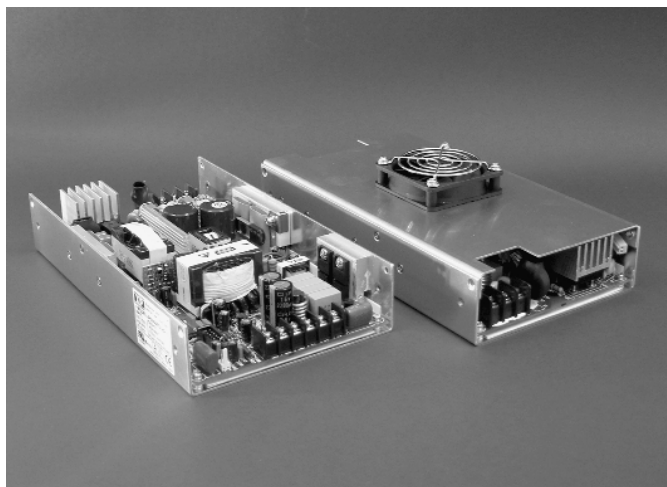


AC-DC Chassis Mount

250 Watts JPS250 Series



THE **XP**ERTS IN POWER

- 200 W with Convection Cooling
- High Efficiency, Up To 90%
- Meets 1U, Low Profile Requirements
- Active PFC
- Zero Voltage Switching Technology
- Remote ON/OFF & Remote Sense
- Current Share

Specification

Input

AC Input Voltage	• 90-264 VAC (170-370 VDC)
Power Factor	• 0.99
Input Frequency	• 47-63 Hz
Inrush Current	• 30 A max at 115 VAC 60 A max at 230 VAC
Input Current	• 2.75 A max at 115 VAC 1.40 A max at 230 VAC
Remote On/Off	• On = Logic LOW or open circuit Off = Logic HIGH

Output

Output Voltage	• 5-48 VDC, See Table
Output Voltage Adjustment	• $\pm 10\%$ on output 1 only
Output Power	• 250 Watts
Minimum Load	• No minimum load required on single output models, 2 A on V1 of multi output models, See Note 4
Line Regulation	• $\pm 0.5\%$
Load Regulation	• $\pm 1\%$ for V1 & V2, $\pm 5\%$ V3 & V4
Initial Set Accuracy	• $\pm 1\%$
Ripple & Noise	• $\pm 1\%$ max (pk-pk)
Transient Response	• 4% max deviation, 500 μ s recovery time for a 25% load change
Temperature Coeff	• $\pm 0.05\%/^{\circ}\text{C}$
Hold Up Time	• 20 ms minimum at low line
Remote Sense	• Compensates for up to 0.5 V drop
Overvoltage Protection	• 115% to 140% on single output models & V1 of quad output models, recycle input to reset
Overcurrent Protection	• 120% to 130% on all outputs, trip & restart
Overtemperature Protection	• Shuts down at $+110^{\circ}\text{C}$ measured internally, auto recovers

Current Share

- Single wire current sharing on V1 & V2 (4 supplies can be paralleled)

Fan Output

- 5 V model 5 V at 390 mA, 24 V model 24 V at 80 mA, others 12 V at 120 mA

General

Efficiency	• Up to 90%
Power Density	• 4.96 W/in ³
MTBF	• 255,000 hrs min to MIL-HDBK-217F
Isolation Voltage	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Size	• 4.2 x 8.0 x 1.5" 106.7 x 203.2 x 38.1 mm
Weight	• 750 g approx
Signals/Control	• AC OK, DC OK, Remote ON/OFF See Application Notes

Environmental

Operating Temperature	• 0°C to $+70^{\circ}\text{C}$ See Derating Curve Full power to $+50^{\circ}\text{C}$
Cooling	• 250 W with 18 CFM airflow 200 W Convection Cooling
Storage Temperature	• -20°C to $+85^{\circ}\text{C}$

EMC & Safety

EMI/EMC	• Meets EN61000-3-2, -3, EN55022 Class B & FCC 20780 Level B conducted
ESD Susceptibility	• EN61000-4-2 Level 3 Perf Criteria A
Radiated Susceptibility	• EN61000-4-3 10 V/m Perf Criteria A
EFT	• EN61000-4-4 Level 3 Perf Criteria A
Surge	• EN61000-4-5 Level 3 Perf Criteria A
Safety Approvals	• UL1950, CSA C22.2 No 234, EN60950, CE Mark LVD

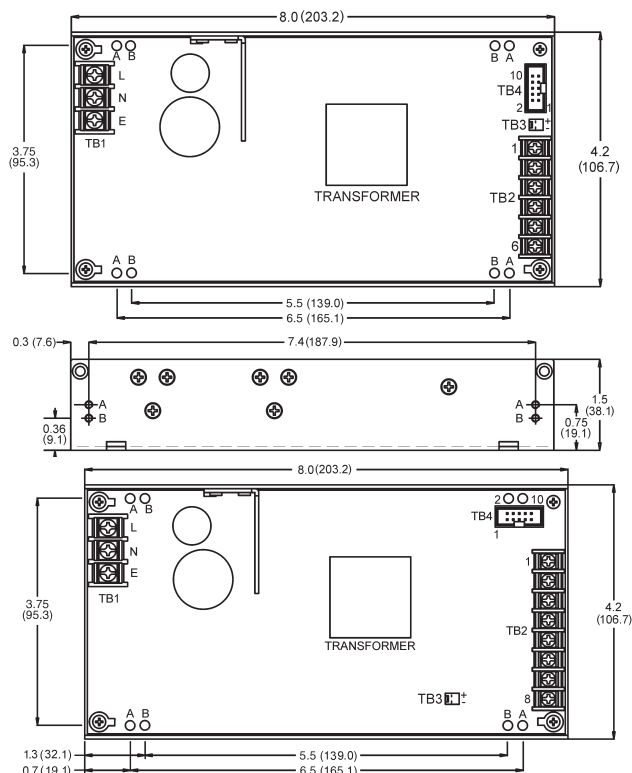
OUTPUT VOLTAGE & CURRENT RATINGS - SINGLE OUTPUT MODELS						JPS250
Maximum Power ⁽¹⁾	Output Voltage	Output Current ⁽¹⁾		Ripple & Noise Pk-Pk ⁽³⁾	Efficiency Typical	Model Number ⁽²⁾
		Convection Cooled	18 CFM			
225 W	5 V	36.0 A	45.0 A	50 mV	83%	JPS250PS05C*
250 W	12 V	17.0 A	21.0 A	120 mV	86%	JPS250PS12C*
250 W	15 V	13.5 A	17.0 A	120 mV	87%	JPS250PS15C*
250 W	24 V	8.5 A	10.4 A	200 mV	88%	JPS250PS24C*
250 W	48 V	4.3 A	5.2 A	200 mV	88%	JPS250PS48C*

Notes

1. Maximum power with 18 CFM forced air, 200 W max with convection cooling.
2. For non-current share version delete suffix 'C' from model number.
3. Measured over 20 MHz bandwidth.

* Also available from Farnell InOne, see pages 350 & 351.

Mechanical Details - Single Output Models



All models (except JPS250PS05)

TB2 CONNECTIONS		
Pin	JPS250PS05	All Other Models
1	+5 V	+ V
2	+5 V	+ V
3	GND	+ V
4	GND	GND
5	GND	GND
6	GND	GND
7	+5 V	N/A
8	+5 V	N/A

JPS250PS05

TB4 CONNECTIONS	
Pin	Functions
1	GND
2	DC OK
3	AC OK
4	Remote ON/OFF
5	+ Sense
6	- Sense
7	Current Share
8	N/C
9	N/C
10	N/C

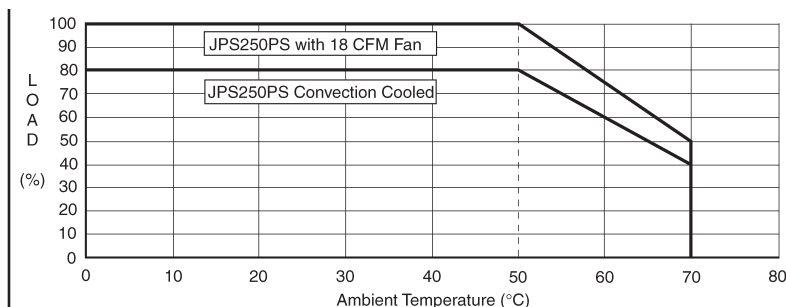
NOTES:

1. Dimensions shown in inches (mm).
2. Tolerance is ± 0.8 mm max.
3. TB3 is for fan, with Molex 5045-02A or equivalent.
4. TB1 (AC input) and TB2 (DC output) are terminal blocks.
5. TB4 signal connector is Molex 70246-10 or equivalent.
6. Maximum mounting screw penetration is 0.16 (4.0)
7. Fan/Cover option available, order part number JPS250F/CVR5* for 5 V models, JPS250F/CVR* for 12, 15 & 48 V models, JPS250F/CVR24* for 24 V models, or alternatively add suffix '-E' to receive cover fitted to the unit.

Fixing Holes:

A = #6-32 Screw Mounting Holes
B = M3 x 0.5 Screw Mounting Holes

Derating Curve & Application Notes - Single Output Models



Application Notes

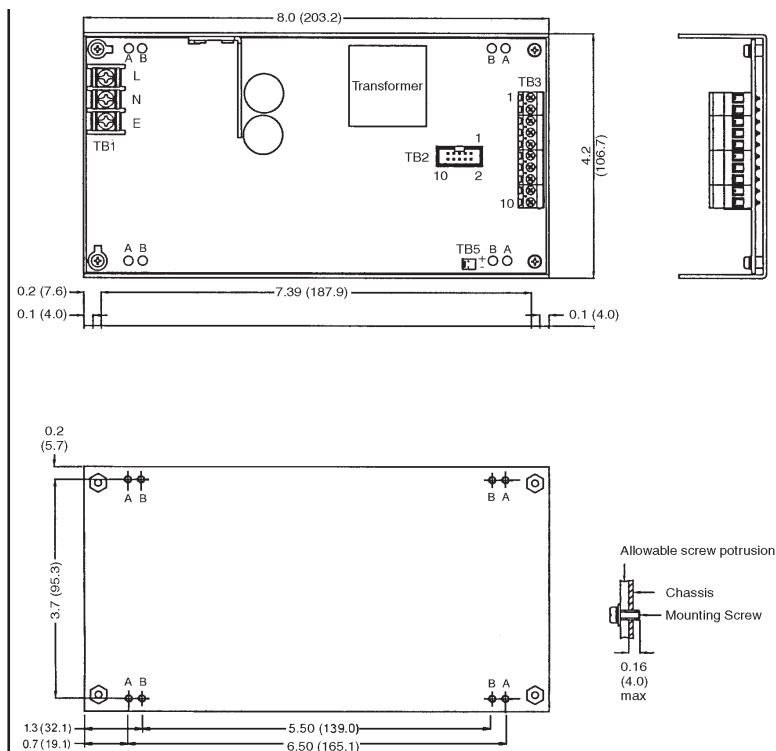
1. To turn off the output, apply 5 V to the remote ON/OFF.
2. AC OK is a TTL signal which goes LOW when input falls below 60 VAC at rated load.
3. DC OK is a TTL signal which goes LOW when PSU is in an overcurrent condition, overvoltage condition, disabled or when output falls out of regulation.
4. For AC OK and DC OK signals, source current is 1 mA, sink current is 6 mA.

OUTPUT VOLTAGE & CURRENT RATINGS - MULTI OUTPUT MODELS												JPS250
Output 1			Output 2			Output 3			Output 4			Model Number
Output V1	Conv. Cooled	Max 18 CFM	Output V2	Conv. Cooled	Max 18 CFM	Output V3	Conv. Cooled	Max 18 CFM	Output V4	Conv. Cooled	Max 18 CFM	
3.3 V	16.0 A	20 A	5 V	12 A	20 A	12 V	5 A	6 A	-12 V	1 A	2 A	JPS250PQ46
5.0 V	17.5 A	30 A	12 V	7 A	8 A	-12 V	2 A	3 A	-5 V	1 A	2 A	JPS250PQ41
5.0 V	20.0 A	25 A	12 V	4 A	6 A	24 V	2 A	3 A	-12 V	1 A	2 A	JPS250PQ47
5.0 V	20.0 A	25 A	15 V	3 A	5 A	24 V	2 A	3 A	-15 V	1 A	2 A	JPS250PQ48

Notes

1. Maximum power with 18 CFM forced air, is 250 Watts, or 200 Watts with convection cooling.
2. For current share option add suffix "C" to part number.
3. Current share models are built to order.
4. All models require 2 A minimum load on V1. On V2, JPS250PQ46 requires 1 A and JPS250PQ41 requires 0.5 A.

Mechanical Details - Multi Output Models



TB2 CONNECTIONS				
Pin	PQ41	PQ46	PQ47	PQ48
1	+5 V +S	+3.3 V +S	+5 V +S	+5 V
2	+5 V PS	N.C	+5 V PS	+5 V
3	+12 V +S	+3.3 V PS	+12 V +S	+15 V
4	DC OK	DC OK	DC OK	DC OK
5	+12 V -S	+5 V +S	+12 V -S	+15 V
6	+5 V -S	+3.3 V -S	+5 V -S	+5 V
7	+12 V PS	+5 V PS	+12 V PS	+15 V PS
8	ROF	ROF	ROF	ROF
9	AC OK	AC OK	AC OK	AC OK
10	GND	GND	GND	GND

TB3 CONNECTIONS				
Pin	PQ41	PQ46	PQ47	PQ48
1	+5 V	+12 V	+5 V	+5
2	+5 V	-12 V	+5 V	+5 V
3	GND	+5 V	GND	GND
4	GND	+5 V	GND	GND
5	GND	GND	GND	GND
6	-5 V	GND	-12 V	-15 V
7	-12 V	GND	+24 V	+24 V
8	+12 V	GND	+12 V	+15 V
9	-	+3.3 V	-	-
10	-	+3.3 V	-	-

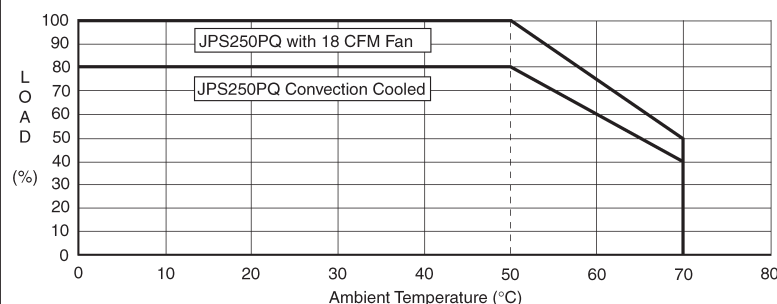
NOTES:

1. Dimensions shown in inches (mm).
2. Tolerance is ± 0.8 mm max.
3. TB5 is for fan, 12 V/100 mA with Molex 5045-02A or equivalent.
4. TB1 (AC input) and TB3 (DC output) are terminal blocks.
5. TB2 signal connector is Molex 70246-10 or equivalent.
6. Maximum mounting screw penetration is 0.16 (4.0).
7. Fan/Cover option available, order part number JPS250F/CVR* for PQ41, 46 & 47, JPS250F/CVR24 for PQ48.

Fixing Holes:

- A = #6-32 Screw Mounting Holes
B = M3 x 0.5 Screw Mounting Holes

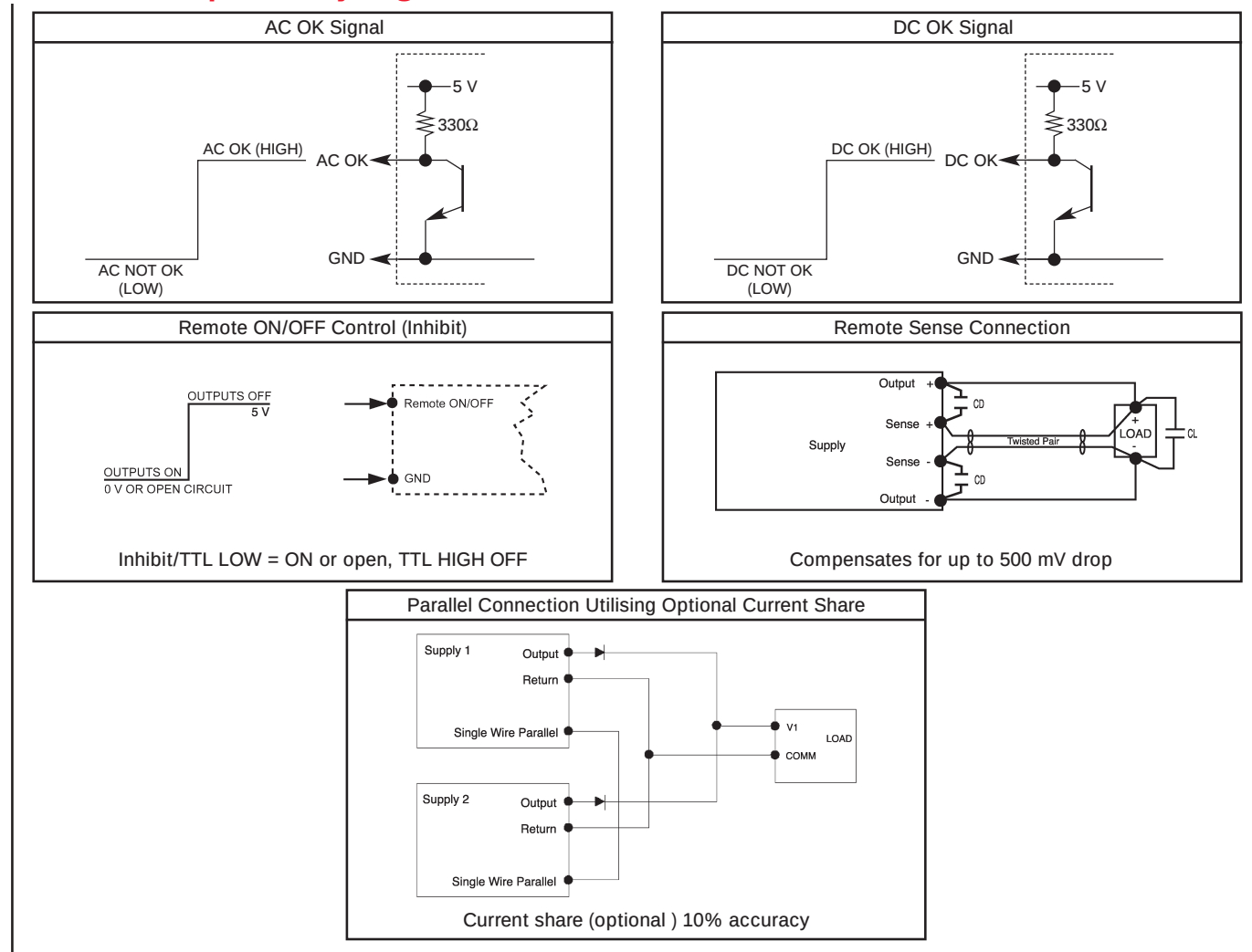
Derating Curve & Application Notes - Multi Output Models



Application Notes

1. To turn off the output, apply 5 V to the remote ON/OFF.
2. AC OK is a TTL signal which goes LOW when input falls below 60 VAC at rated load.
3. DC OK is a TTL signal which goes LOW when PSU is in an overcurrent condition, overvoltage condition, disabled or when output falls out of regulation.
4. For AC OK and DC OK signals, source current is 1 mA, sink current is 6 mA.

Control & Supervisory Signals



JPS250 with Fan/Cover Option

