53 Series

Features

- Linear Power for 240 or 110V AC input
- Wide adjustment range
- Single, dual & triple output models
- Enclosure packaging
- Short circuit, overvoltage & over temperature protection
- Low transients, ripple & noise
- Range of options & accessories
- Low cost
- 5 year warranty

AS/NZS ISO 9001 BUREAU VERITAS Certification

SPECIFICATIONS

Package Formats 53/X XXX ## XXX

##	Style	Input	Output	Cover	Dimensions L,W,H
M	MODULAR	IEC320	H2880 QC Stakes	No	164 x 100 x 66 mm
B	BENCH	1.8M Cord	4mm Binding Posts	Yes	190 x 105 x 80 mm
T	TERMINAL	Screw Terminals	Screw Terminals	No	195 x 100 x 66 mm
TB	TERMINALB	Screw Terminals	Screw Terminals	Yes	164 x 100 x 66 mm
BT	BTERMINAL	IEC320	Screw Terminals	Yes	164 x 100 x 66 mm

Options: 53/X###XX(i/p v) 110/115V input No number indicates **240V** nominal input

###	Description	Relevant Models
A	Adjustable 5V output	53/6
C	Crowbar OVP **added**	53/6 and 53/4
CL	Constant Current I Limit	53/3 and 53/4
XC	Crowbar OVP **deleted**	53/3 and 53/5
TAP	Uses low TFR Secondary	53/2
Blank	None of above options required	

Accessories:

Cat No	Description
53L	2M Moulded Power Cord
53C	Cover Kit (as on B models)
53F	Mounting clip kit 4 x 1062-A
53D	Soft carry case type 1091-A

Parameter	Specifications	Conditions
Safety	NSW approval certificate 6724	To AS3108
Line Regulation	<0.5%	Continuous load, Line ±10%
Load Regulation	<1%	0 to Continuous load, Nominal Line
Ripple and Noise	<0.5mV/V P-P	Continuous load, Nominal Line
Temperature Coefficient	<0.01%/° C	Continuous load, Nominal Line
Current Limit	102% to 150%	Of full load, Nominal Line
Short circuit protection	Yes	Fully protected, any duration
Crowbar Over voltage protection	Adjustable	Standard on 53/3 and 53/5
Over temperature protection	Yes	Standard on all models
Operating Temperature	0° C to 70° C	De-rate Linearly 25° C - 75° C
Input Voltage	240V ±10% 50/60Hz	110/115V also available
MTBF	>200,000 Hours	25° C, Demonstrated.

Output Selection 53/# XXX XX XXX

Single Output				
Output Voltage (V)		Maximum Load		Model
Factory Preset	Adjusted Range	Continuous (Amps)	Surge (Amps)	Prefix **53/#**
5	4 - 6	3.0	3.5	53/**5**
12	6 - 11	1.4	2.5	53/**3**
12	12 - 15	2.3	3.0	53/**3**
12	16 - 18	1.0	1.5	53/**3**
24	16 - 23	0.7	1.0	53/**2**
24	23 - 25	2.0	2.5	53/**4**
24	24 - 30	1.0	1.2	53/**2**
24	31 - 34	0.5	0.7	53/**2**
48	35 - 52	0.5	0.7	53/**7**
48	53 - 60	0.4	0.5	53/**7**
Dual Output (Both independently adjustable)				
±5	±2 - ±6	1.0	1.5	53/2TAP
±12	±2 - ±11	0.5	1.0	53/**2**
±12	±12 - ±15	1.0	1.2	53/**2**
±12	±15 - ±17	0.5	0.7	53/**2**
±24	±18 - ±26	0.5	0.7	53/**7**
±24	±26 - ±30	0.4	0.5	53/**7**
Triple Output Model (5V is preset – see Option A)				
5	5	2.5	3	53/**6**
±12	±12 - ±15	0.7	1	

Application Notes

Installation, B, BT, TB packages

These models should be firmly mounted to a mounting surface before use. Four mounting clips, part number **1062-A,** are provided for this purpose and are fitted by means of the mounting feet screws. The clips can be rotated to any desired position and the supply mounted from above with ease, even when the rear of the mounting surface is inaccessible.

Installation, Cooling

The chassis of the 53 series is the heat sink. Heat generated by the transformer, regulator and rectifier is thermally coupled to the over temperature protection in the regulator(s). Effective over temperature protection is thereby ensured under all conditions. Unobstructed natural convection cooling is important when operating continuously near full load, for maximum reliability and to avoid over temperature shut down. Build-up of dust and dirt will reduce cooling and thus reliability. The heat sink (chassis) temperature near the regulator can reach 60°C at full load and 25°C ambient. The total heat loading is approximately 25 watts

under worst-case conditions. De-rating should be applied for continuous high load operation if the above conditions cannot be met, otherwise over temperature cut-out (which automatically resets) could occur. Rated load should be linearly de-rated from 100% at 25°C to 0% at 75°C. (E.g. Maximum continuous output at 50°C is 50% of rated load at 25°C.

Parallel Operation

All models are suitable for parallel operation. It is recommended that separate pairs of output leads of equal length and conductor area be run from each supply to the load. This, together with accurate adjustment of the output voltage, provides improved load sharing.

Series Operation

Up to 5 supplies can be connected in series for higher output voltages.

Battery Charging

Special versions (**CL** option) are suitable for charging batteries. In the event of mains failure, a small current of approximately 20mA will flow back into the power supply. A series blocking diode can be added to eliminate this if desired. Always ensure that the current rating of the power supply is less than the maximum permissible charge current for the chosen battery. The power supply should be adjusted to the recommended "Float" voltage for the battery. Refer to model 53/U24 for a fully equipped, sophisticated 24V stand-by charging system and UPS with full fault alarms, faulty cell detection and temperature compensated float voltage.

Crowbar Over Voltage Protection

OVP is fitted on models **53/3** and **53/5** to provide a second protective mechanism in the event of regulator failure or a failure in the load equipment leading to a high voltage being imposed on the output of the supply. The voltage that causes the OVP to trip can be adjusted independently of the output voltage.

OVP places an effective short (to approximately 1V) on the output in the event of an over voltage. It can only be reset by turning the supply off or shorting the output completely to 0V.

Adjusting OVP: The OVP trigger threshold can be adjusted using the following procedure: Factory settings are 6.5V for 53/5 and 18V for 53/3.

1. Turn the OVP control, RV2, the left trimmer on the front panel, fully anti-clockwise.
2. Connect a voltmeter to the output.
3. Adjust the output to the desired OVP voltage using RV1, the right trimmer on the front panel.
4. Turn the OVP trimmer, RV2 slowly clockwise while observing the voltmeter. When triggered, the output drops to 1V. OVP threshold has been set.
5. Turn the output voltage control, RV1, about two turns anti-clockwise.
6. Switch the power supply off for a few seconds or short the output to reset the crowbar.
7. Switch on again or remove short from output.
8. Finally adjust RV1 to the desired output voltage

Application Assistance

Our skilled team of engineers is always available to assist you in selecting the best approach to your specific requirements, and to solve any problems that may arise in the application of our products.