ADW120-xx Series

DESCRIPTIONS 120W, AC-DC DIN-Rail Power Supply



RoHS

CE Report EN62368-1

UKCA Report BS EN62368-1

FEATURES

- Universal 180-600VAC or 254-848VDC input voltage
- Single/Two phase both available
- Operating ambient temperature range: -25℃ to +70℃
- High I/O isolation voltage up to 4000VAC
- Industrial-grade design
- Low ripple & noise, high efficiency, high reliability
- DC OK function
- 150% peak load for 3 seconds
- LED indicator for power on
- Output short circuit, over-current, over-voltage, over-temperature protection
- OVC III, 2000m altitude (UL508, IEC60664 standards)
- Safety according to UL508, IEC62368, IEC60664

APPLICATIONS

- Industrial control
- Electromechanical equipment
- Automation equipment

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 400VAC (%) Typ.	Capacitive Load (μF) Max.
EN/BS EN	ADW120-12	120	12V/10.0A	12-14	89.5	15000
EN/BS EN	ADW120-24	120	24V/5.0A	24-28	91	10000
EN/BS EN	ADW120-48	120	48V/2.5A	48-55	92	8000

Note: 1.The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

2.The product picture is for reference only.For details, please refer to the actual product.

Characteristic

Product Specifications	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	Rated input (certified voltage)		220	--	480	VAC
		AC input		180	--	600	
		DC input		254	--	848	VDC
	Input Frequency			47	--	63	Hz
	Input Current	230VAC		--	1.2	1.4	A
		400VAC		--	0.7	1.0	
	Inrush Current	400VAC	Cold start	--	50	--	
	Contact leakage current			<3.5mA/rms			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	0% - 100% load	12V output	--	±1.5	±2.0	%
			24V/48V output	--	±1.0	--	
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	400VAC	12V output	--	±0.5	±1.0	
			24V/48V output	--	±0.5	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/24V output	--	--	120	mV
			48V output	--	--	150	
	Temperature Coefficient			--	±0.03	--	%/°C
	Short Circuit Protection			Constant current hiccup, self-recovery			
	Over-current Protection			≥150% Io, hiccup, self-recovery			
	Over-voltage Protection	12V output		≤16V	Output voltage hiccup		
		24V output		≤35V			
		48V output		≤60V			
	Over-temperature Protection			Shutdown output, recovery after restart			
	Minimum Load			0	--	--	%
	Start-up Time	400V input	Room temperature, full load (cold start)	--	--	2	s
	DC OK Signal			30VDC/1A Max.			
	Hold-up Time	230VAC		--	10	--	ms
		400VAC		--	50	--	
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current < 10mA	4000	--	--	VAC
		Input - PE		2000	--	--	
		Output - PE		500	--	--	
		Output - DC OK	Electric Strength Test for	500	--	--	

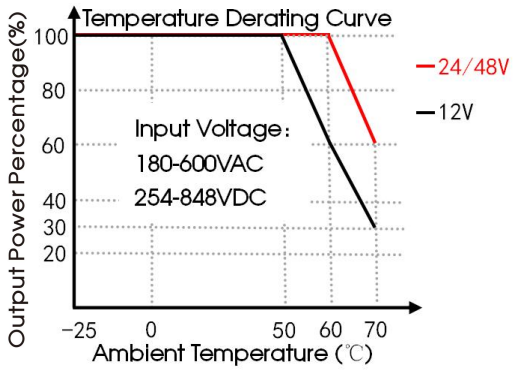
			1min., leakage current < 2mA				
	Insulation Resistance	Input - output	500VDC	100	--	--	MΩ
		Input - PE					
		Output - PE					
	Operating Temperature			-25	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity			--	--	95	%RH
	Altitude			--	--	5000	m
	Power Derating	+50℃ to +60℃	ADW120-12	4.0	--	--	%/℃
		+60℃ to +70℃		3.0	--	--	
		+60℃ to +70℃	ADW120-24/48	4.0	--	--	
		180VAC - 198VAC		2.23	--	--	%/VAC
		550VAC - 600VAC		0.8	--	--	
		2000m-5000m		5.0	--	--	%/Km
	Safety Class			CLASS I			
	MTBF	MIL-HDBK-217F@25℃		> 300,000 h			
Mechanical Specifications	Case Material	Metal (AL1100, SPCC , SGCC)					
	Package Dimensions	124.00 x 41.00 x 110.00 mm					
	Weight	550g (Typ.)					
	Cooling Method	Free air convection					

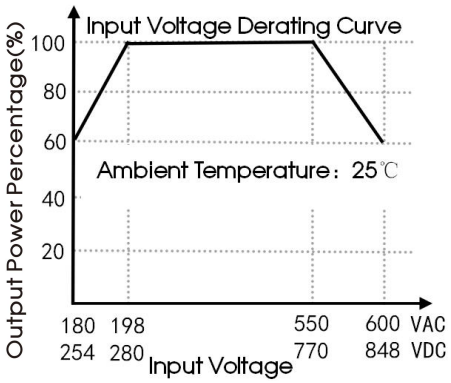
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.

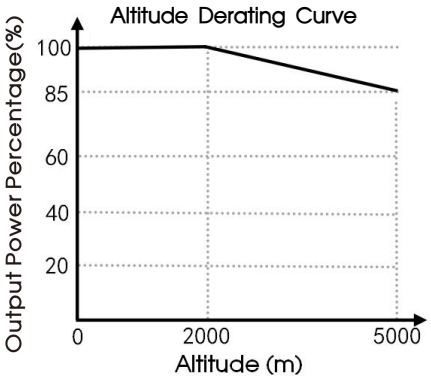
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32 EN55032 CLASS B	
		RE	CISPR32 EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
		Voltage flicker	IEC/EN61000-3-3	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±4KV/Air ±8KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±2KV	Perf. Criteria A
		Surge	IEC/EN61000-4-5 Line to line ± 2KV/line to ground ±4KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A
		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	Perf. Criteria A

Product Characteristic Curve

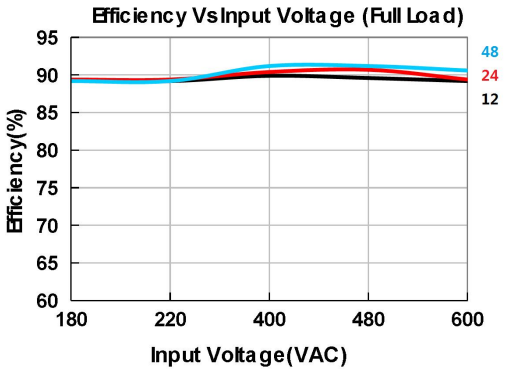


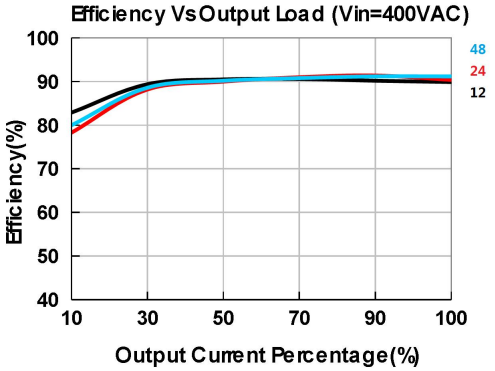




Note: ① With an AC input between 180-198VAC/550-600VAC and a DC input between 254-280VDC/770-848VDC, the output power must be derated as per temperature derating curves;

② This product is suitable for applications using natural air cooling.

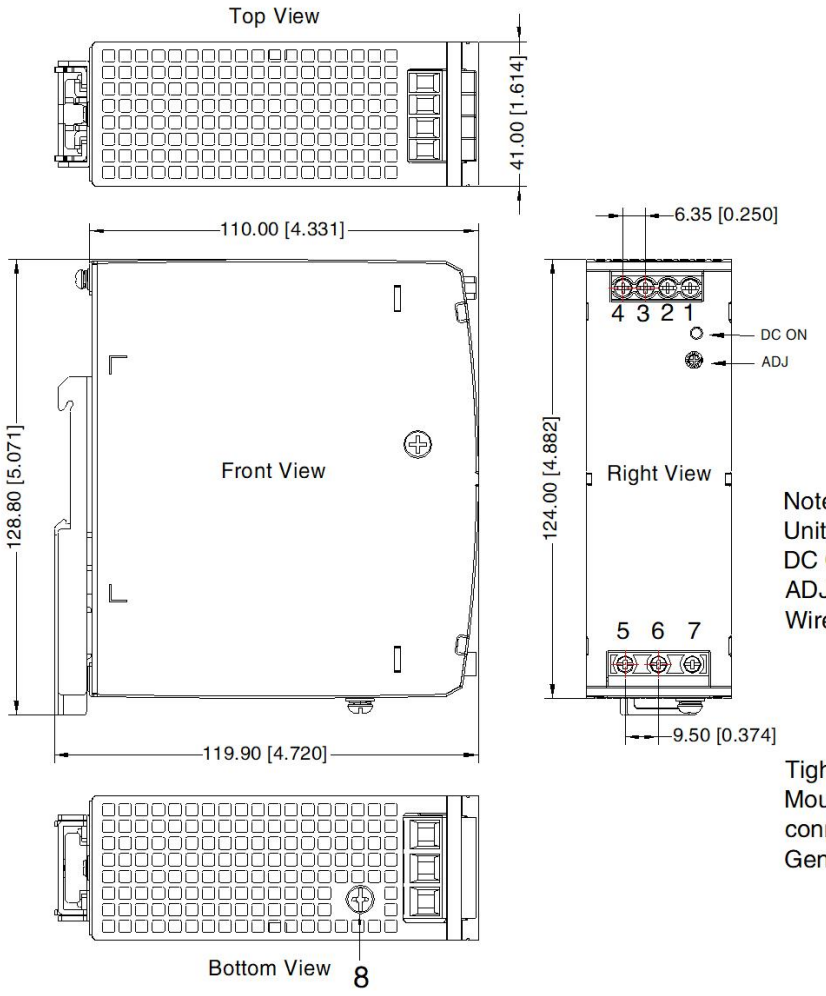




Note:When the device load exceeds 50% of the rated power for a long time, it is recommended to maintain a gap of 20mm at the top, 20mm at the bottom, and 5mm on each side. If the adjacent device is a heat source (such as another power supply), increase this gap to 15mm.

Dimensions and Recommended

THIRD ANGLE PROJECTION



Pin–Out	
Pin	Mark
1	+Vo
2	–Vo
3	DC OK
4	
5	AC(L1)
6	AC(L2)
7	⏚

7、8 any position must be connected to the earth(⏚)

Note:
Unit: mm[inch]
DC ON：Output status indicator LED
ADJ: Output adjustable resistor
Wire range: Input: 26–10 AWG
Output: 12V: 16–10AWG
24V: 20–10AWG
48V: 22–10AWG
DC OK: 24–16AWG
Tightening torque: Max 0.5 N·m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ± 1.00[± 0.039]

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
2. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
9. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.