BPS-85-70

Bipolar Power Supply

BPS-85-70

±85V, ±70A

International Electric Co.

BPS-85-70

Features

- High performance bipolar power supply with ± 85 V, ± 70 A output
- Parallel operation in current mode for ± 85 V and ± 140 A
- 4-quadrant output operation
- Operation with wide range of loads
- Voltage mode and current mode
- Very low ripple and noise
- Flux gate current transducer for excellent temperature and long term current stability
- Ramp response for different loads tuned from front panel
- Analogue voltage programming of output voltage or current
- Air cooled, 19 ” rack mountable package (5 U), 55 kg (121 lb)

Output performance

Output voltage max	± 85 V
Output current max	± 70 A
Output power	6 kW
Small signal bandwidth	> 10 kHz (-3dB)
Switching frequency	250 kHz

Voltage mode:

Line regulation	< 0.01 % (supply voltage min-max)
Load regulation	< 0.05 % (output current 0 – max)
Gain accuracy	< 0.02 %
Gain drift vs. time	< 0.01 % (any 8 hour period after 10 min warm up time)
Gain drift vs. temperature	< 0.005 % /ºC (10 ... 40ºC)
Initial offset	< 5 mV (adjustable to 0 mV)
Offset drift vs. time	< 5 mV (any 8 hour period after 10 min warm up time)
Offset drift vs. temperature	< 1 mV /ºC
Output noise voltage	< 0.2Vrms (0.1Hz...200kHz)
Switching ripple voltage	< 1 Vrms differential (>250kHz)

Current Mode:

Line regulation	< 0.01 % (supply voltage min – max)
Load regulation	< 0.05 % (output voltage 0 – max)
Gain accuracy	< 0.02 %
Gain drift vs. time	< 0.01 % (any 8 hour period after 10 min warm up time)
Gain drift vs. temperature	< 0.005 % /ºC (10 … 40ºC)
Initial offset	< 5 mA (adjustable to 0 mA)
Offset drift vs. time	< 5 mA (any 8 hour period after 10 min warm up time)
Offset drift vs. temperature	< 1 mA /ºC
Output noise current	< 1 mArms (0.1Hz...10kHz)
Switching ripple voltage	< 1 Vrms differential (>250kHz)

Control and monitoring

Local Mode, progamming via front panel:

Voltage mode	-85V to +85V. Setting resolution 10mV
Current mode	-70A to +70A. Setting resolution 10mA

Remote Mode:

Programming, voltage mode	1V/8.5V (± 10 V for ± 85 V) Differential
Programming, current mode	1V/7A (± 10 V for ± 70 A) Differential
Signal input impedance	40 kΩ

Fault protection:	Internal overtemperature
(Output shutdown due to)	AC input voltage out of tolerance
	Internal voltages out of tolerance
	Output crowbar protection for excess returned load energy
	Two external interlocks

Display	TFT 4.3” color display with large view angle
Local mode	Voltage or current mode selected via display Voltage or current output set by knob Enable button for activating the output
Remote mode	Remote mode connector on rear panel Remote mode enabled by logic signal Voltage or current mode selected by logic signal Voltage or current output set by analog programming signal
Tuning	Response for different loads can be fine-tuned at display
Voltage limit	Absolute max voltage limit set via display
Current limit	Absolute max current limit set via display

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System specifications

Input voltage requirements	208V: 180-264VAC 47-63Hz 3-phase Delta, or 400V: 3 x 180-264VAC 47-63Hz L1, L2, L3, N Selected by switch at rear panel
Input current	typ. 20A/180VAC 16A/230VAC
Power factor	typ. 0.95/230VAC at full load
Efficiency	0.75 at 6kW output power
Inrush current	typ. 60A@230VAC at cold start
Leakage current	< 2mA/240 VAC
Environmental requirements:	
Ambient temperature	10 °C to 40 °C
Ambient humidity	30 to 70 % non-condensing
Storage temperature	-20 °C to +85 °C
Cooling	Forced air cooling (front in, rear out) Removable, washable dust filter with capability to replace
Unit dimensions:	
Mounting	19” rack. Provision for rack slides
Height	221,5 mm (5U, 8.75”)
Width	483 mm (19”)
Depth	740 mm (29.1”)
Weight	55 kg (121 lb)

Regulatory

Designed to meet	EN 61010, UL 61010 AC/DC section: UL60950-1, TUV 60950-1 approved CE marked

Company in brief

International Electric Company (IECO) designs and manufactures state-of-the-art electronics for medical, industrial, laboratory and military applications tailored to meet customer needs.

With over 40 years of experience in power electronics we are able to provide solutions for even the most challenging requirements. IECO's quality system is ISO 9001 and ISO 13485 certified.

Power amplifier technology

IECO introduced its first bipolar gradient amplifier in 1994. This revolutionary PWM amplifier enabled excellent image quality in open MRI systems. Simultaneously IECO also launched the first D-class magnet power supply delivering new efficiency levels with 0.1ppm accuracy. IECO's expertise has recently been utilized in the development of the industry's first High Temperature Superconductive MRI magnets.

IECO's power amplifiers are easily scalable for any type of load and any power level needed. Compact amplifier units can be connected in series or in parallel in Master/Slave operation to gain output voltages up to 1100V and output currents over 2000A. Thanks to low-noise, wide bandwidth and excellent step response, IECO has gained the reputation of a technology leader in bipolar gradient amplifiers.

Over 1000 amplifier and magnet power supply systems delivered worldwide.

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