

N range

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Compact 50 watt switchers

Measures 7" x 4 1/4" x 2"

Five fully regulated outputs

Options: cover, mains failure alarm, output level monitor

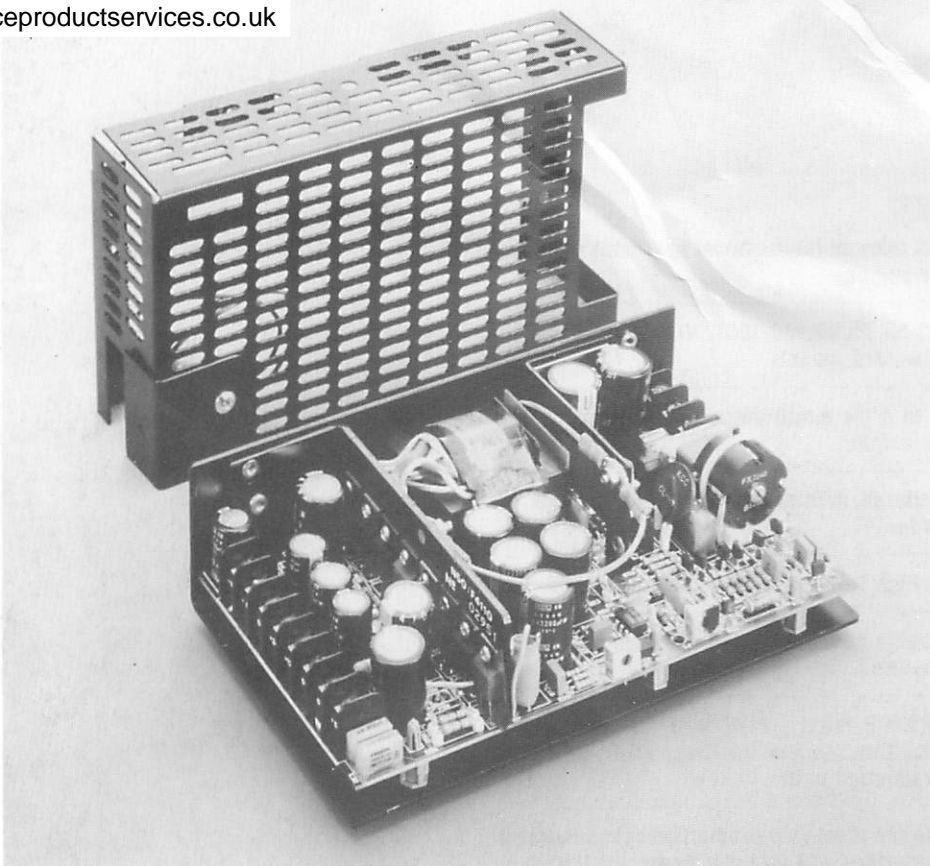
Detailed leaflet available

Input current (at full load typical)

	115V	220V	240V
RMS	1.08A	702mA	670mA
Mean	574mA	314mA	292mA
Repetitive peak	2.75A	2.25A	2.35A

Output voltage regulation

Each output: $\pm 1\%$ max. total change in voltage for: a zero to full load change on the measured output, the worst case change of load on the other outputs, and a line change of 198 to 264V or 103.5 to 132V.



50 watts multi output switching power supplies

ORDER CODES:

Model No.

13N050R110

N50R

13N050R201

N50R201

Standard outputs:

OUTPUT 1
Vnom.Imax.

+5V 6A
+5V 6A

OUTPUT 2
Vnom.Imax.

+12V 1A
+15V 1A

OUTPUT 3
Vnom.Imax.

+24V 1A
+24V 1A

OUTPUT 4
Vnom.Imax.

-5V 1A
-5V 1A

OUTPUT 5
Vnom.Imax.

-12V 1A
-15V 1A

Alternative outputs on power trading principle.
 Maximum continuous total power: 50 watts.

Protection

Overload: current limit at 130% o/p/s 2-5
 Output 1 and overall power limits at 55W

Overvoltage: senses on output 1 only. All
 outputs shut down. Operates at 5.8V min., 7V max.

Mechanical notes

Fixing holes take M3 screws

Maximum penetration 5mm

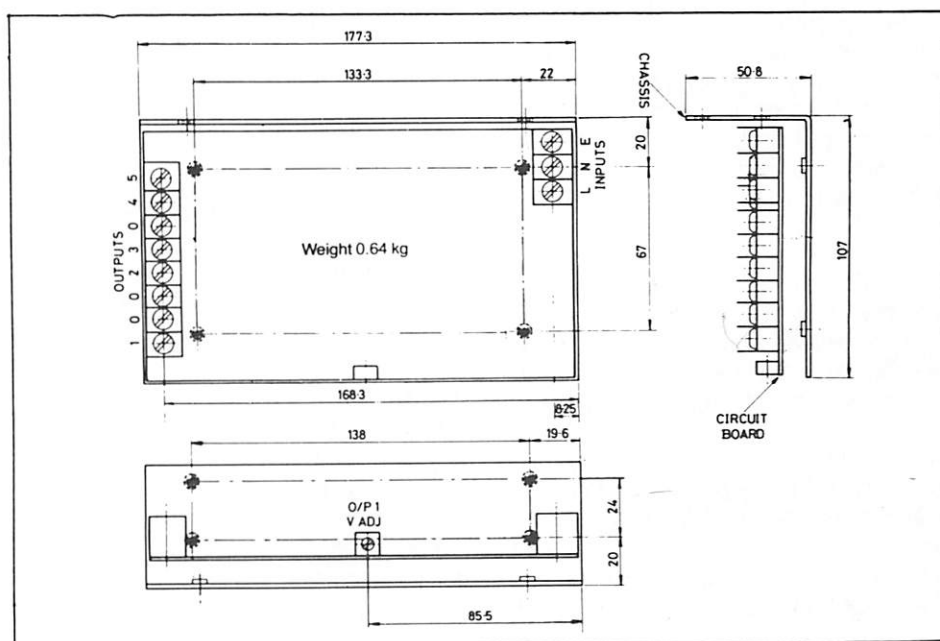
Terminal blocks use No. 6-32 x 1/4" binding head
 screws

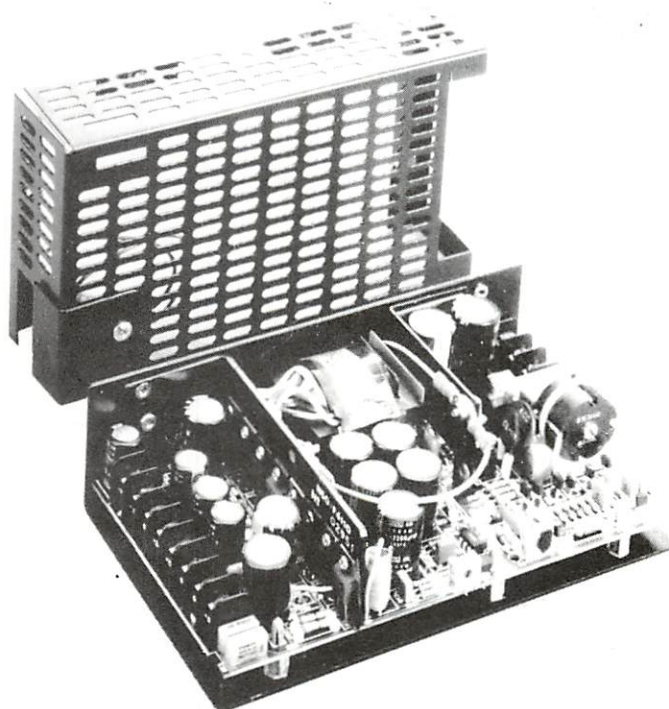
Chassis material is 14 s.w.g. aluminium

Finish: matt black

When optional cover fitted dimensions increase:
 177.3 becomes 182.7 and 107 becomes 109.7

Cooling is by natural convection and provision
 should be made to allow free air flow around unit.





FEATURES

- Switched-mode for small size, high efficiency and low cost
- Quality construction
- Optional safety cover
- Dual range mains input
- Standard models have five outputs: +5V, -5V, +12V (or +15V) -12V (or -15V) and +24V d.c.
- Alternative outputs on power trading principle
- All units undergo 'burn-in' at full load
- Soft start limits in rush current
- Power fail and output monitor options
- Output will hold up for missing whole cycle from 220V mains
- Simple to mount in any plane, convection cooled
- Tailored versions and custom designs to order

APPLICATIONS

- ★ Computers, logic systems, memories, microprocessors, MOS, TTL
- ★ Peripherals, terminals, floppy disk drives, I/O devices
- ★ Business machines, medical, military and industrial OEM
- ★ Communications, telex, radio links, telephone exchanges, call loggers, etc.
- ★ CAD/CAE/CAM equipment

OPTIONS

- Power failure signal
- Power failure signal plus output level monitor
- Safety cover

The Farnell N range of open frame, switch-mode power supplies provide the OEM with a reliable, high quality power source to build into equipment at minimum cost. There are 50, 55, 75, 90, 100, 180, 200, 300 and 350W multi-output, standard N range units available.

The N50R provides 5 d.c. output voltages and can deliver 50W total output power. All outputs are fully regulated and the unit is convection cooled. Standard outputs are +5V, 6A; +12V (or +15V), 1A; +24V, 1A; -5V, 1A; and -12V (or -15V), 1A.

Other combinations of voltage or current, on the power trading principle, can be supplied to order.

Operating from a field selectable 115/230V a.c. input and with optional safety covers being available, these units comply with all relevant safety requirements (see overleaf).

Units available

MODEL NO	OUTPUT 1		OUTPUT 2		OUTPUT 3		OUTPUT 4		OUTPUT 5	
	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max	Voltage Vdc nom	Current Idc max
N50R	+5	6A	+12	1A	+24	1A	-5	1A	-12	1A
N5R201	+5	6A	+15	1A	+24	1A	-5	1A	-15	1A

**DESIGNED TO MEET
THE FOLLOWING
SPECIFICATIONS
WHEN USED INSIDE
FINISHED PRODUCTS**

BS800
BS3535
BS3861
BS6527 level A
BT Guides 2 and 26
CEE 15 clause 17c
FCC Rules, Part 15 Sub Part J,
Class A
IEC 380
UL 478
VDE 084
VDE 0871 level A
VED 0875N

PARAMETER	N50R	N50R201
INPUT VOLTAGE	115/230V a.c. 92/176V a.c. 132/264V a.c.	115/230V a.c. 92/176V a.c. 132/264V a.c.
INPUT FREQUENCY	50Hz 45Hz 440Hz	50Hz 45Hz 440Hz
INPUT CURRENT (typical, at full load)	115V 220V 240V 1.08A 702mA 670mA 574mA 314mA 292mA 2.75A 2.25A 2.35A	115V 220V 240V 1.08A 702mA 670mA 574mA 314mA 292mA 2.75A 2.25A 2.35A
OUTPUT V1	+5V d.c. 6A	+5V d.c. 6A
OUTPUT V2	+12V d.c. 1A	+15V d.c. 1A
OUTPUT V3	+24V d.c. 1A	+24V d.c. 1A
OUTPUT V4	-5V d.c. 1A	-5V d.c. 1A
OUTPUT V5	-12V d.c. 1A	-15V d.c. 1A
OUTPUT POWER	50W	50W
EFFICIENCY	61%	61%
HOLD UP TIME	refer to graph	refer to graph
OPERATING TEMPERATURE RANGE	0 to 50°C full load	0 to 50°C full load
DERATING	2.5% per °C over range 50-70°C	2.5% per °C over range 50-70°C
TEMPERATURE COEFFICIENT	±0.02% per °C	±0.02% per °C
RIPPLE AND NOISE	<75mV pk-pk <20mV r.m.s.	<75mV pk-pk <20mV r.m.s.
OUTPUT VOLTAGE ADJUSTMENT	±5% of nominal (Output 1)	±5% of nominal (Output 1)
OUTPUT VOLTAGE REGULATION	±1% (all outputs)	±1% (all outputs)

PROTECTION

Overload: current limit at approx. 130% o/p/s 2.5 Output 1 and overall power limits at 55W.

Overvoltage: senses on output 1 only. All outputs shut down. Operates at 5.8V min., 7V max.

Fuses: The mains input is fused (fuse type 20mm 2.5A THRC).

RELIABILITY

All units undergo burn-in at full load after test. Wound components produced to DEF STAN 05-24 in special Farnell factory. All components operated well within vendor ratings.

M.T.B.F. 75,000 hours (MIL 217D)

INSULATION

Unit input to output isolation barriers including layout and wiring, are designed to meet a test of 4kV a.c. r.m.s. for one minute (i.e. 2kV r.m.s. input to earth r.m.s. output to earth). Tests are applied to relevant components to ensure compliance with BS3535 clause 17b and CEE15 clause 17c. The complete unit is tested at 1.5kV a.c. for one minute between a.c. input and outputs, with output terminals connected to earth. Tested at 500V d.c. for one minute between output and earth.

CONNECTIONS

Slotted screw terminals on barrier strip. Three way barrier strip for supply input. Separate barrier strip for outputs (see Mechanical Details).

CONDITION	
nominal minimum maximum	
nominal minimum maximum (limits to 66Hz for UL requirements)	
r.m.s. mean repetitive peak	
nominal maximum cont. (1.2A min.)	
nominal maximum cont.	
nominal maximum cont.	
nominal maximum cont.	
nominal maximum cont.	
maximum continuous 0-50°C	
typical at full load and nominal input	
—	
storage temperature range is -25°C to +85°C	
maximum operating temperature 70°C	
typical, all outputs	
measured with unit delivering max. output power. $\Delta f=30\text{MHz}$	
factory preset to 0.5% of nominal. With output 1 set to 5.00V and all outputs loaded at 50% of maximum rated current, the other outputs will be within 5% of stated nominal.	
each output $\pm 1\%$ maximum total change in voltage for: a zero to full load change on the measured output, the worst case change of load on the other outputs and a line change of 198 to 264V or 103.5 to 132V	

OPTIONS

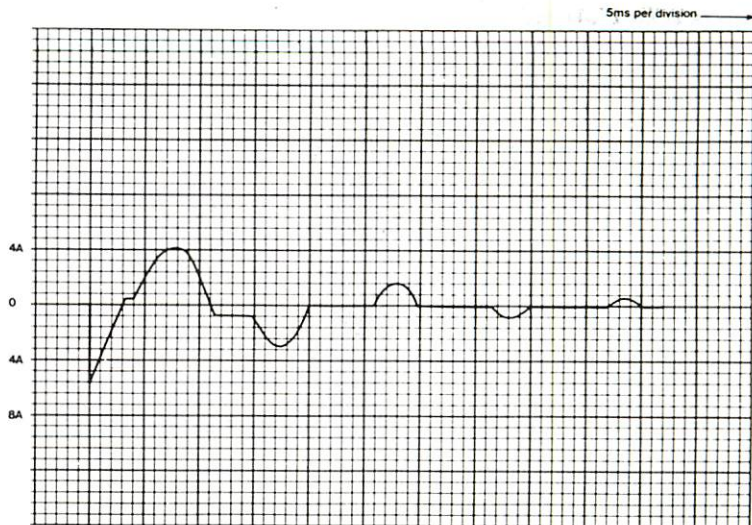
- Power failure signal.
- Power failure signal plus output level monitor.
- Safety cover.

ORDER CODES	ITEM
13N050R110	N50R
13N050R201	N50R201
13FMC050	Cover
13N050RA	Mains failure alarm
13N050RB	Output level monitor

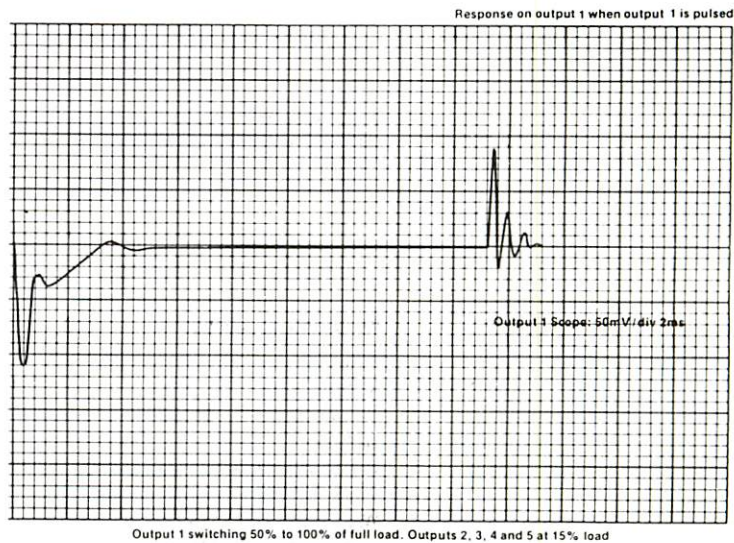
Note: Specification applies in an ambient temperature of 25°C unless otherwise stated.

N50R SWITCH ON SURGE AT 264V MAINS INPUT.

11A maximum peak current from cold start

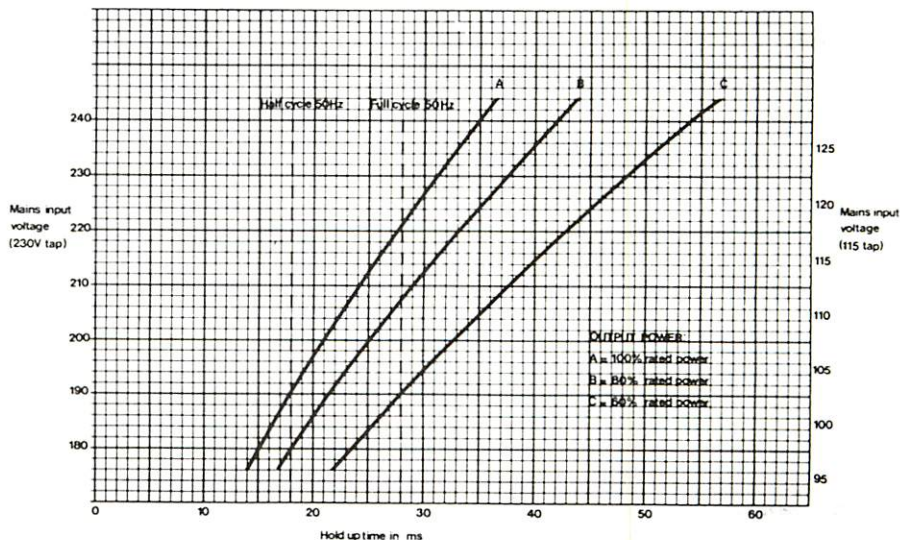


N50R TRANSIENT RESPONSE

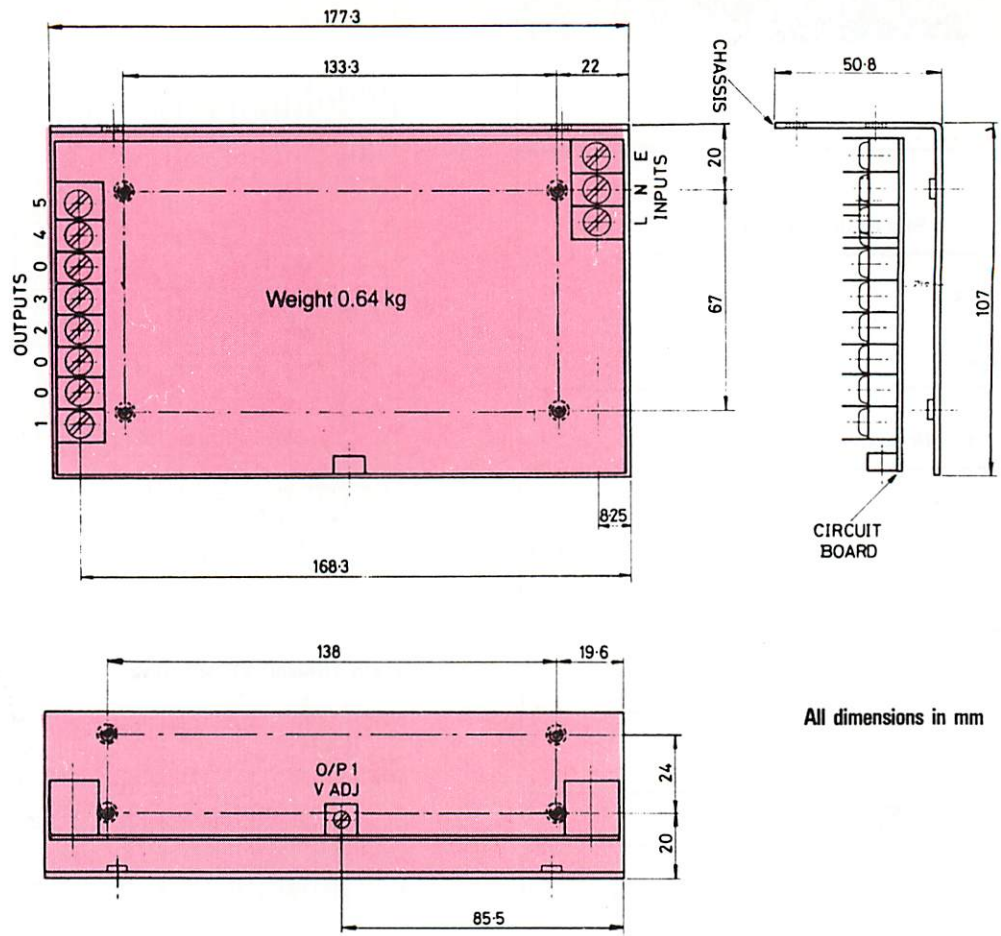


OUTPUT HOLD-UP TIME (all outputs)

220V mains and full load: >1 missing cycle at 50Hz



N50R OUTLINE DRAWING



MECHANICAL NOTES

Fixing holes take M3 screws, 8 off
 Maximum penetration 5mm
 Terminal blocks use No. 6-32 \times $\frac{1}{4}$ " binding head screws
 Chassis material is 14swg aluminium
 Finish: matt black
 When optional cover fitted dimensions increase: 177.3 becomes 182.7 and 107 becomes 109.7
 Cooling is by natural convection and provision should be made to allow free air flow around unit.

Manufactured in England by:

We reserve the right to amend specifications without notification



Farnell

POWER SUPPLIES DIVISION · SANDBECK WAY · WETHERBY · WEST YORKSHIRE LS22 4DH · TEL 0937 61961 · TELEX 557294 FARIST G