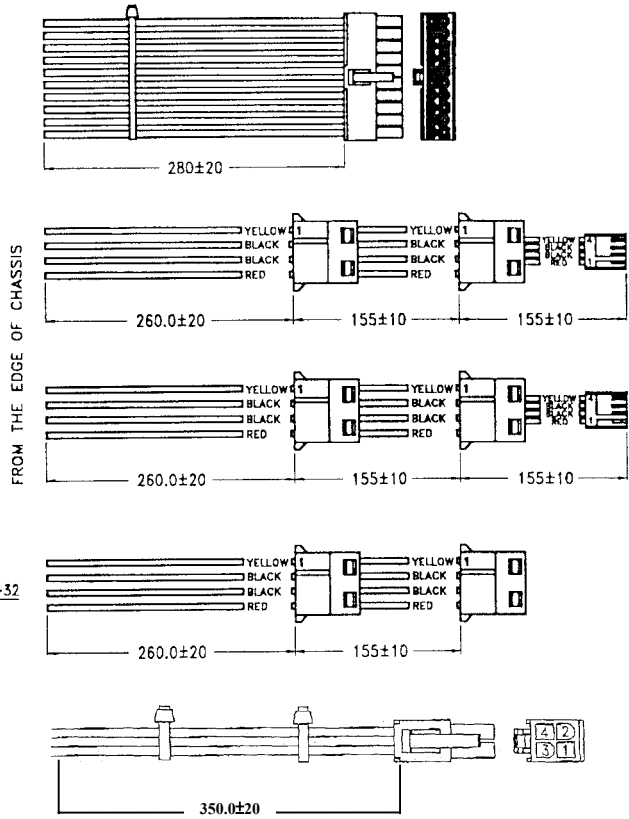
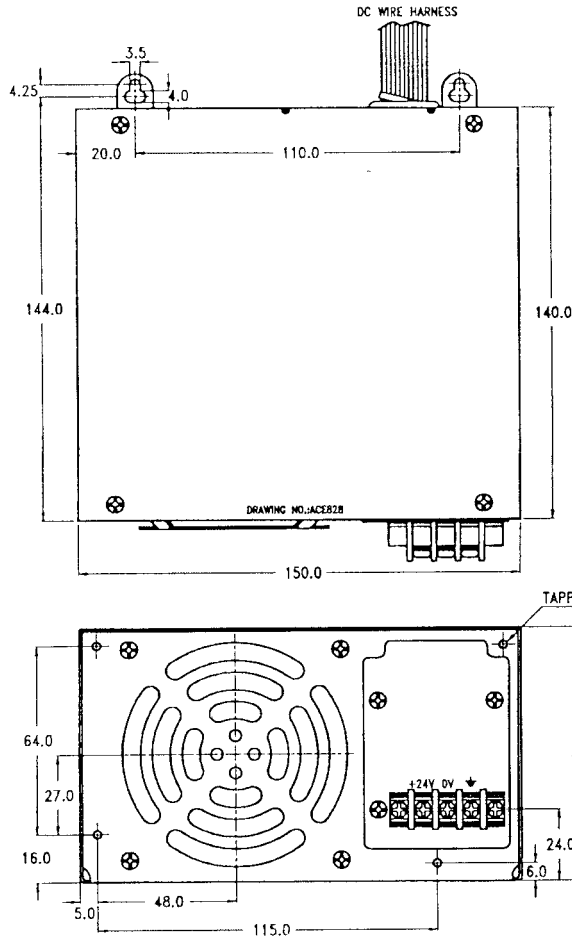
EN 61000-4-5

EN 61000-4-6

EN 61000-4-11



7.0 MECHANICAL SPECIFICATION



Wire Color	VOLTAGE
ORANGE	3.3V
RED	5V
YELLOW	12V
BLUE	-12V
GREY	P.G.
WHITE	-5V
BLACK	GND
PURPLE	+5Vsb
GREEN	POWER ON

7.1 Dimensions

Dimensions are shown in mm as above.

Tolerance specified is +/-0.4mm between mounting holes, +/-0.8mm for other dimensions.

7.2 DC Connectors

3 positions terminal blocks

7.3 DC Output Connectors

ATX: Molex 39-01-2200 or equivalent.

Disk drive: AMP 1-480424-0 or equivalent.

3 1/2" floppy driver: AMP 171822-4 or equivalent.

P4: Molex 39-01-2045 or equivalent.