



## AMED120-480NZ



DIN Rail

The new AMED120-480NZ is a brand-new DIN-rail mounting AC/DC converter that features a cost-effective, energy efficient green power supply solution. It accepts three-phase power distribution system with an ultra-wide input voltage range of 180-600VAC and an output voltage range from 12-48V, this series can benefit your new industrial system design.

This new series offers great operating temperatures, from -25°C to 70°C also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP), over temperature protection (OTP) and an output over-voltage protection (OVP) come standard with the series.

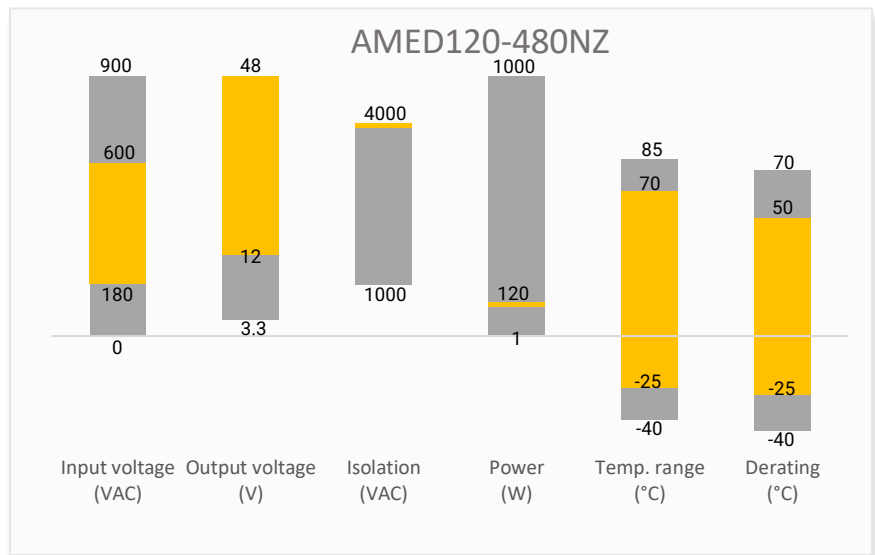
The AMED120-480NZ is perfect for electric distribution box, grid power, instrumentation, CNC, industrial control panel, building automation applications.

## Features

- Ultra-wide Input: 180 - 600VAC/254 - 848VDC
- Operating Temp: -25 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current, over-voltage, over-temperature protection
- Power good signal indication
- High operating altitude up to 5000m



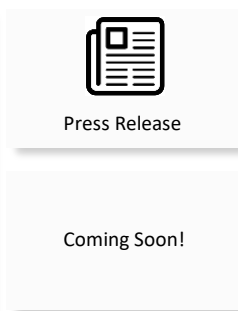
## Summary



## Training



Product Training Video  
(click to open)



Application Notes

## Applications



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

### Single Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (μF)	Efficiency @ 230VAC Typ. (%)
AMED120-12S480NZ	180~600/47~63	254~848	120	12	10	15000	89
AMED120-24S480NZ	180~600/47~63	254~848	120	24	5	10000	91
AMED120-48S480NZ	180~600/47~63	254~848	120	48	2.5	8000	92

\* Output total power must be secured within the rated value if the output voltage increases via the ADJ potentiometer.

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input Current	230VAC	1.2	1.4	A
	400VAC	0.7	1.0	A
Inrush Current	400VAC, cold start	50		A
Leakage Current		<3.5		mA/rms

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	0 - 100% load, 12 VDC Output	± 1.5	± 2	%
	0 - 100% load, 24,48 VDC Output	± 1		%
Line regulation	Rated load	± 0.5		%
Load regulation	0 - 100% load, 12 VDC Output	± 0.5	± 1	%
	0 - 100% load, 24,48 VDC Output	± 1		%
Ripple & Noise*	12, 24 VDC Output		120	mV p-p
	48 VDC Output		150	mV p-p
Start-up time	400VAC input, full load, room temperature, cold start		2	s
Hold up time	230VAC	10		ms
	400VAC	50		ms
Power-Good(P-G) signal	Shorted while output power-up successfully		<30V/1A	
Voltage adjustable range	12 VDC Output	12 - 14		V
	24 VDC Output	24 - 28		V
	48 VDC Output	48 - 53		V

\* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application not for specific details. Measured with a 47μF electrolytic capacitor and a 0.1μF ceramic capacitor.

### Isolation Specifications

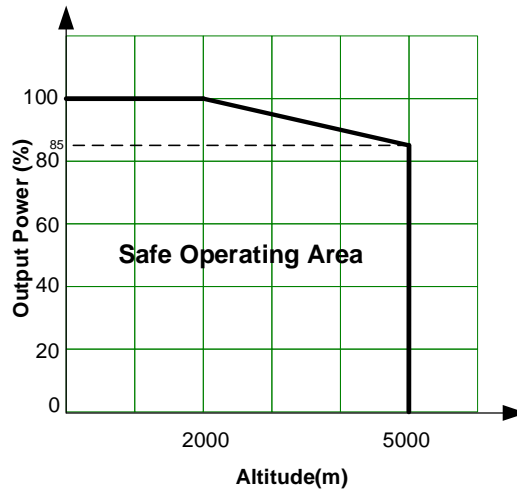
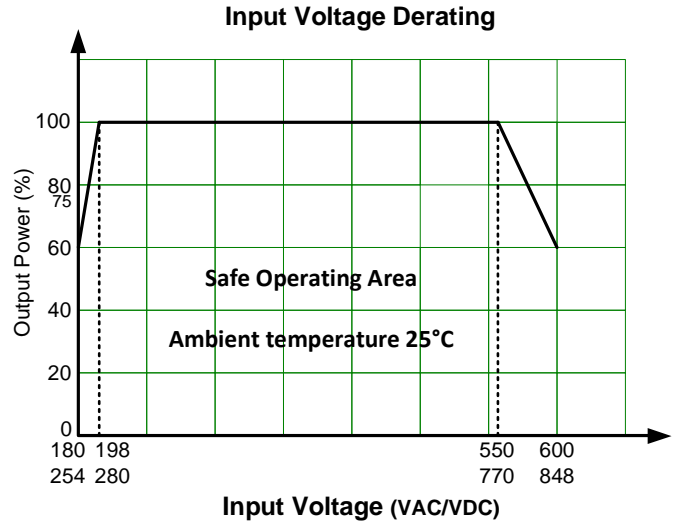
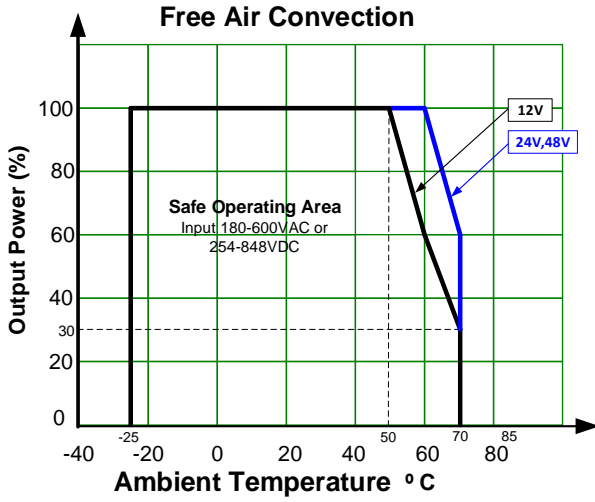
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, Leakage current < 10mA	4000		VAC
Tested Input to GND voltage	60 sec, Leakage current < 10mA	2000		VAC
Tested Output to GND voltage	60 sec, Leakage current < 10mA	500		VAC

Tested Output to P-G signal	60 sec, Leakage current < 2mA	500	VAC
Insulation resistance	I to O, I/O to PE, 500VDC	>100	MΩ

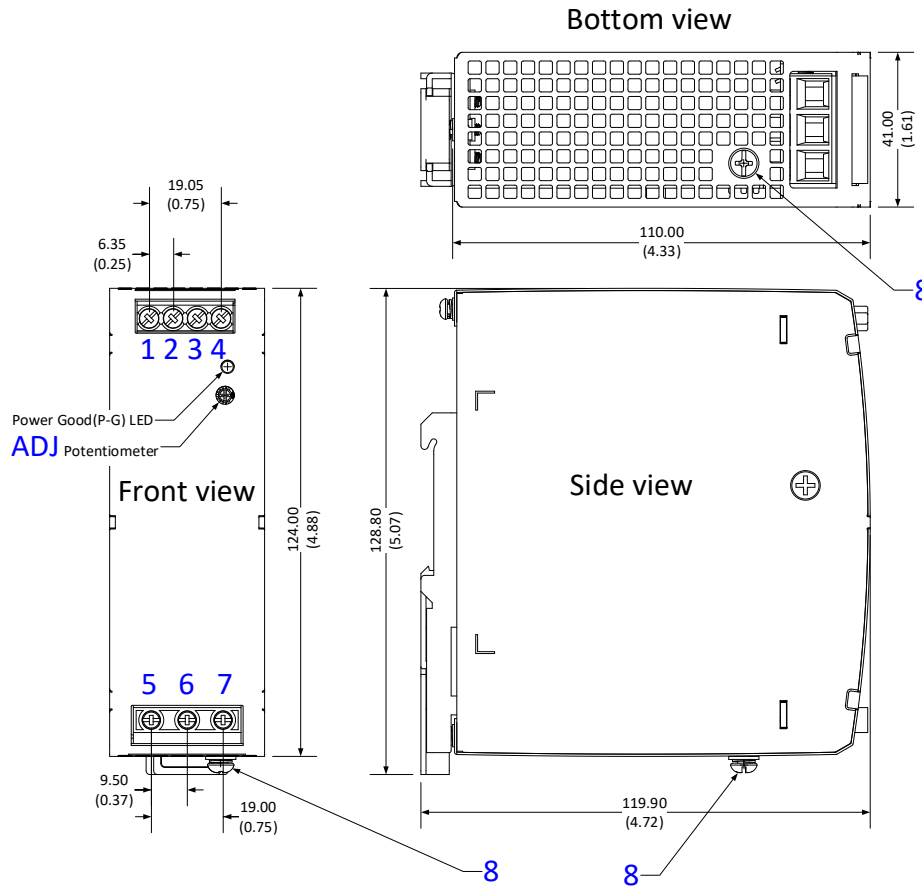
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Over Current protection	Constant current, auto- recovery	≥ 150		% of Iout
Over voltage protection	12 VDC Output, manual-recovery	≤ 16		VDC
	24 VDC Output, manual-recovery	≤ 35		VDC
	48 VDC Output, manual-recovery	≤ 60		VDC
Over temperature protection	Output voltage turn off, manual-recovery			
Short circuit protection	Hiccup, Continuous, auto-recovery			
Operating temperature		-25 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	12 VDC Output, +50 °C to +60°C	4.0		% / °C
	12 VDC Output, +60 °C to 70°C	3.5		% / °C
	24,48 VDC Output, +60 °C to 70°C	4.0		% / °C
	180VAC - 198VAC	2.23		% / °C
	550VAC - 600VAC	0.8		% / VAC
	2000m – 5000m	5.0		% / Km
Temperature coefficient		± 0.03		% / °C
Protection Class	Class I			
Cooling	Free air convection			
Storage Humidity	Non-condensing		<95	% RH
Altitude			5000	m
Case material	Metal (AL1100, SPCC, SGCC)			
Weight		550		g
Dimensions (L x W x H)	1.61 x 4.88 x 4.33 inches (41.00 x 124.00 x 110.00 mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)			
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.				

Safety Specifications		
Parameters		
Agency approval	CE EN62368	
Standards	Designed to meet IEC62368-1, IEC60664, UL61010-1, UL508, UL61010-2-201	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, Class B
	Voltage flicker	IEC/EN 61000-3-2
	Harmonic current	IEC/EN 61000-3-3, Class A
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±4KV, Air ±8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±2KV, Criteria A
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, L-G ±4KV, Criteria A
	CS, Conducted Disturbance Immunity	IEC/EN 61000-4-6 10V r.m.s, Criteria A
	Voltage dips, Short Interruptions and Voltage Variations Immunity	IEC/EN 61000-4-11 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods, Criteria A

Derating



## Dimensions



Pin Output Specifications	
Pin	Function
1	Power-Good (P-G)
2	Power-Good (P-G)
3	-V Output
4	+V Output
5	Input (L1)
6	Input (L2)
7	GND $\equiv$
8	GND $\equiv$
ADJ	Voltage adjustment

**Note:**

Unit: mm (inch)

General tolerance :  $\pm 1.0$  (0.04)

Wire gauge : Input 26 - 10AWG

Output 12V 16 - 10AWG

Output 24V 20 - 10AWG

Output 48V 22 - 10AWG

P-G Signal 26 - 16AWG

Tightening torque : 0.5N·m Max.

Mounting rail : TS35, rail needs to connect to safety ground

**NOTE:** 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to [www.aimtec.com](http://www.aimtec.com) for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).