

Coutant GPE Series Modular Power Supply Units

The modern art of power



Features

- Universal Mains Input
- Suitable for Series or Parallel Operation
- Rugged Enclosed Construction
- Internal Overvoltage Option
- Separate Mains Terminal Block

Description

The GPE Series of fully enclosed modular power supplies provides a range of single and twin outputs; single units at 5, 12 or 15, 24 or 28 and 48 volts at current levels from 1-15 amps, twin units at 12-15 volts from 1-5 amps.

Internal Overvoltage Protection is fitted as standard on 5V units and as an option on all other units. This may also be added after manufacture by removal of the front panel and simply connecting the device to easily accessible pins.

Overload protection is of a re-entrant characteristic operating between 115-125% of full load.

A 'P' terminal is fitted enabling two units to operate in parallel while ensuring that current sharing takes place. The unit which is set to the higher voltage will act as the "master".

Any number of units may be operated in series provided the 500V insulation is not exceeded.

This range is designed to conform to P.O. technical guide 26 where mains and d.c. terminals are separated; also mains wiring is routed separately.

Units have also been designed to conform to the creepage and bonding specifications BS3861, IEC380 and DIN for electrical safety for office machines.

GPE Series Modular Power Supply Units

Specification

I/P Voltage: 110, 220 & 240V a.c. $\pm 10\%$
 115V +5%, -10%

I/P Frequency: 48-65 Hz

O/P Voltage Ranges: 5V, 12 or 15V, 24 or 28V, 48V,
 2 x 12-15V

O/P Voltage Adjustment: $\pm 0.5V$ min.

Remote Sensing: On all units for up to 0.5V
 total loss on output cables.

O/P Current: Units from 1 amp to 15 amps.

Line Regulation: $< 0.01\% + 1mV$ for $\pm 10\%$
 mains variation.

Load Regulation: $< 0.03\%$ for no load to full
 load change.

Ripple & Noise: $< 1mV$ peak to peak to 10MHz.

Operating Temperature: $-10^{\circ}C$ to $+70^{\circ}C$ derate by
 $2\frac{1}{2}\%/^{\circ}C$ from $50^{\circ}C$.

Storage Temperature: $-20^{\circ}C$ to $+85^{\circ}C$

Temperature Coefficient: Typically $0.005\%/^{\circ}C$
 (Max. $0.015\%/^{\circ}C$)

Transient Response: Typically $30\mu s$ to within 10mV
 of V_{out} . Nominal for 10-100%
 and 100-10% load change.

Overload Protection: Re-entrant characteristic operat-
 ing between 115-125% of full load.

Overvoltage Protection: Optional-adjustable to 120% of
 V nominal.

**Reverse Polarity
 Protection:** By diode across output.

**Series & Parallel
 Connection:** See Application Notes.

Insulation Resistance: O/P to earth $> 30M\Omega$ at 500V d.c.

Flash Test: Line & N to earth 2.5KV A.C.
 for one minute.

Table 1

Type No.	Voltage Rating	Current Rating	Size Ref.	Width mm	Height mm	Depth mm
GPE 100/12	12 or 15v	1 amp	A	80	80	179
GPE 100/24	24 or 28v	1 amp	A	80	80	179
GPE 100/48	48v	1 amp	B	80	125	185
GPE 200/5/OV	5v	2 amp	A	80	80	179
GPE 200/12	12 or 15v	2 amp	B	80	125	185
GPE 200/24	24 or 28v	2 amp	B	80	125	185
GPE 200/48	48v	2 amp	C	125	125	252
GPE 500/5/OV	5v	5 amp	B	80	125	185
GPE 500/12	12 or 15v	5 amp	C	125	125	252
GPE 500/24	24 or 28v	5 amp	C	125	125	252
GPE 500/48	48v	5 amp	D	190	125	252
GPE 1000/5/OV	5v	10 amp	C	125	125	252
GPE 1000/12	12 or 15v	10 amp	D	190	125	252
GPE 1000/24	24 or 28v	10 amp	D	190	125	252
GPE 1500/5/OV	5v	15 amp	D	190	125	252
GPET 100/12/12	$\pm 12-15v$	1 amp	B	80	125	185
GPET 200/12/12	$\pm 12-15v$	2 amp	C	125	125	252
GPET 500/12/12	$\pm 12-15v$	5 amp	D	190	125	252

Remote Sensing

Voltage drops caused by long output leads can be compensated by use of the "sense" terminals. Sense leads should be screened to prevent "pick-up" and separated from the mains input leads or any other cables containing "noise".

Tap Changes

12 or 15 volts and 24 or 28 volts. When changing the O/P voltage of the above units, the main transformer secondary should be set to the higher option when using the higher O/P voltage. This connection is located on the mains transformer.

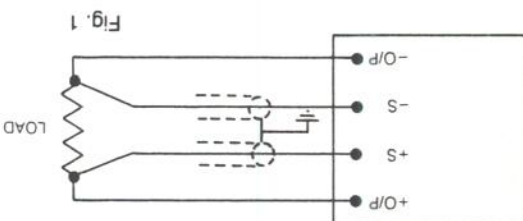


Fig. 1

Applications

Parallel Operation

Two similar units may be operated in parallel to provide increased available load current. By connecting the 'P' terminals together current sharing will take place, the supply set at the highest output voltage will become the "Master" and the remaining unit will "slave".
N.B. When operated in parallel a derating factor of 10% must be applied i.e. 2 GPE 1000/12 units operated in parallel will supply 12V @ 18 amps.

Parallel Redundant Operation

If units are used in parallel to provide standby operation due to failure of either supply the 'P' terminal should not be used and diodes at output current rating be fitted in series with each output as shown in Fig.3.

Series Operation

Any number of units may be operated in series provided the 500V insulation is not exceeded.

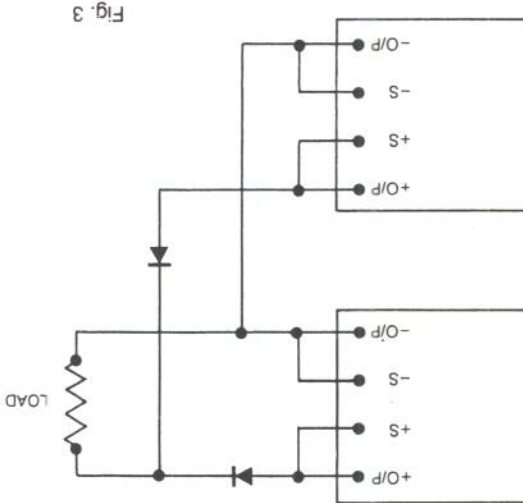


Fig. 3

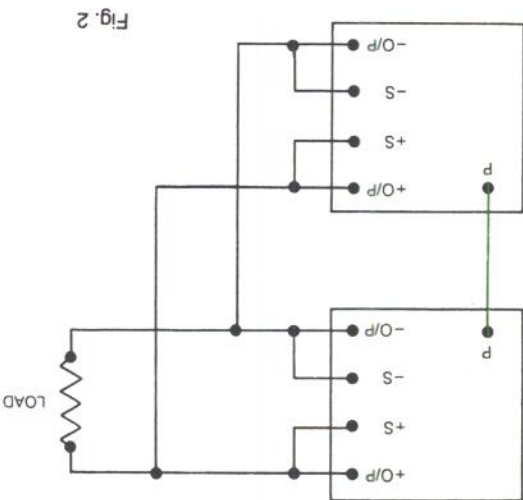
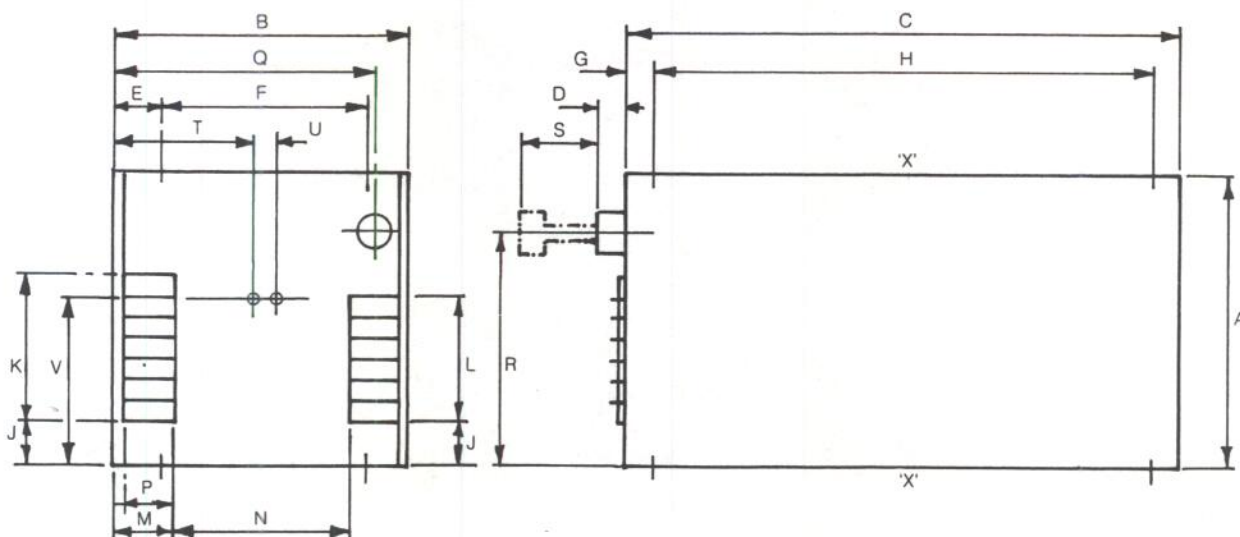


Fig. 2

Outline Drawing



CUSTOMERS FIXINGS M4 X0,7 FULL THREAD 10 DEEP.
RECOMMENDED CLEARANCE HOLE Ø5,5.
'X' VENTILATED COVERS PROVIDE SPACE FOR CONVECTION COOLING.

DIMENSIONS IN mm.

Table 2 Dimensions and Weights

UNIT	OVERALL DIMS.				FIXING CTRS.				TERMINAL CONNS.						FUSE			ADJ. POT			APPROX. WEIGHT
SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	
A	80	80	174	5	15	50	8,5	155	11	46	40	19,3	41,5	16	68	60	30	13,7	12,5	58,6	1.8 kg
B	125	80	180	5	15	50	12,5	155	16	46	40	18,6	42,7	16	66,5	75	30	34,6	10	72,5	2.7 kg
C	125	125	240	12	17,5	90	12,5	215	20	67	57,8	25,4	74,2	22,2	110	102	35	33,8	11	72,5	5.8 kg
D	125	190	240	12	10	170	12,5	215	20	67	57,8	25,4	74,2	22,2	110	102	35	33,8	11	72,5	10.5 kg

Reliability

The M.T.B.F. figures have been calculated using MIL 217B for full load at +50°C.

CASE A—75,000 hrs.
CASE B—70,000 hrs.
CASE C—64,000 hrs.
CASE D—48,000 hrs.

Optional Extras

Internal Overvoltage Protection/OV

Ordering

Model number only required as in table 1.

coutant

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