IE048 Series

Industrial AC/DC Power Supply, 48VDC Output

The IE048 industrial power supplies are functional accessories for Allied Telesis products. They are ideal for Smart Cities, Industrial Ethernet, Transportation or any application requiring systems that function in harsh environments with extended operating temperatures.

Overview

The IE048 Series power supplies deliver reliable 48VDC output voltage. They are fully tested and validated to operate with Allied Telesis Industrial products.

Housed in a compact metal case with DIN rail clip, the IE048 features mechanical robustness, electromagnetic compatibility and enhanced thermal characteristics, making it ideal for exposed areas and harsh environments.

Highly efficient and stable output power provides the capability to support 150% of peak load. The nominal output voltage of 48VDC can be adjusted to match 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.

As well as providing efficiency, the PFC complies with international regulations. It establishes limits on the harmonic currents that can appear on an AC main line.

Key Features

- Electromagnetic immunity for industrial environments
- Highly efficient
- 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
- Warranty period: 5 years

Input Specifications

		IE048-240	IE048-480
Voltage		90 to 264 VAC, 1 Φ[1]	
Current	@115VAC	2.3A typ.	4.6A typ.
	@230VAC	1.2A typ.	2.3A typ.
Frequency		50/60Hz (45 to 60Hz)	
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	≤0.45mA	≤0.75mA
	@240VAC	≤0.75mA	≤1.50mA
Line noise tolerance		2kV, 50 to 1,000ms, ±0~360°	

Output Specifications

		IE048-240	IE048-480
Voltage nominal		52VDC	48VDC
Current		4.6A	10A
Peak current		4.6A	15A
Line regulation		≤192mV[4]	
Load regulation		≤300mV[4]	
Ripple	0° to 70°C	≤240mVp-p	≤120mVp-p
	-25° to 0°C	≤500mVp-p	≤240mVp-p
	Io=0 - 30%	≤750mVp-p	≤750mVp-p
Ripple noise	0° to 70°C	≤300mVp-p	≤150mVp-p
	-25° to 0°C	≤580mVp-p	≤300mVp-p
	Io=0 - 30%	≤750mVp-p	≤750mVp-p
Temperature regulation	0° to 70°C	≤480mV	
	-25° to 70°C	≤600mV	
Voltage accuracy	0° to 70°C	≤486mV	
	-25° to 70°C	≤606mV	
Drift		≤192mV	
Start-up time[5]		≤750ms	
Hold-up time		20ms typ.[5]	
Output voltage adjustment range		48.0 to 55.0VDC	45.0 to 55.2VDC
Output voltage setting		52.0VDC ±1%	48.0VDC ±1%
Protection	Over current	101% of peak current, auto recovery	
	Over voltage	58.1 to 68.0VDC	57.6 to 67.2VDC
	Over temp	√	

Isolation and other Specifications

		IE048-240	IE048-480
Isolation[6]	Input-Output	3,000 VAC for 1 minute; cut off current:10mA	
	Input-P.E.	2,000 VAC for 1 minute; cut off current:10mA	
	Output-P.E.	500 VAC for 1 minute; cut off current:100mA	
	Output-RC, DC_OK		
Remote ON/OFF (RC)		√	
DC_OK contact		≤1A @30VDC; ≤0.5A @30VAC	
LED	Alarm	√ (red)	
	DC_OK	√ (green)	

[1] Output derating is required
[2] More than 3s to re-start
[3] According to Safety certification
[4] Io=30 - 100%, burst operation at ≤30% load
[5] Input voltage: 115VAC, Io=100%
[6] At room temperature

Environmental Specifications

	IE048-240	IE048-480
Operating temperature range[7]	-25° to 70°C [8, 9]	
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

	IE048-240	IE048-480
Compliance mark	CE, cULus, RCM, UL	
Environmental compliance	RoHS, China-RoHS, WEEE	
Safety	CAN/CSA C22.2 No. 62368-1 EN/IEC/UL 62368-1 UL 508	CAN/CSA C22.2 No.60950-1 IEC/UL 60950-1 EN/IEC 62368-1 UL 508
Electromagnetic immunity	EN 55035	
IEC 61000-3-2 Harmonic current emission	Class A	
IEC 61000-3-3 Voltage fluctuation and flicker	n.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	

[7] Refer to the Installation Guide for more details on the safety approved power ratings and thermal conditions
[8] Output derating is required
[9] Tested for startup at -40°C

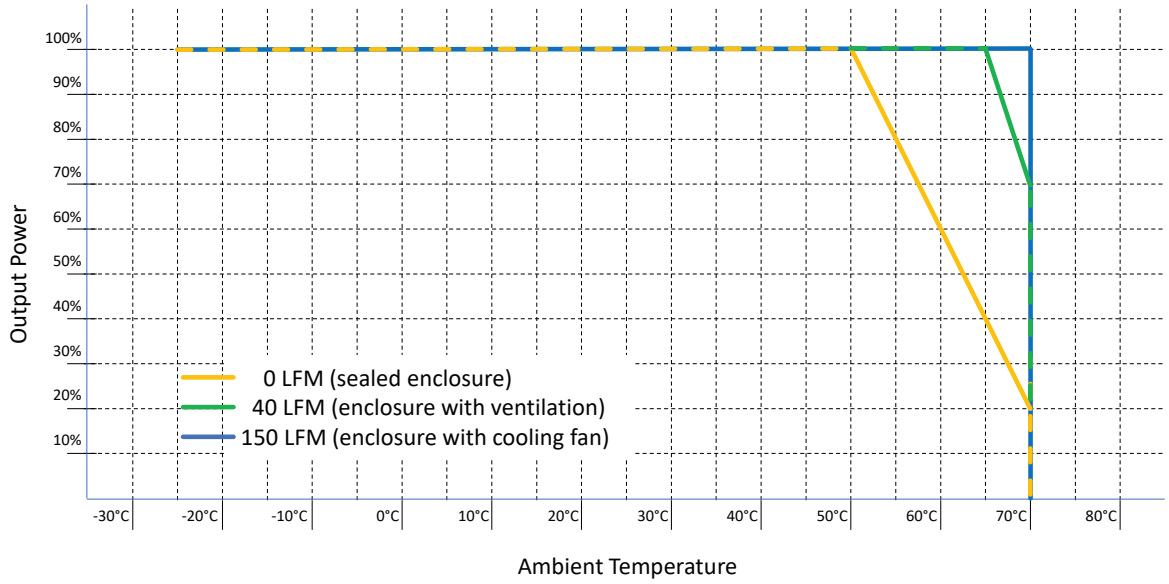
Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	WEIGHT	ENCLOSURE	MOUNTING	PROTECTION RATE
IE048-240	50 x 117 x 124 mm (1.97 x 4.61 x 4.88 in)	0.90 kg	stainless steel	DIN rail[10]	IP20
IE048-480	70 x 117 x 124 mm (2.76 x 4.61 x 4.88 in)	1.20 kg	stainless steel	DIN rail[10]	IP20

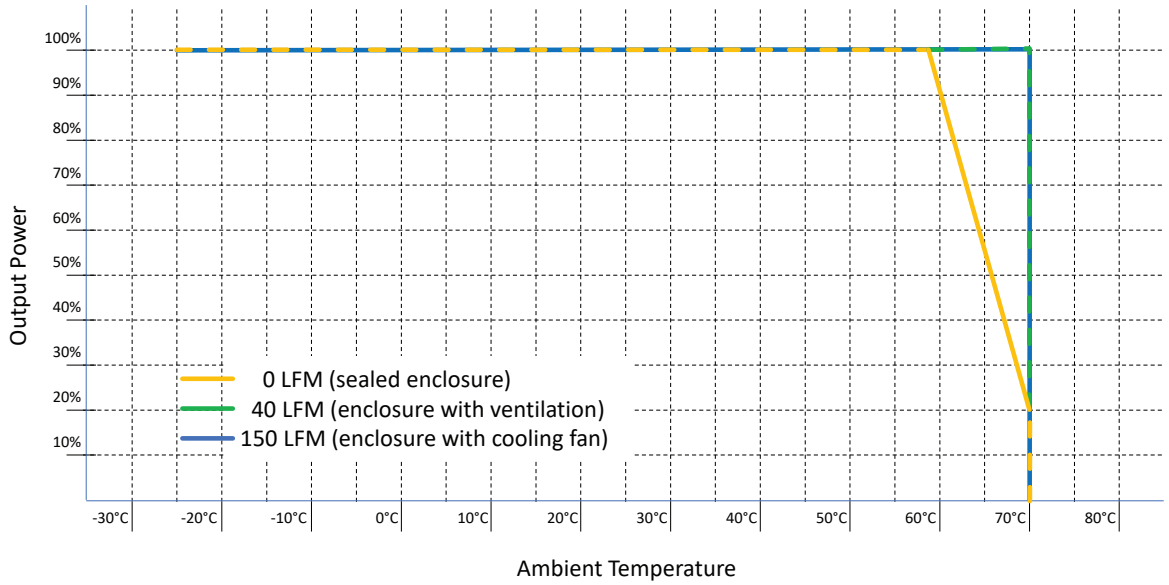
[10] Standard EN 60715 TH 35 DIN rail clip

IE048-240

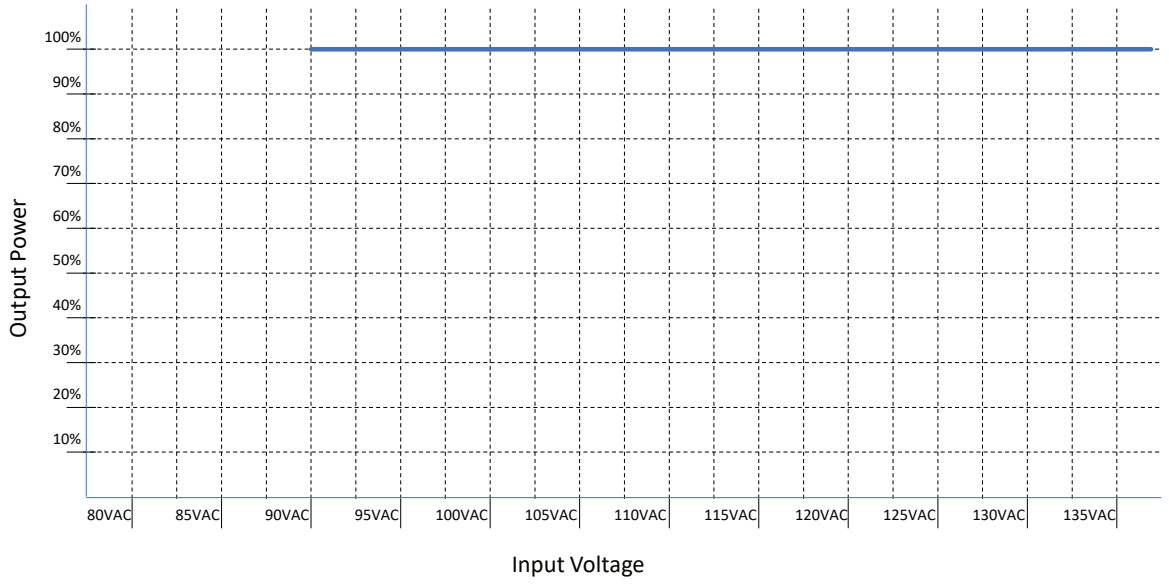
Derating curve @100Vac



Derating curve @230Vac

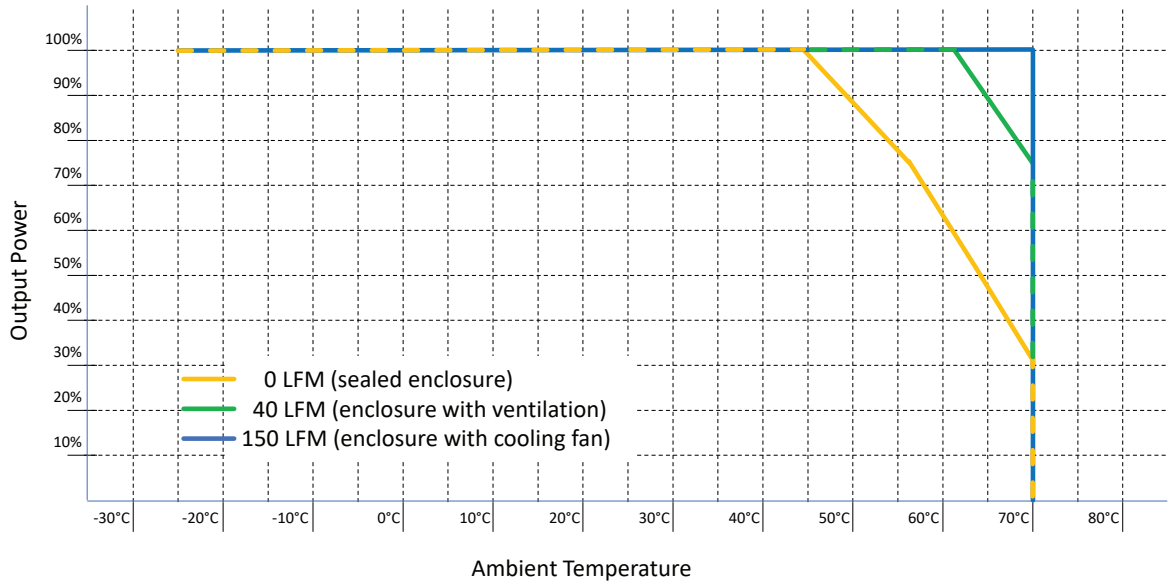


IE048-240 - derating curve on Input Voltage

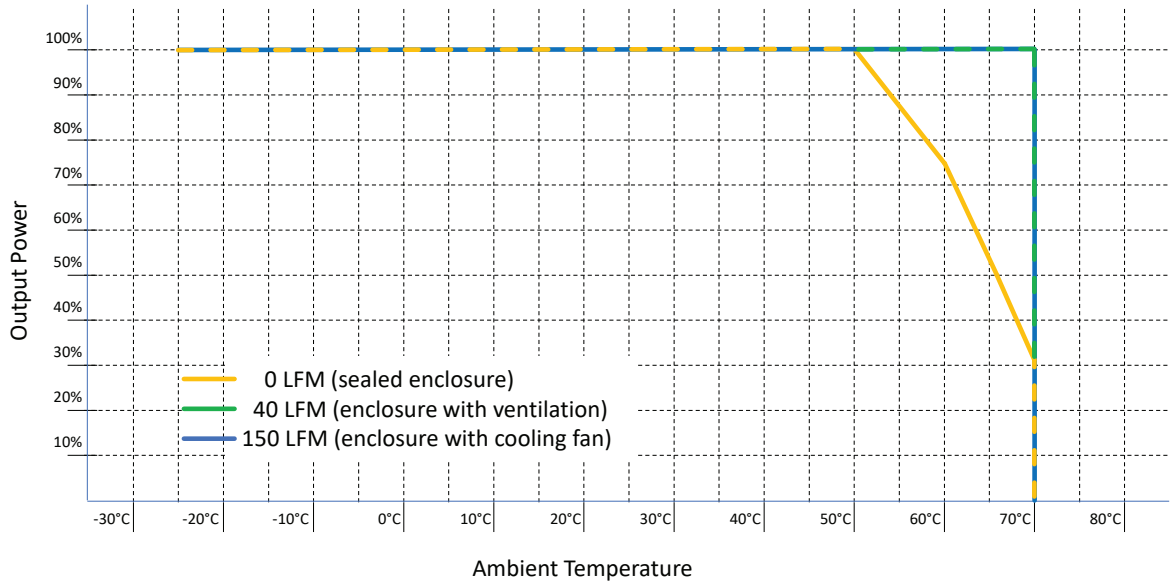


IE048-480

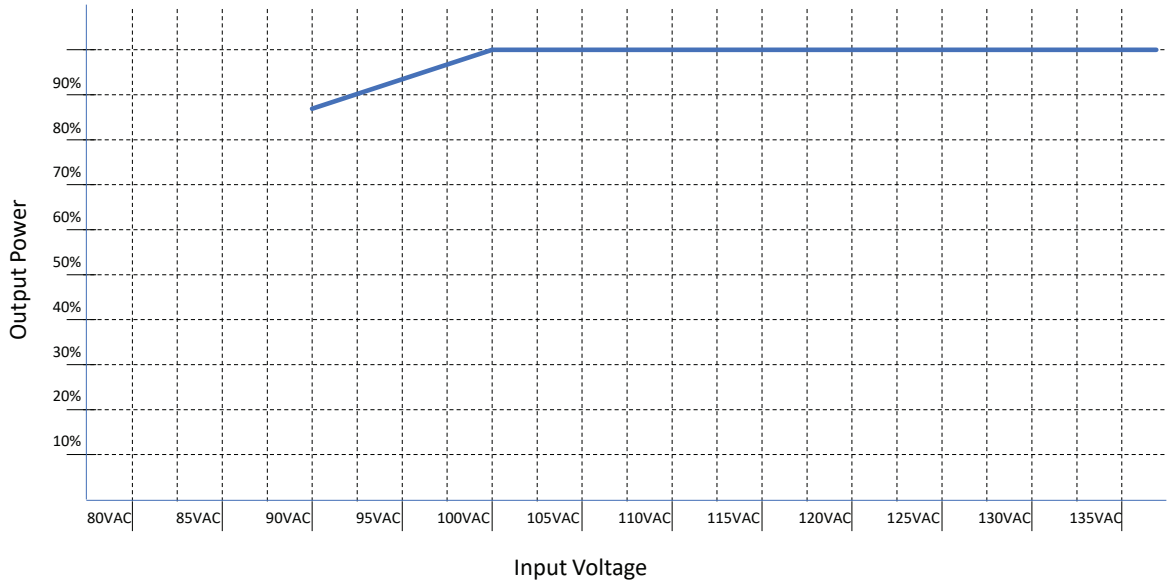
IE048-480 - derating curve @100VAC



IE048-480 - derating curve @230VAC



IE048-480 - derating curve on Input Voltage



Ordering Information

AT-IE048-480-20
480W @48VDC, Industrial AC/DC power supply,
DIN rail mount.

AT-IE048-240-20
240W @48VDC, Industrial AC/DC power supply,
DIN rail mount.

617-000666 RevC