PerFormanCe POWER PFC375

The PFC375 products of the PerFormanCe Power series incorporate high performance midrange power, active Power Factor Correction (PFC), and high reliability to meet varied commercial and industrial requirements.

Providing tightly regulated DC power in a wide variety of single and multiple output configurations, the PFC375 is designed to provide full output power with only 300 Linear Feet per Minute (LFM) forced-air cooling (factory installed fan optional). Other features include remote sense, power fail, logic level inhibit, and DC power good. Main channel current sharing is provided for redundant applications. The PFC375 is available with SAE mountings or optional metric mountings.

The PFC375 product line is approved to the latest international regulatory standards, and displays the CE Mark.

FEATURES

- Power Factor Correction (PFC) Meets EN61000-3-2
- Fully Regulated Outputs
- Main Output Remote Sense
- Current Share, Power Fail, and Power Good Signals
- Overtemperature, Overvoltage, and Overcurrent Protected
- Available with Metric and SAE Mountings
- Input Transient & ESD Compliance to EN61000-4-2/-3/-4/-5
- Fan Output Voltage and Optional Fan



SINGLE OUTPUT MODEL SELECTION CHART

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
PFC375-1012	12V	10.8V to 13.5V	30A	0.2%	0.8%	1%	11.94V to 12.06V
PFC375-1015	15V	12.0V to 17.0V	25A	0.2%	0.6%	1%	14.94V to 15.06V
PFC375-1024	24V	21.6V to 26.4V	15A	0.5%	0.8%	1%	23.88V to 24.12V
PFC375-1028	28V	25.2V to 30.8V	13.4A	0.5%	0.9%	0.9%	27.86V to 28.14V
PFC375-1048	48V	46.0V to 56.0V	7.8A	0.5%	1.0%	1%	47.52V to 48.48V

NOTES: 1) Output currents ratings are expressed with 300 LFM forced air.
2) Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.

MULTIPLE OUTPUT MODEL SELECTION CHART - ISOLATED V3 AND V4 CAN BE USED AS POSITIVE OR NEGATIVE OUTPUTS

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT (NOTE 1)	PEAK OUTPUT CURRENT (NOTE 2)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 3)	INITIAL SETTING ACCURACY
PFC375-4000	+5V	4.5V to 5.5V	3.5 - 40A	40A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	12V	11.3V to 12.6V	6A	6A	0.9%	0.9%	1%	11.9V to 12.1V
	5V	Fixed	3A	3A	2%	2%	2.4%	4.9V to 5.1V
PFC375-4001	+5V	4.5V to 5.5V	3.5 - 40A	40A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	12V	11.3V to 12.6V	6A	6A	0.9%	0.9%	1%	11.9V to 12.1V
	12V	11.0V to 16.0V	3A	3A	0.9%	0.9%	1%	11.9V to 12.1V
PFC375-4002	+5V	4.5V to 5.5V	3.5 - 40A	40A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	12V	11.3V to 12.6V	6A	6A	0.9%	0.9%	1%	11.9V to 12.1V
	24V	22.0V to 28.0V	3A	3A	0.5%	0.8%	1%	23.8V to 24.2V
PFC375-4004	+5V	4.5V to 5.5V	3.5 - 40A	40A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	15V	14.2V to 15.8V	4A	4A	0.7%	0.7%	1%	14.9V to 15.1V
	15V	14.2V to 15.8V	4A	4A	0.7%	0.7%	1%	14.9V to 15.1V

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PerFormanCe POWER PFC375

MULTIPLE OUTPUT MODEL SELECTION CHART (CONT.) - ISOLATED V3 AND V4 CAN BE USED AS POSITIVE OR NEGATIVE OUTPUTS

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT (NOTE 1)	PEAK OUTPUT CURRENT (NOTE 2)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 3)	INITIAL SETTING ACCURACY
PFC375-4005 (Note 4)	+5V	4.5V to 5.5V	3.5 - 40A	40A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	24V	22.0V to 28.0V	3A	3A	0.5%	0.8%	1%	23.8V to 24.2V
	24V	22.0V to 28.0V	3A	3A	0.5%	0.8%	1%	23.8V to 24.2V
PFC375-4200	+24V	21.5V to 26.4V	1 - 10A	10A	0.5%	0.8%	1%	23.8V to 24.2V
	+5V	4.5V to 5.5V	10A	16A	0.4%	0.8%	1%	4.98V to 5.02V
	12V	11.4V to 12.6V	4A	4A	0.5%	1%	1%	11.9V to 12.1V
	12V	11.4V to 12.6V	4A	4A	0.5%	1%	1%	11.9V to 12.1V
PFC375-4201	+24V	21.5V to 26.4V	1 - 10A	10A	0.5%	0.8%	1%	23.8V to 24.2V
	+5V	4.5V to 5.5V	10A	16A	0.4%	0.8%	1%	4.98V to 5.02V
	15V	14.2V to 16.0V	4A	4A	0.5%	0.8%	1%	14.9V to 15.1V
	15V	13.7V to 16.0V	4A	4A	0.5%	0.8%	1%	14.9V to 15.1V
PFC375-4500	+5V	4.5V to 5.5V	3.5 - 50A	50A	0.4%	0.8%	1%	4.98V to 5.02V
	+12V	11.3V to 12.6V	10A	16A	0.9%	0.9%	1%	11.9V to 12.1V
	12V	11.3V to 12.6V	6A	6A	0.9%	0.9%	1%	11.9V to 12.1V
	5V	4.5V to 5.5V	3A	3A	2%	0.9%	1%	4.9V to 5.1V

NOTES: 1) Output currents ratings are expressed with 300 LFM forced air.
2) Peak loads up to 450 Watts for 60 seconds or less are acceptable, (10% duty cycle max.). Peak power must not exceed 450 Watts.
3) Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
4) V3 and V4 may be series connected to obtain 48V.

INPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Input Voltage - AC	Continuous input range.		85		264	VAC
Input Frequency	AC Input.		47		63	Hz
Brown Out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.		85			VAC
Hold-Up Time	Over full AC input voltage range at full rated load.		20			mS
Input Current	85 VAC at full rated load.				6	ARMS
Input Protection	Non-user serviceable internally located AC input line fuse, F10A, 250V.					
Inrush Surge Current	Internally limited by thermistor, one cycle, 25°C.	110 VAC			35	APK
		220 VAC			65	
Power Factor	Per EN61000-3-2.		0.98			W/VA
Operating Frequency	Switching frequency of main transformer.			100		kHz

OUTPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full rated load, 110 VAC. Varies with distribution of loads among outputs.	68			%
Minimum Loads	Single output models.	0			
	Multiple output models, 5V main output only.	3.5			Amps
	Multiple output models, 24V main output only.	1			
Ripple and Noise	Full load, 20MHz bandwidth.	See Model Selection Charts			
Output Power	300 LFM forced air cooling required for operation. See optional fan.				
	Continuous power, multiple output models.		375		Watts
	Peak power, all models.			450	
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on.			0	V
Regulation	Varies by output. Total regulation includes: line changes from 85-132 VAC or 170-264 VAC, changes in load starting at 20% load and changing to 100% load.	See Model Selection Charts			
Transient Response	Recovery time, to within 1% of initial set point due to a 50-100% load change, 3% max. deviation. (Main output only on multi-output units).		1		mS
Turn-On Delay	Time required for initial output voltage stabilization.			1	Sec
Turn-On Rise Time	Time required for output voltage to rise from 10% to 90%.		10		mS

PerFormanCe POWER PFC375

INTERFACE SIGNALS AND INTERNAL PROTECTION

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection	Provided on single output units and the main output only of multiple output units.					
		PFC375-30XX, PFC375-40XX, PFC375-45XX	6.0		6.4	
		PFC375-1012	13.5		15.5	
		PFC375-1015	17.0		19.5	
		PFC375-1024	27.0		30.7	V
		PFC375-1028	30.8		35.0	
		PFC375-1048	60.0		70.0	
		PFC375-42XX	27.0		30.7	
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.					
Overtemperature Protection	System shutdown due to excessive internal temperature, automatic reset.					
Remote Sense	Total voltage compensation for cable losses with respect to the main output.				250	mV
Current Share	Accuracy of shared current with up to 6 parallel units.				10	%
Inhibit	TTL compatible logic signal will inhibit outputs by the application of a logic low signal. An open circuit or external TTL high signal allows normal operation.					
Input Power Fail Warning	TTL compatible logic signal. Time before regulation dropout due to loss of input power at 110 VAC.		5			mS
Power Good	TTL compatible signal. Signal is low if main output is greater or less than 10% of nominal.					
Fan Voltage	Provides 170 mA current to user-supplied fan, if fan option is not selected.			12		V

SAFETY, REGULATORY, AND EMI SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. CSA 22.2 NO. 234/950. EN60950 (TÜV).			Approved		
Dielectric Withstand Voltage	Input to output.		2600			VDC
Electromagnetic Interference	FCC CFR title 47 Part 15 Sub-Part B - Conducted. EN55022 / CISPR 22 Conducted.		B B			Class
ESD Susceptibility	Per EN61000-4-2, level 4.		8			kV
Radiated Susceptibility	Per EN61000-4-3, level 3.		10			V/M
EFT/Burst	Per EN61000-4-4, level 4.		±4			kV
Input Transient Protection	Per EN61000-4-5 class 3.	Line to Line Line to Ground	1 2			kV
Insulation Resistance	Input to output.			10		MΩ
Leakage Current	Per EN60950, 264 VAC.				2.0	mA

ENVIRONMENTAL SPECIFICATIONS

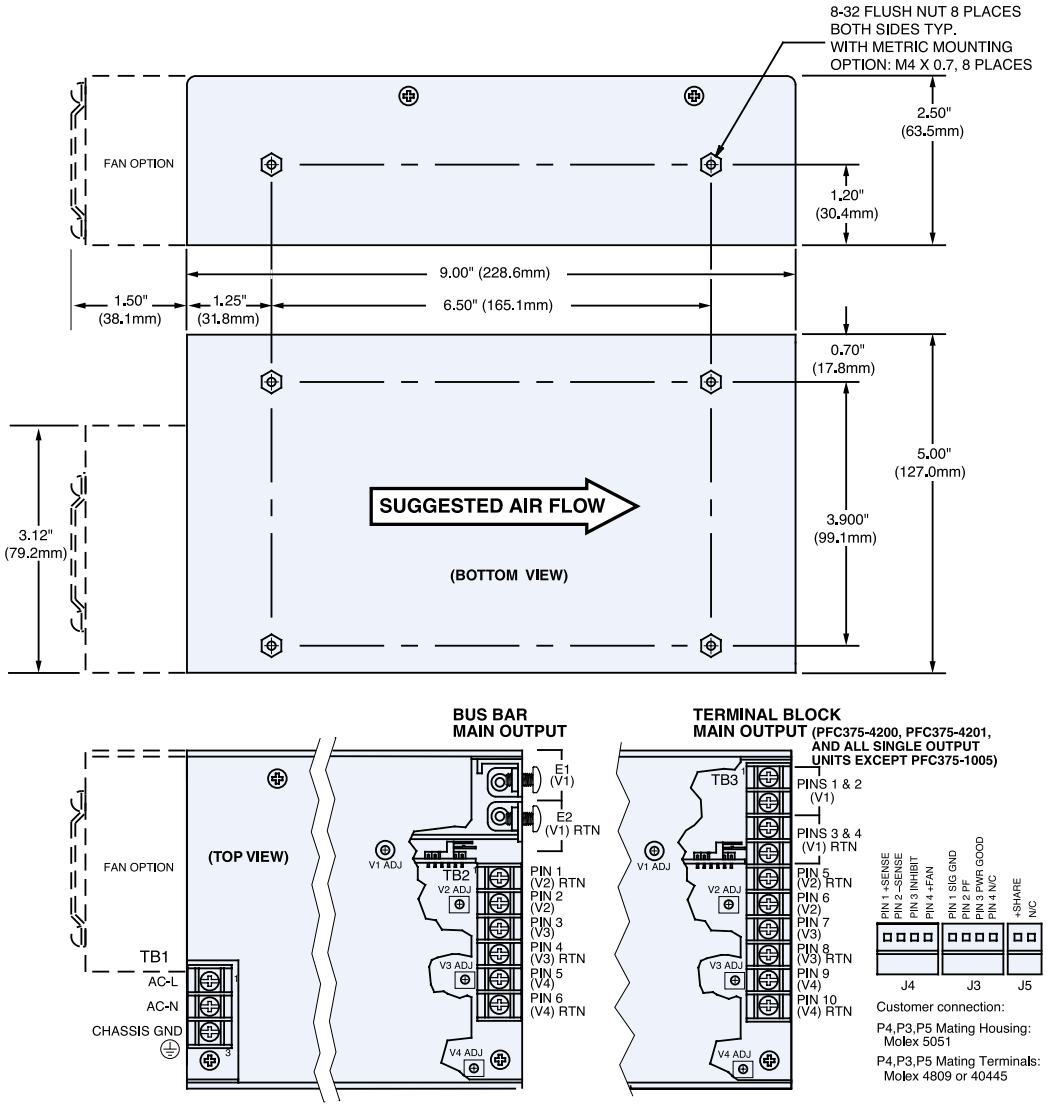
PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Altitude	Operating. Non-Operating.				10k 40k	ASL Ft. ASL Ft.
Operating Temperature		At 100% load	0		50	°C
	Derate linearly above 50°C by 2.5% per °C.	At 50% load	0		70	°C
Storage Temperature			-55		85	°C
Forced Air Cooling	Forced air cooling of 300 LFM is required if the internal fan option is not specified. Cooling air velocity is measured 1/4" above, at the middle of the chassis. Airflow direction is from the input section to the output section.					
Temperature Coefficient	0°C to 70°C (after 15-minute warmup).			±0.02	±0.05	%/°C
Relative Humidity	Non-Condensing.		5		95	%RH
Shock	Operating: 10±3mS, 3 axis, Halfsine. Non-operating: 10±3mS, 3 axis, Halfsine.				20 40	G
Vibration	Operating: 5-32 Hz 32-2000 Hz Sinusoidal Non-operating:				0.02 1 6.15	in (DA) GRMS GRMS

PerFormanCe POWER PFC375

OPTIONS

DESCRIPTION	NOTES	SIZE IMPACT
Fan	Add “F” as a suffix to the model number to order integral fan. (provides required 300 LFM of forced air cooling).	10.50" x 5.00" x 2.50" (266.7mm x 127.0mm x 63.5mm)
Metric Mounting	Add “M” as a suffix to the model number to order chassis with M4 x 0.7 mounting inserts.	9.00" x 5.00" x 2.50" (228.6mm x 127.0mm x 63.5mm)

OVERALL SIZE: 9.00" x 5.00" x 2.50" (228.6mm x 127.0mm x 63.5mm)
OVERALL LENGTH WITH FAN: 10.50" (266.7mm)
WEIGHT: 4.3 LBS (1.95 kg)



INPUT & OUTPUT CONNECTIONS: 6-32 SCREW TERMINAL ON 0.375" (9.5mm) CENTERS
BUS BAR MAIN OUTPUT, E1 & E2, 10-32 SCREW TERMINAL

CHASSIS: 0.090" (2.3mm) ALUMINUM ALLOY, WITH CLEAR FINISH