

## IFC165 Series



- Small Size - 3.0" x 5.0" x 1.25"
- High Power Density
- Active PFC Meets EN61000-3-2, -3
- Single, Dual, Triple & Quad Outputs
- High Efficiency - up to 90%
- Overvoltage and Overcurrent Protection
- Power Fail Detect

## Specification

## Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 2.2 A max at 100 VAC
Inrush Current	• 33 A at 115 VAC, 66 A at 230 VAC
Power Factor	• 0.90 minimum
Earth Leakage Current	• 0.75 mA max at 240 VAC
Input Protection	• Internal 3.15 A fuse

## Output

Output Voltage	• See table
Output Voltage Trim	• Not user adjustable
Initial Set Accuracy	• $\pm 5\%$ maximum
Minimum Load	• 5 W minimum load required
Start Up Delay	• 1.5 s max at 90 VAC
Start Up Rise Time	• 0.2-20 ms
Hold Up Time	• 22 ms min
Line Regulation	• See table and note 1
Load Regulation	• See table and note 2
Over/Undershoot	• <10% at turn on/off
Transient Response	• 5% max. deviation, recovery to within 1% in 500 $\mu$ s for a 25% load change
Ripple & Noise	• 1% pk-pk or 50 mV, whichever is greater
Overvoltage Protection	• 113-145% Vnom, recycle input to reset
Overtemperature Protection	• Shuts down at 120°C, recycle input to reset
Overcurrent Protection	• 150% max, auto recovery (hiccup mode)
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.04% / °C
Remote Sense	• Compensates for up to 0.5 V drop
Current Share	• IFC165PSXX models only - up to 4 supplies to share within 10%

## General

Efficiency	• 85% typical
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Switching Frequency	• 86 kHz typical
Power Density	• 8.8 W/In <sup>3</sup>
Signals	• Power Good - On = Logic High AC OK - On = Logic Low (PS12, PS24 & PS48 only) Green LED for AC OK (PS12, PS24 & PS48 only)
MTBF	• 200 kHrs per Bellcore

## Environmental

Operating Temperature	• -25 °C to +70 °C, derate linearly from 100% at 50 °C to 50% at 70 °C
Cooling	• 12 CFM airflow required for full power
Operating Humidity	• 85% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 3000 m
Shock	• 15 G pk
Vibration	• 2.4 G, 5 Hz to 500 Hz, 3 axis

## EMC &amp; Safety

Emissions	• EN55022, level A conducted
Harmonic Currents	• EN61000-3-2
Voltage Flicker	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria B
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria B
Surge	• EN61000-4-5, level 3 Perf Criteria B
Dips & Interruptions	• EN61000-4-11. 30% 10 ms, 60% 100 ms, 100% 5000ms, Criteria A, B, B
Safety Approvals	• EN60950, UL60950, CSA950 per cUL

**Models and Ratings**

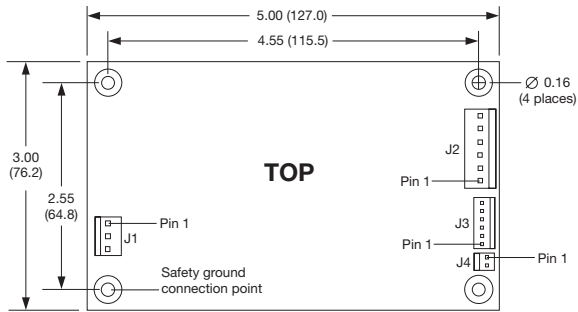
Output 1			Output 2			Output 3			Output 4			Model Number
Vnom	I <sub>max</sub>	Reg <sup>(1)</sup>	Vnom	I <sub>max</sub>	Reg <sup>(1)</sup>	Vnom	I <sub>max</sub>	Reg <sup>(1)</sup>	Vnom	I <sub>max</sub>	Reg <sup>(1)</sup>	
+5.0 V	33.0 A	±3%	+12.0 V	1.0 A	±5%							IFC165PS05
+12.0 V	13.7 A	±3%	+12.0 V	1.0 A	±5%							IFC165PS12
+24.0 V	6.9 A	±3%	+12.0 V	1.0 A	±5%							IFC165PS24
+48.0 V	3.4 A	±3%	+12.0 V	1.0 A	±5%							IFC165PS48
+5.0 V	21.0 A	±4%	+12.0 V	6.0 A	±5%	-12.0 V	1.0 A	±5%				IFC165PT31
+3.3 V	16.0 A	±2%	+5.0 V	20.0 A	±4%	+12.0 V	6.0 A	±5%	-12.0 V	1.0 A	±5%	IFC165PQ40

**Notes**

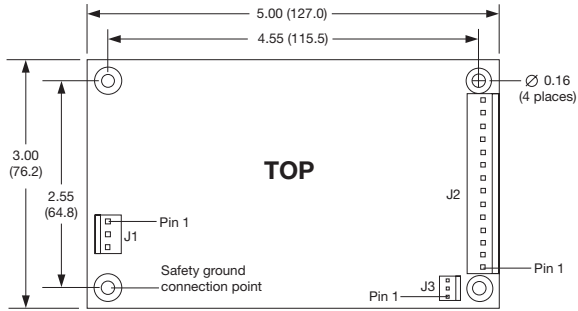
1. Total regulation includes tolerance, line regulation and load regulation. 5 W minimum load on any combination of outputs required to maintain regulation.
2. Maximum output power not to exceed 165 W with 12 CFM forced air or 70 W with convection cooling.
3. For IFC165PT31 and PQ40, the maximum output power of Output 1 and 2 combined is 100W with 12CFM of forced air cooling or 40W with convection cooling.
4. With convection cooling, the -12V output can deliver a maximum output of 0.6A.

**Mechanical Details**

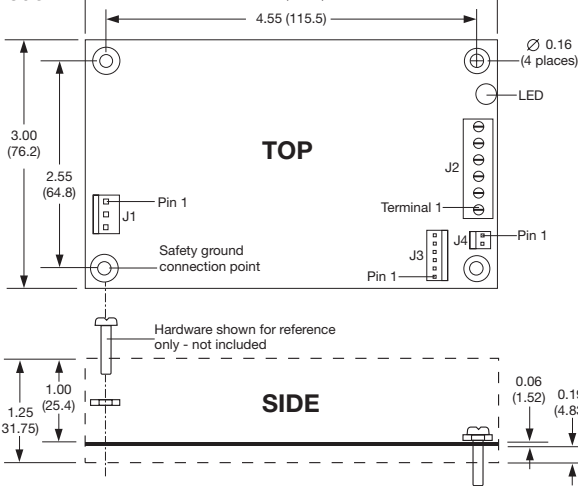
**PS12/24/48 Models**



**PT31/PQ40 Models**



**PS05 Model**



Conn	Pin	Connector Pinouts					
		PS05	PS12	PS24	PS48	PT31	PQ40
J1	1	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
	2						
	3	Line	Line	Line	Line	Line	Line
J2	1	+5 VDC	+12 V	+24 V	+48 V	-12 V	-12 V
	2	+5 VDC	+12 V	+24 V	+48 V	+12 V	+12 V
	3	+5 VDC	+12 V	+24 V	+48 V	N/A	+3.3 V
	4	RTN	RTN	RTN	RTN	N/A	+3.3 V
	5	RTN	RTN	RTN	RTN	N/A	+3.3 V
	6	RTN	RTN	RTN	RTN	RTN	RTN
	7					RTN	RTN
	8					RTN	RTN
	9					RTN	RTN
	10					RTN	RTN
	11					+5 V	+5 V
	12					+5 V	+5 V
	13					+5 V	+5 V
	14					+5 V	+5 V
J3	1	N/C	AC OK	AC OK	AC OK	PG	PG
	2	PS OK	PG	PG	PG	N/A	+3.3 V RS
	3	PG	CS	CS	CS	-R Sense	-R Sense
	4	V1 Sense+	+R Sense	+R Sense	+R Sense		
	5	0V Sense-	-R Sense	-R Sense	-R Sense		
	6	CS	RTN	RTN	RTN		
J4	1	+12 V	+12 V	+12 V	+12 V		
	2	RTN	RTN	RTN	RTN		

		Molex Mating Connectors		
		PS05	PS12, 24, 48	PT31, 40
J1	Housing	09-50-8031	90-50-8033	09-50-8031
	Pins	08-52-0113	08-52-0113	08-52-0113
J2	Housing	Terminal Block	09-50-8143	09-50-8141
	Pins	N/A	08-52-0113	08-52-0113
J3	Housing	22-01-3037	22-01-3037	22-01-3037
	Pins	08-50-0114	08-50-0114	08-50-0114
J4	Housing	22-01-3027	22-01-3027	N/A
	Pins	08-50-0114	08-50-0114	N/A

The maximum width for the screw head is 0.28 (7.1) #6 or M3 screws recommended. 0.25 inch hex or round stand-offs recommended

**Notes**

1. All dimensions in inches (mm).
2. Weight 0.57 lb (260 g) approx.