



Farnell

G RANGE POWER SUPPLIES

This range utilises a switching technique to provide stabilised d.c. from a.c. inputs. The units are compact, lightweight and highly efficient. Various models are available in each of the following power packages: 30, 60, 120, 240, 360 and 600 watts. Dual standard a.c. inputs of 220, 240V and 115, 120V with a tolerance of -20% to +10% are catered for by either a front panel link or a switch, depending on the model.

All units (except 30W models) feature soft-start to reduce in-rush current. RFI is low enough to meet VDE0875 curve N, CISPR (publication 2) curve N and BS800 specifications and some models are mechanically compatible with other makes so we can 'second source' your present supplier. Output is programmable down to 1V on all models except the 30W units and full current capability is retained. We 'burn-in' all units before despatch for maximum reliability, and protection includes constant current limiting and overvoltage protection as standard with optional overcurrent trip being available on all models except the 30 watt range. An LED on the front panel indicates presence of output.

Almost all models are on the British Telecom's List of Permissible Attachments (Accessories) - B.T. Datel Services. A programmable constant current option is available to order and IEEE488 programming of voltage output is possible using our SWIB and F952 modules (not 30W units). Rack mounting kits are available.

A short form listing of the G range follows. Detailed information is in the catalogue and separate leaflets and application notes are available on request.

Models available

| Output Volts - nominal | Front panel potentiometer Adjustment range Volts | Current max. | Model No. |
|---------------------------|--|--------------|-----------|
| 6 | 4-6 | 5A | G6-5M |
| 6 | 4-6 | 10A | G6-10S |
| 6 | 4-6 | 20A | G6-20S |
| 6 | 4-6 | 40A | G6-40A |
| 6 | 4-6 | 60A | G6-60A |
| 5 | 4-6 | 120A | G5-120A |
| 12 | 8-13.2 | 2.5A | G12-2.5M |
| 12 | 8-12.6 | 5A | G12-5S |
| 12 | 8-12.6 | 10A | G12-10S |
| 12 | 8-12.6 | 20A | G12-20A |
| 12 | 8-12.6 | 30A | G12-30A |
| 15 | 10-16.5 | 2A | G15-2M |
| 15 | 10-15.75 | 4A | G15-4S |
| 15 | 10-15.75 | 8A | G15-8S |
| 15 | 10-15.75 | 16A | G15-16A |
| 15 | 10-15.75 | 24A | G15-24S |
| 24 | 16-26.4 | 1.4A | G24-1.4M |
| 24 | 16-25.2 | 2.5A | G24-2.5S |
| 24 | 16-25.2 | 5A | G24-5S |
| 24 | 16-25.2 | 10A | G24-10A |
| 24 | 16-25.2 | 15A | G24-15A |
| 30 | 20-31.5 | 8A | G30-8A |
| 30 | 20-31.5 | 12A | G30-12A |
| 48 | 32-50.4 | 5A | G48-5A |
| 48 | 32-50.5 | 7.5A | G48-7.5A |
| 48 | 32-50.5 | 12.5A | G48-12.5A |

TRIPLE OUTPUT MODELS

| Volts | Volts | | |
|--------|---------------|-------|----------|
| 6 | 4.75-6 | 20A | GT6-20A |
| 2 x 15 | 2 x 14.5-15.5 | 1.75A | |
| 6 | 4.75-6 | 20A | GT6-20AB |
| 2 x 12 | 2 x 11.5-12.5 | 1.75A | |

Available from:

Farnell Instruments Limited,
Sandbeck Way, Wetherby, West Yorkshire LS22 4DH
Telephone: 0937 61961 Telex: 557294

Switched-mode technique for compactness and high efficiency

220-240V or 115-120V, 45-440Hz input

Generous 'brown out' tolerance -20% to +10% of nominal input

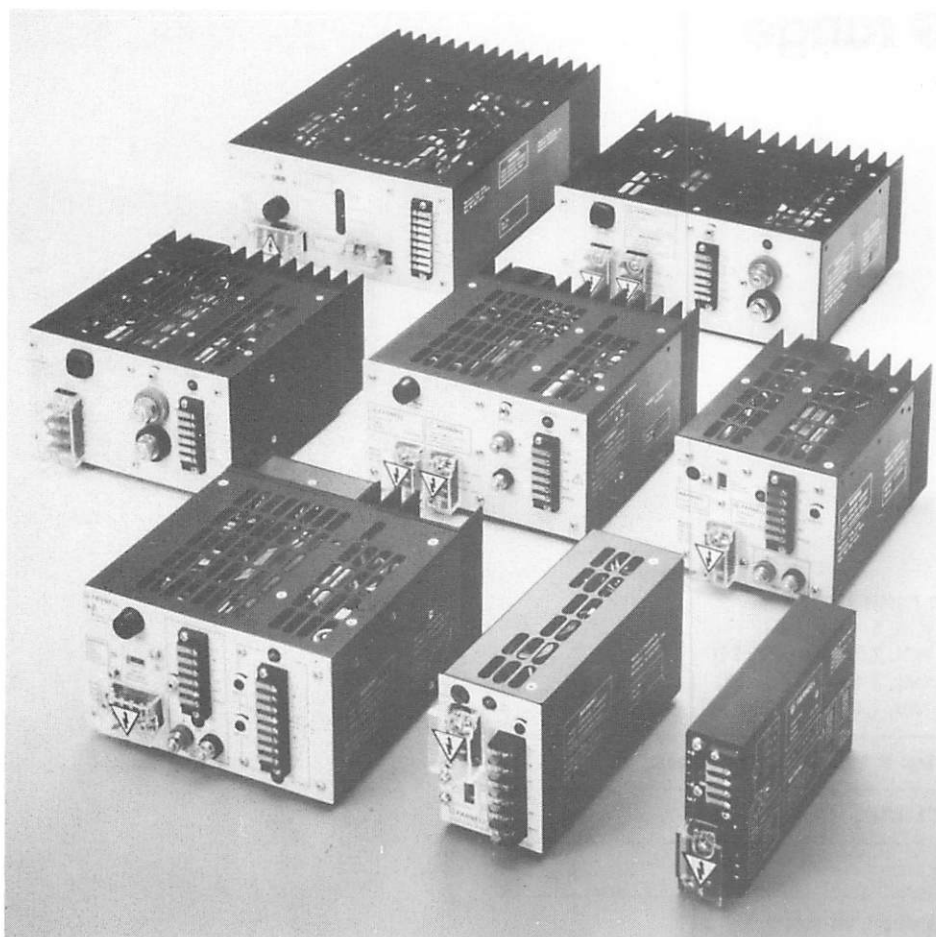
LED lamp indicates output presence

Well protected. Constant current limiting. Overvoltage protection. Accessible fuses.

Soft start limits switch on surge current

On British Telecom's List of Permissible Attachments

Will second source other manufacturers' products



enclosed switching power supplies

Almost every unit in our G range of high efficiency switching power supplies has successfully completed British Telecom assessment for safety and non-interference. This confirms their suitability for use in, or connection to, British Telecom plant. Currently such units are used in telephone exchanges, PDX units, telex equipment, radio links, etc. Many OEMs buy Farnell PSUs for their computer systems and peripherals.

This range comprises single output power packages of 30, 60, 120, 240, 360 and 600 watts rating and various models are available in each package to provide a wide choice of voltage and current outputs. The voltage levels are adjustable by the customer. There is also a triple output model.

Careful consideration has been given to minimising r.f.i. and sample units have passed VDE0875 and BS800. Also sample units have passed independent mechanical trials for the effects of vibration (2G 5-150Hz displacement 2.54mm); bump (1000 @ 30G, 6ms half sine); shock (3 @ 25G, 25ms duration, half sine, each mounting plane).

The units will fit the 2U aperture of racks and the DIN41494 card frame system (Eurocard).

We recommend a visit by a Sales Engineer from our Power Supplies Division to discuss your possible requirements. He can provide you with valuable notes, MTBF details, etc.

Common specification – all models

Mains input

220 to 240V or 115 to 120V, 45 to 440Hz
Switch or link selectable depending on model.

Mains variation tolerated

220V -20% to 240 +10% a.c.
115V -20% to 120 +10% a.c.

Output voltage regulation

0.1% maximum variation from a worst case combination of 0 to 100% load change and 220V-10% to 240V+10% or 115V -10% to 120V +10% line change.

Ripple and noise at full load

Less than 10mV r.m.s. (20mV 600W model)
50mV pk to pk. $\Delta f=30\text{MHz}$

Temperature coefficient

$\pm 0.01\%$ per $^{\circ}\text{C}$

Transient recovery time

Typically 1ms for output to recover within 50mV following a 10% to 100% (or 100% to 10%) load change of 5us risetime.

Hold-up time

Output will be maintained for the duration of a missing mains cycle (28ms) at maximum output current and 220V-10% or 115V-10% when the output is 6V on 6V nominal units or nominal +5% for other units.

Switch on time

Output established within 400ms (30ms on 30W models).

Operating ambient temperature range

-10 $^{\circ}$ to +55 $^{\circ}\text{C}$ for full load output current. Convection cooled free air rating.

Maximum operating ambient temperature

70 $^{\circ}\text{C}$ max. Output current derates linearly from full load at 55 $^{\circ}\text{C}$ to half load at 70 $^{\circ}\text{C}$.

Storage temperature range

-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$.

Efficiency

Better than 70% at full load.

Insulation

Tested at 1.5kV a.c. for one minute between a.c. input and d.c. output with output terminals and earth connected together. $\pm 250\text{V}$ d.c. continuous rating between output and earth. Tested 500V d.c. for 1 minute.

Protection

Constant current limiting at 110% $\pm 5\%$ of full load current. Overvoltage set at nominal +20%. Fuse on a.c. input.

Radio frequency interference

Units comply with the conducted interference requirements of VDE0875 curve N, CISPR (publication 11) curve N and BS800.

Series and parallel operation

Any number of units with the same output voltage may be connected in parallel. Outputs of similar current rating may be connected in series up to a maximum total output voltage of 250V.

External programming

Output voltage may be programmed from 1V upwards with an externally connected resistor. Programming resistance 1000 Ω per volt $\pm 0.5\%$.

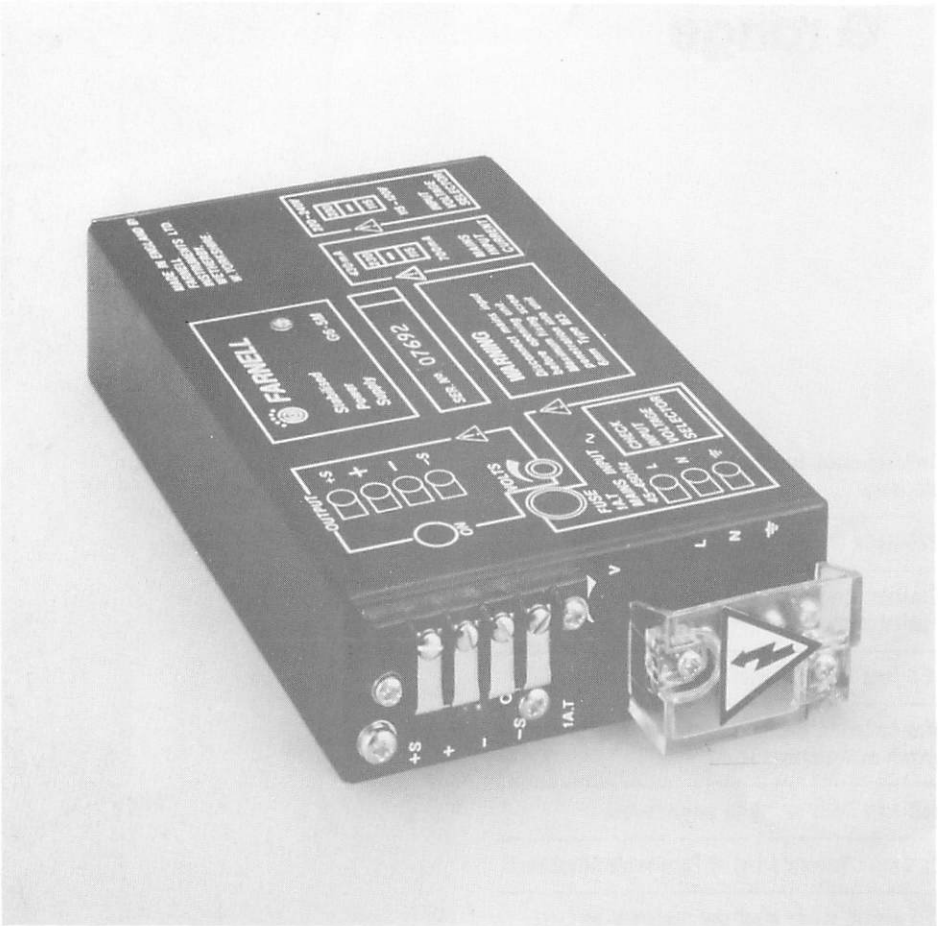
Remote sensing

Up to 5V max. drop in each output load permitted. However, unit output terminal voltage must not exceed 6V for nominal 6V units or $\pm 5\%$ for other units.

Remote switch-off

Output may be reduced to zero by linking the 'PROG' and '+S' terminals (not 30W models).

G range



Four models available:
6 volts, 5 amps (4-6V)
12 volts, 2.5 amps (8-13.2V)
15 volts, 2 amps (10-16.5V)
24 volts, 1.4 amps (16-26.4V)

Vertical or horizontal mounting planes

Fits Eurocard footprint

Compact

Lightweight, yet rugged

30 watts enclosed switching power supplies

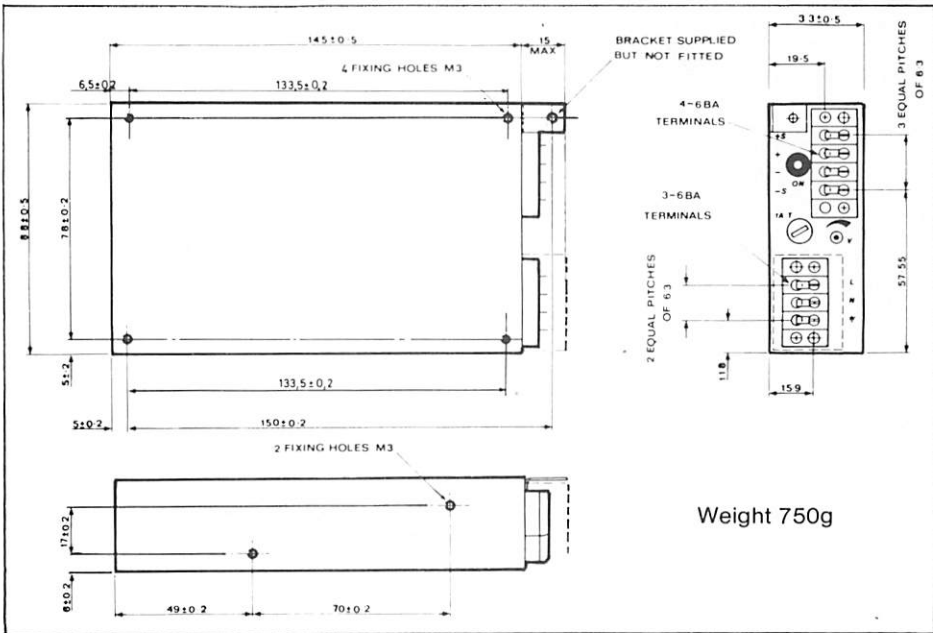
ORDER CODES:

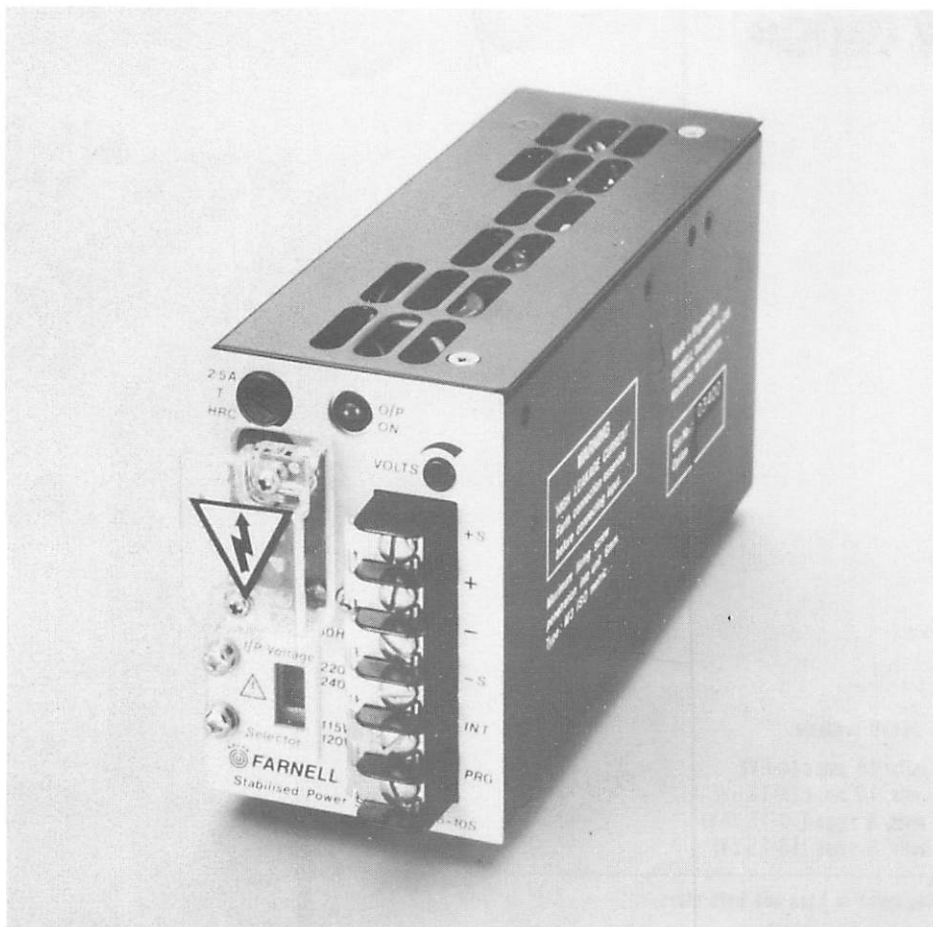
| | Standard outputs/model numbers | | | |
|----------|--------------------------------|------------------------|--------------------------|--------------|
| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
| 13G065M | 6V | 5A | 4 to 6V | G6-5M |
| 13G1225M | 12V | 2.5A | 8 to 13.2V | G12-2.5M |
| 13G1502M | 15V | 2A | 10 to 16.5V | G15-2M |
| 13G2414M | 24V | 1.4A | 16 to 26.4V | G24-1.4M |

The Farnell 30 watt G range comprises four models at various voltage/current combinations.

Each unit will operate from a nominal mains input of either 220 to 240V or 115 to 120V, the range being set by a voltage selector switch on the rear panel. Soft start not featured on this model but maximum surge is less than 80A. The units are suitable for vertical or horizontal mounting and will fit on a Eurocard board.

NATO STOCK NUMBER
G6-5M 6130-99-658-4157





Four models available:

- 6 volts, 10 amps (4-6V)
- 12 volts, 5 amps (8-12.6V)
- 15 volts, 4 amps (10-15.75V)
- 24 volts, 2.5 amps (16-25.2V)

Fixing holes in base and both sides

60 watts enclosed switching power supplies

ORDER CODES:

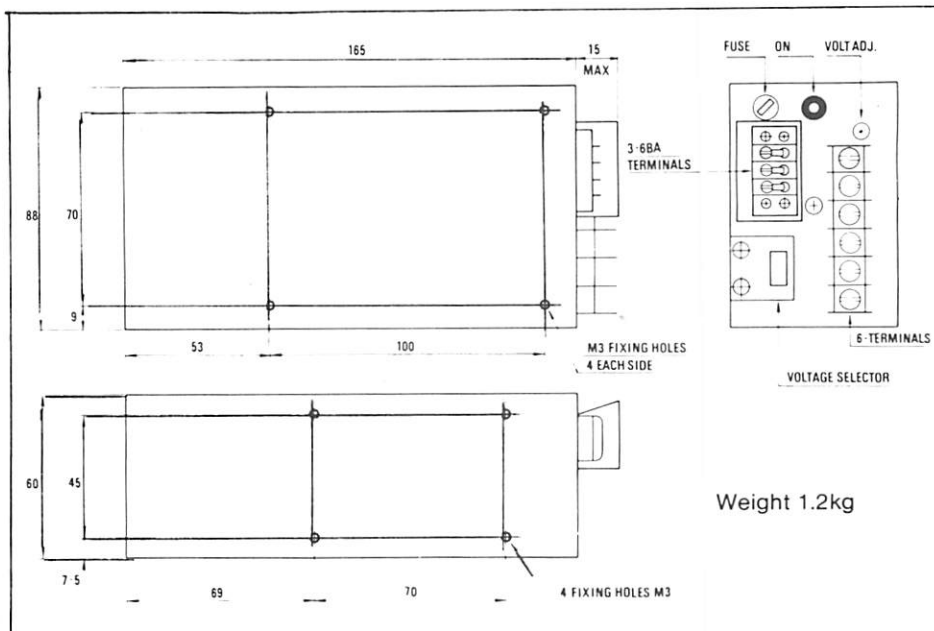
Standard outputs/model numbers

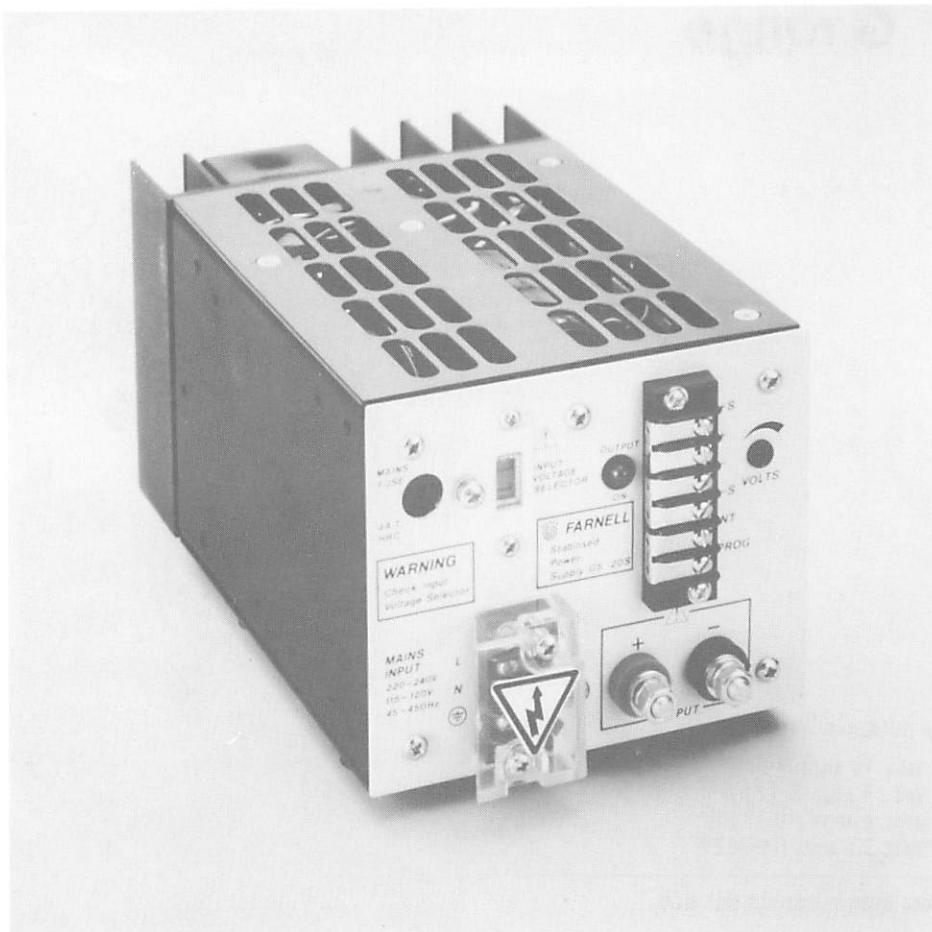
| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|----------|-----------------------------|------------------------|--------------------------|--------------|
| 13G0610S | 6V | 10A | 4 to 6V | G6-10S |
| 13G1205S | 12V | 5A | 8 to 12.6V | G12-5S |
| 13G1504S | 15V | 4A | 10 to 15.75V | G15-4S |
| 13G2425S | 24V | 2.5A | 16 to 25.2V | G24-2.5S |

The Farnell 60 watt G range comprises four models in the same mechanical package with various combinations of output voltage and current.

The mains input selector switch is located on the front panel on these models. Soft start limits peak input current at switch on to a maximum of 16A. This package is a compact format which will usefully interchange with several other manufacturers products.

Model G30-2S is to special order only. Minimum quantity 20 pieces.





Four models available:

- 6 volts, 20 amps (4-6V)
- 12 volts, 10 amps (8-12.6V)
- 15 volts, 8 amps (10-15.75V)
- 24 volts, 5 amps (16-25.2V)

Fixing holes in base and both sides

120 watts enclosed switching power supplies

ORDER CODES:

Standard outputs/model numbers

| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|----------|-----------------------------|------------------------|--------------------------|--------------|
| 13G0620S | 6V | 20A | 4 to 6V | G6-20S |
| 13G1210S | 12V | 10A | 8 to 12.6V | G12-10S |
| 13G1508S | 15V | 8A | 10 to 15.75V | G15-8S |
| 13G2405S | 24V | 5A | 16 to 25.2V | G24-5S |

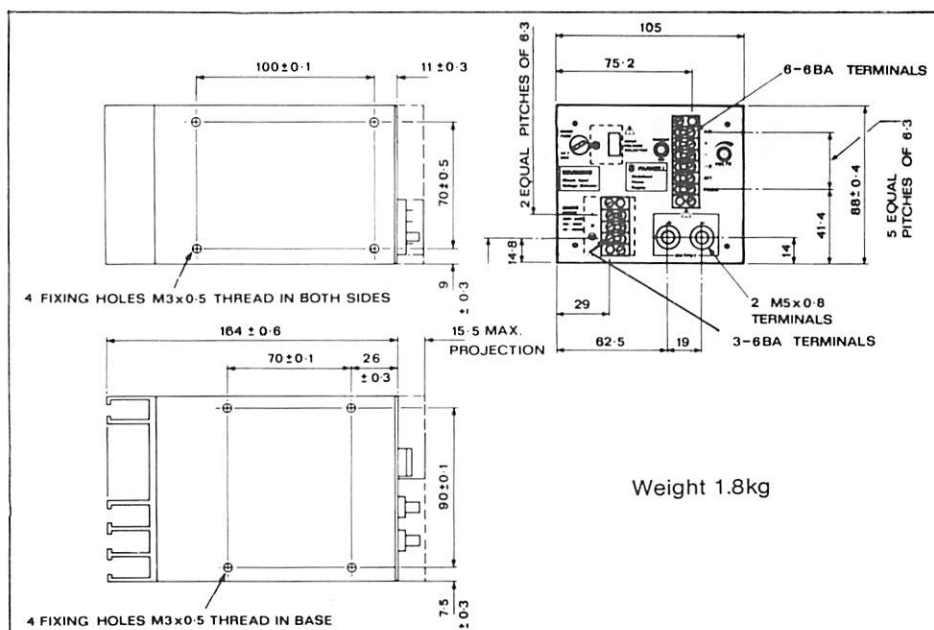
Four models are available in the same mechanical package in combinations of output voltage and current which give a maximum output power of 120 watts.

The mains input selector switch is on the front panel of these models. Instead of screw terminals the output is taken from 2 off M5 x 0.8 studs. Soft start limits input current at switch on to less than 16A.

These units will second-source those made by other manufacturers as the fixing and connection methods are compatible.

Model G30-4S is to special order only. Minimum quantity 20 pieces.

NATO STOCK NUMBERS
G6-20S 6130-99-653-9822
G24-5S 6110-99-745-9456



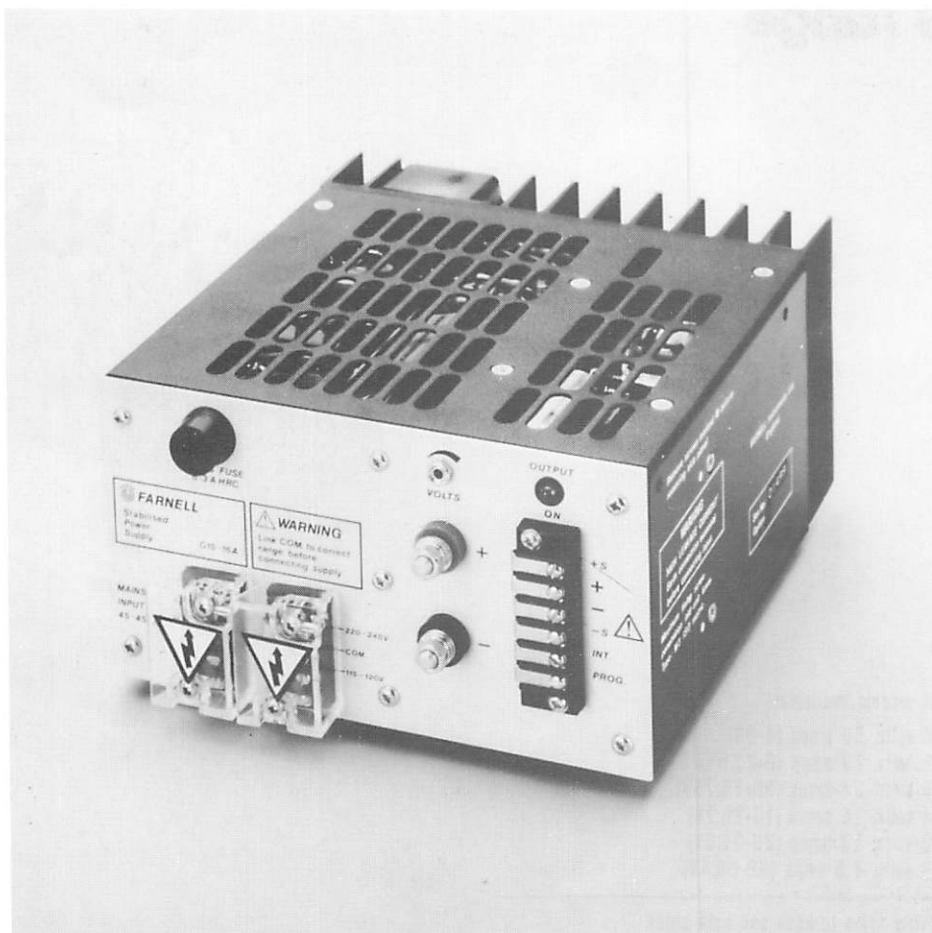
G range

Six models available:

- 6 volts, 40 amps (4-6V)
- 12 volts, 20 amps (8-12.6V)
- 15 volts, 16 amps (10-15.75V)
- 24 volts, 10 amps (16-25.2V)
- 30 volts, 8 amps (20-31.5V)
- 48 volts, 5 amps (32-50.4V)

G48-5A
BT approval pending

Fixing holes in base and both sides



240 watts enclosed switching power supplies

ORDER CODES:

Standard outputs/model numbers

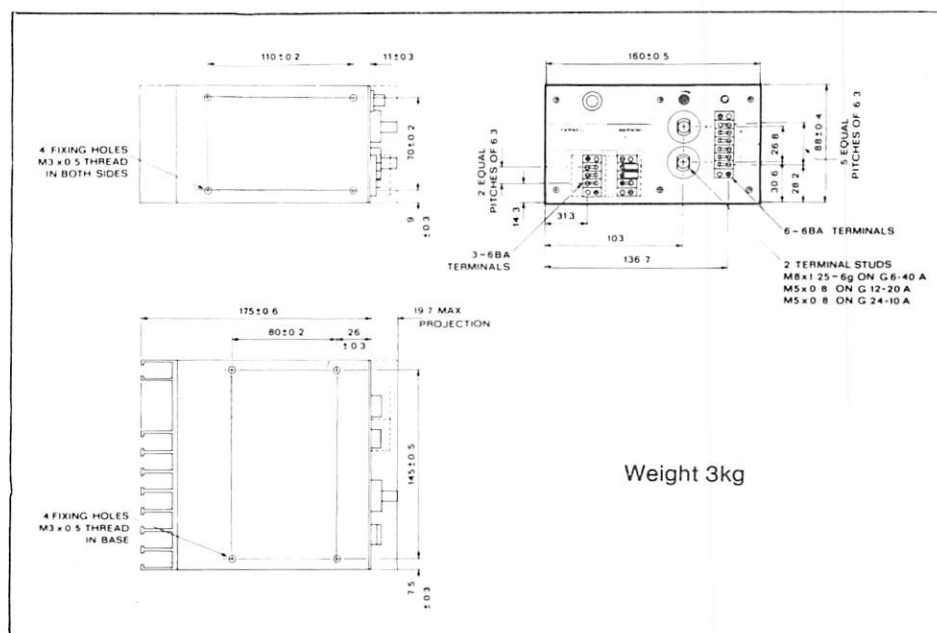
| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|----------|-----------------------------|------------------------|--------------------------|--------------|
| 13G0640A | 6V | 40A | 4 to 6V | G6-40A |
| 13G1220A | 12V | 20A | 8 to 12.6V | G12-20A |
| 13G1516A | 15V | 16A | 10 to 15.75V | G15-16A |
| 13G2410A | 24V | 10A | 16 to 25.2V | G24-10A |
| 13G3008A | 30V | 8A | 20 to 31.5V | G30-8A |
| 13G4805A | 48V | 5A | 32 to 50.4V | G48-5A |

This range comprises six models in the same mechanical package and with various combinations of output voltage and current to give a maximum output power of 240 watts.

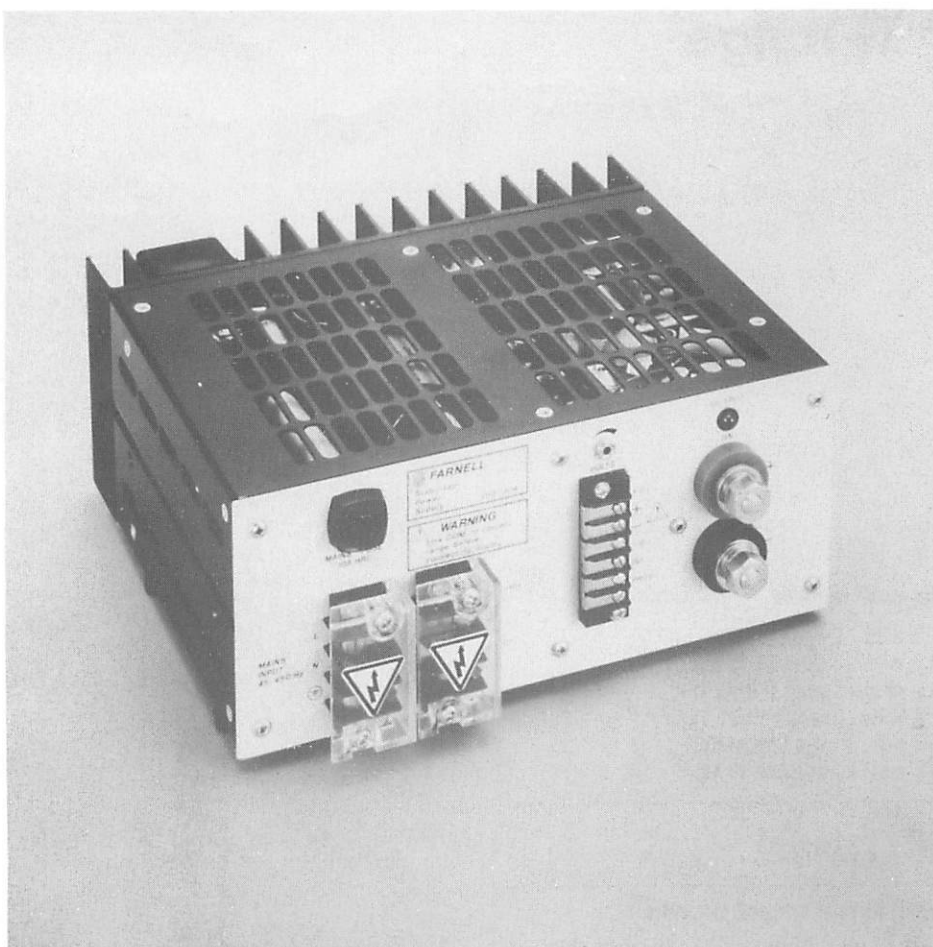
The required mains input is selected by a link on the front panel terminal block. Switch on surge is limited by soft start to be less than 32A.

These units will second source similar models made by other manufacturers. A more recent addition to the 240 watt range has been the 48 volt model.

NATO STOCK NUMBER
G24-10A 6130-99-742-0971



Weight 3kg



Six models available:

- 6 volts, 60 amps (4-6V)
- 12 volts, 30 amps (8-12.6V)
- 15 volts, 24 amps (10-15.75V)
- 24 volts, 15 amps (16-25.2V)
- 30 volts, 12 amps (20-31.5V)
- 48 volts, 7.5 amps (32-50.4V)

Fixing holes in base and both sides

360 watts enclosed switching power supplies

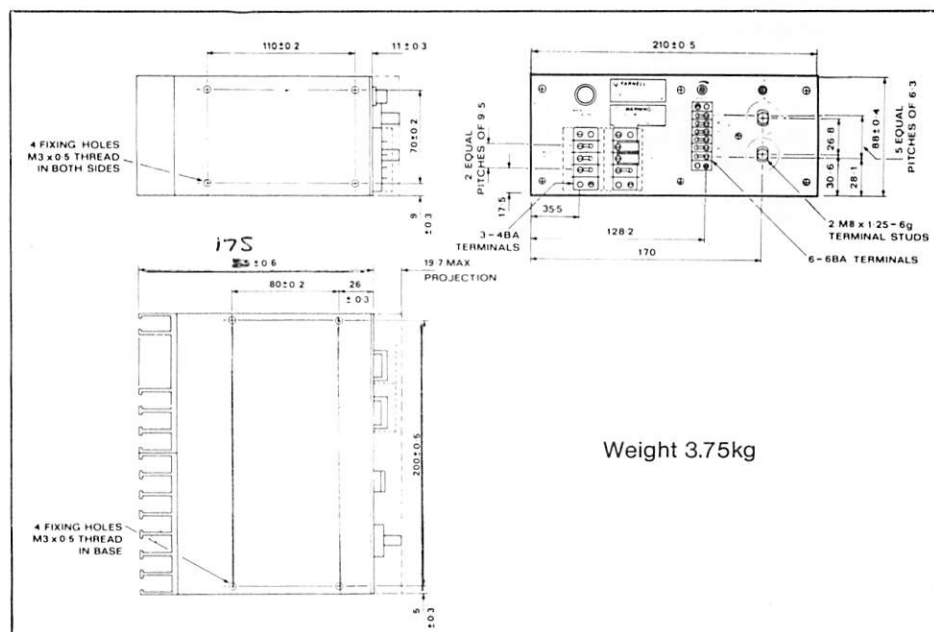
ORDER CODES:

Standard outputs/model numbers

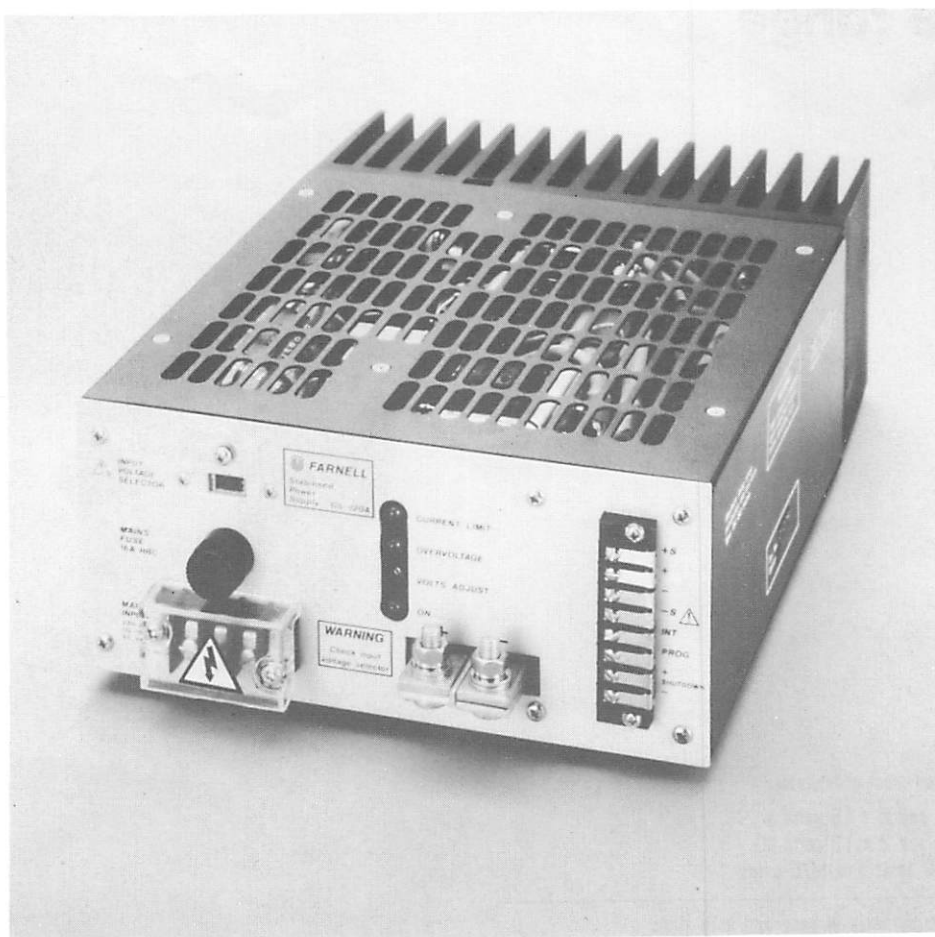
| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|----------|-----------------------------|------------------------|--------------------------|--------------|
| 13G0660A | 6V | 60A | 4 to 6V | G6-60A |
| 13G1230A | 12V | 30A | 8 to 12.6V | G12-30A |
| 13G1524A | 15V | 24A | 10 to 15.75V | G15-24A |
| 13G2415A | 24V | 15A | 16 to 25.2V | G24-15A |
| 13G3012A | 30V | 12A | 20 to 31.5V | G30-12A |
| 13G4875A | 48V | 7.5A | 32 to 50.4V | G48-7.5A |

Remarkably compact and efficient, the Farnell 360 watt G range comprises six models in various combinations of voltage and current. However, model G15-24A is to special order only for a minimum quantity of 20 units. Mains input is selected by a link on a front panel terminal block and switch on surge is limited by soft start to less than 32A. As on all models except the 30 watt units an optional overcurrent trip is available which will disable the output after 200ms of overload to protect circuitry.

These units will second source other manufacturers units. The 48V model is of particular interest to telecommunications customers.



G range



Two models available:

5 volts, 120 amps (4-6V)

(6 volts, 100 amps)

48 volts, 12.5 amps (32-50.4V)

Half rack 2U (90mm) size

LED indication of current limit and overvoltage as well as output presence

Also works from 310-340V d.c. input

600 watts enclosed switching power supplies

ORDER CODES:

Standard outputs/model numbers

| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|-----------|-----------------------------|------------------------|--------------------------|--------------|
| 13G05120A | 5V | 120A | 4 to 6V* | G5-120A |
| 13G48125A | 48V | 12.5A | 32 to 50.4V | G48-12.5A |

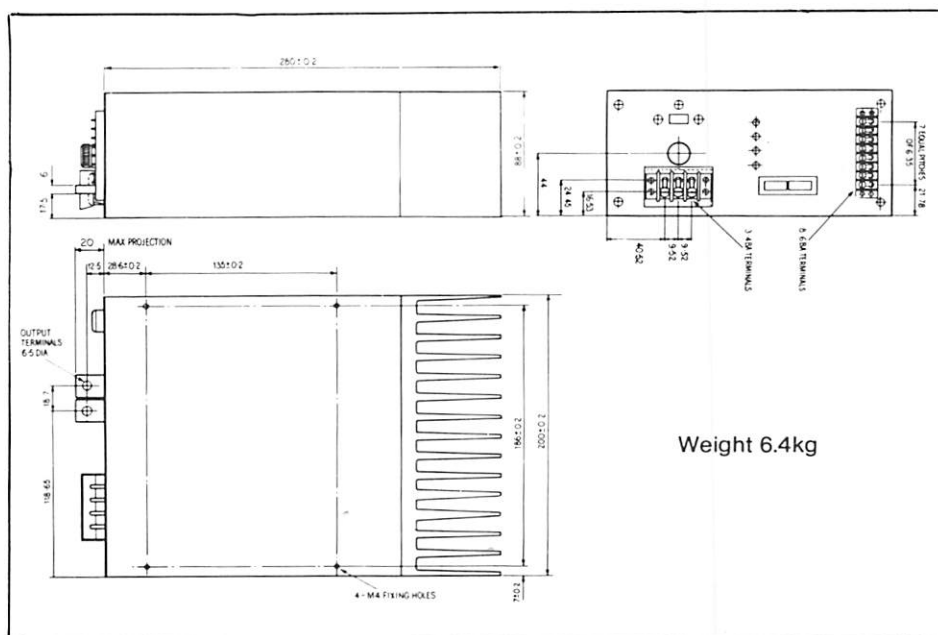
*100A max @ 6V

Astonishingly, it is possible to fit two of the Farnell 600 watt G range power supplies side by side in a 2U rack!

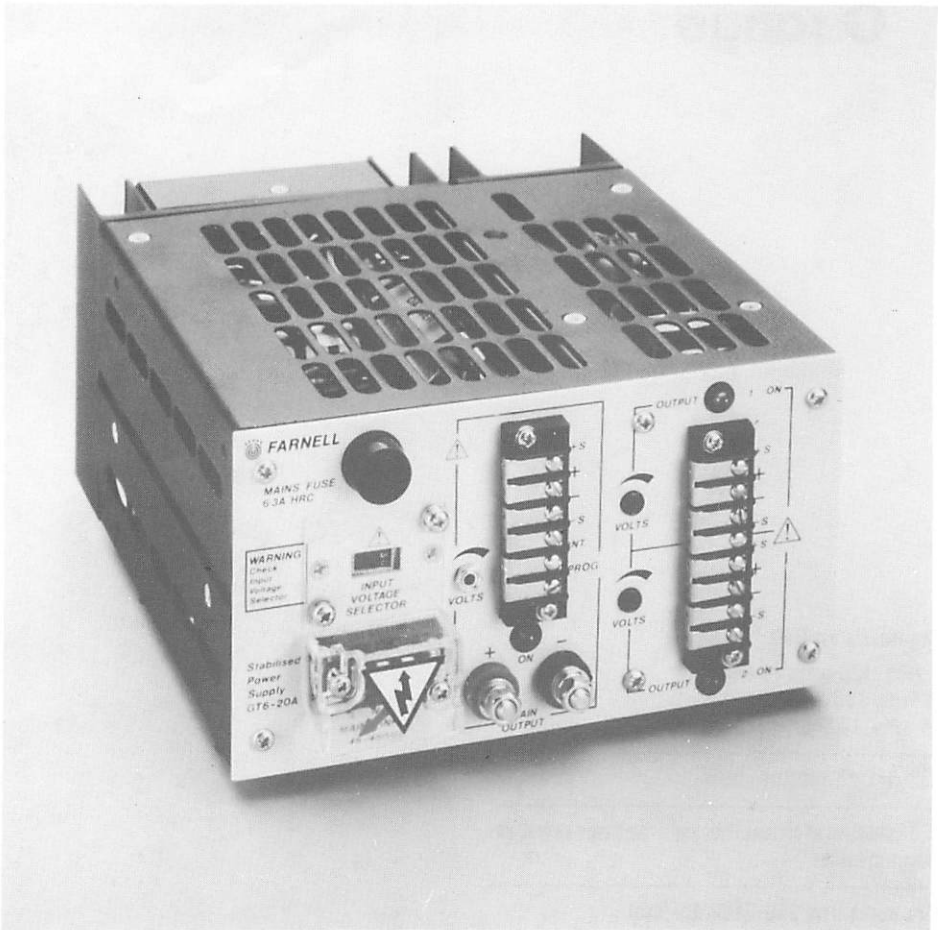
There are two models available: 5V at 120A and 48V at 12.5A. A front panel switch permits change of mains input and a guard cover prevents accidental selection. Soft start circuitry limits maximum peak current to 64A but 45A is typical.

Currently one of the most compact, efficient, convection cooled PSUs available anywhere in the world, the Farnell 600W G range units have a power density of about two watts per cubic inch with a panel height of only 88mm.

Note: The 48V model has different output terminals to those illustrated.



Weight 6.4kg



Two models available:
6 and 2 x 15 volts or
6 and 2 x 12 volts at
20 amps and 1.75 amps

Fixing holes in base and both sides

Triple output enclosed switching power supplies

ORDER CODES:

Standard outputs/model numbers

| | Nominal output voltage d.c. | Maximum output current | Voltage adjustment range | Model number |
|-----------|-----------------------------|------------------------|-----------------------------|--------------|
| 13GT620A | 6V and 2 x 15V | 20A 1.75A | 4.75 to 6V 14 to 15.5V | GT6-20A |
| 13GT620AB | 6V and 2 x 12V | 20A 1.75A | 4.75 to 6V 11.5 to 12.5V | GT6-20AB |

The Farnell GT6-20A power supply uses a combination of switching and linear control techniques to provide three independent stabilised outputs. The main output (switched mode) delivers a maximum of 6V, 20A and the two auxiliaries provide either 12 or 15V at 1.75A depending on which model is selected. The main output has constant current limit and overvoltage protection (plus optional overcurrent trip) and the auxiliaries have cut-back current limit plus auto-reset thermostat.

