

产品特点：

高可靠性
轨道式不间断电源系统的电池控制器
24V 系统可达到 40A
使用 TS-35/7.5 或 TS-35/15 安装，
便于生产维护
电池极性保护
内置电池状态诊断，易于维护
电池充电电流手动可调
继电器触点信号输出，LED 指示直流
总线运行、电池故障、电池放电、电
池电量显示
自然风冷
符合环保要求 RoHs6.

应用领域：

工业控制
清洁能源
轨道交通
生产制造
对尺寸大小、环境要求十分严酷的场
合
对寿命、可靠性要求很高的供配电系
统

Features:

High reliability
Battery controller for DIN rail UPS system
Suitable for 24V system up to 40A
Use TS-35/7.5 or TS-35/15 for easy production and
maintenance
Battery polarity protection
Built-in battery status diagnosis, easy maintenance
Adjustable charging current Relay contact signal
output and LED indicator for DC BUS OK 、
Battery Fail 、 Battery Discharge 、 and Battery
Display
Cooling by free air convection
Comply with RoHs6

Application:

Industrial control
Clean energy
Track and traffic
Production and Manufacturing
It is very harsh on the size and use environment
System with high requirements for life and reliability

EDU-24-40A

产品规格书

PRODUCT SPECIFICATION

制造安全产品 驱动绿色世界 Power a Safe and Green world

Excellent 卓越 Creative 创造 United 协作



合肥华耀电子工业有限公司
ECU ELECTRONICS INDUSTRIAL CO.,LTD.



微信扫码关注

电话 TEL 4006659997/0551-62731110
传真 FAX+86-551-65324417 转 0

安徽省合肥市蜀山区淠河路 88 号
No.88 Pihe road P.O BOX 9023-
20,Hefei China

<http://www.ecu.com.cn>
<http://www.ecupowersupply.com>
sales@ecu.com.cn

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陈虎

基本参数 Basic Parameter	错误!未定义书签。
输入特性 Input Characteristics	1
电池输入/输出特性 Input Characteristics	1
环境特性 Environment Characteristics	2
保护功能 Protection Function	3
特殊功能 Signals Function	3
电气安全 Electrical Safety.....	4
电磁兼容 Electromagnetic Compatibility.....	4
可靠性数据 Reliability.....	4
结构与安装 Mechanical Installation.....	5
附件（ 装配示意图、降额曲线、应用框图、导轨安装方法 ）	6
Appendix(Product assembly/Derating curve/Application/Din track mounting)	6

版本更改记录 Revisions

[illegible]

基本特性 Basic Characteristics

项目 Item	单位 UNIT	最小值 MIN	额定值 Rated	最大值 Max	备注 Notes
输入电压 Input Voltage	V		24		
输出电压 Input Current	V	/	24		
电池电压 Battery voltage	V		24		
充电效率 Charging efficiency			85%		
放电效率 Battery operation efficiency			99%		

输入特性 Input Characteristics

项目 Item	单位 UNIT	最小值 MIN	额定值 Rated	最大值 Max	备注 Notes
输入电压 Input Voltage	V	22	24	30	
输入电流 1 Input Current 1	A	/	/	40.1	Iout = Iin, Icharge = 0
输入电流 2 Input Current 2	mA			100	Iout = 0, Icharge = 0
输入电流 3 Input Current 3	A			6.7	Iout = 0A, Icharge = max Vbattery=24V,Vin=24V
输入电流 4 Input Current 4	A			47	Iout = 40A, Icharge = max Vbattery=24V,Vin=24V
电池反极性保护 Battery reverse polarity protection	/	Yes			
切换电池供电模式电压 Transfer voltage for switching into battery mode	V		21.6		
内置输入保险丝 Internal input fuse	/				No

输出特性 Input Characteristics

项目 Item	单位 UNIT	最小值 MIN	额定值 Rated	最大值 Max	备注 Notes
额定输出电压 Nominal output voltage	V		24		
输出电压 Output voltage, nominal/battery mdoe	V	Vo=Vin-0.3/Vo=Vbat-0.3V			Io=40A
额定输出电流 Nominal output Current	A	/	/	40	

峰值输出电流 1 Output Peak Current 1	A			44	24V输出,持续工作 Output@24V, continuous work
峰值输出电流2 Output Peak Current 2	A			60	24V输出持续5s Output@24V 5s

电池特性 Battery Characteristics

项目 Item	单位 UNIT	最小值 MIN	额定值 Rated	最大值 Max	备注 Notes
电池类型 Battery type					铅酸电池 VRLA
电池电压 Battery Voltage	V	24 or 12*2			
电池容量 Battery size	AH	7		135	
额定输出电流 Nominal output Current	A			40	
峰值输出电流 Output peak current	A			44	continuous work
电池充电电流 Charging current	A	1		5	
缓冲时间 Buffer time	s	30		∞	
充电电压 charge voltage	V	18		27	
停止放电电压 End-of-discharge voltage	V		21		
内置输入保险丝 Internal input fuse	/				no

1. A special feature of this device is the automatic reduction of the charging current to 2A when the input current reaches 37A. This should help to prevent an overload of a 37A power supply.
2. At battery mode, the battery will stop working when battery voltage reaches 21V. Then will continue working Only when battery voltage reach 23V.
3. At force start mode, the battery will work until the battery power is completely empty.
4. Typically, the current limitation of the supplying power source limits the current in an overload condition. There is no overload control included in the DC-UPS. The user has to take care by himself to stay below the allowed output currents in order not to overload the unit.

环境特性 Environment Characteristics

项目 ITEM	单位 UNIT	最小值 MIN	典型值 Rated	最大值MAX	备注 Notes
温度 Temperature	℃	-20	25	70	工作温度Operation Temperature.
		-40	25	85	贮藏温度Storage Temperature
相对湿度 Humidity	℃	20%	RH	90%	工作湿度Operation Humidity
		10%	RH	95%	贮藏湿度Storage Humidity
振动 Vibration	/	IEC 60068-2-6, 正弦10-500Hz , 2G , 位移0.35mm , X、Y、Z轴各60分钟 ; Sine Wave:10-500Hz , 2G , displacement of 0.35mm; 60 min per axis for all X, Y, Z directions			
冲击 Impact	/	IEC60068-2-27,半正弦波 : 15G , 持续11ms , 每个方向3次 , 共6次 Half Sine Wave: 30G for a duration of 18ms, 3 times per direction, 6 times in total			
海拔高度 Altitude	m	≤5000 , 3000m以上降额使用 , 15%load/Km 3000m derated above, 15%load/Km			

冷却方式 Cooling Mode	空气自然冷却 Air Cooling
防护等级 IP level	IP20

保护功能 Protection Function

项目 Item	技术要求 Requirement	注释 Notes
电池防反接保护 Battery anti-reverse Protection	电池接反，电源不损坏/The battery is connected backwards and the power is not damaged	电池接反，显示电池故障状态，电源不损坏/The battery is connected in reverse, showing the battery failure status and the power is not damaged
电池过压/欠压保护 Battery overvoltage / under voltage protection	>30V或<18V保护 >30V or <18V protection	电池电压大于30V或低于18V时，切断电池回路，并显示电池故障状态/ Cut off the battery loop and display the battery failure status when the battery voltage is greater than 30V or the battery voltage is lower than 18V
过流保护 Overcurrent Protect	Iout >100A	当电池供电时，输出电流大于100A，持续时间大于300ms，则电池供电会关断 When output current bigger than 100A for 300ms at battery discharging mode , the output will be shut down.

特殊功能 Signals Function

项目 Item	技术要求 Requirement
面板显示 Panel display	当DC BUS 电压在22V~30V之间时，绿色指示灯常亮，DC OK继电器 吸合；当电池放电且放电电流大于1A时，黄色指示灯亮，BAT DIS继电器 吸合；;当电池未连接、接反、过放电、过压、欠压或故障时，红色指示灯亮，BAT FAIL继电器吸合。/When DC BUS Voltage is between 22V and 30V, the green indicator light is always on and DC OK relay contact short ; When the battery discharges and the discharge current is greater than 1A , the yellow indicator light is always on and BAT DIS relay contact short ; When the battery is not connected , connected in reverse, overdischarge , overvoltage , undervoltage or malfunction , the red indicator light is always on and BAT FAIL relay contact short.
电池电量显示 Battery power display	当电池电压小于23V时，电池电量显示灯为红色常亮；当电池电压在（ 23~25 ） V时，电池电量显示灯为闪烁绿灯；当电池电压大于25V时，电池电量灯为绿灯常亮。/When the battery voltage is less than 23V,the battery power LED displays red ; When the battery voltage is between 23V and 25V,the battery power LED displays flash green ; When the battery voltage is greater than 25V,the battery power LED displays green.
旋钮开关 Dip switch	通过手动调节拨码开关的位置，改变电池充电电流的大小，可调四个档位：1 档：电池充电电流1.0A; 2 档：电池充电电流2.0A; 3 档电池充电电流3.0A; 4 档， 电池充电电流5.0A。/Battery charging current can be changed by change the switch status. 1 status, Battery charging current is 1.0A; 2 status : Battery charging current is 2.0A;3 status : Battery charging current is 3.0A; 4 status ,Battery charging current is 5.0A。
远程信号 Remote signal	与输出隔离，常开触点；当输出指标正常时，DC OK、BATTERY DISCHARGE、BATTERY FAIL 分别为低阻抗 ≤50mΩ，最大耐受直流30 V / 1 A。 / Normally open contact, isolated output, ; When the output index is normal, DC OK,BATTERY DISCHARGE and BATTERY FAIL are of low impedance ≤ 50mΩ , respectively , Max DC 30 V / 1 A.
强启	打开强启开关，电池会持续供电。turn on the force-star switcher , battery will continuous work.

电气安全 Electrical Safety

项目 Item	测试方法 Test Method	测试条件 Test Conditions
绝缘电压 Withstand voltage	输入-输出 I/P-O/P	/
	输入-外壳 I/P-FG	500Vac. 60S,≤10mA
	输出-外壳 O/P-FG	500Vac.60S, ≤10mA
绝缘阻抗 Withstand Resistance	输入-输出 I/P-O/P	/
	输入-外壳 I/P-FG	500VDC, ≥100MΩ, 25℃, 70%RH
	输出-外壳 O/P-FG	500VDC, ≥100MΩ, 25℃, 70%RH
设计标准 Design standards	UL508 工业控制类	/
	EN60950-1资讯类	/
	UL1310 Class2类电源	/
	EN60335-1家电类	/
	EN61347-1灯具类	/
	IEC60601-1医疗类	/

1) ” / ”：不符合项Non-conformance

电磁兼容 Electromagnetic Compatibility

项目 Item	测试方法 Test Method	测试条件 Test Conditions
静电ESD Electrostatic Discharge	IEC 61000-4-2	Criteria A ; Contact discharge 6kV Discharge in air 8kV
射频辐射RS Radiated Field	IEC 61000-4-3	Criterion A 10V/m 80 MHz ... 2.7 GHz
脉冲杂讯EFT Electrical Fast Transient / Burst	IEC 61000-4-4	Criteria B ; V+/V-): 0.5kV
雷击 Surge	IEC 61000-4-5 GB17626-5	Criteria B ; V+/V-): 0.5kV
射频传导 Conducted	IEC 61000-4-6	Criterion A 10V/m 0.15 MHz ... 80 MHz
传导和辐射通用标准 CE&RE	EN 61000-6-2	
	EN55032 CLASS B	
	EN 61000-6-3 EN55032 CLASS B	

- 1)标准A：规格界限内正常性能Criteria A: Normal performance within the specification limits
- 2) 标准B：可自行恢复的临时性退化或功能丧失Criteria B: Temporary degradation or loss of function which is self-recoverable

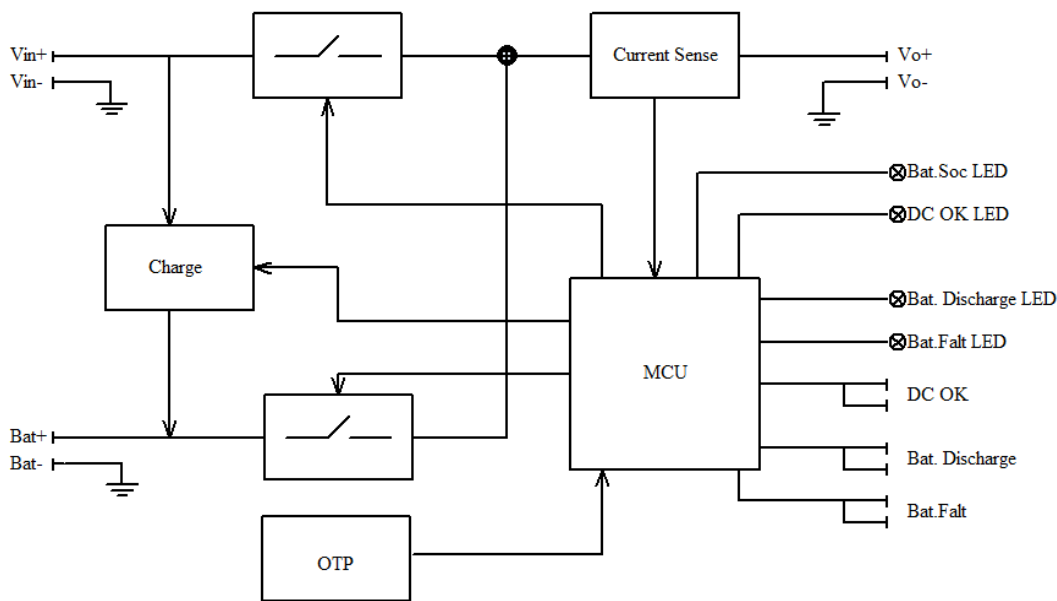
可靠性数据 Reliability

项目 Item	数据 Data	测试条件 Test Conditions
产品老化 Burn-in	100%	I/P:24Vdc, O/P:100% load, 40℃ ±5℃, 4 Hours
平均无故障时间 MTBF	200000H Min	I/P:24Vdc, O/P:100% load, 25℃ , MIL HDBK 217F
	/	I/P:24Vdc, O/P:100% load, 40℃ , MIL HDBK 217F

结构与安装 Mechanical Installation

项目 Item	数据 Data	备注 Note
尺寸mm (长宽高) Size	124 * 119* 57	
重量Kg Weight	0.6	
安装方式 Installation	导轨式安装 mounted on 35mm DIN rails	TS-35/7.5或TS-35/15 EN 60715
输入端子 Input/Output Terminal 输入输出端子	脚距10mm , 6位 Pitch=10mm, 6pin	直插式连接 , 硬导线横截面0.2 mm ² ... 16 mm ² 柔性导线横截面0.2 mm ² ... 16 mm ² 横截面 AWG 20 ... 4 剥线长度17mm-18 mm
	1 PIN --- Vin-	
	2 PIN --- Vin+	
	3 PIN --- BAT-	
	4 PIN --- BAT+	
	5 PIN --- Vo-	
信号端子 Signal Terminal	6 PIN --- Vo+	
	脚距5.0mm , 6位 Pitch=5.0mm, 6pin	直插式连接 , 硬导线横截面0.2 mm ² ... 4 mm ² 柔性导线横截面0.2 mm ² ... 2.5 mm ² 横截面 AWG 24 ... 12 剥线长度10 mm
	7 PIN --- BAT FAIL	
	8 PIN --- BAT FAIL	
	9 PIN --- BAT DIS	
	10 PIN --- BAT DIS	
	11 PIN --- DC OK	
	12 PIN --- DC OK	

框架图 Block diagram



附件（ 装配示意图、 降额曲线、 应用框图、 导轨安装方法 ）

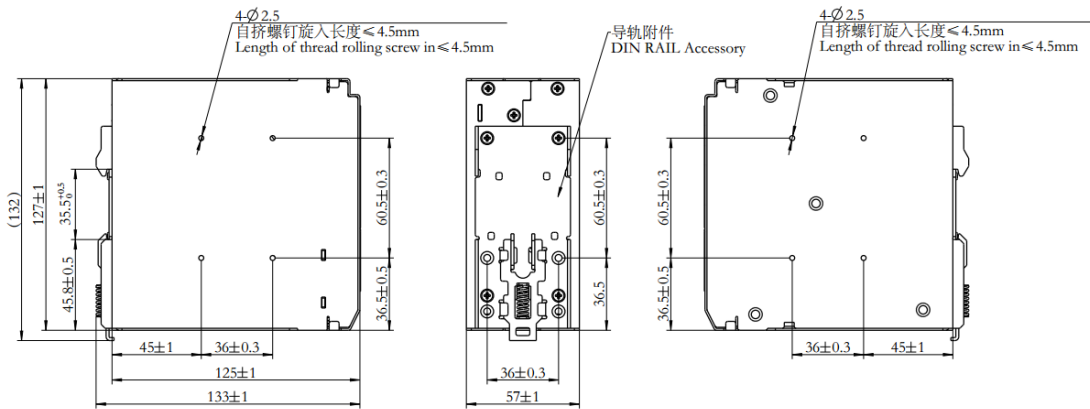
Appendix(Product assembly/Derating curve/Application/Din track mounting)

1. 产品装配示意图 Product assembly

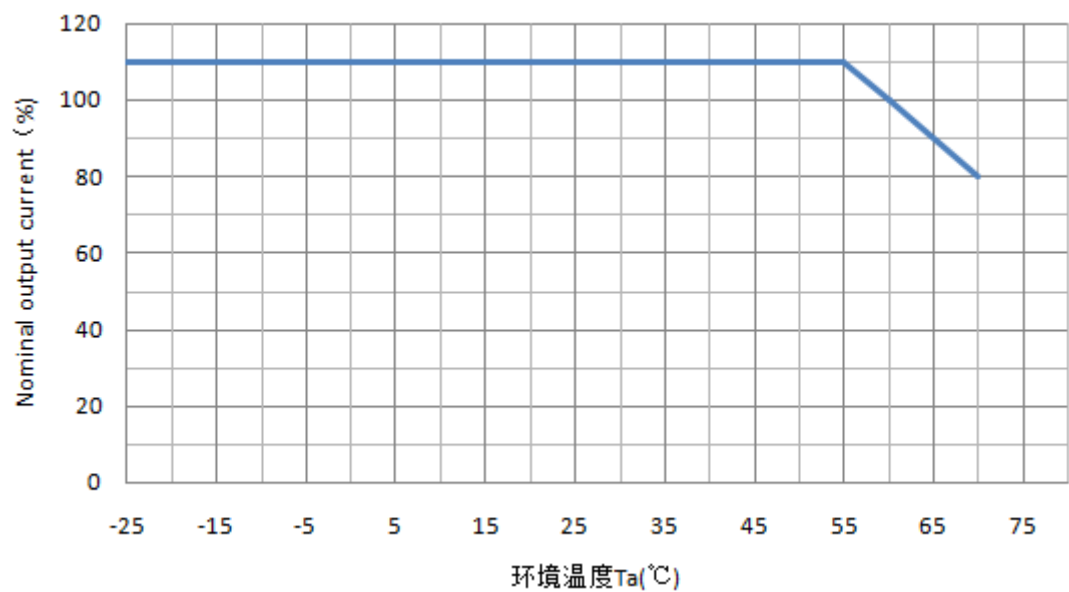
说明:
Note:
A: 产品名称特性示意, 具体参数依照规格书。
A: Refer to product specifications.
B: 建议扭矩:M3.0螺钉<0.4 N·m; M4.0螺钉<0.6 N·m。
B:Suggested tightening torque:M3.0 screw < 0.4 N·m;M4.0 screw < 0.6 N·m.



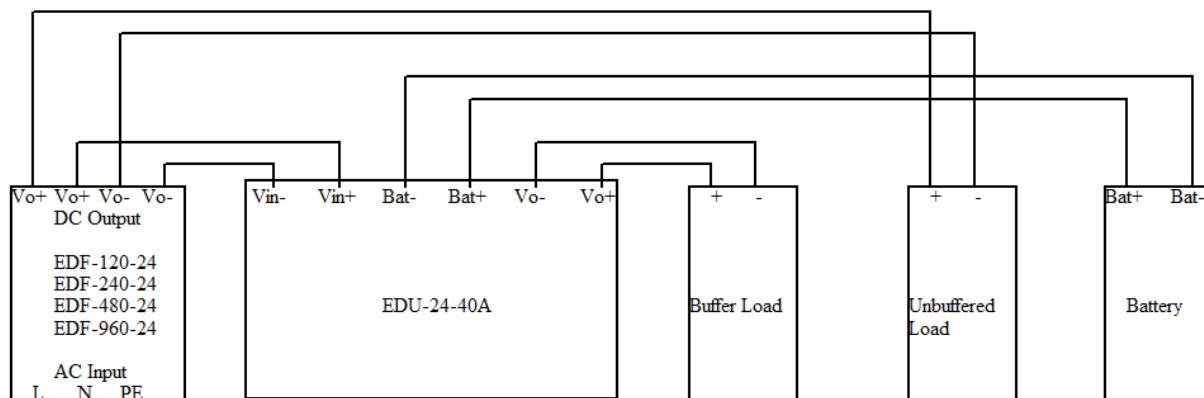
Install rail / 安装轨道: TS35/7.5 or TS35/15



2. 降额曲线 Derating curve:



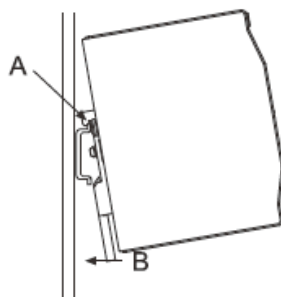
3. 应用框图 Application:



4. 导轨安装方法 Din track mounting:

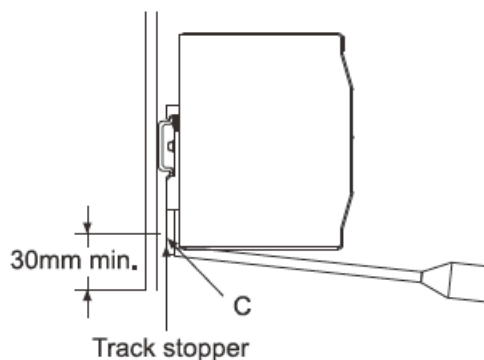
- (1) To mount the Block on a DI track, hook portion (A) of the Block onto the track and press the Block in direction (B).

安装：将(A)部分挂入导轨，朝(B)方向按压卡入导轨



- (2) To dismount the Block, pull down portion (C) with a flat-blade screw-driver and pull out the Block.

拆卸：用平口螺丝刀下拉(C)部分拆卸电源



- (3) 通用壁挂式安装图 Mounting the universal wall adapter

