



## 120ACDRP\_SC series

120W - Single Output AC-DC Converter

### AC-DC Converter

120 Watt

- ⊕ Higher peak power
- ⊕ Built-in DC ok relay contact
- ⊕ 100% full load burn-in test

- ⊕ Built-in active PFC function
- ⊕ DC output voltage adjustable

Introducing our robust and reliable 120ACDRP\_SC series: designed for demanding applications, this power supply features higher peak power capabilities and a built-in DC OK relay contact for enhanced monitoring and control. Each unit undergoes a rigorous 100% full load burn-in test to ensure maximum reliability and performance. Equipped with a built-in active PFC (Power Factor Correction) function, it ensures efficient power usage and reduced harmonic distortion. The DC output voltage is adjustable, providing flexibility to meet varying application requirements. With compact dimensions of 40 × 125 × 113 mm, this power supply is designed to fit seamlessly into tight spaces while delivering robust performance.



#### Common specifications

Short circuit protection:

Over load Normally works within 110 ~ 150% rated output power for more than 5 seconds and then shut down o/p voltage with auto-recovery > 150% rated power, constant current limiting with auto-recovery within 5 seconds and may cause to shut down if over 3 seconds

Over temperature 95°C ≤ 5°C (TSW) detect on heatsink of power switch  
Protection type : Shut down o/p voltage, recovers automatically after temperature goes down

Over voltage 120ACDRP\_12SC 14~17V  
120ACDRP\_24SC 29~33V  
120ACDRP\_48SC 56~65V  
Protection type: Shut down o/p voltage, re-power on to recover

DC OK realy contact ratings (max.) 60VDC/0.3A, 30VDC/1A, 30VAC/0.5A resistive load

Operating temperature: -25~+70°C (Refer to derating curve)

Storage Temperature: -40~+85°C

Operating humidity: 20%~95%RH, Non considering

Storage humidity: 10%~95%RH

Cold start -40°C

Safety standard: UL61010-1, UL61010-2-201, BS EN/EN61010-1

MTBF: 1,500K Hours min. Telcordia SR-332 (Bellcore)

Temp. coefficient ≤ 0.03%/°C (0 ~ 50°C)

Vibration Component: 10 ~ 500Hz, 2G 10min./cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6

Dimension: 40 × 125 × 113 mm

Weight 0.67Kg

#### Output specifications

Item	Operating condition	Min	Typ	Max	Units
Voltage tolerance			±2.0		%
Line regulation			±0.5		%
Load regulation			±1.0		%
Ripple & noise	120ACDRP_12SC			100	mVp-p
	120ACDRP_24SC			100	mVp-p
	120ACDRP_48SC			120	mVp-p
Setup rise time	230VAC at full load	1500		60	ms
	115VAC at full load	3000		60	ms

#### Isolation specifications

Item	Operating Conditions	Min	Typ	Max	Units
Withstand voltage	I/P-O/P		3		kVAC
	I/P-FG		2		
	O/P-FG	0.50			
	O/P-DC OK	0.50			
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:> 100M Ohms/ 500VDC / 25°C / 70% RH				

#### EMC specifications

EMC Emissions	Compliance to BS EN/EN55032, BS EN/EN61 000-3-2,-3
EMC Immunity	Compliance to BS EN/EN61 000-4-2,3,4,5,6,8,11, BS EN/EN55024, BS EN/EN61 000-6-2 (BS EN/EN50082-2), BS EN/EN61 204-3, heavy industry level

#### Example:

##### 120ACDRP\_12SC

120 = 120Watt; AC = AC-DC; DR = Din Rail, P = High performance; 12 = 12Vout; S = Single output; C = PFC (Power Factor Correction);

Note:

- All parameters NOT specially mentioned at 230VAC input, rated load and 25°C of ambient temperature.
- Ripple & noise are measured from peak to peak with band width limit of 20MHz(0.1 uF and 47uF/50V parallel capacitor under DC output full load, AC nominal input 25°C ambient temperature).
- Installation clearances: top with 40mm, bottom with 20mm, left and right with 5mm. Increase the space to 10-15mm when the adjacent device is heat source.
- It could hold up 3 seconds max when reached peak power 180W, please refer to peak loading curves.
- Derating may be needed under low input voltage. Please check the derating curve for more details.
- After 30 minutes of burn-in.
- The ambient temperature derating of 3.5°C/1000m for operating altitude higher than 2000m (6500ft).

#### Input specifications

Item	Operating condition	Min	Typ	Max	Units
Rated input	Certified voltage	100		240	VAC
Nominal input voltage range	[DC input by connecting AC/L(+), AC/N(-)]	90 124		264 370	VAC VDC
Frequency range		47		63	Hz
Power factor	115 VAC at full load		0.96		
	230VAC at full load		0.93		
AC Current	115 VAC		1.4		A
	230VAC		0.7		
Inrush current	115 VAC		35		A
	230VAC		70		
Leakage current	240VAC			1	mA

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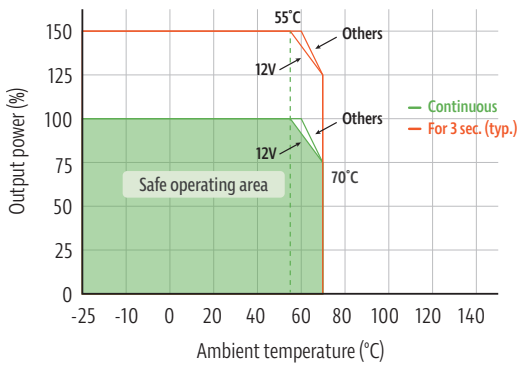
## Product Selection Guide

Certification	Model	DC Voltage (V)	Rated Current (max) A	Rated Power (W)	Peak Power* (W)	Voltage Adj. Range (V)	Efficiency (Typ) %	Ripple & Noise (Max.) mVp-p
	120ACDRP_12SC	12	10	120	180 (3sec.)	12-14	89	100
	120ACDRP_24SC	24	5	120	180 (3sec.)	24-28	91	100
	120ACDRP_48SC	48	2.5	120	180 (3sec.)	48-55	91	120

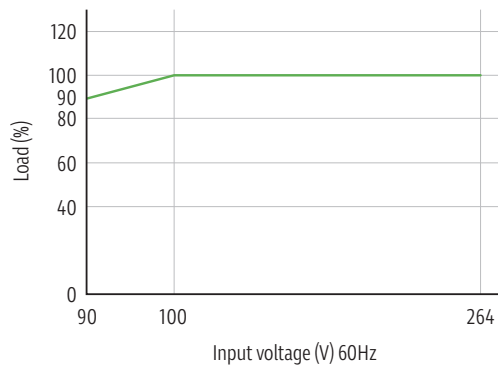
Note: \*It could hold up 3 seconds max when reached peak power 180W, please refer to peak loading curves.

## Product characteristic curve

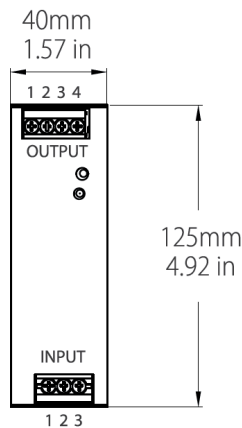
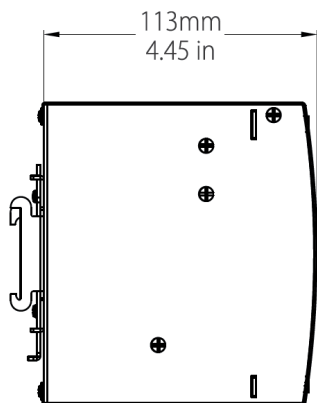
Temperature derating graph



Output and Input Voltage Curves



## Dimensions and Recommended Layout



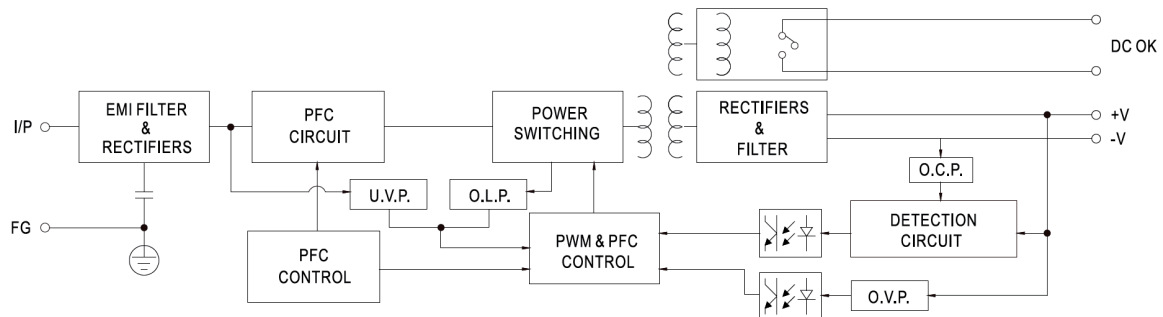
Input	
PIN	Mark
1	FG ⚡
2	AC/N
3	AC/L

Output	
PIN	Mark
1, 2	Relay contact
3	DC OUTPUT -V
4	DC OUTPUT +V

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## 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.

## Peak loading

