

❖ Feature:

- **Universal AC input range 115-277 Vac or 110-420 VDC**
- **Built-in active PFC**
- **Output voltage Selectable: 12V/24V by jumper**
- **Output current Selectable: 12V 10A or 24V 5A**
- **High efficiency 90-92%**
- **Protections Power supply: Short circuit/Overload/Over voltage /Over Temp**
- **Protection Battery Charger: Reverse Battery, Low Battery, Short circuit element, sulphated plates**
- **Charger for Lead. Acid batteries (Li-Ion, Ni-Cd optional)**
- **Charging curve IUoU, constant voltage and current 4 stage: Bulk, Absorption, Float, Equalisation**
- **Cooling by free air convection**
- **Relay contact signal output for Battery fault, AC OK, system fault**
- **EMC and Safety Standards Applied**

Description

The DIN Rail mounted UPSBC120 is an Intelligent Combined Battery Charger and Power Supply with communication for monitoring via a BMS or other types of remote monitoring networks. The selectable output voltage allows for the use of the unit on either a 12 or 24 V DC network. This reduces the inventory and allows for flexible use of spares held on site.

The Unit has 4 stage charging. The selection of this is automatic and is determined via the onboard process logic. There is only the requirement to set up the battery type and the communication parameters in order to configure the unit.

The UPSBC120 has several protective functions to ensure that the battery is in optimum condition for its age and lifecycle state.

There are three relay contacts on the unit which will change to indicate, mains or battery backup operation, a common alarm to indicate a number of battery faults and a third for low AC voltage. These relays are tasked with advice a situation which could lead to a loss of the DC network and a failure of back power.

The unit has an input for a temperature sensor which will adjust the charge voltage per cell in the event to maintain the battery health. The current is regulated by a charge current out pot which should be set in accordance with the manufactures recommended charge rate for the battery type and bank size.

The UPSBC120 has a MODbus or CANbus connection for integration into a BMS or Plant management system. The connection is via a RJ45 connector.

The unit is designed for DIN Rail mounting in a well ventilated enclosure.

Output data Main AC present No Battery Connect	DC Voltage (Note.1) selectable by jumper	12V	24V
	Rated Current IR	10A	5A
	Rated Power	120W	120W
	Ripple / Noise (Note.2)	150mVp-p	200mVp-p
	Voltage Toll. (Note.3)	±2%	±2%
	Line Regulation	±1%	±1%
	Load Regulation	±1.5%	±1.5%
	Over Current Protection	Protection type: Constant Current above 110% rated current (typ.)	
	Over Voltage Protections (Shut down)	17Vdc	34Vdc
Output data Main AC present Battery Connect	DC Voltage (Note.1)	10-14.75Vdc	20-29.5Vdc
	Rated Current continuous (IR+IBATT)	20A	10A
	Rated Current Max 5 SEC (battery Shut down)	25A	20A
	Short Circuit Protection	yes	
Battery Management	Charge Characteristic curve 4 stage	IUoU (Refer to Charging curve)	
	Charging Current (min./max.)	1.0A/10.0A	0.5A/5.0A
	Bulk Voltage max	14,75V	29.5V
	Float Voltage	Depend on the type battery selected	
	Reverse battery connection	yes	
	Detection short circuit element /sulphated element	yes	
	Protection almost total discharge	10V	20V
	Threshold alarm Low Battery	11V	21V
	Temperature compensation	yes	
	Leakage Current from battery	< 10mA	
	Jumper configuration battery type	Open & Sealed Lead Acid, AGM , Li-Io , Li-PoFe ,NiCd	
Input	Voltage Range	85-305 VAC	110-420 VDC
	Frequency Range	47- 440 Hz	
	Efficiency (Typ.)	90%	92%
	AC Current (Typ.)	1,6A / 115VAC	0,6A / 230VAC
	Inrush Current (Typ.)	Cold Start 15A max	
	Setup, Rise Time	500mS Max	
	Leakage Current	<1,5 mA 230Vac	
	Internal fuse (not replacement)	4A	
Other Protection	Over Temperature (Shut down)	Shut down o/p voltage, recovers automatically after temperature goes down	
Led Status Indicators	Led 1		
	Led 2		
	Led 3		
Signal Output/Input RJ45 Other	Mode Bus /CAN Bus	yes	
	Serial Port for smart Battery Temp. Compensation/	yes	
	Serial Port for to Program	yes	
	Start battery from Push Button	yes	
	Test battery from Push button	yes	
	Time Buffering for Backup[TR1]	5min.max	
Signal Output Free switch contacts	Max current EN60947.4.1 Max DC 1: 30Vdc AAC 1: 60 Resistive Load Vac 1A Min 1Ma at 5V dc Permissive Load		
	Main / Backup	yes	
	Low Battery	yes	
	Fault Battery	yes	

Note1: all parameter not specially mentioned are measured at 230Vac 50hz, full load, 25°C of ambient temperature

Note2: ripple & noise are measured at 20Mhz of bandwidth by using 50mm twisted pair-wire with a 10uF & 0,1uF parallel capacitors

Note3: tolerance includes set up tolerance, line regulation and load regulation

Safety & EMC

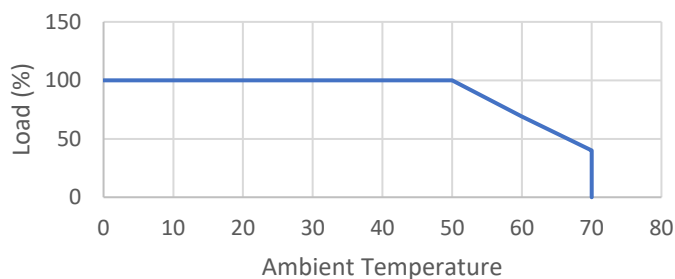
Conformity to	Directive LVD 2014/35/EU , 2014/30/EU
Safety Standards	Conformity EN60950-1, UL60950-1, UL508,C22.2 , EN60335-2-29,UL1236
Insulation voltage Input /Output	4kVac
Insulation voltage Input /PE	2kVac
Insulation voltage Output /PE	500 Vdc
Insulation resistance at 500Vdc	I/PE , O/PE , I/O > 100MOhm
EMC Emission	Compliance to EN55011 (CISPR11), EN55022 (CISPR22) Class B, EN61000-3-2,3
EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11

Environment

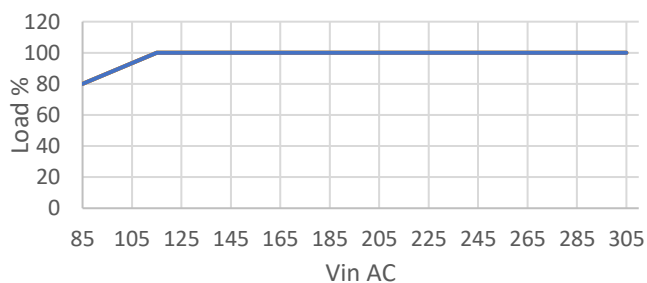
Working Temperature	-20 ~ +70°C (Refer to “Derating Curve”)
Working Humidity	20 ~ 90% RH non-condensing
Storage Temperature, Humidity	-40 ~ +85°C, 10 ~ 95% RH
Pollution degree	2
IP Degree of protection	IP20
Cooling	Convection cooled

Derating Curve

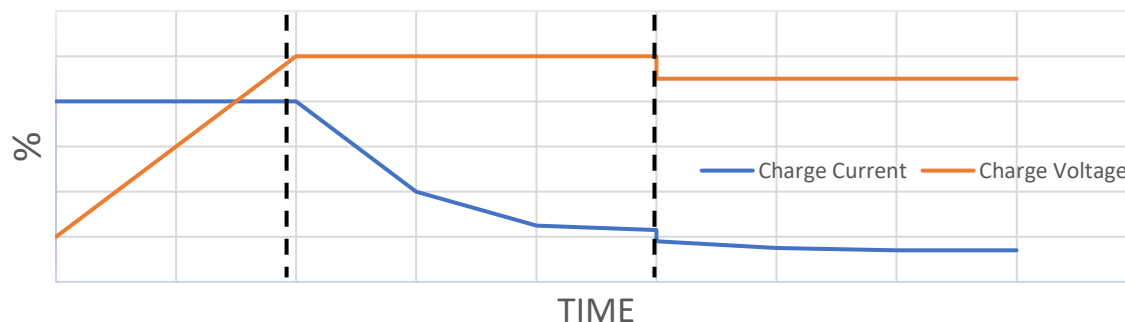
Power Derating Curve



Output Derating VS Input Voltage



Charging Curve



Mechanical Specification

