# ALTECH DIN-Rail Power Supplies

# Altech Corp."

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	Choose your product from a wide range of features and options, suitable for almost all applications.		sino
	Slimline	6-19	
	Small in size - narrow footprint		
	<ul> <li>Powerful with generous power reserves</li> </ul>		
	Simple usage		20
	• 10W to 100W		1 Mole
>	Single Phase Low Profile	20-33	
	<ul> <li>Installs in seconds</li> </ul>		
Charman Million	Simple usage		92
Ling Street	<ul> <li>Robust plastic case</li> </ul>		E o
Barris S.	• 15W to 100W		etal
	Industrial Metal Case Single Phase	34-43	al M
2	<ul> <li>Single Phase Power Supply (75 to 480W)</li> </ul>		Stal 1
	<ul> <li>Rugged metal case</li> </ul>		100
and the second se	Industrial Metal Case Three Phase	44-59	10000
2726	<ul> <li>Three Phase Power Supply (240 to 960 W)</li> </ul>		ase
26.8	Rugged metal case		ase ase
	High Efficiency Compact Housing		Met
	Universal input voltage	60-71	rial
attime	<ul> <li>Rugged metal case</li> </ul>		ust ††
THE OWNER OF THE OWNER	<ul> <li>150% peak load capacity</li> </ul>		E
And the second	Wide input voltage	72-81	
	<ul> <li>Rugged metal case</li> </ul>		2
	• 120W to 480W		cien 10 U
COLOR AND	Accessories	82-91	et
Terrar	<ul> <li>Redundancy Buffer Module</li> </ul>		<b>ig</b>
	UPS Module		H UO O

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# **DIN Rail Power Supplies**







Din Rail mount,

US

- Wide Power Range (10W-960W)
- Wide Adjustment Range
- Rugged for Industrial Use
- High Efficiency
- Lightweight and compact Design
- 3 year warranty

- Short circuit Protection
- Overvoltage Protection
- Overload Protection
- Overtemperature Protection
- Cooling by free air convection
- Worldwide approvals
- UL508 Listed and/or UL60950-1 recognized



# Altech Corp.

# Altech Power Supplies ... ...Easy to Use & Reliable!



# **SPECIFICATIONS**

### Input

- Input Voltage
  - 90-264V AC for single phase
  - 100-550V AC for wide input
  - 340-550V AC for three phase
- Input Frequency: 47-63 Hz
- Input Current: 0.6 A to 8A
- Inrush Current: cold start up to 60 A max
- Power Factor: All units are EN61000-3-2 compliant

## General

- Efficiency: 72-94% (see data sheets)
- Isolation: 3000V AC Input to Output 1500V AC Input to Ground 500V AC Output to Ground

## Environmental

Power supplies can run at 100% capacity inside the panel, there is no need for oversizing. See derating curves for more information.

- Operating Temperature:
- -20 to +60°C (-4° to +140°F)
- Operating Humidity: 90% RH, non-condensing
- Storage Temperature: -20 °C to +85 °C (-4° to +185°F)
- Vibration: 2G, 10 Hz to 500 kHz, 10 min/cycle for 60 minutes each axis

## Output

- Output Voltage: 5V; 12V; 15V; 24V; 48V
- Output Voltage Adjustment Range: ±10%
- Initial Set Accuracy: ±2% max
- Ripple & Noise: See data sheet
- Over-voltage Protection: 115-135%
- Overload Protection: 105-150%, constant current with auto recovery

# EMC & Safety

- Emissions: EN55022/55011, Class B
- EN61000-3-2, -3
- Voltage Flicker: EN61000-3-3
- ESD Immunity: EN61000-4-2, level 3
- Radiated Immunity: EN61000-4-3, 10 V/m
- EFT/Burst: EN61000-4-4, level 3
- Surge: EN61000-4-5, level 3
- Conducted Immunity: EN61000-4-6, 10 V rms,
- Safety Approvals: EN60950 UL508 UL60950
  - CE marked
- Military Standard
   MIL-HDBK-217F

5



# Slim line Single Phase Power Supply

ALTECH's slim type DIN rail switching power supply, PS-S Series designed for the fast growing demand of low wattage DIN rail applications. These 10W to 100W models are enclosed with fully isolated plastic case to prevent users from hazardous shock. The design complies with the slim trend that the precious space on the industrial rail can be saved effectively. Featuring up to 84% of efficiency, this series is cooled by only free air convection up to 70°C that significantly increase the reliability and lifetime of the power supply. Another important feature of PS-S Series is its low power consumption (<0.75W). This unique characteristic can significantly expand the application of PS-S series beyond just heavy industrial field, but can also be implied to datacom or IT applications that require green power to save the energy and to obey the anticipated government laws in the near future!

Short circuit protection, overload protection, over voltage protection, and the DC OK signal for monitoring the status of power supply are standard functions for the PS-S Series. Typical applications includes factory automation, process control, electro-mechanical industry, datacom and IT.

- Input voltage range:
- AC inrush current (max): Cold start:
- DC adjustment range:
- Overload protection:
- Over-voltage protection:
- Setup, rise, time (max):
- Withstand voltage:
- Working temperature:
- Safety standards:
- EMC standards:

85-264V AC; 120-370V DC

20A at 115V AC,; 40A at 230V DC  $\pm$ 10% rated output voltage 105%-160% constant current limiting (auto- recovery) 115%-135% rated output voltage 500ms, 30ms/230V AC 1000ms, 30ms/115V AC, at full load I/P-0/P: 3KV AC, I/P-FG:1.5KV AC, 0/P-FG:0.5KV AC -20 to +70°C (-4° to +158°F), refer to output derating curve UL508, EN60950-1 EN55022 class B EN61000-4-2,3,4,5,6,8,11 ENV50204; EN55024; EN61000-6-1; EN61204-3; Light Industry Level criteria A MIL-HDBK-217F

Military Standard

PS-S Series	Altech Corp."	<b>mline</b> e phase
		singl
<ul> <li>Features:</li> <li>Universal AC input/Full range</li> <li>Protections: Short circuit / Overload / Overvoltage</li> <li>Cooling by free air convection</li> <li>DIN rail mountable</li> <li>NEC class 2 / LPS compliant (12V,24V,48V only)</li> <li>LED indicator for power on</li> <li>DC OK relay contact</li> <li>No load power consumption&lt;0.75W</li> <li>100% full load burn-in test</li> </ul>		Low Profile single phase
• 3 year warranty	Multiple output connector for easy wiring on PS-S40, PS-S60 and PS-S100 models	Industrial Metal Case single phase
35mm DIN Rail Mounting	DC on LED signal	Industrial Metal Case three phase
Robust plastic housing	Easy to understand layout panel CE Compliance UL508 Listed Universal Input	High Efficiency compact housing
Slim Series - narrow for maximized panel space	-	

# 10-100W Slimline POWER SUPPLIES

# **10W Single Output Industrial DIN Rail Power Supply**

Cat. No.	Out V DC	put A	Tol. %	Ripple & Noise	Efficiency	NOTES		
PS-S1005	5V DC	2A	±5%	80 mVp-p	77%			
PS-S1012	12V DC	0.84A	±3%	120 mVp-p	81%			
PS-S1015	15V DC	0.67A	±3%	120 mVp-p	81%			
PS-S1024	24V DC	0.42A	±2%	150 mVp-p	84%			

### 20W Single Output Industrial DIN Rail Power Supply

Cat. No.	Out V DC	put A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-S2005	5V DC	ЗA	±2%	80 mVp-p	76%	
PS-S2012	12V DC	1.67A	±1%	120 mVp-p	80%	
PS-S2015	15V DC	1.34A	±1%	120 mVp-p	81%	
PS-S2024	24V DC	1A	±1%	150 mVp-p	84%	

### 40W Single Output Industrial DIN Rail Power Supply

Cat. No.	Outr V DC	out A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-S4005	5V DC	6A	±2%	80 mVp-p	78%	
PS-S4012	12V DC	3.33A	±1%	120 mVp-p	86%	
PS-S4024	24V DC	1.7A	±1%	150 mVp-p	88%	
PS-S4048	48V DC	0.83A	±1%	200 mVp-p	88%	

### 60W Single Output Industrial DIN Rail Power Supply

Cat. No.	Out V DC	put A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-S6005	5V DC	10A	±2%	80 mVp-p	78%	
PS-S6012	12V DC	5A	±1%	120 mVp-p	86%	
PS-S6024	24V DC	2.5A	±1%	150 mVp-p	88%	
PS-S6048	48V DC	1.25A	±1%	200 mVp-p	87%	

### 100W Single Output Industrial DIN Rail Power Supply

Cat. No.	Outp	out	Tol.	Ripple &	Efficiency	NOTES
	V DC	Α	%	Noise		
PS-S10012	12V DC	7.5A	±1%	120 mVp-p	85%	
PS-S10024	24V DC	4A	±1%	150 mVp-p	86%	
PS-S10048	48V DC	2A	±1%	200 mVp-p	88%	

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# **SPECIFICATIONS**



#### Terminal Pin. No Assign. (TB1)

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

#### Terminal Pin. No Assign. (TB2) Pin No. Assignment

4	DC OUTPUT +V
5	DC OUTPUT -V
6	DC OK SIGNAL

Altech Corp.

Universal Input: 85-264V AC, 120-370V DC full range; 0.33A @ 110V AC; 0.21A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, single screw terminal Size (WxHxD): 22.5x90x100mm (0.89x3.54x3.94 inches) Packaging: 1/box; 0.37lbs / 0.17Kg

#### Terminal Pin. No Assign. (TB1)

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

### Terminal Pin. No Assign. (TB2)

Pin No.	Assignment
4	DC OUTPUT +V
5	DC OUTPUT -V
6	DC OK SIGNAL

Universal Input: 85-264V AC, 120-370V DC full range; 0.55A @ 110V AC; 0.35A @ 230V AC Connection: Input - 2 poles, Output – 2 poles, single screw terminal Size (WxHxD): 22.5x90x100mm (0.89x3.54x3.94 inches) Packaging: 1/box; 0.42lbs / 0.19Kg

#### 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
5/6	DC OK Relay Contact

Universal Input: 85-264V AC, 120-370V DC full range; 1.1A @ 115V AC, 0.7A @ 370V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 40x90x100mm (1.57x3.54x3.94 inches) Packaging: 1/box; 0.66lbs / 0.3Kg

#### 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
5/6	DC OK Relay Contact

Terminal Pin. No Assign. (TB2)

DC OUTPUT -V

DC OK Relay Contact

Assignment DC OUTPUT +V

Universal Input: 85-264V AC, 120-370V DC full range; 1.8A @ 115V AC, 1A @ 370V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 40x90x100mm (1.57x3.54x3.94 inches) Packaging: 1/box; 0.73lbs / 0.33Kg

#### Terminal Pin. No Assign. (TB1)

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

Universal Input: 85-264V AC, 120-370V DC full range; 1.3A @ 115V AC, 0.8A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 55x90x100mm (2.17x3.54x3.94 inches) Packaging: 1/box; 0.93lbs / 0.42Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Pin No.

1/2

3/4

5/6

Slimline single phase

# **PS-S10 Series Specifications**

.... +V -V DC

SV 3.0A DC OK

0.55A 50/60Hz

⊕ N L



### Features:

- Universal AC input / full range
- . Protections: Short Circuit / Overload / Overvoltage
- Cooling by free air convection
- DIN rail mountable
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption < 0.75W • 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PS-S1005	PS-S1012	PS-S1015	PS-S1024	
UUIPUI	DC VOLTAGE	5V	12V	15V	24V	
	RATED CURRENT	2A	0.84A	0.67A	0.42A	
	CURRENT RANGE	0~2A	0~0.84A	0~0.67A	0~0.42A	
	RATED POWER	10W	10W	10W	10W	
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	
		Ripple & noise are measured at 2	20MHz of bandwidth by using a 12	twisted pair-wire terminated with a 0.	1μF & 47μF parallel capacitor	
	VOLTAGE TOLERANCE	±5.0%	±3.0%	±3.0%	±2.0%	
		Tolerance: includes set up toler	ance, line regulation and load reg	gulation.		
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±5.0%	±3.0%	±3.0%	±2.0%	
	SETUP, RISE TIME	500ms, 30ms/230VAC;	1000ms, 30ms/115VAC	at full load		
	HOLD LIP TIME (Typ.)	Length of set up time is measu 120ms/230VAC: 25ms/	red at cold first start. Turning ON 115VAC at full load	/OFF the power supply may lead to	increase of the set up time.	
INPUT		85264\/AC: 120370\				
		05~204VAC, 120~370V	100			
		47~03112	010/	010/	0/0/	
			0170	0170	0470	
	AU CURRENT (IIIAX.)	0.33A/113VAU; 0.21A/2	30VAU			
	INRUSH CURRENT (TYP.)	ULD START: 33A/113V	AU; 7UA/23UVAU			
PROTECTION		<titia 240vac<="" td=""><td></td><td></td><td></td></titia>				
The Letter	OVERLOAD PROTECTION	Above 105% rated outp	out power			
		Protection type: Hiccup mode, r	recovers automatically after fault	condition is removed		
	OVERVOLIAGE PROTECTION	5.75~6.75V	13.8~16.2V	17.25~20.25V	27.6~32.4V	
	OVER TEMPERATURE PROTECTION	Protection type: Shut down ove Power supply shut dow	rvoltage, re-power on to recover	nt limiting / output voltage	noes to O	
		re-power on to recover		in initially / output voltago	g000 to 0,	
	DC OK AKTIV SIGNAL (max.)	3.75~6V (50mA)	9~13.5V (40mA)	11.5~16.5V (40mA)	18~27V (20mA)	
ENVIRUNMENT	WORKING TEMP.	-20 ~ +70°C (Refer to c	output load derating curv	e)		
	WORKING HUMIDITY	20 ~ 90% RH non-cond	densing			
	STORAGE TEMP. / HUMIDITY	-40 ~ +85°C; 10 ~ 95%	6 RH			
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)				
	VIBRATION	Component: 10 ~ 500H	lz, 2G 10min. / 1cycle, 6	0 min. each long X,Y, Z axe	S	
	MOUNTING	Compliance to IEC6006	8-2-6	· · · · · · · · · · · · · · · · · · ·		
SAFETY & EMC	SAFETY STANDARDS	111 508				
		EN60950-1 compliant				
		NEC class2 / LPS comp	liant			
	WITHSTAND VOLTAGE		$G \cdot 1.5 K V \Delta C = 0/P_F G \cdot 0$	5KV/AC		
		//F-U/F. SKVAC //F-FU. I.SKVAC U/F-FU. U.SKVAC				
		Compliance to EN5501	1			
		EN55022 (CISPR22)	I			
		EN6120/-3 Class B				
		Compliance to ENG1000	0000			
		Compliance to ENG1000	U-J-Z,-J N 4 9 9 4 5 6 9 11, EN55	024 ENIVE0204 ENG1000	6 1-EN61204 2-	
		light industry levels orite	0-4-2,3,4,3,0,0,11, ENGC	0024, ENV30204, EN01000	-0-1,EN01204-3,	
		that is still mosts EMC directive	a component which will installe	d into a final equipment. The final e	quipment must be re-contirme	
OTHERS		unat is suit meets Ewic directive	95.			
	MTBF	584K hrs min. MIL-HI	DBK-217K (25°C)			
	DIMENSION	22.5x90x100mm (WxH)	xD)			
	PACKING	0.17Kg; 72pcs / 13.2Kg	g / 0.91CUFT			
		All parameters NOT specially m	nentioned are measured at 230V	AC input, rated load and 25°C of am	bient temperature	

# Altech Corp.

Slimline

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### **Mechanical Specification**

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-20

0

10

30

AMBIENT TEMPERATURE (°C)

40

20

50

60



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

**INPUT VOLTAGE (VAC) 60Hz** 

100 115 120 140 160 180 200 220 240 264

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70 (VERTICAL)

40

85 95

	PS-S20 Sei	ries 🗾		ノイト	
E D	Specificatio	ns		sal AC input / full range tions: Short Circuit / Ov	e verload / Overvoltage
÷ ).		ID	<ul><li>Cooling</li><li>DIN rational</li></ul>	g by free air convectior il mountable	
			<ul> <li>NEC c</li> <li>Built in</li> <li>LED in</li> </ul>	lass 2 / LPS compliant DC OK active signal	
	10000		<ul> <li>No loa</li> <li>100%</li> <li>3 year</li> </ul>	d power consumption < full load burn-in test warranty	< 0.75W
OUTDUT	Cat. No.	PS-S2005	PS-S2012	PS-S2015	PS-S2024
UUIPUI	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	3A	1.67A	1.34A	1A
	CURRENT RANGE	0~3A	0~1.67A	0~1.34A	0~1A
	RATED POWER	15W	20W	20W	24W
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	120mVp-p	150mVp-p
		Ripple & noise are measured at	t 20MHz of bandwidth by using a	12" twisted pair-wire terminated with	a 0.1µF & 47µF parallel capacito
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up tol	erance, line regulation and load	regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP. RISE TIME	500ms. 30ms/230VAC	C: 1000ms. 30ms/115VA	C at full load	1.
		Length of set up time is meas	sured at cold first start. Turning	ON/OFF the power supply may lead	to increase of the set up time.
INIDUE	HOLD UP TIME (Typ.)	50ms/230VAC; 20ms/	115VAC at full load		
INPUT —		05 00 00 100 0	20//00		
		85~264VA6 120~3	370000		
	FREQUENCY RANGE	47~63HZ	1	1	
	EFFICIENCY (Typ.)	76%	80%	81%	84%
	AC CURRENT (max.)	0.55A/115VAC; 0.35A	/230VAC		
	INRUSH CURRENT (Typ.)	COLD START: 20A/115	5vac; 40a/230vac		
DOTECTION	LEAKAGE CURRENT	≤1mA/ 240VAC			
RUTECTION	OVERLOAD PROTECTION	105% ~ 160% rated (	output power		
		Protection type: Constant curr	rent limiting, recovers automatic	ally after fault condition is removed	
	OVERVOLTAGE PROTECTION	5.75~6.75V	13.8~16.2V	17.25~20.25V	27.6~32.4V
		Protection type: Shut down or	vervoltage re-power on to recov	In Lo Lo.Lot	27.0 02.10
	OVER TEMPERATURE PROTECTION	Power supply shut do	wn at 70°C constant cur	rent limiting / output voltag	e aces to 0:
		re-power on to recove	er	rone mining / output voltag	o good to 0,
	DC OK AKTIV SIGNAL (max.)	3.75~6V (50mA)	9~13.5V (40mA)	11.5~16.5V (40mA)	18~27V (20mA)
IVIRONMENT -	WORKING TEMP.	-20 ~ +70°C (Refer to	output load derating cu	rve)	
	WORKING HUMIDITY	20 ~ 90% RH non-cor	ndensina	-7	
	STOBAGE TEMP. HUMIDITY	-40 ~ +85°C 10 ~ 95	5% BH		
		+0.03% °C (0 ~ 50°C)			
	VIBRATION	Component: 10 - 500	147 2G 10min / 1cvcle	60 min each long X V 7 av	00
	MOLINTING	Compliance to IEC600	168-2-6		
FFTY & FMC			00 2 0		
	SAFETY STANDARDS	UL508			
		EN60950-1approved			
		NEC class2 / LPS com	pliant		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-	FG: 1.5KVAC 0/P-FG:	0.5KVAC	
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG	G: 100M Ohms/500VDC		
	EMI CONDUCTION & RADIATION	Compliance to EN550	11		
		EN55022 (CISPB22)			
		EN61204-3 Class B			
	HARMONIC CURRENT	Compliance to ENG10	00-3-2 -3		
		Compliance to ENG10	00 0 2, 0 00_1_2 3 1 5 6 9 11. EN	55024. ENIVED204. ENICIO	0-6-1-EN61204 2-
		light industry lovely and	00-4-2,3,4,3,0,0,11; EN itoria A	JJU24, LINVJU204, EINOTUL	0-0-1,LINU1204-0,
		The neuron surgers in		alled into a first service of The C	loguinmentth "
		that is still mosts EMC direct	eu a component wnich will inst ives	aneu into a final equipment. The fina	i equipment must be re-confir
		anat is suit meets EMU difecti	IVC3.		
OTHERS					
OTHERS	MTBF	236.9K hrs min. Mil	L-HDBK-217K (25 C)		
OTHERS	MTBF DIMENSION	236.9K hrs min. Mil 22.5x90x100mm (Wxl	L-HDBK-217K (25 C) HxD)		
OTHERS	MTBF DIMENSION PACKING	236.9K hrs min. Mil 22.5x90x100mm (Wxl 0.19Kg; 72pcs / 14.7k	L-HDBK-217K (25 C) HxD) Kg / 0.91CUFT		

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Slimline

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### **Mechanical Specification**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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WORKING TEMP.

WORKING HUMIDITY STORAGE TEMP., HUMIDITY

TEMP. COEFFICIENT

SAFETY STANDARDS

WITHSTAND VOLTAGE

HARMONIC CURRENT

EMS IMMUNITY

MTBF

DIMENSION

PACKING

ISOLATION RESISTANCE

EMI CONDUCTION & RADIATION

VIBRATION

MOUNTING

**SAFETY & EMC** 

**OTHERS** 

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

-20 ~ +70°C (Refer to output load derating curve)

NEC class2 / LPS compliant (12V, 24V, 48V only)

I/P-O/P: 3KVAC I/P-FG: 1.5KVAC 0/P-FG: 0.5KVAC

I/P-O/P, I/P-FG, O/P-FG: ≥100M Ohms/500VDC (25°C; 70% RH)

Component: 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each long X,Y, Z axes

Compliance to EN61000-4-2,3,4,5,6,8,11; EN55024; ENV50204 ; EN61000-6-2; EN61204-3;

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

The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirmed

 $20 \sim 90\%$  RH non-condensing

-40 ~ +85°C, 10 ~ 95% RH

Compliance to IEC60068-2-6

Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B

Compliance to EN61000-3-2,-3

301.7K hrs min. MIL-HDBK-217K (25°C)

0.3Kg; 42pcs / 13.6 Kg / 0.82CUFT

light industry level; criteria A

that is still meets EMC directives.

40x90x100mm (WxHxD)

±0.03% °C (0 ~ 50°C)

UL508

UL60950-1 EN60950-1approved

# Altech Corp.

Slimline Ф

#### **Mechanical Specification**

FG⊕

AC/N

AC/L 3

2

3,4

5,6





100

### **Block Diagram**



#### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop more than 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load

### **Derating Curve**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

**Output Derating VS Input Voltage** 

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# **PS-S60 Series Specifications**



### Features:

- Universal AC input/full range
  Protections: Short Circuit / Overload / Overvoltage
- Cooling by free air convection ٠
- ٠ DIN rail mountable
- NEC class 2 / LPS compliant (24V,48V only) ٠
- LED indicator for power on
- No load power consumption < 0.75W •
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PS-S6005	PS-S6012	<b>PS-S6024</b>	PS-S6048
OUTPUT	DC VOLTAGE	5V	12V	24V	48V
	BATED CURRENT	10A	5A	2.5A	1.25A
	CUBBENT BANGE	0~104	0~54	$0 \sim 25\Delta$	0~1254
	BATED POWER	50W	60W	60W	60W/RIPPI F &
		90m\/n n	120m\/n n	150m\/n n	200ml/n n
	NUISE (IIIax)	ounvh-h	12011vp-p	100mvp-p	20011vp-p
		Ripple & noise are measure	ed at 20MHz of bandwidth by using a	12 twisted pair-wire terminated with	a 0.1µF & 47µF parallel capacitor
	VULIAGE ADJ. RANGE	5 ~ 6V	12~150	24 ~ 300	48 ~ 56V
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up	tolerance, line regulation and load	regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.5%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	500ms, 30ms/230\	/AC; 500ms, 30ms/115VA0	C at full load	
		Length of set up time is n	neasured at cold first start. Turning	ON/OFF the power supply may lead	d to increase of the set up time.
INDUT	HOLD UP TIME (Typ.)	50ms/230VAC / 20	ms/115VAC at full load		
	VOLTAGE RANGE	85 ~ 264VAC 12	20 ~ 370VDC		
	FREQUENCY RANGE	47~63Hz			
	EFEICIENCY (Typ.)	78%	86%	88%	87%
_		1 8A/115\/AC· 1A/2	30///	0070	0170
		COLD START: 60A/2	230040		
PROTECTION	LEAKAGE CURRENT	$\leq$ Ima/ 240VAC			
INGLEGION	OVERLOAD PROTECTION	105% ~ 150% rate	ed output power		
		Protection type: Constant	current limiting, recovers automatic	cally after fault condition is remove	d
	OVERVOLTAGE PROTECTION	6.25 ~ 7.25V	15.6 ~ 18V	31.2 ~ 36V	57.6 ~ 64.8V
		Protection type: Shut dow	n overvoltage, re-power on to reco	ver	
	OVER TEMPERATURE PROTECTION	Power supply shut	down at 70°C constant cur	rent limiting / output volta	ae aoes to 0:
		re-power on to reco	over	0	
	DC OK AKTIV SIGNAL (max.)	Relay contact rating	g (max.): 30V/1A resistive		
	WORKING TEMP.	-20 ~ +70°C (Refer	to output load derating cu	irve)	
	WORKING HUMIDITY	20 ~ 90% RH non-	condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~	95% BH		
	TEMP. COFFFICIENT	+0.03% °C (0 ~ 50	°C)		
	VIBRATION	Component: 10 ~ 5	00Hz 2G 10min / 1cvcle	60 min each long X V 7 a	
	MOUNTING	Compliance to IEC6	00012, 20 101111. / 109010,		
AFFTY & FMC	MOONTING		0000-2-0		
	SAFETY STANDARDS	UL508			
		UL60950-1			
		EN60950-1approve	d		
		NEC class2 / LPS c	ompliant (24V, 48V only)		
	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC	/P-FG: 1.5KVAC 0/P-FG	: 0.5KVAC	
	ISOLATION RESISTANCE	I/P-0/P. I/P-FG. 0/P	-FG: ≥100M 0hms/500VD	C (25°C: 70% RH)	
	FMI CONDUCTION & BADIATION	Compliance to FN5	5011	o (20 o, 10/01)	
		ENI55022 (CISPR22	)		
		ENG1204 2 Close E	)		
		Compliance to EN6	1000-3-2,-3		
	EMS IMMUNITY	Compliance to EN6	1000-4-2,3,4,5,6,8,11; EN	155024; ENV50204; EN610	00-6-2; EN61204-3;
		light industry level;	criteria A		
		The power supply is cons that is still meets EMC dir	idered a component which will inst ectives.	alled into a final equipment. The fir	nal equipment must be re-confirm
OTHERS	MTBF	299.2K hrs min	MII - HDBK-217K (25°C)		
	DIMENSION	40x90x100mm ////	(HxD)		
	PACKING	- 0.33Ka. 10mm (W)			
		All parameters NOT specie	ally mentioned are measured at 22	OV AC input rated load and 25°C of	ambient temperature
		All parameters NUT Speci	מוץ וווכוונטווכט מול ווופלטוופט לנ 23	ov no iliput, rateu iudu dilu 20 6 01	מחטוכות נכוווףכומנעוש

### **Mechanical Specification**



### **Block Diagram**



#### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop more than 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load

#### **Derating Curve**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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# PS-S100 Series **Specifications**



#### Features:

- Universal AC input / full range
  Protections: Short Circuit / Overload / Overvoltage / Over temperature
- ZCS/ZVS technology to reduce power dissipation
  Cooling by free air convection
- DIN rail mountable
- DC OK relay contact
- No load power consumption < 1W</li>
  LED indicator for power on
- 100% full load burn-in test
- 3 year warranty

	Cat. No.	PS-S10012	PS-S10024	PS-S10048
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	7.5A	4A	2A
	CUBBENT BANGE	0 ~ 7.5A	$0 \sim 4A$	$0 \sim 2A$
	RATED POWER	90W	96W	96W
	RIPPLE & NOISE (max)	120mVp-p	150mVp-p	200mVp-p
		Ripple & noise are measured at 20M	/Hz of bandwidth by using a 12 twisted pair-wir	e terminated with a $0.1\mu$ F & $47\mu$ F parallel capacitor.
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 30V	48 ~ 56V
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up tolerand	ce, line regulation and load regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	3000ms, 50ms/230VAC; 3	3000ms, 50ms/115VAC at full loa	d
		Length of set up time is measured	d at cold first start. Turning ON/OFF the powe	r supply may lead to increase of the set up time.
INDUT	HOLD UP TIME (Typ.)	50ms/230VAC; 20ms/115	VAC at full load	
	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 3	70VDC	
		Deating maybe needed under low	input voltages, please check the derating cu	rve for more detail
	FREQUENCY RANGE	47~63Hz		
	POWER FACTOR (Typ.)	$PF \ge 0.95/230VAC; PF \ge 0.95/230VF = 0.95/230VF = 0.95/230VF = 0.95/230VF = 0.95/230VF = 0.95/250VF = 0.95/250VF = 0.95/250VF = 0.95/250VF = 0.95/250VF = 0$	0.98/115VAC at full load	
	EFFICIENCY (Typ.)	85%	86%	88%
	AC CURRENT (max)	1.3A/115VAC; 0.8A/230VA	AC	
	INRUSH CURRENT (Typ.)	COLD START: 30A/115VAC	C; 60A/230VAC	
PROTECTION -		≤IMA/ 240VAC		
	OVERLOAD	105% ~ 150% rated outp	out power	
		Protection type: Constant current I	limiting, recovers automatically after fault con	ndition is removed
	OVERVOLIAGE	15.6 ~ 18V	31.2 ~ 36V	57.6 ~ 64.8V
		Protection type: Shut down overvo	oltage, re-power on to recover	
	OVENTEWIPENATURE	90 C ± 10 C (NTH2) detec		
		Power supply shut down	at 70°C constant current limiting /	output voltage goes to 0.
		re-nower on to recover		output voltage goes to 0,
	DC OK AKTIV SIGNAL (max)	Relay contact rating (max	): 30V/14 resistive	
ENVIRONMENT		10	tout load derating ourse)	
		-10 ~ +60 C (Refer to our		
			nsing Du	
		$-40 \sim +650$ , $10 \sim 95\%$	Π	
_		$\pm 0.03 \% C (0 \sim 30 C)$	26 10min / 1cycle 60 min each	long X V 7 aves
	MOUNTING	Compliance to IEC60068-	2-6	1011g X, 1, 2 ax03
SAFETY & EMC			20	
	SALETT STANDARDS	EN60050 1 compliant		
	WITHSTAND VOLTAGE		1.5KVAC 0/P-EG:0.5KVAC	
		I/P_0/P_1/P_FG_0/P_FG >	100M 0hms/500VDC/25°C/70% B	н
	EMI CONDUCTION & BADIATION	Compliance to EN55011		
		EN55022 (CISPB22)		
		EN61204-3 Class B		
	HARMONIC CURRENT	Compliance to EN61000-3	3-2-3	
	FMS IMMUNITY	Compliance to EN61000-	4-2.3.4.5.6.8.11: FN55024: FNV5	0204: EN61000-6-2: EN61204-3:
		light industry level: criteri	a A	,,,,,,,
		The power supply is considered a	component which will installed into a final e	quipment. The final equipment must be
OTHERS		re-confirmed that is still meets EN	//C directives.	
UTHENS	MTBF	346K hrs min. MIL-HDB	3K-217K (25°C)	
	DIMENSION	55x90x100mm (WxHxD)		
	PACKING	0.42Kg; 30pcs / 13.6Kg /	0.82CUFT	
		All parameters NOT specially men	tioned are measured at 230V AC input, rated	load and 25°C of ambient temperature.

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

# Altech Corp.

Slimline Ф

### **Mechanical Specification**





### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load





Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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# Low Profile Single Phase Power Supply (Class II)

The Low Profile Single Phase Power Supplies are 15W to 100W single output Class II DIN rail switching power supplies. They are designed for the fast growing demand of the DIN rail application with limited enclosure height. With Class II of protection level, low profile series provide users a safer operating environment since the whole plastic case is free from hazardous leakage current. Featuring up to 89% of high efficiency, this series can be cooled by only free air convection that significantly increase the reliability and lifetime of the power supply. Complying with the safety of the UL508 and EMC requirements of EN50178 which is mainly for power distribution aspects, the low profile switching power supplies are suitable to be installed in a power distribution box or a control cabinet and the major application fields are building automation and household appliance control.

- Input voltage range:
- AC inrush current:
- DC adjustment range:
- Overload protection:
- Over-voltage protection:
- Setup, rise, hold up time:
- Withstand voltage:
- Working temperature:
- Safety standards:
- EMC standards:

85-264V AC; 120-370V DC

- Cold start: 15A at 115V AC, 30A at 230V DC (PS-30xx)
- $\pm 10\%$  rated output voltage
- 105%-160% constant current limiting, auto-recovery
- 115%-135% rated output voltage
- 100ms, 30ms, 100ms at full loadand 230V AC (PS-30xx) I/P-0/P:3KV AC, I/P-FG:1.5KV AC
- -20 to +50°C (-4° to +122°F) at 100%
- and  $+60^{\circ}C$  ( $+140^{\circ}F$ ) at 80% load
- UL60950-1, UL508 EN55022 class B EN61000-4-2,3,4,5,6,8,11 ENV50204

Military Standard:

EN61204-3

MIL-HDBK

0.0

# **PS Series - Low Profile**



### Features:

- Universal AC input/Full range
- Protections: Short circuit / Overload / Overvoltage
- Cooling by free air convection
- DIN rail mountable
- Isolation class II
- LED indicator for power on
- 100% full load burn-in test
- 3 year warranty



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# 15-100W Low Profile POWER SUPPLIES



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STATISTICS.

# 15W Single Output Class II DIN Rail Power Supply



Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-1505	5V DC 2.4A	±2%	80 mVp-p	77%	
PS-1512	12V DC 1.25A	±1%	120 mVp-p	84%	
PS-1515	15V DC 1A	±1%	120 mVp-p	83.5%	
PS-1524	24V DC 0.63A	±1%	150 mVp-p	85%	

### 30W Single Output Class II DIN Rail Power Supply

Cat. No.	Output V DC A	<b>Tol.</b> %	Ripple & Noise	Efficiency	NOTES
PS-3005	5V DC 3A	±2%	80 mVp-p	74%	
PS-3012	12V DC 24	∆ ±1%	120 mVp-p	81%	
PS-3015	15V DC 24	₩ ±1%	120 mVp-p	82%	
PS-3024	24V DC 1.5	A ±1%	150 mVp-p	83%	

# 45W Single Output Class II DIN Rail Power Supply

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-4505	5V DC 5A	±2%	100 mVp-p	72%	
PS-4512	12V DC 3.5A	±1%	200 mVp-p	77%	
PS-4515	15V DC 2.8A	±1%	240 mVp-p	77%	
PS-4524	24V DC 2A	±1%	480 mVp-p	80%	

## 60W Single Output Class II DIN Rail Power Supply

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-6005	5V DC 6.5A	±2%	80 mVp-p	76%	
PS-6012	12V DC 4.5A	±1%	120 mVp-p	82%	
PS-6015	15V DC 4.0A	±1%	120 mVp-p	83%	
PS-6024	24V DC 2.5A	±1%	150 mVp-p	84%	

# 100W Single Output Class II DIN Rail Power Supply

11	
$\sim$	
ENERGY	
SAVER	

Cat. No.	Outp V DC	out A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-10012	12V DC	7.5A	±2%	120 mVp-p	87%	
PS-10015	15V DC	6.5A	±1%	120 mVp-p	87%	
PS-10024	24V DC	4.2A	±1%	150 mVp-p	89%	

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

# SPECIFICATIONS

**PS-15** 

**Series** 

PS-30 Series

# Altech Corp.

Simline single phase

ustrial Metal Cas single phase

dustrial Metal Case three phase



Accessories



Pin No.	Assignment	Pin No.	Assignment
1	AC/L	3	-V
2	AC/N	4	+V

# Universal Input: 85-264V AC, 120-370V DC full range; 0.88A @ 115V AC; 0.48A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, single screw terminal Size (WxHxD): 25x93x56mm (0.98x3.66x2.20 inches) Packaging: 1/box; 0.22lbs / 0.1Kg

#### Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.

Universal Input: 85-264V AC, 120-370V DC full range; 0.88A @ 115V AC; 0.48A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 78x93x56mm (3.07x3.66x2.20 inches) Packaging: 1/box; 0.60lbs / 0.27Kg

#### Terminal Pin. No Assignment

Pin	Assignment	Pin	Assignment
1	AC/L	6,7	DC OUTPUT+V
2	AC/N	8	LED
3	FG 🗄	9	+V ADJ.
4,5	DC OUTPUT-V		

Universal Input: 85-264V AC, 120-370V DC full range; 1.5A @ 115V AC, 0.75A @ 230V AC

Connection: Input - 3 poles, Output - 2 poles, double screw terminal Size (WxHxD): 78x93x67mm (3.07x3.66x2.64 inches) Packaging: 1/box; 0.68lbs / 0.31Kg

#### Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.

Universal Input: 88-264V AC, 124-370V DC full range; 1.2A @ 115V AC, 0.8A @ 230V AC Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 78x93x56mm (3.07x3.66x2.20 inches) Packaging: 1/box; 0.66lbs / 0.30Kg

#### Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.

Universal Input: 88-264V AC, 124-370V DC full range; 3A @ 115V AC, 1.6A @ 230V AC Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 100x93x56mm (3.94x3.66x2.20 inches)

Packaging: 1/box; 0.77lbs / 0.35Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.



PS-45 Series

PS-60 Series



PS-100 Series



# **PS-15 Series** Specifications

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### Features:

- Universal AC input / full range
- Protections: Short Circuit / Overload / Over Voltage •
- Cooling by free air convection DIN rail mountable
- ٠ •
- Isolation class II .
- LED indicator for power on • No load power consumption<0.5W
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PS-1505	PS-1512	<b>PS-1515</b>	PS-1524
UUIPUI	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max)	5V 2.4A 0 ~ 2.4A 12W 80mVp-p	12V 1.25A 0 ~ 1.25A 15W 120mVp-p	15V 1A 0 ~ 1A 15W 120mVp-p	24V 0.63A 0 ~ 0.63A 15.2W 150mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	Ripple & noise are measured at 4.75 ~ 5.5V ±2.0%	20MHz of bandwidth by usin   10.8 ~ 13.2V ±1.0%	g a 12 twisted pair-wire terminated   13.5 ~ 16.5V ±1.0%	with a 0.1µF & 47µF parallel capac   21.6 ~ 26.4V ±1.0%
INDUT	Line Regulation Load Regulation Setup, Rise Time Hold UP Time (Typ.)	Tolerance: includes set up tolera ±1.0% ±1.0% 1000ms, 50ms / 230VA 70ms / 230VAC	ance, line regulation and load ±1.0% ±1.0% C 1000ms, 50ms / 16ms / 115VAC	regulation. ±1.0% ±1.0% '115VAC at full load c at full load	±1.0% ±1.0%
	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.) INRUSH CURRENT (Typ.)	85 ~ 264VAC 47 ~ 63Hz 77% 0.88A / 115VAC COLD START 35A / 115'	120 ~ 370VDC 84% 0.48A / 230VAC VAC 65A / 230VAC	83.50%	85%
	OVERLOAD	105 ~ 160% rated outp         Protection type: Constant currer         Constant current operation region         5.75 ~ 6.75V         Protection type: Shut down over	ut power nt limiting recovers automatic on is within 60 ~ 100% rated   13.8 ~ 16.2V rvoltage, clamping by zener d	ally after fault condition is removed output voltage. 17.25 ~ 20.25V iode	(Hiccup mode)
	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +60°C (Refer to o 20 ~ 90% RH non-cond -40 ~ +85°C, 10 ~ 95% ±0.03% °C (0 ~ 50°C) Component: 10 ~ 500H Compliance to IEC60066	utput load derating cu lensing 5 RH z, 2G 10min. / 1cycle, 8-2-6	rve) 60 min. each long X,Y, Z ay	es
FETY & EMC	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL60950-1 EN60950-1approved Design refer to EN5017i I/P-0/P: 3KVAC I/P-0/P: 100M Ohms/50 Compliance to EN55011 EN55022 (CISPR22); EN Compliance to EN61000 Compliance to EN61000 heavy industry level; cri The power supply is considered The final equipment must be re	8 10VDC (25°C; 70% RH) 1 161204-3 Class B 1-3-2,-3 1-4-2,3,4,5,6,8,11; EN teria A 1 a component which will inst -confirmed that is still meets	55024; ENV50204; EN610( alled into a final equipment. EMC directives.	00-6-2; EN61204-3;
OTHERS	MTBF DIMENSION PACKING	1172.3K hrs min. MIL 25x93x56mm (WxHxD) 0.1Kg; 140pcs / 15Kg / All parameters NOT specially m	-HDBK-217K (25°C) 0.92CUFT entioned are measured at 234	DV AC input, rated load and 25°C of a	umbient temperature

# Altech Corp."

Profile phase

### **Mechanical Specification**





 Terminal Pin. No Assignment

 Pin No.
 Assignment
 Pin No.
 Assignment

 1
 AC/L
 3
 -V

 2
 AC/N
 4
 +V

### **Block Diagram**





Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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# **PS-30 Series** Specifications



### Features:

- Universal AC input/ full range
  Protections: Short Circuit / Overload / Over Voltage
  Cooling by free air convection
- DIN rail mountable
- Isolation class II
- LED indicator for power on •
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PS-3005	PS-3012	PS-3015	<b>PS-3024</b>
UUIPUI	DC VOLTAGE RATED CURRENT	5V 3A	12V 2A	15V 2A	24V 1.5A
		0 ~ 3A	0~2A	0 ~ 2A	0 ~ 1.5A
	RATED POWER RIPPI E & NOISE (max)	15W 80m\/n_n	24W 120m\/n_n	30W 120m\/n_n	30W 150m\/n_n
		Rinnle & noise are measured at	20MHz of bandwidth by using	120111vp-p	with a 0 1 uE & 47 uE parallel capaci
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	4.75 ~ 5.5V ±2.0%	10.8 ~ 13.2V ±1.0%	13.5 ~ 16.5V ±1.0%	21.6 ~ 26.4V ±1.0%
		Tolerance: includes set up tolera	nce, line regulation and load	regulation.	1
	LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	±1.0% ±1.0% 100ms, 30ms / 230VAC 100ms / 230VAC	±1.0% ±1.0% 100ms, 30ms / 115 21ms / 115VAC at fu	$\pm 1.0\%$ $\pm 1.0\%$ VAC at full load ull load	±1.0% ±1.0%
INPUT	VOLTAGE RANGE FREQUENCY RANGE	85 ~ 264VAC 47 ~ 63Hz	120 ~ 370VDC		
DEATECTION	EFFICIENCY (Typ.) AC CURRENT (Typ.) INRUSH CURRENT (Typ.)	74% 0.88A / 115VAC COLD START 15A / 115V	81% 0.48A / 230VAC AC; 30A / 230VAC	82%	83%
PROTECTION	OVERLOAD	105 ~ 160% rated outp Protection type: Constant curren 5.75 ~ 6.75V	ut power t limiting recovers automatica   13.8 ~ 16.2V	ally after fault condition is removed 17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type: Shut down over	voltage, clamping by zener di	ode	1
	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +60°C (Refer to o 20 ~ 90% RH non-cond -40 ~ +85°C, 10 ~ 95% ±0.03% / °C (0 ~ 50°C) Component: 10 ~ 500Hz Compliance to IEC60068	utput load derating cu ensing RH z, 2G 10min. / 1cycle, 3-2-6	rve) 60 min. each long X,Y, Z ax	es
	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL60950-1 EN60950-1approved Design refer to EN5017& I/P-0/P: 3KVAC I/P-0/P: 100M Ohms / 5 Compliance to EN55011 EN55022 (CISPR22) Cla: Compliance to EN61000 Compliance to EN61000 heavy industry level; cri The power supply is considered that is still meets EMC directive:	3 00VDC -3-2,-3 -4-2,3,4,5,6,8,11; EN: teria A a component which will insta	55024; ENV50204; EN6100 illed into a final equipment. The fina	10-6-2; EN61204-3; l equipment must be re-confirmed
UTHERS	MTBF DIMENSION PACKING	441.5K hrs min. MIL-F 78x93x56mm (WxHxD) 0.27Kg; 48pcs / 14Kg / All parameters NOT specially me	HDBK-217K (25°C) 1.02CUFT entioned are measured at 230	W AC input, rated load and 25°C of a	imbient temperature

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### **Mechanical Specification**



#### Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.





**Derating Curve** 



Output Derating VS Input Voltage



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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1850

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# **PS-45 Series Specifications**



#### Features:

- Universal AC input / full range Protections: Short Circuit / Overload / Over Voltage/ • Overtemperature
- Cooling by free air convection
- DIN rail mountable
- UL508 approved •
- LED indicator for power on •
- Fix switching frequency at 100kHz •
- 100% full load burn-in test
- 3 year warranty

	Ual. NU.	r 3-4303	10 4012		10-4324
OUIPUI	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	5A	3.5A	2.8A	2A
	CUBBENT BANGE	0 ~ 5A	0 ~ 3.5A	0 ~ 2.8A	0 ~ 2A
	BATED POWER	25W	42W	42W	48W
		100m\/n n	200m\/n n	42W	40W
	hiffee & NOISE (Inax)		ZUUIIIVP-P	24011VP-P	400111VP-P
		Ripple & noise are measure	a at 20MHz of bandwidth by usin	g a 12 twisted pair-wire terminated	with a U. I µF & 4/µF parallel (
		4.75 ~ 5.5V	10.0 ~ 13.2V	13.5 ~ 10.5V	21.0 ~ 20.4V
	VULIAGE TULERANGE	±2.0%	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up 1	olerance, line regulation and load	regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 60ms / 230	AC at full load		
INDUT	HOLD UP TIME (Typ.)	60ms / 230VAC at fu	III load		
INFUI	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz			
	EFEICIENCY (Typ.)	72%	77%	77%	80%
	AC CUBBENT (max)	1.5A / 115VAC	0 75A / 230VAC	1.1.70	0070
	INBUSH CUBBENT (Typ.)	COLD START 284 / 1	15VAC: 56A / 230VAC		
		<1mA / 2/10\/AC	13140, 3047 230140		
ROTECTION					
	OVERLOAD	105 ~ 160% rated o	utput power		
		Protection type: Constant c	urrent limiting recovers automatic	ally after fault condition is removed	
	OVERVOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type: Shut down	overvoltage, clamping by zener d	iode	
	OVERTEMPERATURE	Tj 135°C typically (U	<ol> <li>detect on heat sink of p</li> </ol>	oower transistor	
		Protection type: Shut down	overvoltage, re-power on to reco	ver	
VIRUNIVIENT	WORKING TEMPERATURE	-10 ~ +50°C (Refer	o output load derating cu	irve)	
	WORKING HUMIDITY	20 ~ 90% BH non-c	ondensina		
	STORAGE TEMP HUMIDITY	-20 ~ +85°C 10 ~ 9	15% BH		
		$\pm 0.03\% / ^{\circ}C / 0 \sim 50$	°C)		
	VIBRATION	Component: 10 - 50	0/ 10Hz 2G 10min / 1cvcle	60 min each long X V 7 a	VOC
	MOUNTING	Compliance to $IECEC$	0112, 20 1011111. / 109016,	00 mm. each long X, I, Z a	A63
FETY & EMC	MOUNTING		000-2-0		
	SAFETY STANDARDS	UL508			
		EN60950-1 approve	d		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/F	P-FG:1.5KVAC 0/P-FG:0.	5KVAC	
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-	FG: 100M 0hms / 500VE	DC (25°C; 70% RH)	
	EMI CONDUCTION & RADIATION	Compliance to EN55	011; EN55022 (CISPR22)	Class B	
	HARMONIC CURRENT	Compliance to EN61	000-3-2,-3		
1	EMS IMMUNITY	Compliance to EN61	000-4-2,3,4,5,6,8,11; EN	V50204; EN55024; EN610	00-6-2;
		heavy industry level;	criteria A		
		The power supply is consid	ered a component which will inst	alled into a final equipment.	
		The final equipment must b	e re-confirmed that it still meets	EMC directives.	
UTHERS	MTRE	364 6K hre min M	II _HDBK_217K (25°C)		
	DIMENSION	02v70v67mm /1 v/M/	L		
		95X/6X0/11111 (LXWX	П) И/а / 1 20ИГТ		
	PAUKING	0.31Kg; 48pcs / 16.	INY / 1.300F1		

### **Mechanical Specification**

Terminal Pin. No Assignment							
Pin	Pin Assignment Pin Assignment						
1	AC/L	6,7	DC OUTPUT+V				
2	AC/N	8	LED				
3	FG 🖶	9	+V ADJ.				
4,5	DC OUTPUT-V						





**Block Diagram** 



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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OUTPUT RIPPLE (mVp-p)

Accessories

1858

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# **PS-60 Series** Specifications



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### Features:

- Universal AC input / full range Protections: Short Circuit / Overload / Over Voltage Cooling by free air convection DIN rail mountable •
- •
- Isolation class II •
- LED indicator for power on . • 100% full load burn-in test
- 3 year warranty

Cat. No.	PS-6005	PS-6012	PS-6015	<b>PS-6024</b>
DC VOLTAGE RATED CURRENT CURRENT RANGE	5V 6.5A 0 ~ 6.5A	12V 4.5A 0 ~ 4.5A	15V 4A 0 ~ 4A	24V 2.5A 0 ~ 2.5A
RATED POWER RIPPLE & NOISE (max)	32.5W 80mVp-p	54W 120mVp-p	60W 120mVp-p	60W 150mVp-p
VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	4.75 ~ 5.5V ±2.0%	11.1 ~ 13.2V ±1.0%	13.5 ~ 16.5V ±1.0%	$\begin{array}{c} 21.6 \sim 26.4V\\ \pm 1.0\% \end{array}$
LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	100erance: includes set up toleral ±1.0% ±1.0% 100ms, 30ms / 230VAC 100ms / 230VAC	tee, line regulation and load ±1.0% 200ms, 30ms / 115 23ms / 115VAC at 1	$ \begin{array}{c} \pm 1.0\% \\ \pm 1.0\% \\ 5VAC at full load \\ full load \end{array} $	±1.0% ±1.0%
VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.) INRUSH CURRENT (Typ.)	85 ~ 264VAC 47 ~ 63Hz 76% 1.2A / 115VAC COLD START 18A / 115V	124 ~ 370VDC 82% 0.8A / 230VAC AC; 36A / 230VAC	83%	84%
OVERLOAD OVERVOLTAGE	105 ~ 160% rated output         Protection type: Constant current         5.75 ~ 6.75V         Protection type: Shut down over	It power limiting recovers automatic 13.8 ~ 16.2V roltage, re-power on to reco	ally after fault condition is removed   17.25 ~ 20.25V	27.6 ~ 32.4V
WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +60°C (Refer to ou 20 ~ 90% RH non-condi -40 ~ +85°C, 10 ~ 95% ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. Compliance to IEC60068	utput load derating cu ensing RH / 1cycle, 60 min. eacl -2-6	ırve) h long X,Y, Z axes	
SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL60950-1 EN60950-1approved Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M Ohms/500 Compliance to EN55011 EN55022 (CISPR22) Clas Compliance to EN61000 Compliance to EN61000 heavy industry level; crit The power supply is considered that is still meets EMC directives	DVDC (25°C; 70% RH is B -3-2,-3 -4-2,3,4,5,6,8,11; EN eria A a component which will inst	) IV50204; EN55024; EN6100 alled into a final equipment. The final	0-6-2; EN61204-3; equipment must be re-confirmed
MTBF DIMENSION PACKING	216.2K hrs min. MIL-H 78x93x56mm (WxHxD) 0.3Kg; 48pcs / 15.4Kg / All parameters NOT specially me	IDBK-217K (25°C) 1.02CUFT ntioned are measured at 23	OV AC input, rated load and 25°C of a	mbient temperature
	Cat. NO.DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max)VOLTAGE ADJ. RANGE VOLTAGE TOLERANCELINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.) INRUSH CURRENT (Typ.)OVERLOAD OVERVOLTAGEWORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTINGSAFETY STANDARDSWITHSTAND VOLTAGE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITYMTBF DIMENSION PACKING	Cat. No.PS-DUCSDC VOLTAGESVRATED CURRENT6.5ACURRENT RANGE0 ~ 6.5ARATED POWER32.5WRIPPLE & NOISE (max)80mVp-pNipple & noise are measured at 1VOLTAGE ADJ. RANGE4.75 ~ 5.5VVOLTAGE TOLERANCE±2.0%LINE REGULATION±1.0%LOAD REGULATION±1.0%SETUP, RISE TIME100ms, 30ms / 230VACHOLD UP TIME (Typ.)100ms, 30ms / 230VACVOLTAGE RANGE85 ~ 264VACFREQUENCY RANGE47 ~ 63H2FREQUENCY RANGE76%AC CURRENT (max.)1.2A / 115VACINRUSH CURRENT (Typ.)COLD START 18A / 115VOVERLOAD105 ~ 160% rated outpuProtection type: Constant currentOVERVOLTAGE-20 ~ +60°C (Refer to outpuWORKING TEMP20 ~ +60°C (Refer to outpuWITHSTAND VOLTAGEI/P-0/P: 3KVACISOLATI	Cat. NO.PS-b005PS-b012DC VOLTAGE RATED CURRENT CURRENT RANGE CURRENT RANGE RATED POWER RIPPLE & NOISE (max)5V12VVOLTAGE ADJ. RANGE VOLTAGE TOLERANCE $0 \sim 6.5A$ $0 \sim 4.5A$ VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE $4.75 \sim 5.5V$ $11.1 \sim 13.2V$ VOLTAGE TOLERANCE $\pm 2.0\%$ $\pm 1.0\%$ LINE REGULATION HOLD UP TIME (Typ.) $\pm 1.0\%$ $\pm 1.0\%$ LOAD REGULATION LOAD REGULATION $\pm 1.0\%$ $\pm 1.0\%$ VOLTAGE RANCE $2.0\%$ $\pm 1.0\%$ VOLTAGE RANCE $100ms, 30ms / 230VAC$ $20ms, 30ms / 115$ VOLTAGE RANCE FREQUENCY RANGE $85 \sim 264VAC$ $124 \sim 370VDC$ FREQUENCY RANGE FREQUENCY RANGE $85 \sim 264VAC$ $124 \sim 370VDC$ VOLTAGE RANCE FREQUENCY RANGE $5.75 \sim 6.75V$ $13.8 \sim 16.2V$ Protection type: Constant current limiting recovers automatic 0VERLOAD $005 \sim 160\%$ rated output powerOVERLOAD $005 \sim 160\%$ rated output powerOVERVOLTAGE $5.75 \sim 6.75V$ $13.8 \sim 16.2V$ WORKING TEMP. VORKING TEMP. VORKING TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION INNUNTING $20 \sim 90\%$ RH non-condensing $20 \sim 90\%$ RH non-condensing $20 \sim 90\%$ RH non-condensing $20 \sim 90\%$ RH non-condensing $40 \sim +85^{\circ}$ , $10 \sim 550Hz$ , $26$ , $50Hz$ SAFETY STANDARDSUL60950-1 ENS0950-1 approved Design refer to ENS0178 UP-0/P: 100M Ohms/500VDC (25°C; 70% RH Compliance to ENS0101 ENS0922 (Class B Compliance to ENS1000 $-3.2, -3$ Compliance to ENS1000 $-3.2, -3$ Compliance to ENS1000 $-3.2, -3$ Compliance to ENS1000 $-3.2, -3$ Compliance to ENS1000 $-3.$	Lat. NO.PS-6003PS-6012PS-6013DC VOLTAGESV12V15VARTED CURRENT6.5A4.5A4.5ACURRENT FANGE0 ~ 6.5A0 ~ 4.5A0 ~ 4.4CURRENT FANGE32.5W54W60WRIPPLE A NOSE (max)80mVp-p120mVp-pRIPPLE A NOSE (max)80mVp-p120mVp-pRIPPLE A NOSE (max)80mVp-p120mVp-pVOLTAGE TOLERANCE $\pm 2.0\%$ $\pm 1.0\%$ $\pm 2.0\%$ $\pm 1.0\%$ $\pm 0.0\%$ $\pm 2.0\%$ $\pm 1.0\%$ $\pm 0.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 0.0\%$ $\pm 2.0\%$ $\pm 1.0\%$ $\pm 0.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 0.0\%$

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#### **Mechanical Specification**

Terminal Pin. No Assignment

AC/L

AC/N

+V

Pin No. Assignment Pin No. Assignment

5,6 -V

7

8

LED

+V ADJ





Block Diagram

1

2

3,4



**Derating Curve** 



Output Derating VS Input Voltage

115

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

**INPUT VOLTAGE (VAC) 60Hz** 

120 140 160 180 200 220 240 264

Ta=25°C

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# PS-100 Series Specifications

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CAUTION

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#### Features:

- Universal AC input / full range
   Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Cooling by free air convection
- DIN rail mountable
- Isolation class II
- LED indicator for power on
- No load power consumption<1W
- 100% full load burn-in test
- 3 year warranty

	Cat. No.	PS-10012	PS-10015	PS-10024
UUIFUI	DC VOLTAGE	12V	15V	24V
	RATED CURRENT	7.5A	6.5A	4.2A
	CUBBENT BANGE	0 ~ 7 5A	0 ~ 6 5A	0 ~ 4 2A
	BATED POWER	90W/	97.5W	100 8W
	DIDDI E & NOISE (max)	120mVn n	120m\/n_n	150m\/n n
	hiff LE & NOISE (IIIdA)			
		Ripple & noise are measured at 20MF	Tz of bandwidth by using a 12 twisted pair-wir	e terminated with a U.1µF & 47µF parallel capacit
	VOLTAGE ADJ. KANGE	12~150	15~180	24 ~ 290
	VULIAGE TULERANCE	±2.0%	±1.0%	±1.0%
		Tolerance: includes set up tolerance, I	line regulation and load regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	2700ms, 80ms / 230VAC	2700ms, 80ms / 115VAC at full lo	bad
INDUT	HOLD UP TIME (Typ.)	50ms / 230VAC	18ms / 115VAC at full load	
INPUT	VOLTAGE BANGE	88 ~ 264VAC	124 ~ 370VDC	
	EBEQUENCY BANGE	47 ~ 63Hz		
	EFEICIENCY (Typ.)	87%	87%	89%
		20 / 115//00	1 64 / 220//40	8370
	AC CONNENT (IIIdX.)	SA / TISVAG	1.0A / 230VAG	
ROTECTION	INRUSH CURRENT (Typ.)	CULD START 30A / TT5VAC;	45A / 230VAC	
	OVERLOAD	105 ~ 135% rated output po	ower	
		Protection type: Constant current limit	ting recovers automatically after fault condition	n is removed
		Under short circuit or overload $\geq 150^{\circ}$	% conditions, output voltage may shut down for	or 5 sec. and then go into constant
		current protection mode		
	OVERVOLIAGE	16 ~ 20V	19 ~ 230	30 ~ 35V
		Protection type: Shut down overvoltag	ge, re-power on to recover	
	OVERTEMPERATURE	$90^{\circ}C \pm 15^{\circ}C$ (RTH2) detect o	on heat sink of power transistor	
WIDONIMENT		Protection type: Shut down of	overvoltage, re-power on to recove	r
	WORKING TEMP.	-20 ~ +60°C (Refer to output	it load derating curve)	
	WORKING HUMIDITY	20 ~ 90% RH non-condensi	ina	
	STORAGE TEMP. HUMIDITY	-40 ~ +85°C, 10 ~ 95% BH	5	
		$\pm 0.03\%$ /°C (0 ~ 50°C)		
	VIBRATION	$10 \sim 500$ Hz 2G 10 min / 1c	ycle 60 min each long X V 7 aves	
	MOUNTING	Compliance to IEC60068 2		
FETY & EMC	MOONTING		0	
	SAFETY STANDARDS	UL60950-1		
		EN60950-1compliant		
		Design refer to EN50178		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC		
	ISOLATION RESISTANCE	I/P-0/P: 100M 0hms/500VD	C (25°C; 70% RH)	
	EMI CONDUCTION & RADIATION	Compliance to EN61204-3:	EN55022 (CISPR22) Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2	2-3	
		Harmonic current test @ 90% load	-, -	
	EMS IMMUNITY	Compliance to EN61000-4-2	2 3 4 5 6 8 11· ENV50204· EN5502	4. EN61000-6-2. EN61204-3.
		boow industry lovel: criteria	Δ	+, ENOTOGO O 2, ENOTZO4 3,
		The power supply is considered a cor	A monent which will installed into a final equina	nent The final equipment must be re-confirmed
		that is still meets EMC directives.	nponent which will instance into a final equipt	
OTHERS	MTDE	496K bro min MIL UDDK	217K (25°C)	
			2111 (23.0)	
	DIMENSION			
	DACI/INIC			
	PACKING	0.35Kg; 36pcs / 13.6Kg / 0.	89CUF1	

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#### **Mechanical Specification**

100	
5 64.75 5 5 5 7.5	
- 0 w4 n 0	
07	03
Ŏ8	



Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.

Terminal Pin. No Assignment

### **Block Diagram**



**Derating Curve** 



### **Output Derating VS Input Voltage**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

1850

# 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  $-20^{\circ}$  C up to  $+70^{\circ}$  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:
- AC inrush current: Cold start:
- Overload voltage protection:
- Over-voltage protection:
- Setup, rise, hold up time:
- Working temperature:

**Three Phase Power Supply:** 

- Three phase input
- Input voltage range:
- AC inrush current:
- Overload voltage protection:
- Over-voltage protection:
- Setup, rise, hold up time:
- Working temperature:
- EMC standards:

85-264V AC / 120-370V DC

- 20A at 115V AC, 40A at 230V AC 105%-160% constant current limiting auto-recovery 115%-135% rated output voltage 500ms; 70ms; 30ms at full load and 230V AC -20 to +50°C (-4° to +122°F) at 100% +60°C (+140°F) at 80% load
- 340-550V AC / 480-760V DC Cold start: 50A 105%-150% constant current limiting auto-recovery 115%-135% rated output voltage 1200ms, 40ms, 20ms @ 400V AC 800ms, 40ms, 20ms @ 500V AC full load -20 to +70°C (-4 to +158°F) at 100% EN61000-6-2 (EN50082-2) Heavy Industrial Level; criteria A

### Single Phase

75-240W	pages 36-45
480W and 480W Switch Select	pages 46-51
Three Phase	
240-960W	pages 52-59

# **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



Accessories

Altech Corp.

# 75-240W Single Phase Power Supplies

### 75W Single Output DIN Rail Power Supply

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Cat. No.	Outp V DC	ut 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%	

### 120W Single Output DIN Rail Power Supply

Cat. No.	Outp	ut	Tol.	Ripple &	Efficiency	NOTES
	V DC	Α	%	Noise		
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%	

### 120W High Input Single Output DIN Rail Power Supply

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



HIGH INPUT

# **SPECIFICATIONS**

# Altech Corp.

Accessories

**PS-75 Series** 



Terminal Pin. No Assign. (TB1)		Termina	l Pin. No Assign. (TB2)
Pin No. Assignment		Pin No.	Assignment
1	FG⊕	1,2	DC OUTPUT +V
2	AC/N	3,4	DC OUTPUT -V
3	AC/L		

	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. (TB				
Pin Nb. 1 2		Assignment			
		FG⊕			
		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



Terminal Pin. No Assign. (T				
	Pin No.	Assignmen	t	
	1	FG 🖶		
	2	AC/N(L2)		
	3	AC/L(L1)		
I	Universal	Input:	340-550\	

Terminal Pin. No Assign. (TB2)				
Pin No.	Assignment			
1,2	DC OUTPUT +V			
3,4	DC OUTPUT -V			

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**



100

Terminal Pin. No Assign. (TB1)				
Pin No.	Assignment			
1	FG 🖶			
2	AC/N			
3	AC/L			

)	Terminal	al Pin. No Assign. (TB2)		
	Pin No.	Assignment		

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

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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# **PS-75 Series** Specifications



CE

### Features:

- Univers al AC input / full range
  - Protections: Short Circuit / Over load /
  - Overvoltage / Over temperature Cooling by free air convection
- ٠
- 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

	Cat. No.	PS-7512	PS-7524	<b>PS-7548</b>		
OUTPUT	DC VOLTAGE	12V 6 20	24V 2 20	48V		
		0.620	0.224	0 1 6		
		0~0.5A	0 ~ 3.2A 76 9W	0~1.0A		
		100mVp p	70.0W	70.0W		
~~~ I	hirree & Noise (max)	Pipple & point are measured at 20MHz a	f handwidth by using a 12 twisted pair wire termine	tod with a 0 1/F % 47/F parallel cond		
	VOLTAGE AD L BANGE	Ripple & hoise are measured at 20MHz d $12 \sim 14V$	$24 \sim 28V$	100  with a 0.1 µF & 47 µF parallel capa		
	VOLTAGE TOLEBANCE	+2.0%	+1.0%	+1.0%		
	VOEIAGE FOEEIVINGE	Tolerance: includes set un tolerance line		1.070		
	LINE REGULATION	+0.5%	+0.5%	+0.5%		
	LOAD REGULATION	+1.0%	+1.0%	+1.0%		
	SETUP. RISE TIME	1000ms. 60ms / 230VAC 1	800ms. 60ms / 115VAC at full load			
	HOLD UP TIME (Typ.)	60ms / 230VAC	12ms / 115VAC at full load			
NPUT -		85 ~ 264VΔC 120 ~ 370	N/DC			
	EREQUENCY BANGE	47 ~ 63Hz				
	FFFICIENCY (Typ.)	76%	80%	81%		
	AC CUBBENT (max.)	1.6 A / 115VAC 0.96A / 23	OVAC			
	INRUSH CURRENT (Tvp.)	COLD START 20A / 115V	AC 40A / 230VAC			
	LEAKAGE CURRENT	$\leq$ 1mA / 240VAC				
TECTION -	Ονεβί θαρ	$105 \sim 150\%$ rated output pow	er			
	OVENEOND	Protection type: Constant current limiting	recovers automatically after fault condition is remov	ved		
_	OVERVOLTAGE	15 ~ 16.5V	29 ~ 34V	58 ~ 65V		
		Protection type: Shut down overvoltage.	re-power on to recover			
	OVERTEMPERATURE	$85^{\circ}C \pm 5^{\circ}C$ (TSW1) detect on h	eat sink of power transistor			
		Protection type: Shut down overvoltage, r	recovers automatically after temperature goes down			
ONMENT	WOBKING TEMP	$-10 \sim +60^{\circ}$ C (Befer to output l	oad derating curve)			
	WORKING HUMIDITY	$20 \sim 90\%$ BH non-condensing				
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C. 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes				
	VIBRATION					
	MOUNTING	Compliance to IEC60068-2-6	,			
TY & EMC	SAFETY STANDARDS	11.508				
		FN60950-1 approved				
- 1	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5K	VAC 0/P-FG: 0.5KVAC			
1	ISOLATION RESISTANCE	I/P-0/P. I/P-FG. 0/P-FG: 100M	Ohms / 500VDC			
	EMI CONDUCTION & RADIATION	Compliance to EN55011; EN55	022 (CISPR22) Class B			
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	3			
	EMS IMMUNITY	Compliance to EN61000-4-2,3	,4,5,6,8,11; ENV50204; EN55024; EN6-	1000-6-2; (EN50082-2)		
		heavy industry level; criteria A				
		The power supply is considered a compo	nent which will installed into a final equipment. The	final equipment must be re-confirme		
HERS	1	that it still meets EMC directives.				
	MTBF	123.1K hrs min. MIL-HDBK-2	217K (25°C)			
	DIMENSION	55.5x125.2x100mm (WxHxD)				
	PACKING	0.6Kg; 20pcs / 13Kg / 1.29CUF	т			
		All parameters NOT specially mentioned	are measured at 230V AC input, rated load and $25^\circ C$	of ambient temperature.		
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### **Mechanical Specification**



Terminal	Pin. No Assignme	nt (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**



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#### **Derating Curve**



### **Output Derating VS Input Voltage**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Simline

Low Profile single phase

High Efficiency ompact housin

Accessories

### PS-120 Series Specifications

110/220



#### 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

OUTDUIT	Cat. No.	PS-12012	<b>PS-12024</b>	<b>PS-12048</b>
UUIPUI	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A
	CUBBENT BANGE	0 ~ 10A	0~5A	$0 \sim 2.5A$
	BATED POWER	120W	120W	120W
	RIPPI F & NOISE (max)	80mVp-p	80mVp-p	100mVn-n
		Bipple & noise are measured at 20MHz	of bandwidth by using a 12 twisted pair-wire terminate	1 with a 0 1 uF & 47 uF narallel canacitor
	VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLEBANCE	+2.0%	+1.0%	+1.0%
		Tolerance: includes set un tolerance line		
	LINE REGULATION	+0.5%	+0.5%	+0.5%
		+1.0%	+1.0%	+1.0%
	SETUP BISE TIME	500ms 70ms / 230VAC 50	10  ms 70 ms / 115 VAC at full load	-1.070
	HOLD UP TIME (Tvp.)	36ms / 230VAC	32ms / 115VAC at full load	
INPUT –				
	VOLTAGE RANGE	88 ~ 132VAC / 176 ~ 264VAC	by switch 248 ~ 370VD	5
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	80%	84%	85%
	AC CURRENT (max.)	2.6 A / 115VAC 1.6A / 230	OVAC	
	INRUSH CURRENT (Typ.)	COLD START 20A / 115V	AC 40A / 230VAC	
	LEAKAGE CURRENT	$\leq$ 3.5mA / 240VAC		
PROTECTION -		105 150% rated output pow	ior	
	OVENLOAD			
		Protection type: Constant current limiting	g, recovers automatically after fault condition is remove	
	UVERVULIAGE	15~10.5V	29 ~ 33V	00 ~ 00V
		Protection type: Shut down overvoltage,	re-power on to recover	
	UVERTEIMPERATURE	$850 \pm 50 (15W1)$	$900 \pm 50 (15W1)$	$900 \pm 50(1501)$
ENVIRONMENT -		Protection type: Shut down overvoltage,	recovers automatically after temperature goes down	
	WORKING TEMP.	-10 ~ +60°C (Refer to output I	oad derating curve)	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	1	
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle	e, 60 min. each long X,Y, Z axes	
	MOUNTING	Compliance to IEC60068-2-6		
SAFETY & EMC				
	SAFETY STANDARDS	UL508		
		UL60950-1		
		EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5K	VAC 0/P-FG: 0.5KVAC	
10	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M	Ohms / 500VDC	
	EMI CONDUCTION & RADIATION	Compliance to EN55011; EN55	5022 (CISPR22) Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2,-	3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3	3,4,5,6,8,11; ENV50204; EN55024; EN610	00-6-2; (EN50082-2);
		heavy industry level; criteria A		
		The power supply is considered a comp	onent which will installed into a final equipment. The fir	al equipment must be re-confirmed
OTHERS		that it still meets EMC directives.		
UTILINO	MTBE	136 8K hrs min MII - HDBK-	217K (25°C)	
	DIMENSION	65 5x125 2x100mm (WvHvD)		
	PACKING	0.79Ka: 20pcs / 16.5Ka / 1.20	CLIFT	
		All parameters NOT specially mentioned	are measured at 230V AC input rated load and 25°C of	ambient temperature
		paramotoro non oponany montuoneu		ansion importation.

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

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#### **Mechanical Specification**



Terminal	Pin. No Assignme	nt (TB1)
Pin No.	Assignment	
1	FG 🖨	
2	AC/N	
3	AC/L	

Terminal Pin. No Assignment (TB2)

 Pin No.
 Assignment

 1.2
 DC OUTPUT HV

1 111140.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V



### **Derating Curve**

**Block Diagram** 



### Static Characterisitcs (24V)



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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### PSH-120 High Input Series

### Specifications



HIGH INPUT

### 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

OUTDUT	Cat. No.	PSH-12024	PSH-12048
UUIPUI	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 twi	sted pair-wire terminated with a 0.1µF & 47µF parallel capac
	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%
INDUT	SETUP, RISE, HOLD UP TIME	1700ms, 120ms, 16ms / 400VAC 1000ms, 120n	ns, 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	
DOTEOTION	LEAKAGE CURRENT	$\leq$ 3.5 mA / 530VAC	
	OVERLOAD	105 ~ 160% rated output power	
		Protection type: Constant current limiting, recovers automatically after f	ault condition is removed
	OVERVOLTAGE	30 ~ 36V	59 ~ 66V
		Protection type: Shut down overvoltage, re-power on to recover	· ·
	OVERTEMPERATURE	$85^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sink of power switch	n)
		Protection type: Shut down overvoltage, recovers automatically after ter	nperature goes down
	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
ETV 9 EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL60950-1 approved	
		IEC60950-1 CB approved by SIQ	
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5KVAC 0/P-FG: 0.5KVA	C
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms / 500VDC (25°C;	70% RH)
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11); EN55022 (CISPR	22); 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
OTHERS		that it still meets EMC directives.	
	MTBF	178.7K hrs min. MIL-HDBK-217K (25°C)	
	DIMENSION		
	PACKING	0.75Kg; 20pcs / 16Kg / 1.29CUF1	
		All parameters NOT specially mentioned are measured at 230V AC input	t, rated load and 25°C of ambient temperature.

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# Simine singie prase

# High Efficiency compact housing

Accessories

### **Mechanical Specification**



Terminal	Pin No. Assignme	nt (TB1)
Pin No.	Assignment	
1	FC A	

1	FG 🖶
2	AC/L2
3	AC/L1

Terminal	Pin No. Assignme	nt (TB2)
Pin No.	Assignment	
1,2	DC OUTPUT +V	
3,4	DC OUTPUT -V	

### **Block Diagram**



### **Derating Curve**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

### PSP-240 Series Specifications



#### Features:

- Universal AC input / full rangeBuilt in active PFC function
- 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

OUTDUT	Cat. No.	PSP-24024	PSP-24048
UUIPUI	DC VOI TAGE	24V	48V
	BATED CUBBENT	104	50
	CUBBENT BANGE	$0 \sim 10A$	$0 \sim 54$
	BATED POWEB	240W	240W
	BIPPI E & NOISE (max)	80m\/n-n	150m\/n-n
		Bipple & noise are measured at 20MHz of bandwidth by using a 12 twisted	pair-wire terminated with a 0.1 uF & 47 uF parallel capacito
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation and load regulation.	1
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 40ms / 230VAC 800ms, 40ms / 115VAC at f	ull load
	HOLD UP TIME (Typ.)	24ms / 230VAC 24ms / 115VAC at full load	
INPUT –		05 00 1//10 100 070//00	
	VOLIAGE RANGE	85 ~ 264VAC 120 ~ 370VDC	
		Derating may be needed under low input voltages, please check the deratin	ng curve for more detail
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	0.96 / 230VAC 0.99 / 115VAC at full load	1
	EFFICIENCY (Typ.)	84%	85%
	AC CURRENT (max.)	2.8A / 115VAC; 1.4A / 230VAC	
	INRUSH CURRENT (Typ.)	COLD START 2/A / 115VAC 45A / 230VAC	
DEDTECTION	LEAKAGE CURRENT	$\leq$ 3.5mA / 240VAC	
	OVERLOAD	105 ~ 150% rated output power	
		Protection type: Constant current limiting, recovers automatically after fault	condition is removed
	OVERVOLTAGE	30 ~ 36V	54 ~ 60V
		Protection type: Shut down overvoltage, re-power on to recover	1
	OVERTEMPERATURE	$100^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sink of power transisted	or)
		Protection type: Shut down overvoltage, recovers automatically after tempe	rature goes down
ENVIRONMENT -		$10 - 70^{\circ}$ C (Defer to output load densiting output)	
		$-10 \sim +70$ C (Refer to output load defailing curve)	
		$20 \sim 90\%$ RH non-condensing	
	STURAGE TEMP., HUMIDITY	-20 ~ +85 0, 10 ~ 95% KH	
		$\pm 0.03\%$ / C (0 ~ 50 C)	
	VIBRATION	10 ~ 500HZ, 2G TOMIN./TCYCle, 60 min. each long X, Y, Z	axes
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL508	
		EN60950-1	
		EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5KVAC 0/P-FG: 0.5KVAC	
	ISOLATION RESISTANCE	I/P-0/P. I/P-FG. 0/P-FG: 100M 0hms / 500VDC	
	EMI CONDUCTION & RADIATION	Compliance to EN55011: EN55022 (CISPR22) Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2 -3	
	FMS IMMUNITY	Compliance to EN61000-4-2.3.4.5.6.8.11; ENV50204; El	N55024: EN61000-6-2: (EN50082-2):
		heavy industry level: criteria A	
		The power supply is considered a component which will installed into a fina	al equipment. The final equipment must be re-confirmed
OTHEDS		that it still meets EMC directives.	
UITIENS	MTBE	289.9K hrs min MII -HDBK-217K (25°C)	
	DIMENSION	125.5x125.2x100mm (WxHxD)	
	PACKING	1.2Kg: 12pcs / 15.5Kg / 1.29CHFT	
	17 Onited	All parameters NOT specially mentioned are measured at 220V AC input ra	ted load and 25°C of ambient temperature
		ni parameters nor specially menuolieu die medsuleu di 2300 AC MUU, id	ינים וסמים מווע בסיס סו מוווטוכות נכוווטרומנטוט.

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#### **Mechanical Specification**



Terminal Pin Number Assignment (TB1)

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

rennant in rannoor / leerginnent ( 122)	Terminal Pin	Number	Assignment	(TB2)
-----------------------------------------	--------------	--------	------------	-------

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

#### **Block Diagram**









**INPUT VOLTAGE (V) 60Hz** 

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Accessories

Case

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### 480W Single Phase Power SUPPLIES

220V ONLY

110/220V SWITCH SELEC

### 480W 220V AC Single Output DIN Rail Power Supply with PFC Function

Cat. No.	Outp	ut	Tol.	Ripple &	Efficiency	NOTES
	V DC	Α	%	Noise		
PSP-48024	24V DC	20A	±1%	120 mVp-p	89%	
PSP-48048	48V DC	10A	±1%	120 mVp-p	89%	

### 480W Switch Select 110/220V AC Single Output DIN Rail Power Supply with PFC Function

Cat. No.	Outp	ut	Tol.	Ripple &	Efficiency	NOTES
	V DC	Α	%	Noise		
PSP-480S24	24V DC	20A	±1%	120 mVp-p	89%	
PSP-480S48	48V DC	10A	±1%	120 mVp-p	89%	

### **SPECIFICATIONS**



# single phase

## Low Profile ingle phase

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15	$\mathbf{e}$
	42
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### PSP-480 Series (220V AC input only)



1	TB1 Tern	ninal Pin. No Assignment
	Pin No.	Assignment
	1	AC/L
	0	

FG∉

3

B2 Tern	ninal Pin. No Assignmen
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

Wide range Input: 180-264V AC only, 250-370V DC, 4A @ 230V AC Built in passive Power Factor Correction function compliance to EN61000-3-2, PF>0.7

Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 227x125x100mm (8.95x4.95x3.95 inches) Packaging: 1/box; 5.3lbs / 2.4Kg

### PSP-480 with Switch Series (110V AC and 220V input AC)



TB1 Terminal Pin. No Assignmer					
	TB1	Terminal	Pin.	No	Assignmer

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

TB2 Terminal Pin. No Assignment

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

Switch select Input: 90-132V AC / 180-264 V AC, 254-370V DC range 8A @ 115V AC, 3.2A @ 230V AC

Built in passive Power Factor Correction function compliance to EN61000-3-2, PF>0.7/230V AC only

Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 227x125x100mm (8.95x4.95x3.95 inches) Packaging: 1/box; 5.8lbs / 2.6Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

# PSP-480 Series Specifications

#### Features:

- Built-in passive PFC function compliance to EN61000-3-2
- High efficiency 89% and low dissipation
- Protections: Short Circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PSP-48024	PSP-48048	
UUIPUI	DC VOLTAGE RATED CURRENT CURBENT RANGE	24V 20A 0 ~ 20A	48V 10A 0 ~ 10A	
	RATED POWER RIPPLE & NOISE (max)	480W 120mVp-p	480W 120mVp-p	
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	Ripple & noise are measured at 20MHz of b 24 ~ 28V ±1.0%	andwidth by using a 12 twisted pair-wire terminated with a 0.1 $\mu$ F & 47 $\mu$ F parallel capacidade 48 $\sim$ 53V $\pm1.0\%$	
	LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	Tolerance: includes set up tolerance, line reg $\pm 0.5\%$ $\pm 1.0\%$ 1200ms, 40ms / 230VAC at full le 16ms / 230VAC	gulation and load regulation. ±0.5% ±1.0% pad	
	VOLTAGE RANGE FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.) AC CURRENT (Typ.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	180 ~ 264 VAC by switch 25 47 ~ 63Hz ≥0.7 89% 4A / 230VAC COLD START 27A / 115VAC ≤ 3.5mA / 240VAC	0 ~ 370VDC 45A / 230VAC	
PROTECTION	OVERLOAD OVERVOLTAGE	105 ~ 150% rated output power         Protection type: Constant current limiting, re         30 ~ 36V         Protection type: Shut down overvoltage, re-;	covers automatically after fault condition is removed $54 \sim 60V$ power on to recover	
	OVERTEMPERATURE	$100^{\circ}C \pm 5^{\circ}C$ (TSW: detect on hea Protection type: Shut down overvoltage, rec	t sink of power switch) overs automatically after temperature goes down	
	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +70°C (Refer to output loa 20 ~ 95% RH non-condensing -20 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 6 Compliance to IEC60068-2-6	d derating curve) 60 min. each long X,Y, Z axes	
SAFETY & EMC	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 EN60950-1 EN60950-1 approved I/P-O/P: 3KVAC I/P-FG: 1.5KVA I/P-O/P, I/P-FG, 0/P-FG: ≥100M 0 Compliance to EN55022 (CISPR2 Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4, heavy industry level; criteria A The power supply is considered a component that it still meets EMC directives.	C O/P-FG: 0.5KVAC Dhms / 500VDC (25°C; 70% RH) 22); Class B 5,6,8,11; ENV50204; EN61000-6-2 (EN50082-2); nt which will installed into a final equipment. The final equipment must be re-confirmed	
UTILIIS	MTBF DIMENSION PACKING	180.9K hrs min. MIL-HDBK-217K (25°C) 227x125.2x100mm (WxHxD) 2.4Kg; 6pcs / 15Kg / 1.75CUFT All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.		

### Altech Corp.

### **Mechanical Specification**



TB1 Tern	ninal Pin. No	Assignment
Pin No.	Assignment	
1	AC/L	
2	AC/N	
3	FG 🖶	

TB2 Terminal Pin. No Assignment			
Pin No. Assignment			
1,2	DC OUTPUT +V		
3,4	DC OUTPUT -V		

**Output Derating VS Input Voltage** 

#### **Block Diagram**



**Derating Curve** 



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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### PSP-480S Series Specifications



#### Features:

- AC input range selectable by switch
- Built-in passive PFC function compliance to EN61000-3-2
- High efficiency 89% and low dissipation
- Protections: Short Circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PSP-480S24	PSP-480S48
UUIPUI	DC VOLTAGE RATED CURRENT	24V 20A	48V 10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	RIPPLE & NOISE (max)	120mVp-p	120mVp-p
		Ripple & noise are measured at 20MHz of band	twidth by using a 12 twisted pair-wire terminated with a $0.1\mu F$ & $47\mu F$ parallel capacitor
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regula	ation and load regulation.
		±0.5%	±0.3%
	SETUP RISE TIME	1200  ms 40  ms / 230  VAC 1200	$1 \pm 1.0\%$ ms 40ms / 115VAC at full load
	HOLD UP TIME (Tvp.)	23ms / 230VAC 23ms / 115VAC	at full load
INPUT —			11 L 05 4 070/20
		90 ~ 132VAC / 180 ~ 264 VAC by s	switch $254 \sim 370$ VDC
		$47 \sim 63HZ$	
	EFEICIENCY (Typ.)	20.7 / 230VAC UIIY	
	AC CUBBENT (Typ.)	8A / 115VAC 3 2A / 230VAC	
	INRUSH CURRENT (Tvp.)	COLD START 27A / 115VAC 45	5A / 230VAC
	LEAKAGE CURRENT	$\leq$ 3.5mA / 240VAC	
PROTECTION		105 . 150% rated output power	
	OVENEOAD	Protection type: Constant current limiting reco	vers automatically after fault condition is removed
	OVERVOLTAGE	$30 \sim 36V$	$59 \sim 66V$
		Protection type: Shut down overvoltage, re-pov	ver on to recover
	OVERTEMPERATURE	$100^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat s	ink of power switch)
ENVIDONMENT		Protection type: Shut down overvoltage, recove	rs automatically after temperature goes down
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C (Refer to output load o	derating curve)
	WORKING HUMIDITY	20 ~ 95% 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
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL508	
		EN60950-1	
		EN60950-1 approved	
		I/P-U/P: 3KVAC I/P-FG: 1.5KVAC	
		I/P-U/P, I/P-FG, U/P-FG: 100M UNIT	IS / 300VDC / 23 C / 70% KH
1		Compliance to EN61000-3-2 -3	I, ENJJUZZ (UJJENZZ), ENUTZU4-J UJASS D
1	EMS IMMUNITY	Compliance to EN61000-4-2.3.4.5	6.8.11' ENV50204' EN61204-3' EN61000-6-2 (EN50082-2)'
51		heavy industry level; criteria A	o,o,, . ,oo_o, ,oo, o,o.ooo o _ (oooo),
		The power supply is considered a component v	which will installed into a final equipment. The final equipment must be re-confirmed
отнере		that it still meets EMC directives.	
UTHENS	MTBF	187.9K hrs min. MIL-HDBK-217K	. (25°C)
	DIMENSION	227x125.2x100mm (WxHxD)	
	PACKING	2.6Kg; 6pcs / 16.6Kg / 1.75CUFT	
		All parameters NOT specially mentioned are me	easured at 230V AC input, rated load and $25^\circ$ C of ambient temperature.

### Altech Corp."

#### **Mechanical Specification**



TB1 Terminal Pin. No Assignment Pin No. Assignment

	5	
1	AC/L	
2	AC/N	
3	FG 🕀	

TB2 Tern	gnment	
Pin No.	Assignment	
1,2	DC OUTPUT +V	
3,4	DC OUTPUT -V	

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#### **Block Diagram**





Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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Accessories

Case

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### 240-960W Three Phase Power Supplies

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### 240W Three Phase Industrial DIN Rail Power Supply

Cat. No.	Outpu V DC	ut A	Tol. %	Ripple & Noise	Efficiency	NOTES
PST-24024	24V DC	10A	±1%	80 mVp-p	89%	
PST-24048	48V DC	5A	±1%	80 mVp-p	89%	

### 480W Three Phase Industrial DIN Rail Power Supply

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PST-48024	24V DC 20A	±1%	80 mVp-p	89%	
PST-48048	48V DC 10A	±1%	80 mVp-p	90%	

### 960W Three Phase Industrial DIN Rail Power Supply

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PST-96024	24V DC 40A	±1%	80 mVp-p	91%	
PST-96048	48V DC 20A	±1%	80 mVp-p	92%	

### 960W Three Phase Industrial DIN Rail Power Supply

### with PFC and Parallel Function (1+1)

1	Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
	PST-960P24	24V DC 40A	±1%	80 mVp-p	91%	
	PST-960P48	48V DC 20A	±1%	80 mVp-p	92%	

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

PARALLEL

### **SPECIFICATIONS**

### Altech Corp."

### **PST-240 Series**



TB1 Terminal Pin. No Assignme		
	Pin No.	Assignment
	1	FG 🖶
	2	AC/L3
	3	AC/L2
	4	AC/L1

#### TB2 Terminal Pin. No Assignment

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

Three phase input: 340-550V AC wide range, 480-780V DC 0.95A @ 400V AC, 0.75A @ 500V AC Connection: Input - 4 poles, Output - 4 poles screw terminal Size (WxHxD): 125x125x100mm (4.95x4.95x3.95 inches) Packaging: 1/box; 2.87lbs / 1.3Kg

### **PST-480 Series**



#### TB1 Terminal Pin. No Assignment

 Pin No.
 Assignment

 1
 AC/L1

 2
 AC/L2

 3
 AC/L3

 4
 FG ()

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

Three phase input: 340-550V AC wide range, 480-780V DC 1.7A @ 400V AC, 1.3A @ 500V AC

Connection: Input - 4 poles, Output - 4 poles screw terminal Size (WxHxD): 227x125x100mm (9.95x4.95x3.95 inches) Packaging: 1/box; 5.5lbs / 2.5Kg

### **PST-960 Series**



#### TB1 Terminal Pin. No Assignment

Pin No.	Assignment	
1	AC/L1	
2	AC/L2	
3	AC/L3	
4	FG	

#### TB2 Terminal Pin. No Assignment

Pin No.	Assignment					
1,2,3	DCOUTPUT+V					
4,5,6	DCOUTPUT - V					
7	GND					
8	P (Current Share)	Farallel Only				

Three phase input: 340-550V AC wide range, 2.4A @ 400V AC, 1.9A @ 500V AC Connection: Input - 4 poles, Output – 6 poles screw terminal Size (WxHxD): 276x125x100mm (10.87x4.95x3.95 inches) Packaging: 1/box; 7.3lbs / 3.3Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

### **PST-240 Series Specifications**



#### Features:

- Three-Phase AC 340 ~ 550V wide range input High efficiency 89% and low dissipation
- Protections: Short Circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- Fixed switching frequency at 70KHz
- 3 year warranty

	Gat. NO.	PS1-24024	PS1-24048
UUIPUI	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	RIPPLE & NOISE (max)	80mVp-p	80mVp-p
		Ripple & noise are measured at 20MHz of ba	ndwidth by using a 12 twisted pair-wire terminated with a 0.1 $\mu\text{F}$ & 47 $\mu\text{F}$ parallel capac
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regi	lation and load regulation.
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
INDUT	SETUP, RISE, HOLD UP TIME	1200ms, 40ms, 20ms / 400VAC; 8	300ms, 40ms, 40ms / 500VAC at full load
	VOLTAGE RANGE	Three Phase 340 ~ 550VAC (Dua	Phase operation possible) 480 ~ 780VDC
		Dual phase operation: derating of	20% is required
	FREQUENCY RANGE	47 ~ 63Hz	•
	EFFICIENCY (Typ.)	89%	
	AC CURRENT	0.95A / 400VAC; 0.75 / 500VAC	
	INRUSH CURRENT (Typ.)	COLD START 50A	
DOTEOTION	LEAKAGE CURRENT	$\leq$ 3.5 mA / 530VAC	
RUIECTION —		105 150% rated output power	
	OVERLOAD	$103 \sim 130\%$ lated output power	overe externationly offer foult condition is removed
		30 - 36V	50 66V
	OVERVOEIAGE	Brotection type: Shut down evenueltage re-pr	
	OVERTEMPERATURE	$100^{\circ}\text{C} + 5^{\circ}\text{C}$ (TSW) detect on heat	sink of nower switch
		Protection type: Shut down overvoltage re-pr	ower automatically after temperature goes down
VIRONMENT			
	WORKING TEMP.	$-20 \sim +70^{\circ}$ 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	$\pm 0.03\%$ / C (0 ~ 50 C)	
	VIBRATION	10 ~ 500HZ, 2G 10min./1cycle, 60	J min. each long X, Y, Z axes
CETV 9 EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL508	
		EN60950-1approved	
		UL60950-1	
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5KVAC	CO/P-FG: 0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M Ohr	ns / 500VDC (25°C; 70% RH)
1	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR1	1), EN55022 (CISPR22) Class B
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5	5,6,8,11; ENV50204; EN61000-6-2; (EN50082-2), EN61204-3;
		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
οτμερο		that it still meets EMC directives.	
UTHERS	MTBF	114.6K hrs min. MIL-HDBK-217	K (25°C)
	DIMENSION	125.5x125.2x100mm (WxHxD)	
	PACKING	1.3Kg: 12pcs / 16.6Kg / 1.29CUF	r
		All parameters NOT specially mentioned are	neasured at 400VAC input, rated load and 25°C of ambient temperature.
		,	

### Altech Corp."

### **Mechanical Specification**



TB1 Terminal Pin. No Assignment

Pin No.	Assignment	
1	FG 🖶	
2	AC/L3	
3	AC/L2	
4	AC/L1	

TB2 Terminal Pin. No Assignment					
Pin No.	Assignment				
1,2	DC OUTPUT +V				
3,4 DC OUTPUT -V					

**Block Diagram** 





Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Simline single phase

Low Profile single phase

dustrial Metal Cas single phase

dustrial Metal Case three phase

High Efficiency ompact housing

Accessories

### **PST-480 Series Specifications**



### Features:

- Three-Phase AC 340 ~ 550V wide range input
- High efficiency 89% and low dissipation
   Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- 3 year warranty

	Cat. No.	PST-48024	PST-48048
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	RIPPLE & NOISE (max)	80mVn-n	80mVn-n
		Ripple & noise are measured at 20MHz	of bandwidth by using a 12 twisted pair-wire terminated with a 0.1µE & 47µE parallel cap
	VOLTAGE AD.J. BANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLEBANCE	+1.0%	+1.0%
		Tolerance: includes set un tolerance line	e regulation and load regulation
	LINE REGULATION	+0.5%	+0.5%
	LOAD REGULATION	+0.5%	+0.5%
	SETUP RISE HOLD UP TIME	1200ms 40ms 16ms / 400VA	AC: 800ms 40ms 35ms / 500VAC at full load
INPUT -			
	VOLTAGE RANGE	Three Phase 340 ~ 550VAC (	Dual Phase operation possible) 480 ~ 780VDC
		Dual phase operation: derating	g of 20% is required
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	89%	90%
	AC CURRENT	1.7A / 400VAC; 1.3A / 500VAC	
	INRUSH CURRENT (Typ.)	COLD START 50A	
DDOTEOTION	LEAKAGE CURRENT	$\leq$ 3.5mA / 530VAC	
PRUIEGIIUN	Ονεβί σαρ	$105 \sim 150\%$ rated output now	Ior
	OVENEOAD	Protection type: Constant surrent limiting	VGI
			50 - 66V
	OVERWOEIAGE	Distantian tuna: Chut dawn avarualtaga	
	OVERTEMPERATURE	$110^{\circ}C + 5^{\circ}C$ (TSW) detect on t	ne-power on to recover
		Protection type: Shut down overvoltage	requers automatically after temperature does down
NVIRONMENT			
	WORKING TEMP.	$-20 \sim +70$ C (Refer to output I	load derating curve)
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	$\pm 0.03\%$ / C (0 ~ 50 C)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle	e, 60 min. each long X,Y, Z axes
AFETV & EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL508	
		EN60950-1approved	
		UL60950-1	
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5K	(VAC 0/P-FG: 0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M	Ohms / 500VDC (25°C: 70% RH)
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISF	PR11), EN55022 (CISPR22), EN61204-3 Class B
	HARMONIC CURRENT	Compliance to EN61000-3-2,-	3
	EMS IMMUNITY	Compliance to EN61000-4-2,3	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 comp	onent which will installed into a final equipment. The final equipment must be re-confirm
οτμερο		that it still meets EMC directives.	
UTHERS	MTBE	91 1K hrs min MII - HDBK-2	17K (25°C)
	DIMENSION	227x125.2x100mm (WxHyD)	····
	PACKING	2.5Kg: 6pcs / 16Kg / 1.75CUF	т
		All narameters NOT specially mentioned	are measured at 400VAC input rated load and 25°C of ambient temperature

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

### Altech Corp.

### **Mechanical Specification**



TB1 Terminal Pin. No Assignment

Pin No.	Assignment	
1	AC/L1	
2	AC/L2	
3	AC/L3	
4	FG 🖶	

TB2 Terminal Pin. No Assignment						
Pin No.	Assignment					
1,2	DC OUTPUT +V					
3,4 DC OUTPUT -V						

**Block Diagram** 











Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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### PST-960 Series Specifications



#### Features:

- Three-Phase AC 340 ~ 550V wide range input
- High efficiency 91% and low dissipation
- Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Optional parallel function(1+1)
- Cooling by free air convection
- DIN rail mountable
- UL 508(industrial control equipment) approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- 3 year warranty

OUTDUT	Cat. No.	PST-96024 / PST-960P24*	PST-96048 / PST-960P48*
	DC VOLTAGE RATED CURRENT CURRENT RANCE	24V 40A	48V 20A
	RATED POWER RIPPLE & NOISE (max)	960W 80mVp-p	0 ~ 20A 960W 80mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION	Ripple & noise are measured at 20MHz of bandwidth b 24 $\sim$ 28V $\pm$ 1.0% Tolerance: includes set up tolerance, line $\pm$ 0.5%	y using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor. 48 ~ 55V ±1.0% regulation and load regulation. ±0.5%
INDUT	LOAD REGULATION SETUP, RISE, HOLD UP TIME	±0.5% 200ms, 60ms, 14ms / 400VAC 200r	±0.5% ns, 60ms, 30ms / 500VAC at full load
	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT	Three Phase 340 $\sim$ 550VAC (Dual Phase Dual phase operation (connecting L1, L3, FG) is allowe 47 $\sim$ 63Hz 91% 2A / 400VAC; 1.6A / 500VAC COLD START 50A $\leq$ 3.5 mA / 530VAC	operation possible in connecting L1, L3, FG) d under certain derating to output load. Please refer to the derating curves for details 92%
PROTECTION	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	105 ~ 125% rated output power Protection type: Constant current limiting, unit will shul 30 ~ 36V Protection type: Shut down overvoltage, re-power on to 110°C $\pm$ 5°C (TSW1) detect on heat sink of 85°C $\pm$ 5°C (TSW2) detect on heat sink of	down overvoltage after 3 sec., re-power on to recover 59 ~ 66V or recover of power transistor power diode
ENVIRONMENT	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	$\begin{array}{l} -20 \ \sim \ +60^{\circ}\text{C} \ (\text{Refer to output load deratin} \\ 20 \ \sim \ 90^{\circ}\text{RH non-condensing} \\ -40 \ \sim \ +85^{\circ}\text{C}, \ 10 \ \sim \ 95^{\circ}\text{RH} \\ \pm 0.03^{\circ}\text{ / }^{\circ}\text{C} \ (0 \ \sim \ 50^{\circ}\text{C}) \\ 10 \ \sim \ 500\text{Hz}, \ 2\text{G} \ 10\text{min./1cycle, } 60 \ \text{min. e} \\ \text{Compliance to IEC60068-2-6} \end{array}$	ng curve)
SAFETY & EMC	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 EN60950-1 approved UL60950-1 I/P-O/P: 3KVAC I/P-FG: 1.5KVAC 0/F I/P-O/P, I/P-FG, 0/P-FG: 100M Ohms / 50 Compliance to EN55011 (CISPR11), EN5 Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8,11 heavy industry level; criteria A The power supply is considered a component which w that it still meets EMC directives.	P-FG: 0.5KVAC OVDC (25°C; 70% RH) 5022 (CISPR22), EN61204-3 Class B ; ENV50204; EN61204-3; EN61000-6-2; (EN50082-2), ill installed into a final equipment. The final equipment must be re-confirmed
OTHERS	MTBF Dimension Packing	122.5K hrs min. MIL-HDBK-217K (25°C 276x125.2x100mm (WxHxD) 3.3Kg; 4pcs / 14.2Kg / 1.14CUFT All parameters NOT specially mentioned are measured	) at 400VAC input, rated load and 25°C of ambient temperature.

\*Special order required.

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

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# Altech Corp.

#### **Mechanical Specification**



 TB1 Terminal Pin. No Assignment

 Pin Nb.
 Assignment

 1
 AC/L1

 2
 AC/L2

AC/L3

FG⊕

TB2 Terminal Pin. No Assignment					
Pin No.	Assignment				
1,2,3	DCOUTPUT+V				
4,5,6	DCOUTPUT - V				
7	P (Current Share)				
8	P (Current Share)				

#### Optional Parallel Function (1+1) - (Special order required)

3

4



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Case

**d**D

### High Efficiency Compact Housing Power Supply

This high performance single output compact DIN rail PS-C Series, with up-to-date circuit design, possess up to 94% of high efficiency and works within  $110 \sim 150\%$  rated output power for up to 3 seconds.

With built-in active PFC function, PS-C Series is a full range AC input switching power supply that fulfills the requirement of EN61000-3-2 for harmonic current. The compact design helps save the precious space on the rail and also makes it up to 50% smaller in size compare to its predecessor model PS-Series. Meanwhile, PS-C also have 5~9% higher efficiency than corresponding models of the PS-Series, which response to the trend of green power with energy saving concept.

Other standard functions include DC OK relay contact, on panel LED indicator, and protection for short-circuit, overload (constant current limiting, shut down if over 3 seconds), over voltage, and over temperature. To fulfill the requirements of marine and semi-conductor related usage, PS-C Series also complies with GL and SEMI F47 norms in addition to UL, CUL and CE certificates. Suitable applications are factory automation, semi-conductor fabrication equipment, marine related installation, and electromechanical applications.

- Input voltage range:
- AC inrush current (typical):Cold start:
- DC adjustment range (typical):
- Overload protection (typical):
- Overvoltage protection (typical):
- Over temperature protection:

• Withstand voltage: Working temperature:

Safety standards: EMC standards: 88-264V AC; 124-370V DC 65A at 230V AC (PSC-240) 12V: 12-14V, 24V: 24-28V, 48V: 48-55V, 110%-150% rated output power 14-17V for 12V model (PSW-120), 29-33V for 24V model 56-65V for 48V model  $95^{\circ}C \pm 5^{\circ}C$  (PSC-120/240):  $105^{\circ}C \pm 5^{\circ}C$ I/P-0/P:3KV AC, I/P-FG:1.5KV AC, 0/P-FG:0.5KV AC, -25 to +70°C (-4° to +158°F), refer to output derating curve UL508; EN60950-1 compliant Compliance to EN55022 class B, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61000-6-2, EN61204-3, heavy Industry level, SEMI F47, GL

### **PS-C Series**





### **Features:**

- High efficiency up to 94% and low power dissipation
- Universal AC Input / Full Range
- 150% peak load capability
- Built-in active PFC function, PF>0.93
- · Protections: Short circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- Din rail mountable
- LED indicator for power on
- UL 508 (industrial control equipment) approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- Built-in DC OK relay contact
- 3 year warranty



# 120-480W Single Phase COMPACT SIZE POWER SUPPLIES



### **120W Single Output DIN Rail Power Supply**

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-C12012	12V DC 10A	±1%	100 mVp-p	89%	
PS-C12024	24V DC 5A	±1%	100 mVp-p	91%	
PS-C12048	48V DC 2.5A	±1%	120 mVp-p	91%	

### 240W Single Output DIN Rail Power Supply

Cat. No.	Outpu V DC	ut A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-C24024	24V DC	10A	±1%	100 mVp-p	94%	
PS-C24048	48V DC	5A	±1%	120 mVp-p	94%	

### 480W Single Output DIN Rail Power Supply

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-C48024	24V DC 20A	±1%	100 mVp-p	94%	
PS-C48048	48V DC 10A	±1%	120 mVp-p	94%	

### 480W Single Output DIN Rail Power Supply

with PFC and Parallel Function (1+7)

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PS-C480P24	24V DC 20A	±1%	100 mVp-p	94%	
PS-C480P48	48V DC 10A	±1%	120 mVp-p	94%	



PARALLEL

### **SPECIFICATIONS**

### Altech Corp.

### **PS-C120 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	Relay Contact	
3	DC OUTPUT -V	
4	DC OUTPUT +V	

Universal Input: 88-264V AC, 124-370V DC full range, 1.4A/115V AC, 0.7A/230V AC Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 40x125.2x113.5mm (1.57x4.93x4.47 inches) Packaging: 1/box; 1.48lbs / 0.67Kg

### **PS-C240** Series



Terminal Pin. No Assign. (TBT		
Pin No.	Assignment	
1	FG 🖶	
2	AC/N	
3	AC/L	

#### Terminal Pin. No Assign. (TB2)

	<u> </u>
Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT -V
5,6	DC OUTPUT +V

Switch select Input: 88-264V AC, 124-370V DC range, 2.6A/115V AC, 1.3A/230V AC Connection: Input - 3 poles, Output - 6 poles screw terminal

Size (WxHxD): 63x125.2x113.5mm (2.48x4.93x4.47 inches) Packaging: 1/box; 2.27lbs / 1.03Kg

### **PS-C480 Series**



#### Terminal Pin. No Assign. (TB1)

(· _ · )			
Pin No.	Assignment		
1	FG⊜		
2	AC/N		
3	AC/L		

### For Parallel Model

Terminal Pin. No Assign. (TB1		
Pin No.	Assignment	
1	FG⊕	
2	AC/N	
3	AC/L	

Ferminal Pin. No Assign. (TB2)		
Pin No.	Assignment	
1,2	DC OUTPUT +V	
3,4	DC OUTPUT -V	
5,6	Relay Contact	

### NC For Parallel Model

7,8

Terminal Pin. No Assign. (TB2)

Assignment
DC OUTPUT +V
DC OUTPUT -V
Relay Contact
P+ (current share)*
P- (current share)*

\* Only parallel function.

Universal Input: 90-264V AC, 127-370V DC full range, 5A/115V AC, 2.5A/230V AC

Connection: Input - 3 poles, Output - 12 poles screw terminal Size (WxHxD): 85.5x125.2x128.5mm (3.37x4.93x5.06 inches) Packaging: 1/box; 3.53lbs / 1.6Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

### **PS-C120 Series Specifications**



### Features:

- High efficiency 91% and low power dissipation
- 150% peak load capabilityBuilt-in active PFC function, PF>0.93
- Protections: Short Circuit / Overload / Over Voltage /
- Overtemperature Cooling by free air convection
- DIN rail mountable
- UL 508 (industrial control equipment) approved
- EN61000-6-2 (EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 3 year warranty

	Gat. No.	PS-012012	P3-612024	P3-012040
	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
	PEAK CURRENT	15A	7.5A	3.75A
	PEAK POWER	180W (3 sec.)	1.0.1	
		3 seconds max please refer to pe	ak loading curves	
	RIPPI F & NOISE (max)	100mVn-n	100mVn-n	120m\/n-n
		Pipple & poice are measured at 20MHz of here	width by using a 12 twisted pair wire termin	120110p-p
		10 1 AV		
		$12 \sim 140$	24~200	40~550
	VOLIAGE TOLENANGE	±1.0%	±1.0%	±1.0%
		Includes set up tolerance, line regul		
		±0.5%	±0.5%	±0.5%
		±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	1500ms, 60ms / 230VAC 3000i	ns, 60ms / 115VAC at full load	
	HOLD UP TIME (Typ.)	20ms / 230VAC 20m	s / 115VAC at full load	
VPUT	VOLTAGE RANGE	88 ~ 264VAC 124	~ 370VDC	
		Deating may be needed under low input voltage	es, please check the derating curve for more	detail
	EREQUENCY BANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	0.93 / 230VAC 0.96 / 115VAC	at full load	
	EFEICIENCY (Typ.)	89%	91%	90.50%
	$\Delta C$ CUBBENT (Typ.)	$1 A \Delta / 115 V \Delta C = 0.7 \Delta / 230 V \Delta C$	0170	00.0078
	INBUSH CUBBENT (Typ.)	354 / 115/40 704 / 230/40		
		< 1  m 1/240  VAC		
TECTION —		S 1 IIIA / 240VAC		
	OVERLOAD	Normally works within 110 ~ 150%	6 rated output power for more that	in 3 seconds and then shut
		down overvoltage		
		$\geq$ 150% rated power, constant curr	ent limiting with auto-recovery with	ithin 3
		seconds and shut down overvoltag	e after 3 seconds	
	OVERVOLTAGE	14 ~ 17V	29 ~ 33V	56 ~ 65V
		Protection type: Shut down overvoltage, re-pov	ver on to recover	
	OVERTEMPERATURE	$95^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat si	nk of power switch)	
		Protection type: Shut down overvoltage, re-pov	ver automatically after temperature goes dov	vn
	DC OK RELAY CONTACT RATINGS (max.)	60VDC / 0.3A 30VDC / 1A	30VAC / 0.5A RESISTIVE LOAD	
CONMENT		25 v 70°C (Pofer to output load	derating ourse)	
	WORKING LEWP.			
		Installation clearances: 40mm on top, 20mm o	n the bottom, 5mm on the left and right side	are recommended when loaded
		permanently with full power. In case the adjace	ent device is a heat source, 15mm clearance	
		00 0F0/ DU		is recommended
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		is recommended
- 1	WORKING HUMIDITY STORAGE TEMP., HUMIDITY	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH		is recommended
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C)		is recommended
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	$\begin{array}{l} 20 \sim 95\% \text{ RH non-condensing} \\ -40 \sim +85^\circ\text{C}, 10 \sim 95\% \text{ RH} \\ \pm 0.03\% \ / \ ^\circ\text{C} \ (0 \sim 50^\circ\text{C}) \\ 10 \sim 500\text{Hz}, 2\text{G} \ 10\text{min./1cycle, }60 \end{array}$	min. each long X,Y, Z axes	is recommended
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	$\begin{array}{l} 20 \sim 95\% \mbox{ RH non-condensing} \\ -40 \sim +85^\circ\mbox{C}, \mbox{ 10} \sim 95\% \mbox{ RH} \\ \pm 0.03\% \ / \ ^\circ\mbox{C} \ (0 \sim 50^\circ\mbox{C}) \\ 10 \sim 500\mbox{Hz}, \mbox{ 2G 10min./1cycle, 60} \\ \mbox{ Compliance to IEC60068-2-6} \end{array}$	min. each long X,Y, Z axes	is recommended
TY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508	min. each long X,Y, Z axes	is recommended
TY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant	min. each long X,Y, Z axes	is recommended
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC //P-EG: 1 5KVAC	min. each long X,Y, Z axes	s recommended
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC //P-FG: 1.5KVAC //P-GQ //P-FG: >100M 0b	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0/ ms/500VDC (25°C: 70% BH)	<pre>is recommended K: 0.5KVAC</pre>
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE FMI CONDUCTION & BADIATION	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC //P-FG: 1.5KVAC I/P-0/P, I/P-FG, 0/P-FG: ≥100M 0h Compliance to EN55022 (CISP822)	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0P ms/500VDC (25°C; 70% RH) Class B	k: 0.5KVAC
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P; J/P-FG, 0/P-FG: $\pm 100M$ Of Compliance to EN55022 (CISPR22) Compliance to EN51020.2.2.2	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0F ms/500VDC (25°C; 70% RH) Class B	s: recommended
TY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC //P-FG: 1.5KVAC I/P-0/P, I/P-FG, 0/P-FG: ≥100M 0F Compliance to EN55022 (CISPR22) Compliance to EN61000-3-2,-3 Compliance to EN61000-3-2,-3	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0/ ms/500VDC (25°C; 70% RH) Class B	(: 0.5KVAC
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P, J/P-FG, 0/P-FG: ≥100M 0h Compliance to EN55022 (CISPR22) Compliance to EN51000-3-2,-3 Compliance to EN61000-4-2,3,4,5, EN6104 0. because induction	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0F ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 there a DEM 547 01 accessed	s recommended 51000-6-2; (EN50082-2);
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P: 3KVAC I/P-FG: ≥100M 0h Compliance to EN55022 (CISPR22) Compliance to EN55022 (CISPR22) Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5, EN61204-3; heavy industry level; c	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0F ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 riteria A, SEMI F47, GL approved	s recommended K: 0.5KVAC 61000-6-2; (EN50082-2);
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P; 3KVAC I/P-FG: ≥100M 0h Compliance to EN55022 (CISPR22) Compliance to EN55022 (CISPR22) Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5, EN61204-3; heavy industry level; of The power supply is considered a component that it still meets EMC directives.	min. each long X,Y, Z axes O/P-FG: 0.5KVAC O/P-DC O/ ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 riteria A, SEMI F47, GL approved which will installed into a final equipment. Th	is recommended <: 0.5KVAC 51000-6-2; (EN50082-2); e final equipment must be re-confirm
TY & EMC	WORKING HUMIDITY STORAGE TEMP, HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P; J/P-FG, 0/P-FG: $\geq 100M$ OC Compliance to EN55022 (CISPR22) Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5, EN61204-3; heavy industry level; c The power supply is considered a component that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K	min. each long X,Y, Z axes O/P-FG: 0.5KVAC O/P-DC O/ ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 riteria A, SEMI F47, GL approved which will installed into a final equipment. Th	is recommended K: 0.5KVAC 51000-6-2; (EN50082-2); e final equipment must be re-confirm
TY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P: 3KVAC I/P-FG: $\ge 100M$ Of Compliance to EN55022 (CISPR22) Compliance to EN61000-4-2,3,4,5, EN61204-3; heavy industry level; co The power supply is considered a component that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K 40x125.2x113.5mm (WxHxD)	min. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0F ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 riteria A, SEMI F47, GL approved which will installed into a final equipment. Th	Is recommended (: 0.5KVAC 51000-6-2; (EN50082-2); e final equipment must be re-confirme
TY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION PACKING	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC //P-FG: 1.5KVAC I/P-0/P: 3KVAC //P-FG: ≥100M 0h Compliance to EN55022 (CISPR22) Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5, EN61204-3; heavy industry level; co The power supply is considered a component that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K 40x125.2x113.5mm (WxHxD) 0.67Kq; 20pcs / 14.4Ka / 1.16CUF	min. each long X,Y, Z axes O/P-FG: 0.5KVAC O/P-DC OF ms/500VDC (25°C; 70% RH) Class B 6,8,11; ENV50204; EN55024; EN6 riteria A, SEMI F47, GL approved which will installed into a final equipment. Th (25°C)	Is recommended (: 0.5KVAC 51000-6-2; (EN50082-2); e final equipment must be re-confirme

### Altech Corp."

### **Mechanical Specification**

Assignment

FG 🕀

AC/N

AC/L

Pin No.

1

2

3

Terminal Pin No. Assignment (TB1)	Terminal Pin No. Assignment (TB2)

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



### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load



### **Derating Curve**

100 sec.



3 sec.

### **Output Derating VS Input Voltage**

15 sec. 3 sec.



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490

Accessories

Te series	PS-C240 Se	ries F	eatures:	au 040% and low newer dissinction
THE FEEL	Specifications		<ul> <li>High enicien</li> <li>150% peak l</li> </ul>	oad capability
TANANA A	specifications		Built-in active	e PFC function, PF>0.93
The seal of	· · · · ·	$\sim$	Protections:     Overtemper:	Short Circuit / Overload / Over Voltage /
mine Dea		hand the second	Cooling by fi	ee air convection
The second se		ENERGY	• DIN rail mou	ntable
人口語の人口			<ul> <li>UL 508 (indi</li> <li>EN61000-6-)</li> </ul>	Istrial control equipment) approved 2(EN50082-2) industrial immunity level
0.8	TTTT		Built-in DC C	DK relay contact
Tables			• 100% full loa	ad burn-in test
	Cot. No.	DC 004004	• 3 year warra	nty RC C24048
OUTPUT		P3-624024		<b>F3-624040</b>
	RATED CURRENT	24v 10A		48V 5A
	CURRENT RANGE	0 ~ 10A		0 ~ 5A
	RATED POWER	240W		240W
	PEAK CURRENT PEAK POWER	15A 360W (3 sec )		7.5A
	I LART OWER	3 seconds max., please re	efer to peak load	ing curves
	RIPPLE & NOISE (max)	100mVp-p		120mVp-p
		Ripple & noise are measured at 20	MHz of bandwidth by	using a 12 twisted pair-wire terminated with a $0.1\mu$ F & $47\mu$ F parallel capacitor.
	VOLTAGE ADJ. HANGE	24 ~ 20V ±1.0%		40 ~ 55V ±1.0%
		Tolerance: includes set up tolerance	e, line regulation and	load regulation.
	LINE REGULATION	±0.5%		±0.5%
	LUAD REGULATION	±1.0% 1500ms 60ms / 230\/ΔC	3000ms 60m	±1.0% s / 115VAC at full load
INDUT	HOLD UP TIME (Typ.)	20ms / 230VAC	20ms / 115	AC at full load
	VOLTAGE RANGE	88 ~ 264VAC	124 ~ 370VI	00
		Deating may be needed under low	input voltages, please	e check the derating curve for more detail
		4/~63Hz	115VAC at full lo	ad
	EFFICIENCY (Typ.)	94%		au
		After 30 minutes of burn-i	in.	
	AC CURRENT (Typ.)	2.6A / 115VAC 1.3A /	230VAC	
	I FAKAGE CURRENT	<pre>&lt; 33A / 115VAC 05A / &lt; 1 mA / 240VAC</pre>	230VAG	
PROTECTION	OVERLOAD	Normally works within 11	0 ~ 150% rated	output power for more than 3 seconds and then shut
		down overvoltage with au	to-recovery	
		$\geq$ 150% rated power, consistency within 2 according	stant current lim	iting with auto-
	OVERVOLTAGE	$29 \sim 33V$	anu shul uuwh	$56 \sim 65V$
		Protection type: Shut down overvol	Itage with auto-recove	ry
	OVERTEMPERATURE	$95^{\circ}C \pm 5^{\circ}C$ (TSW: detect o	n heat sink of po	ower switch)
ENVIRONMENT		Protection type: Shut down overvol	Itage, re-power autom	atically after temperature goes down
	DC OK RELAY CONTACT RATINGS (max.)	60VDC / 0.3A 30VDC /	1A 30VAC/C	1.5A RESISTIVE LUAD
	WORKING TEMP.	$-23 \sim +700$ (Refer to out Installation clearances: 40mm on t	put load defailing op. 20mm on the bott	) CUIVE) om, 5mm on the left and right side are recommended when loaded
		permanently with full power. In cas	se the adjacent device	is a heat source, 15mm clearance is recommended.
	WORKING HUMIDITY	20 ~ 95% RH non-conder	nsing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85 C, 10 ~ 95% F +0.03% / °C (0 ~ 50°C)	(H	
	VIBRATION	10 ~ 500Hz, 2G 10min./1	cycle, 60 min. ea	ich long X,Y, Z axes
	MOUNTING	Compliance to IEC60068-2	2-6	-
SAFETY & EIVIG	SAFETY STANDARDS	UL508		
		EN60950-1 compliant		
1	ISOLATION RESISTANCE	I/P-0/P. I/P-FG. 0/P-FG: ≥	1.5KVAC 0/P-	00VDC (25°C: 70% RH)
1	EMI CONDUCTION & RADIATION	Compliance to EN55022 (	CISPR22) Class E	3
		Compliance to EN61000-3	3-2,-3	
		EN61204-3: heavy industr	1-2,3,4,5,6,8,11; rv level: criteria /	ENV50204; EN55024; EN61000-6-2; (EN50082-2), SEMLE47 GL approved
		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 EM	C directives.	
OTHERS	<del></del>			
OTHERS	MTBF	169.3K hrs min. MIL-HD	)BK-217K (25°C)	
OTHERS	MTBF DIMENSION PACKING	169.3K hrs min. MIL-HE 63x125.2x113.5mm (WxH 1 03Kg: 12pcs / 13.4Kg /	0BK-217K (25°C) IxD) 1.06CUET	

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

### **Mechanical Specification**

Pin No.	Assignment
1	FG 🖶
2	AC/N
3	AC/I

Terminal	Pin No. Assignme	nt (TB2)
Pin No.	Assignment	
1,2	Relay Contact	
3.4	DC OUTPUT +V	

	- 0 m 4 m 0	
	DC OK DC OK +V ADJ.O+ DC OK O	
7.621		
	181 3 2 2 1 3 3 2 2	
	63	

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DETECTION

CIRCUIT

O.V.P.

10 sec. 3 sec.

DC OK

+V -0

-V 0

6

Accessories

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Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT +V
5,6	DC OUTPUT -V



┢⋧⋠

(2)

360W

120W

EMI FILTER

& RECTIFIERS

**DC OK Relay Contact** 

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load

PFC

CIRCUIT

PFC

CONTROL

U.V.P.

### **Peak Loading**

**Block Diagram** 

I/P O

FG O



### **Output Derating VS Input Voltage**



PWM & PFC

CONTROL

	PS-C480 Se	ries	High efficiency     150% peak loa	v 94% and low power dissipation ad capability
	Specifications		Built-in active     Protections: Si     Overtemperate	PFC function, PF>0.94 hort Circuit / Overload / Over Voltage / ure
			Cooling by free	e air convection
			Built-in consta	nt current limiting circuit
317 A.840	C USTED US COR	ENERGY SAVER	DIN rail mount	able
A state of the sta			• OL 508(Indust	EN50082-2) industrial immunity level
			Built-in DC Ok     100% full load	k relay contact burn-in test
OUTPUT	Cat. No.	PS-C48024	• 3 year warran	PS-C48048
		24V 20A		48V 10Δ
	CUBBENT BANGE	0 ~ 20A		0 ~ 10A
	RATED POWER	480W		480W
	PEAK CURRENT	30A		15A
	PEAK POWER	720W (3 sec.)		
		3 seconds peak power	max. and the average	output power should not exceed the rate power
	RIPPLE & NOISE (max)	100mVp-p		120mVp-p
		Ripple & noise are measured at	t 20MHz of bandwidth by usi	ng a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	24 ~ 28V		48 ~ 55V
	VOLTAGE TOLERANCE	±1.2%		±1.0%
		Tolerance: includes set up toler	ance, line regulation and loa	d regulation.
		±0.5%		±0.5%
	SETUP RISE TIME	1500ms 150ms / 230V	/AC 3000ms 150	± 1.070 )ms / 115\/ΔΩ at full load
	HOLD UP TIME (Typ.)	14ms / 230VAC at full l	oad	
INPUT	VOLTAGE BANGE	90 ~ 264VAC 127	~ 370VDC	
		Deating may be needed under l	low input voltages, please ch	eck the derating curve for more detail
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	0.94 / 230VAC 0.99	/ 115VAC at full load	
	EFFICIENCY (Typ.)	94%		
		After 30 minutes of burn-in		
	AC CURRENT (Typ.)	5A / 115VAC 2.5A	/ 230VAC	
	INRUSH CURRENT (Typ.)	40A / 115VAC 80A /	230VAC	
PROTECTION		≤ 0.0 IIIA / 240VAC	110 1500/ rated av	tout neuron for more than 0 seconds and then shut
	OVERLOAD	down overvoltage with	110 ~ 150% lateu ou auto-recoverv	tput power for more than 3 seconds and then shut
		> 150% rated power. c	onstant current limitin	a with auto-recovery within 2 seconds and shut
		down overvoltage after	2 seconds	
	OVERVOLTAGE	29 ~ 33V		56 ~ 65V
		Protection type: Shut down ove	rvoltage with auto-recovery (	on re-power on to recovery
	OVERTEMPERATURE	$105^{\circ}C \pm 5^{\circ}C$ (TSW: dete	ect on heat sink of pov	ver switch)
		Protection type: Shut down ove	rvoltage, re-power automatic	ally after temperature goes down
ENVIRONMENT	DC UK RELAY CUNIACI RATINGS (max.)	60VDC / 0.3A; 30VDC /	1A; 30VAC / 0.5A res	
	WORKING TEMP.	$-25 \sim +70^{\circ}$ C (Refer to c	output load derating c	urve)
		nistaliation clearances: 40mm (	on top, zumm on the bottom,	a beat source. 15mm clearance is recommended when loaded
	WORKING HUMIDITY	20 ~ 95% RH non-conc	tensing	מ חסמו סטוונה, וסחוחו נוהמומונה ול והנטוווווהווטרט.
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C. 10 ~ 95%	6 RH	
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)		
	VIBRATION	10 ~ 500Hz, 2G 10min.	/1cycle, 60 min. each	long X,Y, Z axes
CAFETY & FMC	MOUNTING	Compliance to IEC6006	8-2-6	
SAFETT & EIVIG	SAFETY STANDARDS	UL508		
		EN60950-1 compliant		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-F	G: 1.5KVAC 0/P-FG	: 0.5KVAC 0/P-DC 0K: 0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG:	≥100M 0hms/500VI	DC (25°C; 70% RH)
	EMI CONDUCTION & RADIATION	Compliance to EN55022	2 (CISPR22) Class B	
		Compliance to EN61000	J-3-2,-3	
	EMS IMMUNITY	Compliance to EN61000	J-4-2,3,4,5,6,8,11; Eľ	NV50204; EN55024; EN61000-6-2; (EN50082-2),
		EN61204-3; neavy indu	ISTRY IEVEI; Criteria A, S	bEIVII F47, GL approved
		The new or oursely is sensitive	a component which will ins	ianeu mito a mitai equipment. me mitai equipment must pe
OTUEDO		The power supply is considered re-confirmed that it still meets	EMC directives.	
OTHERS	MTBF	re-confirmed that it still meets 112.9K hrs min. MII -	EMC directives. HDBK-217K (25°C)	
OTHERS	MTBF DIMENSION	The power supply is considered re-confirmed that it still meets 112.9K hrs min. MIL- 85.5x125.2x128.5mm (	EMC directives. HDBK-217K (25°C) (WxHxD)	
OTHERS	MTBF DIMENSION PACKING	The power supply is considered re-confirmed that it still meets 112.9K hrs min. MIL- 85.5x125.2x128.5mm ( 1.6Kg; 8pcs / 13.8Kg /	EMC directives. HDBK-217K (25°C) (WxHxD) 0.9CUFT	

For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

### Altech Corp.

### **Mechanical Specification**

Terminal Pin No. Assignment (TB1) Pin No Assignment

FIIINO.	Assignment
1	FG 🖶
2	AC/N
3	AC/L

Terminal	Pin No. Assignme	nt (TB2)
Pin No.	Assignment	
1,2	DC OUTPUT +V	
3,4	DC OUTPUT -V	
5,6	Relay Contact	
7,8	NC	





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#### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load

#### **Block Diagram**



125.2

### **Peak Loading**



### **Derating Curve**



### **Output Derating VS Input Voltage**

15 sec. 3 sec.

(2) 720W ---

240W



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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	PS-C480P S	eries Featur •High	es: efficiency 94% and low power dissipation	ᇇ
	With Parallel Fun	nction Built- Prote	<ul> <li>peak load capability</li> <li>in active PFC function, PF&gt;0.94</li> <li>ctions: Short Circuit / Overload / Over Voltage /</li> </ul>	YY
		Overi • Cooli • Built-	temperature ng by free air convection in constant current limiting circuit	
PARAL		• DIN F • Curre • UL 50 • EN61 • Built- • 1009	all mountable ent sharing up to 380W (1+7) 08(industrial control equipment)approved 1000-6-2(EN50082-2) industrial immunity level in DC OK relay contact	
		• 100% • 3 vea	ar warranty	
	Cat. No.	PS-C480P24	PS-C480P48	
OUTPUT	DC VOLTAGE	24V	48V	-
	RATED CURRENT	20A	10A	
	CURRENT RANGE	0 ~ 20A	0 ~ 10A	
	RATED POWER	480W	480W	
		30A 720W (2 ppp )	15A	
	FEAK FOWER	3 seconds peak power max, and the average	output power should not exceed the rate power	
	RIPPLE & NOISE (max)	100mVp-p Ripple & noise are measured at 20MHz of bar	120mVp-p ndwidth by using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel	capacitor.
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V	
	VOLTAGE TOLERANCE	±1.2%	±1.0%	
		Tolerance: includes set up tolerance, line regu	llation and load regulation.	
		±0.5%	±0.5%	
	SETUP RISE HOLD UP TIME	$\pm 1.0\%$ 1500ms 150ms 14ms / 230VAC	±1.0% 3000ms_150ms / 115\/ΔC at full load	
INPUT ——				_
	FREQUENCY RANGE	Deating may be needed under low input volta $47 \sim 63$ Hz	ges, please check the derating curve for more detail	
	POWER FACTOR (Typ.) EFFICIENCY (Typ.)	0.94 / 230VAC 0.99 / 115VAC 94%	at full load	
PROTECTION	AC CURRENT (max.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	After 30 minutes of burn-in.           5A / 115VAC         2.5A / 230VAC           40A / 115VAC         80A / 230VAC           ≤ 0.6 mA / 240VAC		_
	OVERLOAD	Normally works within 110 ~ 150' overvoltage with auto-recovery ≥ 150% rated power, constant cur overvoltage after 2 seconds 29 ~ 33V	% rated output power for more than 3 seconds and then shure that the shure the seconds and shure the seconds and shure $156 \sim 65V$	ıt down Jown
	OVERTEMPERATURE	Protection type: Shut down overvoltage with a $105^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat	auto-recovery on re-power on to recovery sink of power switch)	
	CURRENT SHARING DC OK BELAY CONTACT BATINGS (max )	Protection type: Shut down overvoltage, re-po Please see function diagram 60VDC / 0.3A 30VDC / 1A 30VAC	wer automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-25 ~ +70°C (Refer to output load Installation clearances: 40mm on top, 20mm	derating curve) on the bottom, 5mm on the left and right side are recommended when loaded	-
	Working Humidity Storage Temp., Humidity Temp. Coefficient Vibration Mounting	20 ~ 95% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6	) min. each long X,Y, Z axes	
SAFETY & EMC	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-0/P, I/P-FG, 0/P-FG: ≥100M 0 Compliance to EN55022 (CISPR22 Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5 EN61204-3; heavy industry level; The power supply is considered a component re-confirmed that it still meets EMC directives	CO/P-FG: 0.5KVACO/P-DC 0K: 0.5KVAC hms/500VDC (25°C; 70% RH) ) Class B 5,6,8,11; ENV50204; EN55024; EN61000-6-2; (EN50082-2), criteria A, SEMI F47, GL approved which will installed into a final equipment. The final equipment must be s.	
UTHERS	MTBF DIMENSION PACKING	112.9K hrs min. MIL-HDBK-217 85.5x125.2x128.5mm (WxHxD) 1.6Kg; 8pcs / 13.8Kg / 0.9CUFT All parameters NOT specially mentioned are r	K (25°C) measured at 230V AC input, rated load and 25°C of ambient temperature.	

### Altech Corp.

### **Mechanical Specification**

Terminal	Pin No. Assignmer	nt (TB1)
Pin No.	Assignment	
1	FG 🕀	1
2	AC/N	
3	AC/L	]

Terminal	Pin No. Assignment (TB2)
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7	P+ (current share)

P- (current share)



### **DC OK Relay Contact**

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 90% output voltage.
Contact Ratings (max.)	30V/1A resistive load

8



### **Block Diagram**



PSU

PSU

PSU

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(5) When in parallel operation, the minimum output load should

be greater than 3% of total output load.

(Min. load > 3% rated current per unit x number of unit)

### **Derating Curve**



### **Output Derating VS Input Voltage**

PSU

PSU



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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DC OK

PSU

Accessories

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### Wide Input Compact Housing Power Supply

With the PSW family, AC/DC compact DIN rail switching power supplies with single phase wide input range, Altech further expanded the power supply line. Built-in active PFC function, these high efficient power units meet the harmonic current limitation per EN61000-3-2. Equipped with 180 to 550Vac single phase wide input range, they can be used in general power system applications with single phase 230Vac input or can capture two phases from the 220~550Vac three-phase power system, which can greatly increase the flexibility of system deployment.

With up-to-date circuit design PSW series possess up to 93% of extremely high efficiency and can provide 100% power continuously at 50\*C by only free air convection, or operate under 70\*C ambient temperature by suitable power derating. The compact design in width helps save the precious space on the rail and also makes it up to 50% smaller in size compare to its predecessor models. Meanwhile, with wider input range the PSW series also has 3% higher efficiency than corresponding models, which response to the trend of green power with energy saving concept. Other standard functions include DC OK relay contact alarm signal output, front panel DC voltage adjustment , as well as protection for short-circuit, overload (constant current mode, shut down if over 3 seconds), over voltage, and over temperature. The PSW series comply with UL508, IEC60950-1 (CB), and CE certificates and also meet the EMC requirements of heavy industrial immunity level (EN61000-6-2). Suitable applications include industrial control system, semi-conductor fabrication equipment, factory automation, electromechanical applications, and marine related installation.

- Input voltage range: 180~550V AC; 254-780V DC
- AC inrush current (typical):Cold start: 50A at 400V AC
- DC adjustment range (typical): 12V: 12-15V, 24V: 24-29V, 48V: 48-58V,
- Overload protection (typical): 105%-130% rated output
  Over-voltage protection (typical): 16-18V for 12V model (PSW-120),

31-37V for 24V model; 60-67V for 48V model

-20 to +70°C (-4° to +158°F),

UL508 (PSW-240 pending)

refer to output derating curve (PSW-120)

2000ms, 70ms at full load and 230V AC (PSW-120) 2000ms, 150ms at full load and 230V AC (PSW240/480)

I/P-0/P:3KV AC, I/P-FG:1.5KV AC, 0/P-FG:0.5KV AC,

Compliance to EN55011 (CISPR11), EN55022 class B, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN55024,

EN61000-6-2, EN61204-3, heavy Industry Level criteria A

- Setup, rise, time (typical):
- Withstand voltage:
- Working temperature:
- DC OK signal
- Safety standards:
- EMC standards:
- Military standard:
  - For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

MIL-HDBK-217K

Relay contact

### **PSW Series**



- Single and two phase wide input range 180~550VAC
- Universal AC Input / Full Range
- High efficiency up to 93% and low power dissipation
- Protections: Short circuit / Overload / Overvoltage / Over temperature
- Cooling by free air convection
- DIN rail mountable
- UL 508 (industrial control equipment) approved
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 3 year warranty



<u>Altech Corp.</u>®

Accessories

### 120-480W Single Phase

WIDE INPUT POWER SUPPLIES



### **120W Single Output DIN Rail Power Supply**

Cat. No.	Outpu V DC	ut A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSW-12012	12V DC	10A	±1.5%	120 mVp-p	89.5%	
PSW-12024	24V DC	5A	±1%	120 mVp-p	91%	
PSW-12048	48V DC	2.5A	±1%	150 mVp-p	92%	

### 240W Single Output DIN Rail Power Supply

Cat. No.	Outpu	ut	Tol.	Ripple &	Efficiency	NOTES
	V DC	Α	%	Noise		
PSW-24024	24V DC	10A	±1%	120 mVp-p	90%	
PSW-24048	48V DC	5A	±1%	120 mVp-p	90%	

### 480W Single Output DIN Rail Power Supply

(Also available with Optional Parallel Function (7+1))

Cat. No.	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSW-48024	24V DC 20A	±1%	100 mVp-p	94%	
PSW-48048	48V DC 10A	±1%	120 mVp-p	94%	

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## <u>Altech Corp.</u>°

### **SPECIFICATIONS**

### **PSW-120 Series**



Terminal Pin. No Assign. (TB1)				
Pin No.	Assignment			
1	FG⊜			
2	AC/L2			
3	AC/L1			

erminal Pin. No Assign. (TB2)			
Pin No.	o. Assignment		
1,2	Relay Contact		
3	DC OUTPUT -V		
4	DC OUTPUT +V		

Universal Input: 180-550V AC, 254-780V DC full range, 0.55A/400V AC, 1.2A/230V AC Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 40x125.2x113.5mm (1.57x4.93x4.47 inches) Packaging: 1/box; 1.433lbs / 0.65Kg

### **PSW-240 Series**



Terminal Pin. No Assign. (TB1)		
Pin No.	Assignment	
1	FG⊜	
2	AC/L2	
3	AC/L1	

Terminal Pin. No Assign. (TB2)			
Pin No.	Assignment		
1,2	Relay Contact		
3,4	DC OUTPUT -V		
5,6	DC OUTPUT +V		

Universal Input: 180-550V AC, 254-780V DC full range, 1A/400V AC, 2A/230V AC

Connection: Input - 3 poles, Output - 6 poles screw terminal Size (WxHxD): 63x125.2x113.5mm (2.48x4.93x4.47 inches) Packaging: 1/box; 2.337lbs / 1.06Kg

### **PSW-480 Series**



Terminal Pin. No Assign. (TB1)			
Pin No. Assignment			
1	FG⊕		
2	AC/N		

### For Parallel Model Terminal Pin. No Assign. (TB1)

AC/L

3

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

erminal Pin. No Assign. (TB2)				
Pin No.	. Assignment			
1,2	DC OUTPUT +V			
3,4	DC OUTPUT -V			
5,6 Relay Contact				

#### For Parallel Model

Terminal Pin. No Assign. (TB2		
Pin No. Assignment		
1,2	DC OUTPUT +V	
3,4	DC OUTPUT -V	
5,6 Relay Contact		
* Only parallel function.		

Universal Input: 180-550V AC, 254-780V DC full range, 1.6A/400V AC, 4A/230V AC Connection: Input - 3 poles, Output – 12 poles screw terminal Size (WxHxD): 85.5x125.2x128.5mm (3.37x4.93x5.06 inches) Packaging: 1/box; 3.748lbs / 1.7Kg

Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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Accessories

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## **PSW-120 Series Specifications**



### Features:

- Single and two phase wide input range 180 ~ 550VAC
   Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- DIN rail mountable
- UL508 (industrial control equipment) approved EN61000-6-2 (EN50082-2) industrial immunity level
- 100% full load burn-in test
- Built-in DC OK relay contact
- 3 year warranty

	Cat. No.	PSW-12012	<b>PSW-12024</b>	<b>PSW-12048</b>
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A
	BATED POWER	120W	120W	120W
	BIPPLE & NOISE (max)	120mVn-n	120mVn-n	150mVn-n
		Rinnle & noise are measured at 20MHz of h	andwidth by using a 12 twisted pair-wire te	rminated with a 0 1µE & 47µE parallel canacitor
	VOLTAGE AD L BANGE	$12 \sim 15V$	24 ~ 29V	$48 \sim 58V$
	VOLTAGE TOLEBANCE	+1.5%	+1.0%	+1 0%
	VOEINGE FOLEINWOL	Tolerance: includes set un telerance. line re		1.070
	LINE REGULATION			+0.5%
		+0.5%	+0.5%	+0.5%
		2000 ms $70 ms$ $50 ms$ / $400 VAC$	2000mc 70mc 10mc / 220V	AC at full load
	SETUP, NISE HOLD OF HIME	2000IIIS, 70IIIS, 50IIIS 7 400VAC	2000IIIS, 70IIIS, 10IIIS / 2000	AG at full load
		Lengur of set up time is measured at cold in	rst start. Turning ON/OFF the power supply	very quick may lead to increase of the set up time.
	VOLTAGE RANGE	180 ~ 550VAC 2	54 ~ 780VDC	
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	89.5% / 400V	91% / 400V	92% / 400V
	AC CURRENT	0.55A / 400VAC 1.2A / 230V	AC	
	INRUSH CURRENT (Typ.)	COLD START 50A		
	LEAKAGE CURRENT	$\leq$ 3.5 mA / 530VAC		
PROTECTION				
	OVERLOAD	105 ~ 130% rated output power		
		Protection type: Constant current limiting, re	covers automatically after fault condition is	removed
	OVERVOLTAGE	16 ~ 18V	31 ~ 37V	60 ~ 67V
		Protection type: Shut down overvoltage, re-	power on to recover	
	OVERTEMPERATURE	$105^{\circ}C \pm 5^{\circ}C (12V), 110^{\circ}C \pm 5^{\circ}C (12V)$	24V) (TSW1) detect on heat sink	of power switch transistor;
		$100^{\circ}C \pm 5^{\circ}C$ (48V) (TSW1) detect	on heat sink of power diode	
		Protection type: Shut down overvoltage, re-	power automatically after temperature goes	down
	DC OK SIGNNAL	Relay contact rating (max.): 30V	/ 1A resistive	
ENVIRUNIMENT	WORKING TEMP.	$-25 \sim +70^{\circ}$ C (Refer to output loa	d derating curve)	
	WORKING HUMIDITY	20 ~ 90% BH non-condensing	<b>3</b> • • • •	
	STORAGE TEMP. HUMIDITY	-40 ~ +85°C 10 ~ 95% BH		
	TEMP COFFEICIENT	+0.03% / °C (0 ~ 50°C)		
	VIBRATION	$10 \sim 500$ Hz 2G 10 min /1 cycle f	0 min_each long X Y 7 axes Mo	unting clip: Compliance to IEC60068-2
SAFETY & EMC				
	SAFETY STANDARDS	UL508 approved		
		IEC60950-1 compliant		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG:1.5KVA	C 0/P-FG:0.5KVAC 0/P-DC	OK:0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0h	ms/500VDC (25°C; 70% RH)	
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR	11), EN55022 (CISPR22), EN6120	14-3 Class B
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4	,5,6,8,11; ENV50204; EN61204-3	3; EN61000-6-2; (EN50082-2),
		heavy industry level; criteria A,		
OTHERS		The power supply is considered a compone	nt which will installed into a final equipmen	t. The final equipment must be
		re-confirmed that it still meets EMC directiv	es.	
	MTDE	269K bro min MIL HDPK 217k	( (25°C)	
		200K 1115 11111. WILL-FIDDK-217F	(23.6)	
	DIWENSION	40x125.2x113.511111 (₩XΠXD)	T	
	PACKING	0.65Kg; 20pcs / 14Kg / 1.16CUF	1	
		All parameters NUT specially mentioned are	measured at 230V AC input, rated load and	1 25 C of ambient temperature.

## <u>Altech Corp.</u>°

### **Mechanical Specification**



#### TerminaPinNo. Assignment (TB1)

PinNo.	Assignment	
1	FG 🖶	
2	AC/L2	
3	AC/L1	

Termina	PinNo. Assignm	ent (TB2)
PinNo.	Assignment	
1,2	RelayContact	
3	DCOUTPUT-V	
4	DC OUTPUT+V	



### **Derating Curve**



### Static Characteristics



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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## **PSW-240 Series** Specifications



### Features:

- Single and two phase wide input range 180~550VAC
- High efficiency 91% and low power dissipation
   Protections: Short Circuit / Overload / Over Voltage / Overtemperature
- Cooling by free air convection
- DIN rail mountable
- UL 508 (industrial control equipment) approved
- EN61000-6-2 (EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 3 year warranty

	Cat. No.	PSW-24024	PSW-24048	
UUIPUI	DC VOLTAGE	24V	48V	
	RATED CURRENT	10A	5A	
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	
	RATED POWER	240W	240W	
	RIPPLE & NOISE (max)	150mVp-р 150mVp-р		
		Ripple & noise are measured at 20MHz of bandwidth by	using a 12 twisted pair-wire terminated with a $0.1\mu F$ & $47\mu F$ parallel capacity of the terminated with a $0.1\mu F$	
	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%	$\pm 0.5\%$	
	LOAD REGULATION	±1.0%	±1.0%	
INDUT	SETUP, RISE, HOLD UP TIME	800ms, 150ms, 18ms / 400VAC 1500	Oms, 150ms, 18ms / 230VAC at full load	
	VOLTAGE RANGE	180 ~ 550VAC 254 ~ 780VDC		
		Derating may be needed under low input voltage. Please	e check the derating curve for more details	
	FREQUENCY RANGE	47 ~ 63Hz	-	
	EFFICIENCY (Typ.)	91%		
	AC CURRENT	1A / 400VAC 2A / 230VAC		
	INRUSH CURRENT (Typ.)	COLD START 50A		
PROTECTION	LEAKAGE CURRENT	$\leq$ 3.5 mA / 530VAC		
PROTECTION	Ονεβί θαρ	$105 \sim 130\%$ rated output power		
	OVENEOAD	Protection type: Constant current limiting unit will shut o	down after 3 sec : auto recovery after 1 minute if the fault condition is remo	
	OVERVOLTAGE	$29 \sim 33V$	$56 \sim 65V$	
	overnoennae	Protection type: Shut down overvoltage, re-power on to	recovery	
		Under over-voltage condition, If input voltage $\leq$ 200VAC,	the power supply will shut down and then may have auto-recovery	
		after several seconds		
	OVERTEMPERATURE	$90^{\circ}C \pm 5^{\circ}C$ (TSW) detect on heat sink of power switch		
		Protection type: Shut down overvoltage, recovers automatically after temperature goes down		
	DC OK RELAY CONTACT RATINGS (max.)	) 60VDC / 0.3A; 30VDC / 1A; 30VAC / 0.5A resistive load		
	WORKING TEMP.	-30 ~ +70°C (Refer to output load derating	g curve)	
		Installation clearances: 40mm on top, 20mm on the bott	tom, 5mm on the left and right side are recommended when loaded	
		permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.		
		20 ~ 95% KH non-condensing		
		-40 ~ +85 C; 10 ~ 95% KH		
		$\pm 0.03\%$ / $\cup$ (0 ~ 50 U) 10 - 500Uz 20 10min /1augla 60 min each long V V Z avec		
		10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes		
AFETY & EMC	MOUNTING			
	SAFETY STANDARDS	UL508 approved		
		IEC 60950-1 compliant		
		Design refer to GL		
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG: 1.5KVAC 0/P-	FG :0.5KVAC 0/P-DC 0K: 0.5KVAC	
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: ≥ 100M 0hms / 50	00VDC (25°C; 70% RH)	
	EMI CONDUCTION & RADIATION	EN55022 (CISPR22), Class B		
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3		
- 1	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; EN 55024; EN61000-6-2; (EN50082-2);		
		EN61204-3; neavy industry level; criteria A	A approved;	
		I ne power supply is considered a component which will equipment must be re-confirmed that is still meets EMC	i installed into a final equipment. The final	
OTHERS	LATOF.			
	MIRE	141.1K nrs min. MIL-HDBK-217K (25°C)		
	DIMENSION	63X125.2X113.5MM (WXHXD)		
	DAOI/INIO			
	PACKING	1.00Kg; 12pcs / 13.7Kg / 1.00CUF1		

### **Mechanical Specification**

## Altech Corp.



Terminal Pin No. Assignment (TB1) Terminal Pin No. Assignment (TB2)

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PIN NO.	Assignment	
1	FG 🖶	
2	AC/L2	
3	AC/L1	

NL.

Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT +V
5,6	DC OUTPUT -V

### **Block Diagram**



### **DC OK Relay Contact**

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

### **Derating Curve**



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

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Accessories

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## **PSW-480 Series Specifications**

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Altech Corp.



### Features:

• Single and two phase wide input range 180~550VAC

- High efficiency 93% and low power dissipation Protections: Short Circuit / Overload / Over Voltage /
- Overtemperature Cooling by free air convection
   DIN rail mountable

- UL 508(industrial control equipment) approved EN61000-6-2 (EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 3 year warranty

DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	24V 20A $0 \sim 20A$ 480W 100mVp-p Ripple & noise are measured at 20MHz of bandwidth by 24 ~ 28V $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	$ \begin{array}{c} 48V \\ 10A \\ 0 \sim 10A \\ 480W \\ 150mVp-p \\ using a 12 twisted pair-wire terminated with a 0.1 \mu F & 47 \mu F parallel capace \\ 48 \sim 55V \\ \pm 1.0\% \\ oad regulation. \\ \pm 0.5\% \\ \pm 1.0\% \\ ms, 150ms, 16ms / 230VAC at full load \\ \end{array} $
RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	20A $0 \sim 20A$ 480W 100mVp-p Ripple & noise are measured at 20MHz of bandwidth by $24 \sim 28V$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, $150ms$ , $18ms / 400VAC$ 2000 $180 \sim 550VAC$ 254 $\sim 780VDC$ Derating may be needed under low input voltage. Please $47 \sim 63Hz$ 92% 1.6A / 400VAC $4A / 230VACCOLD START 50A\leq 3.5 mA / 530VAC105 \sim 130\% rated output power$	10A $0 \sim 10A$ $480W$ $150mVp-p$ using a 12 twisted pair-wire terminated with a $0.1\mu$ F & $47\mu$ F parallel capace $48 \sim 55V$ $\pm 1.0\%$ $00d$ regulation. $\pm 0.5\%$ $\pm 1.0\%$ $\pm 0.5\%$ $\pm 1.0\%$ ms, 150ms, 16ms / 230VAC at full loadcheck the derating curve for more details93%
CURRENT FANGE RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	0 ~ 20A 480W 100mVp-p Ripple & noise are measured at 20MHz of bandwidth by 24 ~ 28V $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	0 ~ 10A 480W 150mVp-p using a 12 twisted pair-wire terminated with a $0.1\mu$ F & $47\mu$ F parallel capac 48 ~ 55V $\pm 1.0\%$ toad regulation. $\pm 0.5\%$ $\pm 1.0\%$ ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	480W 100mVp-p Ripple & noise are measured at 20MHz of bandwidth by 24 ~ 28V $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	480W 150mVp-p using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capac 48 ~ 55V ±1.0% toad regulation. ±0.5% ±1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	100mVp-p100mVp-pRipple & noise are measured at 20MHz of bandwidth by $24 \sim 28V$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC2000180 ~ 550VAC254 ~ 780VDCDerating may be needed under low input voltage. Please47 ~ 63Hz92%1.6A / 400VAC4A / 230VACCOLD START 50A $\leq 3.5$ mA / 530VAC105 ~ 130% rated output power	1500 Wp-p using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capar 48 ~ 55V ±1.0% toad regulation. ±0.5% ±1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	Ripple & noise are measured at 20MHz of bandwidth by $24 \sim 28V$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capad 48 ~ 55V ±1.0% oad regulation. ±0.5% ±1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	hipple a rouse are measured at 20042 of barrowidul by $24 \sim 28V$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 $180 \sim 550VAC 254 \sim 780VDC$ Derating may be needed under low input voltage. Please $47 \sim 63Hz$ 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq 3.5 mA / 530VAC$ $105 \sim 130\%$ rated output power	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	24 ~ 28V $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	$\begin{array}{l} 48 \sim 53V\\ \pm 1.0\%\\ \text{oad regulation.}\\ \pm 0.5\%\\ \pm 1.0\%\\ \text{ms, 150ms, 16ms / 230VAC at full load}\\ \end{array}$ check the derating curve for more details $\begin{array}{c} 93\%\\ \end{array}$
VULIAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	$\pm$ 1.0% Tolerance: includes set up tolerance, line regulation and $\pm$ 0.5% $\pm$ 1.0% 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	± 1.0% text{back} begin{tabular}{lllllllllllllllllllllllllllllllllll
LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	Tolerance: includes set up tolerance, line regulation and $\pm 0.5\%$ $\pm 1.0\%$ 800ms, 150ms, 18ms / 400VAC 2000 180 ~ 550VAC 254 ~ 780VDC Derating may be needed under low input voltage. Please 47 ~ 63Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq$ 3.5 mA / 530VAC 105 ~ 130% rated output power	ead regulation. ±0.5% ±1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	$\begin{array}{c} \pm 0.5\% \\ \pm 1.0\% \\ 800 \text{ms}, 150 \text{ms}, 18 \text{ms} / 400 \text{VAC} & 2000 \\ 180 \sim 550 \text{VAC} & 254 \sim 780 \text{VDC} \\ \hline \text{Derating may be needed under low input voltage. Please} \\ 47 \sim 63 \text{Hz} \\ 92\% \\ 1.6\text{A} / 400 \text{VAC} & 4\text{A} / 230 \text{VAC} \\ \hline \text{COLD START 50A} \\ \leq 3.5 \text{ mA} / 530 \text{VAC} \\ \hline 105 \sim 130\% \text{ rated output power} \end{array}$	±0.5% ±1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
LOAD REGULATION SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	±1.0%       800ms, 150ms, 18ms / 400VAC       2000         180 ~ 550VAC       254 ~ 780VDC         Derating may be needed under low input voltage. Please         47 ~ 63Hz         92%         1.6A / 400VAC       4A / 230VAC         COLD START 50A         ≤ 3.5 mA / 530VAC         105 ~ 130% rated output power	+1.0% ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
SETUP, RISE, HOLD UP TIME VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	800ms, 150ms, 18ms / 400VAC         2000           180 ~ 550VAC         254 ~ 780VDC           Derating may be needed under low input voltage. Please         47 ~ 63Hz           92%         1.6A / 400VAC         4A / 230VAC           COLD START 50A         ≤ 3.5 mA / 530VAC         105 ~ 130% rated output power	ms, 150ms, 16ms / 230VAC at full load check the derating curve for more details 93%
VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	180 ~ 550VAC254 ~ 780VDCDerating may be needed under low input voltage. Please47 ~ 63Hz92%1.6A / 400VAC4A / 230VACCOLD START 50A $\leq$ 3.5 mA / 530VAC105 ~ 130% rated output power	check the derating curve for more details
FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	Intervention         204 × 700VDC           Derating may be needed under low input voltage. Please         47 ~ 63Hz           92%         1.6A / 400VAC         4A / 230VAC           COLD START 50A         ≤ 3.5 mA / 530VAC           105 ~ 130% rated output power	check the derating curve for more details
FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	behaving may be needed under low input voltage. Please $47 \sim 63$ Hz 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A $\leq 3.5$ mA / 530VAC 105 ~ 130% rated output power	93%
EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	$47 \sim 63 \text{HZ}$ 92% 1.6A / 400VAC 4A / 230VAC COLD START 50A ≤ 3.5 mA / 530VAC 105 ~ 130% rated output power	93%
AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	92% 1.6A / 400VAC 4A / 230VAC COLD START 50A ≤ 3.5 mA / 530VAC 105 ~ 130% rated output power	93%
AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	1.6A / 400VAC 4A / 230VAC COLD START 50A ≤ 3.5 mA / 530VAC 105 ~ 130% rated output power	
INRUSH CURRENT (Typ.) LEAKAGE CURRENT OVERLOAD	COLD START 50A ≤ 3.5 mA / 530VAC 105 ~ 130% rated output power	
LEAKAGE CURRENT OVERLOAD	≤ 3.5 mA / 530VAC 105 ~ 130% rated output power	
OVERLOAD	105 ~ 130% rated output power	
	Protection type: Constant current limiting, unit will shut d	own after 3 sec.; auto recovery after 1 minute if the fault condition is remo
UVERVULIAGE	29 ~ 33V	56 ~ 65V
	Protection type: Shut down overvoltage; auto recovery af	ter 1 minute if the fault condition is removed
	Under over-voltage condition, If input voltage $\leq$ 200VAC,	the power supply will shut down and then may have auto-recovery after
	several seconds.	
OVERTEMPERATURE	$95^{\circ}C \pm 5^{\circ}C$ (TSW) detect on heat sink of po	ower switch
	Protection type: Shut down overvoltage, recovers automa	tically after temperature goes down
DC OK RELAY CONTACT RATINGS (max.)	60VDC / 0.3A; 30VDC / 1A; 30VAC / 0.5A	resistive load
WORKING TEMP.	-30 ~ +70°C (Refer to output load derating	curve)
	Installation clearances: 40mm on top, 20mm on the botto	om, 5mm on the left and right side are recommended when loaded
	permanently with full power. In case the adjacent device	is a heat source, 15mm clearance is recommended.
WORKING HUMIDITY	20 ~ 95% RH non-condensing	
STORAGE TEMP., HUMIDITY	-40 ~ +85°C; 10 ~ 95% RH	
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)	
VIBBATION	$10 \sim 500$ Hz 2G 10 min /1 cvcle 60 min ea	ch long X Y 7 axes
MOUNTING	Compliance to IEC60068-2-6	
SAFETY STANDARDS		
	IEC 60950-1 compliant	
	Design refer to GL	
WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG:1.5KVAC O/P-F	G:0.5KVAC 0/P-DC 0K:0.5KVAC
ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms / 500	/DC (25°C; 70% RH)
EMI CONDUCTION & RADIATION	EN55022 (CISPR22), EN61204-3 Class B	
HARMONIC CURRENT	Compliance to EN61000-3-23	
EMS IMMUNITY	Compliance to EN61000-4-2.3.4.5.6.8.11	ENV50204: EN 55024: EN61000-6-2: (EN50082-2):
	FN61204-3: heavy industry level: criteria	approved:
	The power supply is considered a component which will	installed into a final equipment. The final equipment must be
	re-confirmed that is still meets EMC directives.	······································
MTBF	112.8K hrs min. MIL-HDBK-217K (25°C)	
DIMENSION	85.5x125.2x128.5mm (WxHxD)	
PACKING	1.7Kg; 8pcs / 14.6Kg / 0.9CUFT	
	All parameters NOT specially mentioned are measured a	t 400VAC input, rated load and 25°C of ambient temperature.
	DC OK RELAY CONTACT RATINGS (max.) WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION PACKING	Protection type: Shut down overvoltage, recovers automaDC OK RELAY CONTACT RATINGS (max.)60VDC / 0.3A; 30VDC / 1A; 30VAC / 0.5AWORKING TEMP30 ~ +70°C (Refer to output load derating Installation clearances: 40mm on top, 20mm on the bott permanently with full power. In case the adjacent deviceWORKING HUMIDITY20 ~ 95% RH non-condensingSTORAGE TEMP, HUMIDITY-40 ~ +85°C; 10 ~ 95% RHTEMP. COEFFICIENT±0.03% / °C (0 ~ 50°C)VIBRATION10 ~ 500Hz, 2G 10min./1cycle, 60 min. ea MOUNTINGMOUNTINGCompliance to IEC60068-2-6SAFETY STANDARDSUL508 approved IEC 60950-1 compliant Design refer to GLWITHSTAND VOLTAGEI/P-0/P. 'JKVAC I/P-FG: 1.5KVAC 0/P-F ISOLATION RESISTANCEEMI CONDUCTION & RADIATIONEN55022 (CISPR22), EN61204-3 Class B Compliance to EN61000-3-2,-3EMS IMMUNITYCompliance to EN61000-3-2,-3EMS IMMUNITY112.8K hrs min. MIL-HDBK-217K (25°C)DIMENSION85.5x125.2x128.5mm (WxHxD) PACKINGPACKING1.7Kg; 8pcs / 14.6Kg / 0.9CUFT All parameters NOT specially mentioned are measured at



### Accessories

### Power Supply Redundancy Buffer Module

PS-RDN20 is a 20A redundancy (decoupling) module for the 24V DC power system. Containing 2 sets of 20A Or-ing diodes with wonderful heat dissipation deployment, PS-RDN20 give you a new option for safe connection of 1+1 redundant set-up. Not only perfectly decouple power sources from each other as well as from the load, PS-RDN20 also provides users monitoring signals for both input channels through the built-in relays. Since there's no switching components inside the module, PS-RDN20 will not arise additional EMI issues and should provide you a worry-free application platform!

DC input voltage range Reverse voltage DC output current DC output voltage drop Input voltage alarm Relay contact rating Working Temperature EMC standards Connection 21~28V, 20A max. x 2 channels 30V 20A max. 0.5V max. When input is > 20V( $\pm$ 5%) or <30V( $\pm$ 5%), relay contacts 30VDC, 1A -20~+70°C EN55022 class B, EN61000-4-2,3,4,5,6,8, ENV50204 I/P: 4 poles, 0/P: 2 poles screw DIN terminal, Single output: 4 poles

### **UPS Battery Module**

PS-UPS40 is a 40A max. DC UPS (battery control) module for the 24 V DC power system. Accompany with external batteries, it can back-up up to 40A of current to critical loads for certain period of time depending on the capacity of batteries. With complete monitoring signals and LED indicators for DC BUS OK, Battery Fail, Battery Discharge and the repeated Battery Test function to check the situation of external batteries. Users can customize their own DC UPS system to back up critical loads and capture the status of the whole system easily.

DC input / DC bus	24~29V, 40A max.
Battery inout voltage	21~29V
Battery input current	0~40A
Charge current (typ.)	2A
External battery (typ.)	24V, 4AH / 7AH / 12AH
DC bus ok	Relay status: Short when DC voltage between $21 \sim 29V(\pm 3\%)$ , relay contacts
Battery fail	Relay status: Short when battery failure is observed through the battery test function, relay contacts
	LED (red): Battery over-discharge warning or battery broken: light; battery OK: dark
Battery discharge	Relay status: Short when battery in discharge condition, relay contacts
	LED (yellow): Battery discharging: light; battery is not discharging or discharging current <2A: dark
Working temperature	-20~+70°C
EMC standards	EN55022 class B, EN61000-4-2,3,4,5,6,8, ENV50204
Connection	I/P: 2 poles, O/P: 2 poles screw DIN terminal, Single output: 6 poles

## Redundancy Buffer Module UPS Battery Module



### **Redundancy Buffer Module Features:**

- Suitable for redundant operation of 24V system
- Installed on 35 x 7.5 mm or 35 x 15 mm DIN Rail
- Relay contact signal output and LED indicator for input failure alarm
- Cooling by free air convection
- 3 year warranty

### **UPS Battery Module Features:**

- Battery controller for DIN Rail UPS system
- Installed on 35 x 7.5 mm or 35 x 15 mm DIN Rail
- Parallel connection to DC BUS
- Suitable for 24V system up to 40A
- Built-in battery test function
- Battery polarity protection
- Relay contact signal output and LED indicator for DC BUS OK, battery fail and battery discharge
- Cooling by free air convection
- 3 year warranty



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### Accessories

• REDUNDANCY BUFFER MODULE

UPS MODULE

RoHS DE CE

### **Power Supply Redundancy Buffer Module**

PS-RDN20 is a 20A redundancy (decoupling) module for the 24V DC power system. Containing 2 sets of 20A Oring diodes with excellent heat dissipation deployment. PS-RDN20 give you a new option for safe connection of 1+1 redundant set-up. Not only perfectly decouple power sources from each other as well as from the load, PS-RDN20 also provides users monitoring signals for both input channels through the built-in relays. Since there's no switching components inside the module, PS-RDN20 will not arise additional EMI issues and should provide you a worry-free application platform!

Cat. No.	Voltage Range	Current Range	NOTES
PS-RDN20	21-28V DC	0-20A	
Connection: To	rminal 1 4 polos Tormir		

Connection: Terminal 1 - 4 poles, Terminal 2 - 6 poles Size (WxHxD): 55.5x125x100mm (2.19x4.95x3.95 inches) Packaging: 1/box; 1.1lbs / 0.5Kg

DC Fail Block Diagram



### 40 AMP UPS Battery Controller

PS-UPS40 is a 40A max. DC UPS (battery control) module for the 24 V DC power system. Accompany with external batteries, it can back-up up to 40A of current to critical loads for certain period of time depending on the capacity of batteries. With complete monitoring signals and LED indicators for DC BUS OK, Battery Fail, Battery Discharge and the repeated Battery Test function to check the situation of external batteries. Users can customize their own DC UPS system to back up critical loads and capture the status of the whole system easily.

Cat. No.	Voltage Range	Current Range	NOTES
PS-UPS40	21-29V (Battery) 24-29V (DC)	0 - 40A	
Connection. Torm	inal 1 4 nalas Tarminal		

Connection: Terminal 1 - 4 poles, Terminal 2 - 6 poles Size (WxHxD): 55.5x125x100mm (2.19x4.95x3.95 inches) Packaging: 1/box; 1.21lbs / 0.55Kg

### **SPECIFICATIONS**



### **PS-RDN20** Series



#### Terminal Pin. No Assign. (TB1) Pin No. Assignment 1 Vout+ 2 Vout-Vin-3,4 5 Vin B+ б Vin A+

Terminal Pin. No Assign. (TB2) Pin No. Assignment Alarm B1 1 Alarm B2 2 3 Alarm A1 Alarm A2 4

#### Applications:

1.1+1 Redundancy Using 1 more PSU as the redundant unit





2. 1+N Redundancy: Using more PSUs as the redundant units to increase the reliability



50

70

60

(VERTICAL)



### **PS-UPS40 Series**



Terminal Pin. No Assign. (TB1) Pin No. Assignment BATTERY INPUT + 1 2 BATTERY INPUT -DC INPUT -3 DC INPUT + 4

Terminal Pin. No Assign. (TB2) Pin No. Assignment BAT DISC 1 1 2 BAT DISC 2 3 BAT OK 1 4 BAT OK 2

#### 1. Backup connection for AC interruption







### 20



#### 2. Combine redundancy module (PS-RDN20) to back up AC interruption or failure of PSU



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.



40



100 80 LOAD (%) 60

**Derating Curve** 

100

80

60

40

20

PSU

Vin A

-10

0

PSU

¥

Vout

¥

**Derating Curve** 

40

Vin B

10

20

30

LOAD (%)

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Accessories

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## PS-RDN20 Specifications

No

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- Suitable for redundant operation of 24V system
- Installed on DIN Rail TS35 / 7.5 or 15
- Relay contact signal output and LED indicator for input failure alarm
- Cooling by free air convection
- 3 year warranty

ΠΙΤΡΙΙΤ	Cat. No.	PS-RDN20
	REVERSE VOLTAGE (max.)	30V
	OUTPUT CURRENT (max.)	20A
	VOLTAGE DROP	0.5V
	LED INDICATORS	Two green LED's indicating each input is OK or fail
INPUT		21 201/
		IWU 20A per input
	INPUT CORRENT (Max.)	20A per linput
INCTION		
	INPUT VOLTAGE ALARM	When input is $\ge 20V (\pm 5\%)$ or $\le 30V (\pm 5\%)$ relay contacts
	RELAY CONTACT RATING (max.)	30VDC, 1A
RONMENT		
	WORKING TEMP.	-20 ~ +70°C
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes
	MOUNTING	Compliance to IEC60068-2-6
TY & EMC		
	WITHSTAND VOLTAGE	Terminal- Chassis: 0.5KVAC, Relay Contacts- Terminal: 0.5KVAC
	ISOLATION RESISTANCE	Terminal- Chassis: ≥100M Ohms / 500VDC (25°C; 70% RH)
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8; ENV50204; heavy industry level; criteria A,
THERS -		
	MTBF	996.8Khrs min. MIL-HDBK-217K (25°C)
	DIMENSION	55.5x125.2x100mm (WxHxD)
	PACKING	0.5Kg; 20pcs / 11Kg / 1.29CUFT
		All parameters NOT specially mentioned are measured at 24V DC input rated load and 25°C of ambient temperature

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### **Mechanical Specification**



Terminal Pin. No Assignment (TB1)		
Pin No.	Assignment	
1	Vout+	
2	Vout-	
3,4	Vin-	
5	Vin B+	
6	Vin A+	

Terminal F	Terminal Pin. No Assignment (TB2)	
Pin No.	Assignment	
1	Alarm B1	
2	Alarm B2	
3	Alarm A1	
4	Alarm A2	

**Block Diagram** 



**Derating Curve** 



Note: All dimensions are in millimeters, to convert to inches multiply by 0.03937.

Accessories

## PS-UPS40 Specifications

No

RoHS

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### Features:

- Battery controller for DIN Rail UPS system
- Parallel connection to DC BUS
- Suitable for 24V system up to 40A
- Installed on DIN Rail TS35/ 7.5 or 15
- Built-in battery test function
- Battery polarity protection
- Relay contact signal output and LED indicator for DC BUS OK,
- Battery fail, and battery discharge
- Cooling by free air convection
- 3 year warranty

	Cat. No.	PS-UPS40
DC BUS	DC VOLTAGE (Typ.) RATED CURRENT	24 ~ 29V 40A
BATTERY / OUTPUT	VOLTAGE RANGE (Typ.) CURRENT RANGE CHARGE CURRENT (Typ.) EXTERNAL BATTERY (Typ.)	21 ~ 29V 0 ~ 40A 2A 4 / 7 / 12AH / 24V
UNCTION	RELAY CONTACT RATING (max.) DC BUS OK	30VDC, 1A Relay contact: Short when DC voltage between 21 ~ 29V ( $\pm$ 3%), relay contacts
	BATTERY FAIL	Relay contact: Short when battery failure is observed through the battery test function, relay contacts LED (Red): Battery over- discharge warning or battery broken: light; Battery OK: dark Every 25 seconds, unit will send out test signal through Battery Fail relay contact and LED indicator
	BATTERY DISCHARGE	once the battery is fail. Relay contact: Short when battery in discharge condition, relay contacts LED (Yellow): Battery discharging: light; Battery is not discharging or discharging current ≤2.0A: dark
IRONMENT	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY VIBRATION MOUNTING	-20 ~ +70°C 20 ~ 90% RH -20 ~ +85°C, 10 ~ 95% RH 10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes Compliance to IEC60068-2-6
Y & EMC	WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION EMS IMMUNITY	Terminal- Chassis: 0.5KVAC, Relay Contacts- Terminal: 0.5KVAC Terminal- Chassis: ≥100M 0hms / 500VDC (25°C; 70% RH) Compliance to EN55022 (CISPR22) Class B Compliance to EN61000-4-2,3,4,5,6,8; ENV50204; heavy industry level; criteria A
RS	MTBF DIMENSION	161.9Khrs min. MIL-HDBK-217K (25°C) 55.5x125.2x100mm (WxHxD)

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### **Mechanical Specification**



Terminal Pin. No Assignment (TB1)

1         BATTERY INPUT +           2         BATTERY INPUT -           3         DC INPUT -           4         DC INPUT +
2 BATTERY INPUT - 3 DC INPUT - 4 DC INPUT +
3 DC INPUT - 4 DC INPUT +
4 DC INPUT +

Terminal Pin. No Assignment (TB2)						
Pin No.	Assignment					
1	BAT DISC 1					
2	BAT DISC 2					
3	BAT OK 1					
4	BAT OK 2					
5	DC OK 1					
6	DC OK 2					

### **Block Diagram**



**Derating Curve** 



Accessories

2

### Accessories POWER SUPPLIES

### **DIN MOUNTING RAILS**

Altech DIN Rails comply with DIN 50045, 50022 and 50035 Standards. The use of DIN Rails enhances design capabilities, saves space and reduces labor.

Standard rails are made of steel with zinc plating and chromate passivation and are available in various configurations.

DIN Rails are 35mm wide and available in 7.5 and 15mm depths. They are supplied in 1 m (3'3") and 2 m (6'6) lengths. Upon request they can be cut to custom lengths and punched with holes or perforations.



### SUPPORT BRACKETS

Support Brackets elevate DIN Rails away from the panel to facilitate component mounting and to increase wiring access. Angled brackets tilt the rail by 45° to improve visibility. Straight brackets are available in three heights for optimum positioning of the rail.

Brackets mount with 2 screws to any panel or flat surface and have tapped center holes for rail mounting. Bracket material is steel, zinc plated yellow chromate.



For the latest on Altech Power Supply specifications please visit www.altechcorp.com/power.

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### **END STOPS and SPACER**

End Stops prevent power supplies and other DIN Rail mount components and devices from moving laterally on the rail. They are available in polyamide 6.6 and metal configurations for 35mm DIN rails.

CA802 is a small endstop for the smaller power supplies. CA202 is a large endstop for larger power supplies. CA302 is used with 7.5mm deep DIN rail and the CA402 is used with 15mm deep rail.

DIN Rail mountable spacers (CASP and 15.960) are generally used to ensure cooling space for the small power supply.

C/	4202	CA	802	CA302		CA402		CA	SP	15.960							
		Æ	3	L	-			F	7	D	T						
Polyamide	6.6	Polyamide 6.6		Steel		Steel		Polyamide 6	i.6	Polyamide 6	.6						
44.5 x 50	x 9.5 mm	32 x 45 x 8	32 x 45 x 8 mm		32 x 45 x 8 mm		32 x 45 x 8 mm 27 x 39.5 x 16 m		16 mm 27 x 39.5 x 16 mm		16 mm	29 x 43 x 8 mm		29 x 43 x 8 mm		69 x 55 x 9	mm
Cat. No.	Std. Pk.	Cat. No.	Std. Pk.	Cat. No.	Std. Pk.	Cat. No.	Std. Pk.	Cat. No.	Std. Pk.	Cat. No.	Std. I						
CA202	50	CA802	50	CA302	50	CA402	50	CASP	50	15.960	10						

### **GROUND BLOCKS for DIN Rail**

Use ground blocks instead of grounding studs and wire lugs to terminate ground wires, saving installation and wiring time.

Ground blocks clamp mechanically onto the DIN Rail by tightening the center mounting screw, making a reliable electrical connection between the cage clamp terminals and the DIN Rail. The rail serves as a busbar and automatically distributes ground potential to all other ground terminals on the same rail.

Ground blocks can also be used as end stops, preventing other terminal blocks and components from moving laterally on the DIN Rail. They are supplied with a standard green/yellow housing for easy identification.	CGT4N	CGT6N	CGT10U			
	CE	CE	CE AEx eII EEx eII			
Terminal Width	6 mm	8 mm	10 mm			
Height x Length	45.4 x 54.2 mm	47 x 54.5 mm	49.5 x 45 mm			
Stripping Length	9 mm	12 mm	12 mm			
Insulation Material	Polyamide 6.6	Polyamide 6.6	Polyamide 6.6			
Type of Connection	2 screw clamps	2 screw clamps	2 screw clamps			
Approvals						
Wire Range	22-10 AWG 0.5-4 sq.mm 22-10 AWG	22-8 AWG 1.5-6 sq.mm 22-8 AWG	22-6 AWG 1.5-10 sq.mm 16-8 AWG			
Torque	7 lb-in 0.8 Nm 7 lb-in	14 lb-in 0.8 Nm 14 lb-in	14 lb-in 1.2 Nm 14 lb-in			

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# Frequently Asked Questions

#### Notes on choosing a switching power supply?

• To increase the reliability of the switching power supply, we suggest users choose a unit that has a rating of 30% more power than actual need. For example, if the system needs a 90W source, we suggest that users choose a switching power supply with 120W of output power or more. By doing this, you can effectively boost the reliability of the switching power supply in your system.

• We also need to consider about ambient temperature of the switching power supply and whether there is additional device for dissipating the heat. If the switching power supply is working in a high temperature environment, we need to make some derating to the output power. The derating curve of "ambient temperature" versus "output power" can be found on our spec sheets.

- · Choosing functions based on your application:
  - Protection function:
    - Overvoltage Protection (OVP)
    - Overtemperature Protection (OTP)
    - Overload Protection (OLP)
    - Short Circuit Protection (SCP)
  - Application function:
    - Signaling Function (Power Good, Power Fail)
    - DC OK Signal
  - · Special function:
    - Power Factor Correction (PFC)
    - Uninterruptible Power Supply (UPS) function
    - · Pick Load Capability
    - Make sure that the model qualifies for the safety standards and EMC regulations you need.

#### How do we choose a power supply to charge a battery?

ALTECH does not have power supplies designed for battery charging. If you like to choose a Power Supply as a battery charger, our advice is to pick a power supply with over load protection (OLP) which mode is constant current limiting. The models in this mode provide constant current even when the protection circuit is triggered. The second choice is fold-back current limiting or constant wattage model. In this model, when a battery is running low, the output current of the power supply will gently increase. The level of increase depends on battery's capacity and degree of exhaustion.

Hiccup or shut down model are not recommended because it will stop to generate current when OLP happens.

#### Does Altech carry class 2 power supplies?

Selected models of the Altech slim line series (PS-S...) is NEC class 2 / LPS compliant, but they are not UL1310 tested. More information can be found on the individual specification sheets.

#### Can ALTECH's power supply be used in the range of 45Hz ~ 440Hz? If YES, what will happen?

ALTECH's power supply can be used within this frequency range. But if the frequency is too low, the efficiency will also be lower. For example, when a PS-12024 is operated under 230VAC and rated load, if the frequency of AC input is 60 Hz, the efficiency is around 84%; however, if the frequency of AC input reduces to 50 Hz, the efficiency will be around 83.8%. If the frequency is too high, the power factor of the switching power supply with PFC (power factor correction) function will reduce and this also will cause higher leakage current. For example, when a PS-12024 is operated under 230VAC and rated load, if the frequency of AC input is 60 Hz, the power factor is 0.93 and the leakage current is around 0.7mA; however, if the frequency of AC input increase to 440 Hz, the power factor will decrease to 0.75 and the leakage current will rise to around 4.3mA.

### If we need a 24V output power supply, but ALTECH does not have this model, can we use two 12V power supplies connecting in series instead of one 24V power supply?

YES, basically you can do this to get the right output voltage, but be careful that the rated output current of the series system should be the rating of the minimum one in these series connected power supplies. Furthermore, we like you to parallel a diode at the output of power supply to prevent possible damage of internal capacitors.



#### Why I cannot turn on the power supply smoothly when the loads are motors, light bulbs or capacitive loads?

If you connect the switching power supply to motors, light bulbs, or high capacitive loads, you will have a high output surge current when you turn on the S.P.S. and this high surge current will cause failure of start up. We suggest using switching power supply with over load protection and constant current limiting protection to deal with these loads.

#### Why did the power supply shuts down during operation and after turning it off, I can restart the power supply again?

In general there are two circumstances that will cause the power supply to shut down. The first one is the activation of the over-load-protection (OLP). To deal with this situation, we suggest increasing the rating of the output power or modifying the OLP point. The second one is the activation of over-temperature protection (OTP) when the internal temperature reaches the pre-set value. All of these conditions will let the switching power supply enter protection mode and shut down. After these conditions are removed, the switching power supply will be back to normal.

#### The output ground (GND) and frame ground (FG) is the same point in my system, can ALTECH's power supplies be used in such system?

Yes. Since our products are designed based on isolation concept, it will be no problem that the output ground (GND) and frame ground (FG) is the same point in your system. But, EMI may be affect by this connection.

### During the operation of ALTECH power supply, there is some leakage current on the case. Is this normal? Will this leakage current hurt human body?

Due to the requirement of EMI, there will be some Y capacitors between line and neutral to the FG (case) to improve EMC. These Y capacitors will cause some leakage current flow from line or neutral to the case (normally case will be connected to earth ground). For example, IEC-60950-1 requires that this current should be less than 3.5mA for IT equipment, so basically the leakage current you find on the case will not hurt human body. Proper connection to Earth ground will solve the leakage current problem.

#### What should be noticed when installing a power supply in vertical and horizontal directions?

Most small wattage power supplies are mainly installed in the horizontal position. If you have to install it vertically because of mechanical limitation, you should consider the output derating due to the heat concern. The temperature derating curve can be found on the spec sheet.

### What is "Input - Inrush Current"? What will we notice?

At input side, there will be  $(1/2 \sim 1 \text{ cycle}, \text{ ex. } 1/120 \sim 1/60 \text{ seconds for 60 Hz AC source})$  large pulse current (20~60A based on the design of S.P.S.) at the moment of power on and then back to normal rating. This "Inrush Current" will appear every time you turn on the power. Although it will not damage the power supply, we suggest not turning the power supply ON/OFF very quickly within a short time. Besides, if there are several power supplies turning on at the same time, the circuit breaker of AC source may shut off and go into protection mode because of the huge inrush current. It is suggested that these power supplies start up one by one if possible.

#### What is PFC?

PFC stands for Power Factor Correction. The purpose of PFC is to improve the ratio of apparent power and real power. The power factor is only 0.4~0.6 in non-PFC models. In PFC models, the power factor can reach above 0.95. The calculation formulas are as below:

Apparent Power=Input Voltage x Input Current (VA)

### Real Power= Input Voltage x Input Current x Power Factor (W)

From the environment friendly point, the electric power plant needs to generate a power which is higher than apparent power in order to steadily provide electricity to the market. The real usage of electricity should be defined by real power. Assuming the power factor is 0.5, the power plant needs to produce more than 2VA to satisfy 1W real power. On the contrary, if the power factor is 0.95, the power plant only needs to generate more than 1.06VA to provide 1W real power need. It will be more effective.

#### What is the difference between -V, +V and COM which are marked on the output side? COM(COMMON) means common ground.

Single output: Positive pole (+V), Negative pole (-V)

+V; COM and -V can be attained by using two switching power supplies in series. Example: (2x PS-S2012)

### In ALTECH's catalog, we see AC and DC at input, what is it all about?

Due to different circuit designs, ALTECH power supply's input consists of three types as below:

 $(\sqrt{2}=1,414 \rightarrow 1.414 \text{ x AC} = \text{DC})$ A.85~264VAC;120~370VDC

B.176~264VAC;250~370VDC

C.85~132VAC/176~264VAC by Switch; 250~370VDC

- In the case of option A and B inputs models, power supply can work properly no matter under AC or DC input. Some models need correct connection of
  input poles, positive pole connects to AC/L; negative pole connects to AC/N. Others may require opposite connection, positive pole to AC/N; negative
  pole to AC/L. If customers make a wrong connection, the power supply will not be broken. You can just reverse the input poles and power supply will
  still work.
- In the case of option C input models, please make sure that you switch the 115/230V input correctly. If the switch is on the 115V side and the real
  input is 230V, the power supply will be damaged.



# **Frequently Asked Questions**

## Why the input voltage marked on the spec. sheet is 88~264 VAC while the label on the power supply says that it is 100~240VAC?

During safety verification process, the agency will use a stricter standard  $-\pm 10\%$  (IEC60950 uses +6%, -10%) of the input voltage range labeled on the power supply to conduct the test. So, operating at the wider input voltage range as specified on the spec. sheet should be fine. The narrower range of input voltage labeled on the power supply is to fulfill the test standard of safety regulation and make sure that users insert input voltage correctly.

### Will ALTECH's products with CE marking meet the EMC requirements after assembling into my system?

We cannot guarantee 100% that the final system can still meet the EMC requirements. The location, wiring and grounding of the switching power supply in the system may influence its EMC characteristics. In different environment or applications, the same switching power supply may have different outcomes. Our test results are based on setup shown in the EMC report.

#### What is different between information (EN60950-1) and medical (EN60601-1) safety standard?

According to safety standard, the leakage current in EN60950-1 Class I cannot exceed 3.5mA. Many of ALTECH's power supplies meet this requirement but may not meet the EN60601-1. Others criteria like safe distance and numbers of fuse are also different. Please consult the diagram below:

Subjects		IEC60950-1	IEC60601-	1		
Creepage distance/ Clearance distance	Basic Insulation	2.5mm/2mm	4mm/2.5mm			
Working Voltage: Max. 250Vrms	Supplementary Insulation	5mm/4mm	8mm/5mm			
	Basic Insulation	1500Vac	1500Vac			
Electric Strength Test	Supplementary Insulation	3000Vac	4000Vac			
		Handheld: 0.75mA	-			
	CLASS I		Leakage current of grounding	0.3mA		
Leakage Current		Others: 3.5mA	Leakage current of grounding	0.1mA		
	CLASS II	0.25mA	Leakage current of grounding	0.1mA		
Number of Fuse		1	2			
The Lowest Ambient Temperature		Refer to the definition of Manufacturer	40°C			

#### What is MTBF? Is it different from Life Cycle?

MTBF and Life Cycle are both indicators of reliability. Altech uses MIL-HDBK-217F as the core of MTBF. An expected reliability is forecasted through accounting component's number. The exact meaning of MTBF is after continuously using of power supply in a certain time, the probability of operating properly is 36.8% (e-1=0.368). If power supply is continuously used at double the MTBF time, the probability of operating properly becomes 13.5% (e-2=0.135). Life Cycle is found through using the temperature rise of electrolytic capacitor to estimate the approximate life of power supply. For example, PS-S10 series MTBF=584K hours; electrolytic capacitor C108 Life Cycle=202K hours (Ta=45° C).

### POWER SUPPLY LEGAL DISCLAIMER

Power supply data sheet specifies devices but can not promise to deliver any specific characteristics. No warranty or guaranty is given regarding performance or suitability. The customer shall test and ensure that each power supply would work for the anticipated use. Altech Corp. reserves the right to make modification to its power supply data sheets or specifications at any time without prior notice. Please visit www.altechcorp.com/power for more information.

## **Selection Guide**

## Altech Corp.®

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	5	12	15	24	48	Unit	55	IL J	ঁ ৩	~ ~¥	<sup>بل</sup> رو	N RC	nº Re	30 QC	Sho	N 046	× 04	<sup>51</sup> 04	ET EW	¢ي ً
PS-S10xx	Х	Х	Х	Х		Х		Х		Х	Х	Х	Х	SIG	Х	Х	Х		Х	Х
PS-S20xx	Х	Х	X	Х		Х		X		Х	Х	Х	Х	SIG	Х	Х	Х		X	Х
PS-S40xx	Х	Х		Х	Х	Х		X	Х	Х*	Х	Х	Х	Х	Х	Х	Х		X	X
PS-S60xx	Х	Х		Х	Х	Х		X	Х	Х*	Х	Х	Х	Х	Х	Х	Х		X	Х
PS-S100xx		Х		Х	Х	Х		Х		Х*	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
PS-15xx	Х	Х	X	Х		Х			Х		Х	Х	Х		Х	Х	Х		X	Х
PS-30xx	Х	Х	Х	Х		Х			Х		Х	Х	Х		Х	Х	Х		X	X
PS-45xx	Х	Х	X	Х		Х		X			Х	Х	Х		Х	Х	Х	Х	X	Х
PS-60xx	Х	Х	X	Х		Х			Х		Х	Х	Х		Х	Х	Х		X	Х
PS-100xx		Х	Х	Х		Х			Х		Х	Х	Х		Х	Х	Х	Х	Х	Х
PS-75xx		Х		Х	Х	Х		X			Х	Х	Х		Х	Х	Х	Х	X	Х
PS-120xx		Х		Х	Х		Х	X	Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PSH-120xx				Х	Х	Х			Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PSP-240xx				Х	Х	Х		X	Х		Х	Х	Х		Х	Х	Х	Х	Х	Х
PSP-480xx				Х	Х	۷		X	Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PSP-480Sxx				Х	Х		Х	X	Х		Х	Х	Х		Х	Х	Х	Х	Х	Х
PST-240xx				Х	Х	TP		X	Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PST-480xx				Х	Х	TP		X	Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PST-960xx				Х	Х	TP		X	Х		Х	Х	Х		Х	Х	Х	Х	X	Х
PST-960Pxx				Х	Х	TP		Х	Х		Х	Х	Х		Х	Х	Х	Х	Х	Х
PS-C120xx		Х		Х	Х	Х		X			Х	Х	Х	Х	Х	Х	Х	Х	X	Х
PS-C240xx				Х	Х	Х		X			Х	Х	Х	Х	Х	Х	Х	Х	X	Х
PS-C480xx				Х	Х	Х		X			Х	Х	Х	Х	Х	Х	Х	Х	X	Х
PS-C480Pxx				Х	Х	Х		X			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
PSW-120xx		Х		Х	Х	WR		Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
PSW-240xx				Х	Х	WR		Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
PSW-480xx				Х	Х	WR		Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
PS-RDN			21-2	8							Х	Х	Х						Х	
PS-UPS			21-2	8							Х	Х	Х	DBO					Х	

TP = three phase inputWR = wide range input  $X^*$  = selected items, see data sheet SIG = DC OK signal

 $\label{eq:V} \begin{array}{l} V = 220V \text{ INPUT ONLY} \\ \text{DBO} = \text{DC bus OK} \end{array}$ 

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