POWER

DS800SL Series

800 Watts Bulk Front End

Data Sheet

Total Output Power:
800 Watts +5.0 Vdc Standby



RoHS

SPECIAL FEATURES

- 800 W output power
- 19.05 W/cu-in
- 1U X 54.5 mm form factor (slimline)
- N + 1 redundant
- Hot-swap
- Internal OR'ing
- 5.0 V housekeeping
- High efficiency 92% @ 200 Vac, 50% load (Climate Savers Gold)
- Variable speed "smart fans"
- EMI Class B
- Available in two airflow directions

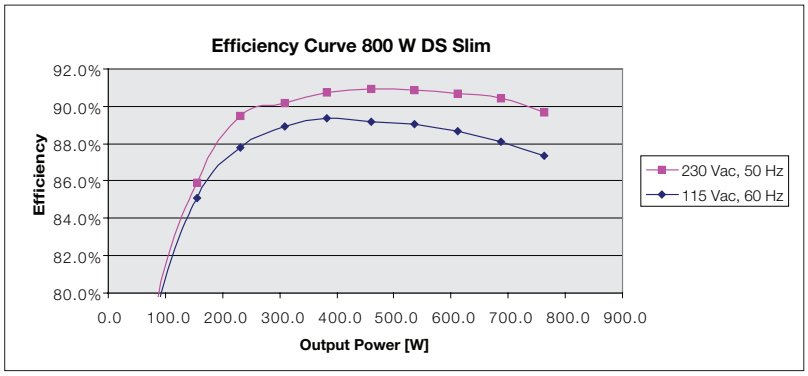
SAFETY

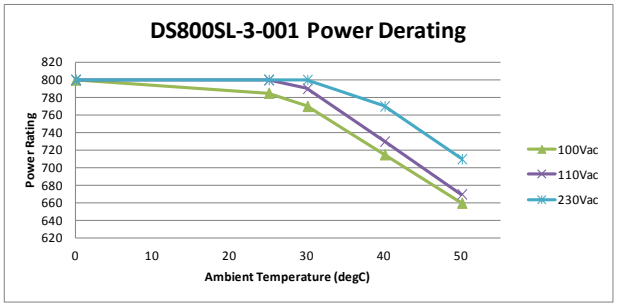
- UL/cUL 60950 -1
- CSA 60950-1
- VDE 60950-1
- China CCC
- CB Scheme Report/Cert

Electrical Specifications

Input		
Input range (operating)	90 - 264 Vac	
Input range (nominal)	115 / 230 Vac	
Frequency	47 - 63 Hz	
Input fusing	Internal 10 A fuse	
Inrush current	≤ 40 A peak	Either hot or cold start
Power factor	0.99 typical	Meets EN61000-3-2
Harmonics	Meets IEC 1000-3-2 requirements	
Input current	10.0 A RMS max input current	At 100 Vac
Holdup time	10 ms minimum for main O/P	At full rated load
Undervoltage lockout	85 ± 3.0 Vac 80 ± 3.0 Vac	Turn-on voltage Turn-off voltage
Overvoltage lockout	N/A	
Leakage current	< 1.0 mA	At 264 Vac
On/Off power switch	N/A	
Power line transient	MOV directly after the fuse	

ARTESYN™
EMBEDDED TECHNOLOGIES

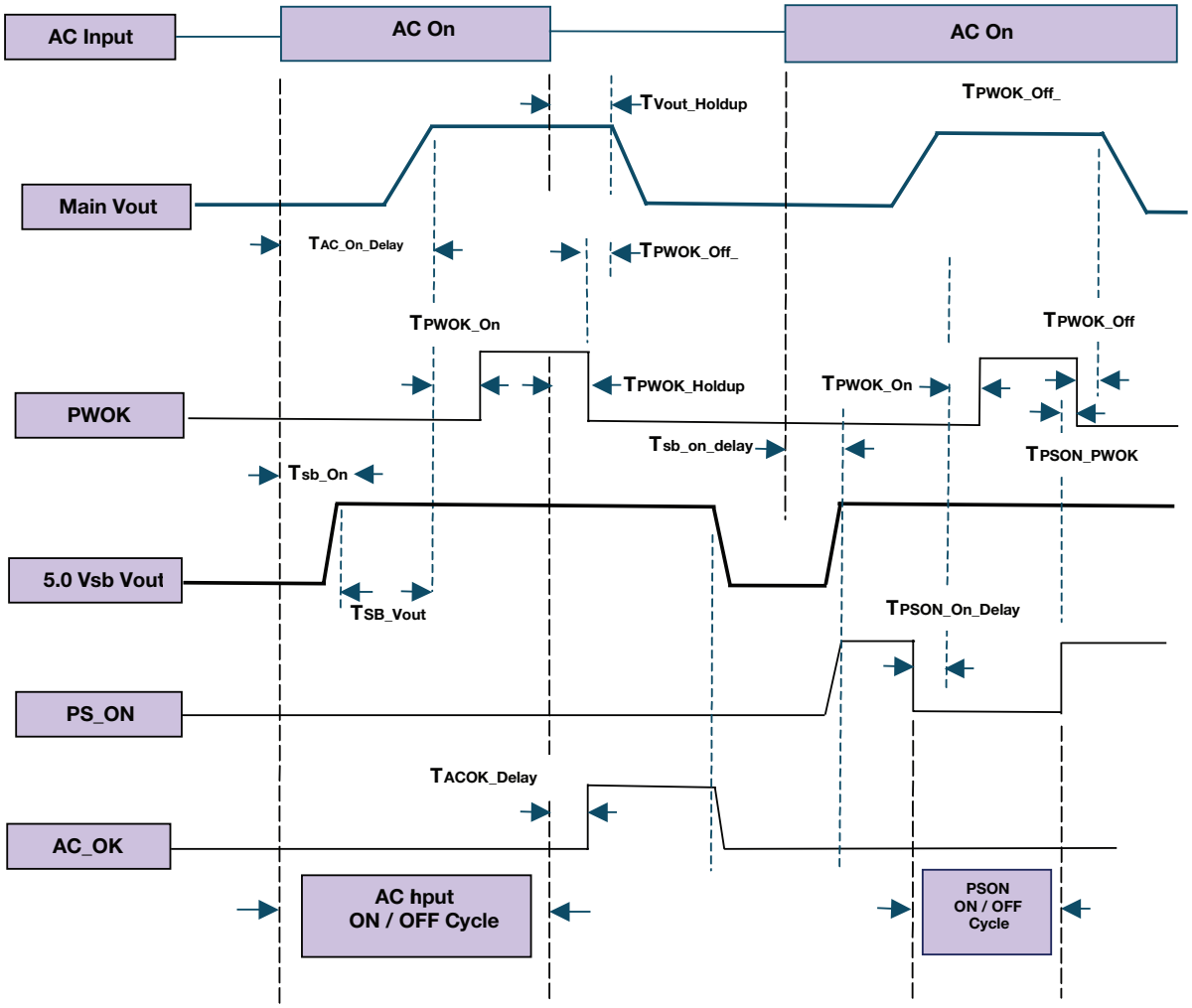




Output		
Output rating	12 V @ 66.7 A; 800 W 5.0 Vsb @ 4 A; 20 W	90 - 264 Vac
Setpoint	12.0 V	
Total regulation range	12 V ± 1% 5.0 Vsb ± 3%	Line/load/transient when measured at output connector
Rated load	800 W maximum	No derating over operating temp range for forward air
Minimum load	12 V @ 0.5 A 5.0 Vsb @ 0.0 A	No load operation shall not damage the power supply
Output noise (PARD)	120 mV Max P-P 100 mV Max P-P	12.0 V output 5.0 Vsb output Measured with a 0.1 uF ceramic and 10 uF tantalum capacitor on any output; 20 Mhz
Output voltage overshoot	600 mV; 12 V main 250 mV; 5.0 standby	1 A/uSec slew rate
Transient response	+/-5% of regulation range	50% load step @ 1 A/us Step load valid between 10% to 100% of output rating Recovery time to within 1% of set point at onset of transient
Max units in parallel	Up to 6	
Short circuit protection	>130% of rated output	Output to return
Remote sense	Compensation up to 100 mV	
Output isolation	Standard per Safety Requirements	
Forced load sharing	To within 10% of all shared outputs	Digital sharing control
Overload protection (OCP)	120% to 130% 120% to 170%	12 V output 5.0 Vsb output
Overvoltage protection (OVP)	110% to 120% 110% to 125%	12 V output 5.0 Vsb output
Overtemperature protection	10 - 15 ˚C above safe operating area	Both PFC and output converter monitored

Outputs - All Models

Timing Diagram



Outputs - All Models

Turn On/Off Timing				
Item	**Description**	**Min**	**Max**	**Units**
Tvout_rise	+12 Output rise time	10	300	mSec
Tvout_rise	5.0 Vsb output rise time	1	50	mSec
Tsb_on_delay	Delay from AC being applied to 5.0 Vsb being within regulation.		1500	mSec
Tac_on_delay	Delay from AC being applied to all output voltages being within regulation.		3000	mSec
Tvout_holdup	Time all output voltages, including 5.0 Vsb, stay within regulation after loss of AC.	10		mSec
Tpwok_holdup	Delay from loss of AC to de-assertion of PWOK.	5		mSec
Tpson_on_delay	Delay from PSON# active to output voltages within regulation limits.	50	2500	mSec
Tpson_pwok	Delay from PSON# de-active to PWOK being de-asserted.		100	mSec
Tacok_delay	Delay from loss of AC input to de-assertion of ACOK#.	10		mSec
Tpwok_on	Delay from output voltages within regulation limits to PWOK asserted at turn on.	100	1000	mSec
Tpwok_off	Delay from PWOK de-asserted to 12 Vdc or 5.0 Vsb dropping out of regulation limits.	1	1000	mSec
Tpwok_low	Duration of PWOK being in the de-asserted state during an off/on cycle using AC or the PSON# signal.	100		mSec
Tsb_vout	Delay from 5.0 Vsb being in regulation to 12 Vdc being in regulation at AC turn on.	50	1000	mSec

PSON

The PSON# signal is required to remotely turn on/off the power supply. PSON# is an active low signal that turns on the +12 Vdc power rail. When this signal is not pulled low by the system, or left open, the +12 Vdc output turns off. The Vsb output remains on. This signal is pulled to a standby voltage by a pull-up resistor internal to the power supply. The power supply fan(s) shall operate at the lowest speed.

PSON Signal Characteristics		
Signal Type	Accepts an open collector/drain input from the system. Pulled-up to the 5.0 Vsb located in power supply.	
PSON# = Low	ON	
PSON# = Open	OFF	
	MIN	MAX
Logic level low (power supply ON)	0 V	0.8 V
Logic level high (power supply OFF)	2.0 V	5.2 V
Source current, Vpson = low		4 mA
Power up delay: Tpson_on_delay	5 msec	200 msec

PWOK# (POWER GOOD)

PWOK is a power good signal and will assert HIGH when the outputs are within the regulation limits. PWOK will be pulled LOW by the power supply to indicate when either output falls below regulation limits or when AC power has been removed for a time sufficiently long so that power supply operation is no longer guaranteed. The start of the PWOK# delay time shall be inhibited as long as the +12 Vdc output is in current limit or the 5.0 Vsb output is below the regulation limit.

PWOK Signal Characteristics		
Signal Type	Open collector/drain output from power supply. Pullup to 5.0 Vsb external to the power supply.	
PWOK = High	Power Good	
PWOK = Low	Power Not Good	
	MIN	MAX
To tLogic level low voltage, Ising = 4 mA	0 V	0.8 V
Logic level high voltage, Isource = 200 µA	2.0 V	5 .2V
Sink current, PWOK = low		4 mA
Source current, PWOK = high		2 mA
PWOK delay: T_{pwok_on}	100 ms	1000 ms
PWOK rise and fall time		100 µsec
Power down delay: T_{pson_off}	1 msec	1000 msec

PSKILL

The +12 Vdc output only from the power supply shall be disabled if the PSKILL input is high and V Standby will continue to be provided, outputs may be enabled if this signal is low. The power supply includes a pull up to disable all outputs if this signal is open. PSKILL whall not be connected during a hot insertion before all of the other pins are connected.

AC INPUT PRESENT INDICATOR (ACOK/L)

The ACOK signal is used to indicate presence of AC input to the power supply. This signal shall be connected to Vsb through a resistor on the host system side. A logic “Low” level on this signal shall indicate AC input to the power supply is present. A Logic “High” on this signal shall indicate a loss of AC input to the power supply.

ACOK# Signal Characteristics		
Signal Type	Pull up to 5.0 Vsb through a resistor in the host system.	
Present = High	Present	
Present = Low	Not Present	
	MIN	MAX
Logic level low voltage, Isink = 4 mA	0 V	0.8 V
Logic level high voltage, Isink = 50 µA	2.0 V	5.2 V
Sink current, PRESENT# = low		4 mA
Sink current, PRESENT# = high		50 µsec

STATUS INDICATIONS

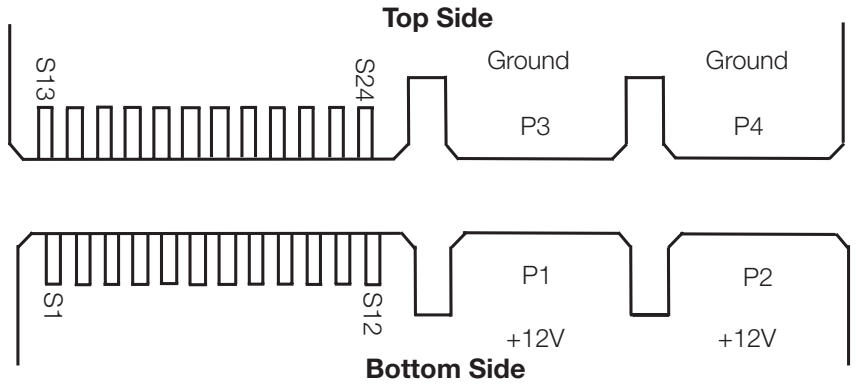
See table below for Summary of Status signals, Ports and Indicators. The condition column assumes 2 or more power supplies present and ON and 5.0 Vsb shared for management interface. On the “Fan Blocked” condition, the assumption is that all outputs are within spec and not over temperature. This would be considered a “warning” condition. On the “Standby” condition, the system differentiates this state by knowing PS_ONL in negated (requesting Standby).

Status Indicators												
Condition	Status Signals		Status Register		Shutdown Register					LED's		
	ACOK/L	PWOK/H	PSON	PWOK	Fan-Fail	AC-Loss	O-Temp	O-Current	Fail	AC	DC	Fail
Normal Operation	0	1	1	1	0	0	0	0	0	On	On	Off
V1 12 V Overcurrent	0	0	1	0	0	0	0	1	1	On	Off	On
AC Input Fail	1	0	1	0	0	1	0	0	1	Off	Off	Off
Fan Blocked or Running Under Speed. O/P's ok	0	1	1	1	0	0	0	0	0	On	On	Off
UV on V1 12 V and PS Has Latched Off	0	0	1	0	0	0	0	0	1	On	Off	On
UV on Vsb +5.0 and PS Has Turned Off	0	0	1	0	0	0	0	0	1	On	Off	On
OV on V1 12V or Vsb +5.0 & PS Has Latched Off	0	0	1	0	0	0	0	0	1	On	Off	On
Over Temp and PS Has Turned Off	0	0	1	0	0	0	1	0	1	On	Off	On
Fan Below Shutdown Limit	0	0	1	0	1	0	0	0	1	On	Off	On
No Problems But PS is in Standby Mode	0	0	0	0	0	0	0	0	0	On	Off	Off

Output Connector and Pin Out Table

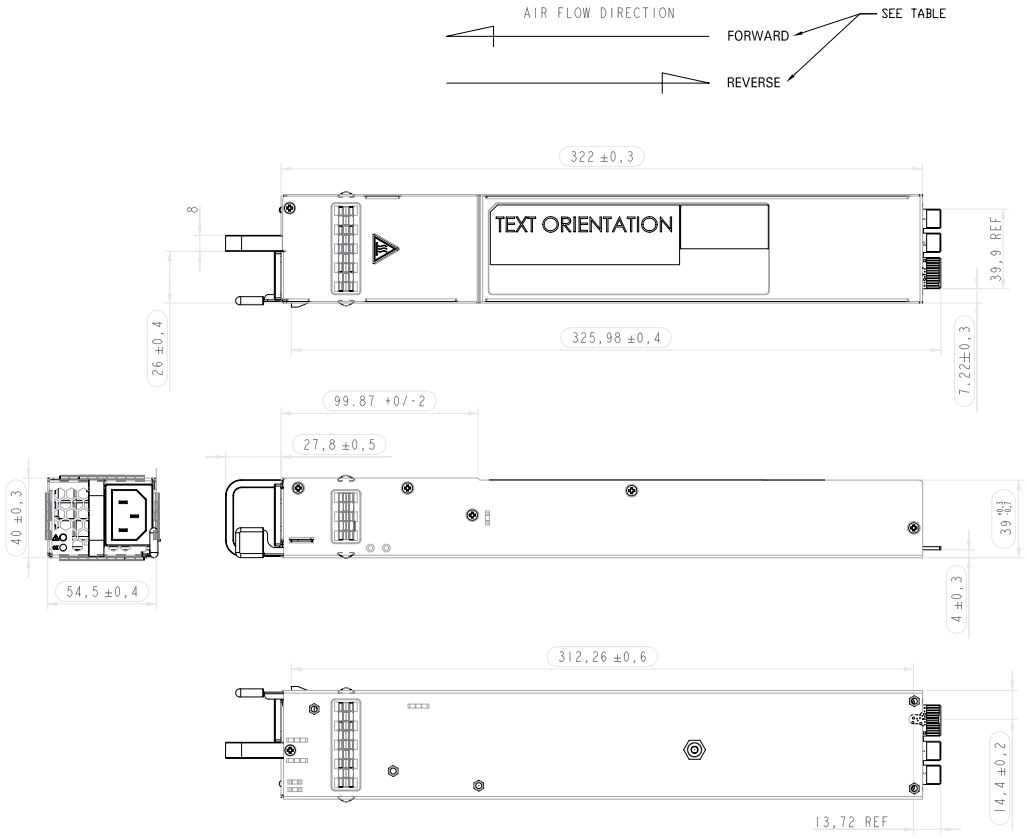
Pin	Signal Name
Pin 1	+12 V
Pin 2	+12 V
Pin 3	Ground
Pin 4	Ground
S1	+12 V Sense
S2	+12 V RTN Sense
S3	+12 V Current Share
S4	SMB_ALERT/L
S5	SDA
S6	SCL*
S7	PSKILL
S8	PSON/L
S9	PW_OK
S10	PS_A1
S11	+5.0 V_STBY
S12	+5.0 V_STBY
S13	Reserved
S14	PRESENT/L
S15	PS_A0
S16	Reserved
S17	Reserved for factory use
S18	EEPROM_WP
S19	ACOK/L
S20	Not used
S21	PS_A2
S22	V_STBY Remote Sense
S23	V_STBY
S24	V_STBY

* Supports I²C standard mode (100 kHz) only



Note: Pin number may not necessarily match vendor’s pin number assignment. Please follow the signal and number assignment as indicated in this datasheet

Mechanical Drawing



BURN-IN

100% Burn-in at 45 ˚C, at 80-90% load. Duration of burn-in determined by Quality Assurance Procedures.

MTBF

The power supply has an MTBF of >400K hours using Telcordia SR-332 at full load, and 25 °C ambient. With the power supply installed in a system in a 25 ˚C ambient environment and operating at full load, capacitor life shall be 5 years, minimum for ALL electrolytic capacitors contained within this power supply. T

QUALITY ASSURANCE

Full QAV testing shall be conducted in accordance with Artesyn Embedded Technologies Standards with reports available upon request.

WARRANTY

Artesyn Embedded Technologies shall warrant the power supply to be free of defects in materials and workmanship for a minimum period of two years from the date of shipment, when operated within specifications. The warranty shall be fully transferable to the end owner of the equipment powered by the supply.

WORLDWIDE OFFICES

Americas
2900 S.Diablo Way
Tempe, AZ 85282
USA
+1 888 412 7832

Europe (UK)
Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
+44 (0) 1384 842 211

Asia (HK)
14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
+852 2176 3333

ARTESYN™
EMBEDDED TECHNOLOGIES

www.artesyn.com

For more information: **www.artesyn.com/power**
For support: **productsupport.ep@artesyn.com**

While every precaution has been taken to ensure accuracy and completeness in this literature, Artesyn Embedded Technologies assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Artesyn Embedded Technologies, Artesyn and the Artesyn Embedded Technologies logo are trademarks and service marks of Artesyn Embedded Technologies, Inc. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners. © 2015 Artesyn Embedded Technologies, Inc.