

BPEU2451 AC/DC Converter



The BPEU Series of AC/DC Converters is available with multiple outputs and output power from 1300 W up to 3000 W. All models incorporate active Power Factor Correction (PFC).

Other standard features include current and voltage monitoring, overvoltage, overtemperature as well as short circuit protection.

These power supplies were designed to power radio-frequency power amplifier (RFPA) applications in the Broadcasting industry.

Key Features & Benefits

- Output Power 3000 W
- Active PFC
- High Efficiency
- Input Voltage: Single-Phase 220/240 VAC
- Main Output: 30-50 V/40 A
- Auxiliary Output: 24 V/3.5 A
- Current and Voltage Monitoring
- Remote Enable

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BPEU2451

TECHNICAL PARAMETERS

Input Specifications

PARAMETER	DESCRIPTION / CONDITION
Voltage	185 – 264 VAC Single-Phase
Current	≤ 20A @ full-load @ 185 VAC Single-Phase
Frequency	44 - 63 Hz
Efficiency	≥ 92% @ full-load @ 230 VAC
Power Factor	> 0.97 @ full-load @ 230 VAC
Inrush Current	≤ 30 Apk @ 230 VAC

Output Specifications

OUTPUT	VOLTAGE (VDC)	Inom (A)	Ipk (A)	TOLERANCE (%)	RIPPLE (%)	POWER (W)
V1	+30 to 50 *	29 @ 50V **	33 @ 45V **	≤ 2	< 3	1650
V2	+30 to 50 *	29 @ 50V **	33 @ 45V **	≤ 5	≤ 5	1650
V3***	+24	3.5	4	≤ 5	≤ 5	84

* V1 – V2 adjustable by single multi-turns trimmer set on board or by remote 0 to 5 Vexternal signal (see procedure below).

** I_{max} total V1 – V2 = 58 A @ 50V / 60 A @ 45 V.

*** Internal OR diode in series on positive pole.

Protection

PARAMETER	DESCRIPTION / CONDITION
Over-Load	Constant-Current
Short-Circuit	Hiccup mode (auto recovery)
Over-Voltage (V1, V2)	Set point = 58 V ± 5%, latching
Over-temperature	Non-latching with hysteresis
General:	AC side thermal fuses (T)

Alarms / Signals / Controls

PARAMETER	DESCRIPTION / CONDITION
V1, V2 current monitor IM (IMTOT)	Linear analog signal 100 mV → 1 A (IMTOT: 0 – 65 A = 0 – 4 V)
Output V1, V2 voltage monitor VM	Linear analog signal 100 mV → 1 V
Over Temperature Alarm	Open collector, max. sink 4 mA; Alarm = Low (on = 70°C; reset = 60°C tolerance ± 5%)
Over Temperature Protection	Open collector, max. sink 4 mA; Alarm = Low (on = 80°C; reset = 70°C tolerance ± 5%)
Power Fail - main under-voltage	Open collector, max. sink 4 mA; Alarm = Low (set point V _{in} < 180 VAC)
Remote Enable output V1, V2	Connected to COM = Power-On, floating = Off (sink 5 mAmps min.)
Remote Enable output V3	Connected to COM = Power-On, floating = Off (sink 5 mAmps min.)

Thermal Characteristics

PARAMETER	DESCRIPTION / CONDITION
Operating Temperature:	-10 to +45°C (see Thermal Protection)
Storage Temperature:	-20 to +85°C

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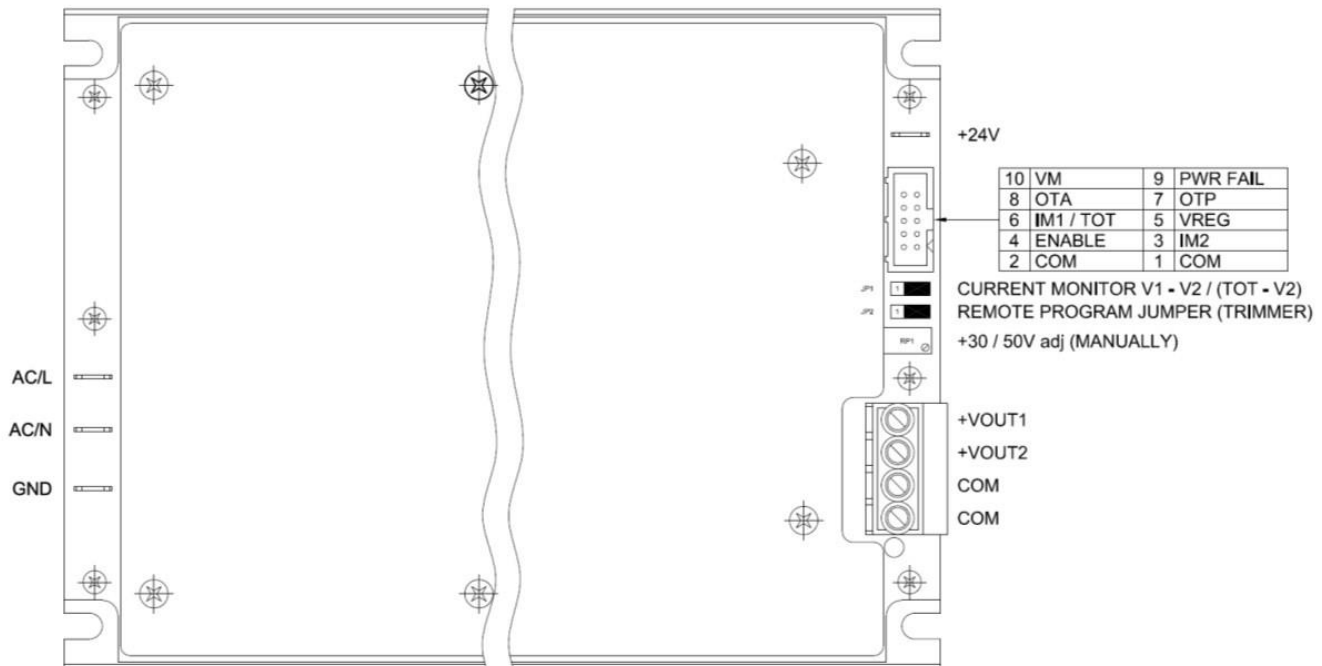
Standards / Regulations

PARAMETER	DESCRIPTION / CONDITION	
Safety:	EN60950-1	
	EN55022	Conducted Noise (Industrial level)
	EN61000-4-4	Fast-Transients
	EN61000-4-5	Surges (± 2 kV common ± 1 kV differential)
EMC / EMI	EN61000-4-11	Voltage-Dips
	EN61000-3-2	Harmonics Current
CE Mark		

Connections

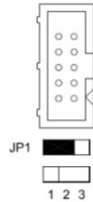
PARAMETER	DESCRIPTION / CONDITION
Input	N° 3 Fast-on male connectors (6.35 x 0.8 mm), L, N, PE
Output	V1, V2: 4 pole screw type terminal block (2 pole for Positive and 2 pole for Negative) V3: N° 2 Fast-on male connectors (6.35 x 0.8 mm)
Signals/Controls	Male FLAT type 10 pole dual in line connector

Figure 1 – Connections

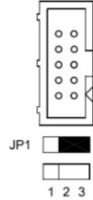
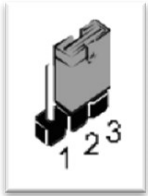


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CURRENT MONITORS

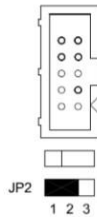


Place jumper JP1 cap shorting pins 1-2 to read Current Monitor Total via pin 6 and Current Monitor Vout2 via pin 3

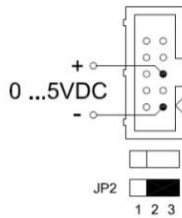
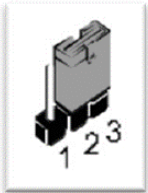


Place jumper JP1 cap shorting pins 2-3 to read Current Monitor Vout1 via pin 6 and Current Monitor Vout2 via pin 3

MAIN OUTPUT VOLTAGE TRIM (V1)



Place jumper JP2 cap shorting pins 1-2 to adjust Vout manually by on board trimmer "+48Vadj"



Place jumper JP2 cap shorting pins 2-3 to reduce linearly Vout by external 0-5 VDC source as below:

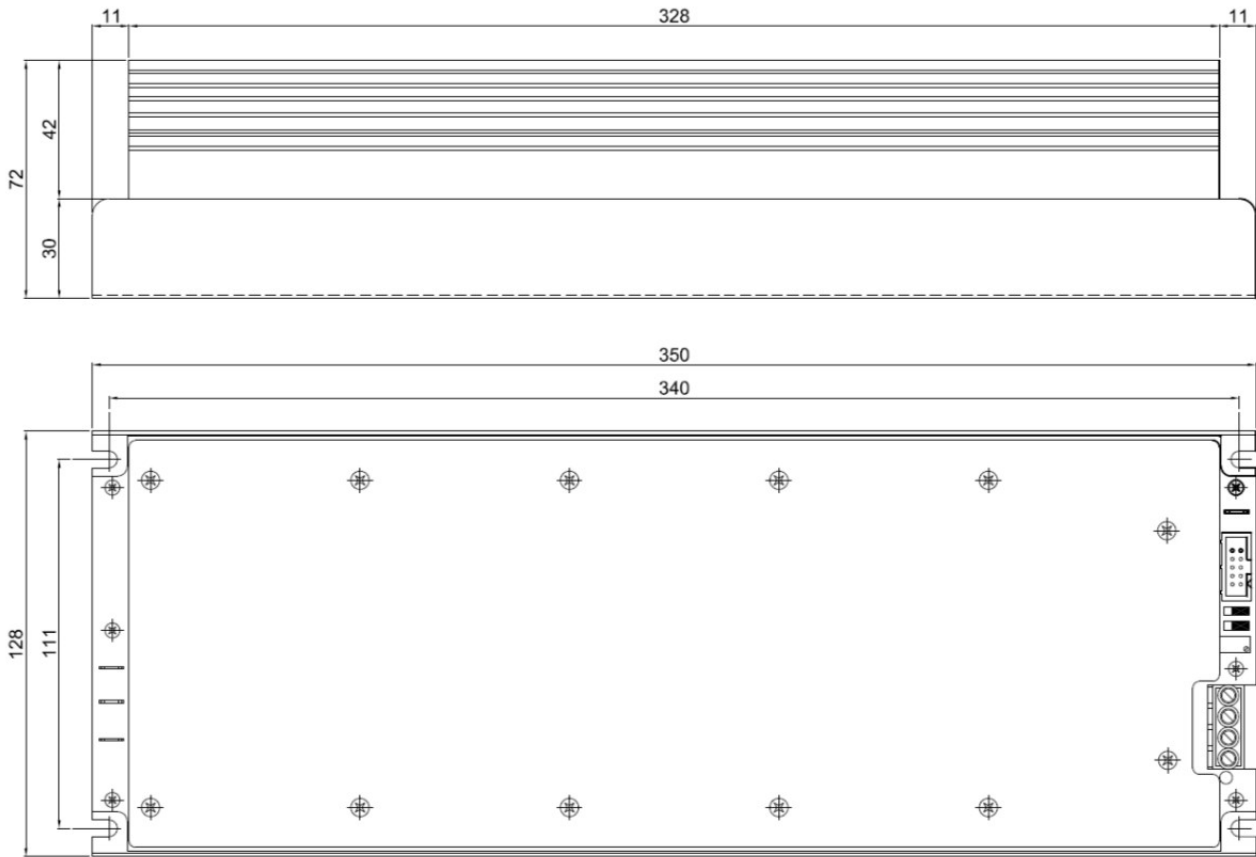
0 V → Vout = 50 V

5 V → Vout = 30 V

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Dimensions

Figure 2 - Mechanical Drawing



All dimensions are nominal and expressed in millimeters. Tolerance 0.5 mm max.

For more information on these products consult: tech.support@psbel.com

NUCLEAR AND MEDICAL APPLICATIONS - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.