

产品特点:

- ✓ 小体积 127*115*35mm
- ✓ 高可靠性
- ✓ 使用 TS-35/7.5 或 TS-35/15 安装, 便于生产维护
- ✓ 效率 88%以上, 低损耗
- ✓ 自然风冷, 满载工作

Features:

- ✓ Small size 127 * 115 * 35mm
- ✓ High Reliability
- ✓ Use TS-35/7.5 or TS-35/15 for easy installation, production and maintenance
- ✓ High efficiency 88%, low power dissipation
- ✓ Natural air cooling ,full-load operation

应用领域:

- ✓ 工业控制
- ✓ 清洁能源
- ✓ 轨道交通
- ✓ 生产制造

Application:

- ✓ Industrial control
- ✓ Clean energy
- ✓ Rail transit
- ✓ Manufacturing

EDG-120-24

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

订购信息 Ordering Information:

设计号 Design NO:

ECU2.939.10615

物料号 Part No:

5.13.70.0671

客户签章
Customer's signature:

日期 DATE:

基本参数 Basic Parameter 1

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版本更改记录 Revisions

版本 Rev	日期 Date	更改说明 Description	核准 Approved
A00	2024-07-19	第一次发行 First Issue	

设计 Designed

于 耀

审核 Checked

批准 Approved

基本参数 Basic Parameter

项目 Item	单位 Unit	规格 Specification	备注 Notes
产品输入输出类型 Input And Output Type	A+D		A) AC-DC; B) AC-AC; C) DC-AC; D) DC-DC
产品工作原理类属 Working Principle	A		A) 开关电源; B)线性电源 A)Switching power supply; B)Linear power supply
输出电压 Output Voltage	V	24	
额定功率 Total Rated Power	W	120	
效率 Efficiency	%	88	230Vac/50Hz,额定负载,0.5h后测试 Run the test after 0.5 hours at full load
功率因数校正 Power Factor Correction	C		A)主动式active PFC; B)被动式Passive PFC; C)无No
纹波&噪声 Ripple Noise	mVp-p	100	详见备注 See remarks
产品认证标志 Product Certification Mark	0		0 无、1 CE、2 CCC、3 CQC、4 TUV、5 UL、6 CB、7 TUVul、8 CSA、 9 FCC、10 KC、11 GL、12 ATEX、13 IECEx、14 CUL、15 其它 others

1. 输出纹波噪声测试条件/DC output ripple & noise test conditions:
- 1)示波器须设置在 20M 赫兹带宽/Oscilloscope should be limited at 20MHZ bandwidth;
- 2)将 0.1uF 的陶瓷电容和 47uF 的电解电容并联在线材末端/ Connect 0.1uF ceramic capacitors and 47uF electrolytic capacitors in parallel at the end of the wire;
- 3)使用 300mm 的双绞线连接电源和负载/ Connect the load and power supply with a 300mm twisted pair;
- 4)在负载端进行测试/ Test on the load side;
- 5)若无特殊说明，以上规格参数均在输入电压范围为 90~264Vac，温度范围 25℃的环境下测量。/ Unless otherwise specified, the above specifications are measured in the input voltage range of 90~264Vac and the temperature range of 25 °C.
2. " / "：不符合项 " / "： Non-conformance term;

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
输入电压类型 Input Voltage Type		B+D			A)三相供电; B)单相供电; C)双相供电; D) 直流供电; E)其它不规则供电 A)Three-phase; B)Single-phase; C)Dual phase; D)DC power supply; E)Other power supply
输入电压 Input Voltage	Vac	90	115/230	264	参考输出降额曲线 Refer to output derating curve.
	Vdc	120		370	
输入频率 Input Frequency	Hz	47	50	63	
输入电流 Input Current	A			1.5	230Vac 满载Full load
				2.4	115Vac, 满载 Full load.
输入冲击电流 Inrush Current	A			30	230Vac, 满载, 冷机启动Full load. cold start.
输入冲击电流方案 Inrush Current Mode		B			A)主动式Active; B)被动式Passive; C)单电阻 Only Resistance; D)无NO
空载损耗 No-Load Consumption	W			1.5	230Vac,空载No load @ Vout=24V
输入保险 Input Fuse	T4A/250Vac				

" / "：不符合项 " / "： Non-conformance term;

输出特性：Output Characteristics：

项目 Item	单位 Unit	最小值 Min	典型值 Typ	最大值 Max	备注 Notes
标准输出电压 Output Voltage	Vdc		24		
输出电压可调范围 Output Voltage Adjustable Range	Vdc	24		28	
额定输出电流 Rated Output Current	A	0		5	@24V输出 Output@24V
负载调整率 Load Regulation	%	/	/	+/-1	230Vac ,0% ~ 100% load最小负载到额定负载 Min load to rated load
输入电压调整率 Line Regulation	%			+/-0.5	85~264Vac 额定负载 Rated load
温度调整率 Temperature Regulation	%			+/-0.07	+/-0.07% @ 0℃~+60℃； +/-1% @ -25℃~0℃&+60℃~+70℃； +/-2.5% @ -40℃~-25℃；
电压误差 Voltage Tolerance	%			+/-2	-25℃~+70℃
开机延迟时间 Setup Time	s			2	115Vac&230Vac 100% Load 额定负载 Rated load
上升时间 Rise Time	ms			100	输出从10%上升到90%的时间 The time taken while output voltage increased from 10% to 90%
保持时间 Hold Up Time	ms	15			115Vac, 满载Full load
	ms	20			230Vac, 满载Full load
过冲响应 Overshoot Response (O/P Voltage)	%			+/-5	开关机时 Power on/off
负载动态 Load Dynamic Response	%			+/-5	设定周期20ms,升降电流0.1A/μs,在10%~90%负载 Setting period 20ms. Rising and falling current 0.1A/μs@ 10%~90% load
并联冗余功能 Parallel Connection					详见附件 See Appendix

“/”：不符合项 “/”：Non-conformance term;

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; 50℃~70℃以上需降额使用, 参考降额曲线; -40℃启动; Derated@50℃~70℃, refer to derating curve; Start up@-40℃
		-40	25	85	贮藏温度Storage Temperature
相对湿度 Humidity	RH	5%		95%	工作湿度Operation Humidity
		5%		95%	贮藏湿度Storage Humidity
振动 Vibration		幅度<15Hz, ±2.5mm (IEC 60068-2-6) /15Hz...150Hz, 0.7G, 90分钟 < 15Hz, amplitude ±2.5mm(acc. to IEC 60068-2-6) / 15Hz ... 150Hz,0.7G, 90 min.			
冲击 Impact		30G, 各个方向 (IEC 60068-2-27)			
		30G, each direction(acc. to IEC 60068-2-27)			
海拔高度 Altitude		≤3000m, 3000m以上降额使用, 15%load/Km, 最高海拔5000m			
		≤3000m, derated over 3000m, 15% load/Km, max altitude 5000m			
冷却方式 Cooling Mode		空气自然冷却 Air Cooling			

防护等级 IP Level	IP20
污染等级 Pollution Level	PD2
RoHS环境指令	符合Compliant
阻燃等级 (外壳) Flame Rating(Case)	UL94V-0

“/”：不符合项 “/”：Non-conformance term;

保护功能 Protection Function

项目 Item	技术要求 Technical Requirement	恢复方式 Recovery Mode	保护方式 Protection Mode	备注 Notes
输出短路保护 Output Short Circuit Protection	电源无损坏，关闭输出电压 Power supply no damaged, shut down O/P voltage.	C	C	恢复方式Recovery mode: A) 自动恢复Auto recovers; B) 重启恢复Restart; C) 打嗝Hiccup 保护方式Protection mode: A) 恒功率Constant power; B) 恒电流Constant current; C) 输出掉电Output voltage drop;
输出过流保护 Output Over Current Protection	110%~140% @ Io	C	C	
输出过压保护 Output Over Voltage Protection	120~150% @ Vo	C	C	
过温保护 Over Temperature Protection	关闭输出电压 Shut Down O/P Voltage.	C	C	

“/”：不符合项 “/”：Non-conformance term;

特殊功能 Specific Function

项目 Item	技术要求 Technical Requirement
面板显示 Panel Display	当输出指标正常时，绿色LED常亮/Output Voltage≥21.6V，Green LED is always on;

“/”：不符合项 “/”：Non-conformance term;

电气安全 Electrical Safety

项目 Item	测试方法 Test Method	测试条件 Test Conditions	备注 Notes
高压测试 Hi-pot Test	输入-输出 I/P-O/P	4242Vdc. 60s,≤1mA	
	输入-大地 I/P-PE	2121Vdc. 60s,≤1mA	
	输出-大地 O/P-PE	700Vdc.60s, ≤1mA	
绝缘阻抗 Withstand Resistance	输入-输出 I/P-O/P	500VDC. ≧5MΩ	
	输入-大地 I/P-PE	500VDC. ≧5MΩ	
	输出-大地 O/P-PE	500VDC. ≧5MΩ	
泄露电流	L、N-外壳/L、N-Case	3.5mA Max	

Leakage Current	L、N-PE/L、N-PE	3.5mA Max
接地阻抗 PE Resistance	PE-外壳/PE-Case	< 0.1Ohm
过电压等级 Overvoltage category	III, II	III (IEC 61010-1, IEC 61010-2-201, EN 62368-1, EN 61558-2-16) II (EN 62368-1, EN 60335-1)
电气设备安全等级类属 Electrical Equipment Safety Class	A	A)一类设备Class I ;B)二类设备Class II;C)三类设备（最高标称电压不超过50Vac或120VDC， 以及不属于AB） Class III(The maximum nominal voltage does not exceed 50Vac or 120VDC, and is not part of A,B); EN 61140, GB/T17045
安规标准 Safety Standard		EN62368-1, GB4943.1
		EN61010, GB4793.1

1) “/”: 不符合项 “/”Non-conformance;

电磁兼容 Electromagnetic Compatibility

项目 Item	测试标准 Test Standard	测试条件 Test Conditions	
静电ESD Electrostatic Discharge	IEC 61000-4-2 GB17626-2	Criteria A; Air Discharge: ±8kV; Contact Discharge: ±4kV	
射频辐射RS Radiated Field	IEC 61000-4-3 GB17626-3	Criteria A; 80-1000MHz, 10V/M, 80% modulation (1kHz);	
脉冲杂讯EFT Electrical Fast Transient / Burst	IEC 61000-4-4 GB17626-4	Criteria A; ±4kV	
雷击 Surge	IEC 61000-4-5 GB17626-5	Criteria A; Common Mode: 4kV; Differential Mode: 2kV	
射频传导 Conducted Emission	IEC 61000-4-6 GB17626-6	Criteria A; 0.15-80MHz, 10Vrms, 80% modulation (1kHz) 80MHz-1GHz, 10Vrms, 80% modulation (1kHz) 1.4GHz-2GHz, 10Vrms, 80% modulation (1kHz) 2GHz-2.7GHz, 10Vrms, 80% modulation (1kHz)	
电压瞬断 Voltage Dips And Interruptions	IEC 61000-4-11 GB17626-11	Voltage Dips >95% reduction,0.5 period	Criteria A
		Voltage Dips >30% reduction,25 period	Criteria B
		Voltage interruptions >95% reduction,250 period	Criteria B
谐波 Harmonic Current Emission	IEC/EN 61000-3-2 GB17625-1	Class A	
传导和辐射通用标准 CE&RE	GB9254, CISPR 32, EN 55032 Class B	GB9254, CISPR 32, EN 55032 Class B	
电压波动和闪烁 Voltage Fluctuation and Flicker	IEC/EN 61000-3-3, GB17625.2	Criteria 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;
- 3) 标准C: 不可自行恢复的临时性退化或功能丧失， 必须重新启动后才能恢复正常工作Criteria C:Need to restart the power supply, to return to normal work;
- 4) 标准D: 永久性退化或功能丧失， 需要更换零部件或维修人员介入Criteria D:Permanent degeneration or loss of function;
- 5) 不对称: 共模（线对地） Asymmetrical: Common mode (Line to earth);
- 6) 对称: 差模（线对线） Symmetrical: Differential mode (Line to line);
- 7) 电源应视为系统内元件的一部分， 需结合终端设备进行EMC确认Power should be considered part of the element within the system, to be combined with the terminal device EMC acknowledgment;

可靠性数据 Reliability

项目 Item	数据 Data	测试条件 Test Conditions
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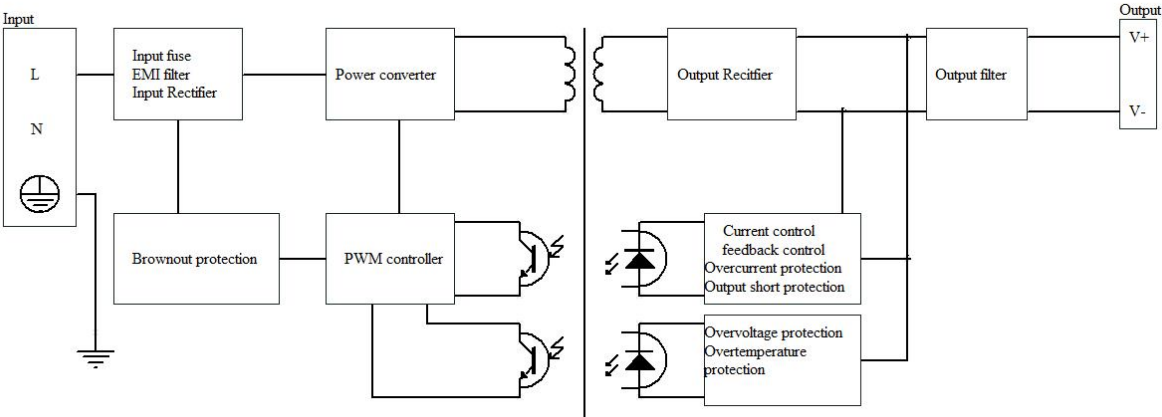
产品老化 Burn-in	100%	230Vac, 满载Full load, 40℃±5℃, 4小时Hours
平均无故障时间 MTBF	200000H Min	230Vac, 满载Full load, 25℃, MIL HDBK 217F

“/”: 不符合项 “/”Non-conformance;

结构与安装 Mechanical Installation

项目 Item	数据 Data	备注 Note
尺寸mm (长宽高) Size	127 * 115* 35	材质: 铝; Case material : AL
重量Kg Weight	0.48	
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
最小间距 Space	上下(Above/Below): 45mm; 左右(Left and right side): 0mm,5mm With a Heat Source	
输出端子 Output Terminal	脚距7.5mm, 4位/Pitch=5mm, 4pin	直插式连接Push-In Terminal;
	1 PIN---V+	硬导线横截面Hard wire cross section 0.2 mm ² ... 4 mm ² ;
	2 PIN---V+	柔性导线横截面Flexible wire cross section 0.2 mm ² ... 2.5 mm ²
	3 PIN---V-	横截面Cross section AWG 24 ... 12
	4 PIN---V-	剥线长度Strip length 10 mm
输入端子 Input Terminal	脚距7.5mm, 3位Pitch=7.5mm, 3pin	直插式连接Push-In Terminal;
	7 PIN---L	硬导线横截面Hard wire cross section 0.2 mm ² ... 4 mm ² ;
	8 PIN---N	柔性导线横截面Flexible wire cross section 0.2 mm ² ... 2.5 mm ²
	9 PIN---FG	横截面Cross section AWG 24 ... 12 剥线长度Strip length 10 mm

框架图 Block diagram



附件（安装示意图、降额曲线、典型应用、导轨安装方法）

Appendix(Installation Instruction /Derating Curve/Typical Application/Din-rail Installation Method)

1. 产品装配示意图 Product assembly

说明:

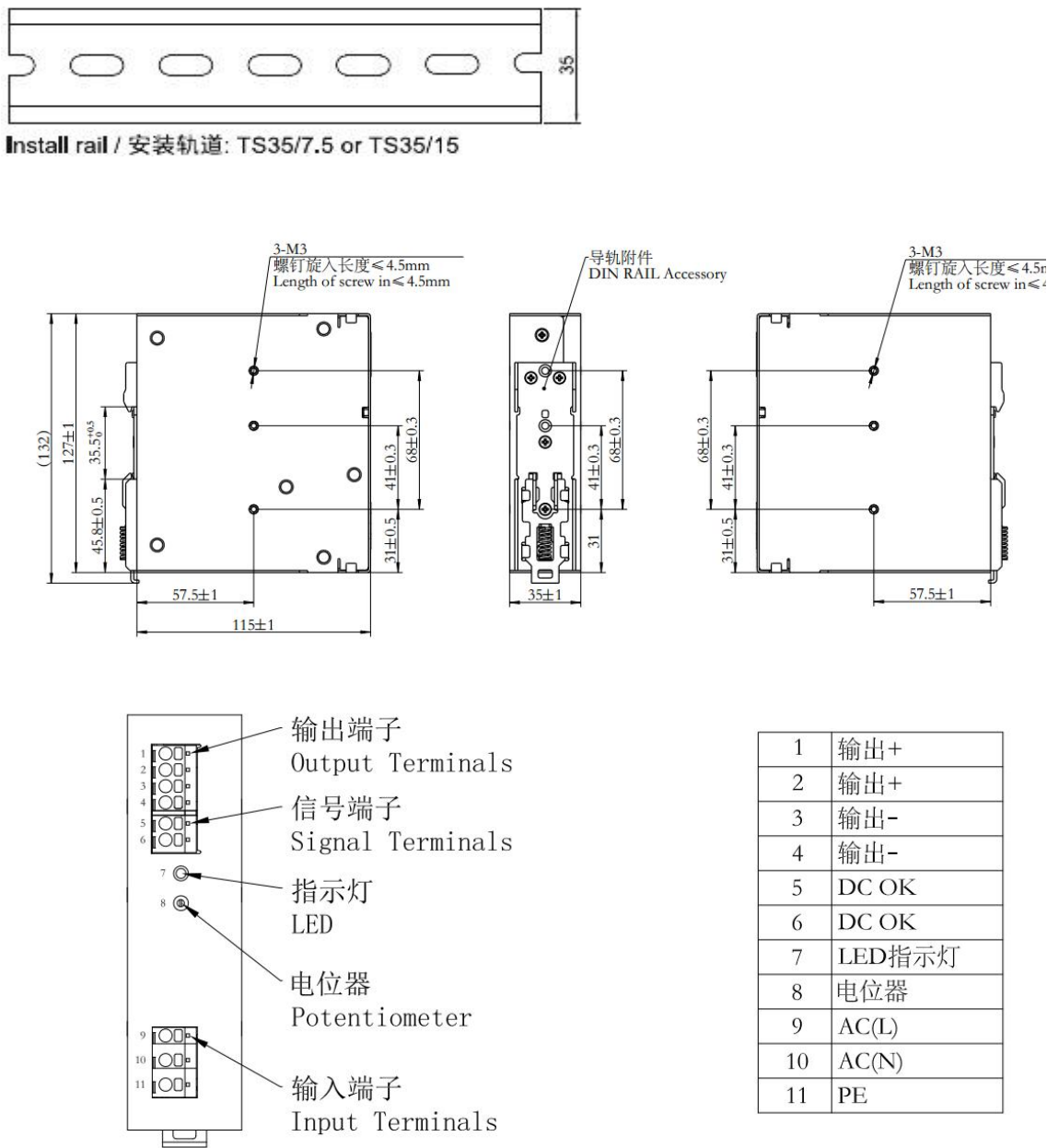
Note:

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.



2. 降额曲线 Derating Curve:

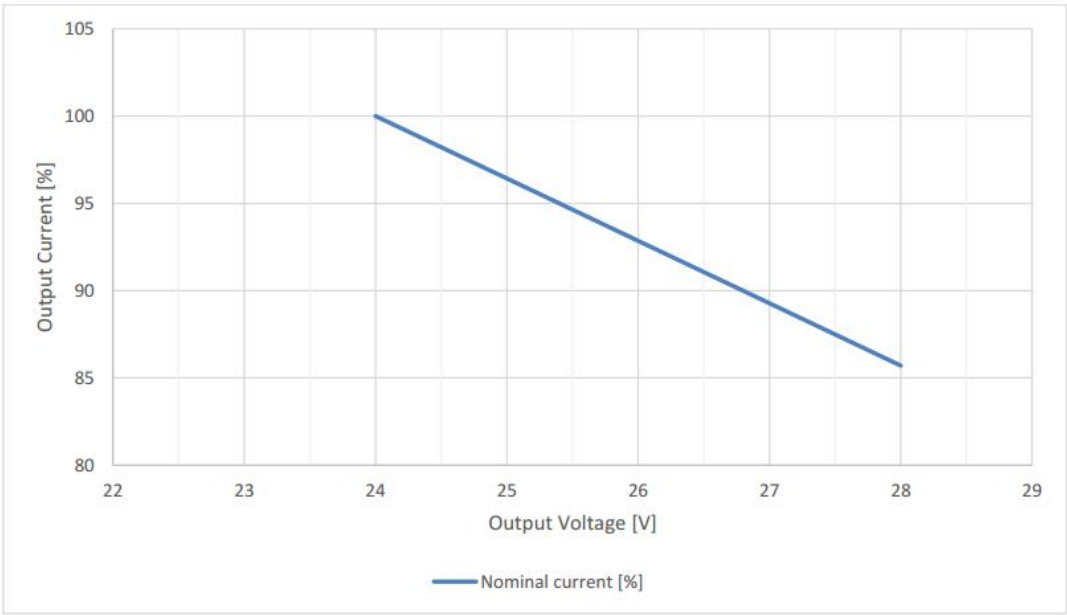


图1：输出电压下输出电流降额曲线
Fig1: Output Current Derating curve depending on Output Voltage

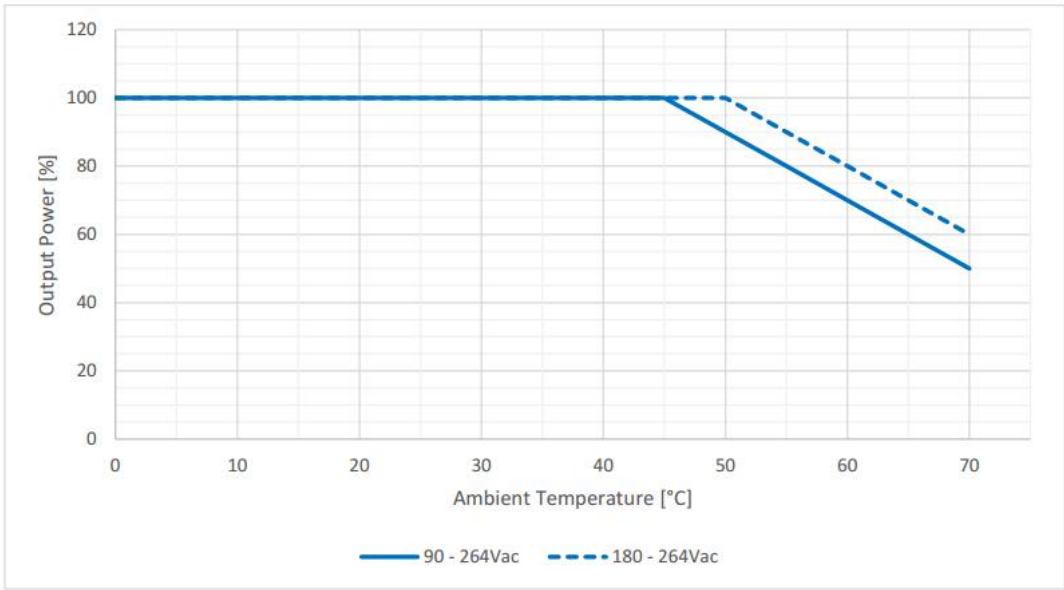
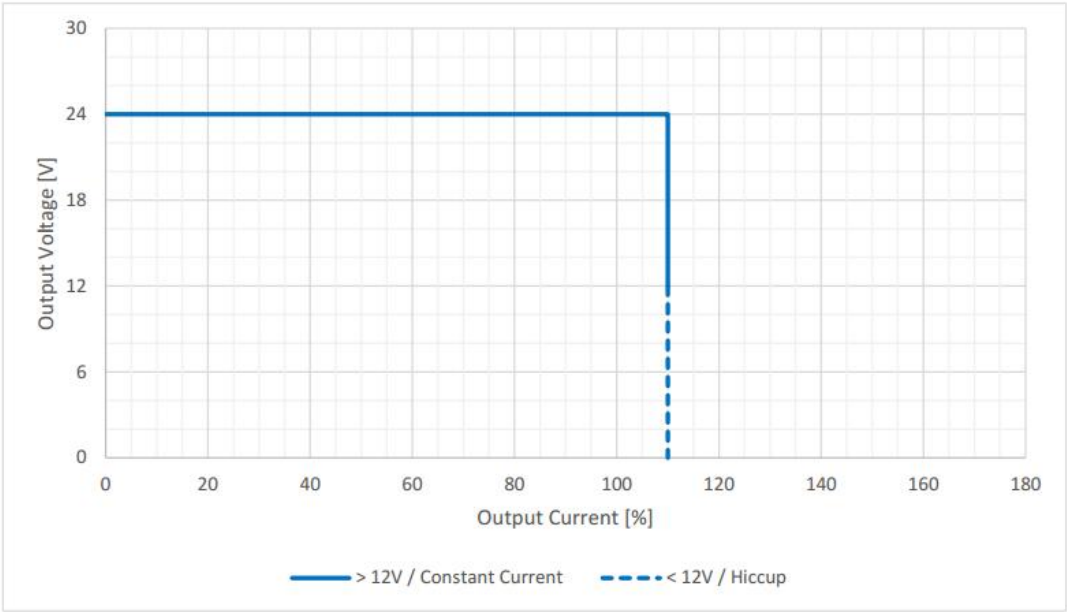


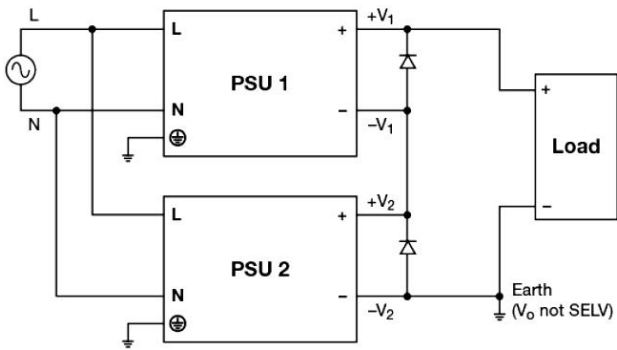
图2：环境温度和输入电压下输出功率降额曲线
Fig2: Output Power Derating curve depending on Ambient Temperature and Input Voltage

3. 限流特性 Current Limiting Characteristic

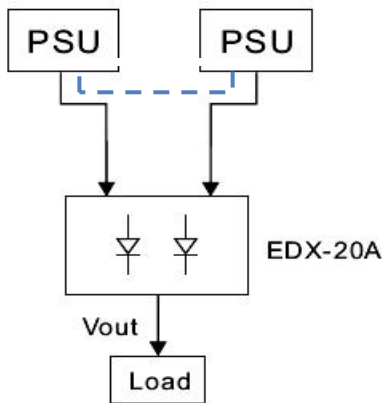


4. 典型应用 Typical Application:

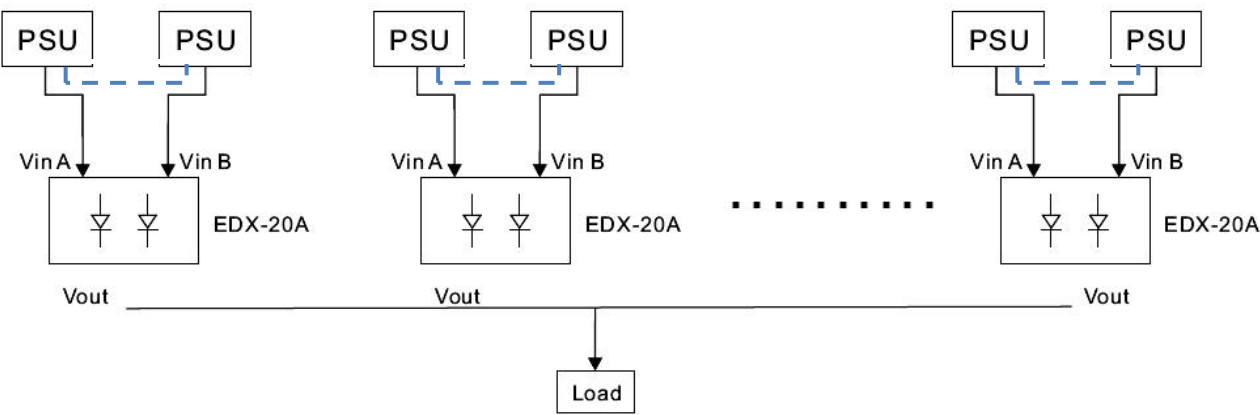
3.1 串联接线图 Series Operation Connection Diagram:



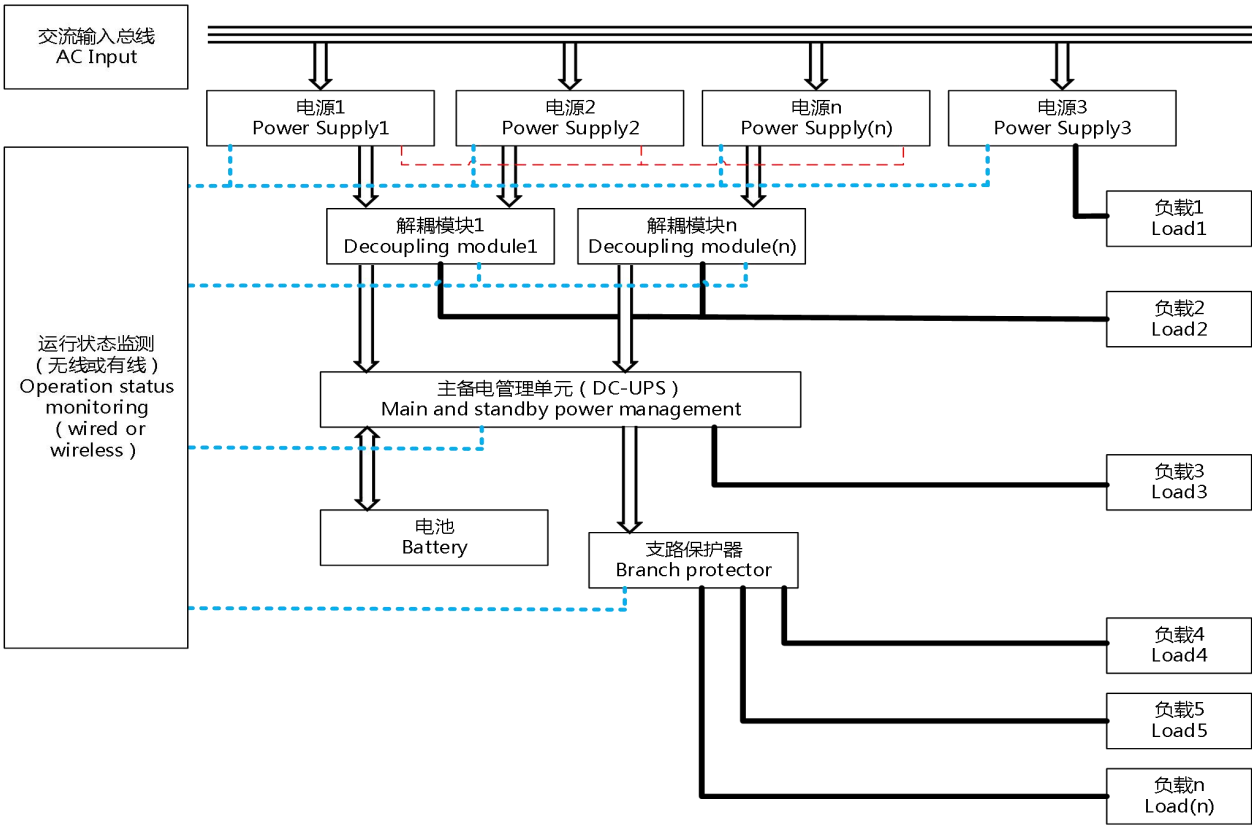
3.2 1+1 冗余接线图 1+1 Redundancy Connection Diagram



3.3 1+N 冗余接线图 1+N Redundancy Connection Diagram:

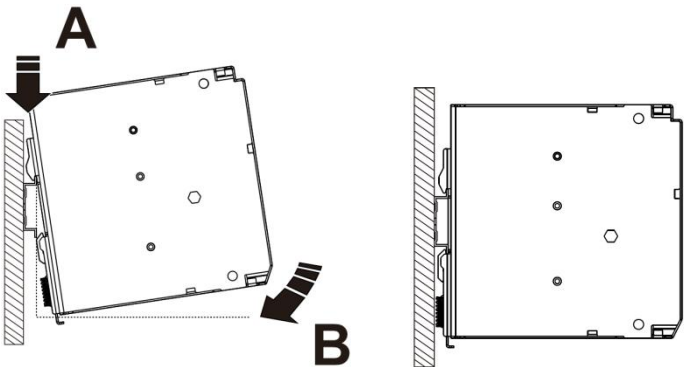


3.4 可靠性系统构建图 Reliability system:



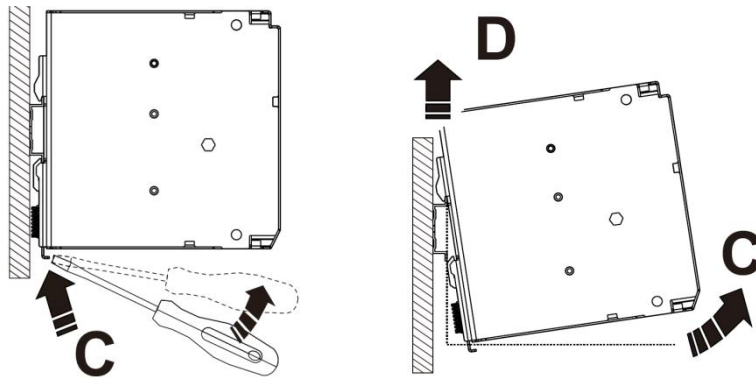
5. 导轨安装方法 Din Track Mounting:

- (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

