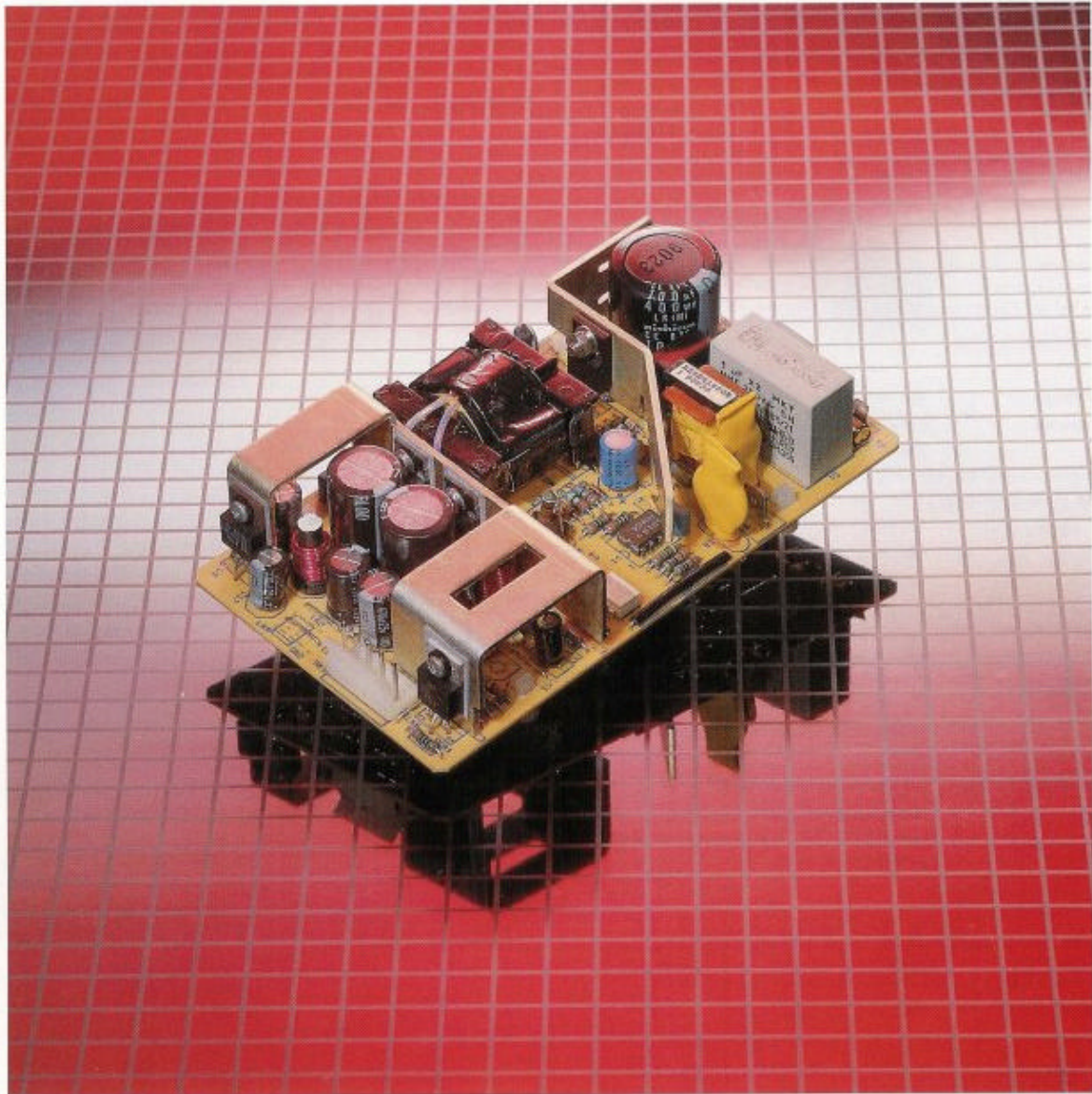


**FARNELL ADVANCE POWER**



**NU030P Range  
Universal Input  
Multi Output  
Power Supplies**

## PROTECTION

Input Fuse	Input protection is provided by an internal 1.6A T. 250V 5 x 20 mm fuse.
Output Power Limit	Primary power limit operates on all outputs. 35 - 55W maximum output power with fold back.
Output Overvoltage	Provided on output 1 only. Overvoltage protection shuts down all outputs when output 1 exceeds the limit value, which lies in the range 6.0V to 7.0V. After approximately 500ms, the unit will try to restart.

## TURN ON/TURN OFF CHARACTERISTICS

Turn On	Output voltage ramp-up is monotonic. Typical turn on delay is 1.5s after application of input at 30W proportional output load.
Hold Up Time	Outputs are maintained for at least 15ms after power failure at 110V a.c. input with 30W output load.

## ISOLATION

Primary to Secondary	All isolation barriers are tested to 4kV r.m.s. Complete units are tested to 1.5kV r.m.s.
Primary to Earth	Complete units are tested to 1.5kV r.m.s.
Secondary to Earth	All outputs are isolated from earth to 50V d.c. working. Isolation has been tested to 500V d.c.
Earth Leakage Current	Typically 0.5mA measured in the earth lead at 230V 50Hz input.

## ELECTROMAGNETIC COMPATIBILITY

Exported Noise	Tested to VDE0871 Class B; FCC Rules Part 15 Subpart J Class B; BS6527 Class B.
Susceptibility	Outputs will remain within specification for 1500V, 5ns rise time, 100ns duration common mode disturbances with a repetition rate of 10Hz.

## ENVIRONMENTAL CONDITIONS

Ambient Temperature	0 to 50°C operating; -40 to + 85°C non-operating.
Humidity	0 to 95% R.H. non-condensing.
Altitude	0 to 3000m (10,000ft).
Vibration	To IEC 68-2-6; BS2011 Part 2.1 Fc 1983.
Drop and Topple	To IEC 68-2-31; BS2011 Part 2.1 Ec 1977.
Pollution	The power supply is designed to operate in office type environments.

## MECHANICAL SPECIFICATION

Mounting Orientation	The unit may be mounted in any orientation without derating except with the board uppermost.
Ventilation and Cooling	The unit is designed to be convection cooled, so sufficient space must be left above and below the unit for free air flow, or the panels should be perforated to allow adequate air flow. The chassis and cover, when fitted, are ventilated as indicated on the outline drawing: Faces 'A' are fully ventilated; faces 'B' are partially ventilated.
Finish	Chassis and cover are finished in semi-gloss black powder coat.

## GUARANTEE

All Farnell Advance Power products are guaranteed against faulty manufacture and faulty components for a period of twelve months from the date of despatch. See conditions of sale for full details.

## ORDERING INFORMATION

The order code consists of five fields, as follows:

	13	NU	030P	300	M	
Source Code					Mechanical Configuration	
Series Number					Blank: Unit supplied in card form.	
Range					M: Unit supplied with chassis and cover.	
Version					The chassis and cover option may be ordered separately, for which the order code is: <u>13NU030P3M</u>	



# NU030P RANGE MULTI OUTPUT SWITCH MODE POWER SUPPLIES

## FEATURES

- Up to 30W output power convection cooled
- Universal input: 88V to 264V a.c. input without adjustment

## MODELS AVAILABLE

Model Number	Output 1	Output 2	Output 3
NU030P300	+5V 3A	+12V 2A	-12V 0.3A
NU030P301	+5V 3A	+12V 2A	+24V 0.3A
NU030P302	+5V 3A	+15V 2A	-15V 0.3A

## SPECIFICATION

All parameters are as defined in Farnell Advance Power document "Definition of Terms". All values are specified with an input voltage of 240V a.c. and in an ambient temperature of 25°C unless otherwise stated.

## INPUT SPECIFICATION

Voltage Range	88V to 264V a.c.
r.m.s. Current	0.82A maximum at 88V input; 0.62A maximum at 115V input; 0.58A maximum at 230V input.
Repetitive Peak Current	1.7A maximum at 115V input; 1.1A maximum at 230V input.
Peak Inrush	46A maximum. Unit cold.
Frequency	47.5 - 440Hz.
Supply Type	Single phase TN-S systems (as defined in IEC264). i.e. systems with a separate earth conductor which is directly connected to the neutral conductor at the source.
Power	47W maximum with total output load of 30W.
Apparent Power Factor	0.5 minimum at full load.
Efficiency	64% minimum under worst case load conditions, 67% minimum at 30W proportional load.

## OUTPUT SPECIFICATION

NU030P300	Output 1	Output 2	Output 3
Nominal Voltage	5V	12V	12V
Factory Setting	5.0V $\pm$ 1%	12.0V $\pm$ 5%	12.0V $\pm$ 5%
Output Current	0A - 3.0A	0A - 2.0A	0A - 0.3A
NU030P301	Output 1	Output 2	Output 3
Nominal Voltage	5V	12V	24V
Factory Setting	5.0V $\pm$ 1%	12.0V $\pm$ 5%	24.0V $\pm$ 5%
Output Current	0A - 3.0A	0A - 2.0A	0A - 0.3A
NU030P302	Output 1	Output 2	Output 3
Nominal Voltage	5V	15V	15V
Factory Setting	5.0V $\pm$ 1%	15.0V $\pm$ 5%	15.0V $\pm$ 5%
Output Current	0A - 3.0A	0A - 2.0A	0A - 0.3A

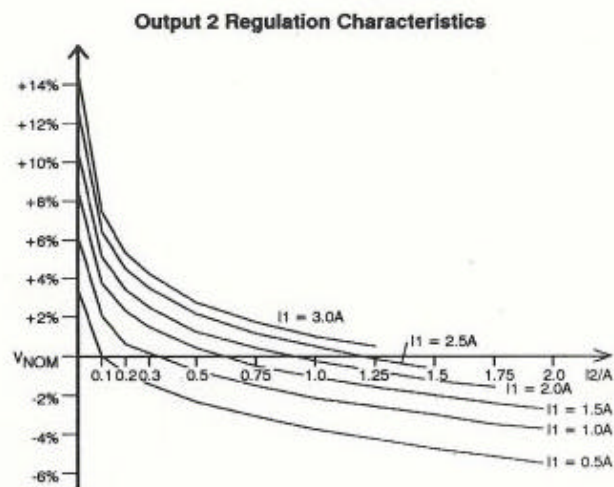
- Triple output
- Power trading for flexibility

## Power

Continuously rated at 30W with convection cooling at ambient temperatures over the full operating temperature range.

## Load Regulation

A load change on any output of  $\pm 40\%$   $I_{MAX}$  from 60%  $I_{MAX}$  will cause a maximum voltage change on that output of  $\pm 0.5\%$  on outputs 1 and 3,  $\pm 4\%$  on output 2.



## Line Regulation

With all outputs proportionally loaded to provide 30W total output power, an input voltage change of 88V to 264V a.c. will cause a maximum voltage change of 1%  $V_{NOM}$  on output 2 and 0.4%  $V_{NOM}$  on outputs 1 and 3.

## Cross Regulation

A load change of 50%  $I_{MAX}$  to 100%  $I_{MAX}$  on the varied output causes a maximum voltage change in the measured output as below. Outputs other than the varied output are loaded to 20%  $I_{MAX}$ .

Measured Output	Varied Output	Cross Regulation
1	2	0.4% $V_{nom}$
1	3	0.4% $V_{nom}$
2	1	6% $V_{nom}$
2	3	1% $V_{nom}$
3	1	1% $V_{nom}$
3	2	0.4% $V_{nom}$

## Temperature Coefficient

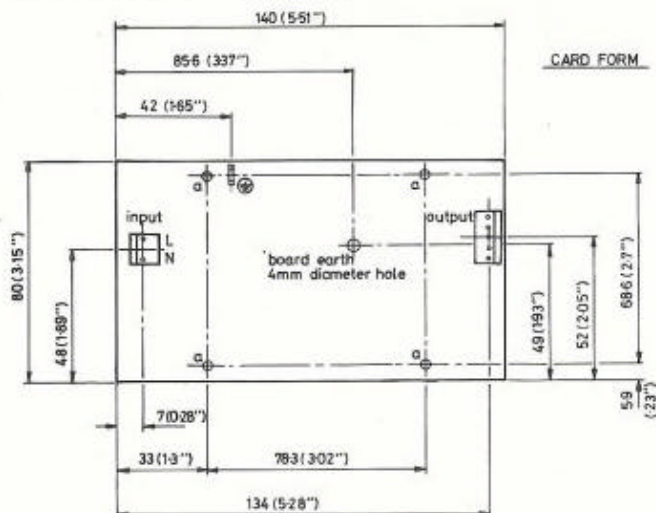
All outputs have a typical temperature coefficient of  $\pm 0.03\%/^{\circ}\text{C}$  over the temperature range 0 - 50°C.

## Ripple and Noise

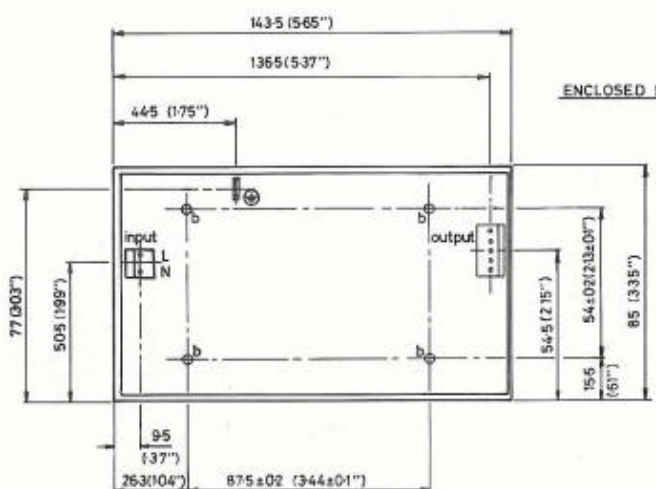
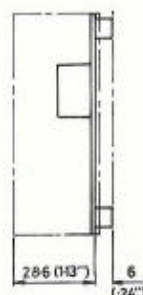
With all outputs proportionally loaded to provide 30W output power, the differential ripple voltage on any output will not exceed 25mV pk-pk over the frequency range 10Hz to 100kHz; the differential noise voltage will not exceed 100mV pk-pk over the frequency range 10Hz - 30MHz.

# NU030P OUTLINE DRAWING

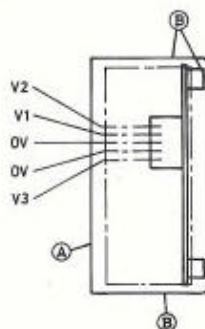
All dimensions in mm (inches) unless otherwise indicated



CARD FORM



ENCLOSED FORM



## External Dimensions and Mass

Card Form	140 (5.51) x 80 (3.15) x 28.6 (1.13)	0.25kg (0.55lb)
Enclosed Form	143.5 (5.65) x 85 (3.35) x 42 (1.65)	0.4kg (0.88lb)

## Fixings

**Card Form** The circuit board has 4 x 4mm (0.16") clearance holes marked 'a' on the outline drawing. Units are supplied with 4 off 10mm stand-off pillars and 4 off No 6 x 5/16" countersink head self tapping screws.

**Enclosed Form** When fitted with chassis and cover, 6 x M3 ISO standard threaded inserts are provided on the chassis. Four on the base and two on the rear face. These are marked 'b' on the outline drawing. Screw penetration must not exceed 4mm (0.6") from the outer face of the chassis.

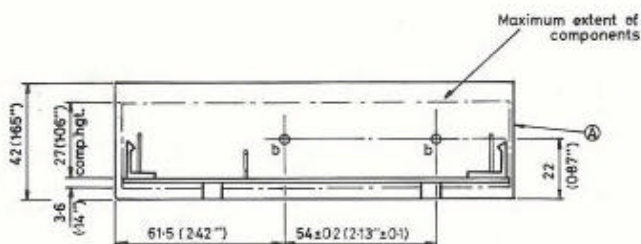
## Connectors

The following connectors are required for connection to the power supply.

**Mains Input:** Amp 0.156" pitch 3-way housing with locking ramp, ref 640250-3, with crimps fitted in positions 1 and 3. Crimp reference, 640707-1 (loose), 350980-1 (bandolier) suitable for multi-strand cables in the range 24-18 AWG.

**Safety Earth:** 1/4" spade AMP housing reference 154719 fitted with crimp, reference 341002 (loose), 154718-1 (bandolier) suitable for multi-strand cables in the range 24-18 AWG.

**Outputs:** AMP 0.156" pitch housing with locking ramp 5 way, reference 640250-5, crimp reference 640707-1 (loose), 350980-1 (bandolier) suitable for multi-strand cables in the range 24-18 AWG.



Maximum extent of components

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We reserve the right to amend specifications without prior notification

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