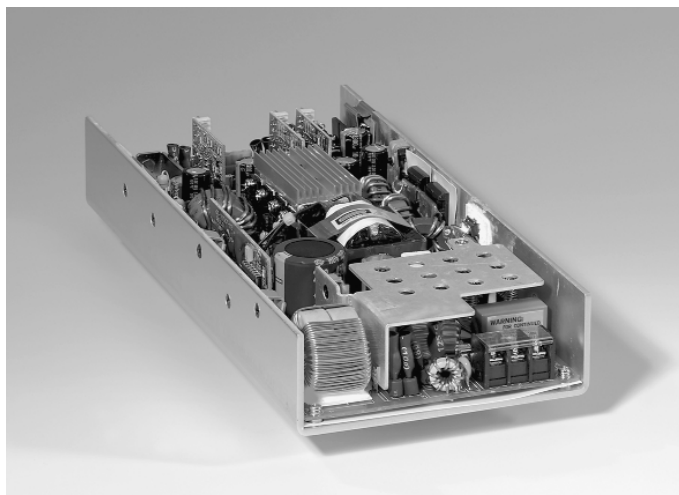


# AC/DC U-Channel

## 400 Watts IFC400 Series

**XPiQ inc.**

Intelligent Design Quality Product



Active PFC - Meets EN61000-3-2, -3

5 Isolated & Regulated Outputs

3 Outputs have Current Sharing  
& Oring Diodes

OVP, OCP, OTP, DC OK & Remote Sense

Dedicated 12 V/250 mA Fan Output

International Safety Approvals

### Specification

#### Input

AC Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
DC Input Voltage	• 170-370 VDC
Power Factor	• 0.98 typical
Inrush Current	• 43 A at 115 VAC, 86 A at 230 VAC
Input Current	• 7.1 A (rms) at 115 VAC, 3.2 A (rms) at 230 VAC

#### Output

Output Voltage	• See Table
Output Power	• 400 Watts
Output Voltage Adjustment	• $\pm 10\%$ on V1, V2 and V3
Minimum Load	• 5 A - V1, 1 A - V2, 0 A - V3, V4 & V5
Line Regulation	• $\pm 0.5\%$ from low line to high line
Load Regulation	• $\pm 2\%$ for V1 and V2, $\pm 3\%$ for V3 $\pm 4\%$ for V4 and V5
Ripple and Noise	• $\pm 2\%$ maximum
Transient Response	• 4% max deviation, 500 $\mu$ s recovery time for a 25% load change
Temperature Coefficient	• 0.04%/ $^{\circ}$ C
Hold up Time	• 12 ms minimum at 115 VAC
Overvoltage Protection	• 112% to 132% for V1 only, recycle input to reset
Overcurrent Protection	• All outputs protected to short circuit conditions
Overtemperature Protection	• Provided
Remote Sense	• V1 - 0.3 V min, V2 - 0.2 V min, V3 - 0.5 V min
Current Share	• Single wire current sharing V1, V2 & V3

#### General

Efficiency	• 70% typical
Power Density	• 4.15 W/in <sup>3</sup>
Leakage Current Maximum	• 0.46 mA at 115 VAC, 0.80 mA at 230 VAC
Switching Frequency	• 94 kHz, $\pm 5$ kHz
MTBF	• 100,000 hrs min to MIL-HDBK-217F
Isolation Voltage	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Signals	• DC OK
Size	• 5.00" x 11.00" x 1.75"
Weight	• 1.7 kgs (3.74 Lbs.) approx.

#### Environmental

Operating Temperature	• 0 $^{\circ}$ C to +70 $^{\circ}$ C with derating
Cooling	• 45.2 CFM required for full power from 0 $^{\circ}$ C to +50 $^{\circ}$ C, derate linearly from 100% load at +50 $^{\circ}$ C to 50% load at +70 $^{\circ}$ C
Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 $^{\circ}$ C to +85 $^{\circ}$ C

#### EMC & Safety

Safety Approvals	• UL1950, CSA C22.2 No 60950, EN60950 CE Mark LVD
EMII/EMC	• EN61000-3-2, -3 EN55022 & FCC 20780 Class B conducted, Class A radiated
Immunity and Surge	• EN55024 (EN61000-4-2, -3, -4, -5, -6, -8, 11)

## OUTPUT VOLTAGE & CURRENT RATINGS

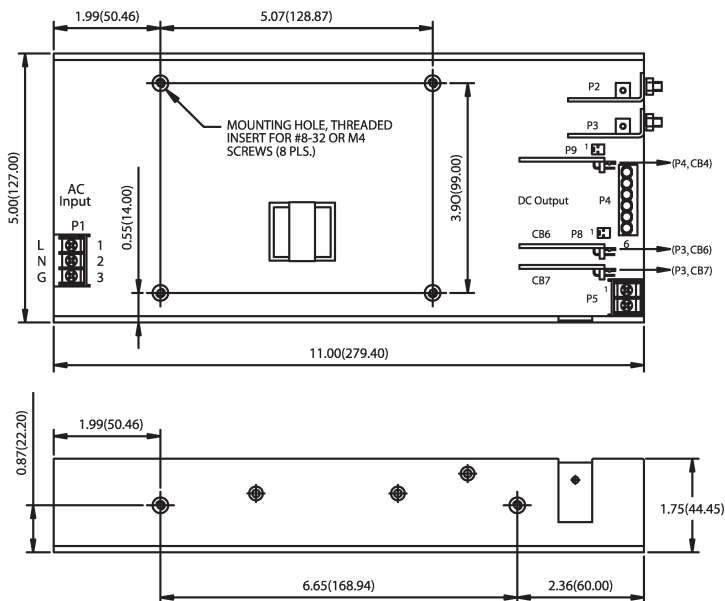
**IFC400**

Output Power Maximum	Output Number	Output Voltage	Output Current	Total Regulation	Model Number
400 W	V1	5.1 V	40 A	2%	IFC400-50B
	V2	3.3 V	20 A	2%	
	V3	12.0 V	9 A	3%	
	V4	12.0 V	6 A	4%	
	V5	5.0 V	6 A	4%	
400 W	V1	5.1 V	40 A	2%	IFC400-51B
	V2	3.3 V	20 A	2%	
	V3	15.0 V	8 A	3%	
	V4	15.0 V	5 A	4%	
	V5	24.0 V	4 A	4%	
400 W	V1	5.1 V	40 A	2%	IFC400-55B
	V2	3.3 V	20 A	2%	
	V3	12.0 V	9 A	3%	
	V4	12.0 V	6 A	4%	
	V5	24.0 V	4 A	4%	
400 W	V1	5.1 V	40 A	2%	IFC400-56B
	V2	3.3 V	20 A	2%	
	V3	15.0 V	8 A	3%	
	V4	15.0 V	5 A	4%	
	V5	5.0 V	6 A	4%	

### Notes

1. All outputs are isolated and have individual return leads. Outputs can be either positive or negative.
2. Outputs V1, V2 and V3 include single wire current sharing and oring diodes.
3. Output V1 requires 5 A minimum load.
4. Output V2 requires 1 A minimum load.
5. Peak current for output V3 is 12 A for 12V or 9.6 A for 15 V.
6. 45.2 CFM forced air cooling is required for 400 W output.

### Mechanical Details



#### Notes:

1. Dimensions shown are in inch (mm).
2. Tolerance is 0.02 (0.5) maximum.
3. P1 input connector is Beau Inc. P/N 72-5-03C, screws are #6-32 on 0.375 inch (9.53 mm) centers.
4. P4 Output connector is Dinkle P/N 166-06P.
5. P8 is for DC fan rated 12V/0.25 A.
6. P8 and P9 Connectors mate with Molex housing 22-01-1023 and Molex 40445 series crimp terminal.
7. Main output studs P2/P3 use M5\*0.8 screws.
8. Weight: 1.70 kgs (3.74 lbs.) approx.

#### DC OK Signal Spec

TTL logic high for normal operation, TTL logic low upon loss of input power.  
 This signal appears at least 1 ms prior to the +5.1 V output dropping 5% below its nominal value.  
 The signal also provides a minimum delay of 100 ms after the +5.1 V output is within regulation.

PIN CONNECTIONS	
CB4 Sub-board (for V1)	
Pin	Function
P4-1	+ Sense
P4-1	- Sense
P4-1	Current Share
CB6 Sub-board (for V3)	
P3-1	+ Sense
P3-2	- Sense
P3-3	Current Share
CB7 Sub-board (for V2)	
P3-1	+ Sense
P3-2	- Sense
P3-3	Current Share

Note:  
 For each Sub-board, Pin 1 is located at the top of the connector.

PIN CONNECTIONS	
P1	
Pin	Function
1	Live
2	Neutral
3	GND
P2	
Pin	Function
1	V1+
P3	
Pin	Function
1	V1 Return
P4	
Pin	Function
1	V5+
2	V5 Return
3	V4+
4	V4 Return
5	V3+
6	V3 Return
P5	
Pin	Function
1	V2+
2	V2 Return
P8	
Pin	Function
1	Fan (+12 V)
2	Fan Return
P9	
Pin	Function
1	Return
2	DC OK

