

***K-LINE* Intelligent Battery Charger**



K-LINE BC4-24/30-S is a microcontroller unit (MCU) based battery charger with limiting charging voltage and limiting charging current characteristics, designed for charging 24V or 30V, 2.2-10Ah, nickel-cadmium (NiCd) or nickel-metal hydrid (NiMH) rechargeable battery pack.

The charger is a surface mount unit, ideally to be used in a switchboard together with a battery pack for circuit breaker tripping. It can also be used together with a battery pack, a K-Line VR4-24/30 DC-DC converter and a conventional 24V or 30V DC power supply unit to provide a 24V or 30V DC uninterrupted power supply for essential standing load such as for electronic protection relays.

Special Features

- Fully automatic changeover between boost charge and trickle charge.
- Terminals provided for external test button, manual boost charge button, voltmeter and ammeter as well as for LEDs to indicate the charging state and conditions of the charger.
- Battery temperature detecting by means of a negative temperature coefficient (NTC) thermistor if it is fitted in the battery pack.
- Continuously voltage and current monitoring to control the charging voltage and charging current at the required level.
- Override timer provided to prevent overcharge and possible damage of the battery.
- Built-in control for short circuit, battery overheating, battery loose connection and battery reverse polarity protections.
- Dry changeover contacts provided for charge failure and low battery voltage external alarms.

Standard Compliance

The battery charger is designed to meet the following international standards:

IEC 61000-3-2:2006+A1:2009+A2:2009

IEC 61000-3-3:2008

IEC 61000-6-2:2005

IEC 61000-6-4:2006+A1:2010

IEC 61204:2001

IEC 60950-1:2009

BSEN 61204:1995

BS 7430:1998

Specifications

Model No.	BC4-24/30-S			
Input voltage	160-280V, 47-63Hz, single phase			
Input current	0.5A			
Output voltage ripple P-P	< $\pm 0.1\%$			
Output fuse protection	2.5A			
Maximum output power	70W			
No. of cells (1.2V/cell)	20 (24V battery pack), 25 (30V battery pack)			
Nominal charging voltage (1.41V/cell)	28.2V (24V battery pack), 35.25V (30V battery pack)			
Charging voltage adjustable range (1.35–1.5V/cell)	27 - 30V (24V), 33.75 - 37.5V (30V)			
For battery capacity (selectable)	2.2Ah	4/4.5Ah	7Ah	10Ah
Nominal boost charge current	275mA (0.125C)	563mA (0.14C/0.125C)	875mA (0.125C)	1250mA (0.125C)
Boost charge current adjustable range	220 - 440mA	225 - 900mA	350 - 1400mA	500 - 2000mA
Nominal trickle charge current (20% of boost charge current)	55mA (0.025C)	113mA (0.028C/0.025C)	175mA (0.025C)	250mA (0.025C)
Changeover from boost charge to trickle charge	110mA	225mA	350mA	500mA
	Boost charge current dropped to the above changeover values; or battery temperature reached 48°C; or after a boost charge of 8 hours			
Intermittent charge	When battery is fully charged and that the charge current dropped to 20mA, intermittent charge starts When battery voltage dropped to 1.36V/cell due to self discharge, continuous charge resumes			
Time required to fully charge the battery	Less than 8 hours			
Changeover from trickle charge to boost charge	When battery voltage dropped to 1.25V/cell or by operating the manual boost charge push button			
Alarm relays (default setting is “disabled”)	Charge failure (1C/O), low battery voltage (1C/O) Contact rating: 10A, 220VAC/30VDC			
Degree of protection	IP 20			
External indicating and control equipment (not supplied with the charger)	Meters	Voltmeter and ammeter		
	LEDs	Mains on, charge failure, high battery voltage (>1.47V/cell), low battery voltage (<1.15V/cell) and boost charge (red) / trickle charge (green)		
	Controls	Manual boost charge push button and charge failure test button		

DC Power Supply Unit

K-LINE DP4-24/30 DC power supply unit is intended for use together with BC4-24/30 or BC4-24/30-S charger and a battery pack to provide a 24V or 30V uninterrupted DC power supply for standing load.

AC Input : 200-240V 50-60Hz 1.5A

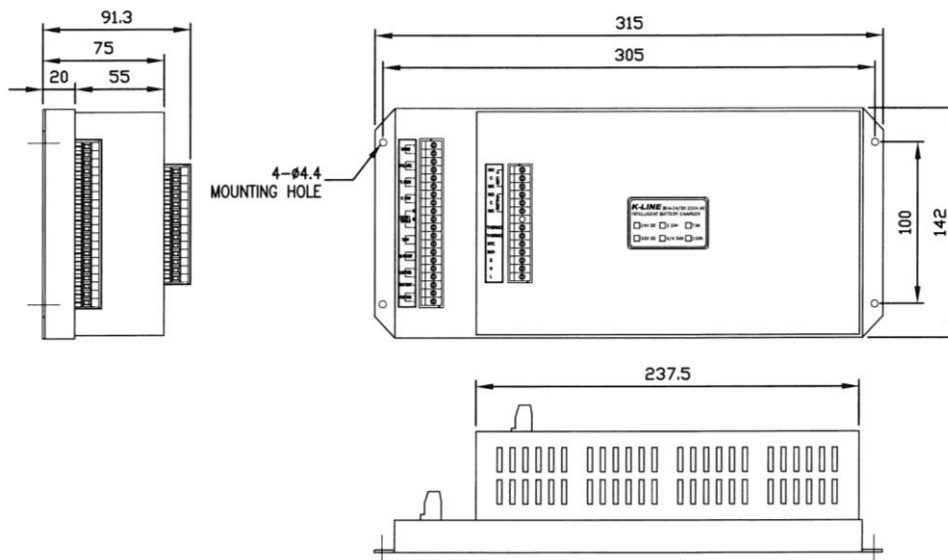
DC Output : 24V/6.2A or 30V/5A selectable

Back-up Battery Voltage : 24V or 30V

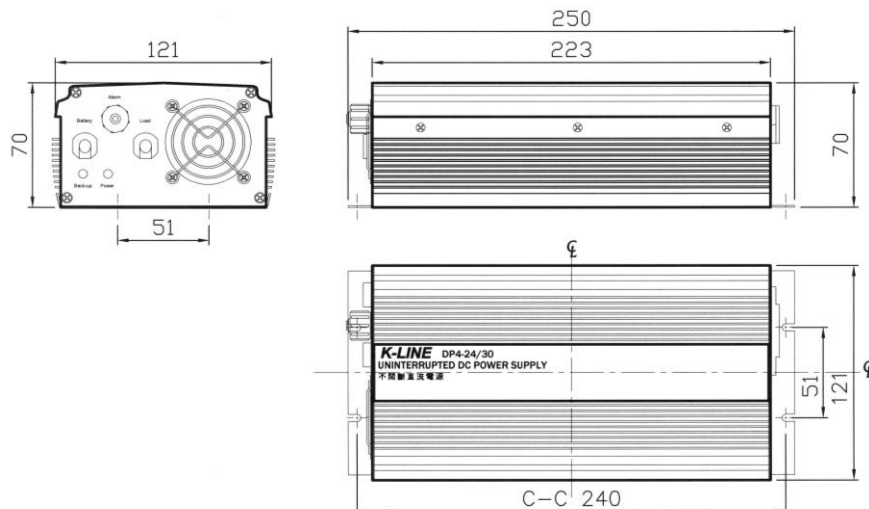


Battery Back-up Time at 120W DC Output				
Battery Voltage	24V		30V	
Battery Capacity	4/4.5Ah	10Ah	4/4.5Ah	10Ah
App. Back-up Time	45min	100min	55min	120min

Outline Dimensions

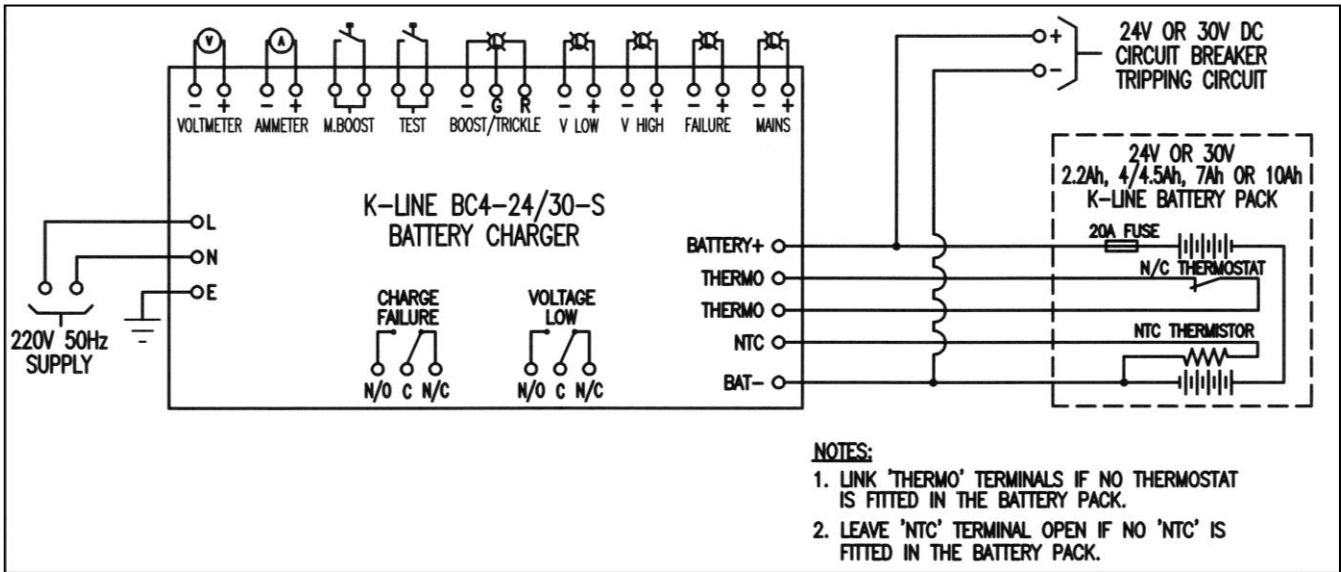


BC4-24/30-S Battery Charger

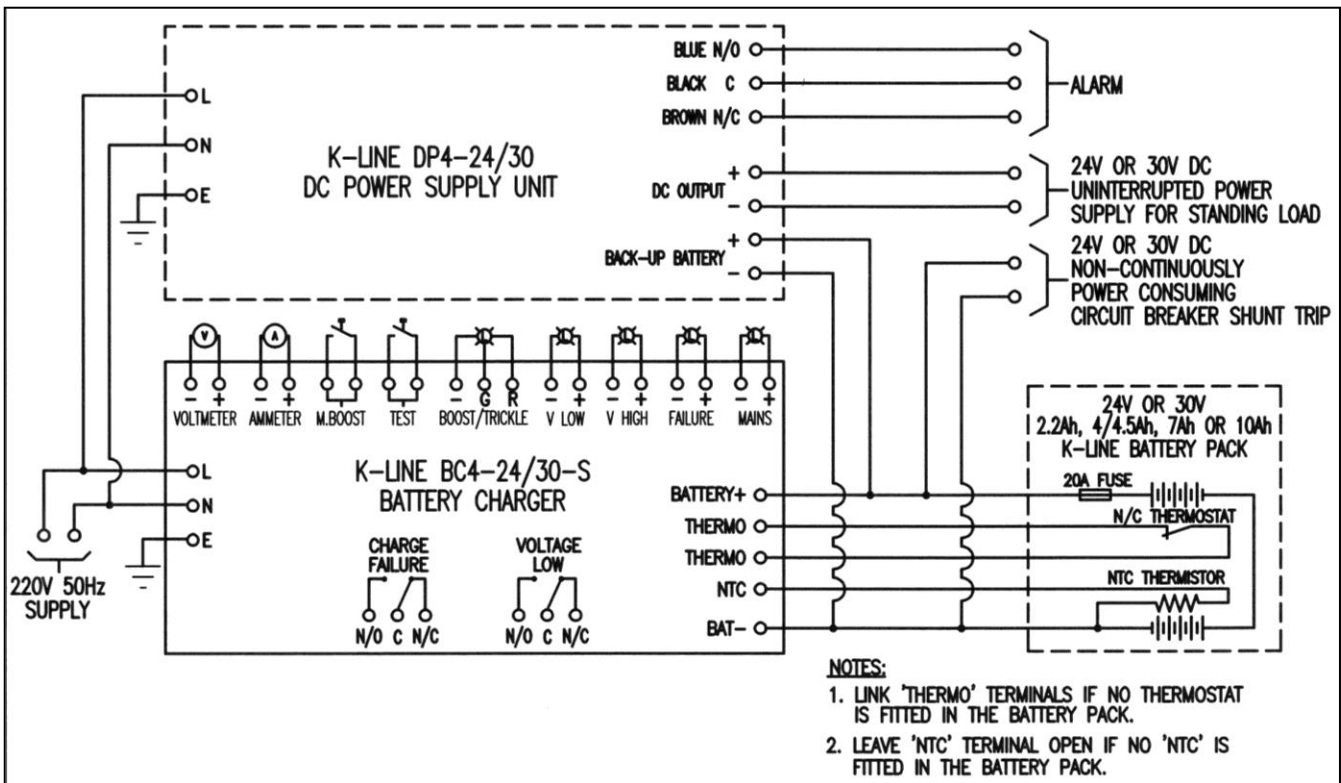


DP4-24/30 Power Supply Unit

Wiring Connection



FOR CIRCUIT BREAKER TRIPPING



UNINTERRUPTED POWER SUPPLY FOR STANDING LOAD

Rickson Engineering Ltd.
21/F, Sun Hing Ind. Building,
46 Wong Chuk Hang Road, Hong Kong.

利信機電有限公司
香港黃竹坑道 46 號
新興工業大廈 21 字樓

Tel: (852) 3120 7500

Fax: (852) 3120 7511

Email: general@rickson.com.hk

Website: <http://www.rickson.com.hk>