

# iPowerSupply S 230VAC/48VDC 500W

## Features

- Industrial power supply, input voltage 85...264V AC
- Nominal output voltage 48V DC and 54V DC for Power over Ethernet
- Adjustable output voltage from 30V DC up to 56V DC
- 500 Watts power output
- Easy assembly on the DIN-rail or wall
- Maximum energy efficiency thanks to low idling losses
- Quick startup with LED function monitoring
- High operating safety due to long mains buffering under full load and high MTBF (> 500,000 h)
- Can be used worldwide in all industrial sectors due to a wide-range input and an international approval package
- Extended operating temperature range: -25 ... 70 °C (> 55° C derating)
- Short circuit-/no-load protection
- Overload protection
- High Efficiency
- Parallel connection possible for increased performance and redundancy



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## Description

The compact iPowerSupply perfectly complements Aginode's Industrial Ethernet product portfolio. Due to the design, the wide-range inputs and the global approvals, the iPowerSupply is well suited for use in installations around the globe. The iPowerSupplies comply with high requirements for EMC and environmental conditions which allows its operation in very harsh environments.

The iPowerSupply is not only able to supply active systems, such as switches, with power, but also other Power over Ethernet enabled devices at the same time. Moreover a parallel connection of iPowerSupplies can be used to increase the power and realise redundancy. The reliability and efficiency of the iPowerSupply is underlined by a high electrical efficiency, low stand-by losses and high MTBF values.

## Standards

EN 60204 / Surge voltage category III  
EN 61558-2-17  
EN 60950/VDE 0805 (SELV)  
EN 61558-2-17  
EN 50178/VDE 0160 (PELV)  
EN 60950 (SELV)  
EN 60204 (PELV)  
DIN VDE 0100-410  
DIN VDE 0106-1010  
DIN 57100-410  
DIN VDE 0106-101  
EN 61000-3-2  
EN 61000-6-2  
EN 61000-4-2  
EN 61000-4-3  
EN 61000-4-4  
EN 61000-4-5  
EN 61000-4-6  
EN 61000-4-11  
EN 61000-6-3  
EN 55011

# iPowerSupply S 230VAC/48VDC 500W

## Characteristics

### Input data

Input nominal voltage range	100 V AC ... 240 V AC
AC input voltage range	85 V AC ... 264 V AC
DC input voltage range	N.A.
AC frequency range	45 ... 65 Hz
Current consumption	Approx. 4.6 A (120 V AC) Approx. 2.4 A (230 V AC)
Inrush current limitation	< 15 A
Power failure bypass	> 13 ms (120 V AC) > 18 ms (230 V AC)
Typical response time	< 1 s
Protective circuitry	Transient surge protection Varistor
Recommended backup fuse for mains protection	16 A (characteristic B)
Discharge current to PE	< 3.5 mA

### Output data

Nominal output voltage	48 V DC $\pm$ 1%
Setting range of the output voltage	30 V DC ... 56 V DC (> 48 V constant capacity)
Output current	10 A (-25°C ... 55°C)
Derating	Above +55°C: 2.5% per Kelvin
Current limitation	Approx 11.4 A (in the event of a short circuit)
Max. capacitive load	Unlimited
Control deviation	< 1 % (change in load, static 10% ... 90%) < 2 % (change in load, dynamic 10% ... 90%) < 0.1 % (change in input voltage $\pm$ 10%)
Power loss nominal load max.	46 W
Maximum power dissipation idling	4 W
Efficiency	> 91 %
Ascent time	2 ms ( $U_{OUT}(10\% \dots 90\%)$ )
Residual ripple	< 50 mV <sub>PP</sub>
Peak switching voltages	< 50 mV <sub>PP</sub>
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	Yes
Surge protection against internal surge voltages	Yes, limited to approx. 60 V DC
Resistance to reverse feed	60 V DC

### Signal output DC OK active

Status display	"DC OK" LED green / $U_{OUT} < 0.9 \times U_N$ : LED flashing
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## Characteristics

### General data

Insulation voltage input/output	4 kV AC (type test) 2 kV AC (routine test)
Insulation voltage input / PE	2 kV AC (type test) 2 kV AC (routine test)
Insulation voltage output / PE	500V DC (type test)
Degree of protection	IP20
Class of protection	I, with PE connection
MTBF	> 500 000 h in acc. with IEC 61709 (SN 29500)
Type of housing	Steel sheet, zinc-plated
Side element version	Aluminum
Dimensions W / H / D (state of delivery)	115/ 130 / 152.5 mm
Weight	2 kg

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C (> 55° C derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	95 % (at 25°C, no condensation)
Vibration (operation)	< 15 Hz, amplitude $\pm 2.5$ mm in acc. with IEC 60068-2-6 15 Hz ... 150 Hz, 2.3g, 90 min.
Shock	15g in all directions in acc. with IEC 60068-2-27
Pollution degree in acc. with EN 50178	2
Climatic class	3K3 (in acc. with EN 60721)

### Standards

Electrical Equipment for Machinery	EN 60204
Safety transformers for power supply units	EN 61558-2-17
Electrical safety (of information technology equipment)	EN 60950/VDE 0805 (SELV) EN 61558-2-17
Electronic equipment for use in electrical power installations	EN 50178/VDE 0160 (PELV)
SELV	EN 60950 (SELV) EN 60204 (PELV)
Safe isolation	DIN VDE 0100-410 DIN VDE 0106-1010
Protection against electric shock	DIN 57100-410
Protection against electric shock, basic requirements for safe isolation in electrical equipment	DIN VDE 0106-101
Limitation of mains harmonic currents	EN 61000-3-2

### Approvals

UL approvals	UL Listed UL 508 UL/C-UL Recognized UL 60950
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## Characteristics

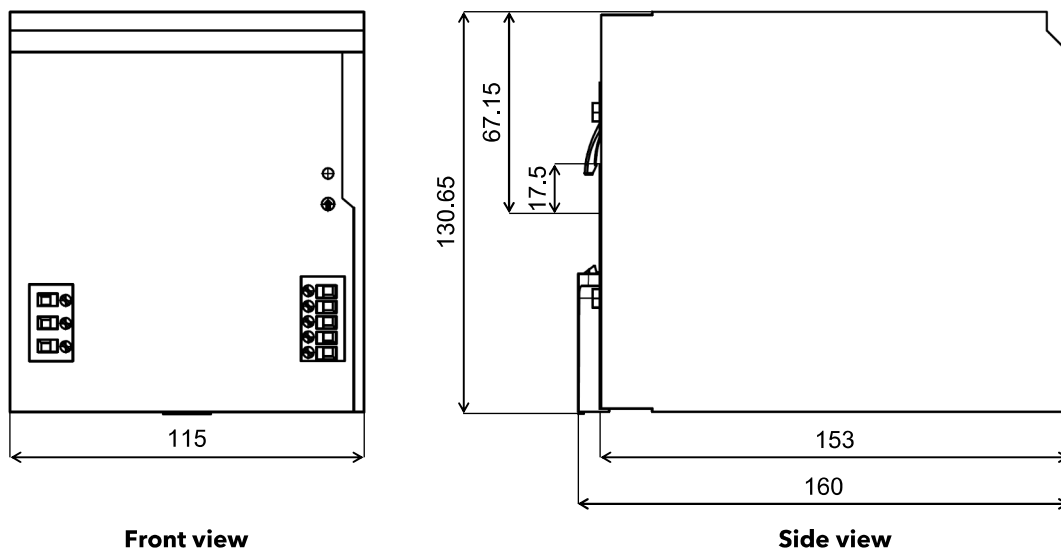
### Conformance with EMC directive 2004/108/EC Noise immunity according to EN 61000-6-2

Electrostatic discharge	EN 61000-4-2 Housing: Level 3 Contact discharge: 6 kV Discharge in air: 8 kV Comments: Criterion B
Electromagnetic HF field	EN 61000-4-3 Housing: Level 3 Frequency range: 80 ... 3000 MHz Field intensity: 10 V/m Comments: Criterion A
Fast transients (burst)	EN 61000-4-4 Input: 4 kV (Level 4 - asymmetrical: conductor to ground) Output: 2 kV (Level 3 - asymmetrical: conductor to ground) Comments: Criterion B
Surge current loads (surge)	EN 61000-4-5 Input: 4 kV (Level 4 - asymmetrical: conductor to ground) 2 kV (Level 4 - symmetrical: conductor to conductor) Output: 2 kV (Level 3 - asymmetrical: conductor to ground) 1 kV (Level 3 - symmetrical: conductor to conductor) Comments: Criterion B
Conducted interference	EN 61000-4-6 Input/output: Level 3 - asymmetrical Frequency range: 10 kHz ... 80 MHz Voltage: 10 V Comments: Criterion A
Voltage dips	EN 61000-4-11 Input: (mains buffering > 10 ms) Comments: Criterion B

### Emitted interference in acc. with EN 61000-6-3

Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

## Dimensions



## Details

### Attention

In order to guarantee sufficient convection, we recommend observing the following minimum distance to other modules: 5 cm in a vertical direction.

### Info

The power supply unit can be snapped onto all DIN rails in acc. with EN 60715 and must be mounted vertically (connecting terminal blocks on bottom).

### Installation

The power supply unit can be installed on all 35 mm DIN rails according to EN 60175.

Position the module with the DIN rail guide on the upper edge of the DIN rail, and snap it in with a downward motion.

### Removing

Pull the snap lever open with the aid of a screwdriver and slide the module out at the lower edge of the DIN rail.

## Ordering information

Article number	Description
1316187	iPowerSupply S 110-230VAC/48VDC 500W