Size: 4.88in x 2.13in x 4.33in
(124mm x 54mm x 110mm)

FEATURES

- Universal 320-600VAC or 450-850VDC Input Voltage
- Three-Phase Input (Two or Three Phase are Available)
- High Efficiency
- Low Ripple & Noise
- High I/O Isolation Voltage up to 4000VAC
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- 130% Peak Load for 3 Seconds
- DC OK Function
- OVC III (Designed to meet EN62477/2000m)
- UL61010-1, UL61010-2-201, IS13252 (Part1), EN62368-1, and BS EN62368-1 safety Approvals for Standard Models

DESCRIPTION

The PSDF240 series of DIN rail power supplies offers 240 watts of power in a 4.88” x 2.13” x 4.33” package. This series consists of single output models with a universal input voltage range of 320-600VAC or 450-850VDC. Features of this series include high efficiency, low ripple and noise, and protection against output short circuit, over current, over voltage, and over temperature conditions. Standard models also have UL61010-1, UL61010-2-201, IS13252 (Part1), EN62368-1, and BS EN62368-1 safety approvals.

MODEL SELECTION TABLE

Model Number[1]	Input Voltage Range	Output Voltage	Output Current	Output Voltage Adjustable Range[2]	Output Power	Maximum Capacitive Load	Efficiency
PSDF240-24S	320-600VAC (450-850VDC)	24V	10A	24-28V	240W	10000µF	92%
PSDF240-48S		48V	5A	48-55V	240W	5000µF	92%

SPECIFICATIONS

All specifications are based on Ta=25°C, Humidity <75%, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range (Three-Phase Input)	AC Input		320		600	VAC
	DC Input		450		850	VDC
Input Frequency			47		63	Hz
Input Current	400VAC				0.85	A
	500VAC				0.75	
Inrush Current	400VAC	Cold Start		50	60	A
Leakage Current	480VAC			<2mA/rms		
Hot Plug				Unavailable		
OUTPUT SPECIFICATIONS						
Output Voltage				See Table		
Voltage Accuracy	All Load Range			±1.0		%
Line Regulation	Rated Load			±0.5		%
Load Regulation	400VAC			±1.0		%
Output Power				See Table		
Output Current				See Table		
Minimum Load			0			%
Maximum Capacitive Load				See Table		
Ripple & Noise[3]	20MHz bandwidth (Peak-Peak Value)	24V Output		100	150	mV
		48V Output		150	200	
Hold-Up Time	400VAC		10	20		ms
	500VAC		30	40		
Start-Up Time					1.5	s
Stand-By Power Consumption					2	W
DC OK Signal[4]	Resistive Load			30VDC/1A Max.		
Temperature Coefficient				±0.03		%/°C
PROTECTION						
Short Circuit Protection	Enter hiccup mode after constant current operation for 3s (typ.)			Continuous, Self-Recovery		
Over Current Protection	Enters hiccup mode after constant current operation for 3s (typ.), self recovery			≥130		%Io
Over Voltage Protection	Output voltage hiccup, self-recovery	24V		≤36		VDC
		48V		≤65		
Over Temperature Protection	Over Temperature Protection Start				85	°C
	Over Temperature Protection Release		50			

SPECIFICATIONS

All specifications are based on Ta=25°C, Humidity <75% RH, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature			-30		+70	°C
Storage Temperature			-40		+85	°C
Storage Humidity					95	%RH
Altitude					5000	m
Power Derating	+60°C to +70°C		3.0			%/°C
	320VAC - 340VAC	Three-Phase Input	1.0			%/VAC
	550VAC - 600VAC		0.4			
	320VAC - 340VAC	Two-Phase Input (80%Io)	1.0			
	550VAC - 600VAC		0.4			
MTBF	MIL-HDBK-217F @25°C		300,000			H
GENERAL SPECIFICATIONS						
Typ. Efficiency	400VAC		See Table			
Isolation	Electric strength test for 1min. Leakage Current <10mA	Input-Output	4000			VAC
	Electric strength test for 1min. Leakage Current <15mA	Input-⏚	2500			
		Output-⏚	500			
		Output-DC OK	500			
Insulation Resistance	500VDC	Input-Output	100			MΩ
		Input-⏚	100			
		Output-⏚	100			
PHYSICAL SPECIFICATIONS						
Dimensions (L x W x H)			4.88in x 2.13in x 4.33in (124mm x 54mm x 110mm)			
Weight			1.65lbs (0.75kg)			
Cooling			Free Air Convection			
Case Material			Metal (AL1100, SGCC)			
SAFETY CHARACTERISTICS & EMC						
Safety Standards	Standard Model		UL61010-1, UL61010-2-201, IS13252 (Part1) Safety Approved & EN62368-1, BS EN62368-1 (Report); Design Refers to UL/IEC62368-1 & EN61558-1, EN62477			
	With Conformal Coating (“C” Suffix)		UL61010-1, UL61010-2-201, Safety Approved & EN62368-1, BS EN62368-1 (Report); Design Refers to UL/IEC62368-1 & EN61558-1, EN62477			
Safety Class			Class I			
Emissions	CE	CISPR32 EN55032	Class B			
	RE	CISPR32 EN55032	Class B			
	Harmonic Current	IEC/EN61000-3-2	Class A			
	Voltage Flicker	IEC/EN61000-3-3				
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV			Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m			Perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV			Perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to Line ±2KV/Line to Ground ±4KV			Perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s			Perf. Criteria A
	PFMF	IEC/EN61000-4-8	30A/m			Perf. Criteria B
	Voltage Dips, Short Interruptions and Voltage Variations Immunity	IEC/EN61000-4-11	100% dip 1 period, 30% dip 25 periods, 100% interruptions 250 periods			Perf. Criteria B

NOTES

1. Add “C” to model number to indicate product with conformal coating.
2. The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.
3. The “tip and barrel method” is used for ripple and noise test. Ripple & noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. Contact factory for specific information.
4. DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.
5. Room temperature derating of 3.5°C/1000m is needed for operating altitude greater than 2000m.
6. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability.
7. Customization is available, please contact factory.
8. Product customization is available. Please contact factory.
9. The out case needs to be connected to PE (⏚) of system when the terminal equipment is operating.
10. Products classified to ISO14001 and related environmental laws and regulations and should be handled by qualified units.

**Due to advances in technology, specifications subject to change without notice.*

WARNINGS

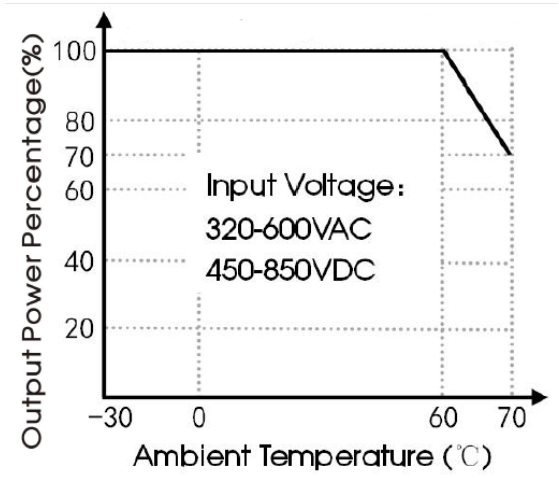
WARNING: Risk of electrical shock, fire, personal injury or death:

1. Do not use the power supply without proper grounding (Protective Earth). Use the terminal on the input block for earth connection and not one of the screws on the housing.
2. Turn power off before working on the device, protect against inadvertent re-powering.
3. Make sure that the wiring is correct by following all local and national codes
4. Do not modify or repair the unit.
5. Do not open the unit as high voltages are present inside.
6. Use caution to prevent any foreign objects from entering the housing.
7. Do not use in wet locations or in areas where moisture or condensation can be expected
8. Do not touch during power-on or immediately after power-off, hot surfaces may cause burns 
9. For ambient temperature ≤60°C, use ≥90°C – copper wire only; for ambient temperature >60°C to 85°C, use ≥105°C – copper wire only; use only wires with a minimum dielectric strength of 300V (input) and 60V (output)

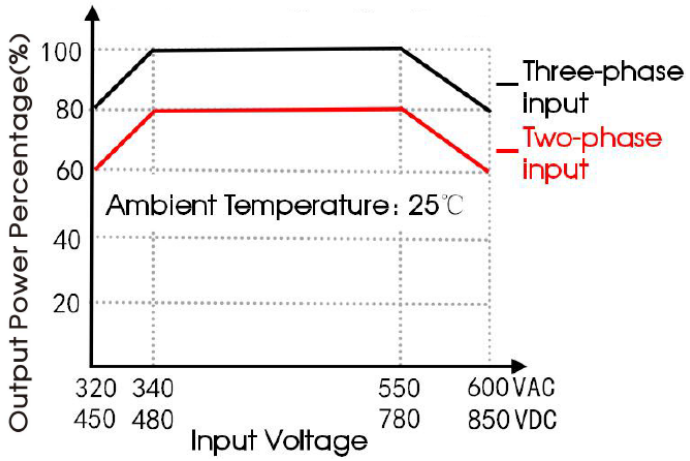
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

Temperature Derating Curve

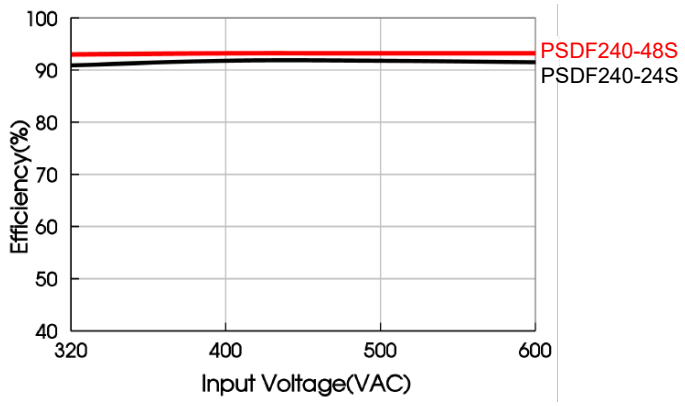


Input Voltage Derating Curve

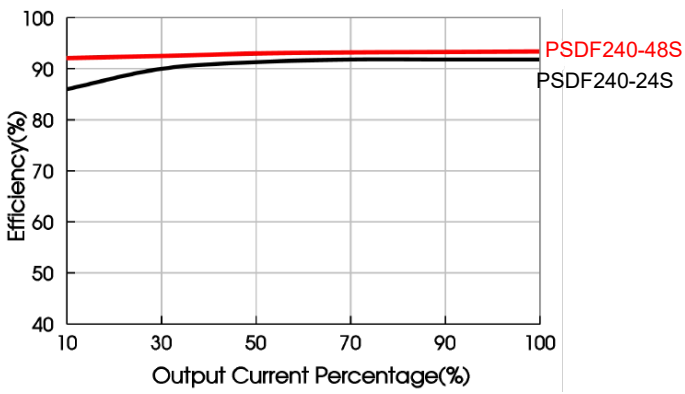


Note:
1. With an AC input voltage between 320-340VAC/550-600VAC and a DC input between 450-480VDC/780-850VDC the output power must be derated as per the temperature derating curves
2. This product is suitable for applications using natural air cooling, for applications in closed environment, please contact factory.

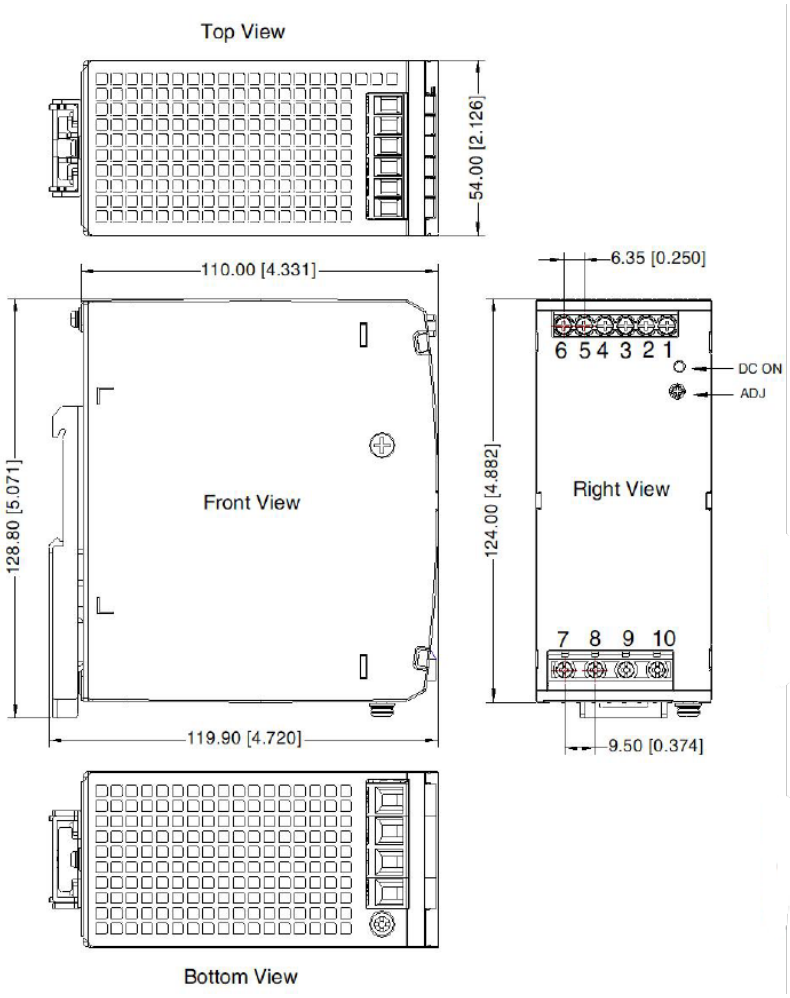
Efficiency vs. Input Voltage (Full Load)



Efficiency vs Output Load (Vin=400VAC)



MECHANICAL DRAWINGS



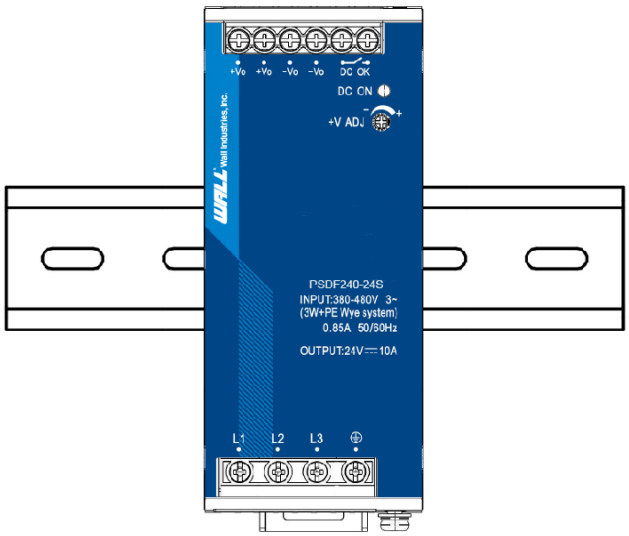
THIRD ANGLE PROJECTION

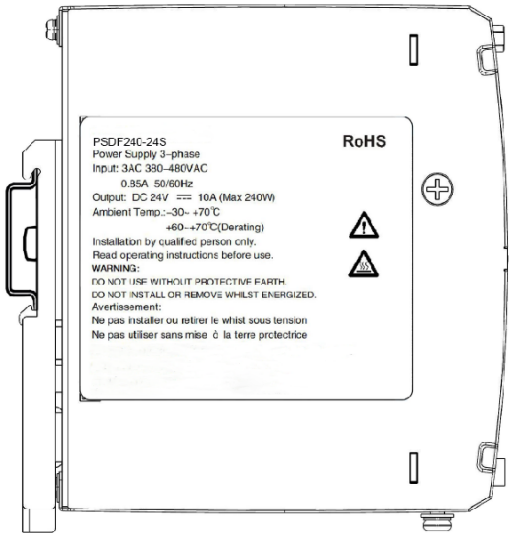
Pin-Out

Pin	Mark
1	DC OK
2	
3	-Vo
4	
5	+Vo
6	
7	AC(L1) or DC+
8	AC(L2) or DC-
9	AC(L3)
10	⏚

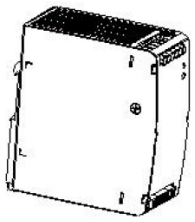
Notes:
Unit: mm [inch]
DC ON: Output status indicator LED
ADJ: Output Adjustable Resistor
Wire Range: Input: 24-10AWG (12-10AWG for pin10)
Output: 24V: 16-10AWG
48V: 18-10AWG
DC OK: 24-16AWG
Input Tightening Torque: Max 1.0N·m
Output Tightening Torque: Max 0.5N·m
Mounting Rail: TS35, rail needs to connect safety ground
General Tolerances: ±1.00 [±0.039]

INSTALLATION DIAGRAM

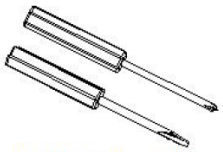




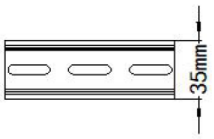
Bill Of Material		
1	Product	1 PCS
2	Phillips screwdriver Slotted screwdriver	1 PCS
3	TS35/7.5 or TS35/15	1 PCS
4	24–10AWG wires	/ PCS
	All above is only for reference, the actual wiring diameter and locking torque refer to the appearance size diagram	



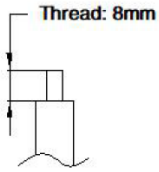
Product



Phillips screwdriver
Slotted screwdriver
Diameter of the cutting tools: 3mm

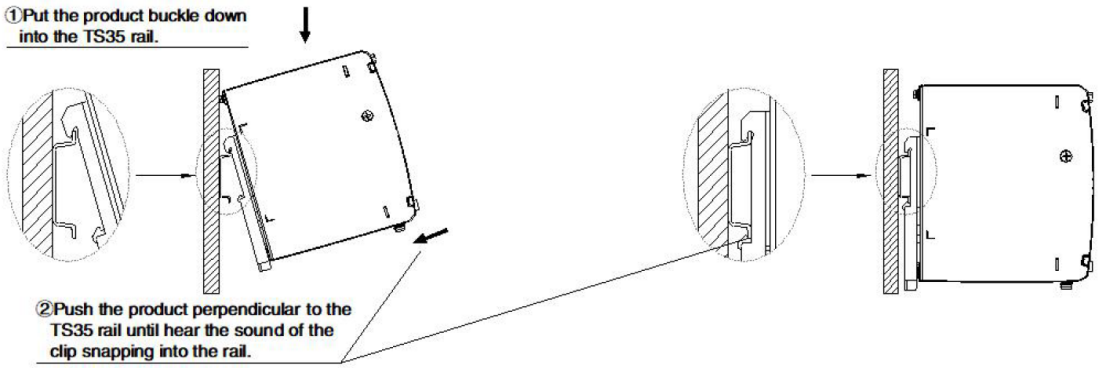


TS35/7.5 or TS35/15

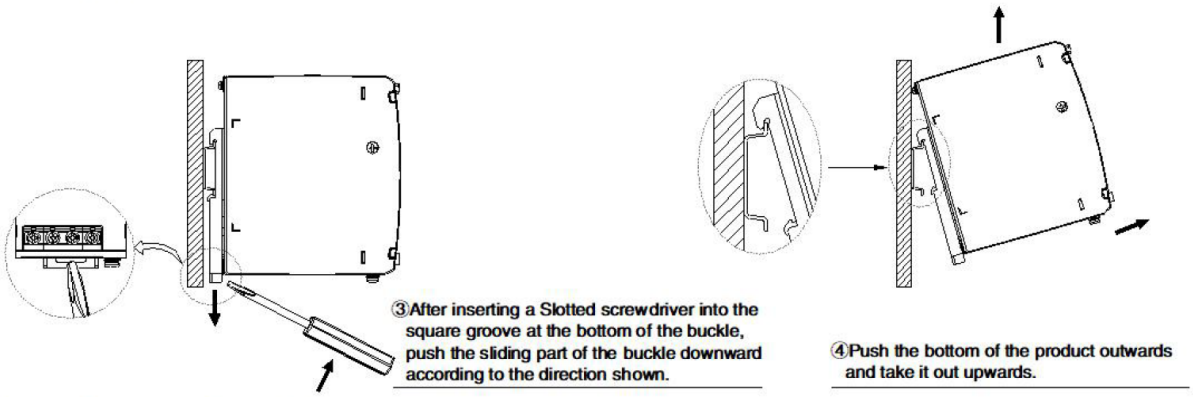


24–10AWG wires

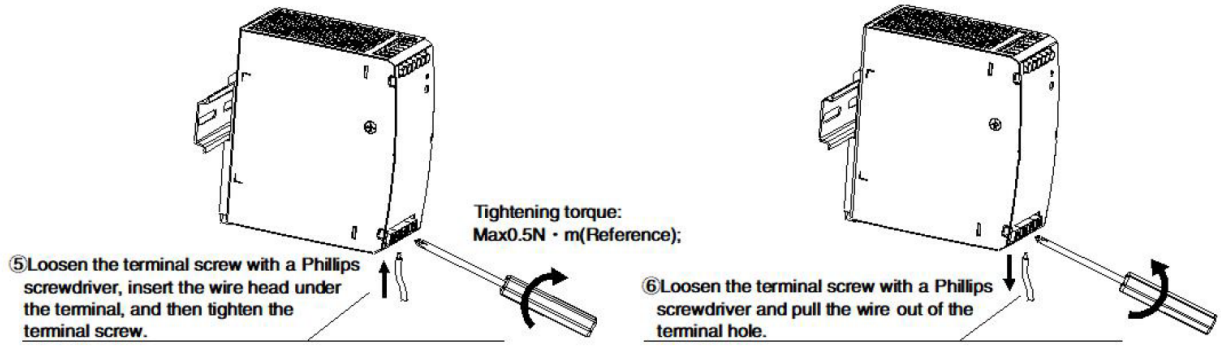
Installation steps ①–②



Disassembly steps ③–④



Connecting/Disconnecting Steps ⑤–⑥



Note: Keep the following installation clearances: 20mm on top, 20mm on bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply.

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: 2015 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.

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