Altech Corp.®

Bitech Corp.

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Serving the Automation & Control Industry since 1984

Quality Endorsed Company

DIN Rail Power Supplies

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DIN Rail Power Supplies

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

In response to a growing market for high power regulated Power Supplies, Altech introduced the new Din Rail mountable power supply line. They are reliable, cost effective, space economical and easy to install and maintain. They are able to handle any industrial process requirement. In addition, you do not need to oversize them; they are designed to work on 100% load capacity. The universal input, power factor correction and many approvals proves that Altech Power Supplies will function worldwide on a wide variety of applications. Wide operation temperature range, high efficiency and many protections make Altech Power supplies your best choice.

Our well trained technical experts welcome the opportunity to answer your technical questions and provide solutions to your automation and control needs. Give us a call or visit www.altechcorp.com.

Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.



DIN Rail Power Supplies 🔊 🚇 🐏 🔇 CE 🛄



Selection Guide4-5



- Class 2, UL 1310 Recognized
- Brown-out protection
- 10W to 480W rated power
- Universal single phase input

PSA Flex Series (1 Phase)

- · Flex power, solid metal housing
- UL 508 listed
- 120W to 600W rated power
- · High efficiency with Boost Power
- Single phase input

PSB Flex Series (2 & 3 Phase)

- · Flex power , solid metal housing
- UL 508 listed
- 120W to 600W rated power
- High efficiency with Boost Power
- Two and Three phase input

PS-S Slim line Series



- UL 508 listed
- DC OK contact
- 10W to 100W rated power
- Universal single phase input



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- · Low profile Design, plastic housing
- UL 60950-1 Recognized
- Isolation Class II
- 10W to 100W rated power
- Universal single phase input

PS Industrial Series

- · Robust Metal housing
- UL 508 listed
- Built in active PFC function
- 75W to 960W rated power
- Single and three phase universal input

PS-C and W Series

- · Narrow design, small metal housing
- UL 508 listed
- 150% pick load capacity
- 120W to 480W rated power
- Single and two phase wide input

CBI DC UPS System

- Fully automated battery care module
- Three charging modes
- 12, 24, 36 and 48V DC single outputs
- 110-230-277 / 230-400-500VAC input
- · System start from battery function

VEW CB Battery Chargers

- Intelligent battery chargers
- Suitable for most common battery types
- · Adjustable charging current
- 2 VDC and 24VDC single output
- 110-220-277 VAC input

Accessories

- Redundancy diode module
- UPS controller module
- Battery holders and enclosures
- · Ultra capacitor modules

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Selection Guide

Choose your product from a wide range of features and options, suitable for almost all applications.

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	Cat. No.		Rat	ed Cur	rent			Jersal Swit	nput ch Sel	el or	2 ¹¹ .19	0950,	STOP	ec. ,	Class	ox ox	K CITC	uit shoad	Volta Ove	Terri
	VDC	5	12	15	24	48	Jul	SW	_ 6 ₃₁	۲	J.	<u>ک</u>	¢	AF	$\langle \phi \rangle$	Sho	046	· 04	Ove	ୖୖୖ
	PSC-10xx	-	0.84A	0.67A	0.42A	-														
	PSC-20xx	_	1.7A	1.4A	1A	-														
PSC Class 2 Compact	PSC-40xx	_	3.4A	2.7A	1.7A	0.85A														
Com	PSC-60xx	-	4A	5A	2.5A	1.25A														
ss Ss Ss	PSC-96xx	-	7.5A	6.4A	4A	2A														
Clas	PSC-151xx	-	-	-	6.3A	3.2A														
PSC	PSC-241xx	-	-	-	10A	5A														
	PSC-481xx	-	-	-	20A	10A														
	PSC-RM20	_	-	-	20A	-														
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ж	PSA-120xx	-	-	-	5A	-														
PHAS	PSA-180xx	_	-	-	7.5A	-														
Flex SINGLE PHASE	PSA-360xx	-	-	-	14A	-														
ы П С	PSA-600xx	-	-	-	25A	-														
PSA & PSB Flex =) PHASE SINGL	PSB-120xx	-	_	-	5A	-														
PSA & TWO (THREE) PHASE	PSB-180xx	-	-	-	7.5A	-														
) (THR	PSB-360xx	_	-	-	14A	-														
DWT	PSB-600xx	-	-	-	25A	-														
									/										\frown	
	PS-S10xx	2A	0.84A	0.67A	0.42A	-														
mine HASE	PS-S20xx	ЗA	1.67A	1.34A	1	-														
PS-S Slin SINGLE PH	PS-S40xx	6A	3.33A	-	1.7A	0.83A														
PS-S Sli	PS-S60xx	10A	5A	-	2.5A	1.25A														
	PS-S100xx	-	7.5A	-	4A	2A														
Y		\sim		\sim														\leq		
	PS-15xx	2.4A	1.25A	1A	0.63A	-														
rofile ASE	PS-30xx	3A	2A	2A	1.5A	-														
PS Low Profile SINGLE PHASE	PS-45xx	5A	3.5A	2.8A	2A	-														
S Lo SINGI	PS-60xx	6.5A	4.5A	4A	2.5A	-														
<u> </u>	PS-100xx	-	7.5A	6.5A	4.2A	-														

Selection Guide



Choose your product from a wide range of features and options, suitable for almost all applications.

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	Cat. No.		Out	put Volta	age			Jersal Swit	ich se	allelor	NIL DO LICO	2095 ,	3108	ec. 050	0125	07 07	or Citr	anosd ov	ar Johrs	Terni
	VDC	5	12	15	24	48	Ju	Su		<u> </u>	<u>ې</u> ک	<u>ې</u> ک	\$ ²	4hr	0	, ex	04	04	04	
	PS-75xx	-	6.3A	-	3.2A	1.6A														
SE	PS-120xx	-	10A	-	5A	2.5A														
E PHA	PSH-120xx	-	-	-	5A	2.5A														
al SINGLE PHASE	PSP-240xx	-	-	-	10A	5A														
stria §	PSP-480xx	-	-	-	20A	10A														
PS Industrial S	PSP-480Sxx	-	-	-	20A	10A														
	PST-240xx	-	-	-	10A	5A														
PHASE	PST-480xx	_	-	-	20A	10A														
THREE PHASE	PST-960xx	_	-	-	40A	20A														
F	PST-960Pxx	-	-	-	40A	20A														
	PS-C120xx	_	10A	_	5A	2.5A														
ousing SINGLE PHASE	PS-C240xx	_	_	_	10A	5A													\vdash	
using VGLE F	PSH-C480xx	_	_	_	20A	10A													\vdash	
t Hou SII	PSP-C480Pxx	_	_	_	20A	10A														
Compact Housing 0LTAGE SINGLE PI	PSW-120xx	_	10A	_	5A	2.5A														
Comp WIDE VOLTAGE	PSW-240xx	_	_	_	10A	5A														
WIDE	PSW-480Pxx	-	-	_	20	10														
												$\left \right $								
	CBI12xx	_	3-25A	_	-	-														
S	CBI24xx	_	_	_	3-20A	-														
DC-U	CBI48xx	_	-	_	-	5-10A														
	CBI280 xx		12V/15A	24V/10A /Oltage	36V/7A MULTI-V	48V/5A														
ery ger	CB12xx	_	3-35A	-	-	-														
Battery Charger	CB24xx	-	-	-	3-20A	-														
	CB12245A	-	6 A	-	5 A	-														
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es.	PS-RDN			21-28V																
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ALTECH's Compact DIN rail switching power supply, PSC Series designed for the fast growing demand of DIN rail applications. These 10W to 480W models are enclosed with fully isolated plastic or metal case to prevent users from hazardous shock. The design complies with the compact requirements that the precious space on the industrial rail can be preserved effectively. Featuring up to 94% of efficiency, this series is cooled only by free air convection up to 70°C that significantly increase the reliability and lifetime of the power supply. Another important feature of PSC Series is its low power consumption (<0.75W) This unique characteristic can significantly expand the application of PSC series beyond just heavy industrial field, but can also be implied to dotcom 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 PSC Series. Typical applications include factory automation, process control, electro-mechanical industry, dotcom and IT.

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

Military Standard

Vibration

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- 85-264V AC; 120-370V DC 20A at 115V AC; 40A at 230V AC ±10% rated output voltage 105% rated output power 115%-150% rated output voltage Brown out protection 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 de-rating curve UL508 listed, UL1310 recognized, TUV approved EN60950-1 compliant 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 withstands 2G test
- Built in remote ON/OFF function (metal case only)

Features:

- Universal AC input/Full range
- Protections: Short circuit / Overload / Overvoltage
- Cooling by free air convection
- · DIN rail mountable
- UL1310
- NEC class 2 / LPS compliant (12V,24V,48V only)
- No load power consumption <0.75W
- LED indicator for power on
- 100% full load burn-in test
- DC OK relay contact
- 3 year warranty









10W Single Output Industrial DIN Rail Power Supply

Cat. No.	Out V DC		Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-1012	12V DC	0.84A	±1%	100 mVp-p	81%	
PSC-1015	15V DC	0.67A	±1%	100 mVp-p	81%	
PSC-1024	24V DC	0.42A	±1%	120 mVp-p	81%	

20W Single Output Industrial DIN Rail Power Supply

Cat. No.	Out _l V DC	put A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-2012	12V DC	1.7A	±1%	100 mVp-p	83%	
PSC-2015	15V DC	1.4A	±1%	100 mVp-p	85%	
PSC-2024	24V DC	1A	±1%	120 mVp-p	86%	

40W Single Output Industrial DIN Rail Power Supply

Cat. No.	Outj V DC	out A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-4012	12V DC	3.4A	±1%	100 mVp-p	84%	
PSC-4015	15V DC	2.7A	±1%	100 mVp-p	84%	
PSC-4024	24V DC	1.7A	±1%	120 mVp-p	84%	
PSC-4048	48V DC	0.85A	±1%	180 mVp-p	85%	

60W Single Output Industrial DIN Rail Power Supply

Cat. No.	Out V DC	put A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-6012	12V DC	5A	±1%	100 mVp-p	86%	
PSC-6015	15V DC	4A	±1%	100 mVp-p	87%	
PSC-6024	24V DC	2.5A	±1%	120 mVp-p	87%	
PSC-6048	48V DC	1.25A	±1%	180 mVp-p	88%	

96W Single Output Industrial DIN Rail Power Supply

Cat. No.	Outp V DC	out A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-9612*	12V DC	7.5A	±1%	180 mVp-p	87%	
PSC-9615*	15V DC	6.4A	±1%	180 mVp-p	87%	
PSC-9624	24V DC	4A	±1%	180 mVp-p	88%	
PSC-9648	48V DC	2A	±1%	250 mVp-p	87%	

*Not included in UL file E361915











SPECIFICATIONS

PSC-10 Series



PSC-20 Series



PSC-40 Series



PSC-60 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
4	DC OUTPUT +V
5	DC OUTPUT -V
6	DC OK SIGNAL

Universal Input: 88-264V AC, 124-370V DC full range; 0.23A @ 110V AC; 0.17A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, single screw terminal Size (WxHxD): 23x90x99mm (0.9x3.54x3.94 inches) Packaging: 1/box; 0.29lbs / 0.13Kg

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: 88-264V AC, 124-370V DC full range;

0.45A @ 110V AC; 0.32A @ 230V AC Connection: Input - 2 poles, Output - 2 poles, single screw terminal

Size (WxHxD): 23x90x99mm (0.9x3.54x3.94 inches) Packaging: 1/box; 0.32lbs / 0.14Kg

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: 88-264V AC, 124-370V DC full range; 0.8A @ 115V AC, 0.4A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 40x90x99mm (1.57x3.54x3.94 inches) Packaging: 1/box; 0.63lbs / 0.28Kg

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: 88-264V AC, 124-370V DC full range; 1.3A @ 115V AC, 0.6A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 40x90x99mm (1.57x3.54x3.94 inches) Packaging: 1/box; 0.67lbs / 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

Universal Input: 88-264V AC, 124-370V DC full range; 1.1A @ 115V AC, 0.55A @ 230V AC

Connection: Input - 2 poles, Output - 2 poles, double screw terminal Size (WxHxD): 55x90x99mm (2.17x3.54x3.94 inches) Packaging: 1/box; 0.9lbs / 0.4Kg

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





Features:

- Universal AC input (88-264V AC)
- Protections: Short Circuit / Overload / Overvoltage
- Brown-out protection •
- Installed on DIN rail TS35 / 7.5 or 15 ٠
- True DC OK signal output ٠
- All wiring 105°C long life electrolytic capacitors
- High operation temperature up to 70°C ٠
- Withstands 2G vibration test
- High efficiency, long life and high reliability
- 3 year warranty
- UL1310 Class 2 Power unit / LPS pass
- UL508 (Industrial control equipment) listed

OUTPUT	Cat. No.	PSC-1012	PSC-1015	PSC-1024
	DC VOLTAGE	12V	15V	24V
	RATED CURRENT	0.84A	0.67A	0.42A
	CURRENT RANGE	0~0.84A	0~0.67A	0~0.42A
	RATED POWER	10.08W	10.05W	10.08W
	RIPPLE & NOISE (max)	100mVp-p	100mVp-p	120mVp-p
		Ripple & noise are measured at 20MHz of bandw	idth by using a 12" twisted pair-wire termin	ated with a 0.1µF & 47µF parallel capacitor
	VOLTAGE ADJ. RANGE	10.8~13.2V	13.5~16.5V	21.6~26.4V
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regul	ation and load regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	< 800ms, < 100ms/230V AC at ful	lload	
INPUT	HOLD UP TIME (Typ.)	> 32ms / 230V AC; > 16ms / 115V		
	VOLTAGE RANGE	88V~264VAC; 124V~370VDC		
	VOEN de la ade	Derating may be needed under low input volta	ges. Please check the derating curve for	more details.
	FREQUENCY RANGE	47~63Hz		
	EFFICIENCY (Typ.)	81%	81%	81%
	AC CURRENT (Typ.)	0.23A/115VAC; 0.17A/230VAC		
	INRUSH CURRENT (Typ.)	15A / 115V AC; 30A / 230V AC		
PROTECTION	LEAKAGE CURRENT	< 1mA/ 230VAC		
	OVERLOAD PROTECTION	> 102% rated output power		
		Protection type: Constant current limiting, reco	vers automatically after fault condition is	removed.
	OVERVOLTAGE PROTECTION	115%~150% rated output voltage	···· ···· · ···· · · · · · · · · · · ·	
		Protection type: Latch-off mode.		
	OVER TEMPERATURE PROTECTION	Power supply shut down at 70°C co	onstant current limiting / outpu	t voltage goes to 0:
ENVIRONMENT		re-power on to recover		
	WORKING TEMP.	-20 ~ +70°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)		
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min. / 1cycle, 6	60 min. each long X,Y, Z axes	
and the second second second second	SAFETY STANDARDS	UL508, TUV EN60950-1:2006+A11	• • • •	nt
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC (4242DC) I/P-FG	· · · · ·	int int
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hm		
	EMI CONDUCTION & RADIATION	EN55022:2006+A1:2007 Class B	3/300100	
	HARMONIC CURRENT	EN61000-3-2:2006 Class A, EN610	00 3 3.3008	
	EMS IMMUNITY	EN61204-3:2000, EN55024:1998+		ry lovel critoria A
		The power supply is considered a component	0	
OUTPUT		that it still meets EMC directives.	which will instance into a final equipment	
	DC OK Signal	Open collector. Max: 40mA		
	MTBF	562.7K hrs MIL-HDBK-217K		
	DIMENSION	23x90x99 mm (WxHxD)		
	PACKING	0.13Kg/48 pcs. / 7.44Kg		
	CONNECTION	I/P 3 poles, O/P: 3 poles screw DIN	terminal	
	COOLING	Free air convection		
	COULING	All parameters NOT specially mentioned are m	easured at 230V AC input rated load and	1.25°C of ambient temperature
	1		sacaroa at 2004 no input, ratou idau ant	

PSC-10 Series



(a)5V signal (b)LED (c)Relay DC OK • DC OK a DCOK Model R R Model Model **≷** R Śκ ≥1.5KΩ 12V 12V ≥2.4KΩ 12V 3 Relay RL ☆ 5.1V 15V ≥2KΩ 15V ≥3KΩ 15V ≥**3.9K**Ω <u>≥</u>4.7KΩ 24V 24V 24V V- 0 V-V.

Block Diagram



Derating Curve







R

≥700 Ω

≥700 Ω

<u>≥</u>1.2KΩ





Features:

- Universal AC input (88-264V AC)
- Protections: Short Circuit / Overload / Overvoltage
- Brown-out protection •
- Installed on DIN rail TS35 / 7.5 or 15 ٠
- True DC OK signal output ٠
- All wiring 105°C long life electrolytic capacitors
- High operation temperature up to 70°C ٠
- Withstands 2G vibration test
- High efficiency, long life and high reliability
- 3 year warranty
- UL1310 Class 2 Power unit / LPS pass
- UL508 (Industrial control equipment) listed

OUTPUT	
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OUTPUT	Cat. No.	PSC-2012	PSC-2015	PSC-2024		
	DC VOLTAGE	12V	15V	24V		
	RATED CURRENT	1.7A	1.4A	1A		
	CURRENT RANGE	0~1.7A	0~1.4A	0~1A		
	RATED POWER	20.4W	21W	24W		
	RIPPLE & NOISE (max)	100mVp-p	100mVp-p	120mVp-p		
		Ripple & noise are measured at 20MHz of bandwi	1	1		
	VOLTAGE ADJ. RANGE	10.8~13.2V	13.5~16.5V	21.6~26.4V		
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%		
		Tolerance: includes set up tolerance, line regula	ation and load regulation.	1		
	LINE REGULATION	±1.0%	±1.0%	±1.0%		
	LOAD REGULATION	±1.0%	±1.0%	±1.0%		
	SETUP, RISE TIME	< 800ms, < 100ms/230V AC at ful				
NPUT	HOLD UP TIME (Typ.)	> 32ms / 230V AC; > 16ms / 115V				
	VOLTAGE RANGE	88V~264VAC: 124V~370VDC				
		Derating may be needed under low input volta	ges. Please check the derating curve for m	ore details.		
	FREQUENCY RANGE	47~63Hz				
	EFFICIENCY (Typ.)	83%	85%	86%		
	AC CURRENT (Typ.)	0.45A/115VAC; 0.32A/230VAC				
	INRUSH CURRENT (Typ.)	20A / 115V AC; 40A / 230V AC				
PROTECTION	LEAKAGE CURRENT	< 1mA/ 230VAC				
	OVERLOAD PROTECTION	> 105% rated output power				
		Protection type: Constant current limiting, recovers automatically after fault condition is removed.				
	OVERVOLTAGE PROTECTION	115%~150% rated output voltage				
		Protection type: Latch-off mode. Power supply shut down at 70°C constant current limiting / output voltage goes to 0;				
	OVER TEMPERATURE PROTECTION		instant current limiting / output v	voltage goes to 0;		
ENVIRONMENT		re-power on to recover				
	WORKING TEMP.	-20 ~ +70°C (Refer to output load \circ	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)				
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min. / 1cycle, 6	0 min. each long X,Y, Z axes			
	SAFETY STANDARDS	UL508, TUV EN60950-1:2006+A11	, UL1310 NEC class 2 compliant			
	WITHSTAND VOLTAGE	I/P-0/P: 4242DC I/P-FG: 2121D0	1 minute			
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hm	s/500VDC			
	EMI CONDUCTION & RADIATION	EN55022:2006+A1:2007 Class B				
	HARMONIC CURRENT	EN61000-3-2:2006 Class A, EN610	00-3-3:2008			
	EMS IMMUNITY	EN61204-3:2000, EN55024:1998+		level. criteria A		
		The power supply is considered a component				
OUTPUT		that it still meets EMC directives.				
	DC OK Signal	Open collector. Max: 40mA				
	MTBF	120.4K HRS MIL-HDBK-217 (25°C)	131.3K HRS MIL-HDBK-217 (25°C)	125.9K HRS MIL-HDBK-217 (25°C		
	DIMENSION	23x90x99 mm (WxHxD)				
	PACKING	0.14Kg/48 pcs./7.92Kg				
	CONNECTION	I/P 3 poles, O/P: 3 poles screw DIN	terminal			
	COOLING	Free air convection				
	JUDIE III					

PSC-20 Series

Mechanical Specification



Application of DC OK Active Signal

2

5

6

(a)5V signal

DC OK ⊶ DC OK • ОСОК ⊶ Model R Model R Š R Š R 12V ≥1.5KΩ 12V ≥**2.4K**Ω Rela 15V ≥**2K**Ω 15V \geq 3K Ω ☆ 5.1V ≥**4.7K**Ω 24V ≥**3.9K** Ω 24V V- ∘ V-V-

(b)LED

<u> </u>			
	[-t	Model	R
ay		12V	\geq 700 Ω
xy	3 " "	15V	\geq 700 Ω
	<u>i-</u> {	24V	≥1.2K ଘ
	•		

(c)Relay

Block Diagram







Features:

- Universal AC input (88-264V AC)
- Protections: Short Circuit / Overload / Overvoltage
- Brown-out protection
- Installed on DIN rail TS35 / 7.5 or 15
- True DC OK signal output
- All wiring 105°C long life electrolytic capacitors
- High operation temperature up to 70°C
- Withstands 2G vibration test
- High efficiency, long life and high reliability
- 3 year warranty
- UL1310 Class 2 Power unit / LPS pass
- UL508 (Industrial control equipment) listed

DC VOLTAGE 12V 15V 24V 46V RATED CURRENT 3.4A 2.7A 1.7A 0.58A CURRENT FANGE 03.4A 02.7A 01.7A 00.85A RATED DOWCH 40.8W 40.8W 40.8W 40.8W 40.8W RIPE POWCH 40.8W 40.8W 40.8W 40.8W 40.8W VOLTAGE IND, RANGE 10.8 10.7% ±1.0%	OUTPUT	Cat. No.	PSC-4012	PSC-4015	PSC-4024	PSC-4048	
CURRENT RANGE 0 - 3.4A 0 - 2.7A 0 - 1.7A 0 - 0.8SA NATED POWER 40.8W 40.8W 40.8W 40.8W NPPLE & NOISE (max) 100mVp-p 120mVp-p 130mVp-p Figle & Lotes and added to denote the interacted at some the interacted at the a third south interacted at the interacted at t		DC VOLTAGE	12V	15V	24V	48V	
CURRENT RANGE 0 - 3.4A 0 - 2.7A 0 - 1.7A 0 - 0.85A NATED POWER 40.8W 40.8W 40.8W 40.8W NPPLE & NOISE (max) 100mVp-p 130mVp-p 130mVp-p Fight & tore are manual of 20MH of building at 2" biolect present energies with a 01.1et & 0.9F part of exporter 43.2 - 52.8V 13.2 - 26.4V 43.2 - 52.8V VOLTAGE TOLERANCE 10.6 - 13.2V 13.6 - 16.5V 21.6 - 26.4V 43.2 - 52.8V LINE REGULATION 1.10% ±1.0% ±1.0% ±1.0% ±1.0% LINE REGULATION 1.10% ±1.0% ±1.0% ±1.0% ±1.0% SETUR RISE TIME < 600ms, < 50ms / 230WC at full load		RATED CURRENT	3.4A	2.7A	1.7A	0.85A	
INPUT 40.8W 80.8W 80.8W <th< td=""><td></td><td></td><td>0 ~ 3.4A</td><td></td><td>0 ~ 1.7A</td><td>0 ~ 0.85A</td></th<>			0 ~ 3.4A		0 ~ 1.7A	0 ~ 0.85A	
INPUT IOOmVp-p 100mVp-p 120mVp-p 120mVp-p VOLTAGE ADJ, RANGE 10.8 - 13.2V 13.5 - 16.5V 21.6 - 62.4V 43.2 - 52.8V VOLTAGE TOLERANCE 10.8 - 13.2V 13.5 - 16.5V 21.6 - 62.4V 43.2 - 52.8V LINE REGULATION ±1.0% ±1.0% ±1.0% ±1.0% ±1.0% INPUT NOR EQUATION ±1.0% ±1.0% ±1.0% ±1.0% INPUT VOLTAGE ADJ, RANGE #0.0% ±1.0% ±1.0% ±1.0% INPUT VOLTAGE TOLERANCE 23.0% (2.500K) ±1.0% ±1.0% ±1.0% INPUT VOLTAGE TANGE 84.264/AC; 12.4 - 370/0C ±1.0% ±1.0% ±1.0% REPOLENCY PANGE 84.763/AC; 04.4 / 230/AC ±1.0% ±4.0% 85%, AC CURRENT (%p.) 0.8 A / 159/AC; 04.4 / 230/AC ±4.66 ±4.0% 85%, AC CURRENT (%p.) 0.8 A / 159/AC; 04.4 / 230/AC ±4.76 ±4.76 ±4.76 VOLTAGE PARTEON > 105% rated output rottage Prover supply shut down at 70 C constant current limiting routput voltage <							
INPUT VOLTAGE ADJ, RANCE 10.8 - 10.5 V 21.6 - 26.4 V 43.2 - 25.8 V VOLTAGE TOLERANCE ±1.0%							
VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE $10.8 - 13.2V$ $13.5 - 16.5V$ $21.6 - 26.4V$ $43.2 - 52.8V$ $\pm 1.0\%$ INPUTLOAD REGULATION $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ INPUTVOLTAGE TOLERANCE $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ $\pm 1.0\%$ INPUTVOLTAGE RANGE $88 - 264WC; 124 - 370WC$ $thil load$ VOLTAGE RANGE $88 - 264WC; 124 - 370WC$ $B4\%$ 85% PROTECTIONVOLTAGE RANGE $47 - 63Hz$ 84% 84% 85% PROTECTIONVOLTAGE PROTECTION $0.8 A / 115WC; 0.4A / 230WC84\%85\%VOLTAGE PROTECTION> 165\% rated output powerProtection ppc bacted current limiting, reverse advantatically after fault condition is removed.OVERUGAD PROTECTION> 155\% rated output voltagepower on to recoverVIRIBONMENTVORKING TEMP20 - 90\% RH non-condensingSAFETY & EMCSAFETY STANDARDSULS08, TUV EN60950-1:2006+A11, UL130 NEC class 2 compliantWIRKING HUMIDITY20 - 90\% RH non-condensingSTORAGE TEMP, / HUMIDITY20 - 90\% RH non-condensingTORAGE TEMP, / HUMIDITY20 - 90\% RH non-condensingSTORAGE TEMP, / HUMIDITY20 - 90\% RH non-condensing$			1 1 1	1	1	1 1 1	
INPUT VOLTAGE TOLERANCE ±1.0%							
INPUT Distance incluses set up telemone. Iteruption and load regulation. ±1.0%							
INPUT ±1.0% <td< td=""><td></td><td>VOLIAGE TOLLAANGE</td><td></td><td></td><td></td><td>1 ±1.070</td></td<>		VOLIAGE TOLLAANGE				1 ±1.070	
INPUT LOAD REGULATION ±1.0%						.1.00/	
INPUT SETUR, RISE TIME < 800ms, < 50ms / 230VAC; > 16ms / 115VAC at full load HOLD UP TIME (Typ.) > 32ms / 230VAC; > 16ms / 115VAC at full load VOITAGE RANGE 88 ~ 264VAC; 1/4 ~ 370VDC Derating may be needed under low input voltages. Please check the derating curve for more details. FREQUENCY RANGE 84% EFFICIENCY (Typ.) 0.8 A / 115VAC; 0.4A / 230VAC NEWLSH CURRENT (Typ.) 0.8 A / 115VAC; 0.4A / 230VAC LEAKAGE CURRENT (Typ.) 0.0 A / 115VAC; 0.4A / 230VAC UVERUAD PROTECTION > 105% rated output power Protection type: close and curve initing. reserves automatically after fault condition is renoved. OVERUAD PROTECTION > 105% rated output voltage OVERUAD PROTECTION > 105% rated output voltage OVERVOLTAGE PROTECTION > 105% rated output voltage OVERTURENT VORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VORKING FEMP. -20 ~ +70°C (Refer to output load derating curve) VORKING HUMIDITY STORAGE TEMP./ HUMIDITY -20 ~ 90% RH non-condensing Storas 2 compliant WIRKING FEMP. -20 - +70°C (Refer to output load derating curve) VUBRATION VUBRATION <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
INPUT HOLD UP TIME (Typ.) > 32ms / 230VAC; >16ms / 115VAC at full load VOLTAGE RANGE 88 - 264VAC; 124 - 370VDC Deterting may be needed under low your voltages. Please check the detailing curve for more details. PRECUENCY RANGE 47-631z 84% 84% 84% 85% AC CURRENT (Typ.) 0.8 A / 115VAC; 0.4 A / 230VAC 84% 84% 85% PROTECTION UCERLOAD PROTECTION > 105% rated output power 86% 85% OVERLOAD PROTECTION > 105% rated output power 96 voltage 96 voltage 96 voltage ENVIRONMENT OVER TEMPERATURE PROTECTION > 105% rated output voltage 96 voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. -20 ~ +70C (Refer to output load derating curve) 90% RH non-condensing STORAGE TEMP, HUMIDITY 20 ~ 90% RH non-condensing STORAGE TEMP, HUMIDITY 40 ~ 85°C; 10 ~ 95% RH TEMP. COEFFICIENT ±0.03% / 7 (0 ~ 50°C) 94260 voltage, 80 min. each long X,Y,Z axes SAFETY & EMC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WTHSTAND VOLTAGE VP-0/P: 42(20C UP-F6: 100M Ohms/500VDC EM conduct voltage EM CONDUCTION RESITANCE UP-0/P: 42(20C) U					±1.0%	±1.0%	
INPOT VOLTAGE RANGE 88 ~ 264VAC; 124 ~ 370VDC Deraining my to ineded under to be input voltages. Please check the derating curve for more details. PROTECTION PROTECTION 84% 84% 84% 85% PROTECTION OVERLOAD PROTECTION S0.8 / 115VAC; 0.44 / 230VAC 230VAC OVERLOAD PROTECTION > 105% rated output power Protection hyse. Constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output voltage Protection hyse. Constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. - 20 ~ + 70°C (Refer to output toward detarting curve) WORKING TEMP. - 20 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 20 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 20 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 00 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 00 ~ + 60°C (Refer to output todat detarting curve) WORKING TEMP. - 00 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 00 ~ + 70°C (Refer to output todat detarting curve) WORKING TEMP. - 00 ~ + 70°C (Refer to output t			,				
ENVIRONMENT Oversity of the desiting ourse for more details. PROTECTION 0.8 A / 115VAC; 0.4A / 230VAC 84%, 84%, 84%, 85%, 84%, 84%, 84%, 85%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 85%, 84%, 84%, 84%, 85%, 84%, 84%, 84%, 84%, 85%, 84%, 84%, 84%, 84%, 84%, 84%, 84%, 84	INPUT	HOLD UP TIME (Typ.)	> 32ms / 230VAC; >16	ims / 115VAC at full load			
PROTECTION PROTECTION 47-63Hz 84% 84% 84% 84% PROTECTION 0.8 A / 115VAC; 0.4 A / 230VAC OVERLOAD PROTECTION > 105% rated output power Protection type: constant current limiting, recores automatically after fault condition is removed. OVERUOLTAGE PROTECTION > 105% rated output voltage Protection type: constant current limiting, recores automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output voltage Protection type: constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. SAFETY & EMC STARAGE TEMP. / HUMIDITY 20 ~ 90% RH non-condensing STORAGE TEMP. / HUMIDITY SAFETY & EMC SAFETY SANDARDS ULS08, TUV EN00950-1:2006-A11, UL1310 NEC class 2 compliant WIRKINON CURRENT OUTPUT DC OK Signal Relso compact device as a component which will installed into a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed tual to sill media Ed compact as a final equipment must be re-confirmed		VOLTAGE RANGE					
PROTECTION EFFICIENCY (7yp.) 84% 84% 84% 85% AC CURRENT (7yp.) 0.8 A / 115VAC; 0.4A / 230VAC INNUSH CURRENT (7yp.) 0.18 A / 115VAC; 60A / 230VAC LEAKAGE CURRENT < 1mA / 230VAC			ι,	low input voltages. Please check the	he derating curve for more det	ails.	
PROTECTION AC CURRENT (Typ.) LEAKAGE CURRENT (Typ.) COLD START 30A / 115WAC; 60A / 230VAC PROTECTION > 105% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output power Protection type: constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output voltage Protection type: latch-off mode OVER TEMPERATURE PROTECTION Protection type: latch-off mode OVER TEMPERATURE PROTECTION Protection type: latch-off mode OVER TEMPERATURE PROTECTION Protection type: latch-off mode OVER TEMPERATURE PROTECTION Prover on to recover WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VURKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VURKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VURKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VURKING TEMP. -20 ~ +70°C (Refer to output load derating curve) VURKING TEMP.				0.400	0.494	050/	
PROTECTION INRUSH CURRENT COLD START 30A / 115VAC; 60A / 230VAC PROTECTION > 105% rated output power Protectin type: Constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output voltage Protectin type: Constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION 115% ~ 150% rated output voltage OVER TEMPERATURE PROTECTION Power supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover WORKING FUMIDITY 20 ~ +70°C (Refer to output load derating curve) 20 ~ +70°C (Refer to output load derating curve) SAFETY & EMC WORKING HUMIDITY SAFETY & EMC USOB, TUP + 400 ~ +85°C; 10 ~ 95% RH SAFETY & EMC SAFETY STANDARDS UL508, TUP + 50024; 261 10min, / 1cycle, 60 min. each long X,Y, Z axes USOB, TUP + 50024; 220 00 Chass A USOB, TUP + 50; 2005 SAFETY STANDARDS UL508, TUP + 50; 100 Momms/S00VDC WITHSTAND VOLTAGE VP-0/P; 4242DC VP-F6; 2121DC 1 minute ISOLATION RESISTANCE VP-0/P; 10+76; 000 Momms/S00VDC EMS 10000-3-2; 2006 Class A, EN61000-3-3; 1995+A1; 2001+A2; 2005 EMS IMMUNITY EN61000-3-2; 2006 Class A, EN61000				• • • •	84%	85%	
PROTECTION LEAKAGE CURRENT < 1mA/ 230VAC OVERLOAD PROTECTION > 105% rated output power Protection type: constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION > 105% rated output voltage Protection type: latch-off mode OVER TEMPERATURE PROTECTION Power on to recover ENVIRONMENT WORKING TEMP. VORKING TEMP. VORKING HUMIDITY -20 ~ +70°C (Refer to output load derating curve) WORKING HUMIDITY SAFETY & EMCC WORKING TEMP. VIBRATION -20 ~ 90% RH non-condensing STORAGE TEMP. / HUMIDITY -00 ~ 95% RH teuP. COEFFICIENT SAFETY & EMCC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P: 4242DC / I/P-FG: 2121DC 1 minute SOLATION RESISTANCE EN55022: 2006 Class B EMIMUNITY EN55022: 2006 Class B EMS IMMUNITY EN55020: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3:2000, Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3:2000, Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3:2000, Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-2: At hts MLI-HDBK-217K DIMENSION <td></td> <td></td> <td>,</td> <td></td> <td></td> <td></td>			,				
PROTECTION OVERLOAD PROTECTION > 105% rated output power Protection type: constant current limiting, recovers automatically after fault condition is removed. OVERVOLTAGE PROTECTION 115% ~ 150% rated output voltage Protection type: latent mode OVERVOLTAGE PROTECTION 115% ~ 150% rated output voltage Protection type: latent mode OVER TEMPERATURE PROTECTION Power supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. -20 ~ +70°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 SAFETY & EMC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P: 4242DC I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-0/P: 4000-3-3: 1995+A1: 2001+A2: 2005 EMI CONDUCTION & RADIATION EN51020-3:2: 2006 Class A HARMONIC CURRENT EN61204-3:2000, EN55024: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3:2000, EN55024: 1995+A1: 2001+A2: 2005 EMS IMMUNITY				vac; 60a / 230vac			
OVERLOAD PROTECTION > 105% Table output power Protection type: Constant current limiting, recovers automatically after fault condition is removed. OVER VOLTAGE PROTECTION UVER TEMPERATURE PROTECTION 115% ~ 150% rated output voltage Protection type: lack-toff mode OVER TEMPERATURE PROTECTION Power supply shut down at 70°C constant current limiting, / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. vORKING HUMIDITY 20 ~ +70°C (Refer to output load derating curve) WORKING HUMIDITY SAFETY & EMC WORKING TEMP. vOBAGE TEMP, / HUMIDITY 20 ~ +85°C; 10 ~ 95% RH TEMP. COEFFICIENT SAFETY & EMC SAFETY STANDARDS UL508, TUV EN06950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE VP-0/P; V242DC VP-66; 1020 HMM/S00VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class A EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI CONDUCTION & RADIATION EN55022: 2006 Class A EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI INMUNITY EN61002-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI MUNITY EN61002-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI INMUNITY EN61002-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI SIMMUNITY EN61000-3-2: 000 FLISC024-1990A, A12: 0001+A2: 2005	DRATEATION	LEAKAGE CURRENT	< 1mA/ 230VAC				
ENVIRONMENT Protection type: Constant current limiting, recovers automatically after fault condition is removed. ENVIRONMENT OVER VOLTAGE PROTECTION 115% ~ 150% rated output voltage Protection type: lath-off mode OVER TEMPERATURE PROTECTION Nower supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. -20 ~ +00°C (Refer to output load derating curve) WORKING HUMIDITY 20 ~ +00°C (Refer to output load derating curve) WORKING HUMIDITY -00 ~ +85°C; 10 ~ 95% RH TEMP. COEFFICIENT ±0.03% / °C (0 ~ 50°C) VIBRATION 10 ~ 500Hz, 26 10min. / toycle, 60 min. each long X,Y, Z axes SAFETY & EMCC SAFETY STANDARDS UL508, TUV EN60500-12:006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P: 4242DC I/P-0/P: 4242DC I/D-10/P: 4242DC WITHSTAND VOLTAGE I/P-0/P: 4242DC I/P-16: 2121DC 1 minute I/D-2005 EMI CONDUCTION & RADIATION EM55022:006 Class A Rel1000-3-3: 1995+A1: 2001+A2: 2005 EMS 1000-3-2: 2006 Class A EMS IMMUNITY EN61204-3:2000; EMS5024:1998+A1: 2001+A2: 2005 EMS 1000-14: 2:2005 EMS 1000-14: 2:2005 EMS IMMUNITY EN61204-3:2000; EMS5024:1998+A1: 200	PROTECTION	OVERLOAD PROTECTION	> 105% rated output p	ower			
OVERVOLTAGE PROTECTION 115% ~ 150% rated output voltage Protection type. Istach-off mode OVER TEMPERATURE PROTECTION Power supplies that-off mode OVER TEMPERATURE PROTECTION Power supplies that-off mode OVER TEMPERATURE PROTECTION Power supplies that-off mode VORKING TEMP. -20 ~ +70°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, 261 Omin. / tsycle, 60 min. each long X,Y, Z axes SAFETY & EMC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P -0/P, I/P -6G, 0/P -FG: 2121DC 1 minute ISOLATION RESISTANCE ISOLATION RESISTANCE I/P -0/P, UP -FG: 0/P -FG: 1000 Onms/500VDC EMI CONDUCTION & RADIATION EMS IMMUNITY EN61204-3:2000, EN55024:1998+A1:2001+A2:2005 IEMS IMMUNITY EMS IMMUNITY EN61204-3:					fter fault condition is removed	L	
ENVIRONMENT Protection type: latch-off mode WORKING TEMP:		OVERVOLTAGE PROTECTION					
OVER TEMPERATURE PROTECTION Power supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP: STORAGE TEMP, HUMIDITY -20 ~ +70°C (Refer to output load derating curve) WORKING HUMIDITY 20 ~ 95% RH SAFETY & EMC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P; 4242DC I/P-FG: 21210C 1 minute ISOLATION 10 ~ 500Hz, 26 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY & EMC SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P; 4242DC I/P-FG: 21210C 1 minute ISOLATION RESISTANCE I/P-0/P; I/P-FG: 010M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class A HARMONIC CURRENT EN61200-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3:2000, EN55024: 1998+A1: 2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. OUTPUT DC OK Signal Relay contact (30VDC / 1A, 120VAC / 1A) MTBF 947.2K hrs MIL-HDBK-217K DIMENSION 0.28Kg							
Interviewer with the second stress of the second s							
ENVIRONMENT WORKING TEMP. -20 ~ +70°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 SAFETY & EMC SAFETY STANDARDS ULS08, TUV EN60950-1:2006+A11, UL 1310 NEC class 2 compliant WITHSTAND VOLTAGE //P -0/P; 4242DC //P -FG: 2121DC 1 minute ISOLATION RESISTANCE //P -0/P; 4242DC //P -FG: 2121DC 1 minute ISOLATION RESISTANCE //P -0/P; 4242DC //P -FG: 100M 0hms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class A EN61000-3-3: 1995+A1: 2001+A2: 2005 EMI CONDUCTION & RADIATION EN55022: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2006 (ass A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 (and that it still meets EMC directives. OUTPUT DC OK Signal Relay contact (30VDC / 1A, 120VAC / 1A) (and that it still meets							
OUTPUT 20 ~ 7/0 C (nells to duplating the duplating to duplating the duplating to duplati			•				
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COOLING Free air convection			• • •				
				s screw Din terminal			
All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.		COOLING					
		-	All parameters NOT specially n	nentioned are measured at 230V AC	input, rated load and 25°C of	ambient temperature.	

14

PSC-40 Series

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 below 90% rated output voltage
Contact Ratings (max.)	30V / 1A resistive load

Derating Curve









Features:

- Universal AC input (88-264V AC)
- Protections: Short Circuit / Overload / Overvoltage
- Brown-out protection
- Installed on DIN rail TS35 / 7.5 or 15
- True DC OK signal output
- All wiring 105°C long life electrolytic capacitors
- High operation temperature up to 70°C
- Withstands 2G vibration test
- High efficiency, long life and high reliability
- 3 year warranty
- UL1310 Class 2 Power unit / LPS pass
- UL508 (Industrial control equipment) listed

INPUT DC VOLTAGE NATED CURRENT CORRENT RANGE 12V 15V 24V 48V NATED CURRENT CURRENT RANGE 0 - 5A 0 - 4A 0 - 25A 0 - 25A <t< th=""><th>OUTPUT</th><th>Cat. No.</th><th>PSC-6012</th><th>PSC-6015</th><th>PSC-6024</th><th>PSC-6048</th></t<>	OUTPUT	Cat. No.	PSC-6012	PSC-6015	PSC-6024	PSC-6048
UNPUT O = 0.4 BATE P POVER B RIPLE & NOISE (max) O = 0.5 BOW BOW BOW BOW BOW BOW BOW BOW BOW BOW		DC VOLTAGE	12V	15V	24V	48V
UNPUT O = 6A (ATCE POWER RIPLE & NOISE (max) 0 - 5A (OW) 0 - 2.6A (OW) 0 - 2.5A (OW) 0 - 2.5A (OW) VIDTAGE AD.J RANCE VIDTAGE TOLERANCE 10.8 - 13.2V 100mVp-p (100mVp-p) 120mVp-p (100mVp-p) 120mVp-p (100mVp-		RATED CURRENT	5A	4A	2.5A	1.25A
INPUT EOW EOW EOW EOW EOW EOW EOW EOW INPLE & NOSE (max) Pape Anter are meaned at 2006 / 4 branched brains 12* brance par-wate meaned with a 10 / 6 A 200 / papel acqueb pape Anter are meaned at 2006 / 4 branched brains par-wate meaned with a 10 / 6 A 200 / 4 32 - 52.8V I 20 / 13 - 51.5V I 10 / 15 - 52.5V UNIT GRE FEDULATION = 1.0% =						
NPUT IODmVp-p Topes Access measure at 2002 were transfer by using 1 12 were transfer by even transfer				•		
Prote & force are measured at 20ther & difference investment and with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence involves for the intermediated with a 1/2 should expendence into the intermediated with a 1/2 should expendence intermediated expendence intermedinated expendence intermediated expendence interest in the inter		-				
INPUT UCTAGE ADJ. RANGE 10.8 ~ 13.2V 11.5 ~ 16.5V 21.6 ~ 26.4V 43.2 ~ 52.8V INPUT LINE REGULATION ±1.0% ±0.5% ±1.0% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% ±1.0% ±0.5% <td< td=""><td></td><td></td><td>1 1 F F</td><td></td><td></td><td></td></td<>			1 1 F F			
INPUT Toterance incluses at up thermice, the requirement, the requirement in the rescuence and the set of the set of regulation. INPUT UNE REGULATION ±1.0%		VOLTAGE ADJ. RANGE				
INPUT Toterance incluses at up thermice, the requirement, the requirement in the rescuence and the set of the set of regulation. INPUT UNE REGULATION ±1.0%		VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%	±1.0%
INPUT LOAD REGULATION ±1.0% ±1.0% ±1.0% ±1.0% ±1.0% INPUT ABOms / 230WAC > 16ms / 15WAC at thill load <800ms / 230WAC > 16ms / 15WAC at thill load ±1.0% ±1.0% VOLTAGE RANGE 80 - 24WAC > 124 - 370WDC >22ms / 230WAC > 16ms / 15WAC at thill load PROTECTION VOLTAGE RANGE 88 - 24WAC > 124 - 370WDC 88% 87% 88% AC CURRENT (typ.) 1.3 A / 115WAC > 0.6A / 230WAC 87% 87% 88% 87% 88% AC CURRENT (typ.) 1.3 A / 115WAC > 0.6A / 230WAC 115WAC > 0.6A / 230WAC > 0.6WAC > 0.			Tolerance: includes set up t		d regulation.	
INPUT SETUP, RISE TIME < 800ms, < 50ms / 230VAC; 1140 load HOLD UP TIME (Typ.) > 32ms / 230VAC; >16ms / 115VAC at full load VOLTAGE RANGE 88 - 264VAC; 124 - 370V0C Denting may apply in low input voltage. Please check the denting curve for more details. FFEQUENCY RANGE 47-63Hz EFFICIENCY (Typ.) 1.3 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.3 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC UEAKAGE CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC OVER NOLTAGE PROTECTION > 102% rated output power Protection type: Constant current limiting, recover automatically after fault condition is removed OVER VOLTAGE PROTECTION > 102% rated output voltage OVER VOLTAGE PROTECTION > 102% rated output voltage OVER TEMPERATURE PROTECTION New supply shut down at 70°C constant current limiting / output voltage goes to 0; repower on to recover WORKING TEMP. -20 - +70°C (Refer to output load derating curve) VURENT CEMP. -20 - +70°C (Refer to output load derating curve) STAFETY & EMC USOB, TUV EN06950-1:2006+A11, UL1310 NEC class 2 compliant		LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
INPUT SETUP, RISE TIME < 800ms, < 50ms / 230VAC; 1140 load HOLD UP TIME (Typ.) > 32ms / 230VAC; >16ms / 115VAC at full load VOLTAGE RANGE 88 - 264VAC; 124 - 370V0C Denting may apply in low input voltage. Please check the denting curve for more details. FFEQUENCY RANGE 47-63Hz EFFICIENCY (Typ.) 1.3 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.3 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC INRUSH CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC UEAKAGE CURRENT (Typ.) 1.03 A / 115VAC; 0.6A / 230VAC OVER NOLTAGE PROTECTION > 102% rated output power Protection type: Constant current limiting, recover automatically after fault condition is removed OVER VOLTAGE PROTECTION > 102% rated output voltage OVER VOLTAGE PROTECTION > 102% rated output voltage OVER TEMPERATURE PROTECTION New supply shut down at 70°C constant current limiting / output voltage goes to 0; repower on to recover WORKING TEMP. -20 - +70°C (Refer to output load derating curve) VURENT CEMP. -20 - +70°C (Refer to output load derating curve) STAFETY & EMC USOB, TUV EN06950-1:2006+A11, UL1310 NEC class 2 compliant		LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
Input Length of set up times inessued at birds start. Turing OMOPF the power supply may lead to increase of the set up time. PROTECTION VOLTAGE RANGE 88 ~ 264VAC; 124 ~ 370VDC Detailing may apply in low input voltage. Plasse check the detailing curve for more details. PROTECTION FREQUENCY RANGE 47 ~ 63Hz EFFICIENCY (Typ.) 1.3 A / 115WC; 06A / 230VAC INRUSH CURRENT (Typ.) 1.3 A / 115WC; 06A / 230VAC INRUSH CURRENT (Typ.) 2.3 Photo and the set up time. OVER LOAD PROTECTION > 102% rated output power Protection type: Constrant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION > 102% rated output voltage Protection type: Constrant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION > 20 - 470°C (Refer to output voltage Protection type: Constrant current limiting, routput voltage goes to 0; repower on to recover WORKING TEMP; -20 - 470°C (Refer to output load derating curve) VORKING TEMP; -20 - 90% RH non-condensing STORAGE TEMP; / HUMIDITY -40 - 485°C; 10 - 95%, RH TEMP, COEFFICIENT ±0.03% / 70 (o - 50°C); VIBRATION 10 - 500Hz; 26 10min. / tcycle, 60 mi			I contract the second se		1	1
Index of Transport VoltAGE RANGE 80 - 264VAC; 12 - 370/DC Deating may apply in low input voltage. Please check the derating curve for more details. FREDUENCY RANGE 87% 87% 88% AC CURRENT (Typ.) 13.8 / 115VAC; 0.64 / 230VAC 87% 88% AC CURRENT (Typ.) 0.0LD START 300 / 115VAC; 0.64 / 230VAC INRUS of TVP.) COLD START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC INRUS of TVP.) COLD START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC INRUS of TVP.) COLD START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC INRUS OF TVP. COLD START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC INRUS OF TVP. VIDE START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC VER TOTAL CURRENT (Typ.) 0.0L START 30A / 115VAC; 0.64 / 230VAC 10.0L START 30A / 115VAC; 0.64 / 230VAC OVER TEMPERATURE PROTECTION > 102% rated output voltage Prodection type: constraint current limiting, reverse automatically after fault condition is removed OVER TEMPERATURE PROTECTION > 0.0VER TEMPERATURE PROTECTION > 0.0VER to non- routput voltage SAFETY & EMOC </td <td></td> <td></td> <td></td> <td></td> <td>ON/OFF the power supply may le</td> <td>ad to increase of the set up time.</td>					ON/OFF the power supply may le	ad to increase of the set up time.
PROTECTION Determing may apply in low input voltage. Please check the derating curve for more details. PROTECTION EFFICIENCY (Typ.) 88% 87% 87% 88% AC CURRENT (Typ.) 1.33 / 115VAC; 0.64 / 230VAC 87% 88% 88% AC CURRENT (Typ.) COLD START 304 / 115VAC; 604 / 230VAC 88% 87% 88% ENVIRONMENT OVER LOAD PROTECTION > 102% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION POWer supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: 20 - +70°C (Refer to output load derating curve) SAFETY & EMC WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: -20 - +70°C (Refer to output load derating curve) WORKING TEMP: -20 - +70°C (Refer to output load derating curve) -20 - +70°C (Refer to output load derating curve) -20 - +70°C (Refer to output load de	INPUT	HOLD UP TIME (Typ.)	> 32ms / 230VAC; >	16ms / 115VAC at full lo	bad	
PROTECTION Derating may apply in low input witage. Please check the derating curve for more details. PROTECTION EFFICIENCY (Typ.) 1.8 A/ 115VAC; 0.6 A/ 230VAC 87% 87% 88% AC CURRENT (Typ.) 1.3 A/ 115VAC; 0.6 A/ 230VAC 87% 88% 87% 88% PROTECTION LEAKAGE CURRENT (Typ.) 0.01 START 30A/ 115VAC; 60A / 230VAC 88% 87% 88% ENVIRONMENT OVER LOAD PROTECTION > 102% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed 0VER VOLTAGE PROTECTION NOW supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover ENVIRONMENT WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) WORKING TEMP. -20 ~ +70°C (Refer to output load derating curve) -20 ~ +70°C (Refer to output load derating curve) -20 ~ +70°C (Refer to output load derating curve) -20 ~ +70°C (Refer to output load derating curve) -20 ~ +70°C (Refer to output load derating curve)		VOLTAGE BANGE	88 ~ 264VAC: 124 ~	. 370//DC		
PROTECTION FREQUENCY RANGE 47-63H2 PROTECTION AC CURRENT (Typ.) 88% 87% 87% 87% 88% AC CURRENT (Typ.) 1.3 A / 115VAC; 0.6A / 230VAC 0.6A / 230VAC INRUSH CURRENT (Typ.) COLD START 30A / 115VAC; 60A / 230VAC VER LOAD PROTECTION > 102% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION > 102% rated output voltage OVER VOLTAGE PROTECTION Power supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover SAFETY & EMC WORKING TEMP. VORKING HUMIDITY 20 ~ 90% RH non-condensing STORAGE TEMP. / HUMIDITY 20 ~ 90% RH non-condensing STORAGE TEMP. / HUMIDITY 400 - 485°C; 10 ~ 95% RH VIBRATION 10 ~ 500H2; 26 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS UL508, TUV EN0050-1:2006-A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE VP-0P; VP-FG, 0P-FG: 100M Ohms/500VDC EMI IONNUC CURRENT EMS100M-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EMS1024-3: 2000 EASS A, EN1000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EMS1024-3: 2000 EASS A component which will installed into a final equipment must be re-confin Hut at all media EXC derective a The power supply is			,		lerating curve for more details	
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PROTECTION INRUSH CURRENT (Typ.) LEAKAGE CURRENT COLD START 30A / 115VAC; 60A / 230VAC OVER LOAD PROTECTION > 102% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION 115% - 150% rated output voltage Protection type: Lath-off mode OVER TEMPERATURE PROTECTION OVER TEMPERATURE PROTECTION Power supply shut down at 70°C constant current limiting / output voltage goes to 0; re-power on to recover SAFETY & EMC WORKING TEMP. -20 - +70°C (Refer to output load derating curve) VORKING HUMIDITY 20 - 90% RH non-condensing STORAGE TEMP. / HUMIDITY STORAGE TEMP. / HUMIDITY -40 - +85°C; 10 - 95% RH TEMP. COEFFICIENT TEMP. COEFFICIENT ±0.03% / °C (0 - 50°C) VIBRATION VIBRATION 10 - 500Hz, 2G 10min. / tcycle, 60 min. each long X,Y, Z axes VIBRATION 10 - 500Hz, 2G 10min. / tcycle, 60 min. each long X,Y,Z axes VIBRATION 10 - 500Hz, 2G 10min. / tcycle, 60 min. each long X,Y,Z axes OUTPUT EMI CONDUCTION & RADIATION EMSESTANCE VIDRON RESISTANCE I/P -0/P. I/P-FG, 0:10M Ohms/500VDC EMI CONDUCTION & RADIATION EMSESTANCE VIDRON RESISTANCE I/P -0/P. I/P-FG, 0:					0770	0070
PROTECTION LEAKAGE CURRENT <1mA / 230VAC		()))	,			
ENVIRONMENT CHINA 20040 ENVIRONMENT OVER LOAD PROTECTION > 102% rated output yower Protection type: constant current limiting, recovers automatically after fault condition is removed OVER VOLTAGE PROTECTION ENVIRONMENT OVER TEMPERATURE PROTECTION Protection type: lath-off mode Protection type: lath-off mode OVER TEMPERATURE PROTECTION Protection type: lath-off mode OVER TEMPERATURE PROTECTION 20 ~ 470°C (Refer to output load derating curve) SAFETY & SEMC WORKING HUMIDITY 20 ~ 90% RH non-condensing STGRAGE TEMP, HUMIDITY 40 ~ 450°C; 10 ~ 50°C; 10 ~ 500Hz, 26 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY & STANDARDS ULS08, TUV EN06950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE WITHSTAND VOLTAGE VP-0/P, VP-16; 0.PF-16; 1000 Mbm/s500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 ENVIENT ENGIDUA-3: 2000 CLISSO24: 1998+A1:2001+A2: 2001 HA2:	PROTECTION			15VAU; 60A / 230VAU		
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ENVIRONMENT re-power on to recover SAFETY & EMC WORKING TEMP. WORKING HUMIDITY -20 ~ +70°C (Refer to output load derating curve) WORKING HUMIDITY 20 ~ 90% RH non-condensing STORAGE TEMP. / HUMIDITY -40 ~ +85°C; 10 ~ 95% RH SAFETY & EMC WORKING TEMP. WORKING HUMIDITY -40 ~ +85°C; 10 ~ 95% RH -20 ~ +70°C (Refer to output load derating curve) SAFETY & EMC WORKING TEMP. WIBATION 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P. I/24242D, I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-0/P. I/P-FG: 0/P-FG: 100M 0hms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHz0) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal						
SAFETY & EMC WORKING TEMP. -20 ~ +70°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, 26 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS ULS08, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-0/P. I/2+242DC, I/P-FG; 2121DC 1 minute ISOLATION RESISTANCE I/P-0/P. I/P-FG, 0/P-FG; 100M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 WITHST MORE SUPPLY EN61200-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONLECTION (/P:3 poles screw DIN terminal COOLING		OVER TEMPERATURE PROTECTION	Power supply shut d	own at 70°C constant cu	rrent limiting / output volt	age goes to 0;
SAFETY & EMC 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, 26 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE //P-O/P. 4242DC, //P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-O/P, I/P-FG, 0/P-FG: 100M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1: 2001+A2: 2005 DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WXHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection	ENVIRONMENT		re-power on to recov	ver		
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SAFETY & EMC TEMP. COEFFICIENT ±0.03% / °C (0 ~ 50°C) VIBRATION 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE //P-0/P: 4242DC, //P-FG: 2121DC 1 minute ISOLATION RESISTANCE //P-0/P: 4242DC, //P-FG: 100M 0hms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confire MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION //P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection		WORKING HUMIDITY	20 ~ 90% RH non-c	ondensing		
SAFETY & EMC VIBRATION 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each long X,Y, Z axes SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-O/P: 4242DC, I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-O/P, I/P-FG, 0/P-FG: 100M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confire that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3Kg; 27 pcs / 9.3Kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection		STORAGE TEMP. / HUMIDITY	-40 ~ +85°C; 10 ~ 9	95% RH		
SAFETY & EMC VIBRATION 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each long X, Y, Z axes SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-O/P: 4242DC, I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-O/P, I/P-FG, 0/P-FG: 100M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confire that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3Kg; 27 pcs / 9.3Kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection		TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50	°C)		
OUTPUT SAFETY STANDARDS UL508, TUV EN60950-1:2006+A11, UL1310 NEC class 2 compliant WITHSTAND VOLTAGE I/P-O/P: 4242DC, I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-O/P: 4242DC, I/P-FG: 100M Ohms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confire that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS DIMENSION 40x90x999 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection	SAFETY & EMC	VIBRATION			ch long X.Y. Z axes	
OUTPUT WITHSTAND VOLTAGE I/P-O/P: 4242DC, I/P-FG: 2121DC 1 minute ISOLATION RESISTANCE I/P-O/P, I/P-FG, 0/P-FG: 100M 0hms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirm that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x999 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection			•			
OUTPUT ISOLATION RESISTANCE //P-O/P, I/P-FG, 0/P-FG: 100M 0hms/500VDC EMI CONDUCTION & RADIATION EN55022: 2006 Class B HARMONIC CURRENT EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EMS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirm that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x999 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection			,	,	NEC Class 2 compliant	
OUTPUT EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY EN55022: 2006 Class B EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirm that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION MMENSION 40x90x999 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION COULING Free air convection			,			
OUTPUT ENARMONIC CURRENT EMS IMMUNITY EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirm that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x999 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection			, ,			
OUTPUT ENS IMMUNITY EN61204-3: 2000, EN55024: 1998+A1:2001+A2: 2003 light industry level, criteria A The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirm that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COOLING Free air convection						
DUTPUT The power supply is considered a component which will installed into a final equipment. The final equipment must be re-confirment that it still meets EMC directives. DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COULING Free air convection		HARMONIC CURRENT				
DC OK Signal Relay contact (24VDC / 1A, 120VAC / 1A) MTBF 944.6K HRS MIL-HDBK-217F DIMENSION 40x90x99 mm (WxHxD) PACKING 0.3kg; 27pcs / 9.3kg CONNECTION I/P: 3 poles, 0/P: 6 poles screw DIN terminal COOLING Free air convection		EMS IMMUNITY				
DC OK SignalRelay contact (24VDC / 1A, 120VAC / 1A)MTBF944.6K HRSDIMENSION40x90x99 mm (WxHxD)PACKING0.3kg; 27pcs / 9.3kgCONNECTIONI/P: 3 poles, 0/P: 6 poles screw DIN terminalCOOLINGFree air convection					talled into a final equipment. The f	inal equipment must be re-confirmed
MTBF944.6K HRSMIL-HDBK-217FDIMENSION40x90x99 mm (WxHxD)PACKING0.3kg; 27pcs / 9.3kgCONNECTIONI/P: 3 poles, 0/P: 6 poles screw DIN terminalCOOLINGFree air convection	UUIPUI		that it still meets EMC direc	ctives.		
DIMENSION40x90x99 mm (WxHxD)PACKING0.3kg; 27pcs / 9.3kgCONNECTIONI/P: 3 poles, 0/P: 6 poles screw DIN terminalCOOLINGFree air convection		DC OK Signal	Relay contact (24VD)	C / 1A, 120VAC / 1A)		
PACKING0.3kg; 27pcs / 9.3kgCONNECTIONI/P: 3 poles, 0/P: 6 poles screw DIN terminalCOOLINGFree air convection		MTBF	944.6K HRS MIL-H	DBK-217F		
PACKING0.3kg; 27pcs / 9.3kgCONNECTIONI/P: 3 poles, 0/P: 6 poles screw DIN terminalCOOLINGFree air convection		DIMENSION	40x90x99 mm (WxH	xD)		
CONNECTIONI/P: 3 poles, O/P: 6 poles screw DIN terminalCOOLINGFree air convection				,		
COOLING Free air convection						
All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.		GOULING		ly mentioned are measured at 23	30V ΔC innut rated load and 25°C	of amhient temperature

PSC-60 Series

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 below 90% rated output voltage
Contact Ratings (max.)	30V / 1A resistive load

Derating Curve









Features:

- Universal AC input (88-264V AC)
- Protections: Short Circuit / Overload / Overvoltage
- Brown-out protection •
- Installed on DIN rail TS35 / 7.5 or 15 ٠
- True DC OK signal output •
- All wiring 105°C long life electrolytic capacitors
- High operation temperature up to 70°C ٠
- Withstands 2G vibration test •
- High efficiency, long life and high reliability •
- 3 year warranty
- UL1310 Class 2 Power unit / LPS pass •
- UL508 (Industrial control equipment) listed

OUTDUIT	
OUTPUT	

OUTPUT	Cat. No.	PSC-9612*	PSC-9615*	PSC-9624	PSC-9648
	DC VOLTAGE	12V	15V	24V	48V
	RATED CURRENT	7.5A	6.4A	4A	2A
	CURRENT RANGE	0 ~ 7.5A	0 ~ 6.4A	0 ~ 4A	0 ~ 2A
	RATED POWER	90W	96W	96W	96W
	RIPPLE & NOISE (max)	180mVp-p	180mVp-p	180mVp-p	250mVp-p
	, , , , , , , , , , , , , , , , , , ,		20MHz of bandwidth by using a 12"		
	VOLTAGE ADJ. RANGE	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up tole	rance, line regulation and load reg	ulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±2.0%	±2.0%	±2.0%	±2.0%
	SETUP. RISE TIME	< 800ms, < 40ms / 23	OVAC at full load		1
INPUT	HOLD UP TIME (Typ.)	,	Sms / 115VAC at full load		
INFUT					
	VOLTAGE RANGE	88 ~ 264VAC; 124 ~ 3	TUVDC ut voltage. Please check the deration	aa ouruo for moro dotoilo	
	FREQUENCY RANGE	47Hz~63Hz	It voltage. Please check the deratil	ng curve for more details.	
			0. / 11EV/AC at full load		
	POWER FACTOR (Typ.)		98 / 115VAC at full load	0.000/	070/
	EFFICIENCY (Typ.)	87%	87%	88%	87%
	AC CURRENT (Typ.)	1.1 A / 115VAC; 0.55A			
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 30A / 115	ovac; 60a / 230vac		
	LEAKAGE CURRENT	<1mA / 230VAC			
	OVER LOAD PROTECTION	> 102% rated output p	ower		
		Protection type: Constant curre	ent limiting, recovers automatically	after fault condition is remove	ed.
	OVER VOLTAGE PROTECTION	115% ~ 150% rated o	utput voltage		
		Protection type: latch-off mode)		
ENVIRONMENT	OVER TEMPERATURE PROTECTION	90°C ± 10°C (RTH2) det	tect on heat sink of power	r transistor	
		Protection type: Shut down over	ervoltage, re-power on to recover		
	WORKING TEMP.	-20 ~ +70°C (Refer to	output load derating curve	9)	
	WORKING HUMIDITY	20 ~ 90% RH non-con	densina	,	
	STORAGE TEMP. / HUMIDITY	-40 ~ +85°C; 10 ~ 959	% RH		
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)			
SAFETY & EMC	VIBRATION	, , ,	. / 1cycle, 60 min. each l	ong X Y 7 axes	
and the second second second second		,		0 / /	
	SAFETY STANDARDS		1:2006+A11, UL1310 NEC	class 2 compliant	
	WITHSTAND VOLTAGE	I/P-0/P: 4242DC I/P-			
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG:			
	EMI CONDUCTION & RADIATION	EN55022:2006 Class B			
	HARMONIC CURRENT	EN61000-3-2:2006 Cla	ass A, EN61000-3-3: 1995	+A1: 2001+A2: 2005	
	EMS IMMUNITY		5024:1998+A1:2001+A2:		
OUTPUT				l into a final equipment. The fi	nal equipment must be re-confirme
		that it still meets EMC directive	es.		
	DC OK Signal	Relay contact (24VDC /	′ 1A, 120VAC / 1A)		
	MTBF	120.4K Hrs MIL-HDBK-	217F		
	DIMENSION	55x90x99 mm (WxHxD)		
	PACKING	0.4Kg/24 pcs. / 10.8Kg			
		0 1 0			
	PACKING	0.4Kg/24 pcs. / 10.8Kg I/P 3 poles, 0/P: 6 poles Free air convection			

*Not included in UL E361935

PSC-96 Series

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% rated output voltage
Contact Ratings (max.)	30V / 1A resistive load

Derating Curve







Features:

- Universal AC input (88-264V AC)
- Installed on DIN rail TS-35 / 7.5 or 15
- Built-in active PFC function, PF > 0.95
- 150% peak load capability
- 100% full load burn-in test
- Protection: SCP, OLP, OVP, OTP
- Two selectable peak load modes
- Built-in DC OK Relay contact
- Built-in Remote ON / OFF function
- 3 years warranty
- UL 508



150W DIN Rail Power Supply

Cat. No.	Phases	output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-15124	1	24V DC 6.3A	±1%	≤240 mVp-p	≥87%	
PSC-15148	1	48V DC 3.2A	±1%	≤480 mVp-p	≥87%	



240W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-24124	1	24V DC 10A	±1%	≤150 mVp-p	≥91%	
PSC-24148	1	48V DC 5A	±1%	≤300 mVp-p	≥92%	



480W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSC-48124	1	24V DC 20A	±1%	≤240 mVp-p	≥93%	
PSC-48148	1	48V DC 10A	±1%	≤480 mVp-p	≥94%	



20A DIN Rail Redundancy Module

Cat. No.	Phases	Output	lı	nput	NOTES
		V DC A	VDC	Α	
PSC-RM20	1	24V DC 20A	24VDC	2x20A	

**Other output voltages on request.

SPECIFICATIONS

PSC-151 Series



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

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

	0
SW NO.	Assignment
SW1	PEAK LOAD SETTING
SW2	REMOTE ON/OFFSETTING

Universal Input:	2.0A @ 115VAC / 1.0A @ 230VAC
Connection Input:	2 poles, single screw terminal
Connection Output:	2 poles, single screw terminal
Size (WxHxD):	55.5x12.5x100 mm (2.19x4.92x3.93 in.)
Packaging:	1/box; 0.72kg (1.6 lbs)

PSC-241 Series



Terminal Pin No. Assignment (TB1)		Terminal Pir	No. Assignment (TB2	
	Pin NO.	Assignment	Pin NO.	Assignment
	1	FG 🕀	1	DC+
	2	AC/L	2	DC-
	3	AC/N	3	INH+

Pin NO.	Assignment
1	DC+
2	DC-
3	INH+
4	INH-
5,6	Relay Contact

Switch No. Assignment	ch No. Assignm	ent
---	----------------	-----

SW NO.	Assignment
SW1	PEAK LOAD SETTING
SW2	REMOTEON/OFF SETTING

Universal Input:	2.6A @ 1
Connection Input:	2 poles, s
Connection Output:	2 poles, s
Size (WxHxD):	66x12.5x
Packaging:	1/box; 0

15VAC / 1.3A @ 230VAC single screw terminal single screw terminal x118 mm (2.6x4.9x4.65 in.) 0.9kg (2.0 lbs)

PSC-481 Series



Terminal Pir	No. Assignment (TB1)	Те
Pin NO.	Assignment	
1	FG 🕀	
2	AC/L	
3	AC/N	

1)	Terminal Pir	No. Assignment (TB2)
	Pin NO.	Assignment
	1-3	DC+
	4-6	DC-
	7	INH+
	8	INH-
	9,10	DCOK Signal

Universal Input:	5.0A @ 115VAC / 2.5A @ 230VAC
Connection Input:	2 poles, single screw terminal
Connection Output:	2 poles, single screw terminal
Size (WxHxD):	86x12.5x123 mm (3.4x4.9x4.85 in.)
Packaging:	1/box; 1.45kg (3.2 lbs)

PSC-RM20



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

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

Input:	2x20A @ 24VDC	
Connection Input:	2 poles, single screw terminal	
Connection Output:	2 poles, single screw terminal	
Size (WxHxD):	55.5x12.5x100 mm (2.19x4.92x3.93 in.)	
Packaging:	1/box; 0.72kg (1.6 lbs)	

Switch No. Assignment

SW NO.	Assignment
SW1	PEAK LOAD SETTING
SW2	REMOTE ON/OFF SETTING



PSC-151 Series No CE U CUSTED E205412 Type Approved

Features:

- Universal AC input (88-264V AC)
- Installed on DIN rail TS-35 / 7.5 or 15
- Built-in active PFC function, PF > 0.95 • •
- 150% peak load capability
- 100% full load burn-in test •
- Protection: SCP, OLP, OVP, OTP • Two selectable peak load modes
- Built-in DC OK Relay contact
- Built-in Remote ON / OFF function •
- 3 years warranty
- UĹ 508

OUTPUT	Cat. No.	PSC-15124	PSC-15148
and the second	DC VOLTAGE	24V	48V
	RATED CURRENT	6.3A	3.2A
	CURRENT RANGE	0~6.3A	0~3.2A
	RATED POWER	150W	150W
	PEAK CURRENT	9.45A	4.8A
	PEAK POWER	225W (3sec.)	auld not avecad the rate payment
	RIPPLE & NOISE (max)	3 seconds or 20% duty cycle max. and the average output power she 240mVp-p	480mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" t	
	VOLTAGE ADJ. RANGE	-2% ~ +8%	-2% ~ +8%
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation and load reg	
	LINE REGULATION	±0.5%	±0.5%
		±1.0%	±1.0%
INPUT	SETUP, RISE TIME	700ms, 30ms / 230VAC / 115VAC at full load	
INFOT	HOLD UP TIME (Typ.)	16ms / 230VAC; 16ms / 115VAC at full load	
	VOLTAGE RANGE	88 ~ 264VAC; 124 ~ 373VDC Derating may apply in low input voltage. Please check the derati	na curve for more details
	FREQUENCY RANGE	$47 \sim 63$ Hz	
	POWER FACTOR(Typ.)	0.9 / 230VAC; 0.98 / 115VAC at full load	
	EFFICIENCY (Typ.)	87%	87%
	AC CURRENT (Typ.)	2.0A / 115VAC; 1.0A / 230VAC	
	INRUSH CURRENT (Typ.)	33A / 115VAC; 65A / 230VAC	
PROTECTION	LEAKAGE CURRENT	<1mA/ 240VAC	
	OVERLOAD PROTECTION	105% ~ 150% rated output power for 3 sec and then shutdown	in O/P with auto-recovery.
		150% or greater rated power or short circuit is constant current	
		If O/P drops to 40% output then it auto-recover 5 times; if fault of	
		during auto recovery, the system will shut down and needs to be	
	OVER VOLTAGE	29 ~ 33V Protection type: Latch-off mode, repower on to recover.	56 ~ 65V
	OVER TEMPERATURE	$95 \pm 5^{\circ}$ C (TSW: detect on heatsink of power diod	le)
ENVIRONMENT		Protection type: Shut down o/p voltage, recovers automatically a	,
	WORKING TEMP.	-10 ~ +70°C (Refer to derating curve)	
		Installation clearance: 40mm from top, 20mm from bottom, 5mm	
		permanently with full power. In case the adjacent device is a hea	it source, 15mm clearance is recommended.
		20 ~ 95% RH non-condensing	
	STORAGE TEMP. / HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT VIBRATION	$\pm 0.03\%$ / °C (0 ~ 50°C)	
SAFETY & EMC	VIDRATION	10 ~ 500Hz, 2G 10min. / 1cycle, 60min. each al	Dirg X, f, Z axes
	SAFETY STANDARDS	UL 508 / TUV EN 60950-1	
	WITHSTAND VOLTAGE	I/P-0/P: 4242VDC, I/P-FG: 2121VDC, 0/P-FG: 707	7VDC, 0/P-DC 0K: 707VDC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: >100M Ohms / 500VDC	/ 25°C / 70% RH
	EMI CONDUCTION & RADIATION	EN55022 (CISPR22) Class B	
	HARMONIC CURRENT	EN61000-3-2, -3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV5	
		EN61204-3; heavy industry level; criteria A, MEE	
OUTPUT		The power supply is considered a component which will installed re-confirmed that it still meets EMC directives.	d into a final equipment. The final equipment must be
	DC OK RELAY. CONTACT RATINGS (max)	60VDC / 0.3A, 30VDC / 1A, 30VAC / 0.5A resistiv	e load
	MTBF	62.7K HRS (MIL-HDBK-217F)	
	DIMENSION	55.5x125.2x99.8 mm (WxHxD)	
	PACKING	0.72kg; 12pcs / 12.8kg	
	COOLING	Free air convection	
	1	All parameters NOT specially mentioned are measured at 230VA	C input, rated load and 25°C of ambient temperature.

PSC-151 Series

Mechanical Specification

Terminal Pin No. Assignment (TB1)

Pin NO.	Assignment
1	FG 🕀
2	AC/L
3	AC/N

Terminal Pin No. Assignment (TB2)

Pin NO.	Assignment
1	DC+
2	DC-
3	INH+
4	INH-
5,6	Relay Contact

Switch No. Assignment

SW NO.	Assignment
SW1	PEAK LOAD SETTING
SW2	REMOTE ON/OFF SETTING



TB2 Br

OV ADJ. DC ON

ON OF



Unit : mm / inch

Block Diagram



DC OK Relay Contact

Contact Close	When the output voltage reaches the adjusted output voltage.
Contact Open	When the output voltage drop below 45% rated output voltage.
Contact Ratings(max.)	30V/1A resistive load





Peak Load SW1 ON (Mode1) Default setting



T-peak presents while the unit is working within 110%~150% Rating output power. See curve " B " for the variation in T-peak between output current and holdup time. If T-peak is more than the time setting in curve "B", the output current will drop to the constant current limit (I-normal) that is 105% rating power, meanwhile, I- normal and T-normal will be presenting. See curve "A" for the timing back to I-Peak of T-normal and this Mode can use for easy 2-stage battery charger.

Peak Load SW2 OFF (Mode2)



T-peak presents while the unit is working within 110%~150% Rating output power. See curve " B " for the variation in T-peak between output current and holdup time. If T-peak is more than the time setting in curve "B", the output current will be shut down for $3{\sim}4$ sec, then auto-recovery.



PSC-151 Series

Remote ON/OFF

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

SW2	INH+(3 PIN)/ INH-(4 PIN)	Output Status	
OFF	SW ON (>2.5V)	ENABLE	
OFF	SW OFF (<0.8V)	DISABLE	
ON	SW ON (>2.5V)	DISABLE	
ON	SW OFF (<0.8V)	ENABLE	(Default Setting)



Derating Curve



Output derating VS input Voltage







Features:

- Universal AC input (88-264V AC)
- High efficiency 92% and low power dissipation
- Installed on DIN rail TS-35 / 7.5 or 15
- Built-in active PFC function, PF > 0.95
- 150% peak load capability •
- 100% full load burn-in test
- Protection: SCP, OLP, OVP, OTP
- Two selectable peak load modes
- Built-in DC OK Relay contact
- Built-in Remote ON / OFF function
- 3 years warranty
- UL 508

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OUTPUT	Cat. No.	PSC-24124	PSC-24148
	DC VOLTAGE RATED CURRENT	24V 10A	48V 5A
	CURRENT RANGE	0~10A	0~5A
	RATED POWER	240W	240W
	PEAK CURRENT	15A	7.5A
	PEAK POWER	360W (3sec.) Two selectable peak load modes 3 seconds or 20% duty cycle Max. The average output power sho	
	RIPPLE & NOISE (max)	150mVp-p Ripple & noise are measured at 20MHz of bandwidth by using a 12	300mVp-p " twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	-2% ~ +8%	-2% ~ +8%
	VOLTAGE TOLERANCE	±1.0% Tolerance: includes set up tolerance, line regulation and load r	±1.0% regulation.
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	700ms, 30ms / 230VAC / 115VAC at full load	
INPUT	HOLD UP TIME (Typ.)	20ms / 230VAC; 20ms / 115VAC at full load	
	VOLTAGE RANGE	88 ~ 264VAC; 124 ~ 373VDC Derating may apply in low input voltage. Please check the der	ration curve for more details
	FREQUENCY RANGE	$47 \sim 63$ Hz	
	POWER FACTOR (Typ.)	0.96 / 230VAC; 0.96 / 115VAC at full load	
	EFFICIENCY (Typ.)	91%	92%
	AC CURRENT (Typ.)	2.6A / 115VAC; 1.3A / 230VAC	02/0
	INRUSH CURRENT (Typ.)	33A / 115VAC; 65A / 230VAC	
PROTECTION	LEAKAGE CURRENT	<1mA/ 240VAC	
	OVERLOAD		
	OVERLOAD	105% ~ 150% rated output power for 3 sec and then shutdov 150% or greater rated power or short circuit is constant curre	
		If 0/P drops to 40% output then it auto-recover 5 times; if fau during auto recovery, the system will shut down and needs to	
	OVER VOLTAGE	28 ~ 33V	56 ~ 65V
		Protection type: Shut down 0/P voltage with auto-recovery	a da)
ENVIRONMENT	OVER TEMPERATURE	95 ±5°C (TSW: detect on heatsink of power div Protection type: Shut down o/p voltage, recovers automatically	,
	WORKING TEMP.	$-25 \sim +70^{\circ}$ C (Refer to output load derating cur	
		Installation clearances: 40mm on top, 20mm on the bottom, 5	
		permanently with full power. In case the adjacent device is a h	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)	
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each	n long X,Y, Z axes
	SAFETY STANDARDS	UL508, TUV EN60950-1	
	WITHSTAND VOLTAGE		/G: 707VDC 0/P-DC 0K: 707VDC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: > 100M Ohms / 500VE	
	EMI CONDUCTION & RADIATION	EN55022:2006 Class B	
	HARMONIC CURRENT	EN61000-3-2: 2006 Class A, ENG1000-3-3: 19	995+41.2001+42.2005
	EMS IMMUNITY	EN61204-3: 2000, EN55024: 1998+A1: 2001+	
OUTPUT		The power supply is considered a component which will instal re-confirmed that it still meets EMC directives.	o
and the second sec	DC OK RELAY CONTACT RATINGS (max)	60VDC / 0.3A, 30VDC / 1A, 30VAC / 0.5A resist	tive load
	MTBF	57K HRS (MIL-HDBK-217F)	
	DIMENSION	65.8x125.2x117.7 mm (WxHxD)	
	PACKING	0.9kg; 12pcs / 12.8kg	
	COOLING	Free air convection	
		All parameters NOT specially mentioned are measured at 230	VAC input, rated load and 25°C of ambient temperature.

PSC-241 Series

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 below 45% rated output voltage.
Contact Ratings(max.)	30V/1A resistive load

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

Unit : mm / inch





Peak Load SW1 ON (Mode1) Default setting



T-peak presents while the unit is working within 110%~150% Rating output power. See curve " B " for the variation in T-peak between output current and holdup time. If T-peak is more than the time setting in curve "B", the output current will drop to the constant current limit (I-normal) that is 105% rating power, meanwhile, I- normal and T-normal will be presenting. See curve "A" for the timing back to I-Peak of T-normal and this Mode can use for easy 2-stage battery charger.

Peak Load SW2 OFF (Mode2)



PSC-241 Series

Remote ON/OFF

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

SW2	INH+(3 PIN)/ INH-(4 PIN)	Output Status	
OFF	SW ON (>2.5V)	ENABLE	
OFF	SW OFF (<0.8V)	DISABLE	
ON	SW ON (>2.5V)	DISABLE	
ON	SW OFF (<0.8V)	ENABLE	(Default Setting)



Derating Curve



Output derating VS input Voltage







Features:

- Universal AC input (88-264V AC)
- Installed on DIN rail TS-35 / 7.5 or 15
- Built-in active PFC function, PF > 0.95
- 150% peak load capability ٠
- Protection: SCP, OLP, OVP, OTP
- Two selectable peak load modesBuilt-in DC OK (Open Collector Signal)
- Built-in Remote ON / OFF function
- 3 years warrantyUL 508

OUTPUT	Cat. No.	PSC-48124	PSC-48148
	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0~20A	0~10A
	RATED POWER	480W	480W
	PEAK CURRENT	30A	15A
	PEAK POWER	720W (3sec.) Two selectable peak load modes	1
		3 seconds or 20% duty cycle Max. The average output power should	not exceed the rate power.
	RIPPLE & NOISE (max)	240mVp-p Ripple & noise are measured at 20MHz of bandwidth by using a 12" to	480mVp-p visted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	-5% ~ +5%	
	VOLTAGE TOLERANCE	±1.0%	±1.0%
	VOEINGE FOEEININGE	Tolerance: includes set up tolerance, line regulation and load regu	
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 100ms / 230VAC / 115VAC at full load	1
INPUT	HOLD UP TIME (Typ.)	16ms / 230VAC; 16ms / 115VAC at full load	
	VOLTAGE RANGE	· · ·	
	VULIAGE RANGE	88 ~ 264VAC; 124 ~ 373VDC Derating may apply in low input voltage. Please check the derating may apply in low input voltage.	a curve for more details.
	FREQUENCY RANGE	47 ~ 63Hz	3
	POWER FACTOR (Typ.)	0.96 / 230VAC / 115VAC at full load	
	EFFICIENCY (Typ.)	93%	94%
	AC CURRENT (Typ.)	5.0A / 115VAC; 2.5A / 230VAC	
	INRUSH CURRENT (Typ.)	33A / 115VAC; 65A / 230VAC	
PROTECTION	LEAKAGE CURRENT	< 1mA/ 240VAC	
THOTEOHON			
	OVERLOAD	105% ~ 150% rated output power for 3 sec and then shutdown i 150% or greater rated power or short circuit is constant current I	-
		If O/P drops to 40% output then it auto-recover 5 times; if fault co	
		during auto recovery, the system will shut down and needs to be	
	OVER VOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type: Latch-off mode.	
	OVER TEMPERATURE	$95 \pm 5^{\circ}$ C (TSW: detect on heatsink of power diod	
ENVIRONMENT		Protection type: Shut down o/p voltage, recovers automatically af	ter temperature goes down
	WORKING TEMP.	-20 ~ +70°C (Refer to output load derating curve	
		Installation clearance: 40mm from top, 20mm from the left and ri	
	WORKING HUMIDITY	loaded permanently with full power. In case the adjacent device is $20 \sim 95\%$ RH non-condensing	s a field solve, formin clearance is recomended.
	STORAGE TEMP. / HUMIDITY	-40 ~ +85°C; 10 ~ 95% RH	
	TEMP. COEFFICIENT	$\pm 0.03\%$ °C (0 ~ 50°C)	
CAFETY & FMC	VIBRATION	$\pm 0.03\%$ C (0 ~ 30 C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 min. each lo	
SAFETY & EMC		· · · ·	nig x, i, z axes
	SAFETY STANDARDS	UL 508 / EN 60950-1	
	WITHSTAND VOLTAGE	I/P-0/P: 4242VDC, I/P-FG: 2121VDC, 0/P-FG: 707	
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: >100M 0hms / 500VDC /	25°C / 70% RH
	EMI CONDUCTION & RADIATION	EN 55022 (CISPR22), EN 61000-6-3	
	HARMONIC CURRENT	EN61000-3-2, -3-3	
	EMS IMMUNITY	IEC 61000-4-2, 3, 4, 5, 6, 8, 11; EN 61000-6-1; I	
OUTPUT		The power supply is considered a component which will installed re-confirmed that it still meets EMC directives.	into a final equipment. The final equipment must be
	DC OK RELAY CONTACT RATINGS (max)	60VDC / 0.3A, 30VDC / 1A, 30VAC / 0.5A resistive	9 1080
	DIMENSION	86.3x124.8x123.4 mm (WxHxD)	
		()	
	PACKING	1.45kg; 8pcs / 12kg All parameters NOT specially mentioned are measured at 230VAC	input rated load and 25°C of ambient temperature

PSC-481 Series

Mechanical Specification

Terminal Pin No. Assignment (TB1)

Pin NO.	Assignment
1	FG 🕀
2	AC/L
3	AC/N

Terminal Pin No. Assignment (TB2)

Pin NO.	Assignment
1-3	DC+
4-6	DC-
7	INH+
8	INH-
9,10	DC OK Singal

Switch No. Assignment

	=
SW NO.	Assignment
SW1	PEAK LOAD SETTING
SW2	REMOTE ON/OFF SETTING



Block Diagram



DC OK Relay Contact

Contact Ratings(max.) CTR : MIN. 50% at IF = 5mA, VCE = 5V	
Isolation Voltage Between input and output Viso = 3750Vrms	





Peak Load SW1 ON (Mode1) Default setting



T-peak presents while the unit is working within 110%~150% Rating output power. See curve " B " for the variation in T-peak between output current and holdup time. If T-peak is more than the time setting in curve "B", the output current will drop to the constant current limit (I-normal) that is 105% rating power, meanwhile, I- normal and T-normal will be presenting. See curve "A" for the timing back to I-Peak of T-normal and this Mode can use for easy 2-stage battery charger.

Peak Load SW2 OFF (Mode2)



T-peak presents while the unit is working within 110%~150% Rating output power. See curve " B " for the variation in T-peak between output current and holdup time. If T-peak is more than the time setting in curve "B", the output current will be shut down for $3{\sim}4$ sec, then auto-recovery.



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PSC-481 Series

Remote ON/OFF

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

SW2	INH+(3 PIN)/ INH-(4 PIN)	Output Status	
OFF	SW ON (>2.5V)	ENABLE	
OFF	SW OFF (<0.8V)	DISABLE	
ON	SW ON (>2.5V)	DISABLE	
ON	SW OFF (<0.8V)	ENABLE	(Default Setting)



Derating Curve



Output derating VS input Voltage





PSC-RM20 Specifications



Features:

- 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

OUTPUT	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		
	INPUT VOLTAGE RANGE	21 ~ 28V
	NUMBER OF INPUTS	Two
	INPUT CURRENT (max.)	20A per input
PROTECTION		
	INPUT VOLTAGE ALARM	When input is \geq 20V (±5%) or \leq 30V (±5%) relay contacts
	RELAY CONTACT RATING (max.)	30VDC, 1A
ENVIRONMENT		
	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
SAFETY & 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,
OUTPUT		
	MTBF	996.8Khrs min. MIL-HDBK-217K (25°C)
	DIMENSION	55.5x125.2x100mm (WxHxD)
	PACKING	0.45Kq; 20pcs / 11Kq / 1.29CUFT
		All parameters NOT specially mentioned are measured at 24V DC input, rated load and 25°C of ambient temperature.

Block Diagram





Terminal Pin. No Assignment (TB1)		
Assignment		
Vout+		
Vout-		
Vin-		
Vin B+		
Vin A+		

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

Applications







FLEX Power Single Phase 24V DC Power Supplies

More flexibility in input voltage

The FLEX line of power supplies are suitable to a wide range of input voltage. With a single type it is therefore possible to meet the requirements of more applications and consequently improve design activity and stock management.

More Power: Power Boost

As an example, PSA-18024 is a 24Vdc power supply that features a continuous duty current of 7.5A at 110°C and 5A at 60°C and a Power Boost of 150%, equivalent to 7.5A, for at least 3 min. This features allows the use of a smaller size unit to power demanding loads such as motors, solenoid valves, lamps and other loads with transient overload behavior which would otherwise require an oversize power supply.





More flexibility in input voltage

As an example, PSA-18024 can be the right solution for two design cases in very different temperature conditions:

- 1) 7.5A, 24Vdc in continuous duty at 40°C.
- 2) 5A, 24Vdc in continuous duty at 60°C +Power Boost 7,5A for at least 3 min.

Power Good relay for monitoring the output voltage level

Output voltage is continuously monitored. The units 24 VDC output are equipped with Power Good relay. The NO contact triggers any time the output voltage level goes below 20Vdc (24 Vdc output). This feature is particularly useful in redundant applications.



Applications in compliance with EN 60204-1 standard

The FLEX Power units comply with the requirement of EN60204-1 standard that an overload of 50% over the nominal current be withstand by the power supply for at least 1 hour to allow the tripping of magneto-thermic switches on the output. These features allows the implementation of "Control of commands and Emergency stops" by means of industrial PCs, PLC, remote I/O, etc. required by the standard.
FLEX Power Single Phase 24V DC Power Supplies

Hiccup Mode Automatic Restart

This is the default factory setting of all FLEX Power units. In case of shortcircuit or overloading, the output current is interrupted. The device tries again to re-establish output voltage and normal condition about every 2 second till the problem is cleared.

Manual Reset Mode Restart by Operator

In case of short-circuit or overload, the output current is interrupted. In order to restart the output it is necessary to switch-off the input circuit for about 1 minute. This protection mode is particularly suggested in applications where safety procedures require that reset be carried out only by an authorized person.

Continuous Output mode

In case of short-circuit or overload, the output current is kept at high values with near zero voltage. In case of short circuit the current can reach up to 3 times the rated current at 60°C. This protection mode is used to meet the requirements of demanding loads such as motors, solenoid valves, lamps, PLC with highly capacitive input circuits and other loads with marked transient overload behavior.



Output circuits protected by magneto-thermic circuit breakers

Standard output circuit breakers can be triggered quickly and reliably with FLEX technology, which allows three times the nominal current at 60°C. Defective current paths are selectively disconnected, the defect is limited and the important parts of the system remain in operation. This together with the 50% overload capacity in compliance with EN60204-1 allows to safely manage any overload and short circuit condition.

Reduced dimensions and snap-on DIN rail bracket

The higher performances obtained with the FLEX Power line, allow almost half dimensions as conventional technology and higher performances. An example is the PSA-12024 (120V) with maximum current is 12A. In permanent duty at 40°C it can deliver 5A at 24Vdc. All FLEX units feature the new DIN rail mounting bracket, easy to use and safe against heavy loading and vibrations.

Easy Parallel connection

With FLEX technology it is easy to double capacity. The units PSA-360, PSB-360, PSA-600 and PSB-600 can be easily connected in parallel without needing high precision instruments. Follow instructions supplied with each unit.

FLEX Power Single Phase 24V DC Power Supplies

Specifications



Features:

- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty



120W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSA-12024	1	24V DC 5A	±3%	<80 m\/n n	≥91%	
F3A-12024		24V DC 5A	±370	≤80 mVp-p	29170	



180W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSA-18024	1	24V DC 7.5A	±3%	≤80 mVp-p	≥91%	

12V DC and 48V DC output on request.



360W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSA-36024	1	24V DC 14A	±3%	≤80 mVp-p	≥91%	

12V DC and 48V DC output on request.



600W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSA-60024	1	24V DC 25A	±3%	≤80 mVp-p	≥92%	
PSA-60024			±3%	≤80 mVp-p	≥92%	

48V DC output on request.

**Other output voltages on request.

SPECIFICATIONS

PSA-12024 Series



Ierminal Pin. No Assignment (IB1)		Ierminal	Pin. No Assignment (TB2)
Pin No.	Assignment PSA-12024 (1 phase)	Pin No.	Assignment PSA-12024 (1 phase)
1	N/AC	1/2	DC OUTPUT -V
2	L/AC	3/4	DC OUTPUT +V
3	FG 🕀	5/6	Relay Contact

 Nominal Input Data:
 115VAC/1.8A - 230VAC/0.9A (selectable by switch)

 Connection:
 screw terminal blocks for wires 0.2-2.5mm² / AWG 24-14

 Size (WxHxD):
 55x116x103 mm (2.17x4.57x4.06 inches)

 Packaging:
 1/box; 0.5kg (1.1 lbs)

PSA-18024 Series



Terminal Pin. No Assignment (TB1)		Terminal	Pin. No Assignment (TB2)
Pin No.	Assignment PSA-18024 (1 phase)	Pin No.	Assignment PSA-18024 (1 phase)
1	N/AC	1/2	DC OUTPUT -V
2	L/AC	3/4	DC OUTPUT +V
3	FG 🖨	5/6	Relay Contact

 Nominal Input Data:
 115VAC/2.8A - 230VAC/1.3A (selectable by switch)

 Connection:
 screw terminal blocks for wires 0.2-2.5mm² / AWG 24-14

 Size (WxHxD):
 55x116x103 mm (2.17x4.57x4.06 inches)

 Packaging:
 1/box; 0.6kg (1.32 lbs)

PSA-36024 Series



Terminal Pin. No Assignment (TB1)		Terminal	Pin. No Assignment (TB2)
Pin No.	Assignment PSA-36024 (1 phase)	Pin No.	Assignment PSA-36024 (1 phase)
1	N/AC	1/2/3	DC OUTPUT -V
2	L/AC	4/5/6	DC OUTPUT +V
3	FG 🖨	7/8	Relay Contact

 Nominal Input Data:
 115VAC/3.3A - 230VAC/2.2A (selectable by switch)

 Connection:
 screw terminal blocks for wires 0.2-2.5mm² / AWG 24-14

 Size (WxHxD):
 72x118x133 mm (2.83x4.49x5.24 inches)

 Packaging:
 1/box; 0.72kg (1.59 lbs)

PSA-60024 Series



Terminal Pin. No Assignment (TB1)		Terminal	Pin. No Assignment (TB2)
Pin No.	Assignment PSA-60024 (1 phase)	Pin No.	Assignment PSA-60024 (1 phase)
1	N/AC	1/2	DC OUTPUT -V
2	L/AC	3/4	DC OUTPUT +V
3	Jumper 115V AC	5/6	Relay Contact
4	Jumper 115V AC		
5	FG 🕀		
Nominal	Nominal Input Data: 115VAC/8.0A - 230VAC/4.2A (selectable by switch)		
Connecti	on: screw terminal blocks for	or wires up	to
	4mm² / 11AWG (solid),		AWG (stranded)
Size (Wxł	ize (WxHxD): 85x120x142 mm (3.35x4		nches)
Packagin	g: 1/box; 1.0kg (2.2 lbs)		



PSA-120 Series (1 Phase)

Specifications



- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL 508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay circuit
- 3 year warranty

UTPUT	Cat. No.	PSA-12024
	DC VOLTAGE	24 V
	RATED CURRENT	5A
	CURRENT RANGE	0-5A
	RATED POWER	120 W
	RIPPLE & NOISE (max)	100 mVp-p
	······································	Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated
		with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	22 V ~ 27 V
	VOLTAGE TOLERANCE	-0.3%
	VOEN GE POEEN WOE	Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	SHORT CIRCUIT CURRENT Icc	12A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD max	11 W
	LINE REGULATION	$\pm 0.5\%$
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
DUT		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time
PUT	HOLD UP TIME (Typ.)	20 msec
	VOLTAGE RANGE	90 ~ 135V AC / 180 ~ 264V AC switch select
	FREQUENCY RANGE	47 ~ 63 Hz
	EFFICIENCY (Typ.)	>91 %
	AC CURRENT (115 - 230V)	1.8 - 0.9V AC
	INRUSH CURRENT (Typ.)	$< 11 \text{ A} \le 5 \text{ msec}$
	INTERNAL FUSE	4A (T)
	EXTERNAL FUSE (recommended)	10 A (MCB curve B)
ROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 230 V AC
	OVERLOAD	In (60°C) x 1.5 $^{3} \ge 3$ min.
		Current max. Overload @ 4VDC (permanent) Imax=In (60°C) x (1.8 - 2.2)
	OVER VOLTAGE	30 ~ 35 VDC
	OVER TEMPERATURE	Shuts down output and automatically restarts when the temperature inside goes down
VIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	WORKING TEMP.	-25 up to +70 °C
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	± 0.03% / C° (0 ~ 60 °C)
AFETY & EMC	MOUNTING	In according to IEC60068-2-6
	SAFETY STANDARDS	UL508 Listed, IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-0/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 MΩ (min) @ 500 VDC
	EMI CONDUCTION & RADIATION	EN61000-6-4
	HARMONIC CURRENT	EN61000-3-2
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN61000-6-2,
		The power supply is considered a component which will be installed into a final equipment.
THERS		The final equipment must be re-confirmed that it still meets EMC directives.
	MTBF IEC 61709	> 500.000 h
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 VDC
	POLLUTION DEGREE	2
	CONNECTION TERMINAL BLOCK	2.5 mm Screw terminal (24 ~ 14 AWG)
	DIMENSION	55x110x105 mm (2 16x4 33x4 13 in)
	DIMENSION PACKING	55x110x105 mm (2.16x4.33x4.13 in) 0.50 kg (1.1 lbs) each



TB1 Terminal Pin. No Assignment

Pin No.	Assignment
	(1 phase)
1	N / AC
2	L / AC
2	FG⊕

TB2	Terminal	Pin.	No	Assignment

Pin No.	Assignment
	DC output -V
3,4	DC output +V
5,6	DC OK relay contacts

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below $20Vdc \pm 5\%$.







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PSA-180 Series (1 Phase) Specifications



- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

DUTPUT	Cat. No.	PSA-18024
	DC VOLTAGE	24 V
	RATED CURRENT	7.5 A
	CURRENT RANGE	0-7.5A
	RATED POWER	180 W
	RIPPLE & NOISE (max)	100 mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacito
	VOLTAGE ADJ. RANGE (DC)	10 V ~ 14 V
	VOLTAGE TOLERANCE	-0.03
		Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	SHORT CIRCUIT CURRENT Icc	16 A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	17 W
	LINE REGULATION	± 0.5%
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
	, -	Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
NPUT	HOLD UP TIME (Typ.)	Typ. 20 msec
	VOLTAGE RANGE	90 ~ 135V AC / 180 ~ 264V AC switch select
	FREQUENCY RANGE	47 ~ 63 Hz +-6%
	EFFICIENCY (Typ.)	>91 %
	AC CURRENT (115 – 230 Vac.)	2.8 ~ 1.3 A
	INRUSH CURRENT (Typ.)	< 11 A < 5 msec
	INTERNAL FUSE	4A (T)
	EXTERNAL FUSE (recommended)	10 A (MCB curve B)
DOTECTION		< 1.5 mA @ 230 Vac
ROTECTION		
	OVERLOAD	In (60°C) x 1.5 ³ (3 min.)
		Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 - 2.2)
	OVER VOLTAGE	30 – 35 Vdc
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
NVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	-25 up to +70 °C
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	$\pm 0.03\% / C^{\circ} (0 \sim 60 °C)$
AFETY & EMC	MOUNTING	In according to IEC60068-2-6
	SAFETY STANDARDS	UL508 Listed
	SALETT STANDARDS	IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-0/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	
	ISOLATION RESISTANCE	IP 20 (EN/IEC 60529) 100 ΜΩ (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4 EN61000-3-2
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
		EN 61000-4-6, EN61000-6-2, EN61000-6-4, The power supply is considered a component which will be installed into a final equipment. The final equipment must be
		re-confirmed that it still meets EMC directives.
THERS		
OTHERS	MTBF IEC 61709	> 500.000 h
THERS	MTBF IEC 61709 POLLUTION DEGREE	> 500.000 h 2
THERS	POLLUTION DEGREE	2
THERS	POLLUTION DEGREE CONNECTION TERMINAL BLOCK	2 2.5 mm Screw terminal (24 ~ 14 AWG)
THERS	POLLUTION DEGREE	2



TB1 Terminal Pin. No Assignment

Pin No.	Assignment				
	(1 phase)				
1	N / AC				
2	L / AC				
3	FG⊕				
-					

Pin No.	Assignment

1,2	DC output -V
3,4	DC output +V
5,6	DC OK relay contacts

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below 20Vdc ±5%.



Output Derating Curve



1	Transform
	P makes
15	College Pack mild

PSA-360 Series (1 Phase) **Specifications**



Features:

- Multiple overload/ short circuit protection modes • Efficiency above 91%
- Easy parallel connection for more power
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

DUTPUT	Cat. No.	PSA-36024
	DC VOLTAGE	24 V
	RATED CURRENT	14 A
	CURRENT RANGE	0 ~ 14 A
	RATED POWER	336 W
	RIPPLE & NOISE (max)	80 mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor
	VOLTAGE ADJ. RANGE (DC)	22 ~ 27 V
	VOLTAGE TOLERANCE	-0.03
		Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	SHORT CIRCUIT CURRENT Icc	30 A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	28 W
	LINE REGULATION	± 0.5%
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
	SETUP, NISE TIME	
		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
	HOLD UP TIME (Typ.)	Typ. 20 msec
NPUT	VOLTAGE RANGE	90 ~ 135V AC / 180 ~ 264V AC switch select
	FREQUENCY RANGE	47 ~ 63 Hz
	EFFICIENCY (Typ.)	>91 %
		3.3 ~ 2.2 A
	AC CURRENT (115 – 230 Vac.)	
	INRUSH CURRENT (Typ.)	< 16 A < 5 msec
	INTERNAL FUSE	6.3 A (T)
	EXTERNAL FUSE (recommended)	16 A (MCB curve B)
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 230 Vac
	OVERLOAD	In (60°C) x 1.5 3 (3 min.)
	OVENEOAD	Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 - 2.2)
	OVER VOLTAGE	14 ~ 17 Vdc 30 ~ 35 Vdc 50 ~ 55 Vdc
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
ENVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	-25 up to +70 °C
	WOTINING TEIMT.	
		(>60°derating 2.5% °C)
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	$\pm 0.03\% / C^{\circ} (0 \sim 60 °C)$
SAFETY & EMC	MOUNTING	In according to IEC60068-2-6
	SAFETY STANDARDS	UL508 Listed
		IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-0/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 MΩ (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4
	HARMONIC CURRENT	
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
		EN 61000-4-6, EN61000-6-2, EN61000-6-4,
		The power supply is considered a component which will be installed into a final equipment. The final equipment must be
DTHERS		re-confirmed that it still meets EMC directives.
THENS		
	MTBF IEC 61709	> 500.000 h
	POLLUTION DEGREE	2
	CONNECTION TERMINAL BLOCK	2.5 mm Screw terminal (24 ~ 14 AWG)
	CONNECTION TERMINAL DECCK	
	DIMENSION	
		72x115x135 mm (2.8x4.5x5.3 in) 0.65 kg (1.4 lbs) each

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

Altech Corp.

PSA Flex Series

Mechanical Specification





TB1 Terminal Pin. No Assignment

Pin No.	Assignment				
	(1 phase)				
1	N				
2	L				
	FG 🖶				

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below 20Vdc ±5%.



Parallel Connection

A parallel connection with the same model power supply can be set up to increase the output power. The output has to be adjusted approximately to the same value (± 20mV) while applying a 1-2 A load to all devices before connecting them in parallel. In PSA-360xx, for more power, the position of the Easy Parallel jumper needs to be changed to enable a parallel connection. In this mode up to 4 power supplies can be put together in parallel.

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1,2,3 DC output -V 4,5,6 DC output +V

Assignment

DC OK relay contacts

Output Derating Curve

Pin No.

7,8





REMOVE FOR Easy Parallel conenction PARALLEL OFF (factory selection) CONNECTION

REMOVE FOR PARALLEL

Vadj

Easy Parallel

CONNECTION

ON

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

Appendix

Contraction of the second	Specificatio	Series (1 Phase) ns	Features: • Multiple overload/ short circuit protection modes • Efficiency above 92% • Easy parallel connection for more power • Small size • DIN rail mountable • Cooling by free air convection • UL508 (industrial control equipment) approved • EN60950-1 • Built-in DC OK relay contact			
OUTPUT	Oct. No.	DCA C0004	• 3 year warranty			
001101	Cat. No. DC VOLTAGE	PSA-60024 24 V				
	RATED CURRENT	25 A				
	CURRENT RANGE	0-25A				
	RATED POWER	600 W				
	RIPPLE & NOISE (max)	100 mVp-p Pipple & poise are measured at 20MHz of bandwid	th by using a 12" twisted pair-wire terminated with a 0.1μF & 47μF parallel capacitor.			
	VOLTAGE ADJ. RANGE	$22 \text{ V} \sim 27 \text{ V}$	un by using a 12° twisten pail-wire terminaten with a 0.1µr & 47µr parallel capacitol.			
	VOLTAGE TOLERANCE	-0.03				
		Tolerance: includes set up tolerance, line regulat	ion and load regulation.			
	START UP WITH STRONG LOAD SHORT CIRCUIT CURRENT ICC	≤ 50,000 μF 60 A				
		Max 2 sec.: Hiccup mode				
		Permanent: Continuous mode				
	DISSIPATION POWER LOAD mas	54 W				
	LINE REGULATION LOAD REGULATION	± 0.5% ± 1%				
	SETUP, RISE TIME	1 sec. (max)				
INDUT			tart. Turning ON/OFF the power supply may lead to increase of the set up time.			
INPUT	HOLD UP TIME (Typ.)	Typ. 20 msec				
	VOLTAGE RANGE	90 ~ 135V AC / 180 ~ 264V AC swit 47 ~ 63 Hz +-6%	tch select			
	FREQUENCY RANGE EFFICIENCY (Typ.)	47 ~ 03 HZ +-0% >91 %				
	AC CURRENT (115 – 230 Vac.)	8 ~ 4.2 A				
	INRUSH CURRENT (Typ.)	< 16 A < 5 msec				
	INTERNAL FUSE EXTERNAL FUSE (recommended)	10A (T) 16 A (curve B)				
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 230 Vac				
	OVERLOAD	In (60°C) x 1.5 ³ (3 min.)				
		. , . ,	manent) Imax=In (60°C) x (1.8 - 2.2)			
	OVER VOLTAGE	30 ~ 35 Vdc				
ENVIRONMENT	OVER TEMPERATURE SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Res	tically restarts when the temperature inside goes down start After Main - Selectable			
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc				
	WORKING TEMP.	-25 up to +70 °C				
	HUMIDITY STORAGE TEMP	95 % at 25°C, no condensation				
	TEMP. COEFFICIENT	-40 up to +85 °C ± 0.03% / C° (0 ~ 60 °C)				
SAFETY & EMC	MOUNTING	In according to IEC60068-2-6				
	SAFETY STANDARDS	UL508 Listed				
		IEC/EN 60950, EN 50178, IEC/EN 60				
	WITHSTAND VOLTAGE PROTECTION CLASS	I/P-O/P: 3k VAC I/P-FG: 1.6k VAC IP 20 (EN/IEC 60529)	0/P-FG: 500 VAC			
	ISOLATION RESISTANCE	100 MΩ (min) @ 500 Vdc				
	EMI CONDUCTION & RADIATION	EN61000-6-4				
			1000 A A EN 01000 A E			
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 6 EN 61000-4-6, EN61000-6-2, EN61				
			hich will be installed into a final equipment. The final equipment must be			
OTHERS	1	re-confirmed that it still meets EMC directives.	· ·			
and the second second	MTBF IEC 61709	> 500.000 h				
	POLLUTION DEGREE	2 4 mm Communical (20 10 AM/	N			
	CONNECTION TERMINAL BLOCK DIMENSION	4 mm Screw terminal (30 ~ 10 AWG 85x120x140 mm (3.34x4.72x5.51 i				
	PACKING	0.75 kg (1.9 lbs) each	"/			
	NOTE	All parameters NOT specially mentioned are mea	asured at 230V AC input, rated load and $25^\circ\!C$ of ambient temperature.			

Altech Corp.

PSA Flex Series

Mechanical Specification



TB1 Terminal Pin. No Assignment



Pin No.	Assignment		
1,2	DC output -V		
3,4	DC output +V		
5,6	DC OK relay contacts		

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below $20Vdc \pm 5\%$. Output Derating Curve



Parallel Connection

Vadj

A parallel connection with the same model power supply can be set up to increase the output power. The output has to be adjusted approximately to the same value (± 20mV) while applying a 1-2 A load to all devices before connecting them in parallel. In PSA-600xx, for more power, the position of the Easy Parallel jumper needs to be changed to enable a parallel connection. In this mode up to 4 power supplies can be put together in parallel.





REMOVE FOR

CONNECTION

PARALLEL



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

Easy Parallel

ON

FLEX Power Two and Three Phase 24V DC** Power Supplies

Specifications



Features:

- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty



120W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSB-12024	2	24V DC 5A	±3%	≤80 mVp-p	≥91%	



180W DIN Rail Power Supply

Cat. No.	Phases	output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSB-18024	2	24V DC 7.5A	±3%	≤80 mVp-p	≥91%	
12 VDC and	48 VDC (outout on request				

DC output on request



360W DIN Rail Power Supply

Cat. No.	Phases	Output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSB-36024	2	24V DC 14A	±3%	≤80 mVp-p	≥91%	

12 VDC and 48 VDC output on request



600W DIN Rail Power Supply

Cat. No.	Phases	output V DC A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSB-60024	3	24V DC 25A	±3%	≤80 mVp-p	≥92%	
48 VDC out	put on req	uest				

**Other output voltages on request.

SPECIFICATIONS

PSB-12024 Series



TB1 Termi	nal Pin. No Assignment	TB2
Pin No.	Assignment	Pin
	(2 phase)	
1	N/L	1,
2	L/L	3,
3	FG 🕀	5,

TB2 Terminal Pin. No Assignment				
Pin No.	Assignment			
	-			
1,2	DC output -V			
3,4	DC output +V			
5,6	DC OK relay contacts			

Nominal Input Data: 230VAC/1.0A - 400VAC/0.5A - 500VAC/0.4A

(selectable by switch) Connection:

screw terminal blocks for 0.2-2.5mm² / AWG 24-14 wires. Size (WxHxD): 55x116x103 mm (2.17x4.57x4.06 inches) Packaging: 1/box; 0.5kg (1.1 lbs)

PSB-18024 Series



TB1 Terminal Pin. No Assignment

Pin No.	Assignment	Г
	(2 phase)	
1	N/L	Г
2	L/L	Γ
3	FG⊕	Г

TB2 Terminal Pin. No Assignment				
Pin No.	Assignment			
1,2	DC output -V			
	DC output +V			
5,6	DC OK relay contacts			

Nominal Input Data: 230VAC/1.5A - 400VAC/0.8A - 500VAC/0.7A

Connection: Size (WxHxD): Packaging:

(selectable by switch) screw terminal blocks for 0.2-2.5mm² / AWG 24-14 wires. 55x116x103 mm (2.17x4.57x4.06 inches) 1/box; 0.6kg (1.32 lbs)



PSB-36024 Series

TB1 Terminal Pin. No Assignment				
Pin No.	Assignment			
	(2 phase)			
1	N/L			
2	L/L			
3	FG⊕			

TB1 Terminal Pin. No Assignment				
Pin No.	Assignment			
1,2,3	DC output -V			
4,5,6	DC output +V			
7,8	DC OK relay contacts			

Nominal In

Connection Size (WxHx Packaging:

put Data:	230VAC/2.2A - 400VAC/1.4A - 500VAC/1.0A
	(selectable by switch)
n:	screw terminal blocks for 0.2-2.5mm ² / AWG 24-14 wires.
xD):	72x118x133 mm (2.83x4.49x5.24 inches)
:	1/box; 0.72kg (1.59 lbs)

PSB-60024 Series



TB1 Terminal Pin. No Assignment			
Pin No.	Assignment		
	(3 phase)		
1	L1		
2	L2		
3	L3		
4	FG⊕		
5	FG⊕		

B2 Terminal Pin. No Assignment			
Pin No.	Assignment		
1,2	DC output -V		
3,4	DC output +V		
5,6	DC OK relay contacts		

Nominal Input Data: 400VAC/0.95A - 500VAC/0.85A

Connection:

Size (WxHxD): Packaging:

screw terminal blocks for wires up to

4mm² / 11AWG (solid), 6mm² / 10AWG (stranded) 85x120x142 mm (3.35x4.72x5.59inches) 1/box; 1.1kg (2.43 lbs)

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PSB-120 Series (2 Phase)

Specifications



- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

OUTPUT	Cat. No.	PSB-12024
	DC VOLTAGE	24 V
	RATED CURRENT	5A
	CURRENT RANGE	0 - 5 A
	RATED POWER	120 W
	RIPPLE & NOISE (max)	100 mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	Sing a 12 twisted pair-wire terminated with a 0.1 μ r & 47 μ r parameter capacitor. 22 V ~ 27 V
	VOLTAGE TOLERANCE	-0.03
	VOLIAGE I OLENANGE	
		Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	CURRENT SHORT CIRCUIT Icc	12A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	11 W
	LINE REGULATION	$\pm 0.5\%$
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
INPUT	HOLD UP TIME (Typ.)	Typ. 20 msec
	VOLTAGE RANGE	187 ~ 264 V AC / 330 ~ 550V AC by switch
	FREQUENCY RANGE	47 ~ 63 Hz +-6%
	EFFICIENCY (Typ.)	>91 %
	AC CURRENT (115 $-$ 230 Vac.)	1.0 ~ 0.58 ~ 0.46A
	INRUSH CURRENT (Typ.)	< 11 A < 5 msec
	INTERNAL FUSE	T4A
	EXTERNAL FUSE (recommended)	
DROTECTION	,	10 A (MCB curve B)
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 230 Vac
	OVERLOAD	In (60°C) x 1.5 3 3 min.;
		Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 ~ 2.2)
	OVER VOLTAGE	30 – 35 Vdc
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
ENVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	-25 up to +70 °C (>60° derating 2.5% °C)
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	$\pm 0.03\%$ / C° (0 – 60 °C)
SAFETY & EMC	VIBRATION	In according to IEC60068-2-6
	SAFETY STANDARDS	UL508 approved, IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-O/P: 3k VAC //P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 M Ω (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4
	HARMONIC CURRENT	EN61000-3-2
	EMS IMMUNITY	EN 61000-3-2 EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
		EN 61000-4-6, EN61000-6-2,
		The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
OTHERS		
OTHERS	MTRE JEC 61700	> 500 000 h
OTHERS	MTBF IEC 61709	> 500.000 h 2
OTHERS	POLLUTION DEGREE	2
OTHERS	POLLUTION DEGREE CONNECTION TERMINAL BLOCK	2 2.5 mm Screw (24 ~ 14 AWG)
OTHERS	POLLUTION DEGREE CONNECTION TERMINAL BLOCK DIMENSION	2 2.5 mm Screw (24 ~ 14 AWG) 55x110x105 mm (2.16x4.33x4.13 in)
OTHERS	POLLUTION DEGREE CONNECTION TERMINAL BLOCK	2 2.5 mm Screw (24 ~ 14 AWG)



TB1 Terminal Pin. No Assignment

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TB2 Terminal	Pin.	No Assignment
--------------	------	---------------

Pin No.	Assignment
1.2	DC output -V
3,4	DC output +V
5,6	DC OK relay contacts

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below $20Vdc \pm 5\%$.



Output Derating Curve



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4	Annotation Printing Street Berling
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PSB-180 Series (2 Phase)

Specifications



Features:

- Multiple overload/ short circuit protection modes
- Efficiency above 91%
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

OUTPUT	Cat. No.	PSB-18024
	DC VOLTAGE	24 V
	RATED CURRENT	7.5 A
	CURRENT RANGE	0 - 7.5 A
	RATED POWER	180 W
	RIPPLE & NOISE (max)	100 mVp-p
	VOLTAGE ADJ. RANGE	Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μ F & 47 μ F parallel capacitor. 22 V ~ 27 V
	VOLTAGE TOLERANCE	-0.03
	VOLIAGE TOLENANGE	Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	\leq 50.000 µF
	CURRENT SHORT CIRCUIT ICC	16 A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	17 W
	LINE REGULATION	± 0.5%
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
INPUT	HOLD UP TIME (Typ.)	Typ. 20 msec
	VOLTAGE RANGE	187 ~ 264 V AC / 330 ~ 550V AC by switch
	FREQUENCY RANGE	47 ~ 63 Hz +-6%
	EFFICIENCY (Typ.)	>91 %
	AC CURRENT (230 - 400 - 500 Vac.)) 1.5 ~ 0.8 ~ 0.7 A
	INRUSH CURRENT (Typ.)	< 17 A < 5 msec
	INTERNAL FUSE	T 4 A
	EXTERNAL FUSE (recommended)	10 A (MCB curve B)
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 500 Vac
	OVERLOAD	In (60°C) x 1.5 ³ 3 min.;
		Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 ~ 2.2)
	OVER VOLTAGE	30 ~ 35 Vdc
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
ENVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	-25 up to +70 °C
		(>60°derating 2.5% °C)
	HUMIDITY STORAGE TEMP	95 % at 25°C, no condensation -40 up to +85 °C
	TEMP. COEFFICIENT	± 0.03% / C° (0 ~ 60 °C)
CALETY & EMC	VIBRATION	\pm 0.03 % F C (0 ~ 00 ° C) In according to IEC60068-2-6
SAFETY & EMC		
	SAFETY STANDARDS	UL508 approved, IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-0/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 MΩ (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4
		EN61000-3-2
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN61000-6-2, EN61000-6-4.
OTHERS		The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
OTHERS	MTBF IEC 61709	The power supply is considered a component which will be installed into a final equipment. The final equipment must be
OTHERS	MTBF IEC 61709 POLLUTION DEGREE	The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
OTHERS		The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. > 500.000 h
OTHERS	POLLUTION DEGREE	The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. > 500.000 h
OTHERS	POLLUTION DEGREE CONNECTION TERMINAL BLOCK	The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. > 500.000 h 2 2.5 mm Screw (24 ~ 14 AWG)

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



TB1 Terminal Pin. No Assignment

Pin No.	Assignment (2 phase)
1	N/L
2	L/L
3	FG⊕

TB2 Termina	l Pin. No	Assignment
-------------	-----------	------------

Pin No.	Assignment
1,2	DC output -V
3,4	DC output +V
5,6	DC OK relay contacts

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below 20Vdc \pm 5%.



Output Derating Curve





PSB-360 Series (2 Phase)

Specifications



- Multiple overload/ short circuit protection modes
 Efficiency above 91%
- Easy parallel connection for more power
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

DUTPUT	Cat. No.	PSB-36024
	DC VOLTAGE	24 V
	RATED CURRENT	14 A
	CURRENT RANGE	Refer to Output derating curve
	RATED POWER	336 W
	RIPPLE & NOISE (max)	100 mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacito
	VOLTAGE ADJ. RANGE	22 V ~ 27 V
	VOLTAGE TOLERANCE	-0.03
		Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	CURRENT SHORT CIRCUIT Icc	30 A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	28 W
	LINE REGULATION	± 0.5%
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	1 sec. (max)
		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
	HOLD UP TIME (Typ.)	Typ. 20 msec
NPUT		130.20 11300
	VOLTAGE RANGE	187 ~ 264 V AC / 330 ~ 550V AC by switch
	FREQUENCY RANGE	47 ~ 63 Hz +-6%
	EFFICIENCY (Typ.)	>91 %
	AC CURRENT (230 – 400 – 500 Vac.)	
	INRUSH CURRENT (Typ.)	< 17 A < 5 msec
	INTERNAL FUSE	
	EXTERNAL FUSE (recommended)	16 A (MCB curve B)
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 500 Vac
	OVERLOAD	In (60°C) x 1.5 ³ 3 min.;
	OVENEOAD	Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 ~ 2.2)
	OVER VOLTAGE	$30 \sim 35 \text{ Vdc}$
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
NVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main - Selectable
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	
		-25 up to +70 °C
		(>60°derating 2.5% °C)
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	± 0.03% / C° (0 ~ 60 °C)
SAFETY & EMC	VIBRATION	In according to IEC60068-2-6
		LILEON approved JEC/EN CODED EN CO170 JEC/EN CODED ENCODED & DELVEN CODED &
	SAFETY STANDARDS	UL508 approved, IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-O/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 MΩ (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4
	HARMONIC CURRENT	EN61000-3-2
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
		EN 61000-4-6, EN61000-6-2, EN61000-6-4,
		The power supply is considered a component which will be installed into a final equipment. The final equipment must be
THERS		re-confirmed that it still meets EMC directives.
		. 500.000 h
	MTBF IEC 61709	> 500.000 h
	POLLUTION DEGREE	2
	CONNECTION TERMINAL BLOCK	2.5 mm Screw (24 ~ 14 AWG)
	DIMENSION	72x115x135 mm (2.8x4.5x5.3 in)
		72x115x135 mm (2.8x4.5x5.3 in) 0.65 kg (1.3 lbs) each

Altech Corp.

Mechanical Specification





TB1 Terminal Pin. No Assignment

Pin No.	Assignment
	(2 phase)
1	N/L
2	L/L
3	FG⊕

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below 20Vdc $\pm 5\%$.



Parallel Connection

A parallel connection with the same model power supply can be set up to increase the output power. The output has to be adjusted approximately to the same value (± 20mV) while applying a 1-2 A load to all devices before connecting them in parallel. In PSA-600xx, for more power, the position of the Easy Parallel jumper needs to be changed to enable a parallel connection. In this mode up to 4 power supplies can be put together in parallel.

Vadi



	DC output -V
4,5,6	DC output +V
7,8	DC OK relay contacts

Output Derating Curve





REMOVE FOR
PARALLEL
CONNECTIONEasy Parallel conenction
OFF (factory selection)



Vadj

Easy Parallel N ON

CONNECTION ON

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

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Appendix

PSB Flex Series 28 3 Phase

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TRACE -

PSB-600 Series (3 Phase)

Specifications



- Multiple overload/ short circuit protection modes • Efficiency above 92%
- Easy parallel connection for more power
- Small size
- DIN rail mountable
- Cooling by free air convection
- UL508 (industrial control equipment) approved
- EN60950-1
- Built-in DC OK relay contact
- 3 year warranty

OUTPUT	Cat. No.	PSB-60024
	DC VOLTAGE	24 V
	RATED CURRENT	25 A
	CURRENT RANGE	Refer to Output derating curve
	RATED POWER	600 W
	RIPPLE & NOISE (max)	100 mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	22 V ~ 27 V
	VOLTAGE TOLERANCE	-0.03
		Tolerance: includes set up tolerance, line regulation and load regulation.
	START UP WITH STRONG LOAD	≤ 50,000 μF
	CURRENT SHORT CIRCUIT Icc	60 A
		Max 2 sec.: Hiccup mode
		Permanent: Continuous mode
	DISSIPATION POWER LOAD mas	28 W
	LINE REGULATION	± 0.5%
	LOAD REGULATION	± 1%
	SETUP, RISE TIME	
	SETUP, NISE TIME	1 sec. (max)
INDUT		Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
INPUT	HOLD UP TIME (Typ.)	Typ. 20 msec
	VOLTAGE RANGE	330 ~ 550V AC
	FREQUENCY RANGE	47 ~ 63 Hz +-6%
	EFFICIENCY (Typ.)	>92 %
	AC CURRENT (330 – 500 Vac.)	0.95 – 0.85 A
	INRUSH CURRENT (Typ.)	< 17 A < 5 msec
	INTERNAL FUSE	T 6.3 A
	EXTERNAL FUSE (recommended)	16 A (MCB curve B)
PROTECTION	LEAKAGE CURRENT	< 1.5 mA @ 500 Vac
	OVERLOAD	In (60°C) x 1.5 ³ 3 min.;
		Current max. Overload @ 4Vdc (permanent) Imax=In (60°C) x (1.8 ~ 2.2)
	OVER VOLTAGE	30 ~ 35 Vdc
	OVER TEMPERATURE	Yes. Shuts down output and automatically restarts when the temperature inside goes down
ENVIRONMENT	SHORT CIRCUIT PROTECTION	1 Hiccup Mode / 2 Fold Back / 3 Restart After Main
Envirtonment		·
	DC OK AKTIV SIGNAL (max.)	20 ~ 30 Vdc
	WORKING TEMP.	-25 up to +70 °C
		(>60°derating 2.5% °C)
	HUMIDITY	95 % at 25°C, no condensation
	STORAGE TEMP	-40 up to +85 °C
	TEMP. COEFFICIENT	$\pm 0.03\% / C^{\circ} (0 \sim 60 \text{ °C})$
CALETY & ENAC	VIBRATION	In according to IEC60068-2-6
SAFETY & EMC		
	SAFETY STANDARDS	UL508 approved, IEC/EN 60950, EN 50178, IEC/EN 60950, EN60950-1, PELV EN 60204-1
	WITHSTAND VOLTAGE	I/P-O/P: 3k VAC I/P-FG: 1.6k VAC 0/P-FG: 500 VAC
	PROTECTION CLASS	IP 20 (EN/IEC 60529)
	ISOLATION RESISTANCE	100 M Ω (min) @ 500 Vdc
	EMI CONDUCTION & RADIATION	EN61000-6-4
	HARMONIC CURRENT	EN61000-3-2
	EMS IMMUNITY	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
		EN 61000-4-6, EN61000-6-2, EN61000-6-4,
		The power supply is considered a component which will be installed into a final equipment. The final equipment must be
OTHERS		re-confirmed that it still meets EMC directives.
and the second se		- F00 000 h
	MTBF IEC 61709	> 500.000 h
	POLLUTION DEGREE	2
	CONNECTION TERMINAL BLOCK	2.5 mm Screw (24 ~ 14 AWG)
	DIMENSION	85x120x140 mm (3.34x4.72x5.51 in)
	PACKING	0.75 kg (1.9 lbs) each
	NOTE	All parameters NOT specially mentioned are measured at 230V AC input, rated load and 25°C of ambient temperature.

Altech Corp."

Mechanical Specification



TB1 Terminal Pin. No Assignment

Pin No.	Assignment
	(3 phase)
1	L1
2	L2
3	L3
4	FG 🖶
5	FG 🖶

TB2 Terminal Pin. No Assignment

Pin No.	Assignment
1,2	DC output -V
3,4	DC output +V
5,6	DC OK relay contacts

DC OK Relay Contact

Outputs are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. The signal contact closes when the output power is OK and opens when the output voltage falls below $20Vdc \pm 5\%$. Output Derating Curve



Parallel Connection

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Vadj

A parallel connection with the same model power supply can be set up to increase the output power. The output has to be adjusted approximately to the same value (± 20mV) while applying a 1-2 A load to all devices before connecting them in parallel. In PSA-600xx, for more power, the position of the Easy Parallel jumper needs to be changed to enable a parallel connection. In this mode up to 4 power supplies can be put together in parallel.







Vadj

REMOVE FOR

Easy Parallel ON

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

Appendix

PSB Flex Series 28 3 Phase



Slimline 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 ±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 $+70^{\circ}$ C (-4° to $+158^{\circ}$ F), refer to output
- derating curve
- UL508, EN60950-1
- EN55022 class B

MIL-HDBK-217F

- EN61000-4-2,3,4,5,6,8,11
- ENV50204; EN55024; EN61000-6-1; EN61204-3;
- Light Industry Level criteria A
- Military Standard

PS-S Series



- Universal AC input/Full range
- Protections: Short circuit / Overload / Overvoltage
- Cooling by free air convection
- DIN rail mountable
- NEC class 2 / LPS compliant (12V,24V,48V only)
- LED indicator for power on
- · DC OK relay contact
- No load power consumption<0.75W
- 100% full load burn-in test
- 3 year warranty



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	3A	±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.	Outp 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%	











SPECIFICATIONS

PS-S10 Series

PS-S20

Series



PS-S40 Series









Terminal Pin. No Assign. (TB1)

Pin No.	Assignment
1	FG⊕
2	AC/N
3	AC/L
Ŭ	710/2

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; 0.33A @ 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.	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; 1.8A @ 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

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; 1.3A @ 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



PS-S10 Series Specifications



- Universal AC input / full range
 Protections: Short Circuit / Overload / Overvoltage
- Cooling by free air convection
- DIN rail mountable
- 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

OUTPUT	Cat. No.	PS-S1005	PS-S1012	PS-S1015	PS-S1024
	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	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 tole	erance, line regulation and load re	gulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±5.0%	±3.0%	±3.0%	±2.0%
	SETUP, RISE TIME		; 1000ms, 30ms/115VAC		
				I/OFF the power supply may lead to	increase of the set up time
INPUT		120ms/230VAC; 25ms		Nor i the power supply may lead to	increase of the set up time.
	HOLD UP TIME (Typ.)	120115/230VAG, 23115	1 I JVAG at Iuli ludu		
	VOLTAGE RANGE	85~264VAC; 120~370	OVDC		
	FREQUENCY RANGE	47~63Hz			
	EFFICIENCY (Typ.)	77%	81%	81%	84%
	AC CURRENT (max.)	0.33A/115VAC; 0.21A/			
	INRUSH CURRENT (Typ.)	COLD START: 35A/115			
DEATEOTION			VAG, TUAV230VAG		
PROTECTION	LEAKAGE CURRENT	<1mA/ 240VAC			
	OVERLOAD PROTECTION	Above 105% rated out	tput power		
		Protection type: Hiccup mode	, recovers automatically after fault	condition is removed	
	OVERVOLTAGE PROTECTION	5.75~6.75V	13.8~16.2V	17.25~20.25V	27.6~32.4V
			vervoltage, re-power on to recover		
	OVER TEMPERATURE PROTECTION			nt limiting / output voltage	acce to 0:
				III IIIIIIIII / Output Voltage	yues iu u,
		re-power on to recove			
ENVIRONMENT	DC OK AKTIV SIGNAL (max.)	3.75~6V (50mA)	9~13.5V (40mA)	11.5~16.5V (40mA)	18~27V (20mA)
	WORKING TEMP.	-20 ~ +70°C (Refer to	output load derating curv	re)	
	WORKING HUMIDITY	20 ~ 90% RH non-cor	ndensina		
	STORAGE TEMP. / HUMIDITY	-40 ~ +85°C; 10 ~ 95	•		
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)			
		. ,	U- 00 10min / 1avala 6	0 min angh long V V 7 ava	•
	VIBRATION	•		60 min. each long X,Y, Z axe	5
SAFETY & EMC	MOUNTING	Compliance to IEC600	68-2-6		
	SAFETY STANDARDS	UL508			
		EN60950-1 compliant			
	WITHSTAND VOLTAGE		FG: 1.5KVAC 0/P-FG: 0	5KVAC	
	ISOLATION RESISTANCE		a: 100M Ohms/500VDC	.01(11)0	
	EMI CONDUCTION & RADIATION	Compliance to EN5501			
		EN55022 (CISPR22)			
		EN61204-3 Class B			
	HARMONIC CURRENT	Compliance to EN6100	00-3-2,-3		
	EMS IMMUNITY	Compliance to EN6100	00-4-2,3,4,5,6,8,11; EN55	5024; EN61000-6-1;EN612	04-3;
		light industry level; cri	teria A		
		•		ed into a final equipment. The final e	quinment must he re-confirmer
OTHERS		that it still meets EMC directiv		a ma a ma oqupmont. mo ma o	
	-				
	MTBF	584K hrs min. MIL-H	HDBK-217K (25°C)		
	DIMENSION	22.5x90x100mm (WxH	HxD)		
	PACKING	0.17Kg; 72pcs / 13.2k	(g / 0.91CUFT		
		0, 1	0	AC input, rated load and 25°C of am	bient temperature
		paramotoro nor opoolally			



Block Diagram



Application of DC OK Signal



Derating Curve



Output Derating VS Input Voltage





PS-S20 Series





- Universal AC input / full range
- Protections: Short Circuit / Overload / Overvoltage
- Cooling by free air convection
- DIN rail mountable
- 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

OUTPUT	Cat. No.	PS-S2005	PS-S2012	PS-S2015	PS-S2024		
	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)						
	HIFFEL & NOISE (IIIAX)	80mVp-p 120mVp-p 120mVp-p 150mVp-p					
		Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor					
	VOLTAGE ADJ. RANGE	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		; 1000ms, 30ms/115VA				
		,		ON/OFF the power supply may lead	to increase of the est up time		
INPUT	HOLD UP TIME (Typ.)	50ms/230VAC; 20ms/	ě	UN/OFF the power supply may lead	to increase of the set up time.		
		05 00 000 100 0	20100				
	VOLTAGE RANGE		370VDC				
	FREQUENCY RANGE	47~63Hz					
	EFFICIENCY (Typ.)	76%	80%	81%	84%		
	AC CURRENT (max.)	0.55A/115VAC; 0.35A	/230VAC				
	INRUSH CURRENT (Typ.)	COLD START: 20A/115					
PROTECTION	LEAKAGE CURRENT	≤1mA/ 240VAC					
PROTECTION	ELANAGE CONTRENT	2111A/ 240VA0					
	OVERLOAD PROTECTION	105% ~ 160% rated (output power				
		Protection type: Constant current limiting, recovers automatically after fault condition is removed					
	OVERVOLTAGE PROTECTION	5.75~6.75V	13.8~16.2V	17.25~20.25V	27.6~32.4V		
			vervoltage, re-power on to recov		21.0 02.11		
					no good to O:		
	OVER TEMPERATURE PROTECTION						
		re-power on to recove					
ENVIRONMENT	DC OK AKTIV SIGNAL (max.)	3.75~6V (50mA)	9~13.5V (40mA)	11.5~16.5V (40mA) 18~27V (20mA)		
	WORKING TEMP.	20 J 70°C (Pofor to	output load derating cu	ru(0)			
		•		ive)			
	WORKING HUMIDITY	20 ~ 90% RH non-co	•				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95					
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)					
	VIBRATION	Component: 10 ~ 500	Hz, 2G 10min. / 1cycle,	60 min. each long X,Y, Z a	xes		
SAFETY & EMC	MOUNTING	Compliance to IEC600	68-2-6	• • •			
SAFEIT & EIVIC							
	SAFETY STANDARDS	UL508					
		EN60950-1 compliant					
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-	FG: 1.5KVAC 0/P-FG:	0.5KVAC			
	ISOLATION RESISTANCE		G: 100M Ohms/500VDC				
	EMI CONDUCTION & RADIATION						
	EIVII CONDUCTION & RADIATION	Compliance to EN550	11				
		EN55022 (CISPR22)					
		EN61204-3 Class B					
	HARMONIC CURRENT	Compliance to EN610					
	EMS IMMUNITY	Compliance to EN610	00-4-2,3,4,5,6,8,11; EN	55024; ENV50204; EN610	00-6-1;EN61204-3;		
		light industry level; cr	iteria A				
		The power supply is consider	ed a component which will insta	alled into a final equipment. The fin	al equipment must be re-confirme		
OTHERS		that it still meets EMC directi	-				
	MTBF	236.9K hrs min. Mll	HDBK-217K (25°C)				
	DIMENSION	22.5x90x100mm (WxHxD)					
	PACKING	0.19Kg; 72pcs / 14.7Kg / 0.91CUFT					
			•	OV AC input, rated load and 25°C of	amhient temperature		
		All parameters NUT specially	mondulieu ale illedouleu di 201	1 no iliput, lateu 10du di lu 20 6 01	αποιστικ ισπηροταίμησ		





Block Diagram



Application of DC OK Signal



Derating Curve



Output Derating VS Input Voltage





PS-S40 Series

Specifications



- Universal AC input/full range
- Protections: Short Circuit / Overload / Overvoltage •
- Cooling by free air convection
- DIN rail mountable ٠
- LED indicator for power on DC OK relay contact
 No load power consumption < 0.75W
- 100% full load burn-in test
- 3 year warranty

OUTPUT	Cat. No.	PS-S4005	PS-S4012	PS-S4024	PS-S4048	
	DC VOLTAGE	5V	12V	24V	48V	
	RATED CURRENT	6A	3.33A	1.7A	0.83A	
	CURRENT RANGE	0~6A	0~3.33A	0~1.7A	0~0.83A	
	RATED POWER	30W	40W	40.8W	39.8W	
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	150mVp-p	200mVp-p	
	VOLTAGE AD L DANGE		OMHz of bandwidth by using a 12 twis			
	VOLTAGE ADJ. RANGE	5 ~ 6V	12 ~ 15V	24 ~ 30V	48 ~ 56V	
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%	±1.0%	
		Tolerance: includes set up tolera	ance, line regulation and load regula	ation.		
	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;	500ms, 30ms/115VAC at f	ull load	1	
			red at cold first start. Turning ON/OF		increase of the set un time	
INPUT	HOLD UP TIME (Typ.)	50ms/230VAC; 20ms/1	-			
	VOLTAGE RANGE	85~264VAC 120~37	OVDC			
	FREQUENCY RANGE	47~63Hz				
	EFFICIENCY (Typ.)	78%	86%	88%	88%	
	AC CURRENT (max)	1.1A/115VAC; 0.7A/230	VAC	1		
	INRUSH CURRENT (Typ.)	COLD START: 30A/115V				
PROTECTION	LEAKAGE CURRENT	≤1mA/ 240VAC	A0, 00A/230VA0			
PROTECTION		STILAV 240VA0				
	OVERLOAD PROTECTION	105% ~ 150% rated ou Protection type: Constant curren	Itput power nt limiting, recovers automatically af	ter fault condition is removed		
	OVERVOLTAGE PROTECTION	6.25~7.25V	15.6~18V	31.2~36V	57.6~64.8V	
	OVER TEMPERATURE PROTECTION	Protection type: Shut down overvoltage, re-power on to recover Power supply shut down at 70°C constant current limiting / output voltage goes to 0;				
ENVIRONMENT	DC OK AKTIV SIGNAL (max.)	re-power on to recover Relay contact rating (ma	ax.): 30V/ 1A resistive			
	WORKING TEMP.	$-20 \sim +70^{\circ}$ C (Refer to a	utput load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-cond	· · · · · ·			
		-40 ~ +85°C. 10 ~ 95%				
	STORAGE TEMP., HUMIDITY		п			
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)				
	VIBRATION	•	z, 2G 10min. / 1cycle, 60 n	nin. each long X,Y, Z axe	8	
SAFETY & EMC	MOUNTING	Compliance to IEC6006	8-2-6			
	SAFETY STANDARDS	UL508				
		EN60950-1 compliant				
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-F	G: 1.5KVAC 0/P-FG: 0.5k			
	ISOLATION RESISTANCE		≥100M 0hms/500VDC (25	°С; 70% КП)		
	EMI CONDUCTION & RADIATION	Compliance to EN55011 EN55022 (CISPR22)				
		EN61204-3 Class B				
	HARMONIC CURRENT	Compliance to EN61000)-3-2,-3			
	EMS IMMUNITY	Compliance to EN61000)-4-2,3,4,5,6,8,11; EN5502	24: ENV50204 : EN6100)-6-2: EN61204-3:	
		light industry level; crite		,,,	,,	
		o , ,	a component which will installed in	nto a final equipment. The final e	auipment must be re-confirmed	
OTHERS		that it still meets EMC directive		tto a final oquipmont. The final o		
	MTDE					
		301.7K hrs min. MIL-	· · · ·			
	DIMENSION	40x90x100mm (WxHxD				
	PACKING	0.3Kg; 42pcs / 13.6 Kg	/ 0.82CUFT			
			entioned are measured at 230V AC	input, rated load and 25°C of am	bient temperature.	



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



Output Derating VS Input Voltage





PS-S60 Series

Specifications



- Universal AC input/full range
 Protections: Short Circuit / Overload / Overvoltage
- Cooling by free air convection •
- DIN rail mountable
- LED indicator for power on
- No load power consumption < 0.75W
- 100% full load burn-in test
- 3 year warranty

OUTPUT	Cat. No.	PS-S6005	PS-S6012	PS-S6024	PS-S6048
	DC VOLTAGE	5V	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A	1.25A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER	50W	60W	60W	60W
	-				
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	150mVp-p	200mVp-p
			OMHz of bandwidth by using a 12 twi		
	VOLTAGE ADJ. RANGE	5 ~ 6V	12 ~ 15V	24 ~ 30V	48 ~ 56V
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up toler	ance, line regulation and load regula	ation.	
	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/115VAC at f		1.070
	SETUP, RISE TIME	, , ,	,		
INPUT	HOLD UP TIME (Typ.)	Length of set up time is measu 50ms/230VAC / 20ms/1	red at cold first start. Turning ON/OF 15VAC at full load	FF the power supply may lead to	increase of the set up time.
	VOLTAGE RANGE	85 ~ 264VAC 120 ~	370VDC		
	FREQUENCY RANGE	47~63Hz	0.0.20		
			960/	0.00/	070/
	EFFICIENCY (Typ.)	78%	86%	88%	87%
	AC CURRENT (max)	1.8A/115VAC; 1A/230V			
	INRUSH CURRENT (Typ.)	COLD START: 30A/115V	AC; 60A/230VAC		
PROTECTION	LEAKAGE CURRENT	≤1mA/ 240VAC			
	OVERLOAD PROTECTION	105% ~ 150% rated ou		6 6 14 1/16 i	
	OVERVOLTAGE PROTECTION	6.25 ~ 7.25V	t limiting, recovers automatically at $15.6 \sim 18V$	31.2 ~ 36V	57.6 ~ 64.8V
	OVER TEMPERATURE PROTECTION		rvoltage, re-power on to recover n at 70°C constant current	limiting / output voltage	goes to 0:
ENVIRONMENT	DC OK AKTIV SIGNAL (max.)	re-power on to recover Relay contact rating (ma		initiality / output voltage	9000 10 0,
	. ,				
	WORKING TEMP.	· ·	output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-cond	lensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95%	6 RH		
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)			
	VIBRATION	()	z, 2G 10min. / 1cycle, 60 r	nin each long X Y 7 ave	19
CAFETV & EMO	MOUNTING	Compliance to IEC6006			
SAFETY & EMC	MOONTING		0-2-0		
	SAFETY STANDARDS	UL508			
		EN60950-1 compliant			
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-F	G: 1.5KVAC 0/P-FG: 0.5ł	KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, 0/P-FG: ≥100M 0hms/500VDC (25°C; 70% RH)			
	EMI CONDUCTION & RADIATION	Compliance to EN5501	```	, 10/01111	
	EIVIT CUNDUCTION & RADIATION		1		
		EN55022 (CISPR22)			
		EN61204-3 Class B			
	HARMONIC CURRENT	Compliance to EN61000)-3-2,-3		
	EMS IMMUNITY	Compliance to EN61000	0-4-2,3,4,5,6,8,11; EN5502	24; ENV50204; EN61000)-6-2; EN61204-3;
		light industry level; crite	eria A		
			a component which will installed in	nto a final equipment. The final	equipment must be re-confirmed
OTHERS		that it still meets EMC directive			
	MTBF	200 2K bro min Mil			
		299.2K hrs min. MIL-	()		
	DIMENSION	40x90x100mm (WxHxD	,		
	PACKING	0.33Kg; 42pcs / 14.8Kg			
		All parameters NOT specially m	entioned are measured at 230V AC	input, rated load and 25°C of an	nbient temperature



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

Ta=25℃



PS-S100 Series

Specifications



- 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
- LED indicator for power on
- 100% full load burn-in test
- 3 year warranty

OUTPUT	Cat. No.	PS-S10012	PS-S10024	PS-S10048		
	DC VOLTAGE	12V	24V	48V		
	RATED CURRENT	7.5A	4A	2A		
	CURRENT RANGE	0 ~ 7.5A	0 ~ 4A	0 ~ 2A		
	RATED POWER	90W	96W	96W		
	-					
	RIPPLE & NOISE (max)	120mVp-p	150mVp-p	200mVp-p		
		Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.				
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 30V	48 ~ 56V		
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%		
		Tolerance: includes set up tolerance, 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; 300	00ms, 50ms/115VAC at full load	1		
NPUT	HOLD UP TIME (Typ.)	Length of set up time is measured at 50ms/230VAC; 20ms/115VA		supply may lead to increase of the set up tin		
	VOLTAGE RANGE					
	VULIAGE KANGE	85 ~ 264VAC 120 ~ 370V Derating maybe needed under low int	/DC out voltages, please check the derating cu	Irve for more detail		
	FREQUENCY RANGE	47~63Hz				
	POWER FACTOR (Typ.)	$PF \ge 0.95/230VAC; PF \ge 0.95/230VF = 0.95/200VF = 0.95/200VF = 0.95/200VF $	8/115VAC at full load			
	EFFICIENCY (Typ.)	85%	86%	88%		
			0070	0070		
	AC CURRENT (max)	1.3A/115VAC; 0.8A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START: 30A/115VAC; 6	50A/230VAC			
PROTECTION	LEAKAGE CURRENT	≤1mA/ 240VAC				
	OVERLOAD	105% ~ 150% rated output power				
			ing, recovers automatically after fault con 31.2 ~ 36V			
	OVERVOLTAGE	15.6 ~ 18V Protection type: Shut down overvoltag		57.6 ~ 64.8V		
	OVERTEMPERATURE		n heat sink of power transistor			
	OVERTEMPERATORE	Protection type: Shut down overvoltag	•			
	SHORT CIRCUIT PROTECTION			output voltage goes to 0:		
	SHUKI CIKCUII PRUTECTION		70°C constant current limiting /	output voltage goes to 0;		
		re-power on to recover				
ENVIRONMENT	DC OK AKTIV SIGNAL (max.)	Relay contact rating (max.):	30V/1A resistive			
	WORKING TEMP.	-10 ~ +60°C (Refer to outpu	t load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensi				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH				
		-				
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C)				
	VIBRATION	Component: $10 \sim 500$ Hz, 26	10min. / 1cycle, 60 min. each	long X,Y, Z axes		
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6	3			
	SAFETY STANDARDS	UL508				
		ENCODED 1 compliant				
		EN60950-1 compliant				
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC I/P-FG:1.5	KVAC 0/P-FG:0.5KVAC			
		I/P-0/P: 3KVAC I/P-FG:1.5	_	Н		
	ISOLATION RESISTANCE	I/P-O/P: 3KVAC I/P-FG:1.5 I/P-O/P, I/P-FG, O/P-FG: ≥100	KVAC 0/P-FG:0.5KVAC)M 0hms/500VDC/25°C/70% R	н		
		I/P-O/P: 3KVAC I/P-FG:1.5 I/P-O/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011	_	Н		
	ISOLATION RESISTANCE	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22)	_	н		
	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B)M Ohms/500VDC/25°C/70% R	н		
	ISOLATION RESISTANCE	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22))M Ohms/500VDC/25°C/70% R	Н		
	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2	0M Ohms/500VDC/25°C/70% R :,-3	H D204; EN61000-6-2; EN61204-3;		
	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2	0M Ohms/500VDC/25°C/70% R 2,-3 2,3,4,5,6,8,11; EN55024; ENV50			
	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A	0M Ohms/500VDC/25°C/70% R 2,-3 2,3,4,5,6,8,11; EN55024; ENV50	0204; EN61000-6-2; EN61204-3;		
OTHERS_	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A	DM Ohms/500VDC/25°C/70% R ,-3 ,3,4,5,6,8,11; EN55024; ENV50	0204; EN61000-6-2; EN61204-3;		
OTHERS	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A The power supply is considered a com	OM Ohms/500VDC/25°C/70% R ,-3 ,3,4,5,6,8,11; EN55024; ENV50 ponent which will installed into a final ed irectives.	0204; EN61000-6-2; EN61204-3;		
OTHERS	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A The power supply is considered a con re-confirmed that it still meets EMC d 346K hrs min. MIL-HDBK-	OM Ohms/500VDC/25°C/70% R ,-3 ,3,4,5,6,8,11; EN55024; ENV50 ponent which will installed into a final ed irectives.	0204; EN61000-6-2; EN61204-3;		
OTHERS	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A The power supply is considered a con re-confirmed that it still meets EMC d 346K hrs min. MIL-HDBK- 55x90x100mm (WxHxD)	DM Ohms/500VDC/25°C/70% R ,,-3 ,3,4,5,6,8,11; EN55024; ENV50 ponent which will installed into a final ed rectives. 217K (25°C)	0204; EN61000-6-2; EN61204-3;		
)THERS	ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF	I/P-0/P: 3KVAC I/P-FG:1.5 I/P-0/P, I/P-FG, 0/P-FG: ≥100 Compliance to EN55011 EN55022 (CISPR22) EN61204-3 Class B Compliance to EN61000-3-2 Compliance to EN61000-4-2 light industry level; criteria A The power supply is considered a con re-confirmed that it still meets EMC d 346K hrs min. MIL-HDBK- 55x90x100mm (WxHxD) 0.42Kg; 30pcs / 13.6Kg / 0.1	DM Ohms/500VDC/25°C/70% R ,,-3 ,3,4,5,6,8,11; EN55024; ENV50 ponent which will installed into a final ed rectives. 217K (25°C)	D2O4; EN61000-6-2; EN612O4-3; quipment. The final equipment must be		



Block Diagram



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 Output Derating VS Input Voltage 100 100 90 80 80 LOAD (%) LOAD (%) 60 70 60 40 50 20 40 50 70 (VERTICAL) -10 20 30 40 10 0 60 85 95 100 115 120 140 160 180 200 220 240 264 AMBIENT TEMPERATURE (°C) **INPUT VOLTAGE (VAC) 60Hz**

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

Ta=25℃



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 load and 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°C (+140°F) at 80% load UL60950-1, UL508 EN55022 class B EN61000-4-2,3,4,5,6,8,11 ENV50204 EN61204-3 MIL-HDBK-217K

Military Standard:
PS Series - Low Profile



- 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



15-100W Low Profile POWER SUPPLIES



15W Single Output Class II DIN Rail Power Supply



| |

30W Single Output Class II DIN Rail Power Supply

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

						SAVER
Cat. No.	Outp V DC	ut 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-60 Series



PS-100 Series



Terminal Pin. No Assignment

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



PS-15 Series Specifications



- 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
- No load power consumption <0.5W
- 100% full load burn-in test
- 3 year warranty

OUTPUT	Cat. No.	PS-1505	PS-1512	PS-1515	PS-1524			
	DC VOLTAGE	5V	12V	15V	24V			
	RATED CURRENT	2.4A	1.25A	1A	0.63A			
	CURRENT RANGE	0 ~ 2.4A	0 ~ 1.25A	0 ~ 1A	0 ~ 0.63A			
	RATED POWER	12W	15W	15W	15.2W			
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	120mVp-p	150mVp-p			
				12 twisted pair-wire terminated with a				
	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%			
	VOLIAGE I DELITANCE		Dierance, line regulation and load		1.070			
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%			
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%			
	SETUP, RISE TIME	1000ms, 50ms / 230	,	115VAC at full load				
INPUT	HOLD UP TIME (Typ.)	70ms / 230VAC	16ms / 115VA0	; at full load				
	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz						
	EFFICIENCY (Typ.)	77%	84%	83.50%	85%			
	AC CURRENT (max.)	0.88A / 115VAC	0.48A / 230VAC	1	1			
PROTECTION	INRUSH CURRENT (Typ.)							
FROTECTION		COLD START 35A / 115VAC 65A / 230VAC						
	OVERLOAD	105 ~ 160% rated output power						
		Protection type: Constant current limiting recovers automatically after fault condition is removed (Hiccup mode)						
		Constant current operation r	region is within 60 ~ 100% rated	output voltage.				
	OVERVOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V			
ENVIRONMENT		Protection type: Shut down	overvoltage, clamping by zener d	iode				
	WORKING TEMP.	-20 ~ +60°C (Refer t	o output load derating cu	irve)				
	WORKING HUMIDITY	20 ~ 90% RH non-co						
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 9	U					
	TEMP. COEFFICIENT	±0.03% °C (0 ~ 50°C						
	VIBRATION	,	·	60 min. each long X,Y, Z ax	00			
				00 min. each iony A, I, Z ax	65			
SAFETY & EMC	MOUNTING	Compliance to IEC60	068-2-6					
	SAFETY STANDARDS	UL60950-1						
		EN60950-1 complian	ıt					
		Design refer to EN50	178					
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC						
	ISOLATION RESISTANCE		/500VDC (25°C; 70% RH)					
	EMI CONDUCTION & RADIATION	Compliance to EN550	, , ,					
		EN55022 (CISPR22);						
	HARMONIC CURRENT	Compliance to EN610						
	EMS IMMUNITY			55024. ENVE0204. ENG100	0 6 0 5061004 0			
				55024; ENV50204; EN6100	0-0-2, EN01204-3,			
		heavy industry level;						
OTUEDO		,	ered a component which will inst					
OTHERS	I	The final equipment must be	e re-confirmed that it still meets	EMC directives.				
and the second se	MTBF	1172.3K hrs min.	MIL-HDBK-217K (25°C)					
	DIMENSION	25x93x56mm (WxHx						
	PACKING	0.1Kg; 140pcs / 15K	,					
		•	•	OV AC input, rated load and 25°C of a	mbient temperature			
			, at modourou at 20					



Block Diagram

1

2







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

Output Derating VS Input Voltage



PS-30 Series

Specifications



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

OUTPUT	Cat. No.	PS-3005	PS-3012	PS-3015	PS-3024	
	DC VOLTAGE	5V	12V	15V	24V	
	RATED CURRENT	3A	2A	2A	1.5A	
	CURRENT RANGE	0 ~ 3A	0 ~ 2A	0 ~ 2A	0 ~ 1.5A	
	RATED POWER	15W	24W	30W	36W	
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	
			20MHz of bandwidth by using a 12 tw			
	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 tolera	ance, line regulation and load regula	ation.		
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	
	SETUP, RISE TIME	100ms, 30ms / 230VAC	100ms, 30ms / 115VAC	at full load		
INPUT	HOLD UP TIME (Typ.)	100ms / 230VAC	21ms / 115VAC at full lo			
	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	74%	81%	82%	83%	
	AC CURRENT (Typ.)	0.88A / 115VAC	0.48A / 230VAC			
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 15A / 115	vac; 30a / 230vac			
	OVERLOAD	105 ~ 160% rated output power				
		Protection type: Constant currer	nt limiting recovers automatically af	ter fault condition is removed		
	OVERVOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	
ENVIRONMENT		Protection type: Shut down over	rvoltage, clamping by zener diode			
	WORKING TEMP.	$-20 \sim +60^{\circ}$ C (Refer to output load derating curve)				
	WORKING HUMIDITY	20 ~ 90% RH non-cond	lensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95%	6 RH			
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)				
	VIBRATION	Component: 10 ~ 500H	z, 2G 10min. / 1cycle, 60 r	nin. each long X,Y, Z axe	S	
SAFETY & EMC	MOUNTING	Compliance to IEC6006	8-2-6			
and the second second second second	SAFETY STANDARDS	UL60950-1				
		EN60950-1 compliant				
		Design refer to EN5017	8			
	WITHSTAND VOLTAGE	I/P-0/P: 3KVAC				
	ISOLATION RESISTANCE	I/P-0/P: 100M 0hms / 5	500VDC			
	EMI CONDUCTION & RADIATION	Compliance to EN55011				
		EN55022 (CISPR22) Cla	ss B			
	HARMONIC CURRENT	Compliance to EN61000)-3-23			
	EMS IMMUNITY)-4-2,3,4,5,6,8,11; EN5502	24: ENV50204: EN61000	-6-2: FN61204-3:	
		heavy industry level; cri		,	,,	
			a component which will installed i	nto a final equinment. The final e	auinment must be re-confirmed	
OTHERS		that it still meets EMC directive				
	MTBF	441.5K hrs min. MIL-	-			
	DIMENSION	78x93x56mm (WxHxD)	()			
	PACKING	0.27Kg; 48pcs / 14Kg /	1 02CUFT			
		e: 1 e	entioned are measured at 230V AC	input rated load and 25°C of am	hient temperature	
				input, rator load and 20 0 01 all	sione tomporatarb	



Terminal Pin. No Assignment

AC/L

AC/N

+V

1

2

3,4

Block	Diagra	m



Derating Curve





PS-45 Series

Specifications



- 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

OUTPUT	Cat. No.	PS-4505	PS-4512	PS-4515	PS-4524
	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	5A	3.5A	2.8A	2A
	CURRENT RANGE	0 ~ 5A	0 ~ 3.5A	0 ~ 2.8A	0 ~ 2A
	RATED POWER	25W	42W	42W	48W
	RIPPLE & NOISE (max)	100mVp-p	200mVp-p	240mVp-p	480mVp-p
			20MHz of bandwidth by using a 12	1	
	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 tole	rance, line regulation and load reg	ulation.	
	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 / 230VA	C at full load		
INPUT	HOLD UP TIME (Typ.)	60ms / 230VAC at full	load		
	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	72%	77%	77%	80%
	AC CURRENT (max.)	1.5A / 115VAC	0.75A / 230VAC	1	
	INRUSH CURRENT (Typ.)	COLD START 28A / 11	5vac: 56a / 230vac		
PROTECTION	LEAKAGE CURRENT	≤1mA / 240VAC	,		
	OVERLOAD	105 ~ 160% rated out	put power		
		Protection type: Constant curre	ent limiting recovers automatically	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 ov	ervoltage, clamping by zener diode		
	OVERTEMPERATURE	Tj 135°C typically (U1)	detect on heat sink of pov	ver transistor	
ENVIRONMENT			ervoltage, re-power on to recover		
	WORKING TEMPERATURE	-10 ~ +50°C (Refer to	output load derating curve	9)	
	WORKING HUMIDITY	20 ~ 90% RH non-con	densina	,	
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95°	0		
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C			
	VIBRATION		, Iz, 2G 10min. / 1cycle, 60	min each long X V 7 av	'AQ
SAFETY & EMC	MOUNTING	Compliance to IEC6006			
SAFEIT & EIVIG		•	0-2-0		
	SAFETY STANDARDS	UL508			
		EN60950-1 compliant			
	WITHSTAND VOLTAGE		G:1.5KVAC 0/P-FG:0.5K		
	ISOLATION RESISTANCE	, ,	6: 100M Ohms / 500VDC	· · · ·	
	EMI CONDUCTION & RADIATION	Compliance to EN5501	1; EN55022 (CISPR22) Cla	ass B	
	HARMONIC CURRENT	Compliance to EN6100	0-3-2,-3		
	EMS IMMUNITY	Compliance to EN6100	0-4-2,3,4,5,6,8,11; ENV5	0204; EN55024; EN6100	0-6-2;
		heavy industry level; c	riteria A		
		The power supply is considered	d a component which will installed	l into a final equipment.	
OTHERS		The final equipment must be r	e-confirmed that it still meets EMC	directives.	
Contraction of Contraction	MTBF	364.6K hrs min. MIL	-HDBK-217K (25°C)		
	DIMENSION	93x78x67mm (LxWxH)	()		
	PACKING	0.31Kg; 48pcs / 16.1K	a / 1.3CUFT		



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



Derating Curve



Static Characteristic (24V)





PS-60 Series

Specifications



- 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

OUTPUT	Cat. No.	PS-6005	PS-6012	PS-6015	PS-6024
	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	32.5W	54W	60W	60W
	RIPPLE & NOISE (max)	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	Ripple & noise are measured at 2 4.75 ~ 5.5V	0MHz of bandwidth by using a 12 tw 11.1 ~ 13.2V	visted pair-wire terminated with a 13.5 ~ 16.5V	$21.6 \sim 26.4V$
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%	±1.0%
			nce, line regulation and load regulation	1	1
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		200ms, 30ms / 115VAC		
INPUT	HOLD UP TIME (Typ.)	100ms / 230VAC	23ms / 115VAC at full lo	bad	
	VOLTAGE RANGE	85 ~ 264VAC	124 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz 76%	82%	83%	84%
	EFFICIENCY (Typ.) AC CURRENT (max.)	1.2A / 115VAC	0.8A / 230VAC	0370	0470
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 18A / 115			
	OVERLOAD	105 ~ 160% rated outp	ut power		
		Protection type: Constant curren	t limiting recovers automatically af	ter fault condition is removed	
	OVERVOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
ENVIRONMENT		Protection type: Shut down over	voltage, re-power on to recover		
	WORKING TEMP.	(utput load derating curve)		
		20 ~ 90% RH non-cond	U		
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	-40 ~ +85°C, 10 ~ 95% ±0.03% / °C (0 ~ 50°C)	пп		
	VIBRATION	(/	/ 1cycle, 60 min. each lon	a X.Y. Z axes	
SAFETY & EMC	MOUNTING	Compliance to IEC60068		3 . , , ,	
	SAFETY STANDARDS	UL60950-1			
		EN60950-1 compliant			
		Design refer to EN50178	3		
	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC			
	ISOLATION RESISTANCE	I/P-0/P: 100M 0hms/50	,		
	EMI CONDUCTION & RADIATION	Compliance to EN55011 EN55022 (CISPR22) Clas			
	HARMONIC CURRENT	Compliance to EN61000			
	EMS IMMUNITY		-4-2,3,4,5,6,8,11; ENV502	204; EN55024; EN6100	0-6-2; EN61204-3;
		heavy industry level; cri	teria A		
		The power supply is considered	a component which will installed i	nto a final equipment. The final	equipment must be re-confirme
OTHERS		that it still meets EMC directives	3.		
	MTBF	216.2K hrs min. MIL-I	HDBK-217K (25°C)		
	DIMENSION	78x93x56mm (WxHxD)	4 0001157		
	PACKING	0.3Kg; 48pcs / 15.4Kg /			
		All parameters NOT specially me	entioned are measured at 230V AC	input, rated load and 25°C of a	mbient temperature



Block Diagram



Derating Curve



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

Output Derating VS Input Voltage



PS-100 Series

Specifications



- 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

OUTPUT	Cat. No.	PS-10012	PS-10015	PS-10024
	DC VOLTAGE	12V	15V	24V
	RATED CURRENT	7.5A	6.5A	4.2A
	CURRENT RANGE	0 ~ 7.5A	0 ~ 6.5A	0 ~ 4.2A
	RATED POWER	90W	97.5W	100.8W
	RIPPLE & NOISE (max)	120mVp-p	120mVp-p	150mVp-p
		Ripple & noise are measured at 20MHz of bandwid		
	VOLTAGE ADJ. RANGE	12 ~ 15V	15 ~ 18V	24 ~ 29V
	VOLTAGE TOLERANCE	±2.0%	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation	and load regulation.	
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		80ms / 115VAC at full load	1
NPUT	HOLD UP TIME (Typ.)		115VAC at full load	
	VOLTAGE RANGE			1
			370VDC [Connect AC/L(+), AC/N(-)]
	FREQUENCY RANGE	47 ~ 63Hz	070/	0.00/
	EFFICIENCY (Typ.)	87%	87%	89%
DOTECTION	AC CURRENT (max.)		/ 230VAC	
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 30A / 115VAC; 45A / 2	30VAC	
	OVERLOAD	105 ~ 135% rated output power		
		Protection type: Constant current limiting recovers Under short circuit or overload $\geq 150\%$ conditions,		then ao into constant
		current protection mode \geq 130 % conditions,	output voltage may shut down for 5 sec. and	unen go into constant
	OVERVOLTAGE	16 ~ 20V	19 ~ 23V	30 ~ 35V
		Protection type: Shut down overvoltage, re-power	on to recover	
	OVERTEMPERATURE	$90^{\circ}C \pm 15^{\circ}C$ (RTH2) detect on heat sin		
ENVIRONMENT		Protection type: Shut down overvoltag		
	WORKING TEMP.	$-20 \sim +60^{\circ}$ C (Refer to output load der	, I	
		· ·		
	WORKING HUMIDITY			
	WORKING HUMIDITY	$20 \sim 90\%$ RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH		
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C)	in each long V.V.7 avoa	
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m	in. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6	in. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1	iin. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant	iin. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1	iin. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant	iin. each long X,Y, Z axes	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178		
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC	'0% RH)	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M 0hms/500VDC (25°C; 7	'0% RH)	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M 0hms/500VDC (25°C; 7 Compliance to EN61204-3; EN55022	'0% RH)	
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M 0hms/500VDC (25°C; 7 Compliance to EN61204-3; EN55022 C	'0% RH) (CISPR22) Class B	00-6-2; EN61204-3;
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	-40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M 0hms/500VDC (25°C; 7 Compliance to EN61204-3; EN55022 Compliance to EN61000-3-2,-3 Harmonic current test @ 90% load	'0% RH) (CISPR22) Class B	00-6-2; EN61204-3;
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	$\begin{array}{c} -40 \sim +85^{\circ}\text{C}, 10 \sim 95\% \text{ RH} \\ \pm 0.03\% / ^{\circ}\text{C} (0 \sim 50^{\circ}\text{C}) \\ 10 \sim 500\text{Hz}, 2G 10\text{min.} / 1\text{cycle, 60 m} \\ \text{Compliance to IEC60068-2-6} \\ \hline UL60950-1 \\ \text{EN60950-1 compliant} \\ \text{Design refer to EN50178} \\ I/P-0/P: 3KVAC \\ I/P-0/P: 3KVAC \\ I/P-0/P: 100M 0\text{hms}/500VDC (25^{\circ}\text{C}; 7) \\ \text{Compliance to EN61204-3; EN55022 for Compliance to EN61204-3; EN55022 for Compliance to EN61000-3-2,-3 \\ \text{Harmonic current test @ 90\% load} \\ \text{Compliance to EN61000-4-2,3,4,5,6,8} \\ \text{heavy industry level; criteria A} \\ \text{The power supply is considered a component which } \end{array}$	0% RH) (CISPR22) Class B (,11; ENV50204; EN55024; EN610(, ,
SAFETY & EMC	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	-40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min. / 1cycle, 60 m Compliance to IEC60068-2-6 UL60950-1 EN60950-1 compliant Design refer to EN50178 I/P-0/P: 3KVAC I/P-0/P: 100M 0hms/500VDC (25°C; 7 Compliance to EN61204-3; EN55022 C Compliance to EN61000-3-2,-3 Harmonic current test @ 90% load Compliance to EN61000-4-2,3,4,5,6,8 heavy industry level; criteria A	0% RH) (CISPR22) Class B (,11; ENV50204; EN55024; EN610(
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	$\begin{array}{c} -40 \sim +85^{\circ}\text{C}, 10 \sim 95\% \text{ RH} \\ \pm 0.03\% / ^{\circ}\text{C} (0 \sim 50^{\circ}\text{C}) \\ 10 \sim 500\text{Hz}, 2G 10\text{min.} / 1\text{cycle, 60 m} \\ \text{Compliance to IEC60068-2-6} \\ \hline UL60950-1 \\ \text{EN60950-1 compliant} \\ \text{Design refer to EN50178} \\ I/P-0/P: 3KVAC \\ I/P-0/P: 3KVAC \\ I/P-0/P: 100M 0\text{hms}/500VDC (25^{\circ}\text{C}; 7) \\ \text{Compliance to EN61204-3; EN55022 for Compliance to EN61204-3; EN55022 for Compliance to EN61000-3-2,-3 \\ \text{Harmonic current test @ 90\% load} \\ \text{Compliance to EN61000-4-2,3,4,5,6,8} \\ \text{heavy industry level; criteria A} \\ \text{The power supply is considered a component which } \end{array}$	'0% RH) (CISPR22) Class B 1,11; ENV50204; EN55024; EN6100 h will installed into a final equipment. The fina	
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	$\begin{array}{c} -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}, \ 2G \ 10\text{min}. \ / \ 1\text{cycle}, \ 60 \ \text{m} \\ \text{Compliance to IEC60068-2-6} \\ \hline UL60950-1 \\ \text{EN60950-1 compliant} \\ \text{Design refer to EN50178} \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	'0% RH) (CISPR22) Class B 1,11; ENV50204; EN55024; EN6100 h will installed into a final equipment. The fina	
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF	$\begin{array}{r} -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}, \ 2G \ 10\text{min}. \ / \ 1\text{cycle}, \ 60 \ \text{m} \\ \text{Compliance to IEC60068-2-6} \\ \hline UL60950-1 \\ \text{EN60950-1 compliant} \\ \text{Design refer to EN50178} \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	'0% RH) (CISPR22) Class B 1,11; ENV50204; EN55024; EN6100 h will installed into a final equipment. The fina	



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

Block Diagram



Derating Curve





Industrial Metal Case Single Phase and Three Phase Power Supply

The Altech Industrial metal case power supplies have been optimized for use in practically any DC power applications, with a wide range of AC/DC inputs and an extended temperature range of -20° C up to $+70^{\circ}$ 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:
- Military standard:

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 $+50^{\circ}$ C (-4° to $+122^{\circ}$ 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 MIL-HDBK-217K

PS Series - Metal Case



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



75-240W Single Phase POWER SUPPLIES





75W Single Output DIN Rail Power Supply

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



110/220V

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 V DC	ut A	Tol. %	Ripple & Noise	Efficiency	NOTES
PSP-24024	24V DC	10A	±1%	80 mVp-p	84%	
PSP-24048	48V DC	5A	±1%	150 mVp-p	85%	



SPECIFICATIONS

PS-75 Series



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

FG ⊕ AC/N

AC/L

1

2

3

Terminal Pin. No Assign. (TB2)

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

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

Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 55.5x125x100mm (2.20x4.95x3.95 inches) Packaging: 1/box; 1.35lbs / 0.60Kg



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

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

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

Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 65.5x125x100mm (2.56x4.95x3.95 inches) Packaging: 1/box; 1.75lbs / 0.79Kg

PSH-120 High Input Series



100

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

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

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

Connection: Input - 3 poles, Output - 4 poles screw terminal Size (WxHxD): 65.5x125x100mm (2.56x4.95x3.95 inches) Packaging: 1/box; 1.65lbs / 0.75Kg

PSP-240 Series



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

Terminal	Pin.	No	Assian.	(TB2)
Torrinia			/ toolgii.	('

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

Universal Input: 85-264V AC, 120-370V DC full range, 2.8A @ 115V AC, 1.4A @ 230V AC Built in active Power Factor Correction function. PF>0.95 Connection: Input - 3 poles, Output – 4 poles screw terminal Size (WxHxD): 125x125x100mm (4.95x4.95x3.95 inches) Packaging: 1/box; 2.7lbs / 1.2Kg

	PS-75 Set Specificatio	ns	ures: Universe al AC input / full range Protections: Short Circuit / Over I Overvoltage / Over temperature Cooling by free air convection DIN rail mountable UL508 (industrial control equipm LED indicator for power on 100% full load burn-in test Fix switching frequency at 50KH: 3 year warranty	ent) approved
OUTPUT	Cat. No.	PS-7512	PS-7524	PS-7548
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	12 ~ 14V ±2.0%	24V 3.2A $0 \sim 3.2A$ 76.8W 150mVp-p by using a 12 twisted pair-wire terminated with a 0.1µ 24 ~ 28V $\pm 1.0\%$	$\begin{array}{c} 48V\\ 1.6A\\ 0 \sim 1.6A\\ 76.8W\\ 240mVp-p\\ F \& 47\mu F \text{ parallel capacitor.}\\ 48 \sim 53V\\ \pm 1.0\% \end{array}$
INPUT	LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)		and load regulation. $\pm 0.5\%$ $\pm 1.0\%$ 60ms / 115VAC at full load $115VAC at full load$	±0.5% ±1.0%
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	85 ~ 264VAC 120 ~ 370VDC 47 ~ 63Hz 76% 1.6 A / 115VAC 0.96A / 230VAC COLD START 20A / 115VAC ≤ 1mA / 240VAC	80% 40A / 230VAC	81%
ENVIRONMENT	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	$\begin{array}{l} 105 \sim 150\% \ rated \ output \ power\\ \mbox{Protection type: Constant current limiting, recovers}\\ 15 \sim 16.5V\\ \mbox{Protection type: Shut down overvoltage, re-power o}\\ 85^{\circ}C \pm 5^{\circ}C \ (TSW1) \ detect \ on \ heat \ sink\\ \mbox{Protection type: Shut down overvoltage, recovers a} \end{array}$	29 ~ 34V on to recover to f power transistor	58 ~ 65V
SAFETY & EMC	Working Temp. Working Humidity Storage Temp., Humidity Temp. Coefficient Vibration Mounting	-10 ~ +60°C (Refer to output load der 20 ~ 90% RH non-condensing -20 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 min Compliance to IEC60068-2-6	ating curve)	
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / Compliance to EN55011; EN55022 (Cl Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8 heavy industry level; criteria A		, , ,
	MTBF Dimension Packing	123.1K hrs min. MIL-HDBK-217K (2: 55.5x125.2x100mm (WxHxD) 0.6Kg; 20pcs / 13Kg / 1.29CUFT All parameters NOT specially mentioned are measu	5°C) red at 230V AC input, rated load and 25°C of ambier	nt temperature.



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

Terminal Pin. No Assignment (TB2)

 Pin No.
 Assignment

 1,2
 DC 0 UTPUT +V

 3,4
 DC 0 UTPUT -V

Block Diagram



Derating Curve



Output Derating VS Input Voltage



	PS-120 S Specificatio	ns 👰 (€ CB	 Universal AC input / full range Protections: Short Circuit / Ov Overvoltage/Over temperature Cooling by free air convection DIN rail mountable TS-35/ 7.5 UL 508 (industrial control equit LED indicator for power on 100% full load burn-in test Fix switching frequency at 50k 3 year warranty 	er load / or 1 5 pment) approved
OUTPUT	Cat. No.	PS-12012	PS-12024	PS-12048
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max)	12V 10A 0 ~ 10A 120W 80mVp-p	24V 5A 0 ~ 5A 120W 80mVp-p	48V 2.5A 0 ~ 2.5A 120W 100mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	12 ~ 14V ±2.0%	vidth by using a 12 twisted pair-wire terminated with a $\begin{array}{c} 24 \sim 28V \\ \pm 1.0\% \end{array}$	0.1µF & 47µF parallel capacitor. 48 ~ 53V ±1.0%
INPUT	LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)		lation and load regulation. ±0.5% ±1.0% 5, 70ms / 115VAC at full load ns / 115VAC at full load	±0.5% ±1.0%
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	88 ~ 132VAC / 176 ~ 264VAC by s 47 ~ 63Hz 80% 2.6 A / 115VAC 1.6A / 230VAC COLD START 20A / 115VAC ≤ 3.5mA / 240VAC	84%	248 ~ 370VDC 85%
	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	$\begin{array}{l} 105 \sim 150\% \mbox{ rated output power} \\ \mbox{Protection type: Constant current limiting, recc} \\ 15 \sim 16.5V \\ \mbox{Protection type: Shut down overvoltage, re-po} \\ 85^{\circ}C \pm 5^{\circ}C \mbox{ (TSW1)} \end{array}$	overs automatically after fault condition is removed $29 \sim 33V$ wer on to recover $90^{\circ}C \pm 5^{\circ}C (TSW1)$	58 ~ 65V 90°C ± 5°C (TSW1)
ENVIRONMENT	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	Protection type: Shut down overvoltage, recov $-10 \sim +60^{\circ}$ C (Refer to output load $20 \sim 90\%$ RH non-condensing $-20 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 Compliance to IEC60068-2-6		
	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	heavy industry level; criteria A The power supply is considered a component	ns / 500VDC	
OTHERS	MTBF DIMENSION PACKING	that it still meets EMC directives. 136.8K hrs min. MIL-HDBK-217ł 65.5x125.2x100mm (WxHxD) 0.79Kg; 20pcs / 16.5Kg / 1.29CUF All parameters NOT specially mentioned are m		nbient temperature.



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

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

Static Characterisitcs (24V)

Block Diagram



Derating Curve





PSH-120 High Input Series

Specifications



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

OUTPUT	Cat. No.	PSH-12024	PSH-12048
	DC VOLTAGE RATED CURRENT CURRENT RANGE	24V 5A 0 ~ 5A	48V 2.5A 0 ~ 2.5A
	RATED POWER	120W	120W
	RIPPLE & NOISE (max)	80mVp-p	80mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pa	
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
	LINE REGULATION	Tolerance: includes set up tolerance, line regulation and load regulation. $\pm 0.5\%$	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
INPUT	SETUP, RISE, HOLD UP TIME		30ms / 500VAC at full load
	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT (max.)	340 ~ 550VAC 480 ~ 780VDC 47 ~ 63Hz 85% 0.65A / 400VAC 0.6A / 500VAC COLD START 50A	86%
PROTECTION	INRUSH CURRENT (max.) LEAKAGE CURRENT	\leq 3.5 mA / 530VAC	
THOTEOHON			
	OVERLOAD	105 ~ 160% rated output power	
	OVERVOLTAGE	Protection type: Constant current limiting, recovers automatically after fault 30 ~ 36V	t condition is removed 59 ~ 66V
	OVERVOLIAGE	Protection type: Shut down overvoltage, re-power on to recover	59~000
	OVERTEMPERATURE	$85^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sink of power switch)	
ENVIRONMENT		Protection type: Shut down overvoltage, recovers automatically after tempe	erature goes down
SAFETY & EMC	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	$-20 \sim +60^{\circ}$ C (Refer to output load derating curve) $20 \sim 90\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z Compliance to IEC60068-2-6	axes
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION EMS IMMUNITY	UL60950-1 approved IEC60950-1 CB compliant I/P-0/P: 3KVAC //P-FG: 1.5KVAC 0/P-FG: 0.5KVAC I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms / 500VDC (25°C; 7(Compliance to EN55011 (CISPR11); EN55022 (CISPR22 Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; E heavy industry level; criteria A The power supply is considered a component which will installed into a fin that it still meets EMC directives.); EN61204-3 Class B N61204-3; EN61000-6-2; (EN50082-2),
	MTBF Dimension Packing	178.7K hrs min. MIL-HDBK-217K (25°C) 65.5x125.2x100mm (WxHxD) 0.75Kg; 20pcs / 16Kg / 1.29CUFT All parameters NOT specially mentioned are measured at 230V AC input, ra	ated load and 25°C of ambient temperature.



Terminal	Pin No.	Assignmer	nt (TB1)

Pin No.	Assignment
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





PSP-240 Series

Specifications



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

OUTPUT	Cat. No.	PSP-24024	PSP-24048
	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	RIPPLE & NOISE (max)	80mVp-p	150mVp-p
		Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pai	
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation and load regulation.	
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 40ms / 230VAC 800ms, 40ms / 115VAC at	full load
NPUT	HOLD UP TIME (Typ.)	24ms / 230VAC 24ms / 115VAC at full load	
		05 004/40 100 070/00	
	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC	
	FREQUENCY RANGE	Derating may be needed under low input voltages, please check the derati $47 \sim 63 Hz$	ng curve for more detail
	POWER FACTOR (Typ.)	0.96 / 230VAC 0.99 / 115VAC at full load	
	EFFICIENCY (Typ.)	84%	85%
			0570
	AC CURRENT (max.)	2.8A / 115VAC; 1.4A / 230VAC	
	INRUSH CURRENT (Typ.)	COLD START 27A / 115VAC 45A / 230VAC	
PROTECTION	LEAKAGE CURRENT	\leq 3.5mA / 240VAC	
	OVERLOAD	105 ~ 150% rated output power	
		Protection type: Constant current limiting, recovers automatically after fault	t condition is removed
	OVERVOLTAGE	30 ~ 36V	54 ~ 60V
		Protection type: Shut down overvoltage, re-power on to recover	
	OVERTEMPERATURE	$100^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sink of power transist	or)
ENVIRONMENT		Protection type: Shut down overvoltage, recovers automatically after temperature	erature goes down
	WORKING TEMP.	$-10 \sim +70^{\circ}$ C (Refer to output load derating curve)	
	WORKING HUMIDITY	$20 \sim 90\%$ RH non-condensing	
		-20 ~ +85°C, 10 ~ 95% RH	
	STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	$\pm 0.03\%$ / °C (0 ~ 50°C)	
			avea
	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	
		UL60950-1	
		EN60950-1 compliant	
	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	
	EMS IMMUNITY	Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; E	NEE024: ENG1000 6 2: (ENE0082 2):
			105024, $1001000-0-2$, $(1050002-2)$,
		heavy industry level; criteria A The power supply is considered a component which will installed into a fin	al equipment. The final equipment must be re-confirm
DTHERS		that it still meets EMC directives.	
	MTBF	280 0K hrs min MIL_HDPK 217K (25°C)	
		289.9K hrs min. MIL-HDBK-217K (25°C) 125.5x125.2x100mm (WxHxD)	
	DIMENSION		
	PACKING	1.2Kg; 12pcs / 15.5Kg / 1.29CUFT	
		All parameters NOT specially mentioned are measured at 230V AC input, ra	ated load and 25°C of ambient temperature.



Terminal Pin Number Assignment (TB1)

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

Terminal Pin Number Assignment (TB2)

Output Derating VS Input Voltage

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

Block Diagram







480W Single Phase POWER SUPPLIES





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

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

PSP-480 Series (220V AC input only)



TB1 Terminal Pin. No Assignment 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

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

3.4

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)



В1	Ierminal	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

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



PSP-480 Series

Specifications



220V ONLY

- 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

OUTPUT	Cat. No.	PSP-48024	PSP-48048
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max)	24V 20A 0 ~ 20A 480W 120mVp-p	48V 10A 0 ~ 10A 480W 120mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	24 ~ 28V ±1.0%	y using a 12 twisted pair-wire terminated with a 0.1 μ F & 47 μ F parallel capacitor. 48 \sim 53V $\pm1.0\%$
INPUT	LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	Tolerance: includes set up tolerance, line regulation $\pm 0.5\%$ $\pm 1.0\%$ 1200ms, 40ms / 230VAC at full load 16ms / 230VAC	and load regulation. ±0.5% ±1.0%
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.) AC CURRENT (Typ.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	180 ~ 264 VAC by switch 250 ~ 3 47 ~ 63Hz ≥0.7 89% 4A / 230VAC COLD START 27A / 115VAC 45A / ≤ 3.5mA / 240VAC	70VDC 230VAC
	OVERLOAD OVERVOLTAGE	105 ~ 150% rated output power Protection type: Constant current limiting, recovers a 30 ~ 36V	54 ~ 60V
ENVIRONMENT	OVERTEMPERATURE	Protection type: Shut down overvoltage, re-power or $100^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sink Protection type: Shut down overvoltage, recovers au	of power switch)
SAFETY & EMC	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +70°C (Refer to output load dera 20 ~ 95% RH non-condensing -20 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 min Compliance to IEC60068-2-6	
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	I/P-0/P, I/P-FG, 0/P-FG: ≥100M 0hms Compliance to EN55022 (CISPR22); Cla Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8, heavy industry level; criteria A	
	MTBF DIMENSION PACKING	180.9K hrs min. MIL-HDBK-217K (25 227x125.2x100mm (WxHxD) 2.4Kg; 6pcs / 15Kg / 1.75CUFT All parameters NOT specially mentioned are measur	° C) ed at 230V AC input, rated load and 25°C of ambient temperature.



TB1 Terminal Pin. No Assignment

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

TB2 Tern	ninal Pin. No Assig	Inment
Pin No.	Assignment	
1,2	DCOUTPUT +V	

Output Derating VS Input Voltage

1,2	DCOUTPUT +V
3,4	DCOUTPUT-V
-	

Block Diagram



Derating Curve



Line and the second sec	PSP-480S Specificatio	ns	 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
OUTPUT	Cat. No.	PSP-480S24	PSP-480S48
INPUT	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	24V 20A 0 ~ 20A 480W 120mVp-p Ripple & noise are measured at 20MH 24 ~ 28V ±1.0% Tolerance: includes set up tolerance ±0.5% ±1.0% 1200ms, 40ms / 230VAC 23ms / 230VAC 23ms / -	±0.5% ±1.0% 1200ms, 40ms / 115VAC at full load
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.) AC CURRENT (Typ.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	90 ~ 132VAC / 180 ~ 264 47 ~ 63Hz ≥0.7 / 230VAC only 89% 8A / 115VAC 3.2A / 22 COLD START 27A / 115VA ≤ 3.5mA / 240VAC	30VAC
	OVERLOAD	105 ~ 150% rated output	power
	OVERVOLTAGE OVERTEMPERATURE	$30 \sim 36V$ Protection type: Shut down overvolt $100^{\circ}C \pm 5^{\circ}C$ (TSW: detect of	on heat sink of power switch)
ENVIRONMENT	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +70°C (Refer to outp 20 ~ 95% RH non-conden: -40 ~ +85°C, 10 ~ 95% RI ±0.03% / °C (0 ~ 50°C)	sing H ycle, 60 min. each long X,Y, Z axes
	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 UL60950-1 EN60950-1 compliant I/P-O/P: 3KVAC //P-FG: 1 I/P-O/P, I/P-FG, O/P-FG: 10 Compliance to EN55011 ((Compliance to EN61000-3 Compliance to EN61000-4 heavy industry level; criteri The power supply is considered a c	.5KVAC 0/P-FG: 0.5KVAC IOM Ohms / 500VDC / 25°C / 70% RH CISPR11); EN55022 (CISPR22); EN61204-3 Class B -2,-3 -2,3,4,5,6,8,11; ENV50204; EN61204-3; EN61000-6-2 (EN50082-2);
OTHERS	MTBF Dimension Packing	that it still meets EMC directives. 187.9K hrs min. MIL-HDI 227x125.2x100mm (WxHx 2.6Kg; 6pcs / 16.6Kg / 1.7 All parameters NOT specially mention	D)



TB1 Terminal Pin. No Assignment

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

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

Block Diagram







Output Derating VS Input Voltage





240W Three Phase Industrial DIN Rail Power Supply

Cat. No.	Outp 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%	



PARALLEL

960W Three Phase Industrial DIN Rail Power Supply

with PFC and Parallel Function (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%	

SPECIFICATIONS

PST-240 Series



TB1 Terminal Pin. No Assignment

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

TB2 Terminal Pin. No Assignr			
Pin No.		Assignment	

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

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 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)	Parallel 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



PST-240 Series

Specifications



- 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 convectionBuilt-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

OUTPUT	Cat. No.	PST-24024	PST-24048
	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 bandwidth by	using a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation a	nd load regulation.
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
INPUT	SETUP, RISE, HOLD UP TIME	1200ms, 40ms, 20ms / 400VAC; 800m	s, 40ms, 40ms / 500VAC at full load
	VOLTAGE RANGE	Three Phase 340 ~ 550VAC (Dual Phas	e 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	
PROTECTION	LEAKAGE CURRENT	\leq 3.5 mA / 530VAC	
	OVERLOAD	105 ~ 150% rated output power	
		Protection type: Constant current limiting, recovers a	utomatically after fault condition is removed
	OVERVOLTAGE	30 ~ 36V	59 ~ 66V
		Protection type: Shut down overvoltage, re-power on	to recover
	OVERTEMPERATURE	$100^{\circ}C \pm 5^{\circ}C$ (TSW) detect on heat sink	of power switch
ENVIRONMENT		Protection type: Shut down overvoltage, re-power au	tomatically after temperature goes down
	WORKING TEMP.	-20 ~ +70°C (Refer to output load derat	ing 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, 7 axes
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6	
	SAFETY STANDARDS	UL508	
		EN60950-1 compliant	
		UL60950-1	
	WITHSTAND VOLTAGE		/P-FG: 0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms / 5	
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11), EN	
	EMS IMMUNITY		11; ENV50204; EN61000-6-2; (EN50082-2), EN61204-3;
		heavy industry level; criteria A,	, , , , , , , , , , , , , , , , , , , ,
			will installed into a final equipment. The final equipment must be re-confirmed
OTHERS		that it still meets EMC directives.	
	MTBF	114.6K hrs min. MIL-HDBK-217K (25	(C)
	DIMENSION	125.5x125.2x100mm (WxHxD)	
	PACKING	1.3Kg; 12pcs / 16.6Kg / 1.29CUFT	
			ed at 400VAC input, rated load and 25°C of ambient temperature.
	1		



Block Diagram







Output Derating VS Input Voltage





PST-480 Series Specifications



- 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

OUTPUT	Cat. No.	PST-48024 PST-48048	
	DC VOLTAGE RATED CURRENT CURRENT RANGE	24V 48V 20A 10A 0 ~ 20A 0 ~ 10A	
	RATED POWER RIPPLE & NOISE (max)	480W 480W 80mVp-p 80mVp-p	
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	Ripple & noise are measured at 20MHz of bandwidth by using a 12 twisted pair-wire terminated with a 0.1μ F & $24 \sim 28V$ $48 \sim 55V$ $\pm 1.0\%$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and load regulation.	47µr paranei capacitor.
INPUT	LINE REGULATION LOAD REGULATION SETUP, RISE, HOLD UP TIME	$ \begin{array}{c} \pm 0.5\% \\ \pm 0.5\% \\ 1200\text{ms}, 40\text{ms}, 16\text{ms} / 400\text{VAC}; 800\text{ms}, 40\text{ms}, 35\text{ms} / 500\text{VAC} \text{ at full load} \end{array} $	
	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.)	Three Phase 340 ~ 550VAC (Dual Phase operation possible) 480 ~ 780VDC Dual phase operation: derating of 20% is required 47 ~ 63Hz 89% 90% 1.7A / 400VAC; 1.3A / 500VAC 90% COLD START 50A 90%	
PROTECTION	LEAKAGE CURRENT OVERLOAD	≤ 3.5mA / 530VAC 105 ~ 150% rated output power	
	OVERVOLTAGE	Protection type: Constant current limiting, recovers automatically after fault condition is removed 30 ~ 36V 59 ~ 66V Protection type: Shut down overvoltage, re-power on to recover	
ENVIRONMENT	OVERTEMPERATURE	$110^{\circ}C \pm 5^{\circ}C$ (TSW) detect on heat sink of power switch Protection type: Shut down overvoltage, recovers automatically after temperature goes down	
SAFETY & EMC	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +70°C (Refer to output load derating curve) 20 ~ 90% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes Compliance to IEC60068-2-6	
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 EN60950-1 compliant UL60950-1 I/P-O/P: 3KVAC I/P-FG: 1.5KVAC 0/P-FG: 0.5KVAC I/P-O/P, I/P-FG, 0/P-FG: 100M 0hms / 500VDC (25°C: 70% RH) Compliance to EN55011 (CISPR11), EN55022 (CISPR22), EN61204-3 Class B Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204; EN61204-3; EN61000-6- heavy industry level; criteria A The power supply is considered a component which will installed into a final equipment. The final equipme that it still meets EMC directives.	
	MTBF DIMENSION PACKING	91.1K hrs min. MIL-HDBK-217K (25°C) 227x125.2x100mm (WxHxD) 2.5Kg; 6pcs / 16Kg / 1.75CUFT All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25°C of ambient ter	nperature.


TB1 Terminal Pin. No Assignment

FILLING.	Assignment
1	AC/L1
2	AC/L2
3	AC/L3
4	FG 🖶

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

Block Diagram









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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

OUTPUT	Cat. No.	PST-96024 / PST-960P24*	PST-96048 / PST-960P48*
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER	24V 40A 0 ~ 40A 960W	48V 20A 0 ~ 20A 960W
	RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION	80mVp-p Ripple & noise are measured at 20MHz of bandwidth by u 24 ~ 28V $\pm 1.0\%$ Tolerance: includes set up tolerance, line $\pm 0.5\%$ $\pm 0.5\%$	80mVp-p sing a 12 twisted pair-wire terminated with a 0.1μ F & 47μ F parallel capacitor. 48 ~ 55V $\pm 1.0\%$ regulation and load regulation. $\pm 0.5\%$ $\pm 0.5\%$
INPUT	SETUP, RISE, HOLD UP TIME	200ms, 60ms, 14ms / 400VAC 200m	ns, 60ms, 30ms / 500VAC at full load
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT		operation possible in connecting L1, L3, FG) nder certain derating to output load. Please refer to the derating curves for details. 92%
ENVIRONMENT	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	$\begin{array}{l} 105 \sim 125\% \mbox{ rated output power} \\ \mbox{Protection type: Constant current limiting, unit will shut} \\ 30 \sim 36V \\ \mbox{Protection type: Shut down overvoltage, re-power on to} \\ 110^{\circ}C \pm 5^{\circ}C \mbox{ (TSW1) detect on heat sink of} \\ \mbox{85}^{\circ}C \pm 5^{\circ}C \mbox{ (TSW2) detect on heat sink of} \\ \mbox{Protection type: Shut down overvoltage, r} \end{array}$	59 ~ 66V precover of power transistor
SAFETY & EMC	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	-20 ~ +60°C (Refer to output load deratin 20 ~ 90% RH non-condensing -40 ~ +85°C, 10 ~ 95% RH ±0.03% / °C (0 ~ 50°C) 10 ~ 500Hz, 2G 10min./1cycle, 60 min. 6 Compliance to IEC60068-2-6	
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	UL508 EN60950-1 compliant 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 0hms / 500 Compliance to EN55011 (CISPR11), EN50 Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6,8,11 heavy industry level; criteria A	
	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.



TB1 Terminal Pin. No Assignment Pin No. Assignment AC/L1 AC/L2 2 3 AC/L3 FG⊕ 4

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)



Block Diagram



Derating Curve





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 electro-mechanical 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°C ± 5°C (PSC-120/240); 105°C ± 5°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 MIL-HDBK-217K

• Military standard:

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.	Output V DC 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%	

SPECIFICATIONS

PS-C120 Series



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

AC/L

3

Termina	l Pin. No	Assign.	(TB2)
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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. (TE		I Pin. No Assign. (TB1)
	Pin No.	Assignment
	1	FG⊕
	2	AC/N

Terminal		I PIN. NO ASSIGN. (182)
	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,

AC/L

3

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	

Terminal Pin. No Assign. (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7,8	NC

For Parallel Model

Terminal Pin. No Assign. (
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7	P+ (current share)*
8	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

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PS-C120 Series

Specifications



Features:

- High efficiency 91% and low power dissipation
- 150% peak load capability
- Built-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

DUTPUT	Cat. No.	PS-C12012	PS-C12024	PS-C12048
	DC VOLTAGE RATED CURRENT	12V 10A	24V 5A	48V 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	0.1011
		3 seconds max., please refer to pea	k loading curves	
	RIPPLE & NOISE (max)	100mVp-p	100mVp-p	120mVp-p
		Ripple & noise are measured at 20MHz of bandwid		th a 0.1µF & 47µF parallel capacitor
	VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulat	-	
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		is, 60ms / 115VAC at full load	
NPUT	HOLD UP TIME (Typ.)	20ms / 230VAC 20ms	/ 115VAC at full load	
	VOLTAGE RANGE	88 ~ 264VAC 124 ~	- 370VDC	
		Derating may be needed under low input voltage	es, please check the derating curve for more de	etail
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	0.93 / 230VAC 0.96 / 115VAC a	t full load	
	EFFICIENCY (Typ.)	89%	91%	90.50%
	AC CURRENT (Typ.)	1.4A / 115VAC 0.7A / 230VAC		
	INRUSH CURRENT (Typ.)	35A / 115VAC 70A / 230VAC		
PROTECTION	LEAKAGE CURRENT	\leq 1 mA / 240VAC		
	OVERLOAD	Normally works within $110 \sim 150\%$ down overvoltage $\geq 150\%$ rated power, constant curre seconds and shut down overvoltage $14 \sim 17V$	nt limiting with auto-recovery with	
	overnoeinde	Protection type: Shut down overvoltage, re-power		
	OVERTEMPERATURE	$95^{\circ}C \pm 5^{\circ}C$ (TSW: detect on heat sin		
		Protection type: Shut down overvoltage, re-power	. ,	
INVIRONMENT	DC OK RELAY CONTACT RATINGS (max.)	60VDC / 0.3A 30VDC / 1A	30VAC / 0.5A RESISTIVE LOAD	
		$-25 \sim +70^{\circ}$ C (Refer to output load d	erating curve)	
	WORKING TEMP.		• ,	
	WORKING TEMP.	Installation clearances: 40mm on top, 20mm on	the bottom, 5mm on the left and right side are	
		Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacent	the bottom, 5mm on the left and right side are	
	WORKING HUMIDITY	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%~RH$ non-condensing	the bottom, 5mm on the left and right side are	
	Working Humidity Storage Temp., Humidity	$\label{eq:linear} \begin{array}{l} \mbox{Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer 20 ~ 95\% RH non-condensing -40 ~ +85°C, 10 ~ 95\% RH \end{array}$	the bottom, 5mm on the left and right side are	
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C)	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r	
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) 10 ~ 500 Hz, 2G 10min./1cycle, 60 m	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r	
AFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / [°] C ($0 \sim 50^{\circ}$ C) 10 ~ 500 Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r	
AFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^\circ$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / C ($0 \sim 50^\circ$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r	
AFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes	ecommended
AFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC	the bottom, 5mm on the left and right side are it device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0K: 0	ecommended
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-0/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P; J/P-FG, 0/P-FG: \geq 100M Ohr	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH)	ecommended
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m 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: \geq 100M 0hm Compliance to EN55022 (CISPR22) (the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH)	ecommended
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m 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: \geq 100M Ohr Compliance to EN55022 (CISPR22) C Compliance to EN61000-3-2,-3	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes 0/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B	ecommended
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P: 3KVAC I/P-FG: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) C Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610	ecommended
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P: 3KVAC I/P-FG: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) O Compliance to EN55022 (CISPR22) O Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved	ecommended).5KVAC)000-6-2; (EN50082-2);
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m 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: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) (Compliance to EN55022 (CISPR22)) Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr The power supply is considered a component with	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved	ecommended).5KVAC)000-6-2; (EN50082-2);
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P: 3KVAC I/P-FG: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) O Compliance to EN55022 (CISPR22) O Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr The power supply is considered a component wf that it still meets EMC directives.	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved ich will installed into a final equipment. The final	ecommended).5KVAC)000-6-2; (EN50082-2);
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P: 3KVAC I/P-FG: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) O Compliance to EN55022 (CISPR22) O Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr The power supply is considered a component wt that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved ich will installed into a final equipment. The final	ecommended).5KVAC)000-6-2; (EN50082-2);
	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m 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: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) O Compliance to EN55022 (CISPR22) O Compliance to EN61000-3-2,-3 Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr The power supply is considered a component wf that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K 40x125.2x113.5mm (WxHxD)	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved ich will installed into a final equipment. The final	ecommended).5KVAC)000-6-2; (EN50082-2);
SAFETY & EMC	WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF	Installation clearances: 40mm on top, 20mm on permanently with full power. In case the adjacer $20 \sim 95\%$ RH non-condensing $-40 \sim +85^{\circ}$ C, $10 \sim 95\%$ RH $\pm 0.03\%$ / $^{\circ}$ C ($0 \sim 50^{\circ}$ C) $10 \sim 500$ Hz, 2G 10min./1cycle, 60 m Compliance to IEC60068-2-6 UL508 EN60950-1 compliant I/P-O/P: 3KVAC I/P-FG: 1.5KVAC I/P-O/P: 3KVAC I/P-FG: $\geq 100M$ Ohr Compliance to EN55022 (CISPR22) O Compliance to EN55022 (CISPR22) O Compliance to EN61000-3-2,-3 Compliance to EN61000-4-2,3,4,5,6 EN61204-3; heavy industry level; cr The power supply is considered a component wt that it still meets EMC directives. 289.9K hrs min. MIL-HDBK-217K	the bottom, 5mm on the left and right side are t device is a heat source, 15mm clearance is r nin. each long X,Y, Z axes O/P-FG: 0.5KVAC 0/P-DC 0K: 0 ns/500VDC (25°C; 70% RH) Class B i,8,11; ENV50204; EN55024; EN610 iteria A, SEMI F47, GL approved ich will installed into a final equipment. The final	ecommended).5KVAC)000-6-2; (EN50082-2);

Terminal Pin No. Assignment (TB1)			
Pin No.	Assignment		
1	FG 🕀		

1	ru 🖢
2	AC/N
3	AC/L

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	

Block Diagram



Peak Loading





Output Derating VS Input Voltage

Derating Curve



	PS-C240 S Specification	S B	 150% pea Built-in ac Protection Overtemp Cooling b DIN rail m UL 508 (ii EN61000 Built-in D 	y free air convection nountable ndustrial control equipment) approved -6-2(EN50082-2) industrial immunity level C OK relay contact load burn-in test
OUTPUT	Cat. No.	PS-C24024		PS-C24048
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER PEAK CURRENT PEAK POWER RIPPLE & NOISE (max)	24V 10A 0 ~ 10A 240W 15A 360W (3 sec.) 3 seconds max., please refer 100mVp-p		120mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION LOAD REGULATION SETUP, RISE TIME	$\begin{array}{l} 24 \sim 28V\\ \pm 1.0\%\\ \text{Tolerance: includes set up tolerance, lin}\\ \pm 0.5\%\\ \pm 1.0\% \end{array}$	ne regulation and	ing a 12 twisted pair-wire terminated with a 0.1μ F & 47μ F parallel capacitor. $\begin{array}{l} 48 \ \sim \ 55V \\ \pm 1.0\% \\ \text{load regulation.} \\ \pm 0.5\% \\ \pm 1.0\% \\ \text{is} \ / \ 115VAC \ at \ full \ load \end{array}$
INPUT	HOLD UP TIME (Typ.)	20ms / 230VAC	,	/AC at full load
	VOLTAGE RANGE	88 ~ 264VAC	124 ~ 370V	DC
	FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.) AC CURRENT (Typ.)	47 ~ 63Hz 0.93 / 230VAC 0.99 / 115 94% After 30 minutes of burn-in. 2.6A / 115VAC 1.3A / 23	SVAC at full lo OVAC	e check the derating curve for more detail ad
PROTECTION	INRUSH CURRENT (Typ.)	33A / 115VAC 65A / 23	OVAC	
	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	down overvoltage with auto- $\geq 150\%$ rated power, constair recovery within 2 seconds an 29 ~ 33V Protection type: Shut down overvoltage 95°C ± 5°C (TSW: detect on h	recovery nt current lim nd shut down e with auto-recove neat sink of po	overvoltage after 2 seconds 56 ~ 65V ary power switch)
ENVIRONMENT		Protection type: Shut down overvoltage	e, re-power autom	atically after temperature goes down
	DC OK RELAY CONTACT RATINGS (max.) WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT	permanently with full power. In case th 20 ~ 95% RH non-condensin -40 ~ +85°C, 10 ~ 95% RH $\pm 0.03\%$ / °C (0 ~ 50°C)	: load derating 20mm on the bott le adjacent device 19	om, 5mm on the left and right side are recommended when loaded is a heat source, 15mm clearance is recommended.
CAFETV & FMO	VIBRATION	10 ~ 500Hz, 2G 10min./1cyc		ach long X,Y, Z axes
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6		
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY MTBF DIMENSION	EN61204-3; heavy industry le	DM Ohms / 50 PR22) Class F ,-3 ,3,4,5,6,8,11; evel; criteria A ponent which will rectives. -217K (25°C)	3 ENV50204; EN55024; EN61000-6-2; (EN50082-2),
	PACKING	1.03Kg; 12pcs / 13.4Kg / 1.0		
		All parameters NOT specially mentione	d are measured a	t 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.

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

|--|

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



	PS-C480 S Specifications	S	 150% peak Built-in activ Protections: Overtemperation Cooling by f Built-in cons DIN rail moution UL 508(indu EN61000-6- Built-in DC 0 	ree air convection stant current limiting circuit untable Istrial control equipment) approved 2(EN50082-2) industrial immunity level DK relay contact ad burn-in test
OUTPUT	Cat. No.	PS-C48024	o your want	PS-C48048
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER PEAK CURRENT PEAK POWER		ax. and the average	48V 10A $0 \sim 10A$ 480W 15A e output power should not exceed the rate power 100mVa = 1
	RIPPLE & NOISE (max) VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE LINE REGULATION	100mVp-p Ripple & noise are measured at 20M 24 ~ 28V ±1.2% Tolerance: includes set up toleranc ±0.5%		120mVp-p a 12 twisted pair-wire terminated with a 0.1μ F & 47μ F parallel capacitor. 48 ~ 55V ±1.0% d regulation. ±0.5%
INPUT	LOAD REGULATION SETUP, RISE TIME HOLD UP TIME (Typ.)	±1.0% 1500ms, 150ms / 230VA0 14ms / 230VAC at full loa		±1.0% Oms / 115VAC at full load
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.) AC CURRENT (Typ.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	47 ~ 63Hz	v input voltages, please c 115VAC at full load 230VAC	check the derating curve for more detail
	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	Normally works within 11 down overvoltage with au	to-recovery stant current limitir seconds Itage with auto-recovery on heat sink of po	wer switch)
ENVIRONMENT	DC OK RELAY CONTACT RATINGS (max.)	60VDC / 0.3A; 30VDC / 1A	- · ·	
	Working Temp. Working Humidity Storage Temp., Humidity Temp. Coefficient	$\begin{array}{l} -25 \sim +70^{\circ}\text{C} \; (\text{Refer to out} \\ \text{Installation clearances: 40mm on t} \\ \text{permanently with full power. In car } \\ 20 \sim 95\% \; \text{RH non-conder} \\ -40 \sim +85^{\circ}\text{C}, \; 10 \sim 95\% \; \text{F} \\ \pm 0.03\% \; / \; ^{\circ}\text{C} \; (0 \sim 50^{\circ}\text{C}) \end{array}$	put load derating c op, 20mm on the bottom se the adjacent device is nsing RH	surve) , 5mm on the left and right side are recommended when loaded a heat source, 15mm clearance is recommended.
SAFETY & EMC	VIBRATION MOUNTING SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	$I/P-O/P, I/P-FG, O/P-FG: \ge$ Compliance to EN55022 (Compliance to EN61000-3	2-6 1.5KVAC 0/P-F6 100M 0hms/500V/ CISPR22) Class B 3-2,-3 1-2,3,4,5,6,8,11; E	G: 0.5KVAC 0/P-DC 0K: 0.5KVAC DC (25°C; 70% RH) NV50204; EN55024; EN61000-6-2; (EN50082-2),
OTHERS	MTBF Dimension Packing	re-confirmed that it still meets EM 112.9K hrs min. MIL-HE 85.5x125.2x128.5mm (W 1.6Kg; 8pcs / 13.8Kg / 0.9	C directives. DBK-217K (25°C) xHxD) 9CUFT	stalled into a final equipment. The final equipment must be

								H		128.5	
						Ì	DC OK		c O		
Terminal	Pin No. Assignment (TB1) Ter	minal	Pin No. Assignmer	nt (TB2)				/		L
Pin No.	Assignment	Pi	in No.	Assignment		2					
1	FG 🖨		1,2	DC OUTPUT +V		125.2			0		
2	AC/N		3,4	DC OUTPUT -V							4
3	AC/L		5,6	Relay Contact			O DC OK O*+VADJ		١		
			7,8	NC			- 0 - 0				
									d		Ľ
							85.5				

DC OK Relay Contact

-25

20 30

AMBIENT TEMPERATURE (°C)

10

40 50 60

70

(VERTICAL)

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.

INPUT VOLTAGE (V) 60Hz

Paral	PS-C480P With Parallel Fu Specifications	unction S	 150% peak Built-in active Protections: Overtemper Cooling by for the second second	iree air convection stant current limiting circuit untable ring up to 380W (1+7) ustrial control equipment)approved •2(EN50082-2) industrial immunity level OK relay contact ad burn-in test		
OUTPUT	Cat. No.	PS-C480P24	-	PS-C480P48		
	DC VOLTAGE	24V		48V		
	RATED CURRENT	20A		10A		
	CURRENT RANGE	0 ~ 20A		0 ~ 10A		
	RATED POWER	480W		480W		
	PEAK CURRENT	30A		15A		
	PEAK POWER	720W (3 sec.)		134		
		()	the average output power	r should not exceed the rate power		
	RIPPLE & NOISE (max)	100mVp-p	and avoinage output home	120mVp-p		
			MHz of handwidth by using	a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor.		
	VOLTAGE AD & DEVICE		and a bandwidth by uSINg			
	VOLTAGE ADJ. RANGE	24 ~ 28V		48 ~ 55V		
	VOLTAGE TOLERANCE	±1.2%		±1.0%		
		Tolerance: includes set up toleran	nce, line regulation and loa			
	LINE REGULATION	±0.5%		±0.5%		
INPUT	LOAD REGULATION	±1.0%	000000000000000000000000000000000000000	±1.0%		
INFUT	SETUP, RISE, HOLD UP TIME	1500ms, 150ms, 14ms /		ms, 150ms / 115VAC at full load		
	VOLTAGE RANGE		370VDC			
	FREQUENCY RANGE POWER FACTOR (Typ.) EFFICIENCY (Typ.)	47 ~ 63Hz	vw input voltages, please v 115VAC at full load	check the derating curve for more detail		
PROTECTION	AC CURRENT (max.) INRUSH CURRENT (Typ.) LEAKAGE CURRENT	5A / 115VAC 2.5A / 230VAC 40A / 115VAC 80A / 230VAC ≤ 0.6 mA / 240VAC				
	OVERLOAD	down overvoltage with a	uto-recovery nstant current limiti	utput power for more than 3 seconds and then shut ng with auto-recovery within 2 seconds and shut 56 ~ 65V		
		Protection type: Shut down overv				
	OVERTEMPERATURE	$105^{\circ}C \pm 5^{\circ}C$ (TSW: detection of the second		,		
				ically after temperature goes down		
ENVIRONMENT	CURRENT SHARING DC OK RELAY CONTACT RATINGS (max.)	Please see function diag 60VDC / 0.3A; 30VDC / 1		sistive load		
	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION	$\begin{array}{l} -25 \sim +70^{\circ} C \ (\text{Refer to out} \\ \text{Installation clearances: 40mm or} \\ \text{permanently with full power. In c} \\ 20 \sim 95\% \ \text{RH non-conde} \\ -40 \sim +85^{\circ} C, \ 10 \sim 95\% \\ \pm 0.03\% \ / \ ^{\circ} C \ (0 \sim 50^{\circ} C) \\ 10 \sim 500 \text{Hz}, \ 2\text{G 10min.} \end{array}$	tiput load derating of top, 20mm on the bottom ase the adjacent device is ensing RH 1cycle, 60 min. eac	CUTVE) n, 5mm on the left and right side are recommended when loaded a heat source, 15mm clearance is recommended.		
SAFETY & EMC	MOUNTING	Compliance to IEC60068	•			
OTHERS	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 I/P-0/P, I/P-FG, 0/P-FG: Compliance to EN55022 Compliance to EN61000 Compliance to EN61000 EN61204-3; heavy indus	: 1.5KVAC 0/P-Fi ≥100M 0hms/500V (CISPR22) Class B -3-2,-3 -4-2,3,4,5,6,8,11; E try level; criteria A,	NV50204; EN55024; EN61000-6-2; (EN50082-2),		
	MTBF	112.9K hrs min. MIL-H	IDBK-217K (25°C)			
	DIMENSION PACKING	85.5x125.2x128.5mm (V 1.6Kg; 8pcs / 13.8Kg / 0	VxHxD)			

Ter	minal	Pin No. Assignmen	t (TB1)
Pi	n 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
5,6	Relay Contact
7	P+ (current share)
8	P- (current share)



DC OK Relay Contact

		(1) 720W	(2) 720W
Contact Close	When the output voltage reaches the adjusted output voltag		
Contact Open	When the output voltage drop below 90% output voltage.		
Contact Ratings (max.)	30V/1A resistive load		
		480W	240W
Block Diagran	n		о DC ОК о
I/P o	I FILTER TITIFIERS FFC CIRCUIT PFC CONTROL	POWER SWITCHING SWITCHING PUM & PFC CONTROL PWM & PFC	DETECTION CIRCUIT
as below (P+,P- are c (2)The voltage differer minimized that less th (3)The total output cur by the following equat =(The rated current per (4) In parallel operation the manufacture for of (5) When in parallel op be greater than 3% of	available by connecting the units shown onnected mutually in parallel): ce among each output should be an 2% is required. rent must not exceed the value determined on (Output current at parallel operation) r unit x (Number of unit) x 0.9. 18 units is the maximum, please consult her applications. eration, the minimum output load should	+ LOAD	- - + - DC OK P+P- PSU PSU PSU PSU PSU PSU PSU PSU PSU

Peak Loading

Derating Curve

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









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

meenamear approations, and marm	
 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
• Setup, rise, time (typical):	2000ms, 70ms at full load and 230V AC (PSW-120)
	2000ms, 150ms at full load and 230V AC (PSW240/480)
 Withstand voltage: 	I/P-0/P:3KV AC, I/P-FG:1.5KV AC, 0/P-FG:0.5KV AC,
 Working temperature: 	-20 to +70°C (-4° to +158°F),
	refer to output derating curve (PSW-120)
• DC OK signal	Relay contact
 Safety standards: 	UL508 (PSW-240 pending)
• EMC standards:	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
 Military standard: 	MIL-HDBK-217K

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



120-480W Single Phase

WIDE INPUT POWER SUPPLIES





120W Single Output DIN Rail Power Supply

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

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%	

SPECIFICATIONS

PSW-120 Series



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

Terminal Pin. No Assign. (TB2)			
o. Assignment			
Relay Contact			
DC OUTPUT -V			
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. (TB		
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/L2		
3	AC/L1		

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

Universal Input: 180-550V AC, 254-780V DC full range, 1.6A/400V AC, 4A/230V AC

Connection: Input - 3 poles, Output - 6 poles screw terminal Size (WxHxD): 85.5x125.2x128.5mm (3.37x4.93x5.06 inches) Packaging: 1/box; 3.748lbs / 1.7Kg



PSW-120 Series

Specifications



Features:

- \bullet Single and two phase wide input range 180 \sim 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

OUTPUT	Cat. No.	PSW-12012	PSW-12024	PSW-12048
	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
		120mVp-p		150mVp-p
	RIPPLE & NOISE (max)	- FF	120mVp-p	
			vidth by using a 12 twisted pair-wire terminated wit	
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 29V	48 ~ 58V
	VOLTAGE TOLERANCE	±1.5%	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulati	-	1
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
	SETUP, RISE HOLD UP TIME	2000ms, 70ms, 50ms / 400VAC 2	2000ms, 70ms, 10ms / 230VAC at full	load
INPUT		Length of set up time is measured at cold first st	tart. Turning ON/OFF the power supply very quick m	ay lead to increase of the set up time.
	VOLTAGE RANGE	180 ~ 550VAC 254	~ 780VDC	
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	89.5% / 400V	91% / 400V	92% / 400V
	AC CURRENT	0.55A / 400VAC 1.2A / 230VAC		
	INRUSH CURRENT (Typ.)	COLD START 50A		
DEOTEOTION	LEAKAGE CURRENT	$\leq 3.5 \text{ mA} / 530 \text{VAC}$		
PROTECTION	LEARAGE CONTIENT	2 3.3 MA / 330 VAG		
	OVERLOAD	105 ~ 130% rated output power		
		Protection type: Constant current limiting, recover	ers automatically after fault condition is removed	
	OVERVOLTAGE	16 ~ 18V	31 ~ 37V	60 ~ 67V
		Protection type: Shut down overvoltage, re-powe		
	OVERTEMPERATURE) (TSW1) detect on heat sink of power	switch transistor;
		Protection type: Shut down overvoltage, re-powe		
ENVIRONMENT	DC OK SIGNAL	Relay contact rating (max.): 30V / 1A		
	WORKING TEMP.	$-25 \sim +70^{\circ}$ C (Refer to output load de	erating 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)		
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 m	nin. each long X,Y, Z axes Mounting clip	: Compliance to IEC60068-2-6
	SAFETY STANDARDS	UL508 approved		•
	SALETT STANDARDS	IEC60950-1 compliant		
		•		
	WITHSTAND VOLTAGE		O/P-FG:0.5KVAC O/P-DC OK:0.5KVA	AC .
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms/		
			EN55022 (CISPR22), EN61204-3 Class	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6	,8,11; ENV50204; EN61204-3; EN6100	00-6-2; (EN50082-2),
		heavy industry level; criteria A,		
		The power supply is considered a component wh	nich will installed into a final equipment. The final ec	quipment must be
		re-confirmed that it still meets EMC directives.		
OTHERS				
OTHERS	MTDE		=°0\	
OTHERS	MTBF	268K hrs min. MIL-HDBK-217K (25	5°C)	
OTHERS	DIMENSION	268K hrs min. MIL-HDBK-217K (25 40x125.2x113.5mm (WxHxD)	5°C)	
OTHERS		268K hrs min. MIL-HDBK-217K (25 40x125.2x113.5mm (WxHxD) 0.65Kg; 20pcs / 14Kg / 1.16CUFT	5°C) isured at 230V AC input, rated load and 25°C of amb	



(12.)					
Pin No.	Assignment				
1	FG 🖶				
2	AC/L2				
3	AC/L1				

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

Static Characteristics



Derating Curve





PSW-240 Series

Specifications



Features:

- \bullet 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

OUTPUT	Cat. No.	PSW-24024	PSW-24048
	DC VOLTAGE RATED CURRENT CURRENT RANGE RATED POWER RIPPLE & NOISE (max)	24V 10A 0 ~ 10A 240W 150mVp-p	48V 5A 0 ~ 5A 240W 150mVp-p
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE	$\begin{array}{l} Ripple \& noise are measured at 20MHz of bandwidth by using $24 \sim 28V$ $\pm 1.0\%$ Tolerance: includes set up tolerance, line regulation and loss $100 $= 100$ $= 1$	a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor. $\begin{array}{c} 48 \sim 55V \\ \pm 1.0\% \\ \text{ad regulation.} \end{array}$
INPUT	Line Regulation Load Regulation Setup, Rise, Hold up Time	±0.5% ±1.0% 800ms, 150ms, 18ms / 400VAC 1500n	±0.5% ±1.0% ns, 150ms, 18ms / 230VAC at full load
PROTECTION	VOLTAGE RANGE FREQUENCY RANGE EFFICIENCY (Typ.) AC CURRENT INRUSH CURRENT (Typ.) LEAKAGE CURRENT	$\begin{array}{llllllllllllllllllllllllllllllllllll$	heck the derating curve for more details
	OVERLOAD OVERVOLTAGE OVERTEMPERATURE	29 ~ 33V Protection type: Shut down overvoltage, re-power on to rea	e power supply will shut down and then may have auto-recovery
ENVIRONMENT	DC OK RELAY CONTACT RATINGS (max.)		overs automatically after temperature goes down
SAFETY & EMC	WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION MOUNTING	$\begin{array}{r} -30 \sim +70^{\circ} \text{C} \text{ (Refer to output load derating α}\\ \text{Installation clearances: 40mm on top, 20mm on the botton permanently with full power. In case the adjacent device is 20 ~ 95% RH non-condensing -40 ~ +85^{\circ} \text{C}; 10 ~ 95\% RH \pm 0.03\% / ^{\circ} \text{C} (0 ~ 50^{\circ} \text{C}) \\ 10 ~ 500 \text{Hz}, 26 10 \text{min./1 cycle, 60 min. eac} \\ \text{Compliance to IEC60068-2-6} \end{array}$	n, 5mm on the left and right side are recommended when loaded a heat source, 15mm clearance is recommended.
OTHERS	SAFETY STANDARDS WITHSTAND VOLTAGE ISOLATION RESISTANCE EMI CONDUCTION & RADIATION HARMONIC CURRENT EMS IMMUNITY	$\label{eq:constraint} \begin{array}{l} \textit{I/P-O/P, I/P-FG, O/P-FG, } \geq 100M \mbox{ Ohms } / \mbox{ 500} \\ \textit{EN55022} \mbox{ (CISPR22), Class B} \\ \textit{Compliance to EN61000-3-2,-3} \\ \textit{Compliance to EN61000-4-2,3,4,5,6,8,11; E} \\ \textit{EN61204-3; heavy industry level; criteria A} \\ \textit{The power supply is considered a component which will in} \end{array}$	NV50204; EN 55024; EN61000-6-2; (EN50082-2); approved; stalled into a final equipment. The final
	MTBF DIMENSION PACKING	equipment must be re-confirmed that it still meets EMC di 141.1K hrs min. MIL-HDBK-217K (25°C) 63x125.2x113.5mm (WxHxD) 1.06Kg; 12pcs / 13.7Kg / 1.06CUFT All parameters NOT specially mentioned are measured at 4	rectives



Terminal Pin No. Assignment (TB1)

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

Terminal Pin No. Assignment (TB2)					
Pin No.	Assignment				
1,2	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

LOAD (%)

100

80

60

40

20

-30

0



Output Derating VS Input Voltage



PSW-480 Series

Specifications



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

OUTPUT	Cat. No.	PSW-48024	PSW-48048
	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	RIPPLE & NOISE (max)	100mVp-p	150mVp-p
	······································		ng a 12 twisted pair-wire terminated with a 0.1µF & 47µF parallel capacitor
	VOLTAGE ADJ. RANGE	$ 24 \sim 28V$	$48 \sim 55V$
	VOLTAGE TOLERANCE	±1.0%	±1.0%
		Tolerance: includes set up tolerance, line regulation and	
	LINE REGULATION	$\pm 0.5\%$	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
INDUT			
INPUT	SETUP, RISE, HOLD UP TIME	800ms, 150ms, 18ms / 400VAC 2000	oms, 150ms, 16ms / 230VAC at full load
	VOLTAGE RANGE	180 ~ 550VAC 254 ~ 780VDC	
		Derating may be needed under low input voltage. Please	check the derating curve for more details
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	92%	93%
	AC CURRENT	1.6A / 400VAC 4A / 230VAC	
	INRUSH CURRENT (Typ.)	COLD START 50A	
PROTECTION	LEAKAGE CURRENT	\leq 3.5 mA / 530VAC	
	OVERLOAD	105 ~ 130% rated output power	
			n after 3 sec.; auto recovery after 1 minute if the fault condition is removed
	OVERVOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type: Shut down overvoltage; auto recovery at	
			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	
		Protection type: Shut down overvoltage, recovers automa	, , , ,
ENVIRONMENT	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 both	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)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. ea	ich Iong X.Y. Z axes
SAFETY & EMC	MOUNTING	Compliance to IEC60068-2-6	······································
		•	
	SAFETY STANDARDS	UL508 approved	
		IEC 60950-1 compliant	
		Design refer to GL	
	WITHSTAND VOLTAGE		G:0.5KVAC 0/P-DC 0K:0.5KVAC
	ISOLATION RESISTANCE	I/P-0/P, I/P-FG, 0/P-FG: 100M 0hms / 500	VDC (25°C; 70% RH)
	EMI CONDUCTION & RADIATION	EN55022 (CISPR22), EN61204-3 Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;	ENV50204; EN 55024; 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
OTHERO		re-confirmed that it still meets EMC directives.	
OTHERS			
OTHERS	MTRE	112 8K hrs min MIL_HDBK_217K (25°C)	
OTHERS	MTBF	112.8K hrs min. MIL-HDBK-217K (25°C)	
OTHERS	DIMENSION	85.5x125.2x128.5mm (WxHxD)	
OTHERS		85.5x125.2x128.5mm (WxHxD) 1.7Kg; 8pcs / 14.6Kg / 0.9CUFT	t 400VAC input, rated load and 25°C of ambient temperature.



Terminal Pin No. Assignment (TB1) Terminal Pin No. Assignment (TB2) Pin No. Assignment FG 🕀 1 AC/L2 2

AC/L1

3

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



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



Output Derating VS Input Voltage



Everything and more!

- More efficiency of the battery thanks to continuous control over time.
- · More monitoring in main connection nodes: input, output load, battery.
- Event logging: number of battery charging cycles, charge cycles completed, aborted charge cycles, Ah charged, charging time, total number of transitions stand-by /back-up etc.
- Event Management: checking the load output, shutdown management of PCs (UPS function), RESET management of a generic equipment.
- Flexibility of use: customization of the entire charging curve of the battery, battery type setting, setting of the various time-out algorithms of charge, setting boost voltage, absorption, float, etc... configuration as DC-UPS or batteries charger, enabling power supply function.

Power Continuity

DC-UPS = Power Supply + Battery Charger + Back Up Module

Double Output, Optimized Power Management. Thanks to the DC-UPS units, it will be possible to smart-manage available power. It will be automatically allocated between load and battery. Supplying power to the load is the first priority of the unit; thus it is not necessary to double the power, and also the power available for the battery will go to the load if the load requires so.







In Power Boost mode the maximum current on the load output is the 2 times the rated current $(2 \times In)$ in continuous operation and 3 times the rated current $(3 \times In)$ for max. 4 seconds.

I batt

l batt

l batt

max. 4 sec.

Time Buffering

Time buffering is enabled when in back-up mode. Buffering time setting is possible by operating the rotary switch on the front panel.



Smart Battery Management

Load output will not be affected by battery conditions. The DC-UPS insures continuous power supply to the load even in conditions of completely discharged batteries. The automatic multi-stage operation optimizes and adapts to the battery status. DC-UPS can recharge deeply discharged batteries even when their voltage is close to zero, thus allowing recharge and complete recovery of flat batteries.

2 Ir



Avoid Deep Battery Discharge

In case of mains failure, the battery will supply the load until battery voltage reaches 1.5 Vpc (Volt per cell). Below this level the device automatically switches off to prevent deep discharge and battery damage.



Adjustable Maximum Battery Charging Current

The maximum battery charging current can be set from 10% to 100% of the device rated value.



Power Continuity

Start from Battery without Main

If you want to restart the system while the mains is off, a battery restart function is available, via RTCONN cable connections, or via pushbutton in the front panel.



Wide input voltage range

Flexibility is given also by the wide range input voltage. The range of the devices accept input voltage 120 - 230 - 277 - 400 - 500 VAC.

One device for output 12 or 24 VDC

You can select the voltage between 12 or 24 VDC just before installing the device in your panel (available on selected products in the new Altech DC-UPS units).

Connection & Monitoring

Monitor Signals

_ _ _ _ _ _ _ _ _ _ _

Clear definition of each system oper-ation, via LED indications and Relay contact:

Contact Port signals, galvanic insulation

- Main or back-up signaling relay with voltage-free. NO-NC output terminals.
- Battery faulty signaling relay, relay with voltage-free. NO-NC output terminals.
- Flat battery signaling relay, relay with voltage-free. NO-NC output terminals.

Display Signals by LED

- Input Main On Off
- Battery Fault
- Low battery (capacity less than 30%)
- Type of Battery charge mode
- Help through "blinking code" the diagnosis of the system

Driver Contact

Remote link for selection of trickle/ boost charging Via RTCONN remote connections cable it is possible to drive the devices from Boost - Bulk to Trickle - Float charge. It is also possible to permanently install a jumper for Boost - Bulk Charging.

Accessories

All DC-UPS units can be made available with the following options by RJ45 or RJ11 connector:

Temperature sensor Probe, for ambient temperature compensation charging.

⁺Batt.



Voltage drop cable compensation.



Auxiliary output "Aux 2 and "Aux 3" MODBUS and CANBUS

MODBUS and CANBUS connection for Multimedia management, for connection to external displays and perform customized data monitoring. Connection to:

- Power View App
 Power View
- Power View System
- Power Bus
- Power View Graphic
- Power View Bar Graph
 - Power View Config











Boost flat charge



These devices are completely automatic and can charge any kind of battery using factory pre-set charging curves suitable to the most common battery technologies: open lead acid, sealed lead acid, lead gel, Ni-Cd and Ni-MH. These devices are very flexible and can be customized to meet the needs of the user and the requirements of the application. After the installation, it is possible to carry out functional software updates just using any laptop computer. Doing so, your system can always be updated to changing requirements. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. Battery faults such as battery sulfated, elements in short circuit, accidental reverse polarity connection can easily be detected, identified and removed. The All in one Series meet the highest standards of quality and insure high reliability, with MTBF values up to 300.000 hours.

Battery Care

One Device for All Battery Types

All devices are suitable to charge most batteries types thank to user selectable charging curves. They can charge open lead acid, sealed lead acid, Gel, Ni-Cd, Ni-MH, Li Ion batteries. It is possible to change or add other charging curves connecting the device to a portable PC. Charging mode is then completely automatic.



Boost or float charge.

Multi-Stage Charging / Four Charging Modes

Automatic multi-stage operation and real time diagnostic allows fast recharge and recovery of deeply discharged batteries, adding value and reliability to the system hosting the DC-UPS device. The type of charging is Voltages stabilized and Current stabilized IUoU. CBI battery chargers feature four charging modes, identified by a flashing code on a LED.

- Recovery (5 Blinks / sec) able to recharge batteries even when their voltage is close to zero.
- Boost Bulk (2 Blinks / sec).
- Absorption (1 Blinks / sec).
- Trickle Float (1 Blink / 2 sec).



Diagnosis of Battery and Device

All CBI devices support the user during installation and operation. A LED flashing sequence code allows to discriminate among various possible faults. Error conditions, LED Fault ON and LED Diagnosis flashing with sequence of:

- I flash = Reverse polarity, wrong battery voltage
- 2 flashes= Disconnected battery
- 3 flashes = Battery element in short circuit
- 4 flashes = Overload
- 5 flashes = Battery to be replaced (Internal impedance Bad or Bad battery wire connection).



Battery Care

Battery Life Test

It guarantees battery reliability in time by continuously testing the internal impedance status. It avoids any possible risk of damages and grants also a permanent, reliable and safe connection of the battery to the power supply. The system, through a battery stimulation circuit with algorithms of evaluation of the detected parameter, is able to recognize sulfated batteries or batteries with a short-circuited cell.

Temperature Compensation

In special application like fire fighting equipment, you can recharge the battery also with the temperature compensation charging function, for the best condition of your battery in the temperature fluctuation. Use Port# CBI-RJTEMP for this application.



Check for accidental disconnection of the battery cables.

DC-UPS detects accidental disconnection and immediately switches off output power.

Battery not connected.

If the battery is not connected the battery output is disabled.

Test of wire connection impedance.

During trickle charge the resistance on the battery connection is checked every 20 sec. This to detect if the cable connection has been properly made.

Battery in open circuit or sulfated.

Every four hours DC-UPS tests of internal impedance, while in trickle charging mode.

Reverse polarity check.

If the battery it is connected with inverted polarity, DC-UPS is automatically protected.

Test of battery voltage connections.

Appropriate voltage check, to prevent connection of wrong battery types.

End of charge check.

When the battery it is completely full, the device automatically switches to trickle charging mode.

Check for battery cells in short circuit.

Thanks to specific testing algorithms, the DC-UPS recognize batteries with cells in internal short circuit.

Maximum Safety and Protection

The DC-UPS series is designed to provide safe operation and long power supply and battery life. The following protections are standard features:

- Outputs protected against short circuit and overload
- Protection against deep battery discharge
- Outputs in conformity to SELV and PELV conditions Protection against reverse polarity connection
- High insulation between primary and secondary
- · Detection of batteries with wrong rated voltage

All protections have automatic reset. No thermal fuse to be replaced. Robust construction and easy installation All the units in the range have aluminum casing, DIN rail fastening clip and are light and compact. IP20 protection degree.

Technology

The new DC-UPS range is based on two strategic know-how elements. Switching technology, we have 25 years of experience in design of advanced stabilized switching technology power supplies. A power supply/battery charger unit based on this technology is much more efficient.

Back UP Module and Battery Care units, unlike most other state-of-the-art battery chargers, the DC-UPS series is equipped with complex algorithms which controls the charging process and enable several monitoring functions. The firmware implements the extended battery care know-how, result of many years of experience in this field.

Standards:

- IEC/EN 60335-2-29 Battery chargers • EMC Directive
 - DIN 41773 (Charging cycle)

- EN60950 / UL60950
- · Electrical safety EN54-4 Fire Detection and fire alarm systems







CBI All In One UPS Power Solutions combine the requirements for several applications in just one device which can be used as power supply unit, battery charger, battery care module or backup module. The available power is automatically distributed among load and battery, while supplying power to the load always is the first priority. The maximum available current of the load output is two times the value of the device's rated current.

If the device is disconnected from the main power source, the battery will supply the load until the battery voltage reaches 1.5 V per cell. This prevents the battery from deep discharge. CBI devices provide microprocessor controlled battery charging. Using algorithms, the battery's condition will be detected and based on that, an appropriate charging mode is chosen. The real-time diagnostics system will continuously monitor the charging progress and indicate possibly occurring faults such as elements in short circuit, accidental reverse polarity connection or disconnection of the battery by the battery fault LED and a flashing code of the diagnosis LED.

CBI All In One UPS Power Solutions are suitable for open/sealed lead acid-, lead gel- and optionally Ni-Cd batteries. By using the battery-select-jumper, it is possible to set predefined charging curves for those battery types. The available charging options are recovery-, boost- and trickle charge. All CB devices are built in a rugged metal case with a DIN rail mounting bracket.

Features:

- · Power supply, battery charger, battery care module and backup module in one device
- Three charging modes
- · Compact, rugged metal case
- Available in 12VDC, 24VDC and 48VDC
- · Suitable for most common battery types
- Adjustable charging current
- · Easy battery diagnosis and fault identification either by LED or external devices connected to fault
- Status contacts
- High efficiency up to 91% through switching technology
- · Several output protection features such as short circuit, overload, deep battery discharge etc.
- DIN rail mounting
- Small size
- 3 year warranty



Battery Charging Output

Battery Selection Chart

		-			
	Battery type	1.2 Ah	3.2 Ah	7.2 Ah	12 Ah
	Load 1.5 A	20	60	200	400
	Load 3 A	8	30	120	240
υЩ	Load 5 A	3	15	55	100
BUFFERING (MINUTE) TIME	Load 7.5 A	2	10	30	60
N TEFE	Load 10 A	-	7	20	45
<u>B</u> <u>F</u>	Load 12 A	-	3	12	30
	Load 15 A	-	-	9	20
	Load 20 A	-	-	7	13

The new communication platform for ALTECH CORP. devices allows the connection of all components in a simple but very powerful way. A single communication protocol based on MODbus-RTU or CANbus technology. You can select any of the two buses depending on the application. It allows to communicate with all the accessories provided by ALTECH CORP. and to develop an independent system for electrical continuity. At the same time, it allows monitoring and control all parameters in the system, even from the other side of the world, by means of application tools on the cloud.

ALTECH CORP. allows you to implement very simple but sophisticated monitoring and control for your energy system and opens your mind to new ways to approach your applications.

1 Power View App

System Monitoring Software APP for Tablet "Power View App", is an application for tablet, available in free download. With this App it is possible to connect to ALTECH CORP. cloud and visualize in real time data stored in your own account on the cloud. Data upload is possible through "Power Bus", an ALTECH CORP. MODBUS/Ethernet interface which connects the



DC-UPS MODBUS output to the cloud. Uploaded data can be battery voltage, charge current, discharge current, level of charge, charging mode, alarms, diagnostic signals and more. This allows monitoring of DC-UPS and battery status from any location. It just requires wireless internet connection via tablet.

2 Power View System

Monitoring Software

"Power View System" is a PC-based software developed to monitor in real time every important parameter of the DCUPS/battery system. A simple and intuitive user's interface allows monitoring of battery parameters, load output, temperature sensor, mains presence and all alarm and diagnostic flags. All feature are displayed in a single screen.

3 Power View Graphic

Multifunction Graphic Display

"Power View Graphic" is a Multifunction Graphic Display that can be connected by a single data/power cables to the MODBUS interface of a DC-UPS. It allows to display all parameters of the DC-UPS/battery system that can be accessed by moving through the various screens with a push button user's interface. The screen is back-lit and features a screen saver function for energy saving and longer life.

4 Power View Bar Graph

"Power View Bar Graph" is a circular LED display device for panel mount. Simple and sturdy, it displays the current charge mode, state of charge and system diagnostics at a glance.

5 Power Bus

Interface Module MODBUS 485 - Ethernet and Cloud ALTECH CORP. provides a set of educated MODBUS interfaces that allow remote access to DC-UPS/battery data. Both Ethernet and Cloud communication is therefore made feasible.

6 Power Storage Devices

No matter how large or small the capacity of the battery storage needed in the system, ALTECH CORP. DC-UPS devices allow simple and effective integration. ALTECH CORP. has been a pioneer in the development of automatic charging and monitoring DC-UPS. Thanks to Adel Battery Care technology every battery will be taken care of and will last longer. Continuous system monitoring and life test checking allows preventive replacement and therefore increased system reliability. For a compact and optimized integration, ALTECH CORP. supplies Batt VRLA battery modules.

7 Temperature Compensated Charging

By installing the battery temperature probe "RJ Temp", the charge voltage is automatically adapted to battery temperatures. When the battery temperature is low, the charge voltage increases. Conversely, when battery temperature is high, charge voltage is decreased. Over charge and gassing are thus prevented. This will extend battery life, the specific goal of Adel Battery Care philosophy.

8 Load

The DC-UPS unit mission is to always keep the load supplied. The Load Output is the source of power for the whole electric system and has been designed to perform this duty under the most critical conditions, no matter if during stand-by or back-up modes.

9 Inverter

Among the loads there are sometime devices which requires AC power. In this case an inverter must be installed. ALTECH CORP. DC-UPSs allow connection of inverters up to 1500W.

10 Power View Config

System Configuration Software "Power View Config" is a PC-based software with simple and effective user interface that allows application engineer to configure the system, customize battery charging curve, set alarm thresholds, configure the parameters available for communication on the MODBUS output. Output Voltage: 12, 24, 48 Vdc.

CBI All In One UPS Power Solutions Specifications



* Case Sizes

Size 1: 65 mm x 115 mm x 135 mm **Size 2:** 100 mm x 115 mm x 135 mm **Size 3:** 150 mm x 115 mm x 135 mm

Features:

Power supply, battery charger, battery care module and backup module in one device

- · Three charging modes
- · Several output protection modes
- · Compact, rugged metal case
- Available in 12VDC, 24VDC and 48VDC
- Suitable for most common battery types
- Three charging modes
- · Adjustable charging current
- High efficiency up to 91% through switching technology
- DIN rail mounting
- Small size
- 3 year warranty

12V DC SSingle Phase DIN Rail All In One UPS Power Solution

Cat. No.	Case*	Input VAC	Outp VDC	ut* A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CBI123A	1	115-230-277	12	3	2-9	13.75	14.4	
CBI126A	1	115-230-277	12	6	2-9	13.75	14.4	
CBI1210A	1	115-230-277	12	10	2-9	13.75	14.4	
CBI1235A	3	115-230-277	12	35	2-9	13.75	14.4	

24V DC Single Phase DIN Rail All In One UPS Power Solution

Cat. No.	Case*	Input VAC	Outp VDC		Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CBI243A	1	115-230-277	24	3	2-16	27.5	28.8	
CBI245A	1	115-230-277	24	5	2-18	27.5	28.8	
CBI2410A	2	115-230-277	24	10	2-16	27.5	28.8	
CBI2420A	3	115-230-277	24	20	2-16	27.5	28.8	

48V DC Single Phase DIN Rail All-In-One UPS Power Solution

Cat. No.	Case*	Input VAC	Outp VDC	ut* A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CBI485A	2	115-230-277	48	5	2-24	55	57.6	
CBI4810A	3	115-230-277	48	10	2-24	55	57.6	

Multi-Voltage DIN Rail All-In-One UPS Power Solution

Cat. No.	Case	e* Input VAC	Outr VDC	out* A	Recovery Charge VDC	7 Trickle Charge VDC	Boost Charge VDC	NOTES
CBI280 3648A	2	115-230-277	36/48	7/ 5	2-24	41/ 55	43.2/ 57.6	
CBI280 1224A	2	115-230-277	12/24	15/ 10	2-18	13.75/ 27.5	14.4/ 28.8	
CBI280 1224B	2	230-400-500	12/ 24	15/ 10	2-16	13.75/ 27.5	14.4/ 28.8	

*= Output Current can be adjusted from 20%-100% of value given above



Case 2



Case 3



SPECIFICATIONS



8	CBI123A	Features: • Input: Single-phase 115 - 277 VAC
		Output Load: power supply 12 VDC; 3 A
	DC UPS	 Output: Battery charging 12 VDC; 3 A Suited for the following battery types:
AND CARE AND		Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option
Altech Cor		 Automatic diagnostic of battery status.
All in O	🐘 🔊 🔊 🔊 🔛 🐘	Switching technology, output voltage 10-14.4 VDC
Calash Calash	CCUS US SAVER	Three charging levels: Boost, trickle and recovery
		Protection degree IP20 - DIN rail mountable
NPUT	Cat. No.	CBI123A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 – 305 VAC
	Inrush Current ($V_n - I_n$ nom. Load). I ² t	\leq 11 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.8 ~ 1.3 A
	Internal fuse (factory replaceable)	4 A
UTPUT	External Fuse (recommended) MCB curve B	10 A
	Output Voltage (V_n) / Nominal Current (I_n)	12 VDC / 3A
	Output Current In	3 A
	Efficiency (at 50% of rated current)	\geq 90 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load) Dissipation power load max	Yes, Unlimited 9 W
ROTECTION		5 W
	Short-circuit protection	Yes
	Over Load protection	Yes
.OAD	Over Voltage Output protection Over Temperature protection	Yes (typ. 35 VDC) Yes
OUTPUT		165
	Output voltage (at In)	10 ~ 14.4 VDC
	Nominal current I _{load}	1.1 x ln A ± 5%
	Continuous current (without battery) I _{load} = I _n	3 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	6 A
	Max. Current Output Load (Main) III _{load} (4 sec.)	9 A max.
	Max. Current Output Load (Back Up) Iload (4 sec.)	6 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞: standard 5 min.: Require SW
BATTERY	Protection alarm against total discharge	9-10V DC battery
OUTPUT	Threshold alarm for battery almost flat	10-11 V DC battery
	Boost charge (25 °C) (at I _n)	14.4 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	13.75 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (10 elem.)
	Recovery Charge	2 ~ 9 VDC
	Charging current max I _{batt}	$3A \pm 5\%$
	Charging current limiting I _{adj}	20 – 100 % / lbatt
	Reverse battery protection	Yes Yes hu lumper
	Sulfated battery check Detection of element in short circuit	Yes by Jumper
	Quiescent Current	Yes ≤ 100 mA
	Charging Curve automatic: I _{UoUo}	≤ 100 IIIA 3 stage
THERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
Intrio	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	$-40 - +85^{\circ}C$
	Humidity at 25 °C no condensation	95%
	Cooling	Auto convention
	MTBF	> 300.000 h (IEC 61709)

CBI123A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input / Output

Temp. Comp. Battery (wit	th ext. probe)	Yes - Optional
Remote monitoring displa	ay '	Yes - Optional
Can Bus		No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm² (24–14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	65x115x135 mm
2.56x4.53x5.32 in	
Weight (approx.)	0.6 kg (1.35 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





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

8	CBI126A	Features: • Input: Single-phase 115 - 277 VAC
1 2 3 4 5 6 7 8 9 10	ODITZUA	Output Load: power supply 12 VDC; 6 A
OUT DATIENT OF OF		Output: Battery charging 12 VDC; 6 A
Altech Carp.	DC UPS	 Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
De la constantina de la consta		 Automatic diagnostic of battery status.
C All in OTIC	🐘 🔊 🔊 CE 🛄	 Switching technology, output voltage 10-14.4 VDC
• Transformer Statement		Three charging levels: Boost, trickle and recovery
N C	E393188	Protection degree IP20 - DIN rail mountable
NPUT	Cat. No.	CBI126A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 – 305 VAC
	Inrush Current ($V_n - I_n$ nom. Load). I^2t	\leq 11 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.8 ~ 1.3 A
	Internal fuse (factory replaceable) External Fuse (recommended) MCB curve B	4 A 10 A
UTPUT	External Fuse (recommended) wich curve b	10 A
	Output Voltage (V_n) / Nominal Current (I_n)	12 VDC / 6A
	Output Current In	6 A
	Efficiency (at 50% of rated current)	≥ 90 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load) Dissipation power load max	Yes, Unlimited 17 W
PROTECTION	Dissipation power load max	17 W
	Short-circuit protection	Yes
	Over Load protection	Yes
_OAD	Over Voltage Output protection	Yes (typ. 35 VDC)
OUTPUT	Over Temperature protection	Yes
001101	Output voltage (at In)	10 ~ 14.4 VDC
	Nominal current I _{load}	$1.1 \times \ln A \pm 5\%$
	Continuous current (without battery) I _{load} = I _n	6 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	12 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	18 A max.
	Max. Current Output Load (Back Up) Iload (4 sec.)	12 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞ : standard 5 min.: Require SW
DATTEDY	Protection alarm against total discharge	9-10 VDC battery voltage
BATTERY OUTPUT	Threshold alarm for battery almost flat	10-11 VDC battery voltage
	Boost charge (25 °C) (at In)	14.4 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	13.75 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (10 elem.)
	Recovery Charge	$2 \sim 9 \text{ VDC}$
	Charging current max I _{batt}	$6 A \pm 5\%$
	Charging current limiting I _{adj} Reverse battery protection	20 – 100 % / Ibatt
	Sulfated battery check	Yes Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: $I_{U_0U_0}$	3 stage
OTHERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h
CBI126A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm² (24–14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	65x115x135 mm
2.56x4.53x5.32 in	
Weight (approx.)	0.6 kg (1.35 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







Altech Corp.

 Jumper present: life test enabled.
 Jumper present: fast test enabled.
 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





-		Features:
00000000	CBI1210A	 Input: Single-phase 115 - 277 VAC Output Load: power supply 12 VDC; 10 A
1234561 -++-+		Output: Edat. power supply 12 vDC; 10 A
ALTER AND ALTER	DC UPS	• Suited for the following battery types:
A there are a series of the se		Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option
		Automatic diagnostic of battery status.
Trater CRI245A		Switching technology, output voltage 10-14.4 VDC Three shareing levels. Proof trials and provide the second
and the second second	E353188	 Three charging levels: Boost, trickle and recovery Protection degree IP20 - DIN rail mountable
Tuese		
NPUT	Cat. No.	CBI1210A
_	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 – 305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 11 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.8 ~ 1.3 A
	Internal fuse (factory replaceable) External Fuse (recommended) MCB curve B	4 A 10 A
DUTPUT	External Fuse (recommended) Mich curve b	IUA
	Output Voltage (V_n) / Nominal Current (I_n)	12 VDC / 10A
	Output Current I _n Efficiency (at 50% of rated current)	10 A ≥ 90 %
	Turn-On delay after applying input voltage	≥ 90 % 1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
	Dissipation power load max	17 W
PROTECTION		
	Short-circuit protection	Yes
	Over Load protection Over Voltage Output protection	Yes (typ. 35 VDC)
LOAD	Over Temperature protection	Yes
OUTPUT		100
	Output voltage (at I _n)	10 ~ 14.4 VDC
	Nominal current I _{load}	1.1 x ln A ± 5%
	Continuous current (without battery) $I_{load} = I_n$	10 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	20 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	30 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	20 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞: standard 5 min.: Require SW 9-10V DC battery
BATTERY	Protection alarm against total discharge Threshold alarm for battery almost flat	10-11 V DC battery
OUTPUT	Threshold diam for battery almost hat	10-11 V DC ballery
	Boost charge (25 °C) (at I _n)	14.4 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	13.75 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (10 elem.)
	Recovery Charge	2 ~ 9 VDC
	Charging current max I _{batt}	$10 \text{ A} \pm 5\%$
	Charging current limiting I _{adj}	20 – 100 % / Ibatt
	Reverse battery protection Sulfated battery check	Yes Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	\leq 100 mA
	Charging Curve automatic: I_{UoUo}	3 stage
OTHERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(In) / °C
	Ambient temperature Storage	-40 – +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF	> 300.000 h (IEC 61709)

CBI1210A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

ľ	Main or Backup Power		Yes	
E	Battery Power Low		Yes	
E	Battery Fault		Yes	
ľ	Max. Current Rating (Resi	istive Load)	1A 30 VDC/60 VAC	
ľ	Vinimum Permissible Cu	rrent Rating	1mA @ 5 VDC	

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm² (24–14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	65x115x135 mm
2.56x4.53x5.32 in	
Weight (approx.)	0.6 kg (1.35 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection





Altech Corp.

Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





4447		Features: • Input: Single-phase 115 - 277 VAC
0.0 00000	CBI1235A	Output Load: power supply 12 VDC; 35 A
		Output: Battery charging 12 VDC; 35 A
Maran Barran	DC UPS	Suited for the following battery types:
Alterno State		Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option
· · · · · · · · · · · · · · · · · · ·		Automatic diagnostic of battery status.
An an out catalation of Mentil to the particular Mentil to the parti	Refis 🔊 CE 🛄	Switching technology, output voltage 10-14.4 VDC
INPUT N TITLE	4000 BAVER	 Three charging levels: Boost, trickle and recovery Protection degree IP20 - DIN rail mountable
2 3000		
NPUT	Cat. No.	CBI1235A
	Nominal Input Voltage	115 / 230 ~ 277 VAC
	Voltage range	90 – 135 / 180-305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 35 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	8 ~ 4.2 A
	Internal fuse (factory replaceable)	10 A
UTPUT	External Fuse (recommended) MCB curve B	16 A
	Output Voltage (V _n) / Nominal Current (I _n)	12 VDC / 35A
	Output Current In	35 A
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
ROTECTION	Dissipation power load max	48 W
	Short-circuit protection	Yes
	Over Load protection	Yes
OAD	Over Voltage Output protection	Yes (typ. 35 VDC)
-OAD OUTPUT	Over Temperature protection	Yes
	Output voltage (at I _n)	10 ~ 14.4 VDC
	Nominal current I _{load}	$1.1 \text{ x ln A} \pm 5\%$
	Continuous current (without battery) $I_{\text{load}} = I_n$	35 A
	Continuous current (with battery) I_{load} = I_n + I_{batt}	70 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	105 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	70 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,1,3,5,10,15,20,30,45,60,∞; Require SW
DATTEDV	Protection alarm against total discharge	9-10V DC battery
BATTERY OUTPUT	Threshold alarm for battery almost flat	10-11 V DC battery
	Boost charge (25 °C) (at I _n)	14.4 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I _n)	13.75 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (10 elem.)
	Recovery Charge	2 ~ 9 VDC
	Charging current max I _{batt}	$35 A \pm 5\%$
	Charging current limiting I _{adj}	20 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit Quiescent Current	Yes
	Charging Curve automatic: I _{UoUo}	≤ 100 mA 3 stage
THEDO	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
DTHERS	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	-25 – +70°C - 2.5%(ln) / °C
	Ambient temperature Storage	- 2.5%(iii) / C -40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

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

CBI1235A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Jumper for Battery Type Selection





Altech Corp.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	Yes - Optional

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		••••		

Environment	
Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	4 mm ² (30–10AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	150x115x135 mm
5.91x4.53x5.32 in	
Weight (approx.)	1.55 kg (3.5 Lbs)
Ostate and FMO	

	Safety	and	EMC
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Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.





		Features:
12 Contraction	CBI243A	Input: Single-phase 115 - 277 VAC
· · · · · · · · · · · · · · · · · · ·	UDIZTUA	Output Load: power supply 24 VDC; 3 A
1 2 3 4 Otto mentary by by	DC UPS	Output: Battery charging 24 VDC; 3 A
-O- and a contract of the second seco	DCUPS	 Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option
A man Altech Corp.		 Automatic diagnostic of battery status.
	RHS RN 80 CE 🛄	Switching technology, output voltage 22-28.8 VDC
Constant Calaan Operative Calaan Operative State		Three charging levels: Boost, trickle and recovery
aller Aller Aller Aller Aller	E353188	Protection degree IP20 - DIN rail mountable
Lucue.		
NPUT	Cat. No.	CBI243A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 – 305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	$\leq 11 \text{ A} \leq 5 \text{ msec}$
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.8 ~ 1.3 A
	Internal fuse (factory replaceable)	4 A
UTPUT	External Fuse (recommended) MCB curve B	10 A
	Output Voltage (V _n) / Nominal Current (I _n)	24 VDC / 3A
	Output Current In	3 A
	Efficiency (at 50% of rated current)	≥ 90 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
ROTECTION	Dissipation power load max	13 W
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 35 VDC)
.OAD	Over Temperature protection	Yes
OUTPUT		
	Output voltage (at I _n)	22 ~ 28.8 VDC
	Nominal current I _{load}	$1.1 \text{ x ln A} \pm 5\%$
	Continuous current (without battery) I _{load} = I _n	3 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	6 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	9 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	6 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞: standard 5 min.: Require SW
BATTERY	Protection alarm against total discharge	19-20V DC battery
OUTPUT	Threshold alarm for battery almost flat	20-21 V DC battery
	Boost charge (25 °C) (at In)	28.8 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 \circ C) (at I _n)	27.5 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (20 elem.)
	Recovery Charge	2 ~ 16 VDC
	Charging current max I _{batt}	3 A ± 5%
	Charging current limiting I _{adj}	20 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: I _{UoUo}	3 stage
THERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 – +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
		> 300.000 h

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

CBI243A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm² (24–14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	65x115x135 mm
2.56x4.53x5.32 in	
Weight (approx.)	0.6 kg (1.35 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







Altech Corp.

 Jumper present: life test enabled.
 Jumper present: fast test enabled.
 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





		Features:
	CBI245A	 Input: Single-phase 115 - 277 VAC
e e 123456789	UDILTUR	Output Load: power supply 24 VDC; 5 A
		Output: Battery charging 24 VDC; 5 A
MUN LATER OF AREA	DC UPS	 Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (optior
A market water	CP.	 Automatic diagnostic of battery status.
All in		 Switching technology, output voltage 22-28.8 VDC
Concentration Concent	🖶 🔛 🔊 🐼 CE	Three charging levels: Boost, trickle and recovery
L. Briter	E353188	Protection degree IP20 - DIN rail mountable
Turne		
IPUT	Cat. No.	CBI245A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 – 305 VAC
	Inrush Current ($V_n - I_n$ nom. Load). I ² t	\leq 11 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.8 ~ 1.3 A
	Internal fuse (factory replaceable)	4 A
UTPUT	External Fuse (recommended) MCB curve B	10 A
	Output Voltage (Vn) / Nominal Current (In)	24 VDC / 5A
	Output Current In	5 A
	Efficiency (at 50% of rated current)	\ge 90 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
ROTECTION	Dissipation power load max	17 W
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 35 VDC)
OAD	Over Temperature protection	Yes
OUTPUT		
	Output voltage (at In)	22 ~ 28.8 VDC
	Nominal current I _{load}	1.1 x ln A ± 5%
	Continuous current (without battery) $I_{load} = I_n$	5 A
	Continuous current (with battery) I_{load} = I_n + I_{batt}	10 A
	Max. Current Output Load (Main) I_{load} (4 sec.)	15 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	10 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞ : standard 5 min.: Require SW
	Protection alarm against total discharge	19-20V DC battery
	Threshold alarm for battery almost flat	20-21 V DC battery
001201	Boost charge (25 °C) (at I _n)	28.8 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	27.5 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (20 elem.)
	Recovery Charge	2 ~ 16 VDC
	Charging current max I _{batt}	$5 \text{ A} \pm 5\%$
	Charging current limiting I _{adi}	20 – 100 % / lbatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: IU0U0	3 stage
THERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI245A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm ² (24-14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	65x115x135 mm
2.56x4.53x5.32 in	
Weight (approx.)	0.6 kg (1.35 Lbs)

Safety and EMC

IEC/EN 60335-2-29
EN60950 / UL1950 / CE
EN54-4
89/336/EEC
DIN41773
IEC 61000-6-4
IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection



Charge (2)3

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Altech Corp.

Jumper present: life test enabled Jumper present: fast test enabled Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





CBI2410A DC UPS

Altech Corp

Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 24 VDC; 10 A
- Output: Battery charging 24 VDC; 10 A
- Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status.
- Switching technology, output voltage 22-28.8 VDC
 Three charging levels: Boost, trickle and recovery
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI2410A
	Nominal Input Voltage	115 / 230 ~ 277 VAC
	Voltage range	90-135 / 180-305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 16 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	3.3 ~ 2.2 A
	Internal fuse (factory replaceable)	6.3 A
TPUT	External Fuse (recommended) MCB curve B	16 A
	Output Voltage (V _n) / Nominal Current (I _n)	24 VDC / 10A
	Output Voltage (v_n) / Nominal Current (I_n)	10 A
	Efficiency (at 50% of rated current)	≥ 83 %
		≥ 83 % 1.5 sec. (max)
	Turn-On delay after applying input voltage	
	Start up with Strong Load (capacitive load)	Yes, Unlimited
DTECTION	Dissipation power load max	28 W
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 35 VDC)
AD UTPUT	Over Temperature protection	Yes
01101	Output voltage (at In)	22 ~ 28.8 VDC
	Nominal current I _{load}	1.1 x ln A ± 5%
	Continuous current (without battery) I _{load} = I _n	10 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	20 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	30 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	20 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞ : standard 5 min.: Require SW
	Protection alarm against total discharge	19-20V DC battery
TERY	Threshold alarm for battery almost flat	20-21 V DC battery
UTPUT	Boost charge (25 °C) (at I _n)	28.8 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	27.5 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	
	Recovery Charge	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (20 elem.) 2 ~ 16 VDC
	Charging current max I _{batt}	$10 \text{ A} \pm 5\%$
	Charging current limiting l _{adj}	20 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: I _{UoUo}	3 stage
IERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h
		> 500.000 II

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

CBI2410A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2,5 mm2 (24-14AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	100x115x135 mm
2.95x4.53x5.32 in	
Weight (approx.)	0.85 kg (1.9 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection









Altech Corp.

Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





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ch Corp

CBI2420A DC UPS

Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 24 VDC; 20 A
 Output: Battery charging 24 VDC; 20 A
- Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status.
- Switching technology, output voltage 22-18.8 VDC
 Three charging levels: Boost, trickle and recovery
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI2420A
	Nominal Input Voltage	115 / 230 ~ 277 VAC
	Voltage range	90-135 / 180-305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 35 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	8.0 ~ 4.2 A
	Internal fuse (factory replaceable)	10 A
	External Fuse (recommended) MCB curve B	16 A
TPUT		1077
	Output Voltage (Vn) / Nominal Current (In)	24 VDC / 20A
	Output Current I_n	20 A
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
	Dissipation power load max	48 W
DTECTION	Dissipation power load max	40 ₩
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 35 VDC)
AD	Over Temperature protection	Yes
UTPUT	טיפו ופוווףפומנעופ אוטנפטוטוו	160
	Output voltage (at In)	22 ~ 28.8 VDC
	Nominal current I _{load}	$1.1 \times \ln A \pm 5\%$
	Continuous current (without battery) $I_{load} = I_n$	20 A
	Continuous current (with battery) $I_{load} = I_n$	40 A
	Max. Current Output Load (Main) $I_{load} = I_n + I_{batt}$	40 A 60 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	40 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,2,5,10,15,20,30,45,60,∞; Require SW
	Protection alarm against total discharge	19-20V DC battery
ITERY UTPUT	Threshold alarm for battery almost flat	20-21 V DC battery
	Boost charge (25 °C) (at I _n)	28.8 VDC
	Max. time Bust Charge	15 h 1 min
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I _n)	27.5 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (20 elem.)
	Recovery Charge	2 ~ 16 VDC
	Charging current max I _{batt}	20 A ± 5%
	Charging current limiting I _{adj}	10 – 100 % / lbatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: I _{UoUo}	3 stage
HERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
icho		
	Ambient temperature (operation)	-25 - +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI2420A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Yes
Yes
Yes
1A 30 VDC/60 VAC
1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	4 mm² (30-10 AW
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	150x115x135 mm
5.91x4.53x5.32 in	
Weight (approx.)	1.55 kg (3.5 Lbs)

Saf	ety	and	EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

(30-10 AWG)

5x135 mm

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection



1234567



lumper present: life test enabled Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device



1				Voltage	 	
ent						
Voltage / Current						
Volt				Current		
-						wwww
	Recovery	Charge	Fast / Boos	t Charge	Tickle / Floa	at Charge

Altech Corp.

CBI485A DC UPS

Altech Corp.

Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 48VDC; 5A
 Output: Battery charging 48VDC; 5A
- Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status.
- Switching technology, output voltage 44-57.6VDC
 Three charging levels: Boost, trickle and recovery
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI485A
	Nominal Input Voltage	115 / 230 ~ 277 VAC
	Voltage range	90-135 / 180-305 VAC
	Inrush Current ($V_n - I_n$ nom. Load). I ² t	\leq 16 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	3.3 ~ 2.2 A
	Internal fuse (factory replaceable)	6.3 A
TDUT	External Fuse (recommended) MCB curve B	16 A
<u>TPUT</u>		
	Output Voltage (V _n) / Nominal Current (I _n)	48 VDC / 5A
	Output Current In	5 A
	Efficiency (at 50% of rated current)	≥ 83 %
	Turn-On delay after applying input voltage	1.5 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
DTECTION	Dissipation power load max	28 W
	Short-circuit protection	Yes
	Over Load protection	Yes
_	Over Voltage Output protection	Yes (typ. 90 VDC)
AD	Over Temperature protection	Yes
UTPUT		
	Output voltage (at In)	44 ~ 57.6 VDC
	Nominal current I _{load}	1.1 x In A ± 5%
	Continuous current (without battery) I _{load} = I _n	5 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	10 A
	Max. Current Output Load (Main) Iload (4 sec.)	30 A max.
	Max. Current Output Load (Back Up) Iload (4 sec.)	15 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	∞: standard 5 min.: Require SW
	Protection alarm against total discharge	38-40V DC battery
TERY	Threshold alarm for battery almost flat	40-42V DC battery
UTPUT	Boost charge (25 °C) (at In)	56.6 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at In)	55 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (40 elem.)
	Recovery Charge	2 ~ 24 VDC
	Charging current max I _{batt}	$2A \pm 5\%$
	Charging current limiting I _{adj}	20 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	\leq 100 mA
	Charging Curve automatic: I _{UoUo}	3 stage
IERS	Remote Input Control (RTCONN cable)	Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 – +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	$-40 - +85^{\circ}C$
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI485A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	No

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2.5 mm ² (24-14 AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	100x115x135 mm
2.95x4.53x5.32 in	
Weight (approx.)	0.85 kg (1.9 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection









Altech Corp.

Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.







CBI4810A DC UPS

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Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 48VDC; 10A
 Output: Battery charging 48VDC; 10A
- Suited for the following battery types:
 Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status.
- Switching technology, output voltage 44-57.6VDC
 Three charging levels: Boost, trickle and recovery
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI4810A
	Nominal Input Voltage	115 / 230 ~ 277 VAC
	Voltage range	90-135 / 180-305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 35 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	8.0 ~ 4.2 A
	Internal fuse (factory replaceable)	10 A
	External Fuse (recommended) MCB curve B	16 A
TPUT		1077
_	Output Voltage (Vn) / Nominal Current (In)	48 VDC / 10A
	Output Current I_n	10 A
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
DTECTION	Dissipation power load max	54 W
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 90 VDC)
D	S 1 1	
UTPUT	Over Temperature protection	Yes
51101	Output voltage (at In)	44 ~ 57.6 VDC
	Nominal current I _{load}	$1.1 \times \ln A \pm 5\%$
	Continuous current (without battery) $I_{load} = I_n$	10 A
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	20 A
	Max. Current Output Load (Main) I _{load} (4 sec.)	30 A max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	20 A max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,1,3,5,10,15,20,30,45,60,∞; Require SW
	Protection alarm against total discharge	38-40V DC battery
TERY	Threshold alarm for battery almost flat	40-42V DC battery
UTPUT		
	Boost charge (25 °C) (at I _n)	56.6 VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	55 VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 (40 elem.)
	Recovery Charge	2 ~ 24 VDC
	Charging current max I _{batt}	$10 \text{ A} \pm 5\%$
	Charging current limiting I _{adi}	10 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	\leq 100 mA
	Charging Curve automatic: $I_{U_0U_0}$	3 stage
	Remote Input Control (RTCONN cable)	
IERS		Boost /Trickle / Recovery
	Ambient temperature (operation)	-25 - +70°C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h



CBI4810A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	Yes - Optional

Environment

Fmission Immunity

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	4 mm ² (30-10 AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	150x115x135 mm
5.91x4.53x5.32 in	
Weight (approx.)	1.55 kg (3.5 Lbs)
Safety and EMC	

Salety and ENIC	
Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

IEC 61000-6-4

IEC 61000-6-2

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.





7

Fast Recovery Charge (2)³

6

12345

12345 6 7



umper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.



ד ד ד שנו				Voltage		
Voltage / Current				- Current		
						wwww
	Recovery	Charge	Fast / Boos	t Charge	Tickle / Floa	at Charge

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

Altech Corp.



CBI2803648A **DC UPS**

Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 36/48VDC; 7/5A
- Output: Battery charging 36/48VDC; 7/5A
- Suited for the following battery types:
 Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status.Switching technology, output voltage 33-43.2/44-57.6VDC
- Three charging levels: Boost, trickle and recovery
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI2803648A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 ~ 305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 16 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	3.3 ~ 2.2 A
	Internal fuse (factory replaceable)	6.3 A
	External Fuse (recommended) MCB curve B	16 A
TPUT	External ruse (recommended) wich curve b	10 A
	Output Voltage (V.) / Naminal Power (W)	26 / 48 VDC / 270W (jumper coloction)
	Output Voltage (V _n) / Nominal Power (W)	36 / 48 VDC / 270W (jumper selection)
	Output Current In	7 A @36VDC / 5A @48VDC
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1.5 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
OTECTION	Dissipation power load max	30 W
OTECTION		
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 90 VDC)
AD	Over Temperature protection	Yes
UTPUT		
	Output voltage (at In	33 ~ 43.2 / 44 ~ 57.6 VDC
	Nominal current I_{load}	$1.1 \times \ln A \pm 5\%$
	Continuous current (without battery) $I_{load} = I_n$	7 A @ 36VDC / 5A @ 48VDC
_		14 A @ 36VDC / 10A @ 48VDC max.
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	
	Max. Current Output Load (Main) I _{load} (4 sec.)	21 A @ 36VDC / 15A @ 48VDC max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	14 A @ 36VDC / 10A @ 48VDC max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,2,5,10,15,20,30,45,60,∞
	Protection alarm against total discharge	26-28 / 38-40V DC battery
TTERY	Threshold alarm for battery almost flat	29-31 / 40-42V DC battery
UTPUT		
	Boost charge (25 °C) (at I _n)	43.2 @ 36VDC / 57.6 @ 48VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	41.4 @ 36VDC / 55.2 @ 48VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	
		2.23; 2.25; 2.27; 2.30; NiCd: 1.50V/element
	Recovery Charge	2 ~ 18 / 2 ~ 24VDC
	Charging current max I _{batt}	7 A @ 36VDC / 5A @ 48VDC ± 5%
	Charging current limiting I _{adj}	10 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: I_{UoUo}	4 stage
	Remote Input Control (RTCONN cable)	Boost / Trickle
HERS		
	Ambient temperature (operation)	-25 - +70°C
	Ambient temperature (operation)	
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI2803648A DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes - Optional
Remote monitoring display	Yes - Optional
Can Bus	Yes - Optional

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2.5 mm ² (24-14 AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	115x115x135 mm
2.95x4.53x5.32 in	
Weight (approx.)	0.85 kg (1.9 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







 Jumper present: life test enabled.
 Jumper present: fast test enabled.
 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





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CBI2801224A **DC UPS**

Features:

- Input: Single-phase 115 277 VAC
- Output Load: power supply 12 VDC; 15 A / 234VDC; 10A •
- ٠ Output: Battery charging 12 VDC; 15 A / 24VDC; 10A •
- Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) Automatic diagnostic of battery status. •
- •
- Switching technology, output voltage 10-14.4 VDC / 22-28.8VDC Three charging levels: Boost, trickle and recovery •
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI2801224A
	Nominal Input Voltage	115 ~ 230 ~ 277 VAC
	Voltage range	90 ~ 305 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 16 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	3.3 ~ 2.2 A
	Internal fuse (factory replaceable)	6.3 A
TPUT	External Fuse (recommended) MCB curve B	16 A
PUT		
	Output Voltage (Vn) / Nominal Power (W)	12 / 24 VDC / 270W (jumper selection)
	Output Current In	15 A @ 12VDC / 10A @ 24VDC
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
TECTION	Dissipation power load max	28 W
	Short-circuit protection	Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes (typ. 35 VDC)
D	Over Temperature protection	Yes
JTPUT		100
	Output voltage (at In)	10-14.4 / 22-28.8 VDC
	Nominal current I _{load}	1.1 x ln A ± 5%
	Continuous current (without battery) I _{load} = I _n	15 A @ 12VDC / 10A @ 24VDC
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	30 A @ 12VDC / 20A @ 24VDC max.
	Max. Current Output Load (Main) Iload (4 sec.)	45 A @ 12VDC / 30A @ 24VDC max.
	Max. Current Output Load (Back Up) Iload (4 sec.)	30 A @ 12VDC / 20A @ 24VDC max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,2,5,10,15,20,30,45,60,∞
	Protection alarm against total discharge	10-11 / 20-21V DC battery
TERY	Threshold alarm for battery almost flat	9-10 / 19-20V DC battery
UTPUT		
	Boost charge (25 °C) (at I_n)	14.4 @ 12VDC / 28.8 @ 24VDC
	Max. time Bust Charge	15 h
	Min. time Bust Charge	1 min.
	Trickle charge (25 °C) (at I_n)	13.8 @ 12VDC / 27.6 @ 24VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50V / element
	Recovery Charge	2 ~ 18 / 2 ~ 24VDC
	Charging current max I _{batt}	15 A @ 12VDC / 10A @ 24VDC ± 5%
	Charging current limiting I _{adj}	10 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	\leq 100 mA
	Charging Curve automatic: IUOUO	4 stage
IERS	Remote Input Control (RTCONN cable)	Boost / Trickle
	Ambient temperature (encretion)	25 . 70°C
	Ambient temperature (operation)	$-25 - +70^{\circ}$ C
	De Rating Ta > 50°C	- 2.5%(In) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI2801224A **DC UPS**

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

Main or Backup Power	Yes
Battery Power Low	Yes
Battery Fault	Yes
Max. Current Rating (Resistive Load)	1A 30 VDC/60 VAC
Minimum Permissible Current Rating	1mA @ 5 VDC

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes – (Aux 1)
ModBus / Can Bus	Yes – (Aux 2)
ModBus / Can Bus	Yes – (Aux 3)

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2.5 mm ² (24-14 AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	115x115x135 mm
2.95x4.53x5.32 in	
Weight (approx.)	0.85 kg (1.9 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





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CBI2801224B **DC UPS**

Features:

- Input: Single-phase 230 500 VAC •
- Output Load: power supply 12 VDC; 15 A / 24VDC; 10A
- Output: Battery charging 12 VDC; 15 A / 24VDC; 10A Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status. ٠
- Switching technology, output voltage 10-14.4 VDC / 22-28.8 VDC Three charging levels: Boost, trickle and recovery •
- •
- Protection degree IP20 DIN rail mountable

PUT	Cat. No.	CBI2801224B
	Nominal Input Voltage	230 ~ 400 ~ 500 VAC
	Voltage range	180-264 / 330-550 VAC
	Inrush Current (V _n – I _n nom. Load). I ² t	\leq 16 A \leq 5 msec
	Frequency	47 – 63 Hz
	Input Current (115 – 230 VAC)	2.2 -1.4 -1.0 A
	Internal fuse (factory replaceable)	4 A
	External Fuse (recommended) MCB curve B	16 A
TPUT		
	Output Voltage (V _n) / Nominal Power (W)	12 / 24 VDC / 270W (jumper selection)
	Output Current In	15 A @ 12VDC / 10A @ 24VDC
	Efficiency (at 50% of rated current)	≥ 91 %
	Turn-On delay after applying input voltage	1 sec. (max)
	Start up with Strong Load (capacitive load)	Yes, Unlimited
	Dissipation power load max	28 W
DTECTION		
	Short-circuit protection	Yes
	Over Load protection	Yes
2	Over Voltage Output protection	Yes (typ. 35 VDC)
D UTPUT	Over Temperature protection	Yes
	Output voltage (at I)	10-14.4 / 22-28.8 VDC
	Output voltage (at In)	
	Nominal current I _{load}	$1.1 \times \ln A \pm 5\%$
	Continuous current (without battery) $I_{load} = I_n$	15 A @ 12VDC / 10A @ 24VDC
	Continuous current (with battery) $I_{load} = I_n + I_{batt}$	30 A @ 12VDC / 20A @ 24VDC max.
	Max. Current Output Load (Main) Iload (4 sec.)	45 A @ 12VDC / 30A @ 24VDC max.
	Max. Current Output Load (Back Up) I _{load} (4 sec.)	30 A @ 12VDC / 20A @ 24VDC max.
	Push Button or Remote Input Control (RTCONN cable)	Start From Battery Without Main
	Time Buffering; min (switch output off without main input)	0.5,2,5,10,15,20,30,45,60,∞
	Protection alarm against total discharge	10-11 / 20-21V DC battery
TERY	Threshold alarm for battery almost flat	9-10 / 19-20V DC battery
UTPUT	Boost charge (25 °C) (at I _n)	14.4 @ 12VDC / 28.8 @ 24VDC
		14.4 @ 12vDC / 28.8 @ 24vDC 15 h
	Max. time Bust Charge	
	Min. time Bust Charge	
	Trickle charge (25 °C) (at I _n)	13.8 @ 12VDC / 27.6 @ 24VDC
	Jumper Configuration battery type (V cell) Ni-Cd (optional)	2.23; 2.25; 2.27; 2.30; NiCd: 1.50 / element
	Recovery Charge	2 ~ 18 / 2 ~ 24VDC
	Charging current max I _{batt}	15 A @ 12VDC / 10A @ 24VDC ± 5%
	Charging current limiting I _{adj}	10 – 100 % / Ibatt
	Reverse battery protection	Yes
	Sulfated battery check	Yes by Jumper
	Detection of element in short circuit	Yes
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: I _{UoUo}	4 stage
EDC	Remote Input Control (RTCONN cable)	Boost / Trickle
IERS		
	Ambient temperature (operation)	$-25 - +70^{\circ}$ C
	De Rating Ta $> 50^{\circ}$ C	- 2.5%(ln) / °C
	Ambient temperature Storage	-40 - +85°C
	Humidity at 25°C no condensation	95%
	Cooling	Auto convention
	MTBF (IEC 61709)	> 300.000 h

CBI2801224B DC UPS

The Altech DC-UPS system is built to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority. For high inrush applications the charging power will reroute automatically to the load. In this case the maximum available current on the load output is two times the value of the device rated current.

The Battery Care concept based on algorithms that achieve rapid and automatic charging, battery optimization during charging time, flat batteries recovery and real time diagnostic The Real Time Auto-diagnostic system, monitors battery faults, sulfated battery, short circuit battery elements, reverse polarity connection, battery disconnect. This conditions are detected and identified by the number of blinks of the diagnosis Led.

Signal Output Contacts

RJ45 Connection Input/Output

Temp. Comp. Battery (with ext. probe)	Yes – (Aux 1)
ModBus / Can Bus	Yes – (Aux 2)
ModBus / Can Bus	Yes – (Aux 3)

Environment

Insulation voltage (IN/OUT)	3000 VAC
Insulation voltage (input / ground)	1605 VAC
Insulation voltage (Output / ground)	500 VAC
Protection Class (EN/IEC 60529)	IP20
Pollution Degree Environment	2
Connection TB, Screw Terminal	2.5 mm ² (24-14 AWG)
Protection class (Ground Connected)	Class I
Dimensions (WxHxD)	115x115x135 mm
2.95x4.53x5.32 in	
Weight (approx.)	0.85 kg (1.9 Lbs)

Safety and EMC

Battery charger standard compliance	IEC/EN 60335-2-29
Safety standards compliance:	EN60950 / UL1950 / CE
Fire Detection and alarm compliance	EN54-4
EMC Directive	89/336/EEC
Charging cycle	DIN41773
Emission	IEC 61000-6-4
Immunity	IEC 61000-6-2

The Altech DC-UPS system is designed to charge and monitor all battery types, by selecting the battery type via jumpers. The predefined curves include Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (optional) battery types. The charging curve are programmed to automatically switch between Recovery Charge, Boost charge and Trickle charge. The continuous battery efficiency monitoring, reduces battery damage risk and allows a safe operation in permanent connection.

A compact and rugged metal case with DIN rail mounting bracket provide an easy installation and an IP20 protection.

Jumper for Battery Type Selection







 Jumper present: life test enabled.
 Jumper present: fast test enabled.
 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





power

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CB Type Intelligent Battery Chargers

The CB type battery chargers are designed and manufactured with a wide input voltage, single or two phase 115-230-277 VAC.

flexibility

Technology

The CB series is a new range of battery chargers based on two strategic know-how elements.

Switching technology

277 MAC We have 25 year experience in design of advanced stabilized switching technology power supplies. A battery charger based on this technology is much more efficient and much smaller and lighter than traditional linear technology battery chargers.

Micro-processor and Battery Care

Unlike most other state-of-the-art battery chargers, the CB series is equipped with a micro-processor which controls the charging process and enables several monitoring functions.

Maximum safety and protection

The CB series is designed to provide safe operation and long battery life. The following protections are standard features:

-Output protected against short circuit and overloa
-Protection against deep battery discharge
-Drotection against reverse nelarity connection

ad -High insulation between primary and secondary -Detection of batteries with wrong rated voltage -Protection against the effect of parallel connection with other power sources, e.g. gensets.

115 VAC

All protections have automatic reset. No thermal fuse to be replaced.

One device for all battery types

Completely automatic, the battery chargers of the CB series are microprocessor controlled devices suited to charging most batteries types thank to factory pre-set and selectable charging curves. The can charge open lead acid, sealed lead acid, Bel and Ni-Cd, Ni-MH batteries. It is possible to change or add other charging curves connecting the device to a portable PC.

Mutli-Stage charging Three charging modes

Automatic multi-stage operation and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting the CB device. The type of charging it is Voltages stabilized and current stabilized IUoUo.

CB battery chargers feature three charging modes, identified by a flashing code on a LED.

- Boost (Boost-Bulk) (Blink 2/sec)
- Trickle (also known as float or maintenance charging) (Trickle - Float) (Blink 1/sec)
- Recovery (Recovery) (Blink 5/sec)

Recovery charging

Automatic multi-stage operation optimizes and adapt to battery status, even when the battery voltage is very low. CB can recharge batteries even when their voltage is close to zero. It allows recharge and complete recovery of flat batteries.

Setting of battery maximum charging current

The maximum battery charging current can be set from 20% to 100% of the device rated value. Not available on LC models.



CB Type Intelligent Battery Chargers

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Diagnostic of battery and device

All CB devices support the user during installation and operation. An LED flashing sequence code allows to discriminate among various possible faults.

LED Diagnosis:

- 1 flash Reverse polarity, wrong battery voltage.
- 2 flashes Disconnected battery.
- 3 flashes Battery element in short circuit.
- 5 flashes Battery to be replaced (Internal impedance Bad or Bad battery wire connection.)

Diagnostic checks

Check for accidental disconnection of the battery cables

- If happen the devices switch off immediately the output power.

Battery not connected

- If the battery it is not connected no output power.

Test of quality wire connections

- During trickle charge the quality(resistance) on the battery connection is checked

every 20 sec. this to detect if the cable connection has been properly made.

Test of battery voltage connections

- Appropriate voltage check, to prevent connection of wrong battery types.

End of charging check

- When the battery it is completely full, the device automatically switch in trickle charging mode.

Reverse polarity check

- If the battery it is connected with inverted polarity, the devices are automatically protected.



Monitor signals

Signal contracts

- CB chargers indicate battery status and faults also via a change-over contact with galvanic isolation.
- Battery common fault.





Visual indication

- Battery common fault
- Unit disconnected from mains
- Charging mode - CV device self-diagnostic



Single output devices



With the CB Battery Charger Line, Altech offers a highly reliable battery management solution. Operating at single phase Input Voltages of 115-230-277 VAC, the devices supply an Output of 12VDC and up to 35A or 24VDC and up to 20A.

Element in Short Circuit

Equipped with microcontrollers, the CB line offers fully automated multi-stage charging that will expand the battery's life significantly. Several diagnostic and monitoring features ensure easy handling and a high amount of transparency during daily operation.

Altech's CB line battery chargers are based on the switching technology which allows much higher efficiency as well as smaller and lighter devices. Additionally, several standard safety and protection features ensure safe installation and operation.

DC Output

DIN Rail Mounting

Charging Level

AC Input

Features:

- Fully automated charging
- Three charging modes
- · Compact, rugged metal case
- Available in 12VDC and 24VDC
- Suitable for most common battery types
- Adjustable charging current
- Easy battery diagnosis and fault identification either by LED or external devices connected to fault status contacts
- High efficiency up to 91% through switching technology Several output protection features such as short circuit,
- overload, deep battery discharge etc. DIN rail mounting
- Small size
- 3 year warranty

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- Thanks to specific algorithms of evaluation, the CBs recognize batteries worth element in short circuit.

Configuration Jumper

Battery Fault LED

Diagnosis LED

Battery Type

Fault Status Contacts



CB Battery Chargers - Single Phase Specifications

Case 0

Case 1

Case 2

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12V DC Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC	Outp VDC	A A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CB123A	0	115-230-277	12	3	2-7	13.75	14.4	
CB126A*	0	115-230-277	12	6	2-7	13.75	14.4	
CB1210A	1	115-230-277	12	10	2-9	13.75	14.4	
CB1235A	3	115-230-277	12	35	2-9	13.75	14.4	

* Not for new designs. See CB12245A for new design.

24V DC Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC	Outp VDC	A A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CB243A	0	115-230-277	24	3	2-16	27.5	28.8	
CB245A	1	115-230-277	24	5	2-18	27.5	28.8	
CB2410A	2	115-230-277	24	10	2-18	27.5	28.8	
CB2420A	3	115-230-277	24	20	2-18	27.5	28.8	

Multi Voltage Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC			Recovery Charge VDC		Boost NO Charge VDC	TES
CB12245A	0	115-230-277	12/24	6/5	2-7/2-16	13.75/27.5	14.4/28.8	

Case Sizes

Size 0: 45 mm x 100 mm x 100 mm (1.78 x 3.94 x 3.94 in.) Size 1: 65 mm x 115 mm x 135 mm (2.56 x 4.53 x 5.32 in.) Size 2: 100 mm x 115 mm x 135 mm (3.94 x 4.53 x 5.32 in.) Size 3: 150 mm x 115 mm x 135 mm (5.91 x 4.53 x 5.32 in.)

Output Current can be adjusted from 20%-100% of value given above.



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SPECIFICATIONS

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Case 0



Case 1



Case 2



Case 3



Input Voltage 115-230 277VAC

Input Current 0.5-0.3A (115-230VAC)

Connection Plugable screw terminal blocks

Wire Range 0.2 - 2.5mm2 / AWG 24-14

Size (WxHxD) 45x110x100 mm (1.78 x 3.94 x 3.94 in.)

Packaging 1/box; 0.30kg (0.66 lbs)

Input Voltage 115-230 277VAC

Input Current 2.4-1.2A (115-230VAC)

Connection Screw terminal blocks

Wire Range 0.2 - 2.5mm² / AWG 24-14

Size (WxHxD) 65x115x135 mm (2.56 x 4.53 x 5.32 in.)

Packaging 1/box; 0.65kg (1.43 lbs)

Input Voltage 115-230 277VAC

Input Current 3.3-2.2A (115-230VAC)

Connection Screw terminal blocks

Wire Range 0.2 - 2.5mm² / AWG 24-14

Size (WxHxD) 100x115x135 mm (3.94 x 4.53 x 5.32 in.)

Packaging 1/box; 0.85kg (1.87 lbs)

Input Voltage 115-230 277VAC

Input Current 8-4.2A (115-230VAC)

Connection screw terminal blocks

Wire Range 0.2 - 4mm² / AWG 30-10

Size (WxHxD) 150x115x135 mm (5.91 x 4.53 x 5.32 in.)

Packaging 1/box; 1.5kg (3.31 lbs)





Jumper for

Battery Type Selection 0pen 1 2 3 4 6

Sealed Lead Low

Gel Gel 1 2 3 4 6 Gel Battery

Gel 1 2 3 4 6 Gel Battery (1)

Fast Charge Fast Charge Enable²

Jumper for Battery Type Selection 1 2 3 4 5 6 7 Open

Sealed 1 2 3 4 5 6 7
Lead Low

Sealed Lead High

Gel Battery

6 7

NiCd -NiMh (1)

6 7 Jumper for Functional Setting

Battery Life Test On'

Fast Charge 1 2 3 4 5 6 7
Fast Charge

Fast Recover 1 2 3 4 5 6 7
Fast Recover Charge (2)³

6 7

Gel Gel 1 2 3 4 5 6 7 Gel Battery (1)

6 234 Sealed Lead High

1234 6

1234 6

1234 6







NiCd -NiMh (1) Jumper for Functional Setting Battery Life

enabled only for size 3. Possi echarge the battery also whe roltage is close to zero with t





Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

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Appendix

CB123A Battery Charger

Features:

- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 12 VDC; 3 A
- Suited for the following battery types:
 Open Load Acid. Scaled Load Acid. Log
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) • Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 14.4 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable

INPUT	Cat. No.	CB123A
	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC
	Inrush Current (Vn and In Load) I2t	$11 \text{ A} \le 5 \text{ msec.}$
	Frequency	$47 \sim 63 \text{ Hz} \pm 6\%$
	Input Current	0.5 A ~ 115 VAC; 0.3A ~ 230 VAC
BATTERY	Internal Fuse	4 A
OUTPUT	External Fuse (recommended)	10 A (MCB curve B)
	Battery Output (Battery Care)	
	Boost charge (25°C) (typ. at In)	14.4 VDC
and the second	Max. time Bust Charge (tpy. at In)	15 h
	Min. time Bust Charge (tpy. at In)	70 min.
	Trickle charge (25°C) (typ. at In)	13.75 VDC
	Recovery Charge	2 ~ 7 VDC
	Charging. Max I _{batt} (I _n)	3 A ±5%
	Adjustable charging current l _{adj} (% ln)	20 – 100
	Efficiency (50% - I _n)	81%
	Quiescent Current	≤ 100 mA
	Charging Curve automatic: IUoUo Detection of element in short circuit	3 stage
	Short-circuit protection	Yes Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes
	Jumper Configuration battery type	2.23;2.25;2.27;2.3;
GENERAL DATA	(V cell) Ni-Cd (optional)	1,41–1,5 (20 elem.)
	General Data	
	Insulation voltage (In /Out)	3000 VAC
	Insulation voltage (In / PE)	1605 VAC
	Insulation voltage (Out / PE)	500 VAC
	Protection Class (EN/IEC 60529)	IP20
	Protection class	I, with PE connected
	Reliability: MTBF IEC 61709	> 300.000 hours
	Pollution Degree Environment	2
	Connection Terminal Blocks screw Type	2,5mm (24~14AWG)
	Dimensions (W-H-D)	45x100x100 mm (1.78 x 3.94 x 3.94 in.)
NVIRONMENT	Weight	0.30 Kg approx. (0.65 lbs.)
	Climate Data	
	Ambient temperature (operation)	-25 - +70°C (-13~158°F)
	De Rating Ta $> 50^{\circ}$ C	-2.5%(In) / °C
	Ambient temperature Storage	-40 - +85°C (-40~185°F) 95% to 25°C
SAFETY & EMC	Humidity at 25°C no condensation Cooling	Auto Convention
DAFEITQEINIC		Auto convention
	Norms and Certifications	
	Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC,
OTHERS		EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle),
DTHERS		Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact)	
	Main or Backup Power	Yes
	Low Battery	Yes
	Fault Battery	Yes
	Type of Signal Output Contact	
	Max. current can be switched (EN60947.4.1):	
	Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A	Resistive load
	Min.1mA at 5 VDC	Min load

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CB123A Battery Charger

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Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUOU0. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	OFF
Туре	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	Ĵ1 Blink	ON
diagnosis	Battery No connect	∭ 2 Blink	ON
	Element in Short C.	JML3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram



CB126A Battery Charger ROHS 🚫 CE 😃

* Not for new designs.

Features:

- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 12 VDC; 6 A
- Suited for the following battery types: •
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) Automatic diagnostic of battery status. Charging •
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 14.4 VDC •
- Three charging levels: Boost, Trickle, Recovery. •
- Protected against short circuit, inverted polarity, over load. •
- Signal output (contact free) for fault battery state • •
- Protection degree IP20 DIN rail mountable.

NPUT	Cat. No.	CB126A
_	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC
ATTEN	Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse	\leq 11 A \leq 5 msec. 47 ~ 63 Hz ±6% 1 A ~ 115 VAC; 0.7 A 230 VAC 4 A
ATTERY UTPUT	External Fuse (recommended)	10 A (MCB curve B)
	Battery Output (Battery Care)Boost charge (25°C) (typ. at I_n)Max. time Bust Charge (tpy. at I_n)Min. time Bust Charge (tpy. at I_n)Trickle charge (25°C) (typ. at I_n)Recovery ChargeCharging. Max $I_{batt} < 40°C$ (I_n)Charging. Max $I_{batt} > 40°C$ (I_n)Efficiency (50% - I_n)Charging current limiting I_{adj} Quiescent CurrentCharging Curve automatic: IUOU0	14.4 VDC 15 h 70 min. 13.75 VDC $2 \sim 7$ VDC $6 A \pm 5\%$ 4 A 81% $20 - 100 \% I_{h}$ $\leq 100 mA$ 3 stage
ENERAL DATA	Detection of element in short circuit Short-circuit protection Over Load protection Over Voltage Output protection Jumper Configuration battery type (V cell) Ni-Cd (optional)	Yes Yes Yes 2.23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
	General Data Insulation voltage (In /Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D)	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected > 300.000 hours 2 2,5mm (24~14AWG) 45x100x100 mm (1.78 x 3.94 x 3.94 in.)
NVIRONMENT	Weight	0.30 Kg approx. (0.65 lbs.)
SAFETY & EMC	Climate Data Ambient temperature (operation) De Rating Ta > 50°C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(In) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
THERS	Norms and Certifications Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle), Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
	Type of Signal Output Contact Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load

CB126A Battery Charger



* Not for new designs.

Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUOU0. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	0FF
Туре	Boost	2 Blink/sec	0FF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	Ĵ1 Blink	ON
diagnosis	Battery No connect	ĴĴĨ2 Blink	ON
	Element in Short C.	JML3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram





CB1210A Battery Charger

Features:

- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 12 VDC; 10 A
- Suited for the following battery types:
 Open Lead Acid, Sealed Lead Acid, Lead
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) • Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current Switching technology, output voltage 14.4 VI
- Switching technology, output voltage 14.4 VDC
 Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable

	Cat. No.	CB1210A
	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC
	Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse External Fuse (recommended)	\leq 16 A \leq 5 msec. 47 ~ 63 Hz \pm 6% 2.4 A ~ 115 VAC; 1.2 A 230 VAC 4 A 10 A (MCB curve B)
	Battery Output (Battery Care) Boost charge (25°C) (typ. at I_n) Max. time Bust Charge (tpy. at I_n)	14.4 VDC 15 h
	Min. time Bust Charge (tpy. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge	1 min. 13.75 VDC 2 ~ 9 VDC
I	Charging. Max I _{batt} (I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} Quiescent Current	10 A ±5% 89% 20 – 100 % I _n ≤ 100 mA
	Charging Curve automatic: IUoUo Detection of element in short circuit Short-circuit protection Over Load protection	3 stage Yes Yes Yes
1	Over Voltage Output protection Jumper Configuration battery type (V cell) Ni-Cd (optional)	Yes 2.23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
	General Data Insulation voltage (In /Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected
	Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D) Weight	> 300.000 hours 2 2,5mm(24–14AWG) 65x115x135 mm (2.56 x 4.53 x 5.32 in.) 0.65 Kg approx. (1.43 lbs.)
	Climate Data Ambient temperature (operation) De Rating Ta > 50°C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(ln) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
	Norms and Certifications Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle), Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
	Type of Signal Output Contact Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load

INPUT

BATTERY OUTPUT

GENERAL DATA

SAFETY & EMC

OTHERS

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CB1210A Battery Charger

Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	OFF
Туре	Boost	2 Blink/sec	0FF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	Ĵ1 Blink	ON
diagnosis	Battery No connect	ĴĴÎ2 Blink	ON
	Element in Short C.	JML3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Wiring Diagram

Jumper for Battery Type Selection

6 7

6 7

6

6 7

7

7 6

Jumper for Functional Setting

7

Open

Lead

Sealed

Sealed

Batterv

Battery (1)

Gel

Gel

NiCd -

NiMh (1)

Battery Life

Fast Charge

Fast Recovery

Charge (2)3

Test On¹

Enable²

Lead Low

Lead High

1234

1234

1234

1234

1234

1234

1234

1 2 3 4

1 2 3 4

6 7

6 7

6

6 7



CB Charging Diagram





Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.



CB1235A Battery Charger



- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 24 VDC; 35 A
- Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) • Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
 Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable

INPUT	Cat. No.	CB1235A
	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 / 230 ~ 277 VAC 90 ~ 135 / 180 ~ 305 VAC
BATTERY OUTPUT	Inrush Current (Vn and In Load) I ² t Frequency Input Current Internal Fuse External Fuse (recommended)	$\leq 35 \text{ A} \leq 5 \text{ msec.}$ $47 \sim 63 \text{ Hz} \pm 6\%$ 1.0 A ~ 115 VAC; 0.7 A 230 VAC 10 A 16 A (MCB curve B)
	Battery Output (Battery Care)Boost charge (25°C) (typ. at In)Max. time Bust Charge (tpy. at In)Min. time Bust Charge (tpy. at In)Trickle charge (25°C) (typ. at In)Recovery ChargeCharging. Max Ibatt (In)Efficiency (50% - In)Charging current limiting IadjQuiescent CurrentCharging Curve automatic: IUOU0Detection of element in short circuitShort-circuit protectionOver Load protectionOver Voltage Output protectionPower Supply ModeJumper Configuration battery type	14.4 VDC 15 h 1 min. 13.75 VDC $2 \sim 9$ VDC $35 A \pm 5\%$ 91% $20 - 100 \% I_n$ $\leq 100 mA$ 3 stage Yes Yes Yes Yes Yes Yes Yes Yes
GENERAL DATA	(V cell) Ni-Cd (optional)	1,41–1,5 (20 elem.)
ENVIRONMENT	General Data Insulation voltage (In /Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D) Weight	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected > 300.000 hours 2 4mm(30–10AWG) 150x115x135 mm (5.91 x 4.53 x 5.32 in.) 1.5 Kg approx. (3.31 lbs.)
SAFETY & EMC	Climate Data Ambient temperature (operation) De Rating Ta > 50°C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(ln) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
OTHERS	Norms and Certifications Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage),DIN41773 (Charging cycle), Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
	Type of Signal Output Contact Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load

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CB1235A Battery Charger

Altech Corp.

Technical Features

The CB series battery chargers are designed with advanced multi-stage battery charging method. completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle, A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	0FF
Туре	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	0FF
Auto	Reverse polarity	1 Blink	ON
diagnosis	Battery No connect	<u> </u>	ON
	Element in Short C.	M3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Jumper for Battery Type Selection





Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



3

CB Charging Diagram



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70

CB243A Battery Charger

Features:

- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 24 VDC; 3 A
- Suited for the following battery types:
 Open Load Acid. Cooled Load Acid. Load
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) • Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
 Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable
- Cat. No. **CB243A** INPUT Input Data Nominal Input Voltage (2 x VAC) 115 ~ 230 ~ 277 VAC Input Voltage range (VAC) 90 ~ 305 VAC Inrush Current (Vn and In Load) I2t \leq 7 A \leq 5 msec. Frequency $47 \sim 63 \text{ Hz} + 6\%$ Input Current (115 ~ 230 VAC) 1 ~ 0.7 A Internal Fuse 4 A BATTERY External Fuse (recommended) 10 A (MCB curve B) OUTPUT **Battery Output (Battery Care)** Boost charge (25°C) (typ. at In) 28.8 VDC Max. time Bust Charge (tpy. at In) 15 h Min. time Bust Charge (tpy. at In) 70 min. Trickle charge (25°C) (typ. at In) 27.5 VDC **Recovery Charge** $2 \sim 16 \text{ VDC}$ Charging. Max Ibatt (In) 3 A ±5% Adjustable charging current Iadj (% In) 20 - 100 Efficiency (50% - In) 81% **Quiescent Current** $\leq 100 \text{ mA}$ Charging Curve automatic: IUoUo 3 stage Detection of element in short circuit Yes Short-circuit protection Yes Over Load protection Yes Over Voltage Output protection Yes Jumper Configuration battery type 2.23;2,25;2,27;2,3; (V cell) Ni-Cd (optional) 1,41-1,5 (20 elem.) **GENERAL DATA General Data** Insulation voltage (In /Out) 3000 VAC Insulation voltage (In / PE) 1605 VAC Insulation voltage (Out / PE) 500 VAC Protection Class (EN/IEC 60529) IP20 Protection class I, with PE connected Reliability: MTBF IEC 61709 > 300.000 hours **Pollution Degree Environment** 2 Connection Terminal Blocks screw Type 2,5mm(24-14AWG) Dimensions (W-H-D) 45x100x100 mm (1.78 x 3.94 x 3.94 in.) ENVIRONMENT Weight 0.30 Kg approx. (0.66 lbs.) **Climate Data** Ambient temperature (operation) -25 - +70°C (-13~158°F) De Rating Ta > 50°C - 2.5%(In) / °C Ambient temperature Storage -40 - +85°C (-40~185°F) Humidity at 25°C no condensation 95% to 25°C **SAFETY & EMC** Cooling Auto Convention Norms and Certifications Conforming to: IEC/EN 60335-2-29, EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle), **OTHERS** Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE Signal Output (free switch contact) Main or Backup Power Yes Low Battery Yes Fault Battery Yes **Type of Signal Output Contact** Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A **Resistive** load Min.1mA at 5 VDC Min load

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CB243A Battery Charger

Altech Corp.

Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	0FF
Туре	Boost	2 Blink/sec	0FF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	J1 Blink	ON
diagnosis	Battery No connect	ĴĴĨ2 Blink	ON
	Element in Short C.	JML3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram



CB245A Battery Charger

Features:

- Input: Single-phase 115 230 -277 VAC
- Output: Battery charging 24 VDC; 5 A
- Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) • Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable

NPUT	Cat. No.	CB245A
	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC
BATTERY	Inrush Current (Vn and In Load) I ² t Frequency Input Current Internal Fuse	\leq 16 A \leq 5 msec. 47 ~ 63 Hz ±6% 3.3 A - 115 VAC; 2.2 A ~ 2300 AC 4 A
UTPUT	External Fuse (recommended)	10 A (MCB curve B)
	Battery Output (Battery Care) Boost charge (25°C) (typ. at In) Max. time Bust Charge (tpy. at In) Min. time Bust Charge (tpy. at In) Trickle charge (25°C) (typ. at In) Recovery Charge Charging. Max Ibatt (In) Efficiency (50% - In) Charging current limiting Iadj Quiescent Current Charging Curve automatic: IU0U0 Detection of element in short circuit Short-circuit protection Over Voltage Output protection Jumper Configuration battery type	28.8 VDC 15 h 1 min. 27.5 VDC 2 ~ 18 VDC 5 A $\pm 5\%$ 89% 20 - 100 % In \leq 100 mA 3 stage Yes Yes Yes Yes 2.23;2,25;2,27;2,3;
ENERAL DATA	(V cell) Ni-Cd (optional)	1,41–1,5 (20 elem.)
NVIRONMENT	General Data Insulation voltage (In /Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D) Weight	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected > 300.000 hours 2 2,5mm (24–14AWG) 65x115x135 mm (2.56 x 4.53 x 5.32 in) 0.65 Kg approx. (1.43 lbs.)
	Climate Data	
AFETY & EMC	Ambient temperature (operation) De Rating Ta $> 50^{\circ}$ C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(In) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
	Norms and Certifications	
THERS	Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage),DIN41773 (Charging cycle), Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
	Type of Signal Output Contact Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load

CB245A Battery Charger

Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUOU0. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

Jumper for Battery Type Selection





 Jumper present: life test enabled.
 Jumper present: fast test enabled.
 Jumper present: fast tecovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.





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Fast Recovery

Charge (2)3

CB Charging Diagram



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Appendix

		Features:
Antimities in the second	CB2410A	 Input: Single-phase 115 - 230 - 277 VAC Output: Battery charging 24 VDC; 10 A
	Battery Charge	 Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) Automatic diagnostic of battery status. Charging
Altech Corre		curve IUoUo, constant voltage and current Switching technology, output voltage 28.8 VDC Three charging levels: Boost, Trickle, Recovery.
		 Protected against short circuit, inverted polarity, over load. Signal output (contact free) for fault battery state Protection degree IP20 - DIN rail mountable
IPUT	Cat. No.	CB2410A
	Input Data Nominal Input Voltage (2 x VAC)	115 / 230 ~ 277 VAC
	Input Voltage range (VAC)	90 ~ 135 / 180 ~ 305 VAC
YANYAN Y	Inrush Current (Vn and In Load) I ² t	\leq 16 A \leq 5 msec.
	Frequency Input Current	47 ~ 63 Hz ±6% 3.3 A ~ 115 VAC; 2.2 A ~ 230 VAC
ATTERY	Internal Fuse	6.3 A
UTPUT	External Fuse (recommended)	16 A (MCB curve B)
	Battery Output (Battery Care)	00.01/00
	Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (tpy. at I _n)	28.8 VDC 15 h
	Min. time Bust Charge (tpy. at I_n)	1 min.
	Trickle charge (25°C) (typ. at In)	27.5 VDC
	Recovery Charge	2 ~ 18 VDC
	Charging. Max I _{batt} (I _n) Efficiency (50% - I _n)	10 A ±5% 88%
	Charging current limiting ladi	20 – 100 % In
	Quiescent Current	$\leq 100 \text{ mA}$
	Charging Curve automatic: IUoUo	3 stage
	Detection of element in short circuit Short-circuit protection	Yes Yes
	Over Load protection	Yes
	Over Voltage Output protection	Yes
	Jumper Configuration battery type	2.23;2,25;2,27;2,3;
ENERAL DATA	(V cell) Ni-Cd (optional) General Data	1,41–1,5 (20 elem.)
	Insulation voltage (In /Out)	3000 VAC
	Insulation voltage (In / PE)	1605 VAC
	Insulation voltage (Out / PE)	500 VAC
NAM	Protection Class (EN/IEC 60529) Protection class	IP20 I. with PE connected
	Reliability: MTBF IEC 61709	> 300.000 hours
2 YAYA	Pollution Degree Environment	2
	Connection Terminal Blocks screw Type Dimensions (W-H-D)	2,5mm(24–14AWG) 100x115x135 mm (3.94 x 4.53 x 5.32 in)
VIRONMENT	Weight	0.85 Kg approx. (1.87 lbs.)
	Climate Data	
	Ambient temperature (operation)	-25 - +70°C (-13~158°F)
	De Rating Ta > 50°C	- 2.5%(ln) / °C
	Ambient temperature Storage Humidity at 25°C no condensation	-40 - +85°C (-40~185°F) 95% to 25°C
AFETY & EMC	Cooling	Auto Convention
	Norms and Certifications	
	Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC,
THEDO		EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle),
THERS	Cinnal Output (free quitable souther)	Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power	Yes
	Low Battery	Yes
	Fault Battery	Yes
	Type of Signal Output Contact	
	Max. current can be switched (EN60947.4.1):	
	Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load
	WIII. THIA at J VDG	

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CB2410A Battery Charger



Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUOUO. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	OFF
Туре	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	Ĵ1 Blink	ON
diagnosis	Battery No connect	ĴĨI2 Blink	ON
	Element in Short C.	JM3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Jumper for Battery Type Selection



Jumper present: life test enabled. Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.



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1 2 3 4

Fast Charge

Enable²



CB Charging Diagram



Appendix

C				
		4		
-19	STATE OF		-(1)- OUTPUT (+(2)+ LOAD
	MartineMartine	Marian Marian	Factor Law	**
the state	Antery charge CR24208* NEUT : 85-32555 - 4-80 Statestic -		BATTERY 	
INF	PUT			

CB2420A Battery Charger



Features:

- Input: Single-phase 115 277 VAC
- Output: Battery charging 24 VDC; 20 A
 - Suited for the following battery types:
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option) Automatic diagnostic of battery status. Charging
- curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 DIN rail mountable

Cat. No. **CB2420A** Input Data Nominal Input Voltage (2 x VAC) 115 ~ 230 ~ 277 VAC Input Voltage range (VAC) 90 ~ 135 / 180 ~ 305 VAC Inrush Current (Vn and In Load) 12t \leq 35 A \leq 5 msec. Frequency 47 ~ 63 Hz ±6% Input Current (115 ~ 230 VAC) 8 ~ 4.2 A Internal Fuse 10 A External Fuse (recommended) 16 A (MCB curve B) **Battery Output (Battery Care)** Boost charge (25°C) (typ. at In) 28.8 VDC Max. time Bust Charge (tpy. at In) 15 h Min. time Bust Charge (tpy. at In) 1 min. Trickle charge (25°C) (typ. at In) 27.5 VDC **Recovery Charge** 2~18 VDC Charging. Max Ibatt (In) 20 A ±5% 20 - 100 Adjustable charging current (% In) Efficiency (50% - In) 91% Charging current limiting ladi 20 - 100 % In Quiescent Current ≤ 100 mA Charging Curve automatic: IUoUo 3 stage Detection of element in short circuit Yes Short-circuit protection Yes Over Load protection Yes Over Voltage Output protection Yes Power Supply Mode Yes Jumper Configuration battery type 2.23;2,25;2,27;2,3; (V cell) Ni-Cd (optional) **GENERAL DATA** 1,41-1,5 (20 elem.) **General Data** Insulation voltage (In /Out) 3000 VAC Insulation voltage (In / PE) 1605 VAC Insulation voltage (Out / PE) 500 VAC Protection Class (EN/IEC 60529) IP20 Protection class I. with PE connected Reliability: MTBF IEC 61709 > 300.000 hours Pollution Degree Environment 2 Connection Terminal Blocks screw Type 4 mm(30-10AWG) 150x115x135 mm (5.91 x 4.53 x 5.32 in.) Dimensions (W-H-D) Weight 1.5 Kg approx. (3.31 lbs) ENVIRONMENT **Climate Data** Ambient temperature (operation) -25 - +70°C (-13~158°F) De Rating Ta $> 50^{\circ}$ C - 2.5%(In) / °C Ambient temperature Storage -40 - +85°C (-40~185°F) Humidity at 25°C no condensation 95% to 25°C **SAFETY & EMC** Cooling Auto Convention **Norms and Certifications** Conforming to: IEC/EN 60335-2-29.EN60950/UL1950. Electrical safety. 89/336/EEC. EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle), **OTHERS** Emission: IEC 61000-6-4. Immunity: IEC 61000-6-2. CE Signal Output (free switch contact) Main or Backup Power Yes Low Battery Yes Fault Battery Yes **Type of Signal Output Contact** Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Resistive load Min.1mA at 5 VDC Min load

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BATTERY OUTPUT

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CB2420A Battery Charger

Altech Corp.

Technical Features

The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	0FF
Туре	Boost	2 Blink/sec	0FF
	Recovery	5 Blink/sec	0FF
Auto	Reverse polarity	1 Blink	ON
diagnosis	Battery No connect	<u>₩</u> 2 Blink	ON
-	Element in Short C.	M3 Blink	ON
	Replace Battery	MML 5 Blink	ON

Jumper for Battery Type Selection





Jumper present: fast test enabled. Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram



CB12245A **Battery Charger**



Features:

- Input: Single-phase 115 230 277 VAC
- Output: Battery charging 12 VDC; 24 VDC (switch select) • Suited for the following battery types: •
- Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status. Charging curve IUoUo, constant voltage and current
- Switching technology, output voltage 14.4 VDC / 28.8 VDC
- Four charging levels: Boost, Absorption, Trickle, Recovery. ٠
- Protected against short circuit, reversed polarity, over load.
- Signal output (contact free) for fault battery state ٠
- Protection degree IP20 DIN rail mountable •

INPUT	Cat. No.	CB12245A
	Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC
DATTEDY	Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse	$\leq 16 \text{ A} \leq 5 \text{ msec.}$ 47 ~ 63 Hz ±6% 2.4 A - 115 VAC; 1.2 A 230 VAC 4 A
BATTERY OUTPUT	External Fuse (recommended)	10 A (MCB curve B)
	Battery Output (Battery Care) Boost charge $(25^{\circ}C)$ (typ. at I_n) Max. time Bust Charge (tpy. at I_n) Min. time Bust Charge (tpy. at I_n) Trickle charge $(25^{\circ}C)$ (typ. at I_n) Recovery Charge Charging. Max I_{batt} (I_n)	14.4 VDC / 28.8 VDC (jumper section) 15 h 4 min. 13.75 VDC / 27.5 VDC 2 ~ 7 VDC / 2 ~ 16 VDC 6A@12V / 5A@24V DC
GENERAL DATA	Efficiency (50% - I _n) Charging current limiting I _{adj} Quiescent Current Charging Curve automatic: IUoUo Detection of element in short circuit Short-circuit protection Over Load protection Over Voltage Output protection Jumper Configuration battery type (V cell) Ni-Cd (optional)	90% $20 - 100 \ \% \ I_n$ $\leq 100 \ mA$ $3 \ stage$ Yes Yes Yes Yes 2.23;2,25;2,27;2,3; 1,41-1,5 (20 elem.)
	General Data Insulation voltage (In /Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D)	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected > 300.000 hours 2 2,5mm(24–14AWG) 45x105x100 mm (1.78 x 3.94 x 3.94 in.)
ENVIRONMENT	Weight	0.3 Kg (0.65 lbs) approx.
SAFETY & EMC	Climate Data Ambient temperature (operation) De Rating Ta > 50°C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(ln) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
	Norms and Certifications Conforming to:	IEC/EN 60335-2-29,EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage),DIN41773 (Charging cycle),
OTHERS		Emission:IEC 61000-6-4,Immunity: IEC 61000-6-2.CE
	Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
	Type of Signal Output Contact Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min.1mA at 5 VDC	Resistive load Min load

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CB12245A Battery Charger

Altech Corp.®

Battery

-

Mains or Backup

Battery Low or Battery Replacement

Technical Features

The CB series battery chargers are designed with advanced multistage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.



Wiring Diagram

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Charging

Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUOUO. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging	Trickle	1 Blink/sec	0FF
	Absorption	1 Blink/sec	0FF
Туре	Boost	3 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto	Reverse polarity	1 Blink	ON
diagnosis	Battery No connect	2 Blink	ON
	Element in Short C.	<u>∭</u> 3 Blink	ON
	Replace Battery	MML 5 Blink	ON

CB Charging Diagram



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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	21~28V, 20A max. x 2 channels
Reverse voltage	30V
DC output current	20A max.
DC output voltage drop	0.5V max.
Input voltage alarm	When input is $> 20V(\pm 5\%)$ or $< 30V(\pm 5\%)$, relay contacts
Relay contact rating	30VDC, 1A
Working Temperature	-20~+70°C
EMC standards	EN55022 class B, EN61000-4-2,3,4,5,6,8, ENV50204
Connection	I/P: 4 poles, O/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 Battery inout voltage Battery input current Charge current (typ.)	24~29V, 40A max. 21~29V 0~40A 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 EMC standards Connection	-20~+70°C EN55022 class B, EN61000-4-2,3,4,5,6,8, ENV50204 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



Accessories

- REDUNDANCY BUFFER MODULE
- UPS MODULE





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. I	No. Voltage Rang	e Current Range	NOTES
PS-RE	21-28V DC	0-20A	
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: 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 Vout+ 1 2 Vout-3,4 Vin-5 Vin B+ 6 Vin A+ Terminal Pin. No Assign. (TB2)

Pin No. Assignment Alarm B1 1 Alarm B2 2 3 Alarm A1 4 Alarm A2

Derating Curve



Applications:

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





Load

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

3. Single Use: Connecting only one PSU to one PS-RDN20 to reduce the stress of the diodes and hence increase the reliability



PS-UPS40 Series



Pin No. Assignment BATTERY INPUT + 1 2 BATTERY INPUT -DC INPUT -3 DC INPUT + 4 Terminal Pin. No Assign. (TB2) Assignment Pin No. BAT DISC 1 1 2 BAT DISC 2 3 BAT OK 1 BAT OK 2 4 5 DC OK 1 6 DC OK 2



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

1. Backup connection for AC interruption





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

Terminal Pin. No Assign. (TB1)



PS-RDN20 Specifications



Features:

- 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

C INPUT/ C BUS	Cat. No.	PS-RDN20
	REVERSE VOLTAGE (max.)	30V
	OUTPUT CURRENT (max.)	20A
	VOLTAGE DROP	0.5V
TTERY	LED INDICATORS	Two green LED's indicating each input is OK or fail
/ OUTPUT		
OUIFUI		
	INPUT VOLTAGE RANGE	21 ~ 28V
	NUMBER OF INPUTS	Тwo
	INPUT CURRENT (max.)	20A per input
NCTION		
	INPUT VOLTAGE ALARM	When input is $\ge 20V (\pm 5\%)$ or $\le 30V (\pm 5\%)$ relay contacts
	RELAY CONTACT RATING (max.)	30VDC, 1A
VIRONMENT		
	WORKING TEMP.	-20 ~ +70°C
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	$-40 \sim +85^{\circ}$ C, 10 ~ 95% RH
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60 min. each long X,Y, Z axes
	MOUNTING	Compliance to IEC60068-2-6
ETY & 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,
IERS	··········	
ILIIO		
	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.

Mechanical Specification



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

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

Block Diagram



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





Derating Curve



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



PS-UPS40 Specifications



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

DC INPUT/ DC BUS	Cat. No.	PS-UPS40
	DC VOLTAGE (Typ.)	24 ~ 29V
BATTERY	RATED CURRENT	40A
N / OUTPUT		
	VOLTAGE RANGE (Typ.)	21 ~ 29V
	CURRENT RANGE	0 ~ 40A 2A
	CHARGE CURRENT (Typ.) EXTERNAL BATTERY (Typ.)	2A 4 / 7 / 12AH / 24V
UNCTION		
	RELAY CONTACT RATING (max.)	30VDC, 1A
	DC BUS OK	Relay contact: Short when DC voltage between 21 \sim 29V (±3%), relay contacts
		LED (Green): DC BUS OK: light; DC BUS fail: dark
	BATTERY FAIL	Relay contact: Short when battery failure is observed through the battery test function, relay contact 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
		once the battery is fail.
	BATTERY DISCHARGE	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
NVIRONMENT	I	
	WORKING TEMP. WORKING HUMIDITY	-20 ~ +70°C 20 ~ 90% BH
	STORAGE TEMP., HUMIDITY	-20 ~ +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
AFETY & 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
THEDO	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8; ENV50204; heavy industry level; criteria A
DTHERS		
	MTBF	161.9Khrs min. MIL-HDBK-217K (25°C)
	DIMENSION	55.5x125.2x100mm (WxHxD)
	PACKING	0.55Kg; 20pcs / 12Kg / 1.29CUFT
		All parameters NOT specially mentioned are measured at rated load and 25°C of ambient temperature.

Mechanical Specification



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

Ferminal 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



Applications

1. Backup connection for AC interruption

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.

Battery Backup Enclosures with VRLA Batteries

Compact and fully enclosed improve safety and maintenance, transmit information on the temperature and type of included valve-regulated acid batteries. They save space and improve the efficiency of the DC UPS.

100	Cat. No.	Output	Protection Current	Dimensions h x w x d (mm)	Weight kg (approx.)
1000	BAT-1.2VRLA	24V - 1.2Ah	25 A fuse	62 x 175 x 120	1.5
	BAT-3.4VRLA	24V - 3.2Ah	25 A fuse	82 x 200 x 160	3
	BAT-7.2VRLA	24V - 7.2Ah	25 A fuse	145 x 210 x130	5.5
-	BAT-12VRLA	24V - 12Ah	25 A fuse	210 x 210x210	9

Battery Housing Without Batteries

Compact and fully enclosed improve safety and maintenance, transmit information on the temperature and type of batteries. They save space and improve the efficiency of the DC UPS. Size for 24 VDC: 1.2 Ah, 3 Ah, 7.2 Ah and 12 Ah, batteries are not included.

00	Cat. No.	Battery Type	Protection Current	Dimensions h x w x d (mm)	Weight kg (approx.)
1 22	BTH-1.2	2x 12V/1.2AH	25 A fuse	62 x 175 x 120	0.5
	BTH-3.4	2x 12V/3.4AH	25 A fuse	82 x 200 x 160	0.9
Sector Sector	BTH-7.2	2x 12V/7.2AH	25 A fuse	145 x 210 x130	1.5
	BTH-12	2x 12V/12AH	25 A fuse	210 x 210x210	1.9

Battery Holders

Battery holders for DC UPS system is used in conjunction with a 12 or 24V CBI system. They are designed for maintenance free lead acid batteries (batteries are not included) and protected with a fuse. Units can be installed on a standard 35 mm din rail or wall mounted with a M4 type screw (screws not included).

	Cat. No.	Battery Size AH	Protection A	Dimensions WxHxD (mm)	Weight KG (with battery)	Mounting
	BTM-123	12V/3.2Ah	25A fuse	105x136x90	1.6	M4 SCREW
	BTM-123D	12V/3.2Ah	25A fuse	105x136x90	1.6	DIN RAIL
and the second second	BTM-127	12V/7.2Ah	25A fuse	105x153x123	2.4	M4 SCREW
	BTM-127D	12V/7.2Ah	25A fuse	105x153x123	2.4	DIN RAIL
And a state of	BTM-1212	12V/12Ah	25A fuse	170x153x123	3.5	M4 SCREW
A COLORED OF THE OWNER OWNER OF THE OWNER OF THE OWNER						
	BTM-241	2 x 12V/1.2Ah	25A fuse	170x102x80	1.4	M4 SCREW
Photo shown with batteries.	BTM-241D	2 x 12V/1.2Ah	25A fuse	170x102x80	1.4	DIN RAIL
Please consult Altech for	BTM-243	2 x 12V/3.2Ah	25A fuse	170x136x90	3.1	M4 SCREW
units with battery options.	BTM-243D	2 x 12V/3.2Ah	25A fuse	170x136x90	3.1	DIN RAIL
	BTM-247	2 x 12V/7.2Ah	25A fuse	170x153x123	4.7	M4 SCREW
	BTM-247D	2 x 12V/7.2Ah	25A fuse	170x153x123	4.7	DIN RAIL
	BTM-2412	2 x 12V/12Ah	25A fuse	235x153x123	7.9	M4 SCREW

Battery Selection Chart

Battery Type	1.2 Ah	3 Ah	7.2 Ah	12 Ah
Load 1.5 A	20	60	200	400
	8	30	120	240
Load 3 A Load 5 A	3	15	55	100
	2	10	30	60
Load 7.5 A Load 10 A Load 12 A	No	7	20	45
Load 12 A	No	3	12	30
Load 15 A	No	No	9	20
Load 20 A	No	No	7	13

Ultra Capacitor Modules

Traditional lead-acid batteries rely on aging technology and toxic chemicals for energy storage. While adequate for many applications, they have limitations for emerging applications that require safe, dependable, quick-back up power, over long periods of time. Ultracapacitors in DC-UPS applications, ensure that critical information and functions are available when supply voltage dips, sags, drops out or surges, or during a battery changeover. Working in conjunction with a complementary power supply, Ultracapacitors modules reliably supply energy in peak power demand conditions, short power outages and reducing stress on the primary power supply and extending its usable life. Benefits:

- Environmentally safe
- Virtually maintenance free
- Operating temperature range -40°C to +65°C
- Higher power vs. batteries

- · No toxic chemicals
- Lasts up to 15 years**
- · Higher energy vs. electrolytic capacitors
- Resists shock and vibration



C-TEC Ultra capacitor module

The DC- buffer module of the series C-TEC works with ultra-capacitors as energy storage inside the housing. These capacitors are charge by a external regulated DC-power supply in normal operation. In case of an interruption of the DC-power supply the energy of the capacitors is released. The load is supplied by the buffer module till it is discharged. The back-up time depends on the state of charge of the capacitors and on the discharge current.

Cat. No.	prim. V	sec. V	output A	imax* A	energy Ws	dimensions h x w x d (mm)	weight kg
C-TEC 2403-1	24	24	3	6	1000	92,5x60x116	0.55
C-TEC 2405-5	24/12	24/12	5	7	5000	163x114x145	1.8
C-TEC 2410-10	24/12	24/12	10	10	10000	163x114x145	2.1
C-TEC 2420-8	24	24	20	20	8000	192x84x192	1.8
C-TEC 2440-4P	24	24	40	40	4000	192x84x198	2.0
AC-TEC 2403-1	115 – 230 VAC	24	3	1.5xIA	1000	152,5 x 72 x 130	0.85
AC-TEC 2420-8	3 x 340 – 550 VAC	24	20	1.5xIA	8000	192,5 x 140 x 198	3 0.55



Capacitor Extension Module

The CEM-Module is used to increase the back-up energy of the C-TEC series. The charging and discharging of the extension module is monitored and controlled by the C-TEC.

Cat. No.	nominal voltage V DC	sec. V DC	output A	imax* A	energy Ws	dimensions h x w x d (mm)	weight kg
CEM 1	24	24	3	3	1kJ, 1000Ws	92,5x60x116	0.85
CEM 2	24	24	3	3	2kJ, 2000Ws	92,5x60x116	1
CEM 8	24	24	20	20	8kJ, 8000Ws	192x84x192	1.4
CEM 16	24	24	20	20	16kJ, 16000Ws	192x84x192	1.9



AKKUTEC DC-UPS Buffer Unit (without batteries)

The battery buffered DC power supply is working according the stand-by parallel mode and ensures in connection with a lead-acid battery a safe continuous DC power supply during a determined time interval in case of mains failure. The total output current is shared between supply of the loads and charging of the buffer unit.

Cat. No.	prim. V	sec. V	output A	dimensions h x w x d (mm)	weight kg
AKKUTEC 2402	115 - 230	24	2	60x92,5x116	0.55
AKKUTEC 2405	115-230	24	5	160x75x150	1
AKKUTEC 2412	230	24	12	155x95x183	0.4
AKKUTEC 2440	3x400	24	44	180x290x150	3.3

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.

Can a power supply used to charge a battery?

ALTECH power supplies are not specificity designed for battery charging, but we offer a full line of intelligent battery chargers and DC UPS solutions. If you decide 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.

Power supplies set to Hiccup mode are not recommended because it will stop to generate current when OLP happens.

What is the CB type battery charger?

The CB type intelligent battery charger is a microcontroller equipped device that offers a fully automatic multi stage battery charging that expands the battery life significantly.

What is the All in one DC UPS power solution?

The CBI All in One UPS power solution combines the requirements of several applications in one single devise. It can be used as a power supply unit, battery charger, battery care module and back up module. Only think needs to be added it's a battery to create a complete DC UPS system.

Does Altech carry NEC class 2 power supplies?

The Altech PSC line of power supplies in addition to meet with the NEC requirements they are also UL1310 tested and recognized. 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 30VDC output power supply, but ALTECH does not have this model, can we use two 15VDC power supplies connecting in series instead of one 30VDC 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.

Frequently Asked Questions

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

At input side, there will be $(1/2 \sim 1 \text{ cycle}, \text{ ex. } 1/120 \sim 1/60 \text{ seconds for } 60 \text{ Hz AC source})$ 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.

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	
	CLASS I	Handheld: 0.75mA	-	
			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	

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:

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



Terms and Conditions

TITLE - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

SHIPMENT AND DELIVERY - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

PRICE - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

PAYMENT - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than \$100.00 will be billed at \$100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

LIMITED WARRANTY - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

No representation of other affirmation of facts, including but not limited to

statements regarding capacity, suitability for use or performance of the equipment, shall be or be deemed to be a warranty or representation by ALTECH for any purpose, nor give rise to any liability or obligation of ALTECH whatsoever.

Customer's sole and exclusive remedy in the event of breach of warranty, as set forth herein, is expressly limited to (1) the correction of the defect by adjustment, repair, modification, or replacement, or (2) issuance of a credit or refund of the purchase price for the defective equipment at ALTECH's election and sole expense.

EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY EXTENDS ONLY TO THE CUSTOMER FROM ALTECH OR ITS AUTHORIZED DISTRIBUTOR.

LIMITATION OF LIABILITY - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either party more than two (2) years after the cause of action has accrued.

PATENT INDEMNITY - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

SELLER'S REMEDIES - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder. ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

GOVERNING LAW - This agreement will be governed by the Laws of the State of New Jersey.

GENERAL - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

Here are other great products available from Altech!

Universal Power Distribution Systems



Altech Corp's new catalog features various innovative ways to distribute power in your panel.

 Well known UL508 busbars in two sizes and ratings up to 200A/480V AC

 Introducing the UL489 recognized busbar for Altech's line of Miniature Molded Case Circuit Breakers with an industry leading rating of 115A/480V AC

New ADP distribution system utilizing 0.25 quick-connects
Extended power distribution block

line

Interface Modules & Industrial Relays



Altech offers a wide range of DIN Rail or panel mount cable interface modules, relay interface modules, power supplies, carrier modules, and custom designed modules. Cable to connector models include: D-Sub connectors, ribbon cable connectors, and Dip socket connectors to terminals. Standard relay modules from 1 to 16 channels, and safety relay modules from 1 to 16 channels and up to 10 poles are included. The catalog also contains a large selection of industrial relays, and custom designed interface modules.

Terminal Blocks



Altech offers a NEW Terminal Block catalog with the most competitively priced blocks in the industry. We feature screw and spring clamp models for DIN rail and panel mount applications. This advanced line of wire termination products will increase your design options and help to get the job done more efficiently. Our line of blocks include feed-through (single, double or triple level), distribution, ground, fuse, disconnect, thermocouple, surge suppressor and indicator. A wide variety of accessories, tools and ferrules are available.

Liquid Tight Strain Reliefs



This 64-page catalog introduces Altech's full line Liquid Tight Strain Reliefs (Cord Grips) which are used to seal cable entries, keep contaminant's from entering enclosures, provide strain relief and thus reduce stress on components and termination points inside enclosures. Available in standard, high-performance, and economy versions, functions include Straight-Through, Increased Strain Relief, Protection, Pull/Bend Bend Protection, Multi-conductor, Flat Cable and EMI/RFI. They can be used with almost any type of cable, cord or conductor - solid, stranded, flat, shielded, high temperature, etc.

Industrial Enclosures



Altech's expanded line of TK Industrial Enclosures, with metric knockouts, is here. Now our entire line of industrial enclosures is in metric. Metric knockouts align with international standards making selection easier and more universal Plus the PG standard is still available. All of Altech's enclosures are internationally accepted and stand up to the harshest environments. They protect against dust, water and corrosion while enhancing the value of your product. Rated up to IP66 (NEMA type 4x), Altech enclosures are available in a wide range of sizes.

Motor Disconnect Switches



Altech's line of Motor Disconnect Switches are UL 508 listed as Manual Motor Controllers for AC Motor Starting Across-the-line and AC General use. This new 16 page catalog includes the 3 different handle designs, which are all available in gray/black or yellow/red housings. Electrical ratings are 25-150A / 600V. The switches are nonfused DIN Rail mountable. Neat features include: snap-on auxiliary switches, door mounting kit and a retrofit 30A fuse holder. Also featured are Enclosed Motor Disconnect Switches & Fused Enclosed Motor Disconnect Switch (30A) in plastic or stainless housings.



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