

IE048-480

480W @48Vdc, Industrial AC/DC power supply, DIN rail mount

The ruggedized IE048-480 industrial power supply is a functional accessory for Allied Telesis products to build a solution suitable for Smart Cities (e.g. Surveillance & Security), Industrial Ethernet, Transportation or any application requiring systems that function in harsh environment with extended operating temperature.



Overview

The IE048-480 is a power supply delivering reliable 480W output power at 48Vdc; it was fully tested and validated to operate with Allied Telesis Industrial products.

Housed in compact metal case with DIN-rail clip, it takes special account of the mechanical robustness, electromagnetic compatibility and thermal characteristics to exhibit the required strengths to work satisfactorily in harsh environment where it will be exposed.

Its highly efficient and stable output power has the capability to support 150% of peak load. The nominal output voltage of 48Vdc can be adjusted to match the application requirements.

The AC/DC rectifier operates over the full range of AC input voltage to fit worldwide power grids. The included active Power Factor Correction circuit (PFC) reduces energy costs by eliminating reactive power and harmonics from power lines. Besides the increment of efficiency, PFC is to comply with international regulations, which established limits on harmonic currents that can appear on the AC main line.

Key Features

- ▶ Electromagnetic immunity for industrial environments
- ▶ High efficiency
- ▶ Active PFC
- ▶ Stable output power with 150% peak current capability
- ▶ Wide input voltage range
- ▶ Protections: peak-current, over-current and over-temperature
- ▶ Remote ON/OFF
- ▶ Output power confirmation relay (DC_OK)
- ▶ Extended operating temperature range
- ▶ Air convention cooling
- ▶ Metal case
- ▶ DIN rail mount

Specifications

INPUT SPECIFICATIONS		
Voltage ¹		90 to 264 Vac, or 98 to 350 Vdc
Current	@115Vac	4.6A typ.
	@230Vac	2.3A typ.
Frequency		50/60Hz (45 to 66Hz), or DC
Efficiency	@115Vac	92 typ.
	@230Vac	94 typ.
Power Factor	@115Vac	0.98 typ.
	@230Vac	0.93 typ.
Inrush current	@115Vac	20A typ. ²
	@230Vac	40A typ. ²
Leakage current ³	@100Vac	≤0.75mA
	@240Vac	≤1.50mA
Line noise tolerance		2kV, 50 to 1,000ms, ±0~360°

OUTPUT SPECIFICATIONS		
Voltage ^{nominal}		48Vdc
Current		10A
Peak current		15A
Line regulation		≤192mV ⁴
Load regulation		≤300mV ⁴
Ripple	0° to 70°C	≤120mVp-p
	-25° to 0°C	≤240mVp-p
	Io=0 - 30%	≤750mVp-p
Ripple Noise	0° to 70°C	≤150mVp-p
	-25° to 0°C	≤300mVp-p
	Io=0 - 30%	≤750mVp-p
Line noise tolerance		2kV, 50 to 1,000ms, ±0~360°
Temperature coefficient	0° to 70°C	≤480mV
	-25° to 70°C	≤600mV
Voltage accuracy ^{Max}	0° to 70°C	±486mV
	-25° to 70°C	±606mV
Drift		≤192mV
Start-up time		≤750ms ⁹
Hold-up time		20ms typ. ⁹
Output voltage adjustment range		45.0 to 55.2Vdc
Output voltage setting		48.0Vdc ±1%
Protection ¹⁰	Over current	>101% of peak current
	Over voltage	57.6 to 67.2Vdc
	Over temp	√

¹ Output derating is required

² More than 3s to re-start

³ According to Safety certification

⁴ At room temperature

⁵ Resistive load

⁶ refer to the Installation Guide for more details on the safety approved power ratings and thermal conditions.

⁷ Tested for startup at -40°C

⁸ Io=30 - 100%, burst operation at ≤30% load

⁹ Input voltage: 115Vac, Io=100%

¹⁰ Automatic recovery

¹¹ Standard EN 60715 TH 35 DIN rail clip

ISOLATION AND OTHER SPECIFICATIONS		
Isolation ⁴	Input-Output	3,000 Vac for 1 minute cutoff current:10mA
	Input-P.E.	2,000 Vac for 1 minute cutoff current:10mA
	Output-P.E.	500 Vac for 1 minute cutoff current:100mA
	Output-RC, DC_OK	
Remote ON/OFF (RC)		√
DC_OK contact ⁵		≤60Vdc 0.3A 30Vdc 1.0A 30Vac 0.5A
DC_OK LED ⁵		
LED	Alarm	√ (red)
	DC_OK	√ (green)

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature range ⁶	-20° to 70°C ^{1,7}
Storage temperature range	-40° to 85°C
Operating humidity range	20% to 90% RH, non-condensing
Storage humidity range	
Operating altitude	5,000 m
Cooling method	air convection

COMPLIANCE	
Compliance Mark	CE, cULus, RCM, UL (Demko)
Environmental compliance	RoHS, China-RoHS, WEEE
Safety	CAN/CSA C22.2 No.107.1-01 CAN/CSA C22.2 No.60950-1 EN 50178 EN/IEC/UL 60950-1 UL 508
Electromagnetic Immunity	EN 55024
IEC 61000-3-2 Harmonic current emission	class A
IEC 61000-4-2 Electrostatic discharge (ESD)	contact discharge: level 4
IEC 61000-4-3 Radiated susceptibility (RS)	level 3
IEC 61000-4-4 Electrical fast transient (EFT)	level 4
IEC 61000-4-5 Lighting/surge immunity (Surge)	line-to-line: level 3 line-to-earth: level 4
IEC 61000-4-6 Conducted immunity (CS)	level 3
IEC 61000-4-8 Magnetic field immunity	level 4
IEC 61000-4-11 AC voltage dips and interrupt	30% reduction for 500ms 60% reduction for 200ms
Electromagnetic Emissions	CISPR 32, class B EN 55011, class B EN 55032, class B FCC 47 CFR Part 15, subpart B, class B VCCI, class B
Shock	non-operating: 20g, 11ms, half-sine (packaged)
Vibration	non-operating: 2g @10~55Hz (DIN rail)
Hazardous location	ANSI/ISA12.12.01 class I, division 2, groups A, B, C and D

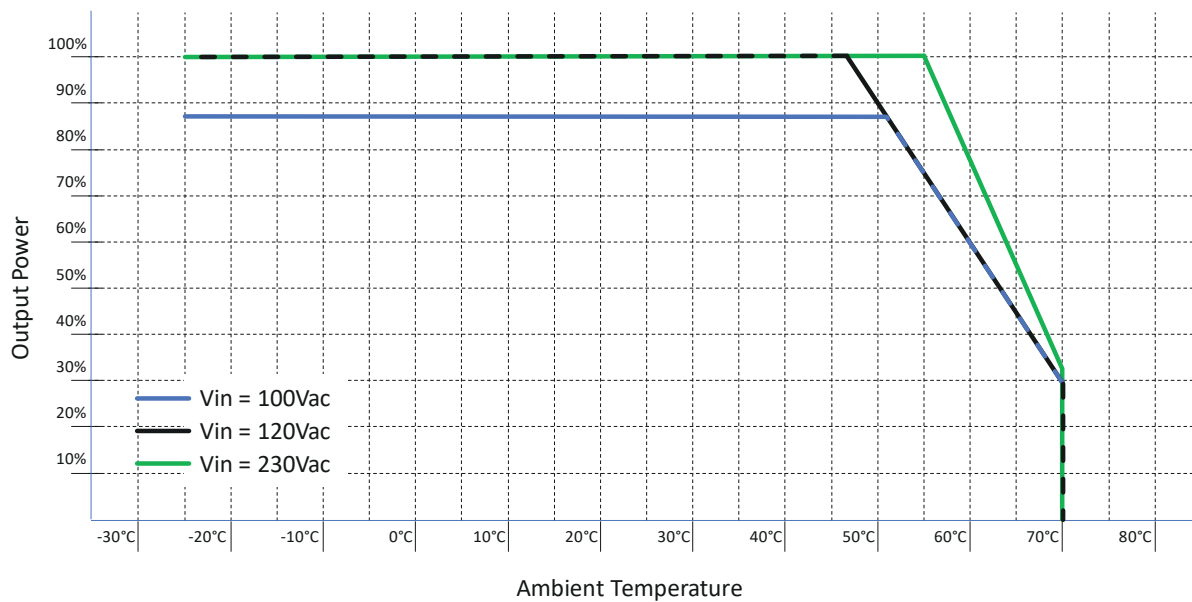
Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	WEIGHT	ENCLOSURE	MOUNTING	PROTECTION RATE
IE048-480	70 x 117 x 124 mm (2.76 x 4.61 x 4.88 in)	1.20 kg	stainless steel	DIN rail ¹¹	IP20

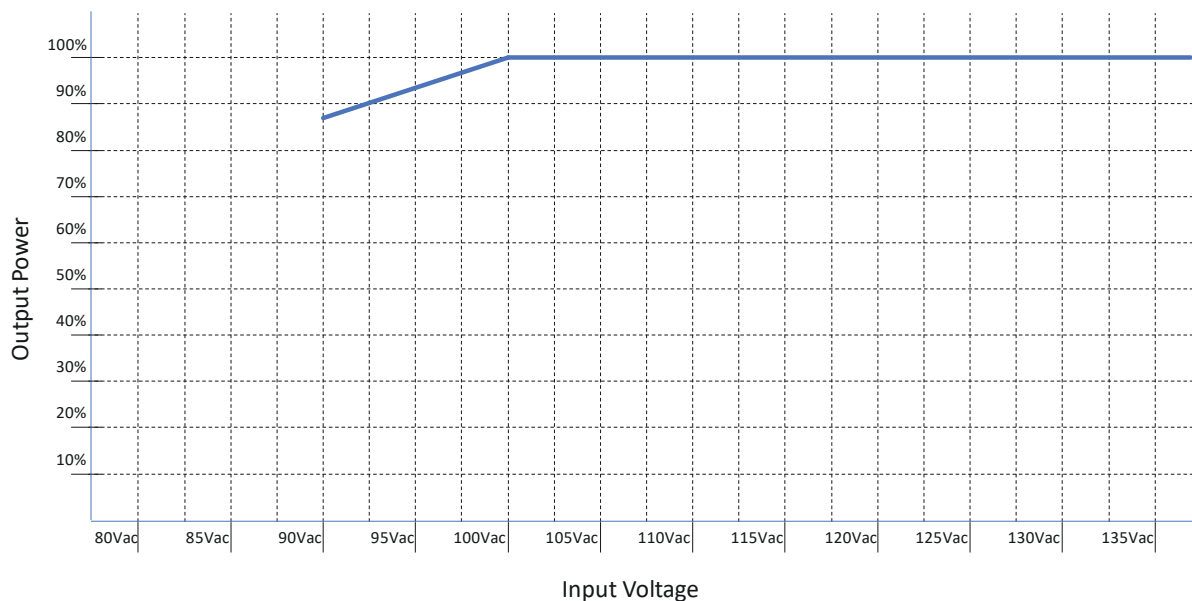
Derating Characteristics - Ambient Temperature

The input voltages (V_{in}) include a tolerance of $\pm 10\%$ nominal value. Derating characteristics are related to a vertically mounted device¹².

¹² The operational ambient temperature varies depend on mounting orientation. Vertical orientation of the device is strongly recommended to make effective the air convection.



Derating Characteristics - Input Voltage



Ordering Information

AT-IE048-480-20

480W @48Vdc, Industrial AC/DC power supply,
DIN rail mount.