Wall Industries, Inc.

PSQP100 Series
100 Watt Quad Output
Built-In Active PFC Function
AC/DC Switching Power Supply

FEATURES

- **3 Year Warranty**
- **Low Cost, High Reliability**
- **CH.4: Polarity is Selectable**
- **Cooling by Free Air Convection**
- **Universal AC Input / Full Range**
- **Fixed Switching Frequency at 100KHz**
- **Built-In Active PFC Function, PF > 0.95**
- **Soft-Start Circuit, Limiting AC Surge Current**
- **Short Circuit, Overload, and Over Voltage Protected**



SPECIFICATIONS: *PSQP100 Series*

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

INPUT SPECIFICATIONS	
Input Voltage Range (See Note 6)	90 ~ 264VAC (127 ~ 370VDC)
Input Frequency	47 to 63Hz
AC Current (typical)	1.5A @ 115VAC 0.75A @ 230VAC
Inrush Current (typical)	Cold Start ≤ 40A @ 230VAC
Leakage Current	< 3.5mA @ 240VAC
Power Factor (typical)	PF > 0.95 @ 230VAC PF > 0.98 @ 115VAC and full load
OUTPUT SPECIFICATIONS	
Output Voltage	See Table
Output Power	See Table
Voltage Tolerance (See Note 3)	PSQP1003A: CH.1: ±3.0% CH.2: ±3.0% CH.3: ±6.0% CH.4: ±5.0% PSQP1003B: CH.1: ±3.0% CH.2: +3.0% CH.3: ±6.0% CH.4: ±5.0% PSQP1003C: CH.1: ±3.0% CH.2: ±3.0% CH.3: +8, -6% CH.4: ±5.0% PSQP1003D: CH.1: ±3.0% CH.2: ±3.0% CH.3: ±6.0% CH.4: ±5.0% PSQP100B: CH.1: ±3.0% CH.2: ±6.0% CH.3: +10, -6% CH.4: ±5.0% PSQP100C: CH.1: ±3.0% CH.2: +6, -10% CH.3: ±8.0% CH.4: ±5.0% PSQP100D: CH.1: ±3.0% CH.2: ±3.0% CH.3: ±6.0% CH.4: ±5.0% PSQP100F: CH.1: ±3.0% CH.2: ±3.0% CH.3: ±6.0% CH.4: ±5.0%
Line Regulation (See Note 4)	PSQP100B & PSQP100C: CH.1: ±1.0% CH.2: ±2.0% CH.3: ±2.0% CH.4: ±1.0% Other Models: CH.1: ±1.0% CH.2: ±1.0% CH.3: ±2.0% CH.4: ±1.0%
Load Regulation	PSQP100B: CH.1: ±2.0% CH.2: ±6.0% CH.3: ±6.0% CH.4: ±2.0% Other Models: CH.1: ±2.0% CH.2: ±2.0% CH.3: ±6.0% CH.4: ±2.0%
Voltage Adjustment Range	PSQP1003A, PSQP1003B, PSQP1003C, & PSQP1003D: CH.1: 4.75 ~ 5.5V, CH.2: 3.14 ~ 3.63V PSQP100B & PSQP100C: CH.1: 4.75 ~ 5.5V PSQP100D: CH.1: 4.75 ~ 5.5V, CH.2: 11.4 ~ 13.2V PSQP100F: CH.1: 4.75 ~ 5.5V, CH.2: 14.3 ~ 16.5V
Output Current	See Table
Ripple & Noise (max) (See Note 2)	See Table
Setup, Rise Time	PSQP100B & PSQP100C: 1000ms, 50ms at full load Other Models: 800ms, 50ms @ 230VAC 800ms, 50ms @ 115VAC and full load
Hold Up Time (typical)	24ms @ 230VAC 24ms @ 115VAC and full load
Temperature Coefficient	±0.03%/°C (0 ~ 50°C)
PROTECTION	
Overload Protection	PSQP100B & PSQP100C: 105 ~ 135% rated output power Other Models: 105 ~ 150% rated output power Protection Type: Hiccup mode, recovers automatically after fault condition is removed.
Over Voltage Protection	PSQP1003A, PSQP1003B, PSQP1003C, & PSQP1003D CH.1: 5.75 ~ 6.75VDC CH.2: 3.8 ~ 4.4V PSQP100B & PSQP100C: CH.1 5.75 ~ 6.75V PSQP100D: CH.1 5.75 ~ 6.75V CH.2: 13.8 ~ 16.2V PSQP100F: CH.1 5.75 ~ 6.75V CH.2: 17.25 ~ 20.25V Protection Type: Shutdown output voltage, re-power on to recover.
Over Temperature (Option)	95°C ±5°C (TSW1) Protection Type: Shutdown output voltage, recovers automatically after temperature goes down.
GENERAL SPECIFICATIONS	
Efficiency (typical)	See Table
Switching Frequency	100KHz
Withstand Voltage	3000VAC (Input to Output), 1500VAC (Input to FG), 500VAC (Output to FG)
Isolation Resistance	100MΩ/500DC (Input to Output, Input to FG, and Output to FG)

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SPECIFICATIONS (CONTINUED):	
ENVIRONMENTAL SPECIFICATIONS	
Working Temperature	-10°C to +60°C (refer to output load derating curve)
Storage Temperature	-20°C to +85°C
Working Humidity	20 ~ 90% RH non-condensing
Storage Humidity	10 ~ 95% RH
Cooling	Free air convection
Vibration	10 ~ 500Hz, 2G 10min./1 cycle, 60min each along X, Y, Z axes.
MTBF	139,900 hours min. @ 25°C (MIL-HDBK-217F)
PHYSICAL SPECIFICATIONS	
Weight	730 grams
Dimensions	199(L) x 99(W) x 50(H) mm
Warranty	3 years
SAFETY & EMC (See Note 5)	
Safety Standards	UL60950-1, TUV EN60950-1 Approved
EMI Conduction & Radiation	Compliance to EN55022 (CISPR22) Class B
Harmonic Current	Compliance to EN61000-3-2,-3
EMS Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A

OUTPUT VOLTAGE / CURRENT RATING CHART

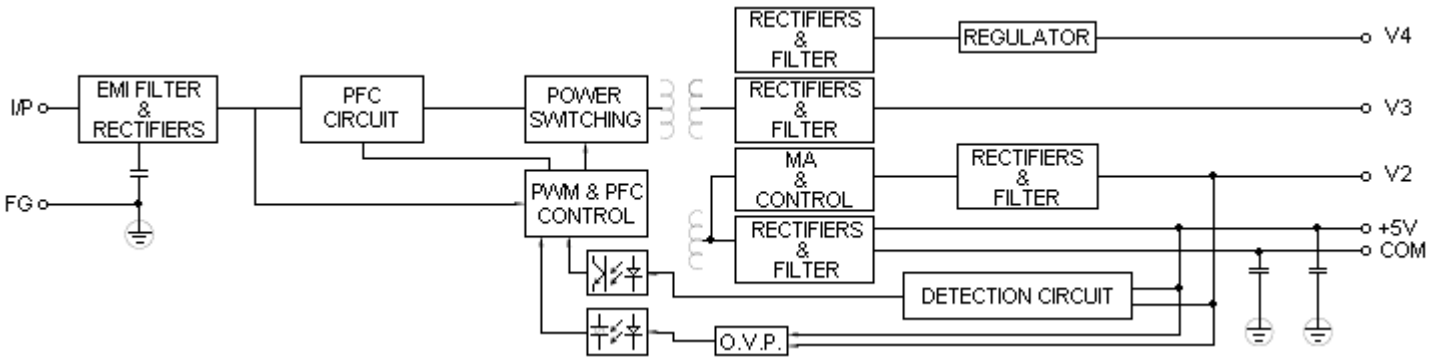
Model Number		Input Voltage	Output Voltage	Rated Output Current	Output Current Range	Ripple & Noise	Rated Output Power	Efficiency
PSQP1003A	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	100mVp-p	99.4W	74%
	CH: 2		3.3 VDC	8A	0 ~ 10A	100mVp-p		
	CH: 3		12 VDC	2.5A	0.3 ~ 3A	150mVp-p		
	CH. 4		-5 VDC	0.6A	0 ~ 1A	150mVp-p		
PSQP1003B	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	100mVp-p	100W	74%
	CH: 2		3.3 VDC	8A	0 ~ 10A	100mVp-p		
	CH: 3		12 VDC	2.2A	0.3 ~ 3A	150mVp-p		
	CH. 4		-12 VDC	0.6A	0 ~ 1A	150mVp-p		
PSQP1003C	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	100mVp-p	100.9W	75%
	CH: 2		3.3 VDC	8A	0 ~ 10A	100mVp-p		
	CH: 3		15 VDC	1.7A	0.3 ~ 2A	150mVp-p		
	CH. 4		-15 VDC	0.6A	0 ~ 1A	150mVp-p		
PSQP1003D	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	100mVp-p	104.8W	75%
	CH: 2		3.3 VDC	8A	0 ~ 10A	100mVp-p		
	CH: 3		24 VDC	1.3A	0.3 ~ 2A	150mVp-p		
	CH. 4		-12 VDC	0.6A	0 ~ 1A	150mVp-p		
PSQP100B	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	10A	2 ~ 10A	100mVp-p	101W	76%
	CH: 2		12 VDC	3A	0.3 ~ 4A	150mVp-p		
	CH: 3		-12 VDC	1A	0.15 ~ 1A	150mVp-p		
	CH. 4		-5 VDC	0.6A	0 ~ 1A	100mVp-p		
PSQP100C	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	10A	2 ~ 10A	100mVp-p	101W	77%
	CH: 2		15 VDC	2.2A	0.3 ~ 3A	150mVp-p		
	CH: 3		-15 VDC	1A	0.15 ~ 1A	150mVp-p		
	CH. 4		-5 VDC	0.6A	0 ~ 1A	100mVp-p		
PSQP100D	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	120mVp-p	100W	78%
	CH: 2		12 VDC	2.4A	0 ~ 3A	150mVp-p		
	CH: 3		24 VDC	1A	0.3 ~ 2A	200mVp-p		
	CH. 4		-12 VDC	0.6A	0 ~ 1A	150mVp-p		
PSQP100F	CH: 1	90 ~ 264VAC (127 ~ 370VDC)	5 VDC	8A	2 ~ 10A	120mVp-p	103W	78%
	CH: 2		15 VDC	2A	0 ~ 3A	180mVp-p		
	CH: 3		24 VDC	1A	0.3 ~ 2A	200mVp-p		
	CH. 4		-15 VDC	0.6A	0 ~ 1A	150mVp-p		

NOTES

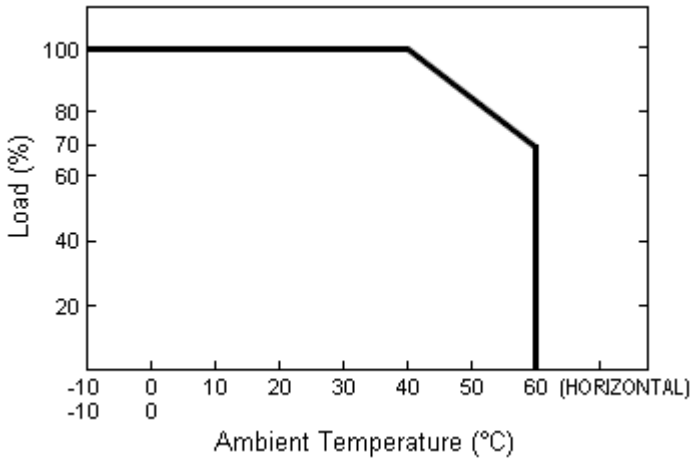
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load, and 25°C ambient temperature.
2. Ripple & noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
3. Tolerances include set up tolerance, line regulation, and load regulation.
4. Line Regulation is measured from low line to high line at rated load.
5. The power supply is considered a component, which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives
6. Derating may be needed under low input voltages. Please check the derating curve for more details.

BLOCK DIAGRAM

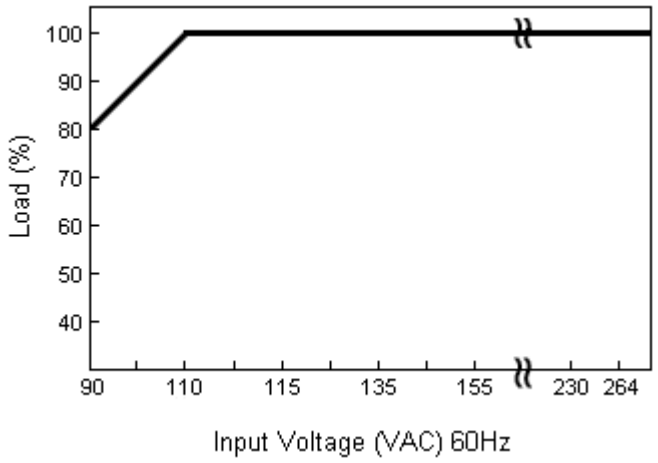
fosc: 100KHz



DERATING CURVE

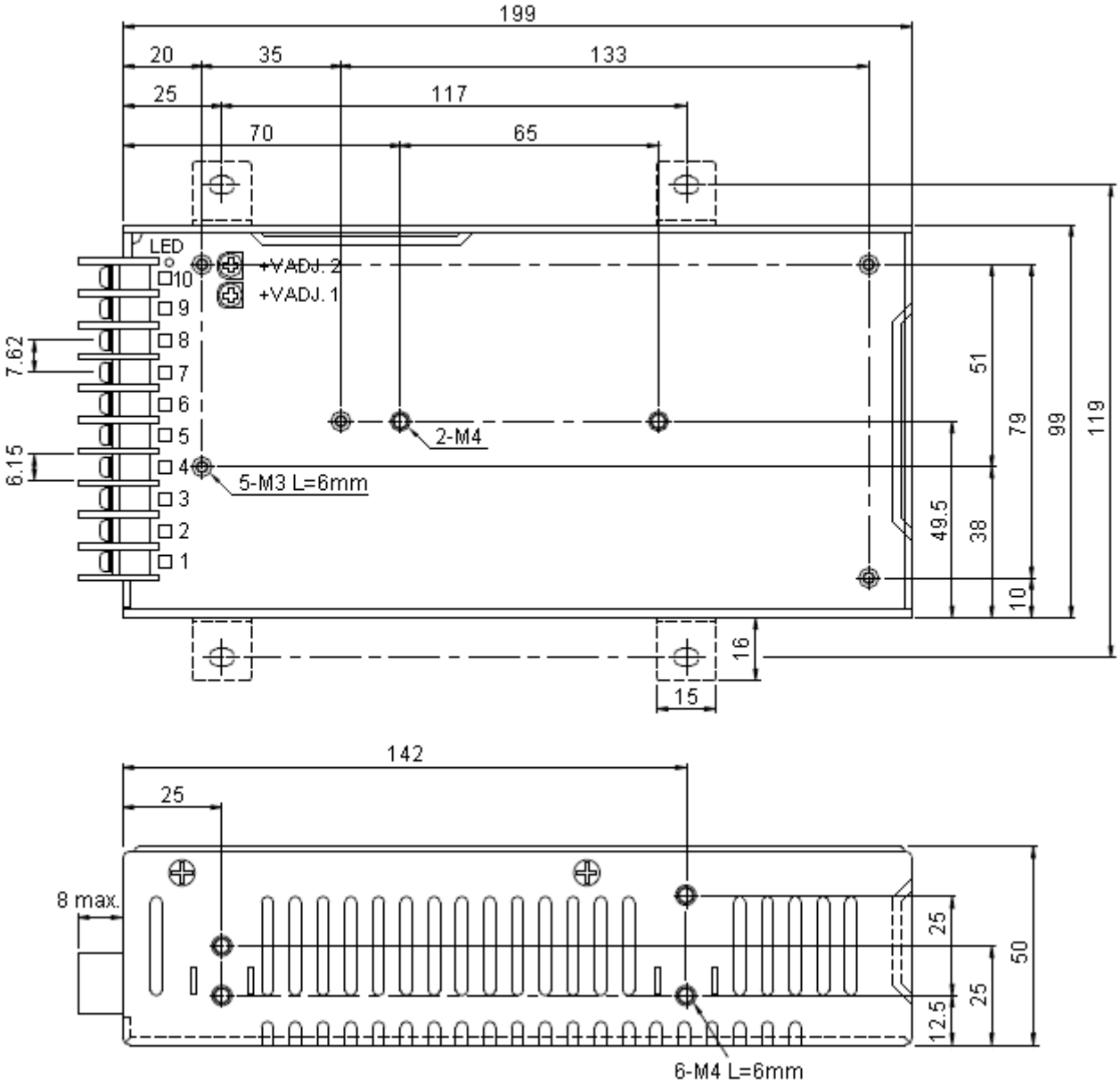


OUTPUT DERATING VS INPUT VOLTAGE



MECHANICAL DRAWING

Unit: mm



Terminal Pin No. Assignment	
Pin No.	**Assignment**
1	AC/L
2	AC/N
3	FG
4	DC OUTPUT V4
5	DC OUTPUT V3
6,7	DC OUTPUT V1
8,9	DC OUTPUT COM
10	DC OUTPUT V2