



## 120ACDRW\_SC series

120W - Single Output AC-DC Converter

### AC-DC Converter

120 Watt

- ⊕ Single and two phase ultra wide input range 180~550VAC
- ⊕ Bulit-in constant current limiting circuit
- ⊕ Short circuit protection overload protection, over voltage and over temperature protection
- ⊕ Built-in DC OK relay contact

The Introducing our new AC-DC power 120ACDRW\_SC series. With a single and two-phase ultra-wide input range of 180~550VAC, this advanced unit provides maximum flexibility for diverse applications. It features a built-in constant current limiting circuit to ensure stable and consistent performance under all load conditions. For enhanced safety and protection, the power supply includes short circuit, overload, over-voltage, and over-temperature protection. Additionally, the built-in DC OK relay contact allows for seamless system monitoring and integration.



Common specifications	
Over load	105 ~ 130% rated output power. Protection type: Constant current limiting, recovers automatically after fault condition is removed.
Over temperature	Shut down o/p voltage, recovers automatically after temperature goes down.
Over voltage	14~17V 120ACDRW_12SC 29~33V 120ACDRW_24SC 56~65V 120ACDRW_48SC Protection type : Shut down o/p voltage, re-power on to recover
Operating temperature	-25~+70°C (with derating)
Storage Temperature	-40~+85°C
Operating humidity	20%~90% RH, non condensing
Storage humidity	10%~95% RH
Cold start	-40°C
MTBF	1300k hrs min. Telcordia SR-332 (Bellcore)
Temp. coefficient	±0.03%/°C (0 ~ 50°C)
Vibration	Component: 10 ~ 500Hz, 2G 10min./1 cycle, 60min. each along X, Y, Z axes; Mounting clip: compliance to IEC60068-2-6.
Safety standards	UL61010-1, UL61010-2-201, BS EN/EN62368-1
Dimension:	40 x 113 x 125 mm
Weight	0.65kg

Output specifications					
Item	Operating condition	Min	Typ	Max	Units
Voltage tolerance			±2.0		%
Line regulation			±0.5		%
Load regulation			±0.5		%
Setup rise time	400VAC at full load		2000		ms
			70		
			50		
Hold up time	230VAC at full load		2000		ms
			70		
			10		

Input specifications					
Item	Operating condition	Min	Typ	Max	Units
Rated input	Certified voltage	220		480	VAC
Voltage range		180		550	VAC
		254		780	VDC
Frequency range		47		63	Hz
Inrush current	Cold start		50		A
Leakage current	530VAC			3.5	mA
AC current	400VAC		0.7		A
	230VAC		1.2		

EMC specifications	
EMC Emissions	Compliance to BS EN/EN55032, BS EN/EN61000-3-2,-3
EMC Immunity	Compliance to BS EN/EN61000-4-2, 3, 4, 5, 6, 8, 11

Isolation specifications					
Item	Operating conditions	Min	Typ	Max	Units
Withstand voltage	I/P-O/P: 3kVAC I/P-FG: 2kVAC O/P-FG: 0.5kVAC O/P-DC OK: 0.5kVAC				
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25 / 70% RH				

**Example:**  
**120ACDRW\_12SC**  
**120 = 120Watt; AC = AC-DC; DR = Din Rail, W = Wide Input;**  
**12 = 12Vout; S = Single output; C = PFC (Power Factor Correction)**

- All parameters NOT specially mentioned at 400VAC input, rated load and 25°C of ambient temperature.
- Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
- 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.
- The ambient temperature derating of 3.5 °C/1000m for operating altitude higher than 2000m (6500ft).
- The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to „EMI testing of component power supplies.“

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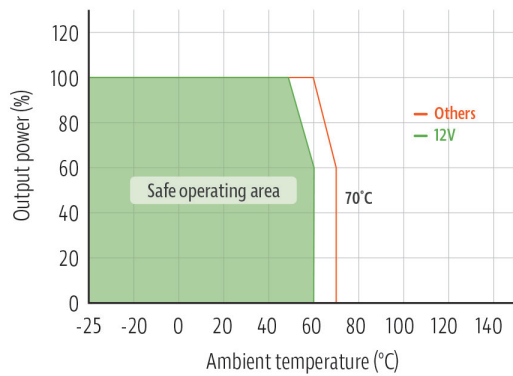
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## Product Selection Guide

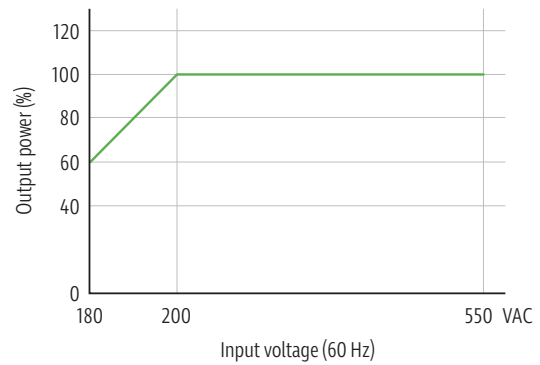
Certification	Part number	DC Voltage (V)	Rated Current (A)	Rated Power (W)	Voltage Adj. Range (V)	Efficiency (%)	Ripple & Noise (mVp-p)
UL	120ACDRW_12SC	12	10	120	12 ~ 15	89.5%/400VAC	120
UL	120ACDRW_24SC	24	5	120	24 ~ 29	91.0%/400VAC	120
UL	120ACDRW_48SC	48	2.5	120	48 ~ 58	92.0%/400VAC	150

## Product characteristic curve

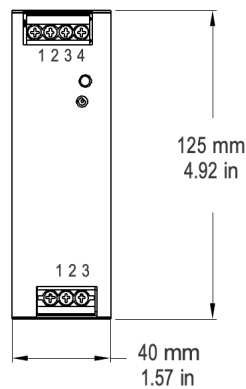
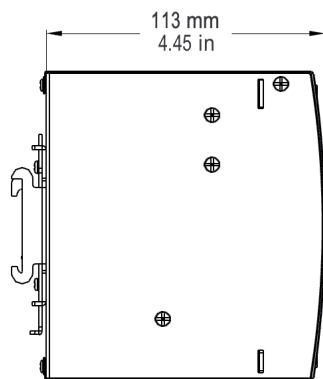
Temperature derating graph



Input voltage derating curve



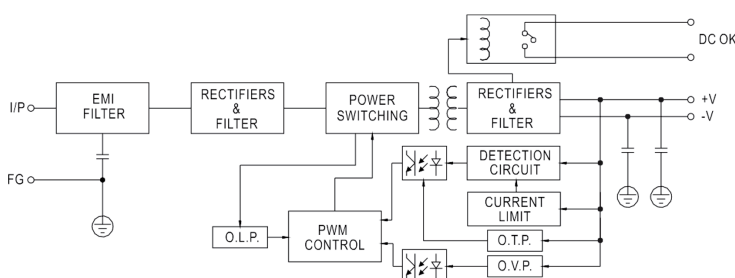
## Dimensions and recommended layout



Input	
PIN	Mark
1	FG (⊥)
2	AC/L2
3	AC/L1

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

## Functional 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.