



Industrial Metal Case Single Phase and Three Phase Power Supply

The Altech Industrial metal case power supplies have been optimized for use in practically any DC power applications, with a wide range of AC/DC inputs and an extended temperature range of -20°C up to $+70^{\circ}\text{C}$. These metal case power supplies feature a small housing design and high power reserve. Excellent electrical specifications and high immunity against fluctuations in input voltage make these metal case modules the best choice to industrial automation. Altech's metal case power supplies are available in six single-phase and four three-phase models with 12VDC (75W and 120W), 24 VDC and 48VDC output voltages, and up to 40A output currents. This voltage range enables the Industrial metal case supplies to be used in virtually any single-phase or three-phase application. The Industrial metal case power supply series offers users easy wiring with screw terminal blocks and snap-on DIN-rail mounting. Designed for use in numerous applications around the world, this power supplies are UL and CSA approved, CE marked and ROHS compliant. They feature a rugged metal housing, vibration- and shock-proof construction and provide a cost-effective power delivery solution for basic functionality requirements.

Single Phase Power Supply:

- Input voltage range: 85-264V AC / 120-370V DC
- AC inrush current: Cold start: 20A at 115V AC, 40A at 230V AC
- Overload voltage protection: 105%-160% constant current limiting auto-recovery
- Over-voltage protection: 115%-135% rated output voltage
- Setup, rise, hold up time: 500ms; 70ms; 30ms at full load and 230V AC
- Working temperature: -20 to $+50^{\circ}\text{C}$ (-4 to $+122^{\circ}\text{F}$) at 100%
 $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$) at 80% load

Three Phase Power Supply:

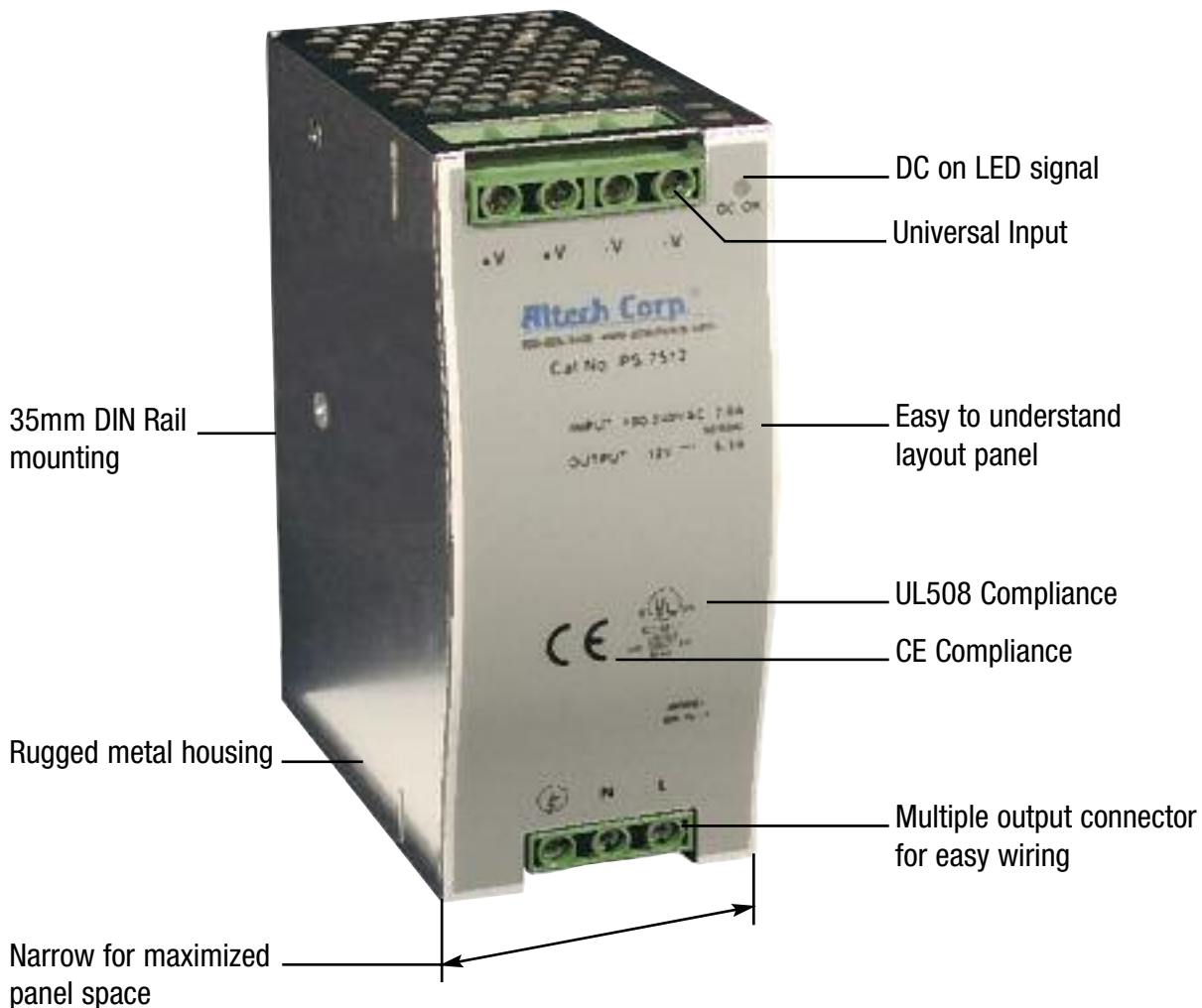
- Three phase input
- Input voltage range: 340-550V AC / 480-760V DC
- AC inrush current: Cold start: 50A
- Overload voltage protection: 105%-150% constant current limiting auto-recovery
- Over-voltage protection: 115%-135% rated output voltage
- Setup, rise, hold up time: 1200ms, 40ms, 20ms @ 400V AC
800ms, 40ms, 40ms @ 500V AC full load
- Working temperature: -20 to $+70^{\circ}\text{C}$ (-4 to $+158^{\circ}\text{F}$) at 100%
- EMC standards: EN61000-6-2 (EN50082-2)
Heavy Industrial Level; criteria A
- Military standard: MIL-HDBK-217K

PS Series - Metal Case



Features:

- Universal AC input / Full range
- Single phase or Three phase
- Built in active PFC function
- Protections: Short circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- DIN rail mountable
- UL 508 (industrial control equipment) approved
- LED indicator for power on
- 100% full load burn-in test
- 3 year warranty



75-240W Single Phase POWER SUPPLIES



75W Single Output DIN Rail Power Supply

Cat. No.	Output V DC	A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-7512	12V DC	6.3A	±2%	100 mVp-p	76%	
PS-7524	24V DC	3.2A	±1%	150 mVp-p	80%	
PS-7548	48V DC	1.6A	±1%	240 mVp-p	81%	



110/220V
SWITCH SELECT

120W Single Output DIN Rail Power Supply

Cat. No.	Output V DC	A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-12012	12V DC	10A	±2%	80 mVp-p	80%	
PS-12024	24V DC	5A	±1%	80 mVp-p	84%	
PS-12048	48V DC	2.5A	±1%	100 mVp-p	85%	



HIGH INPUT

120W High Input Single Output DIN Rail Power Supply

Cat. No.	Output V DC	A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSH-12024	24V DC	5A	±1%	80 mVp-p	85%	
PSH-12048	48V DC	2.5A	±1%	80 mVp-p	86%	

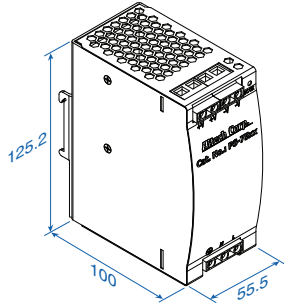


240W Single Output DIN Rail Power Supply with PFC Function

Cat. No.	Output V DC	A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSP-24024	24V DC	10A	±1%	80 mVp-p	84%	
PSP-24048	48V DC	5A	±1%	150 mVp-p	85%	

SPECIFICATIONS

PS-75 Series



Terminal Pin. No Assign. (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

Terminal Pin. No Assign. (TB2)

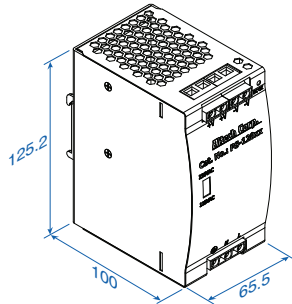
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Universal Input: 85-264V AC, 120-370V DC full range,
1.6A @ 115V AC, 0.96A @ 230V AC

Connection: Input - 3 poles, Output - 4 poles screw terminal
Size (WxHxD): 55.5x125x100mm (2.20x4.95x3.95 inches)

Packaging: 1/box; 1.35lbs / 0.60Kg

PS-120 Series (Switch Select)



Terminal Pin. No Assign. (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

Terminal Pin. No Assign. (TB2)

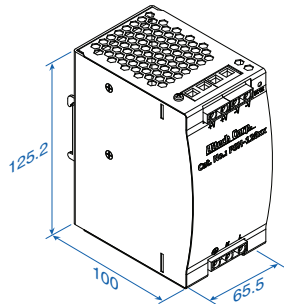
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Switch select Input: 88-132V AC / 176-264 V AC, 248-370V DC range,
2.6A @ 115V AC, 1.6A @ 230V AC

Connection: Input - 3 poles, Output - 4 poles screw terminal
Size (WxHxD): 65.5x125x100mm (2.56x4.95x3.95 inches)

Packaging: 1/box; 1.75lbs / 0.79Kg

PSH-120 High Input Series



Terminal Pin. No Assign. (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N(L2)
3	AC/L(L1)

Terminal Pin. No Assign. (TB2)

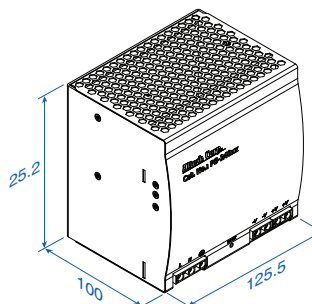
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Universal Input: 340-550V AC, 480-780V DC range,
0.65A @ 400V AC, 0.6A @ 500V AC

Connection: Input - 3 poles, Output - 4 poles screw terminal
Size (WxHxD): 65.5x125x100mm (2.56x4.95x3.95 inches)

Packaging: 1/box; 1.65lbs / 0.75Kg

PSP-240 Series



Terminal Pin. No Assign. (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

Terminal Pin. No Assign. (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Universal Input: 85-264V AC, 120-370V DC full range,
2.8A @ 115V AC, 1.4A @ 230V AC

Built in active Power Factor Correction function. PF>0.95
Connection: Input - 3 poles, Output - 4 poles screw terminal
Size (WxHxD): 125x125x100mm (4.95x4.95x3.95 inches)

Packaging: 1/box; 2.7lbs / 1.2Kg



PS-75 Series Specifications



Features:

- Universal AC input / full range
- Protections: Short Circuit / Over load / Overvoltage / Over temperature
- Cooling by free air convection
- DIN rail mountable
- UL508 (industrial control equipment) approved
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 50KHz
- 3 year warranty

OUTPUT

Cat. No.	PS-7512	PS-7524	PS-7548
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DC VOLTAGE	12V	24V	48V
RATED CURRENT	6.3A	3.2A	1.6A
CURRENT RANGE	0 ~ 6.3A	0 ~ 3.2A	0 ~ 1.6A
RATED POWER	76W	76.8W	76.8W
RIPPLE & NOISE (max)	100mVp-p	150mVp-p	240mVp-p
Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.			
VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 53V
VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%
Tolerance: includes set up tolerance, line regulation and load regulation.			
LINE REGULATION	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	1000ms, 60ms / 230VAC	1800ms, 60ms / 115VAC at full load	
HOLD UP TIME (Typ.)	60ms / 230VAC	12ms / 115VAC at full load	

INPUT

VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC	
FREQUENCY RANGE	47 ~ 63Hz		
EFFICIENCY (Typ.)	76%	80%	81%
AC CURRENT (max.)	1.6 A / 115VAC	0.96A / 230VAC	
INRUSH CURRENT (Typ.)	COLD START	20A / 115VAC	40A / 230VAC
LEAKAGE CURRENT	≤ 1mA / 240VAC		

PROTECTION

OVERLOAD	105 ~ 150% rated output power		
Protection type: Constant current limiting, recovers automatically after fault condition is removed			
OVERVOLTAGE	15 ~ 16.5V	29 ~ 34V	58 ~ 65V
Protection type: Shut down overvoltage, re-power on to recover			
OVERTEMPERATURE	85°C ± 5°C (TSW1) detect on heat sink of power transistor		
Protection type: Shut down overvoltage, recovers automatically after temperature goes down			

ENVIRONMENT

WORKING TEMP.	-10 ~ +60°C (Refer to output load derating curve)		
WORKING HUMIDITY	20 ~ 90% RH non-condensing		
STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH		
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)		
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes		
MOUNTING	Compliance to IEC60068-2-6		

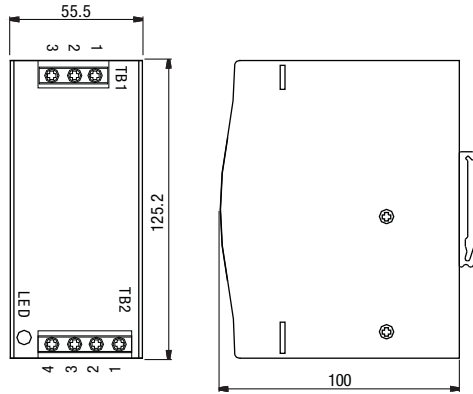
SAFETY & EMC

SAFETY STANDARDS	UL508 EN60950-1 compliant		
WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC		
ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC		
EMI CONDUCTION & RADIATION	Compliance to EN55011; 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; EN61000-6-2; (EN50082-2) heavy industry level; criteria A		

OTHERS

MTBF	123.1K hrs min. MIL-HDBK-217K (25°C)		
DIMENSION	55.5x125.2x100mm (WxHxD)		
PACKING	0.6Kg; 20pcs / 13Kg / 1.29CUFT		
All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.			

Mechanical Specification



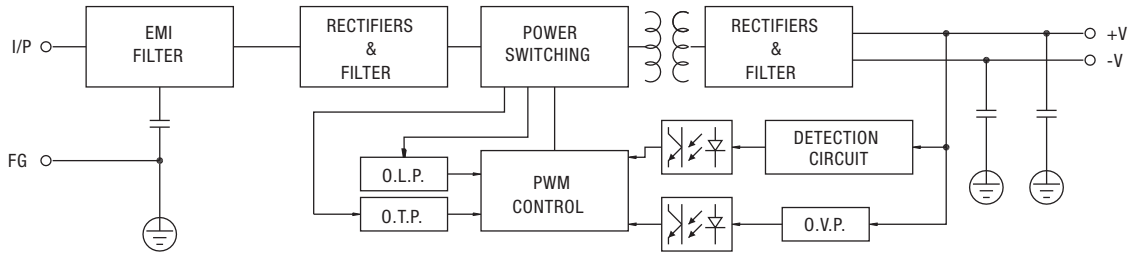
Terminal Pin. No Assignment (TB1)

Pin No.	Assignment
1	FG Ⓧ
2	AC/N
3	AC/L

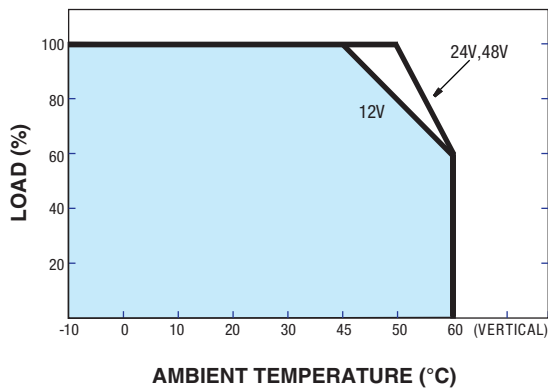
Terminal Pin. No Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

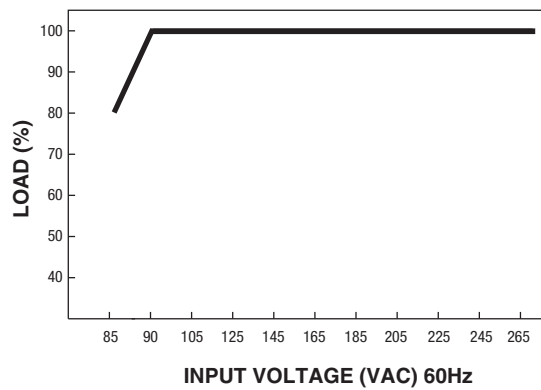
Block Diagram



Derating Curve



Output Derating VS Input Voltage





PS-120 Series Specifications



Features:

- Universal AC input / full range
- Protections: Short Circuit / Over load / Overvoltage/Over temperature
- Cooling by free air convection
- DIN rail mountable TS-35/ 7.5 or 1 5
- UL 508 (industrial control equipment) approved
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 50KHz
- 3 year warranty

OUTPUT

Cat. No.	PS-12012	PS-12024	PS-12048
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DC VOLTAGE	12V	24V	48V
RATED CURRENT	10A	5A	2.5A
CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A
RATED POWER	120W	120W	120W
RIPPLE & NOISE (max)	80mVp-p	80mVp-p	100mVp-p

Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.

VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 53V
VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%

Tolerance: includes set up tolerance, line regulation and load regulation.

LINE REGULATION	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	500ms, 70ms / 230VAC	500ms, 70ms / 115VAC at full load	
HOLD UP TIME (Typ.)	36ms / 230VAC	32ms / 115VAC at full load	

INPUT

VOLTAGE RANGE	88 ~ 132VAC / 176 ~ 264VAC by switch	120 ~ 185VDC / 248 ~ 370VDC
FREQUENCY RANGE	47 ~ 63Hz	
EFFICIENCY (Typ.)	80%	84%
AC CURRENT (max.)	2.6 A / 115VAC 1.6 A / 230VAC	
INRUSH CURRENT (Typ.)	COLD START 20A / 115VAC 40A / 230VAC	
LEAKAGE CURRENT	≤ 3.5mA / 240VAC	

PROTECTION

OVERLOAD	105 ~ 150% rated output power	
	Protection type: Constant current limiting, recovers automatically after fault condition is removed	
OVERVOLTAGE	15 ~ 16.5V	29 ~ 33V
	Protection type: Shut down overvoltage, re-power on to recover	58 ~ 65V
OVERTEMPERATURE	85°C ± 5°C (TSW1)	90°C ± 5°C (TSW1)
	Protection type: Shut down overvoltage, recovers automatically after temperature goes down	90°C ± 5°C (TSW1)

ENVIRONMENT

WORKING TEMP.	-10 ~ +60°C (Refer to output load derating curve)
WORKING HUMIDITY	20 ~ 90% RH non-condensing
STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes
MOUNTING	Compliance to IEC60068-2-6

SAFETY & EMC

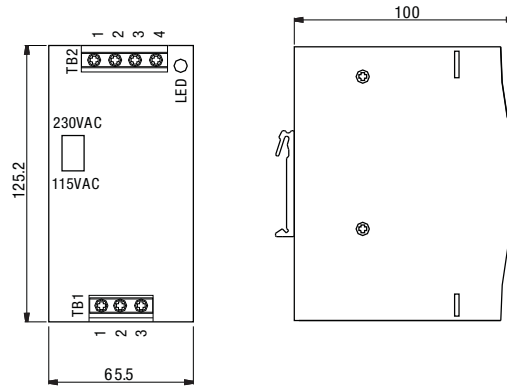
SAFETY STANDARDS	UL508 UL60950-1 EN60950-1 compliant
WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC
ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC
EMI CONDUCTION & RADIATION	Compliance to EN55011; EN55022 (CISPR22) Class B
HARMONIC CURRENT	Compliance to EN61000-3-2,-3
EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; EN55024; EN61000-6-2; (EN50082-2); heavy industry level; criteria A
	The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

OTHERS

MTBF	136.8K hrs min. MIL-HDBK-217K (25°C)
DIMENSION	65.5x125.2x100mm (WxHxD)
PACKING	0.79Kg; 20pcs / 16.5Kg / 1.29CUFT

All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.

Mechanical Specification



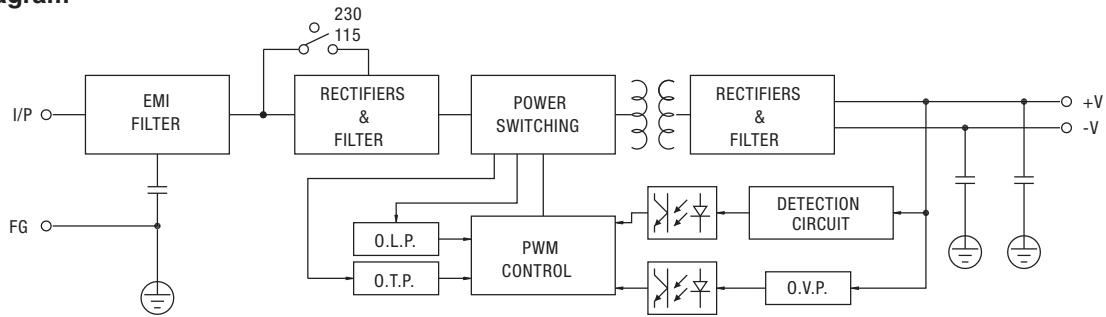
Terminal Pin. No Assignment (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

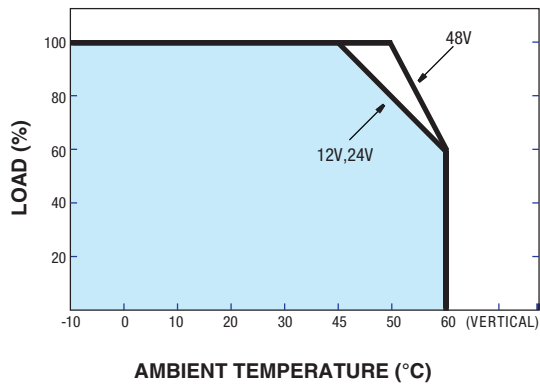
Terminal Pin. No Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

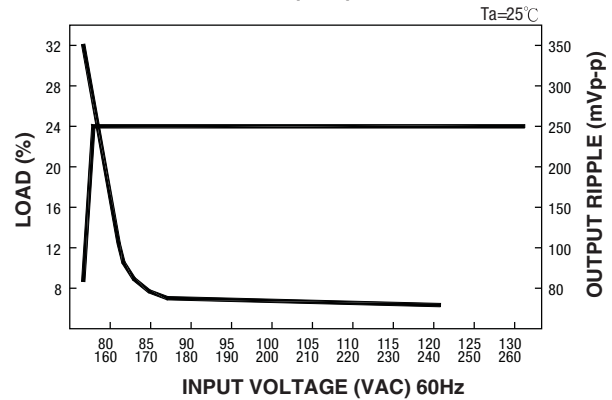
Block Diagram



Derating Curve



Static Characteristics (24V)





HIGH INPUT

PSH-120 High Input Series

Specifications



Features:

- Universal AC input / full range
- Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- Fixed switching frequency at 70KHz
- 3 year warranty

OUTPUT

Cat. No.	PSH-12024	PSH-12048
DC VOLTAGE	24V	48V
RATED CURRENT	5A	2.5A
CURRENT RANGE	0 ~ 5A	0 ~ 2.5A
RATED POWER	120W	120W
RIPPLE & NOISE (max)	80mVp-p	80mVp-p
Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.		
VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
VOLTAGE TOLERANCE	±1.0%	±1.0%
Tolerance: includes set up tolerance, line regulation and load regulation.		
LINE REGULATION	±0.5%	±0.5%
LOAD REGULATION	±0.5%	±0.5%
SETUP, RISE, HOLD UP TIME	1700ms, 120ms, 16ms / 400VAC	1000ms, 120ms, 30ms / 500VAC at full load

INPUT

VOLTAGE RANGE	340 ~ 550VAC	480 ~ 780VDC
FREQUENCY RANGE	47 ~ 63Hz	
EFFICIENCY (Typ.)	85%	86%
AC CURRENT (max.)	0.65A / 400VAC	0.6A / 500VAC
INRUSH CURRENT (max.)	COLD START 50A	
LEAKAGE CURRENT	≤ 3.5 mA / 530VAC	

PROTECTION

OVERLOAD	105 ~ 160% rated output power
Protection type: Constant current limiting, recovers automatically after fault condition is removed	
OVERVOLTAGE	30 ~ 36V 59 ~ 66V
Protection type: Shut down overvoltage, re-power on to recover	
OVERTEMPERATURE	85°C ± 5°C (TSW: detect on heat sink of power switch)
Protection type: Shut down overvoltage, recovers automatically after temperature goes down	

ENVIRONMENT

WORKING TEMP.	-20 ~ +60°C (Refer to output load derating curve)
WORKING HUMIDITY	20 ~ 90% RH non-condensing
STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes
MOUNTING	Compliance to IEC60068-2-6

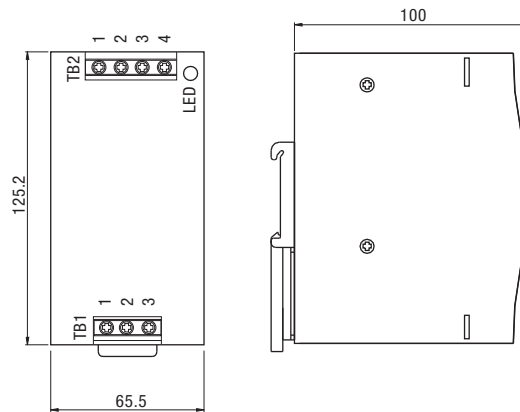
SAFETY & EMC

SAFETY STANDARDS	UL60950-1 approved IEC60950-1 CB compliant
WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC
ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC (25°C; 70% RH)
EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11); EN55022 (CISPR22); EN61204-3 Class B
EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; EN61204-3; EN61000-6-2; (EN50082-2), heavy industry level; criteria A
The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.	

OTHERS

MTBF	178.7K hrs min. MIL-HDBK-217K (25°C)
DIMENSION	65.5x125.2x100mm (WxHxD)
PACKING	0.75Kg; 20pcs / 16Kg / 1.29CUFT
All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.	

Mechanical Specification



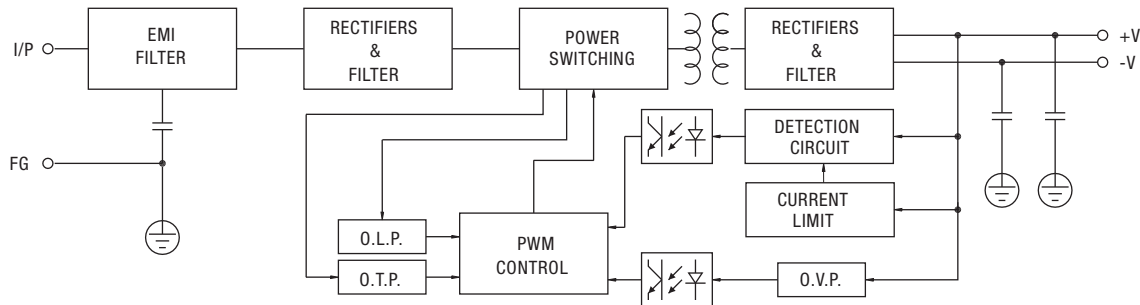
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/L2
3	AC/L1

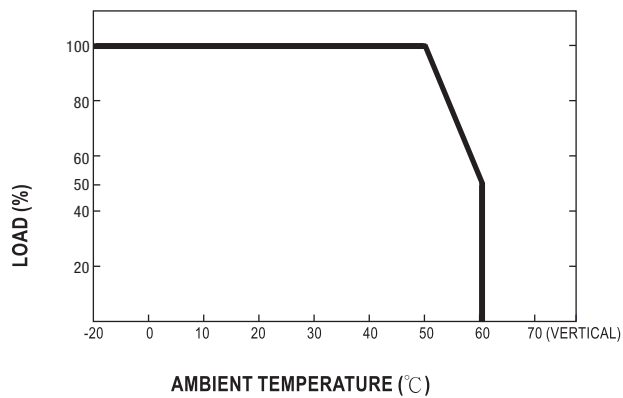
Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Block Diagram



Derating Curve





PSP-240 Series Specifications



Features:

- Universal AC input / full range
- Built in active PFC function
- Protections: Short Circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- DIN rail mountable
- UL 508(industrial control equipment)approved
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at 100KHz
- 3 year warranty

OUTPUT

Cat. No.	PSP-24024	PSP-24048
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DC VOLTAGE	24V	48V
RATED CURRENT	10A	5A
CURRENT RANGE	0 ~ 10A	0 ~ 5A
RATED POWER	240W	240W
RIPPLE & NOISE (max)	80mVp-p	150mVp-p
VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 53V
VOLTAGE TOLERANCE	±1.0%	±1.0%
LINE REGULATION	±0.5%	±0.5%
LOAD REGULATION	±1.0%	±1.0%
SETUP, RISE TIME	800ms, 40ms / 230VAC	800ms, 40ms / 115VAC at full load
HOLD UP TIME (Typ.)	24ms / 230VAC	24ms / 115VAC at full load

INPUT

VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC
FREQUENCY RANGE	47 ~ 63Hz	
POWER FACTOR (Typ.)	0.96 / 230VAC	0.99 / 115VAC at full load
EFFICIENCY (Typ.)	84%	85%
AC CURRENT (max.)	2.8A / 115VAC; 1.4A / 230VAC	
INRUSH CURRENT (Typ.)	COLD START 27A / 115VAC	45A / 230VAC
LEAKAGE CURRENT	≤ 3.5mA / 240VAC	

PROTECTION

OVERLOAD	105 ~ 150% rated output power
OVERVOLTAGE	30 ~ 36V
OVERTEMPERATURE	100°C ± 5°C (TSW: detect on heat sink of power transistor)

ENVIRONMENT

WORKING TEMP.	-10 ~ +70°C (Refer to output load derating curve)
WORKING HUMIDITY	20 ~ 90% RH non-condensing
STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes
MOUNTING	Compliance to IEC60068-2-6

SAFETY & EMC

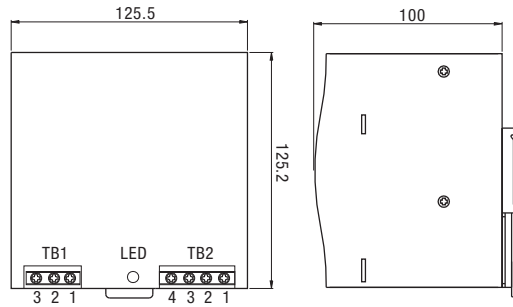
SAFETY STANDARDS	UL508 UL60950-1 EN60950-1 compliant
WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC
ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC
EMI CONDUCTION & RADIATION	Compliance to EN55011; EN55022 (CISPR22) Class B
HARMONIC CURRENT	Compliance to EN61000-3-2,-3
EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; EN55024; EN61000-6-2; (EN50082-2); heavy industry level; criteria A

OTHERS

MTBF	289.9K hrs min. MIL-HDBK-217K (25°C)
DIMENSION	125.5x125.2x100mm (WxHxD)
PACKING	1.2Kg; 12pcs / 15.5Kg / 1.29CUFT

All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.

Mechanical Specification



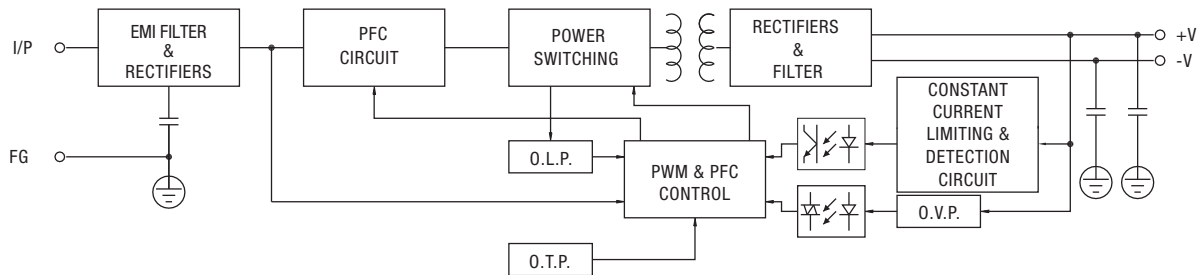
Terminal Pin Number Assignment (TB1)

Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

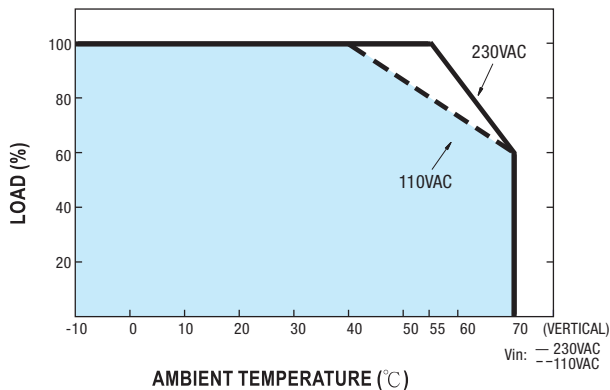
Terminal Pin Number Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Block Diagram



Derating Curve



Output Derating VS Input Voltage

