



- HIGH EFFICIENCY OF >95%
- CONFORMING TO IEC-61000-3-2
- STANDARD “FULL BRICK” PACKAGE
- 1,000W AND 600W VERSIONS
- TYPICAL POWER FACTOR OF 0.99
- THERMAL PROTECTION & INRUSH CURRENT LIMITING
- ENABLE SIGNAL FOR DOWNSTREAM CONVERTERS



FP SERIES - AC/DC

POWER SUPPLY DESIGN EXCELLENCE

The Powerstax FP Series of AC-DC converters are a range of high performance Power Factor Correction bricks. The converters have been developed to provide front-end power conditioning for high input voltage DC-DC modules. Wherever used, these converters are a cost effective alternative to designing power supplies with discrete components.

The FP Series of AC-DC converters incorporate surface mount technology to achieve high power density and reliability. The converters are available with universal input voltage range for worldwide application or high-line (230Vrms) only, with an output voltage of 380V.

The ENABLE output can be used to control the load DC-DC converters. DCOK and VAUX outputs are available to provide monitoring to the system if required.

The modules have inrush current limiting, thermal shut down, output over-voltage and input under-voltage protection. In addition, a SYNC input pin allows the synchronising of units to an external system clock for particularly noise sensitive applications.

STANDARD MODEL	INPUT VOLTAGE	INPUT CURRENT	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT POWER	EFFICIENCY
FP10-230-C38	170-264VAC	4.6A ¹	380VDC	2.63A	1000W	93% ¹
FP06-110-C38	85-264VAC	6.2A ² / 2.9A ¹	380VDC	1.58A	600W	88% ² / 93% ¹

Notes: 1. At nominal 230VAC.
2. At nominal 110VAC.

OTHER HIGH DENSITY PRODUCTS
 F Series DC/DC - 200 to 500W
 F501-385 - High Voltage DC Input
 FAC Series - Integrated AC/DC
 FC Series - Fuel Cell DC/DC



INPUT SPECIFICATIONS	FP06-110-C38	FP10-230-C38
Input Voltage	85-264VAC (300VAC absolute max. <1sec)	170-264VAC (300VAC absolute max. <1sec)
Input Frequency Range	47-63Hz	
Input Current	6.2A @ 110VAC / 2.9A @ 230VAC	4.9A @ 230VAC
Surge Limiting	20A	
Input Protection	External fuse required - 20A normal blow maximum	
Power Factor	0.99	
Harmonic Distortion	EN61000-3-2	
Undervoltage Turn-on/off	85VAC rising / 78VAC falling	170VAC rising / 156VAC falling

OUTPUT SPECIFICATIONS	FP06-110-C38	FP10-230-C38
Voltage Setpoint	380VDC \pm 2% (at full load)	
Output Current	1.58A max. @ 100°C baseplate temp.	2.63A max. @ 100°C baseplate temp.
Line Regulation	370-400VDC (Vin minimum to Vin maximum)	
Load Regulation	370-400VDC (10% load to full load)	
Efficiency (25°C baseplate temp.)	88% @ 110VAC / 93% @ 230VAC	93% @ 230VAC
Temperature Coefficient	>3mV/°C (20°C to 100°C)	
Transient Response	>1.5% Vout nom. (50% load step at 0.1A/ μ s)	
Overvoltage Setpoint	425VDC	
Over Temperature Shutdown	100-110°C, 105°C typ.	
Ripple & Noise	10V max. pk-pk with 1000 μ F load capacitor	15V max. pk-pk with 1000 μ F load capacitor
Vaux Output Voltage	14.5VDC \pm 0.5VDC	
Vaux Output Current	10mA max.	

GENERAL & ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	-20°C to +100°C operating, -40°C to +125°C storage
Humidity	10-90%RH, non-condensing
Cooling	maintain baseplate @ <100°C, see mechanical drawings
Switching Frequency	150kHz
Isolation Capacitance	800pF (input & output/baseplate)
Isolation Resistance	100M Ω (input & output/baseplate)
Isolation Voltage	1500VACrms (input & output/baseplate, basic insulation)
Thermal Resistance	0.1°C/W (baseplate to heatsink with thermal pad)
Pin Soldering Temperature	260°C max. (<5s wave) or 390°C max. (<7s hand)
Pin Material	brass with gold plate
Baseplate Material	aluminium
Weight	<170g



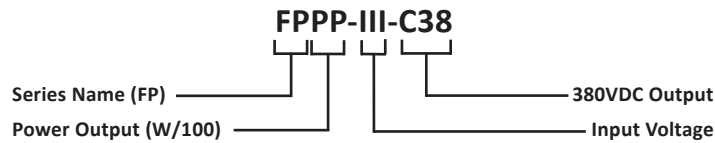
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CONTROL SPECIFICATIONS		min.	typ.	max.
Synchronisation Frequency		165kHz min.		180kHz max.
Enable Threshold	Vout rising Vout falling		360VDC typ. 225VDC typ.	
DCOK Threshold	Vout rising Vout falling		360VDC typ. 350VDC typ.	
SYNC to -Vout	Absolute maximum	-1.2VDC min.		7VDC max.
ENABLE to -Vout	Absolute maximum	-0.3VDC min.		16VDC max.
DCOK to -Vout	Absolute maximum	-0.3VDC min.		16VDC max.
Vaux to -Vout	Absolute maximum	-0.3VDC min.		16VDC max.

SAFETY & EMC SPECIFICATIONS	
Safety Standards	UL/EN/IEC60950-1 2nd Ed. (designed to meet)
Emissions ¹	EN55011, level B (Conducted & Radiated)
Immunity ¹	ESD - EN61000-4-2, Radiated RF - EN61000-4-3, Conducted RF - EN61000-4-6, Fast Transients - EN61000-4-4, Input Surges - EN61000-4-11

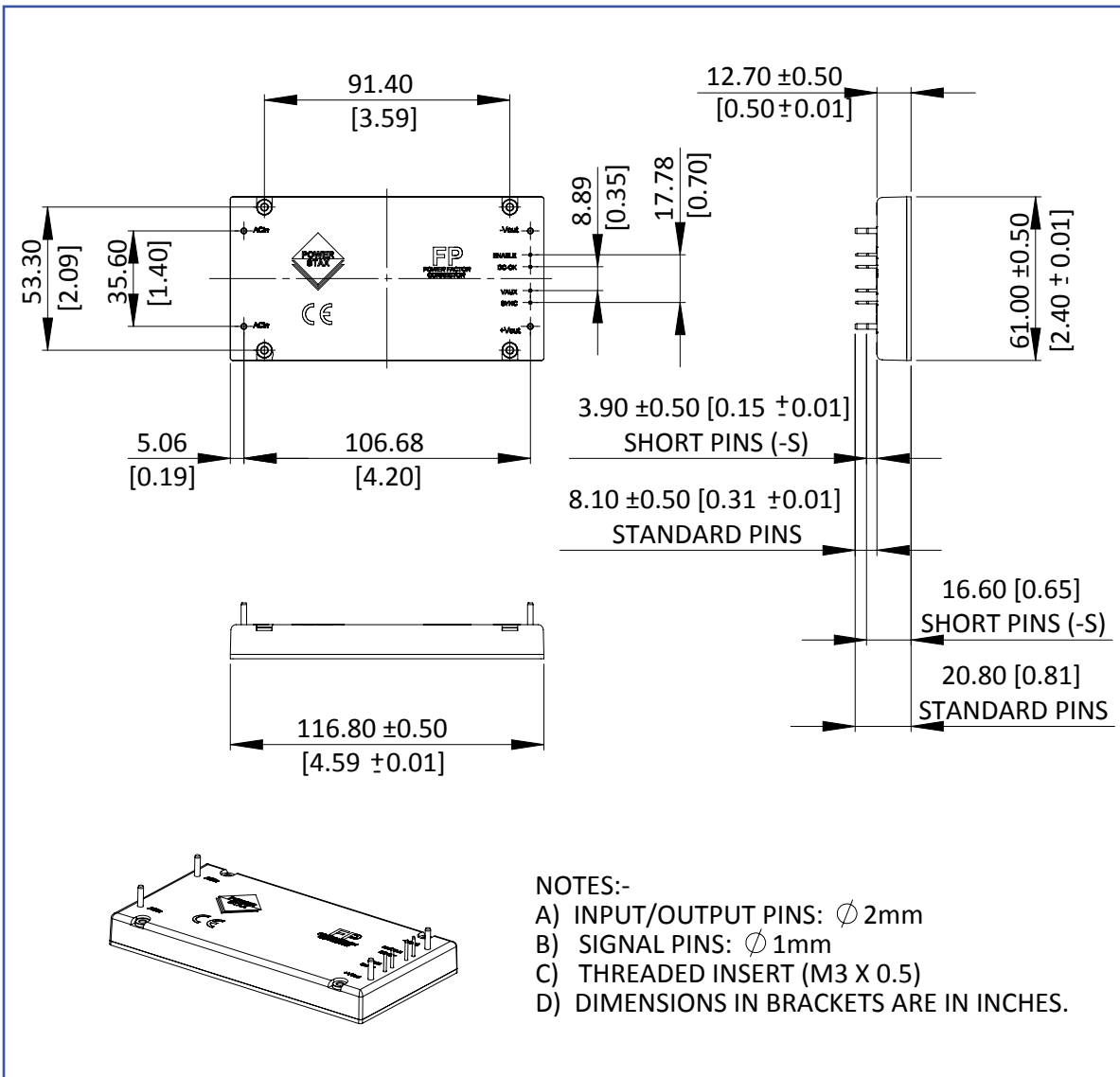
Note 1: Consult factory for details of suitable external filtering.

MODEL NUMBER CONFIGURATION GUIDE





MECHANICALS



FP SERIES - AC/DC

All specifications are typical at nominal line input, full load and 25°C unless otherwise stated.

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