D500 Series Industry Standard

Regulated Linear Power Supplies

Single, Dual, and Triple Output

Single Output

Model D500	**5Vdc 3A**	**Model D506**	**24~28Vdc 1.2A**
Model D501	**5Vdc 6A**	**Model D507**	**24~28Vdc 2.4A**
Model D502	**5Vdc 12A**	**Model D508**	**24~28Vdc 3.6A**
Model D503	**12~15Vdc 1.7A**	**Model D509**	**24~28Vdc 4.8A**
Model D504	**12~15Vdc 3.4A**	**Model D510**	**24~28Vdc 7.2A**
Model D505	**12~15Vdc 6.8A**	**Model D511**	**24~28Vdc 10A**
Model D517	**48Vdc 1A**	**Model D518**	**120~200Vdc 0.15A**

Dual Output

Model D512	**±12~15Vdc 1.7A**
Model D513	**±12~15Vdc 3.4A**
Model D519	**±12~15Vdc 1A**

Triple Output

Model D514	**5Vdc 2A, ±9~15Vdc 0.4A**
Model D515	**5Vdc 3A, ±12~15Vdc 1A**
Model D516	**5Vdc 6A, ±12~15Vdc 1.7A**

The EMS D500 Series power supplies are designed mainly for industrial applications. They are built on open frame 'L' shaped aluminium chassis that comply with industry standard sizes, and have mounting holes on all faces.

The input transformer features a split bobbin construction for improved primary to secondary isolation, and can operate at most ac supply voltages found worldwide. The transformers are factory set for 230Vac operation. Supply connections are made by solder connections directly to the input tags of the transformer.

The 5V and 48V outputs are non-adjustable. All other outputs are adjusted by the potentiometer(s) mounted on the P.C.Board. The output connections are made by 6.35mm (0.25") push-on connectors on the P.C.Board.

The units are designed to meet the requirements of safety standard EN60950, and the units comply with EMC standard EN5022 curve B.

It is recommended that the units be mounted using the largest face in a position that allows adequate convected ventilation. In some applications, it may be necessary to fit additional heat sinks and to provide forced air circulation to prevent the units overheating. It is recommended that Model D511 is always fitted with additional heatsink.

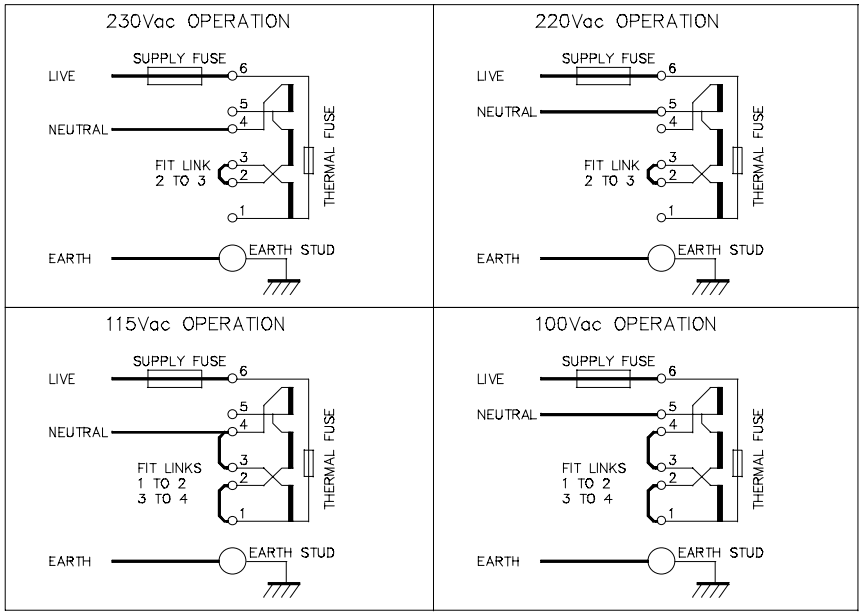
In all applications the supply must be fused using an anti-surge type fuse.

In all applications the chassis must be connected to a suitable earth point.

Supply Connections

The supply connection to the units should be made as shown in the diagrams below.

Note: - Pin 1 on the transformer MUST NOT be used to make supply connections to the unit.



The supply must be fused with an anti-surge (T) HBC type fuse See data sheet D500U002 for supply fuse values. The transformer primary is protected with a thermal fuse. This fuse will permanently break if the internal temperature of the transformer exceeds 130°C.

Output Protection

On Model D514, the ±9~15V output features thermal shutdown protection. It is recommended that a 500mA quick blow fuse be fitted to protect against short circuits. Models D517 and D518 have current limit protection.

All other outputs have current foldback protection.

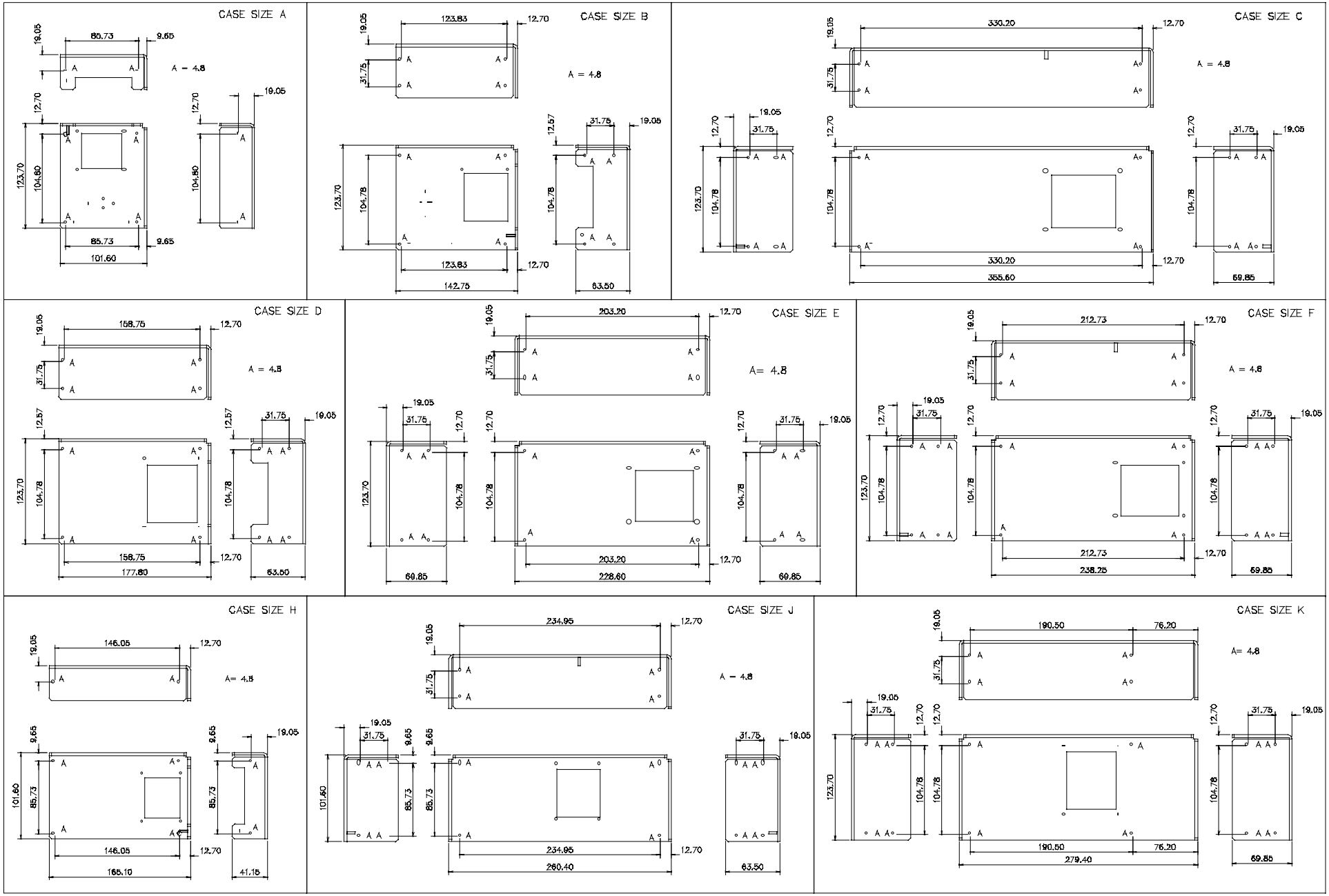
In addition, the 5V outputs have over-voltage protection.

Most units have remote voltage sense facility (see data sheet D500U002). On units fitted with remote sensing it is not necessary to connect the sense inputs to the output terminals if remote sensing is not required. Power must only be taken from the **+OUT** and **-OUT** terminals. Failure to comply with this will result in damage to the unit.

Model No.	D500	D501	D502	D503	D504	D505	D506	D507	D508	D509	D510	D511	D517	D518	D512	D513	D519	D514	D515	D516
Case Size	**A**	**B**	**E**	**A**	**B**	**E**	**A**	**B**	**D**	**E**	**C**	**C**	**B**	**A**	**D**	**F**	**H**	**H**	**J**	**K**
Weight	1.0 kg	1.8 kg	3.4 kg	1.0 kg	1.8 kg	3.4kg	1.0 kg	1.8 kg	2.6 kg	3.4 kg	4.2 kg	4.2 kg	2.0 kg	1.2 kg	2.6 kg	3.2 kg	1.3 kg	1.3 kg	2.3 kg	3.6 kg
Operating Temperature	0 to 40°C																			
Supply Voltage	100 / 115 / 220 / 230 Vac #6																			
Frequency	47 / 63 Hz																			
Supply Fuse 100 / 115 V	T500 mA	T1.0 A	T2.0 A	T500 mA	T1.0 A	T2.0 A	T500 mA	T1.0 A	T2.0 A	T2.0 A	T4.0 A	T4.0 A	T1.0 A	T500 mA	T2.0 A	T2.0 A	T500 mA	T500 mA	T1.0 A	T2.0 A
220 / 230 V	T250 mA	T500 mA	T1.0 A	T250 mA	T500 mA	T1.0 A	T250 mA	T500 mA	T1.0 A	T1.0 A	T2.0 A	T2.0 A	T500 mA	T250 mA	T1.0 A	T1.0 A	T250 mA	T250 mA	T500 mA	T1.0 A
Power Consumption	50 VA	100 VA	200 VA	50 VA	100 VA	200 VA	50 VA	100 VA	150 VA	200 VA	400 VA	400 VA	100 VA	500 VA	150 VA	200 VA	50 VA	50 VA	100 VA	200 VA
Line Regulation	±0.1% For 10% Line Change																			
Load Regulation	±0.1% For 50% Load Change																			
Output 1 **Voltage**	5 Vdc	5 Vdc	5 Vdc	12~15 Vdc	12~15 Vdc	12~15 Vdc	24~28 Vdc	24~28 Vdc	24~28 Vdc	24~28 Vdc	24~28 Vdc	24~28 Vdc	48 Vdc	120~200 Vdc				5 Vdc	5 Vdc	5 Vdc
Current	3A	6A	12A	1.7A 1.5A	3.4A 3.0A	6.8A 6.0A	1.2A 1.0A	2.4A 2.0A	3.6A 3.2A	4.8A 4.0A	7.2A 6.0A	10A #5	1A	0.15A				2A	3A	6A
Ripple	<5 mV Peak to Peak (typical)																			
Voltage Sense Facility	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**	**#1**							**#1**	**#1**
Output Protection	**#2 #3**	**#2 #3**	**#2 #3**	**#3**	**#3**	**#3**	**#3**	**#3**	**#3**	**#3**	**#3**	**#3**	**#4**	**#4**				**#2 #3**	**#2 #3**	**#2 #3**
Output 2 **Voltage**															±12~15 Vdc	±12~15 Vdc	±12~15 Vdc	±9~15 Vdc	±12~15 Vdc	±12~15 Vdc
Current															1.7A 1.5A	3.4A 3.0A	1A	0.4A	1A	1.7A
Ripple															<5 mV Peak to Peak (typical)					
Voltage Sense Facility																#1	#1	#1	#1	#1
Output Protection															**#2 #3**	**#2 #3**	**#2 #3**	**#2 #7**	**#2 #3**	**#2 #3**

On the adjustable output versions, where two ratings are quoted they are to be read as, for example, 1.2A at 24V derated to 1.0A at 28V. If only one rating is quoted, that current is available over the full output voltage range.

1 Denotes Voltage sense facility is fitted.
2 Denotes Over voltage protection is fitted.
3 Denotes Current foldback facility.
4 Denotes Current Limit protected.
5 To obtain full output, Model No D511 requires additional heatsink and / or forced air-cooling.
6 All units are factory set for 230 Vac operation.
7 Denotes thermal shutdown facility. Fit a 500mA quick blow fuse to protect against short circuit.


CASE SIZE A
A = 4.8
CASE SIZE B
A = 4.8
CASE SIZE C
A = 4.8
CASE SIZE D
A = 4.8
CASE SIZE E
A= 4.8
CASE SIZE F
A = 4.8
CASE SIZE H
A= 4.8
CASE SIZE J
A = 4.8
CASE SIZE K
A= 4.8