Wall Industries, Inc.

DATASHEET
Rev. B

PSUP350 SERIES

90~264VAC (127~370VDC) Input
Single Output
Up to 351 Watts
AC/DC Switching Power Supplies

FEATURES

- Single Output
- DC Fan
- Withstand 2G Vibration Test
- RoHS Compliant
- Active AC Surge Current Limiting
- Power OK Signal
- Remote Voltage Sense
- 2 Modes for Remote On/Off Control
- High Efficiency and High Reliability
- High Power Density 6.4w/in^3
- All Using 105°C Long Life Electrolytic Capacitors
- Universal AC Input Voltage Range
- 300W with Free Air Convection
- 350W with 10.5CFM Forced Air
- High Operating Temperature up to 65°C
- Two Different Output Connector Options Available
- Short Circuit, Over Voltage, Over Load, and Over Temperature Protection

DESCRIPTION

The PSUP350 series of AC/DC switching power supplies offers 300W with free air convection and 350W with 10.5CFM forced air. These supplies are housed in a low-profile 9.09 x 4.0 x 1.50 inch U-chassis frame. These supplies have a 90~264VAC (127~370VDC) input voltage range and provide single outputs ranging from 12VDC to 48VDC. Standard features include active power-factor-correction, remote on/off, remote voltage sense, power OK signal, and comprehensive over voltage, short circuit, over load, and over temp. protection. There are two different output connector options available for this series (Type C and Type T). All models are RoHS compliant and have UL/cUL, TUV, CE, and CB approvals.

SPECIFICATIONS: *PSUP350 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 3)*		90 ~ 264VAC (127 ~ 370VDC)
Input Frequency		47 ~ 63Hz
AC Current (typical)		4A @ 115VAC; 2A @ 230VAC
Inrush Current (typical)		22A @ 115VAC; 44A @ 230VAC
Remote Voltage Sense *(see page 6)*		Compensates for wire voltage drop
Remote On/Off *(see page 6)*		2 modes setup for remote on/off
Power Factor (typical)		yes
OUTPUT SPECIFICATIONS		
Output Voltage		See Table
Output Power		See Table
Output Voltage Adjustability		±10%
Voltage Tolerance *(see note 2)*		±2%
Load Regulation		±2%
Line Regulation		±1%
Output Current		See Table
Ripple & Noise *(see note 1)*		150mVp-p
Setup, Rise Time		550ms at full load, 30ms at full load
Hold-Up Time (typical)		16ms @ 230VAC and full load
Temperature Coefficient		±0.03% / °C (0 ~ 50°C)
PROTECTION		
Short Circuit Protection		yes
Over Voltage Protection		115% ~ 150% rated output voltage Protection type: latch-off mode
Over Load Protection		> 105% rated output power Protection type: constant current limiting. For output voltage less than 50% rated DC voltage range the unit will shutdown after 500ms.
Over Temperature Protection		90°C ±5°C with N2; 90°C ±5°C with TH1 sense near D26 heatsink
GENERAL SPECIFICATIONS		
Efficiency		See Table
Withstand Voltage		4242VDC (input to output); 2121VDC (input to FG) for 1 minute
Isolation Resistance		100MΩ @ 500VDC (input to output, input to FG, output to FG)
Leakage Current		< 2mA @ 230VAC
Power OK Signal *(see page 6)*		Open drain. 30VDC / 0.1A max.
ENVIRONMENTAL SPECIFICATIONS		
Working Temperature		-20°C to +65°C (see output load derating curve)
Storage Temperature		-40°C to +85°C
Working Humidity		20% to 90% RH (non-condensing)
Storage Humidity		10% to 95% RH
Vibration		10 ~ 500Hz, 2G 10 min./1cycle, period for 60 min. for each along X, Y, Z axes
Cooling		Free air convection for 300W; 10.5CFM fan for 350W
PHYSICAL SPECIFICATIONS		
Weight, Packing		37.4oz (1060g); 16pcs/12.5kg
Dimensions (L x W x H)		9.09 x 4.0 x 1.50 inches (231 x 101.5 x 38 mm)
Connection *(see note 6)*	C Type Models	Input: 5P / 3.96mm pitch; Output: 9Px2 / 3.96mm pitch
	T Type Models	Input: 5P / 3.96mm pitch; Output: 6P / 9.5mm terminal block with cover
SAFETY & EMC *(see note 4)*		
Safety Standards		UL60950-1, 2nd Edition, TUV EN60950-1: 2006+A11 Approved
EMI Conduction & Radiation		EN55022: 2006 Class B
Harmonic Current		EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005
EMS Immunity		EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2003 light industry level, criteria A

MODEL SELECTION TABLES

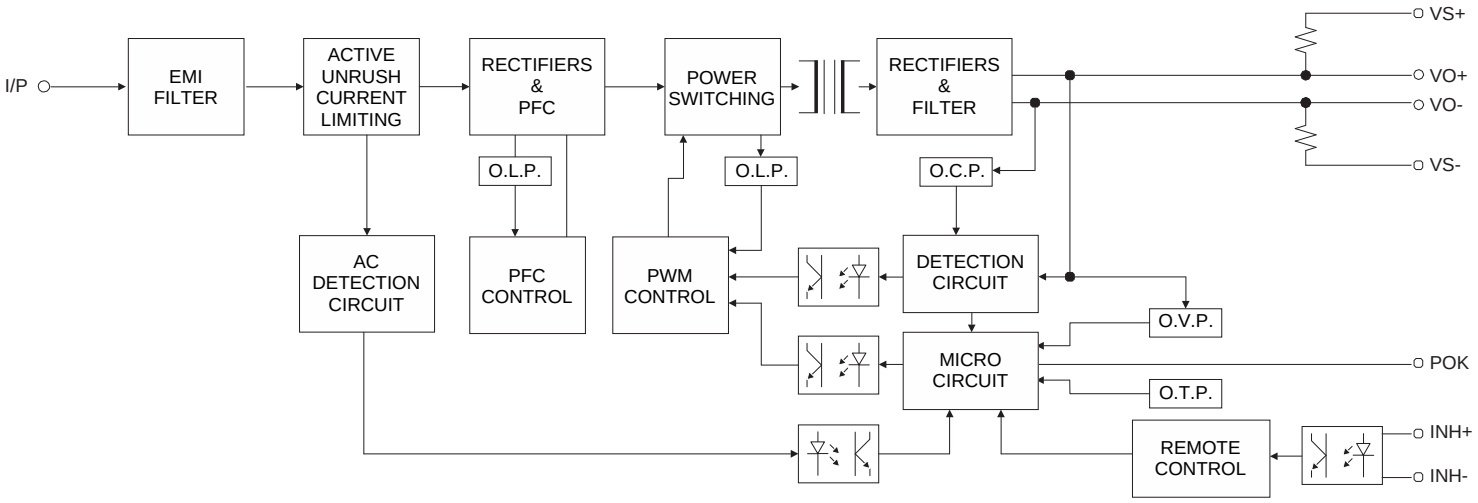
PSUP-350C MODELS							
Model Number	Input Voltage Range	Output Voltage	Output Current		Output Power		Efficiency
			Convection	10.5CFM Fan	Convection	10.5CFM Fan	
PSUP-350-12C	90 ~ 264 VAC (127 ~ 370 VDC)	12 VDC	25 A	29.2 A	300 W	350.4 W	88%
PSUP-350-15C	90 ~ 264 VAC (127 ~ 370 VDC)	15 VDC	20 A	23.4 A	300 W	351 W	89%
PSUP-350-24C	90 ~ 264 VAC (127 ~ 370 VDC)	24 VDC	12.5 A	14.6 A	300 W	350.4 W	89%
PSUP-350-48C	90 ~ 264 VAC (127 ~ 370 VDC)	48 VDC	6.25 A	7.3 A	300 W	350.4 W	90%

PSUP-350T MODELS							
Model Number	Input Voltage Range	Output Voltage	Output Current		Output Power		Efficiency
			Convection	10.5CFM Fan	Convection	10.5CFM Fan	
PSUP-350-12T	90 ~ 264 VAC (127 ~ 370 VDC)	12 VDC	25 A	29.2 A	300 W	350.4 W	88%
PSUP-350-15T	90 ~ 264 VAC (127 ~ 370 VDC)	15 VDC	20 A	23.4 A	300 W	351 W	89%
PSUP-350-24T	90 ~ 264 VAC (127 ~ 370 VDC)	24 VDC	12.5 A	14.6 A	300 W	350.4 W	89%
PSUP-350-48T	90 ~ 264 VAC (127 ~ 370 VDC)	48 VDC	6.25 A	7.3 A	300 W	350.4 W	90%

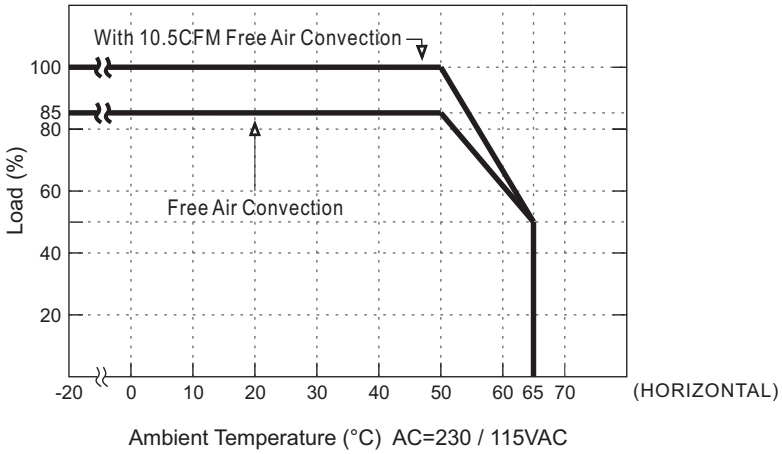
NOTES

1. Ripple & noise is measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF capacitor and a 47μF capacitor in parallel.
2. Tolerance includes set up tolerance, line regulation, and load regulation.
3. Derating may be needed under low input voltages. Please check the derating curve for more details.
4. 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.
5. There are two mechanical options available (Type C or Type T). Please see mechanical drawings on pages 5 and 6 for more details.

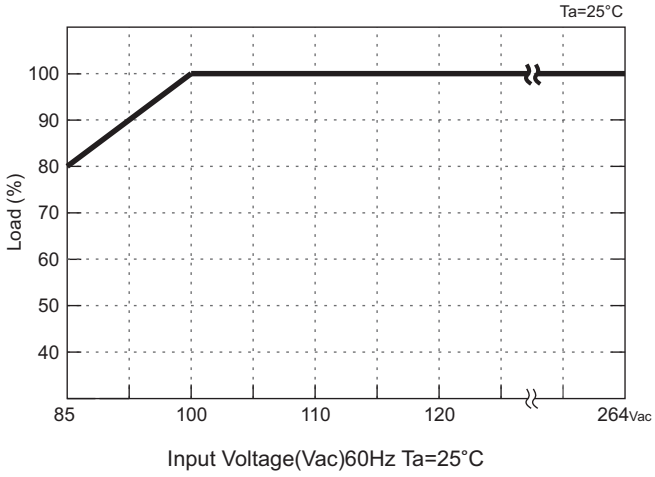
BLOCK DIAGRAM



DERATING CURVE



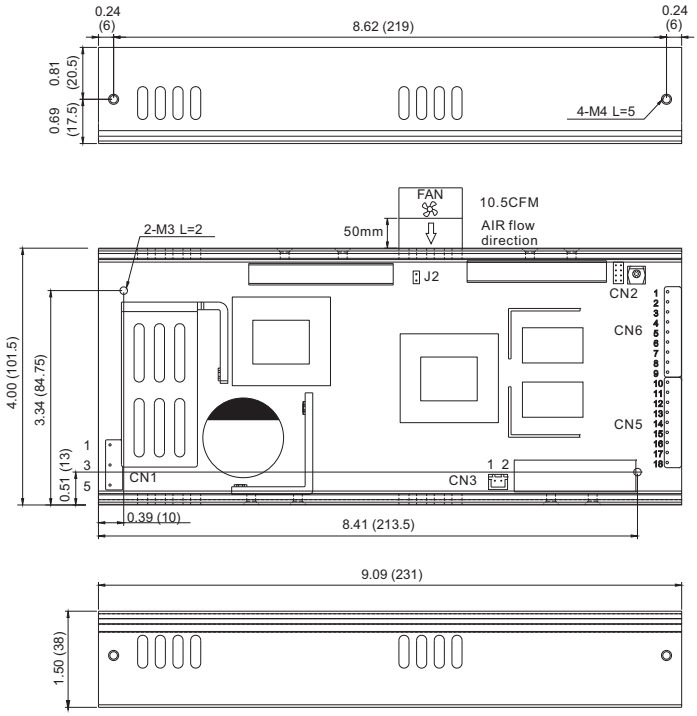
STATIC CHARACTERISTICS



MECHANICAL DRAWINGS

PSUP-350C MODELS

Unit: inches (mm)



AC Input Connector (CN1): JST B5P-VH or Equivalent		
Pin No	Assignment	
1	Ground/Earth	FG
2	NC	NC
3	Neutral	AC/N
4	NC	NC
5	Live	AC/L

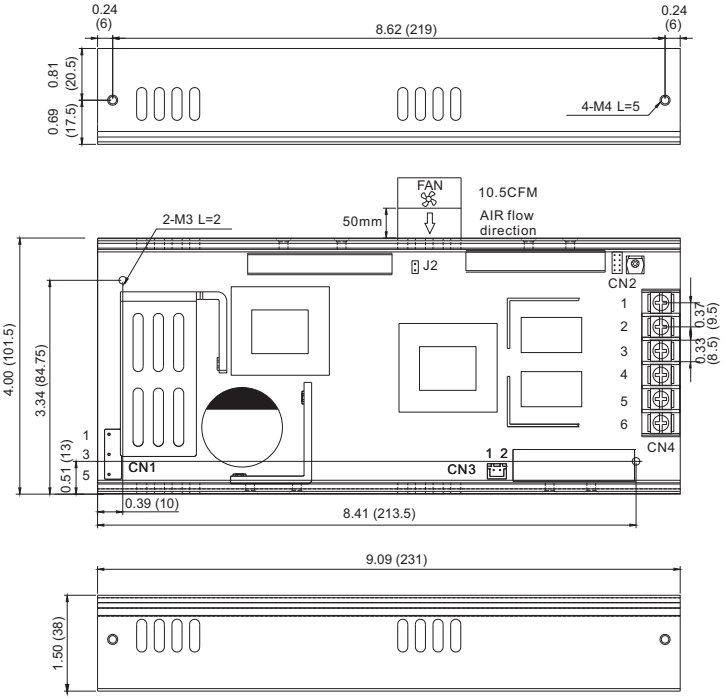
Connector Pin Number Assignment (CN2): JST B8B-PHDSS or Equivalent			
Pin No	Assignment	Mating Housing	Terminal
1	VS +	JST PHD-08VS or equivalent	JST SPHD-002T-P05 or equivalent
2	SGND		
3	INH-		
4	NC		
5	VS-		
6	POK		
7	INH+		
8	VS-		

External FAN Power Connector (CN3)			
Pin No	Assignment	Mating Housing	Terminal
1	SGND	JST XHP-2 or equivalent	JST SXH-001T-0.6 or equivalent
2	12V+		

DC Output Connector (CN5/CN6): JST B9P-VHx2 or Equivalent		
Pin No.	Assignment	
1-9	VO-	Return
10-18	VO+	+Main Output

PSUP-350T MODELS

Unit: inches (mm)



AC Input Connector (CN1): JST B5P-VH or Equivalent		
Pin No	Assignment	
1	Ground/Earth	FG
2	NC	NC
3	Neutral	AC/N
4	NC	NC
5	Live	AC/L

Connector Pin Number Assignment (CN2): JST B8B-PHDSS or Equivalent			
Pin No	Assignment	Mating Housing	Terminal
1	VS +	JST PHD-08VS or equivalent	JST SPHD-002T-P05 or equivalent
2	SGND		
3	INH-		
4	NC		
5	VS-		
6	POK		
7	INH+		
8	VS-		

External FAN Power Connector (CN3)			
Pin No	Assignment	Mating Housing	Terminal
1	SGND	JST XHP-2 or equivalent	JST SXH-001T-0.6 or equivalent
2	12V+		

Remote Sense (CN4) Pitch 9.5mm		
Pin No.	Assignment	
1	VO-	Return
2	VO-	Return
3	VO-	Return
4	VO+	+Main Output
5	VO+	+Main Output
6	VO+	+Main Output

FUNCTION DESCRIPTION OF CN2, J2

1. Remote Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

J2 PIN & CN2 CONNECTIONS		
J2	INH+(7 PIN) / INH-(3 PIN)	OUTPUT STATUS
Open	SW ON (>2.5V)	ENABLE
Open	SW OFF (<0.8V)	DISABLE
Close	SW ON (>2.5V)	DISABLE
Close	SW OFF (<0.8V)	ENABLE

(Default Setting)

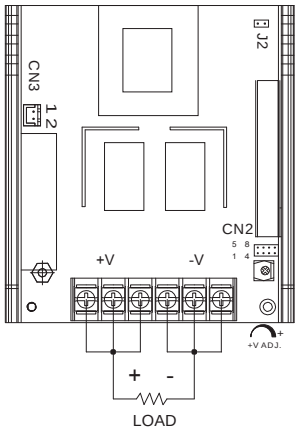
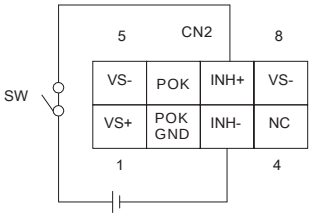


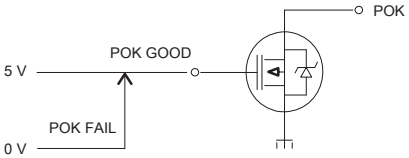
Fig 1.1



External Power Source I=6~20mA

2. POK Control

POK Signal use open drain MOSFET control
Max: 30VDC, 0.1A



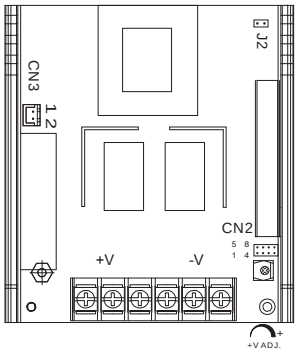
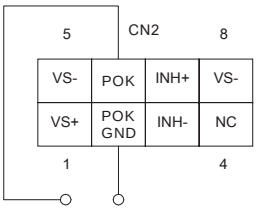


Fig 2.1



3. Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V

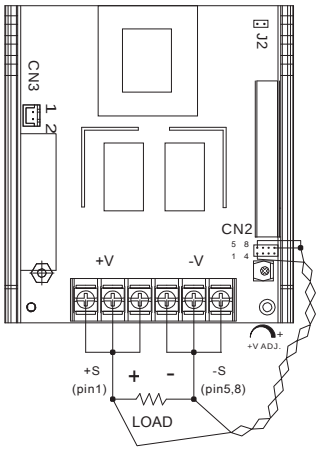
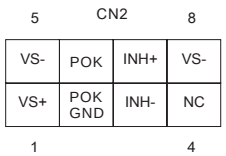


Fig 3.1



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone:	☎(603)778-2300
Toll Free:	☎(888)597-9255
Fax:	☎(603)778-9797
E-mail:	sales@wallindustries.com
Web:	www.wallindustries.com
Address:	5 Watson Brook Rd. Exeter, NH 03833