



■ Control Solutions

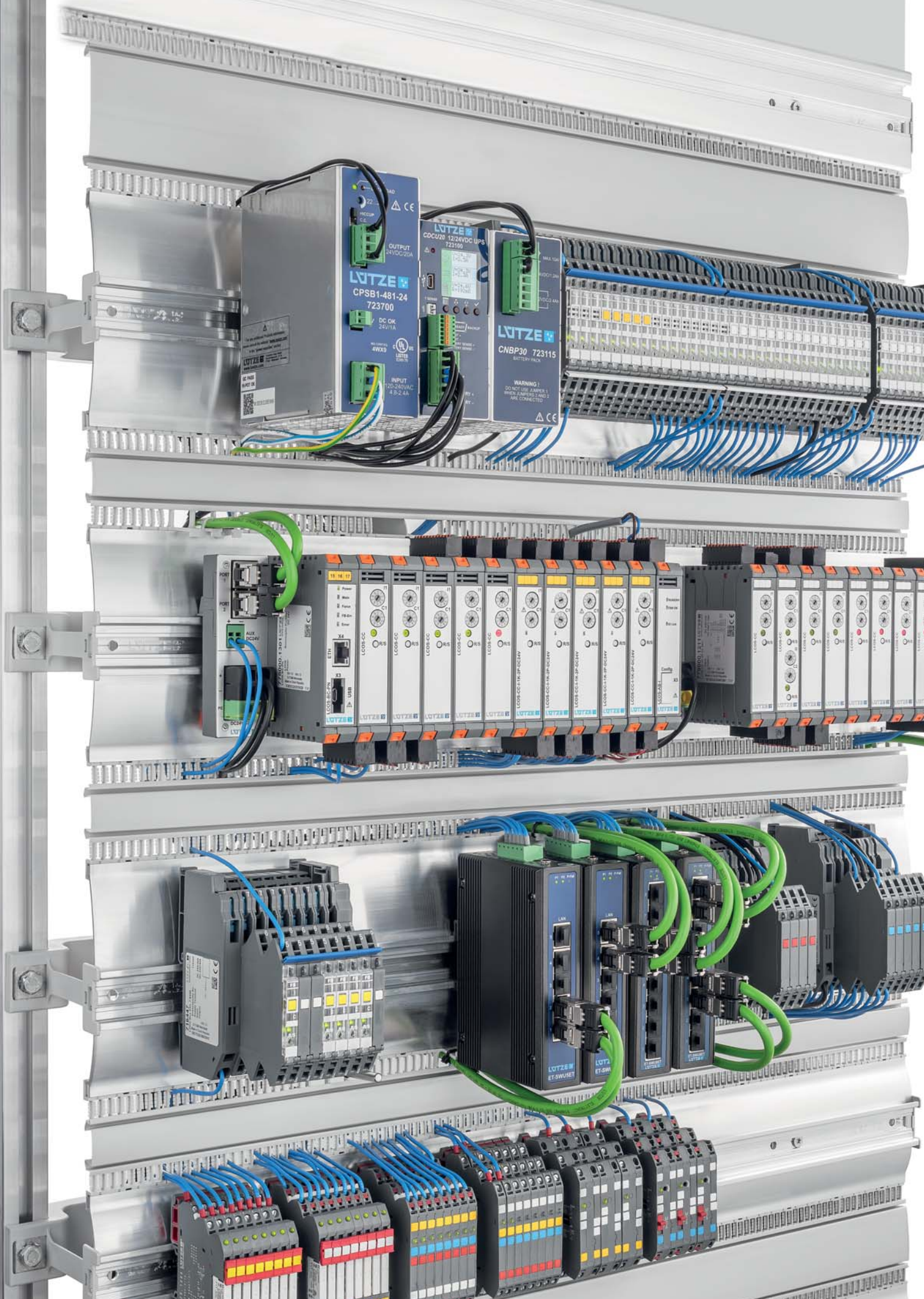
# Industrial Power Supplies

Delta Series Power Supplies

Compact Series Power Supplies

Uninterruptable Power Supplies





# Welcome to LUTZE

## Cable Solutions



## Connectivity Solutions



## Cabinet Solutions



## Control Solutions



## Industrial Power Supplies

LUTZE provides reliable industrial power supplies through innovative design and engineering with 1-, 2- and 3-phase units. LUTZE Delta series power supplies are suitable for industrial applications for standard specifications, providing an economical and reliable solution. LUTZE Compact series power supplies are suitable for industrial applications especially where high inrush power is required, as well as when compact housing or extended reliability are desired.

Both Delta and Compact series offer DIN rail mountable power supplies suitable for a wide variety of different industrial applications. LUTZE's UPS units offer several product solutions when backup power is critical for the application.

LUTZE power supplies are developed with technical innovations in mind. As an example, our Compact power supplies are appr 50 % smaller in size than the industry standard, and yet offer more than 94 % efficiency and are suitable for temperature ranges between -25° C to +75° C.

In your most critical applications, you can rely on LUTZE power supplies to perform beyond your expectations worldwide.

**For more information visit our website**  
[www.lutze.com](http://www.lutze.com)



# Power Supplies from LUTZE

## Energy efficient and space s

**Comprehensive range  
of industrial power supplies**

**High efficiency**  
through advanced digital technology  
Efficiency up to >94 %

**Extremely compact**

**Power Boost**

**Power range  
from 10 W up to 2400 W**

**Output voltages  
from DC 5 V up to DC 72 V.**



# E: Saving



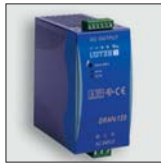
# Power Supply · Overview



1-phase, 10 W



1-phase, 30 W



1-phase, 120 W



1-phase, 240 W



1-phase, 480 W



3-phase, 480 W

## DELTA Series Power Supplies

Part Number	Input		Output Voltage			Rated Output Power								Connection			Type	Page
	1-phase	3-phase	5 V	12 V	24 V	10 W	18 W	30 W	60 W	93 W	120 W	240 W	480 W	Spring	Screw	Plugable Screw		
722761	•		•			2A								•			DRA10-05	14
722752	•				•		0.75A							•			DRA18-24	15
722763	•		•					6A							•		DRAN30-05A	16
722753	•				•			1.25A							•		DRAN30-24A	17
722769	•			•					5A						•		DRAN60-12A	18
722754	•				•				2.5A						•		DRAN60-24A	19
728754	•				•				2.5A						•		DRAN60-24	20
722757	•				•					3.8A					•		DRAN120-24AL	21
722770	•			•							10A					•	DRAN120-12B	22
722758	•				•						5A					•	DRAN120-24B	23
728758	•				•						5A					•	DRAN120-24A	24
722803		•			•							5A				•	WRA120-24	25
722759	•				•								10A			•	DRA240-24B	26
722781	•				•								10A			•	DRA240-24A	27
722804		•			•								10A			•	WRA240-24	28
722782	•				•									20A		•	DRA480-24A	29
722805		•			•									20A		•	WRA480-24	30
722987	•				•									20A		•	DRP-20	31

# Power Supply · Overview



1-phase, 120 W



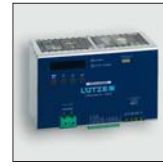
1-phase, 240 W



1-phase, 480 W



3-phase, 960 W



3-phase, 2400 W



50 A Redundant Module

## Compact Series Power Supplies

Part Number	Input			Output					Rated Output Power					Connection			Type	Page		
	1-phase	2-phase	3-phase	12 V	15 V	24 V	48 V	72 V	80 W	120 W	240 W	480 W	960 W	2400 W	Redundant Module	Screw			Pluggable Screw	Subseries
722995	•	•				•					5A					•		Uni	CPSB2-120-24	34
723500	•					•					5A					•		Eco	CPSB1-120-24E	35
723501	•					•					5A					•		Ultra	CPS2B1-120-24	36
722784	•						•				2.5A					•		Eco	CPSB1-120-48R	37
723521	•						•				2.5A					•		Ultra	CPS2B1-120-48	38
723600	•					•						10A				•		Eco	CPSB1-240-24E	40
723601	•					•						10A				•		Ultra	CPS2B1-240-24	41
722996	•	•	•			•						10A				•		Uni	CPSB-123-240-24	42
722786	•						•					5A				•		Eco	CPSB1-240-48R	43
723621	•						•					5A				•		Ultra	CPS2B1-240-48	44
723700	•					•							20A			•		Ultra	CPS2B1-480-24	45
723701	•					•							20A			•		Eco	CPSB1-480-24E	47
722801	•	•	•			•							20A			•		Uni	CPSB-123-480-24	49
723721	•						•						10A			•		Ultra	CPS2B1-480-48	50
722811			•			•								40A		•			CPSB3-960-24	51
722812			•			•								20A		•			CPSB3-960-48	52
722813			•					•						13.3A		•			CPSB3-960-72	53
722814			•			•								100A		•			CPSB3-2400-24	54
722816			•			•								50A		•			CPSB3-2400-48	56
722817			•					•						33A		•			CPSB3-2400-72	58
722999	•			•	•	•	•	•							50A	•			CPSRM50	60

## Programmable DC/DC Converter

Part Number	Input			Output			Features					Type	Page	
	DC 11 - 55 V	12 A		DC 5 - 55 V	10 A	240 Watts	Parallel/Redundant	Hiccup	Constant Current	Digital Display	Pluggable Screw			Description
723300	•	•		•	•	•	•	•	•	•	•	•	CUDC-240-55	61

## UPS Uninterruptible Power Supplies

Part Number	Internal Features									Output					Type	Page				
	Lead Based	Ni-MH	Li-Ion	Capacitive (Buffer)	Adjustable Current	Int. fuse	Deep Discharging Protection	Signal Output	Software Configuration	DC 12 V	DC 24 V	DC 48 V	DC 72 V	DC 10 A			DC 20 A	Battery Housing	Display	Pluggable Screw
723110	•	•	•		•	•		•								•			CNUPS 24	62
723100	•	•	•		•	•	•	•	•	•	•				•		•	•	CDCU20 12/24DC UPS	63
723120				•						•	•	•	•		•				CBU150	65
723115																•		•	CNBP30	66

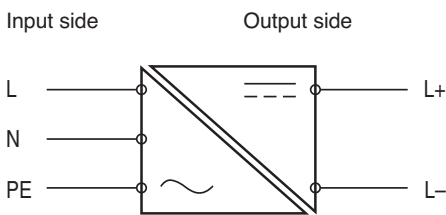
# Power Supplies · Basics

A power supply has a decisive influence on the availability and operational reliability of electrical systems.

Consequently, the selection of the right power supply should be just as critically and carefully undertaken as that of the other system components.

## 1. General structure

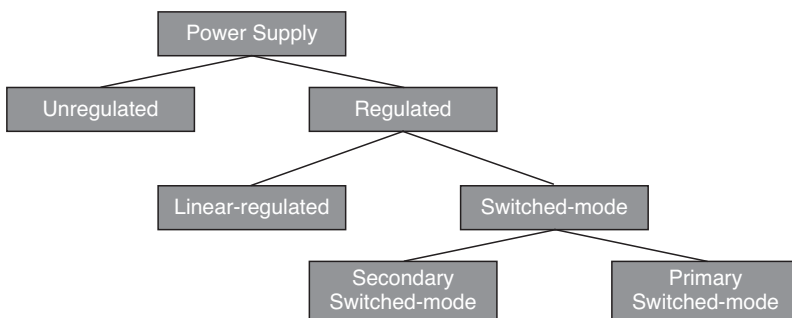
Regardless of the technology employed, power supplies are devices with an input side and an isolated output side.



In technology terms, however, there are two different basic designs:

Unregulated and regulated.

The regulated variants are subdivided into linear-regulated and switched-mode power supplies.



The key criteria in selection of a power supply are:

### Input side:

- Input voltage
- Primary grounding
- Current consumption
- Inrush current
- Input fuse
- Frequency
- DC supply
- Power failure buffering
- Power Factor Correction (PFC)

### Output side:

- Output voltage
- Secondary grounding
- Short-circuit current
- Residual ripple
- Output characteristics
- Output current

## 2. Safety

The safety of people and equipment is always the priority. Accordingly, power supplies must comply with unified regulations and standards.

### 2.1 Galvanic isolation

Galvanic isolation generally refers to the isolation between two conductive objects, such as metal plates or electrical circuits. In the case of electrical circuits it is consequently not possible for charge carriers to flow from one circuit into another, as there is no electrically conductive connection between the two.

In the case of power supplies this means that there is no electrical connection between the input and output sides.

### 2.2 Insulation

The different kinds of insulation are specified in IEC/EN 60950:

- Functional insulation  
Insulation needed for the correct operation of the equipment.

- Basic insulation  
Insulation to provide basic protection against hazardous structure-borne currents.
- Supplementary insulation  
Protection against hazardous structure-borne currents if the basic insulation fails.
- Double insulation  
Insulation comprising both basic insulation and supplementary insulation.
- Reinforced insulation  
Unified insulation system. Provides equivalent protection to double insulation.

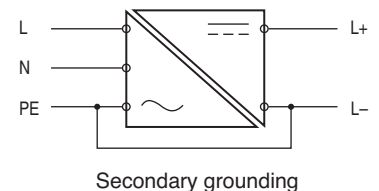
### 2.3 Safe isolation

Safe isolation according to EN 50178 is required for all interfaces between different electrical circuits, such as between a SELV circuit and a mains circuit.

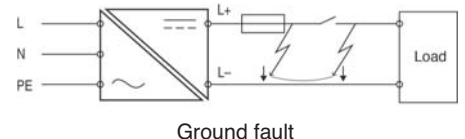
Safe isolation means that no current flow can occur from one electrical circuit to another. This isolation has to be implemented either by double or reinforced insulation or by means of protective shielding.

### 2.4 Secondary grounding

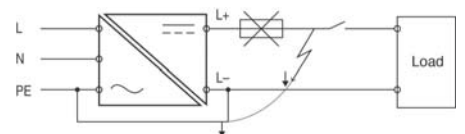
In case of secondary grounding, the output side of the power supply is connected to protective earth (PE) in order to prevent dangerous ground faults.



A ground fault occurs if a current-carrying line has contact to earth. In the worst case, two simultaneous ground faults can lead to a bridging of switches and thus can start equipment accidentally.



If secondary grounding is used, the occurrence of such a ground fault leads to a so-called short circuit to earth which causes the fuses in the secondary circuit to trip.





# Power Supplies · Basics

## 2.5 SELV

SELV according to IEC/EN 60950 is a safety extra low voltage which thanks to its low level and insulation offers better protection against electric shock than higher-tension circuits.

Power supplies generating SELV, for example, must be designed to prevent shorting between the primary and secondary windings and their connections. The windings can only be overlaid if double or reinforced insulation is placed between them. This isolation is termed galvanic isolation. Grounding of the secondary side is not required but permitted.

The peak value must not exceed 42.4 V in case of AC voltages and 60 V in case of DC voltages.

## 2.6 PELV

PELV according to IEC/EN 60950 is a protective extra low voltage with safe isolation. In case of PELV, the electrical circuits are grounded and (like SELV) safely isolated from circuits of higher voltages. The voltage limits are identical to SELV.

PELV is used where active low-voltage conductors or the equipment structures have to be grounded for operational reasons. That is the case, for example, where potential equalisation is required to prevent sparking inside vessels and explosive rooms.

Thanks to the housing earth, hazardous leakage currents can be discharged via the structure independently of the low voltage when interference occurs on other equipment whose touchable conductive parts receive mains voltage.

## 2.7 Protection class

The standard IEC/EN 61140 defines protection classes for electrical equipment. The devices are classified according to the safety measures taken to prevent electric shock. The protection classes are divided into the classes 0, I, II and III.

### • Protection class 0

Apart from the basic insulation there is no protection against electric shock. These devices cannot be connected to electrical installations with PE. Equipment of class 0 is not allowed in Germany. Protection class 0 will no longer be considered in future versions of the standard.

### • Protection class I



In addition to the basic insulation, all electrically conductive parts of the housing are connected to PE. This guarantees that no electric shock can occur in the event of an insulation failure.

### • Protection class II



Protection against electric shock is not only based on the basic insulation. The housing is equipped with reinforced or double insulation. If the housing is made of electrically conductive material, no direct contact between the housing and current-carrying parts is possible. The housings of class II devices are not equipped with a PE connection. It is important to note that the PE connection is not only used for the grounding of housings but also to connect filters for EMC measures (electromagnetic compatibility) to ground. This is why even devices of which the housings are completely made of plastic material can be equipped with a PE connection.

### • Protection class III



The device is operated with safety extra-low voltage (SELV) and thus does not require any protection measures. Power supplies are usually class I or II equipment.

## 2.8 Degree of protection

According to DIN EN 60529, electrical equipment is classified using so-called IP codes. IP stands for "International Protection" or "Ingress Protection". The IP code consists of two figures: The first digit specifies the protection against accidental contact and against ingress of solid foreign bodies; the second digit specifies the protection against ingress of water.

Since power supplies are mostly installed inside cabinets, their typical degree of protection is IP 20.

## 3 Input voltage ranges

### 3.1 Wide-range input

Wide-range input means that the device can be operated with any voltage within the specified limits. LUTZE devices operate in the single-phase range from AC 90 V to AC 264 V or DC 110 V to DC 370 V and in the three-phase range from AC 340 V to AC 576 V or DC 480 V to DC 820 V. There is no loss of power, i.e. the device is able to deliver the specified rated power over the entire input voltage range.

### 3.2 Autorange

Power supplies that are equipped with autorange behaviour perform an internal measurement of the applied supply voltage and automatically switch between the available input voltage ranges.

## 3.3 Manual range selection

In case of manual range selection, the housing of the device is equipped with a selector switch for manual input voltage range selection. LUTZE offers devices permitting operation at AC 115V or 230V.

The operating voltage range is then AC 90 V to AC 132 V; AC 185 V to AC 264 V or DC 300 V to DC 370 V.

## 4 Self-protection

If motors or other large loads have to be started with high inrush currents, secondary branches selectively switched off, systems moved to a safe state in case of overload or the power supply switched off as quickly as possible in case of fault for the sake of process safety, the output behaviour of the power supplies play a key role.

There are basically two types outside of nominal operation. Overload, which can occur sporadically or continuously, and short-circuit.

Overload means that the current required by the loads exceeds the nominal current of the power supply.

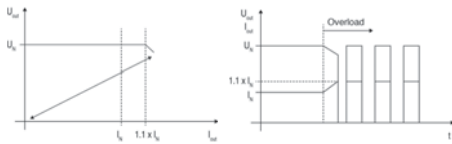
A short-circuit is a special form of overload. In this case, the outputs of the power supply are interconnected at very low resistance, as a result of which the output current may assume extremely high values.

State-of-the-art LUTZE power supplies offer the following protective functions:

### Fold-back characteristic/Hiccup mode

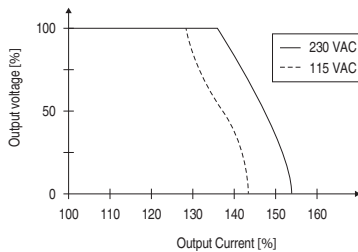
LUTZE power supplies supply a current typically up to 1.2 times the nominal output current. They automatically switch off if the current consumption of the connected loads exceeds this value or if a short-circuit occurs. After a defined period of time, the power supply tries to restart the load. If the overload or the short-circuit still exists, it switches off again. This procedure repeats until the fault is cleared. The power supply has "hiccups". In applications requiring high starting currents, it must be ensured that the overload current capacity is higher than  $1.2 I_N$ . To do so, LUTZE also offers devices with overload capacity of  $1.5 I_N$  featuring Hiccup mode. Another aspect is response to short-circuit. The output voltage is cut very rapidly. Whereas the use of conventional line protection equipment in the secondary circuit is very critical in any case, the function under Hiccup mode is not. Electronic overload protection units such as the LUTZE LOCC-Box should always be used in such cases. They provide safe protection in all circumstances.

# Power Supplies · Basics



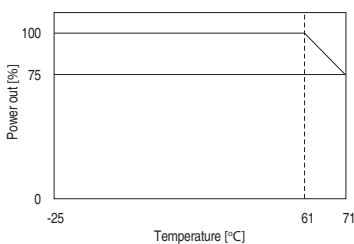
## U/I characteristic

LUTZE power supplies with a U/I characteristic perform current limiting to typically 1.2 times the nominal current at constant output voltage. This current is still available in case of an overload or a short circuit. The voltage is slowly lowered, while the output current may rise further (triangular current limiting). Since the current does not sag in case of an overload, this method enables reliable starting of high loads.



## 5 Influence of ambient temperature

The ambient temperature has a direct influence on the maximum possible output power of a power supply and so on its response to short-circuit or overload. Temperatures inside cabinets may be over 60 °C as a result of internal or external influences. Power supplies still have to operate reliably even at such high temperatures. Due to the components used, however, there is a point as from which the output power has to be reduced. That point is described by so-called derating. The Delta series from Lütze is rated for ambient temperatures up to 70° C for example, with derating beginning at 60° C. The reduction in output power is 2.5 %/°C.



Example: Derating curve of Lütze of Delta series

## 6 Thermal protection

When operating a power supply under extreme conditions for a long duration, e.g. in case of permanent operation within the power limits or in case of very high ambient temperatures, the power supply can heat

up to a degree where safe operation is no longer guaranteed. There are a number of techniques for protecting the power supply against destruction due to overheating.

- The maximum output power is reduced, allowing the power supply to cool down.
- The device is switched off completely and cannot resume operation until a manual reset is performed. Depending on the manufacturer, the reset is done either using a corresponding switch or by disconnecting the supply voltage.
- The device only switches off the output and does not switch it on until the temperature falls below a certain limit value. This is the most frequently used method nowadays, and is the one used by LUTZE.

## 7 General parameters

### 7.1 Open circuit resistance

Open circuit resistant power supplies require no minimum load in order to provide a stable output voltage. This is important, for example, in the case of time-critical applications in which a load is applied which has to be immediately supplied with voltage. Power supplies which are not open circuit resistant often require up to the seconds range until an actual supply takes place.

### 7.2 Resistance to reverse feed

The resistance to reverse feed specifies up to which voltage a power supply is immune against the feeding of voltages into the secondary side. Such a current flow can occur if power supplies are operated in parallel or inductive consumers are connected.

### 7.3 Overvoltage protection (secondary side)

In case of an internal error of the power supply, this protection mechanism prevents the occurrence of overvoltage on the secondary side that could possibly damage or even destroy a connected load or exceed the SELV voltage limit.

### 7.4 Power failure buffering

Power supplies must be able to maintain their output voltage for a certain time in case of supply voltage dips. Usually, a power failure buffering time of at least 20 ms is achieved in order to provide buffering for one complete cycle of the mains voltage. In the semiconductor industry longer times are required. The devices must then comply with the requirements of SEM F47. Most LUTZE devices do so.

## 8 Line cross-section and protection

### 8.1 Input-side protection

If power supplies have their own input protection, such as a safety fuse, no further protective measures are necessary. However, standards stipulate that a power supply must be capable of being disconnected from the supply mains by external means. Line protection equipment can then be used. For the relevant characteristics refer to the LUTZE data sheets.

### 8.2 Output-side protection

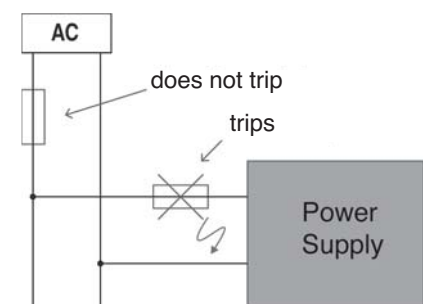
Alongside the output behaviour described in section 4, there is a U/I characteristic with an additional power reserve. However, all these output behaviour modes are ultimately not suitable for safe activation of standard line protection equipment. The reason lies in the technical design of the equipment. Only electronic protection devices capable of reacting fast enough to overload or short-circuit offer a solution. These devices also feature a high degree of repeat accuracy across the entire temperature range. With the LOCC-Box, LUTZE offers intelligent DC protection modules which can also be integrated into field bus communications systems.

### 8.3 Selectivity

Selectivity means the tripping configuration. In electrical systems, distinction can be made between "series selectivity", which means that individual fuses connected in series are selective against each other, and "parallel selectivity", which means that electrical circuits connected in parallel are selective against each other.

### Series selectivity

In case of series-connected fuses, the tripping coordination of fuses is considered as selective if only the fuse installed nearest to the fault trips. Fuses that are located nearer to the energy feeding point do not trip. This guarantees that as many system parts as possible remain operative in the event of one single fault, resulting in an increased availability of electrical systems.

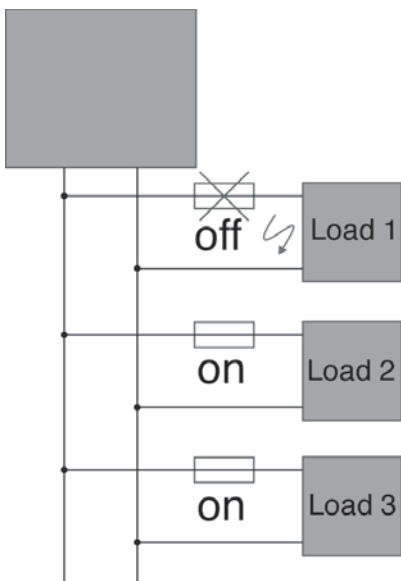


Rule of thumb:  
The fuses must differ by two nominal quantities

# Power Supplies · Basics

## Parallel selectivity

Based on the self-protection, the output voltage is switched off or reduced in the event of a fault. If multiple loads are carried on one power supply, a voltage drop will occur throughout the entire application. To prevent this, protective devices are installed in the individual lines to the consumers. If a fault occurs, the protective device concerned must trip fast enough so as to disconnect the faulty consumer reliably from the rest of the system and such that the other consumers remain available.



## 8.4 Connection cross-sections

The line cross-sections are selected dependent on the maximum output current. The following table provides an overview of the current capacities of multi-core moveable copper cables with different conductor cross-sections at a temperature of 30 °C and up to a nominal voltage of 1000 V (to DIN 57100-523).

Cross-section in mm <sup>2</sup>	A
0.75	12
1	15
1.5	18
2.5	26
4	34
6	44
10	61

## 9 PFC (Power Factor Correction)

Since January 1st 2001, the European standard regarding the limits for harmonic current emissions (IEC/EN 61000-3-2) is in force. This standard defines the maximum allowed intensity of harmonic currents fed back into the supplying mains system. It is applicable for consuming devices with an active power input between 75 and 100 W that are directly connected to the public electricity supply. Power supplies for industrial applications often do not require PFC, since large installations are equipped with a central PFC, installed between the internal electrical system and the public electricity supply.

### 9.1 Passive PFC

For passive PFC, a reactance coil is connected to the input circuit. This reactance coil buffers energy from the mains and thus reduces the current pulses. The lower the pulses, the less harmonics are produced. The advantage of this solution is its easy implementation into existing circuitry. However, the drawback is that it is not able to reduce all harmonics.

### 9.2 Active PFC

Active PFC is able to deliver considerably better results. In a very simplified consideration, one could say that the actual power supply is preceded by another power supply that performs a regulation of the current consumption from the mains. This consumption is oriented towards the sinusoidal supply voltage. Using this technology, it is possible to avoid the production of almost every kind of harmonics. However, the circuitry is much more complex than for passive PFC. LUTZE power supplies are all equipped with active PFC.

## 10 Applications

### 10.1 Parallel connection of power supplies for increased capacity operation

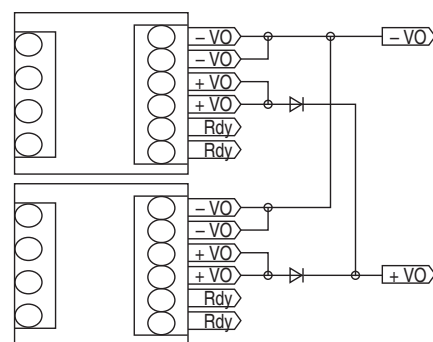
An increase of the output power can be obtained by connecting power supplies in parallel. This can be necessary if the current required by the load is higher than a single power supply can deliver, for example after the expansion of an existing installation. The following preconditions must be met when connecting power supplies in parallel for the purpose of increased capacity:

- Parallel connection is only allowed for identical power supplies.
- The power supplies have to be switched on simultaneously.
- The following points must be observed when connecting the power supplies in order to prevent different voltage drops on the supply lines or at the terminals which would lead to unbalanced load at the common connection point:
  - Identical lengths of the supply lines
  - Identical conductor cross-sections of the supply lines
  - Terminal screws have to be fastened with the same torque to guarantee equal contact resistances.
- The output voltages of the power supplies should not differ by more than 50 mV in the open circuit state. Otherwise safe operation cannot be guaranteed.



### 10.2 Redundancy

The term redundancy generally denotes the existence of several objects that are identical in functionality, content or nature. In industrial automation, redundancy ensures that in the event of failure of a power supply another one takes over the supply, thereby maintaining operation of the system. For this the individual power supplies must be isolated from each other, as one faulty power supply might impact the other one. In the worst case the failed power supply effects a secondary-side short-circuit, which would result in failure of the second power supply. To isolate the power supplies from each other, isolating diodes (so-called O-ring diodes) must be looped into the secondary outputs of the power supplies. They then prevent reciprocal loading. This ensures uninterruptible power supply. In the LUTZE Delta series the isolating diodes are built-in to the output. In the Compact series the diodes must be installed externally as follows:



LUTZE offers isolating diodes up to a nominal current of DC20A.



# Notes

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# DELTA Power Supplies



## DELTA Series

- One and three phase
- 10 to 480 Watts
- Regulated
- Wide input voltage ranges: AC85 - 576 V
- Output voltage range: DC 5/12/24 V
- Output current range: 0.75 - 20 Amps
- Overload and short circuit protection
- High efficiency
- DIN rail mountable
- 5 year warranty
- Class 1, Div.2 units available
- NEC Class 2 compliant units available
- UL 508 Listed

# Power supply - 10 W

Switchmode power supplies, Single-phase, NEC Class 2 compliant

Input: AC 90–264 V, DC 120–375 V

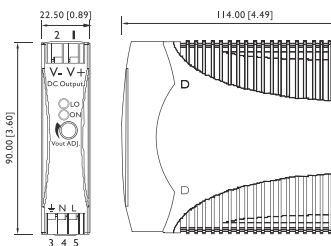
Output: DC 5 V, 2 A



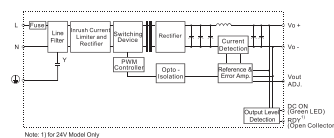
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range          Frequency range          Rated current <math>I_N</math>            Inrush current          Internal fuse          External protection          Number of phases</p> <p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Status indication DC LOW LED red          Parallel / redundant mode</p> <p>Efficiency          Rated over load protection          Over voltage protection          Short circuit</p> <p><b>General</b>          Switching frequency          Insulation voltage input / output          Insulation voltage input / ground          Insulation resistance at DC 500 V          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling</p>	<p>AC 100–240 V          AC 90–264 V / DC 120–375 V          47 Hz – 63 Hz          200 mA @ AC 115 V / 130 mA @ AC 230 V          V          15 A @ AC 115 V / 30 A @ AC 230 V          T2A / AC 250 V          Mini-circuit breaker: B 4 A          1</p> <p>DC 5 V          2 A          4.5–5.75 V          &lt;50 mV          25 ms @ 115 V / 100 ms @ 230 V          ≥4.5 V          &lt;3.5–4.50 V          Max. 2 devices / via external decoupling diodes          73 %          110–135 %          125–145 %          Hiccup Mode</p> <p>Approx. 100 kHz          AC 3.0 kV          AC 1.5 kV<sup>off</sup>          100 MΩ          -20 °C ... +70 °C (Derating)          Capacity: -3 %/°C starting at +60 °C          704000 h          20 – 95 % RH, not condensing          22.5 mm × 90.0 mm × 115.0 mm          Air convection, 25 mm clearance all-</p>	<p>Housing material          Mounting            Degree of protection          Protection class          Over voltage category          Connection type</p> <p>Approvals</p> <p>Standards</p> <p><b>Monitoring</b>          DC ON Control (Rdy)</p>	<p>round          Plastic          DIN rail mountable TS35          (EN 60715)          IP20          II (SELV, PELV)          II          Screw terminal          0.20 mm<sup>2</sup> – 2.0 mm<sup>2</sup>          AWG 24 – AWG 14          UL 508 Listed (E249179)          UL 1310 Class 2 (E320708), (Class 1, Division 2, Groups A, B, C and D) (E350538)          CE          UKCA          IEC/EN 62368-1          EN 61558-1          EN 61558-2-16          EN 61000-6-3          EN 55032 Class B          EN 61000-3-2 Class D          EN 61000-3-3          EN 61000-6-2          EN 55024          EN 61000-4-2 Level 4          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 L-N Level 3          L/N-FG Level 4          EN 61000-4-6 Level 3          EN 61000-4-8 Level 4          EN 61000-4-11 ENV 50204 Level 2          EN 61204-3</p> <p>LED green/red</p>
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Part No.	Type	Weight/unit kg	PU (units)
722761	DRA10-05	0.12	1

**Dimensions**



**PIN assignment**





# Power supply - 18 W

Switchmode power supply, Single-phase, NEC Class 2 compliant

Input: AC 90–264 V, DC 120–375 V

Output: DC 24 V, 0.75 A



### Input

Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Number of phases

AC 100–240 V  
 AC 90–264 V / DC 120–375 V  
 47 Hz – 63 Hz  
 335 mA @ AC 115 V / 210 mA @ AC 230 V  
 15 A @ AC 115 V / 30 A @ AC 230 V  
 T2A / AC 250 V  
 Mini-circuit breaker: B 4 A  
 1

### Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode  
 Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

DC 24 V  
 0.75 A  
 21.6–28.8 V  
 <50 mV  
 20 ms @ 115 V / 75 ms @ 230 V  
 $\geq 21.6$  V  
 <18–21.6 V  
 Max. 2 devices / via external decoupling diodes  
 77 %  
 110–135 %  
 125–145 %  
 Hiccup Mode

### General

Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w × h × d)  
 Cooling

Approx. 100 kHz  
 AC 3.0 kV  
 AC 1.5 kV<sub>eff</sub>  
 100 M $\Omega$   
 -20 °C ... +70 °C (Derating)  
 Capacity: -3 %/°C starting at +60 °C  
 800000 h  
 20 – 95 % RH, not condensing  
 22.5 mm × 90.0 mm × 115.0 mm  
 Air convection, 25 mm clearance all-

Housing material  
 Mounting  
 Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

round  
 Plastic  
 DIN rail mountable TS35  
 (EN 60715)  
 IP20  
 II (SELV, PELV)  
 II  
 Spring terminal  
 0.20 mm<sup>2</sup> – 2.0 mm<sup>2</sup>  
 AWG 24 – AWG 14  
 UL 508 Listed (E249179)  
 UL 1310 Class 2 (E320708), (Class 1, Division 2, Groups A, B, C and D) (E350538)  
 CE  
 UKCA  
 IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3

### Approvals

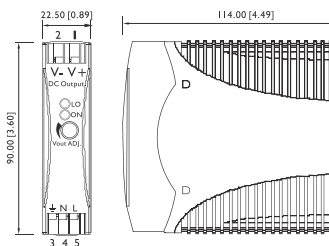
### Standards

Monitoring  
 DC ON Control (Rdy)

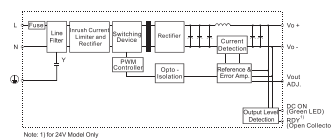
LED green/red

Part No.	Type	Weight/unit kg	PU (units)
722752	DRA18-24	0.15	1

### Dimensions



### PIN assignment



# Power supply - 30 W

## Switchmode power supplies, Single-phase

Input: wide-range input AC 85–264 V, DC 90–375 V

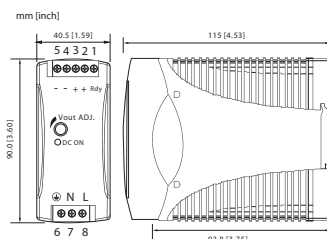
Output: DC 5 V, 6 A



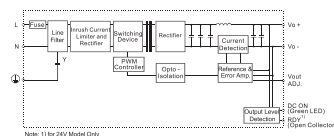
<b>Input</b>			
Rated voltage $U_N$	AC 100–240 V	Dimensions (w × h × d)	40.5 mm × 90.0 mm × 115.0 mm
Operation voltage range	AC 85–264 V / DC 90–375 V	Cooling	Air convection, 25 mm clearance all-round
Frequency range	47 Hz – 63 Hz	Housing material	Plastic
Rated current $I_N$	560 mA @ AC 115 V / 330 mA @ AC 230 V	Mounting	DIN rail mountable TS35 (EN 60715)
Inrush current	20 A @ AC 115 V / 40 A @ AC 230 V	Degree of protection	IP20
Internal fuse	T2A / AC 250 V	Protection class	I
External protection	Mini-circuit breaker: B 4 A	Over voltage category	II
Number of phases	1	Connection type	Screw terminal 0,20 mm <sup>2</sup> – 2,5 mm <sup>2</sup> AWG 24 – AWG 14 UL 508 Listed (E249179) UL 60950-1
<b>Output</b>		Approvals	CE UKCA IEC/EN 62368-1 EN 61000-6-3 EN 55032 Class B EN 61000-3-2 Class D EN 61000-3-3 EN 61000-6-2 EN 55024 EN 61000-4-2 Level 4 EN 61000-4-3 Level 3 EN 61000-4-4 Level 4 EN 61000-4-5 L-N Level 3 L/N-FG Level 4 EN 61000-4-6 Level 3 EN 61000-4-8 Level 4 EN 61000-4-11 ENV 50204 Level 2 EN 61204-3
Rated voltage $U_N$	DC 5 V	Standards	
Rated current $I_N$	6 A		
Setting range $U_{out min.} / U_{out max.}$	5.0–5.5 V		
Ripple and noise	<50 mV		
Hold up time	20 ms @ 115 V / 30 ms @ 230 V		
Status indication DC ON LED green	<3.5 V		
Parallel / redundant mode	Max. 2 devices / via external decoupling diodes e.g. 722987		
Efficiency	79 %		
Rated over load protection	110–150 %		
Over voltage protection	125–137 %		
Short circuit	Fold Forward		
<b>General</b>			
Switching frequency	55 – 135 kHz		
Insulation voltage input / output	DC 4.2 kV		
Insulation voltage input / ground	DC 2.1 kV		
Insulation voltage output / ground	DC 710 V		
Insulation resistance at DC 500 V	100 MΩ		
Operation temperature range	-40 °C ... +70 °C (Derating)		
Derating	2.5 %/°C starting 61 °C		
MTBF	612000 h		
Relative air humidity	20 – 95 % RH, not condensing		

Part No.	Type	Weight/unit kg	PU (units)
722763	DRAN30-5A	0.35	1

### Dimensions



### PIN assignment



# Power supply - 30 W

Switchmode power supply, Single-phase, NEC Class 2 compliant

Input: AC 90–264 V, DC 120–375 V

Output: DC 24 V, 1.25 A



### Input

Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Number of phases

AC 100–240 V  
 AC 90–264 V / DC 120–375 V  
 47 Hz – 63 Hz  
 560 mA @ AC 115 V / 330 mA @ AC 230 V  
 20 A @ AC 115 V / 40 A @ AC 230 V  
 T2A / AC 250 V  
 Mini-circuit breaker: B 4 A  
 1

### Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Parallel / redundant mode  
 Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

DC 24 V  
 1.25 A  
 24–28 V  
 <50 mV  
 20 ms @ 115 V / 30 ms @ 230 V  
 18 V  
 Max. 2 devices / via external decoupling diodes e.g. 722987  
 86 %  
 110–150 %  
 125–137 %  
 Fold Forward

### General

Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w × h × d)  
 Cooling  
 Housing material

55 – 135 kHz  
 DC 4.2 kV  
 DC 2.1 kV  
 DC 710 V  
 100 MΩ  
 -40 °C ... +70 °C (Derating)  
 2.5 %/°C starting 61 °C  
 665000 h  
 20 – 95 % RH, not condensing  
 40.5 mm × 90.0 mm × 115.0 mm  
 Air convection, 25 mm clearance all-round  
 Plastic

### Mounting

Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

DIN rail mountable TS35 (EN 60715)  
 IP20  
 I  
 II  
 Screw terminal  
 0.20 mm<sup>2</sup> – 2.0 mm<sup>2</sup>  
 AWG 24 – AWG 14  
 UL 508 Listed (E249179)  
 UL 1310 Class 2 (E320708), (Class 1, Division 2, Groups A, B, C and D) (E350538)  
 UL 60950-1  
 CE  
 UKCA

### Approvals

### Standards

IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3

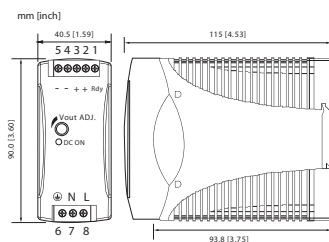
### Monitoring

DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

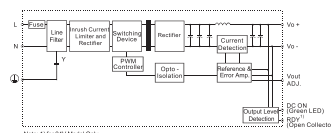
Open Collector  
 DC 24 V  
 ≤35 mA  
 None

Part No.	Type	Weight/unit kg	PU (units)
722753	DRAN30-24A	0.29	1

### Dimensions



### PIN assignment





# Power supply - 60 W

## Switchmode power supply, Single-phase

Input: wide-range input AC 85–264 V, DC 90–375 V

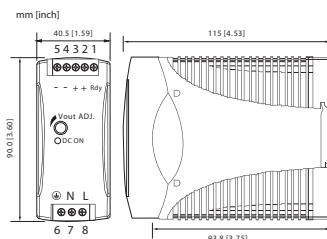
Output: DC 12 V, 5 A



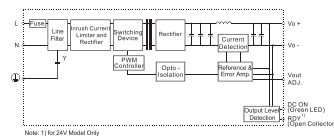
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math>                  Inrush current                  Internal fuse                  External protection                  Number of phases</p> <p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Parallel / redundant mode</p> <p>Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p> <p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Insulation resistance at DC 500 V                  Operation temperature range                  Derating                  MTBF                  Relative air humidity                  Dimensions (w × h × d)</p>	<p>AC 100–240 V                  AC 85–264 V / DC 90–375 V                  47 Hz – 63 Hz                  1.06 A @ AC 115 V / 590 mA @ AC 230 V                  30 A @ AC 115 V / 60 A @ AC 230 V                  T2A / AC 250 V                  Mini-circuit breaker: B 6 A                  1</p> <p>DC 12 V                  5 A                  12-14 V                  50 mV                  20 ms @ 115 V / 30 ms @ 230 V                  &lt;9.0 V                  Max. 2 devices / via external decoupling diodes e.g. 722987                  86 %                  110–150 %                  125–138 %                  Fold Forward</p> <p>55 – 135 kHz                  DC 4.2 kV                  DC 2.1 kV                  DC 710 V                  100 MΩ                  -40 °C ... +70 °C (Derating)                  2.5 %/°C starting 61 °C                  556000 h                  20 – 90 % RH, not condensing                  40.5 mm × 90.0 mm × 115.0 mm</p>	<p>Cooling                  Housing material                  Mounting                  Degree of protection                  Protection class                  Over voltage category                  Connection type</p> <p>Approvals</p> <p>Standards</p>	<p>Air convection, 25 mm clearance all-round                  Plastic                  DIN rail mountable TS35 (EN 60715)                  IP20                  I                  II                  Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>                  AWG 26 – AWG 12                  UL 508 Listed (E249179)                  UL 60950-1                  CE                  UKCA                  IEC/EN 62368-1                  EN 61558-1                  EN 61558-2-16                  EN 61000-6-3                  EN 55032 Class B                  EN 61000-3-2 Class D                  EN 61000-3-3                  EN 61000-6-2                  EN 55024                  EN 61000-4-2 Level 4                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 L-N Level 3                  L/N-FG Level 4                  EN 61000-4-6 Level 3                  EN 61000-4-8 Level 4                  EN 61000-4-11 ENV 50204 Level 2                  EN 61204-3</p>
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Part No.	Type	Weight/unit kg	PU (units)
722769	DRAN60-12A	0.41	1

### Dimensions



### PIN assignment



# Power supply - 60 W

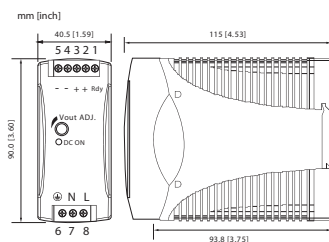
Switchmode power supply, Single-phase, NEC Class 2 compliant  
 Input: wide-range input AC 85–264 V, DC 90–375 V  
 Output: DC 24 V, 2.5 A



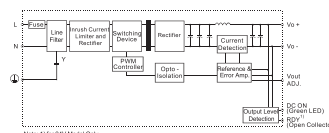
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math></p> <p>Inrush current                  Internal fuse                  External protection                  Number of phases</p> <p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Parallel / redundant mode</p> <p>Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p> <p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Insulation resistance at DC 500 V                  Operation temperature range                  Derating                  MTBF                  Relative air humidity                  Dimensions (w × h × d)                  Cooling                  Housing material</p>	<p>AC 100–240 V                  AC 85–264 V / DC 90–375 V                  47 Hz – 63 Hz                  1.06 A @ AC 115 V / 590 mA @ AC 230 V</p> <p>30 A @ AC 115 V / 60 A @ AC 230 V                  T2A / AC 250 V                  Mini-circuit breaker: B 6 A                  1</p> <p>DC 24 V                  2.5 A                  24–28 V                  50 mV                  20 ms @ 115 V / 30 ms @ 230 V                  18 V                  Max. 2 devices / via external decoupling diodes e.g. 722987</p> <p>89 %                  110–150 %                  125–138 %                  Fold Forward</p> <p>55 – 135 kHz                  DC 4.2 kV                  DC 2.1 kV                  DC 710 V                  100 MΩ                  -40 °C ... +70 °C (Derating)                  2.5 %/°C starting 61 °C                  580000 h                  20 – 90 % RH, not condensing                  40.5 mm × 90.0 mm × 115.0 mm                  Air convection, 25 mm clearance all-round                  Plastic</p>	<p>Mounting                  Degree of protection                  Protection class                  Over voltage category                  Connection type</p> <p>Approvals</p> <p>Standards</p> <p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Isolation voltage</p>	<p>DIN rail mountable TS35                  (EN 60715)                  IP20                  I                  II                  Screw terminal                  0.20 mm<sup>2</sup> – 2.0 mm<sup>2</sup>                  AWG 24 – AWG 14                  UL 508 Listed (E249179)                  UL 1310 Class 2 (E320708), (Class 1, Division 2, Groups A, B, C and D) (E350538)                  UL 60950-1                  CE                  UKCA                  IEC/EN 62368-1                  EN 61558-1                  EN 61558-2-16                  EN 61000-6-3                  EN 55032 Class B                  EN 61000-3-2 Class D                  EN 61000-3-3                  EN 61000-6-2                  EN 55024                  EN 61000-4-2 Level 4                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 L-N Level 3                  L/N-FG Level 4                  EN 61000-4-6 Level 3                  EN 61000-4-8 Level 4                  EN 61000-4-11 ENV 50204 Level 2                  EN 61204-3</p> <p>Normally open                  DC 24 V                  ≤35 mA                  None</p>
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Part No.	Type	Weight/unit kg	PU (units)
722754	DRAN60-24A	0.41	1

### Dimensions



### PIN assignment



# Power supply - 60 W

Switchmode power supply, Single-phase, NEC Class 2 compliant

Input: wide-range input AC 85–264 V, DC 90–375 V

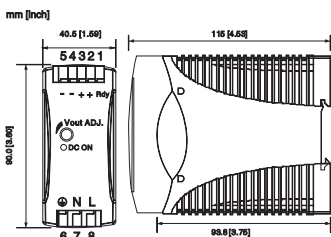
Output: DC 24 V, 2.5 A



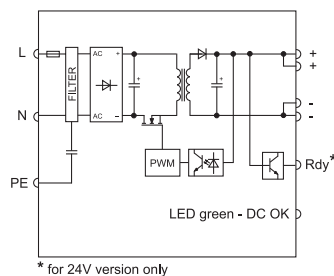
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range          Frequency range          Rated current <math>I_N</math>            Inrush current          Internal fuse          External protection          Number of phases</p> <p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Parallel / redundant mode            Efficiency          Rated over load protection          Over voltage protection          Short circuit</p> <p><b>General</b>          Switching frequency          Insulation voltage input / output          Insulation voltage input / ground          Insulation voltage output / ground          Insulation resistance at DC 500 V          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling            Housing material</p>	<p>AC 100–240 V          AC 85–264 V / DC 90–375 V          47 Hz – 63 Hz          1.06 A @ AC 115 V / 590 mA @ AC 230 V            30 A @ AC 115 V / 60 A @ AC 230 V          T2A / AC 250 V          Mini-circuit breaker: B 6 A          1</p> <p>DC 24 V          2.5 A          24–28 V          50 mV          20 ms @ 115 V / 30 ms @ 230 V          &gt;18 V          Max. 2 devices / via external decoupling diodes          89 %          110–150 %          125–138 %          Fold Forward</p> <p>55 – 135 kHz          DC 4.2 kV          DC 2.1 kV          DC 710 V          100 MΩ          -40 °C ... +70 °C (Derating)          2.5 %/°C starting 61 °C          520000 h          20 – 90 % RH, not condensing          40.5 mm × 90.0 mm × 115.0 mm          Air convection, 25 mm clearance all-round          Plastic</p>	<p>Mounting            Degree of protection          Protection class          Over voltage category          Connection type            Approvals                Standards</p>	<p>DIN rail mountable TS35          (EN 60715)          IP20          Protection class          I (SELV, PELV)          II          Spring terminal          0.20 mm<sup>2</sup> – 2.0 mm<sup>2</sup>          AWG 24 – AWG 14          UL 508 Listed (E249179)          UL 1310 Class 2 (E320708), (Class 1, Division 2, Groups A, B, C and D) (E350538)          UL 60950-1          CE          UKCA          IEC/EN 62368-1          EN 61558-1          EN 61558-2-16          EN 61000-6-3          EN 55032 Class B          EN 61000-3-2 Class D          EN 61000-3-3          EN 61000-6-2          EN 55024          EN 61000-4-2 Level 4          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 L-N Level 3          L/N-FG Level 4          EN 61000-4-6 Level 3          EN 61000-4-8 Level 4          EN 61000-4-11 ENV 50204 Level 2          EN 61204-3</p> <p><b>Monitoring</b>          DC ON Control (Rdy)          Switching voltage          Switching current          Isolation voltage</p>	<p>Normally open          DC 24 V          ≤35 mA          None</p>
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Part No.	Type	Weight/unit kg	PU (units)
728754	DRAN60-24	0.41	1

## Dimensions



## PIN assignment



\* for 24V version only



# Power supply - 93 W

Switchmode power supplies, PFC, Single-phase, NEC Class 2 compliant  
 Input: wide-range input AC 90–132 V, AC 180–264 V, DC 210–375 V  
 Output: DC 24 V, 3.8 A



### Input

Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases

AC 115 / 230 V (auto select)  
 AC 90–132 V / AC 180–264 V / DC  
 210–375 V  
 47 Hz – 63 Hz  
 1.65 A @ AC 115 V / 0.65 A @ AC 230 V  
 24 A @ AC 115 V / 48 A @ AC 230 V  
 T3, 15 A/AC 250 V  
 Mini-circuit breaker: B 6 A  
 0.7  
 1

### Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode  
 Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

DC 24 V  
 3.8 A  
 22.5/28.5 V  
 50 mV  
 20 ms @ 115 V / 75 ms @ 230 V  
 $\geq 17.6$ –19.4 V  
 $\leq 17.6$ –19.4 V  
 Max. 2 devices each with 90 % load  
 current / via external decoupling diodes  
 87 %  
 105–125 %  
 125–145 %  
 Current limit

### General

Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w x h x d)  
 Cooling  
 Housing material

Approx. 80 kHz  
 AC 3.0 kV<sub>eff</sub>  
 AC 1.5 kV<sub>eff</sub>  
 100 M $\Omega$   
 -35 °C ... +71 °C (Derating)  
 Capacity: -2.5 %/°C starting at 60 °C  
 530000 h  
 20 – 90 % RH, not condensing  
 64.0 mm x 124.5 mm x 116.6 mm  
 Air convection, 25 mm clearance all-  
 round  
 Metal

### Mounting

Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

DIN rail mountable TS35  
 (EN 60715)  
 IP20  
 Protection class  
 I (SELV, PELV)  
 II  
 Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>  
 AWG 24 – AWG 10  
 UL 508 Listed (E249179)  
 UL 1310 Class 2 (E320708), (Class  
 1, Division 2, Groups A, B, C and D)  
 (E350538)  
 UL 60950-1  
 CE  
 UKCA

### Approvals

### Standards

IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3

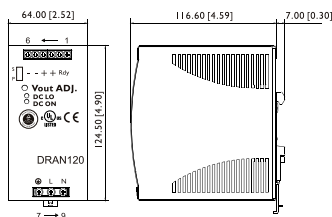
### Monitoring

DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

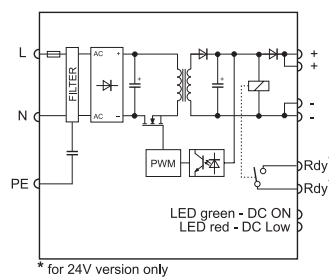
Normally open  
 DC 60 V  
 Max. 300 mA  
 DC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722757	DRAN 120-24AL	0.92	1

### Dimensions



### PIN assignment



# Power supply - 120 W

## Switchmode power supply, PFC, Single-phase

Input: AC 90–132 V, AC 180–264 V, DC 210–375 V

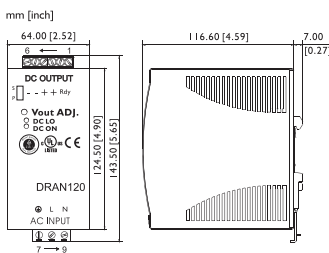
Output: DC 12 V, 10 A



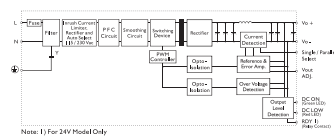
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                    Frequency range                  Rated current <math>I_N</math>                  Inrush current                  Internal fuse                  External protection                  Power factor correction P.F.C.                  Number of phases</p>	<p>AC 115 / 230 V (auto select)                  AC 90–132 V / AC 180–264 V / DC                  210–375 V                  47 Hz – 63 Hz                  2.2 A @ AC 115 V / 0.83 A @ AC 230 V                  24 A @ AC 115 V / 48 A @ AC 230 V                  T3, 15 A/AC 250 V                  Mini-circuit breaker: B 6 A                  0.7                  1</p>	<p>Dimensions (w × h × d)                  Cooling                    Housing material                  Mounting                    Degree of protection                  Protection class                  Over voltage category                  Connection type</p>	<p>64.0 mm × 143.5 mm × 116.6 mm                  Air convection, 25 mm clearance all-round                  Metal                  DIN rail mountable TS35                  (EN 60715)                  IP20                  I                  II                  Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>                  AWG 24 – AWG 10                  UL 508 Listed (E249179)                  UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)                  CE                  UKCA                  IEC/EN 62368-1                  EN 61558-1                  EN 61558-2-16                  EN 61000-6-3                  EN 55032 Class B                  EN 61000-3-2 Class D                  EN 61000-3-3                  EN 61000-6-2                  EN 55024                  EN 61000-4-2 Level 4                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 L-N Level 3                  L/N-FG Level 4                  EN 61000-4-6 Level 3                  EN 61000-4-8 Level 4                  EN 61000-4-11 ENV 50204 Level 2                  EN 61204-3</p>
<p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode                    Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p>	<p>DC 12 V                  10 A                  11.4-14.5 V                  50 mV                  25 ms @ 115 V / 30 ms @ 230 V                  ≥10–11.2 V                  ≤10–11.2 V                  Max. 3 units at 90% load current, manual switch S/P                  84 %                  105–125 %                  125–145 %                  Current limit</p>	<p>Approvals                    Standards</p>	
<p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Insulation resistance at DC 500 V                  Operation temperature range                  Derating                  MTBF                  Relative air humidity</p>	<p>Approx. 80 kHz                  DC 4.2 kV                  DC 2.1 kV                  DC 700 V                  100 MΩ                  -35 °C ... +71 °C (Derating)                  Capacity: -2.5 %/°C starting at +61 °C                  530000 h                  20 – 90 % RH, not condensing</p>		

Part No.	Type	Weight/unit kg	PU (units)
722770	DRAN120-12B	0.92	1

### Dimensions



### PIN assignment



# Power supply - 120 W

**Switchmode power supply, PFC, Single-phase**  
**Input: AC 90–132 V, AC 180–264 V / DC 210–375 V**  
**Output: DC 24 V, 5 A**



### Input

Rated voltage  $U_N$   
 Operation voltage range

Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases

### Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode

Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

### General

Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w × h × d)  
 Cooling

AC 115 / 230 V (auto select)  
 AC 90–132 V / AC 180–264 V / DC  
 210–375 V  
 47 Hz – 63 Hz  
 2.2 A @ AC 115 V / 0.83 A @ AC 230 V  
 24 A @ AC 115 V / 48 A @ AC 230 V  
 T3, 15 A/AC 250 V  
 Mini-circuit breaker: B 6 A  
 0.7  
 1

DC 24 V  
 5 A  
 22.5/28.5 V  
 50 mV  
 25 ms @ 115 V / 30 ms @ 230 V  
 ≥17.6–19.4 V  
 ≤17.6–19.4 V  
 Max. 3 units at 90% load current, manual  
 switch S/P  
 87 %  
 105–125 %  
 125–145 %  
 Current limit

Approx. 80 kHz  
 DC 4.2 kV  
 DC 2.1 kV  
 DC 700 V  
 100 MΩ  
 -35 °C ... +71 °C (Derating)  
 Capacity: -2.5 %/°C starting at +61 °C  
 530000 h  
 20 – 90 % RH, not condensing  
 64.0 mm × 143.5 mm × 116.6 mm  
 Air convection, 25 mm clearance all-

Housing material  
 Mounting  
 Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

### Approvals

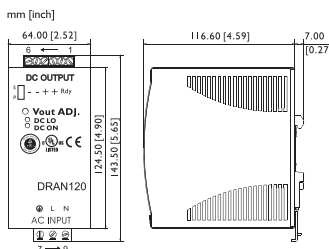
### Standards

**Monitoring**  
 DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

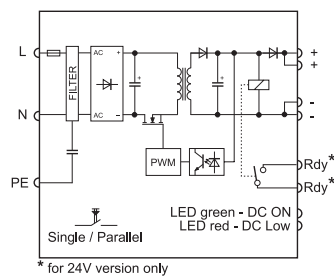
round  
 Metal  
 DIN rail mountable TS35  
 (EN 60715)  
 IP20  
 I  
 II  
 Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>  
 AWG 24 – AWG 10  
 UL 508 Listed (E249179)  
 UL 60950-1, (Class 1, Division 2, Groups  
 A, B, C and D) (E350538)  
 CE  
 UKCA  
 IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3  
 N/O contact  
 DC 60 V  
 Max. 300 mA  
 DC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722758	DRAN120-24B	0.92	1

### Dimensions



### PIN assignment



# Power supply - 120 W

## Switchmode power supply, PFC, Single-phase

Input: AC 90–132 V, AC 180–264 V / DC 210–375 V

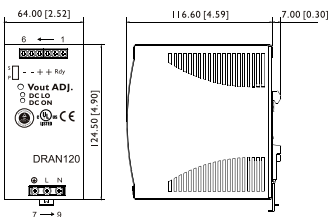
Output: DC 24 V, 5 A



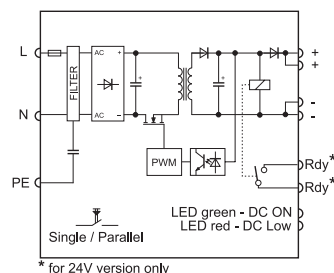
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range            Frequency range          Rated current <math>I_N</math>          Inrush current          Internal fuse          External protection          Power factor correction P.F.C.          Number of phases</p>	<p>AC 115 / 230 V (auto select)          AC 90–132 V / AC 180–264 V / DC 210–375 V          47 Hz – 63 Hz          2.2 A @ AC 115 V / 0.83 A @ AC 230 V          24 A @ AC 115 V / 48 A @ AC 230 V          T3, 15 A/AC 250 V          Mini-circuit breaker: B 6 A          0.7          1</p>	<p>Housing material          Mounting            Degree of protection          Protection class          Over voltage category          Connection type            Approvals</p>	<p>round          Metal          DIN rail mountable TS35 (EN 60715)          IP20          I          II          Screw terminal          0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>          AWG 24 – AWG 10          UL 508 Listed (E249179)          UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)          CE          UKCA          IEC/EN 62368-1          EN 61558-1          EN 61558-2-16          EN 61000-6-3          EN 55032 Class B          EN 61000-3-2 Class D          EN 61000-3-3          EN 61000-6-2          EN 55024          EN 61000-4-2 Level 4          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 L-N Level 3          L/N-FG Level 4          EN 61000-4-6 Level 3          EN 61000-4-8 Level 4          EN 61000-4-11 ENV 50204 Level 2          EN 61204-3</p>
<p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Status indication DC LOW LED red          Parallel / redundant mode            Efficiency          Rated over load protection          Over voltage protection          Short circuit</p>	<p>DC 24 V          5 A          22.5/28.5 V          50 mV          25 ms @ 115 V / 30 ms @ 230 V  <math>\geq 17.6</math>–<math>19.4</math> V  <math>\leq 17.6</math>–<math>19.4</math> V          Max. 3 units at 90% load current, manual switch S/P          87 %          110–145 %          125–145 %          Fold Forward</p>	<p>Standards</p>	<p>Monitoring          DC ON Control (Rdy)          Switching voltage          Switching current          Isolation voltage</p>
<p><b>General</b>          Switching frequency          Insulation voltage input / output          Insulation voltage input / ground          Insulation voltage output / ground          Insulation resistance at DC 500 V          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling</p>	<p>Approx. 80 kHz          DC 4.2 kV          DC 2.1 kV          DC 700 V          100 M<math>\Omega</math>          -35 °C ... +71 °C (Derating)          Capacity: -2.5 %/°C starting at 60 °C          530000 h          20 – 90 % RH, not condensing          64.0 mm × 125.5 mm × 116.6 mm          Air convection, 25 mm clearance all-</p>	<p>N/O contact          DC 60 V          Max. 300 mA          DC 500 V</p>	

Part No.	Type	Weight/unit kg	PU (units)
728758	DRAN120-24A 120W 5A	0.92	1

### Dimensions



### PIN assignment





# Power supply - 120 W, 3-phase

## Switchmode power supply, PFC, 3-phase

Input: AC 340–575 V, DC 480–820 V

Output: DC 24 V, 5 A



### Input

Rated voltage  $U_N$   
Operation voltage range  
Frequency range  
Rated current  $I_N$   
Inrush current  
Internal fuse  
External protection  
Power factor correction P.F.C.  
Number of phases

3 × AC 400–500 V  
3 × AC 340–575 V / 3 × DC 480–820 V  
47 Hz – 63 Hz  
0.36 A @ AC 400 V / 0.3 A @ AC 500 V  
10 A  
3 × T2, 0 A/AC 600 V  
Mini-circuit breaker: 3 × B 6 A  
0.6  
3

### Output

Rated voltage  $U_N$   
Rated current  $I_N$   
Setting range  $U_{out min.} / U_{out max.}$   
Ripple and noise  
Hold up time  
Status indication DC ON LED green  
Status indication DC LOW LED red  
Parallel / redundant mode  
Efficiency  
Rated over load protection  
Over voltage protection  
Short circuit

DC 24 V  
5 A  
22.5/28.5 V  
100 mV  
Min. 20 ms  
 $\geq 17.6$ –19.4 V  
 $\leq 17.6$ –19.4 V  
Max. 2 devices / via external decoupling diodes e.g. 722987  
89 %  
115–135 %  
Temperature: Deactivation at 100–110 °C and automatic activation after cooling off  
125–137 %  
Hiccup Mode

### General

Switching frequency  
Insulation voltage input / output  
Insulation voltage input / ground  
Insulation voltage output / ground  
Insulation resistance at DC 500 V  
Operation temperature range  
Derating  
MTBF  
Relative air humidity  
Dimensions (w × h × d)  
Cooling

Approx. 70 kHz  
DC 4.2 kV  
DC 2.1 kV  
DC 700 V  
100 MΩ  
-40 °C ... +71 °C (Derating)  
Capacity: -2.5 %/°C starting at +61 °C  
572000 h  
20 – 90 % RH, not condensing  
74.3 mm × 124.0 mm × 111.9 mm  
Air convection, 25 mm clearance all-

Housing material  
Mounting  
Degree of protection  
Protection class  
Over voltage category  
Connection type

round  
Metal  
DIN rail mountable TS35  
(EN 60715)  
IP20  
I  
II  
Screw terminal  
0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>  
AWG 24 – AWG 10  
UL 508 Listed (E249179)  
UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)

### Approvals

### Standards

CE  
UKCA  
IEC/EN 62368-1  
EN 61558-1  
EN 61558-2-16  
EN 61000-6-3  
EN 55032 Class B  
EN 61000-3-2 Class D  
EN 61000-3-3  
EN 61000-6-2  
EN 55024  
EN 61000-4-2 Level 4  
EN 61000-4-3 Level 3  
EN 61000-4-4 Level 4  
EN 61000-4-5 L-N Level 3  
L/N-FG Level 4  
EN 61000-4-6 Level 3  
EN 61000-4-8 Level 4  
EN 61000-4-11 ENV 50204 Level 2  
EN 61204-3

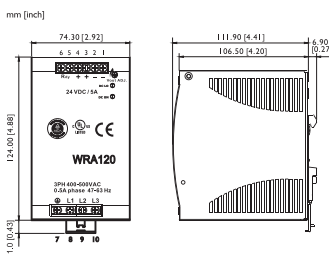
### Monitoring

DC ON Control (Rdy)  
Switching voltage  
Switching current  
Isolation voltage

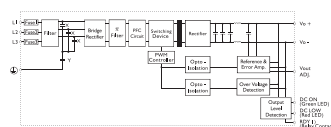
N/O contact  
DC 60 V  
Max. 300 mA  
DC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722803	WRA120-24	0.8	1

### Dimensions



### PIN assignment



# Power supply - 240 W

## Switchmode power supply, PFC, Single-phase

Input: AC 90–132 V, AC 180–264 V, DC 210–375 V

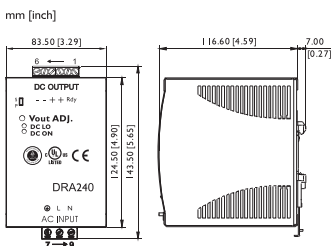
Output: DC 24 V, 10 A



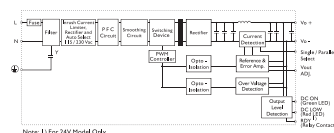
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range            Frequency range          Rated current <math>I_N</math>          Inrush current          Internal fuse          External protection          Power factor correction P.F.C.          Number of phases</p>	<p>AC 115/230 V          AC 90–132 V / AC 180–264 V / DC          210–375 V          47 Hz – 63 Hz          4.0 A @ AC 115 V / 1.55 A @ AC 230 V          30 A @ AC 115 V / 60 A @ AC 230 V          T6, 3 A/AC 250 V          Mini-circuit breaker: B 10 A, C 6 A          0.7          1</p>	<p>Housing material          Mounting            Degree of protection          Protection class          Over voltage category          Connection type            Approvals</p>	<p>round          Metal          DIN rail mountable TS35          (EN 60715)          IP20          I          II          Screw terminal          AWG 24 – AWG 10          0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>          UL 508 Listed (E249179)          UL 60950-1, (Class 1, Division 2, Groups          A, B, C and D) (E350538)          CE          UKCA          IEC/EN 62368-1          EN 61558-1          EN 61558-2-16          EN 61000-6-3          EN 55032 Class B          EN 61000-3-2 Class D          EN 61000-3-3          EN 61000-6-2          EN 55024          EN 61000-4-2 Level 4          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 L-N Level 3          L/N-FG Level 4          EN 61000-4-6 Level 3          EN 61000-4-8 Level 4          EN 61000-4-11 ENV 50204 Level 2          EN 61204-3</p>
<p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Status indication DC LOW LED red          Parallel / redundant mode            Efficiency          Rated over load protection          Over voltage protection          Short circuit</p>	<p>DC 24 V          10 A          22.5/28.5 V          100 mV          25 ms @ 115 V / 30 ms @ 230 V  <math>\geq 17.6</math>–<math>19.4</math> V  <math>\leq 17.6</math>–<math>19.4</math> V          Max. 3 units at 90% load current, manual          switch S/P          89 %          105–145 %          120–145 %          Current limit</p>	<p>Standards</p>	<p><b>Monitoring</b>          DC ON Control (Rdy)          Switching voltage          Switching current          Isolation voltage</p>
<p><b>General</b>          Switching frequency          Insulation voltage input / output          Insulation voltage input / ground          Insulation voltage output / ground          Insulation resistance at DC 500 V          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling</p>	<p>Approx. 40 kHz          DC 4.2 kV          DC 2.1 kV          DC 700 V          100 M<math>\Omega</math>          -40 °C ... +71 °C (Derating)          Capacity: -2.5 %/°C starting at +61 °C          423000 h          20 – 90 % RH, not condensing          83.5 mm × 143.5 mm × 116.6 mm          Air convection, 25 mm clearance all-</p>	<p><b>Monitoring</b>          DC ON Control (Rdy)          Switching voltage          Switching current          Isolation voltage</p>	<p>N/O contact          DC 60 V          Max. 300 mA          DC 500 V</p>

Part No.	Type	Weight/unit kg	PU (units)
722759	DRA240-24B	1.38	1

### Dimensions



### PIN assignment



# Power supply - 240 W

Switchmode power supply, PFC, Single-phase  
 Input: AC 90–132 V, AC 180–264 V, DC 210–375 V  
 Output: DC 24 V, 10 A



### Input

Rated voltage  $U_N$   
 Operation voltage range

Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases

### Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode

Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

### General

Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w × h × d)  
 Cooling

AC 115/230 V  
 AC 90–132 V / AC 180–264 V / DC  
 210–375 V  
 47 Hz – 63 Hz  
 4.0 A @ AC 115 V / 1.55 A @ AC 230 V  
 30 A @ AC 115 V / 60 A @ AC 230 V  
 T6, 3 A/AC 250 V  
 Mini-circuit breaker: B 10 A, C 6 A  
 0.7  
 1

DC 24 V  
 10 A  
 22.5/28.5 V  
 100 mV  
 25 ms @ 115 V / 30 ms @ 230 V  
 ≥17.6–19.4 V  
 ≤17.6–19.4 V  
 Max. 3 units at 90% load current, manual  
 switch S/P  
 89 %  
 105–145 %  
 120–145 %  
 Current limit

Approx. 40 kHz  
 DC 4.2 kV  
 DC 2.1 kV  
 DC 700 V  
 100 MΩ  
 -40 °C ... +71 °C (Derating)  
 Capacity: -2.5 %/°C starting at +61 °C  
 481000 h  
 20 – 90 % RH, not condensing  
 83.5 mm × 124.5 mm × 116.6 mm  
 Air convection, 25 mm clearance all-

Housing material  
 Mounting  
 Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

Approvals

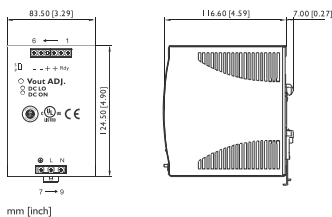
Standards

Monitoring  
 DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

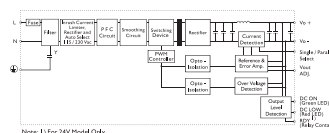
round  
 Metal  
 DIN rail mountable TS35  
 (EN 60715)  
 IP20  
 I  
 II  
 Screw terminal  
 0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>  
 AWG 24 – AWG 10  
 UL 508 Listed (E249179)  
 UL 60950-1, (Class 1, Division 2, Groups  
 A, B, C and D) (E350538)  
 CE  
 UKCA  
 IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3  
 N/O contact  
 DC 60 V  
 Max. 300 mA  
 DC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722781	DRA240-24A	1.38	1

### Dimensions



### PIN assignment



# Power supply - 240 W, 3-phase

## Switchmode power supply, PFC, 3-phase

Input: AC 340–575 V, DC 480–820 V

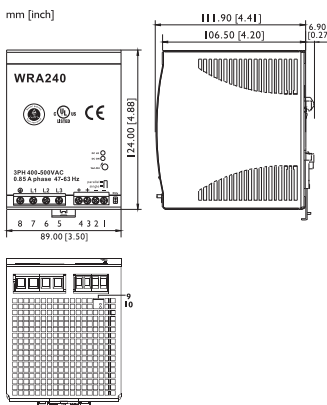
Output: DC 24 V, 10 A



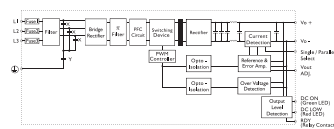
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math>                  Inrush current                  Internal fuse                  External protection                  Power factor correction P.F.C.                  Number of phases</p>	<p>3 × AC 400–500 V                  3 × AC 340–575 V / 3 × DC 480–820 V                  47 Hz – 63 Hz                  0.65 A @ AC 400 V / 0.55 A @ AC 500 V                  20 A                  3 × T2, 0 A/AC 600 V                  Mini-circuit breaker: 3 × B 6 A                  0.6                  3</p>	<p>Housing material                  Mounting                  Degree of protection                  Protection class                  Over voltage category                  Connection type</p>	<p>round                  Metal                  DIN rail mountable TS35                  (EN 60715)                  IP20                  I                  II                  Screw terminal                  0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>                  AWG 24 – AWG 10                  UL 508 Listed (E249179)                  UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)                  CE</p>
<p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode</p>	<p>DC 24 V                  10 A                  22.5/28.5 V                  100 mV                  Min. 20 ms  <math>\geq 17.6</math>–<math>19.4</math> V  <math>\leq 17.6</math>–<math>19.4</math> V                  Max. 2 units at 90% load current, manual switch S/P                  90 %                  Temperature: Deactivation at 100–110°C and automatic activation after cooling off                  125–137 %                  Hiccup Mode</p>	<p>Approvals</p>	<p>Standards                  UKCA                  IEC/EN 62368-1                  EN 61558-1                  EN 61558-2-16                  EN 61000-6-3                  EN 55032 Class B                  EN 61000-3-2 Class D                  EN 61000-3-3                  EN 61000-6-2                  EN 55024                  EN 61000-4-2 Level 4                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 L-N Level 3                  L/N-FG Level 4                  EN 61000-4-6 Level 3                  EN 61000-4-8 Level 4                  EN 61000-4-11 ENV 50204 Level 2                  EN 61204-3</p>
<p>Efficiency                  Rated over load protection</p>	<p>90 %</p>		
<p>Over voltage protection                  Short circuit</p>			
<p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Insulation resistance at DC 500 V                  Operation temperature range                  Derating                  MTBF                  Relative air humidity                  Dimensions (w × h × d)                  Cooling</p>	<p>Approx. 25 kHz                  DC 4.2 kV                  DC 2.1 kV                  DC 700 V                  100 MΩ                  -40 °C ... +71 °C (Derating)                  Capacity: -2.5 %/°C starting at +61 °C                  520000 h                  20 – 90 % RH, not condensing                  89.0 mm × 124.0 mm × 111.9 mm                  Air convection, 25 mm clearance all-</p>	<p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Isolation voltage</p>	<p>N/O contact                  DC 60 V                  Max. 300 mA                  DC 500 V</p>

Part No.	Type	Weight/unit kg	PU (units)
722804	WRA240-24	1.1	1

### Dimensions



### PIN assignment





# Power supply - 480 W

## Switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 120–375 V

Output: DC 24 V, 20 A



### Input

Rated voltage  $U_N$  AC 115 / 230 V (auto select)  
 Operation voltage range AC 90–264 V / DC 120–375 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  4.9 A @ AC 115 V / 2.5 A @ 230 V  
 Inrush current 25 A @ AC 115 V / 50 A @ AC 230 V  
 Internal fuse T10 A/AC 250 V  
 External protection Mini-circuit breaker: B 16 A  
 Power factor correction P.F.C. 0.99  
 Number of phases 1

### Output

Rated voltage  $U_N$  DC 24 V  
 Rated current  $I_N$  20 A  
 Setting range  $U_{out min.} / U_{out max.}$  22.5/28.5 V  
 Ripple and noise 100 mV  
 Hold up time Min. 30 ms  
 Status indication DC ON LED green  $\geq 17.6$ –19.4 V  
 Status indication DC LOW LED red  $\leq 17.6$ –19.4 V  
 Parallel / redundant mode Max. 3 units at 90% load current, manual switch S/P  
 Efficiency 89 %  
 Rated over load protection 120–140 %  
 Over voltage protection 125–137 %  
 Short circuit Current limit

### General

Switching frequency Approx. 80 kHz  
 Insulation voltage input / output DC 4.2 kV  
 Insulation voltage input / ground DC 2.1 kV  
 Insulation voltage output / ground DC 700 V  
 Insulation resistance at DC 500 V 100 M $\Omega$   
 Operation temperature range -40 °C ... +71 °C (Derating)  
 Derating Capacity: -2.5 %/°C starting at +56 °C  
 MTBF 469000 h  
 Relative air humidity 20 – 90 % RH, not condensing  
 Dimensions (w x h x d) 175.5 mm x 124.5 mm x 116.6 mm  
 Cooling Air convection, 25 mm clearance all-round

Housing material Metal  
 Mounting DIN rail mountable TS35

Degree of protection IP20  
 Protection class I  
 Over voltage category II  
 Connection type Screw terminal  
 0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>  
 AWG 24 – AWG 10

Approvals

Standards

UL 508 Listed (E249179)  
 UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)  
 CE  
 UKCA  
 IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 50204 Level 2  
 EN 61204-3

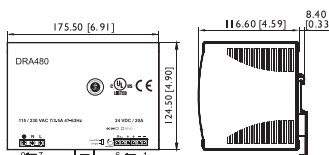
Monitoring  
 DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

N/O contact  
 DC 60 V  
 Max. 300 mA  
 DC 500 V

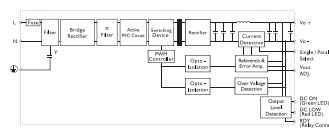
Part No.	Type	Weight/unit kg	PU (units)
722782	DRA480-24A	1.92	1

### Dimensions

mm [inch]



### PIN assignment



# Power supply - 480 W, 3-phase

## Switchmode power supply, PFC, 3-phase

Input: AC 340–575 V, DC 480–820 V

Output: DC 24 V, 20 A



**Input**  
 Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Inrush current  
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases

**Output**  
 Rated voltage  $U_N$   
 Rated current  $I_N$   
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode

Efficiency  
 Rated over load protection  
 Over voltage protection  
 Short circuit

**General**  
 Switching frequency  
 Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Insulation resistance at DC 500 V  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity  
 Dimensions (w × h × d)

3 × AC 400–500 V  
 3 × AC 340–575 V / 3 × DC 480–820 V  
 47 Hz – 63 Hz  
 1.1 A @ AC 400 V / 0.93 A @ AC 500 V  
 20 A  
 T3, 15 A/per Phase  
 Mini-circuit breaker: 3 × B 10 A, C 6 A  
 0.7  
 3

DC 24 V  
 20 A  
 22.5/28.5 V  
 100 mV  
 Min. 20 ms  
 ≥17.6–19.4 V  
 ≤17.6–19.4 V  
 Max. 3 units at 90% load current, manual switch S/P  
 90 %  
 115–135 %  
 125–137 %  
 Current limit (C) / Hiccup Mode (D), switching with switch C/D  
 Hiccup Mode: deactivation within 3 s and restart after 30 s

Approx. 80 kHz  
 DC 4.2 kV  
 DC 2.1 kV  
 DC 700 V  
 100 MΩ  
 -40 °C ... +71 °C (Derating)  
 Capacity: -2.5 %/°C starting at +61 °C  
 412000 h  
 20 – 90 % RH, not condensing  
 150.0 mm × 124.0 mm × 118.8 mm

Cooling  
 Housing material  
 Mounting  
 Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

Approvals

Standards

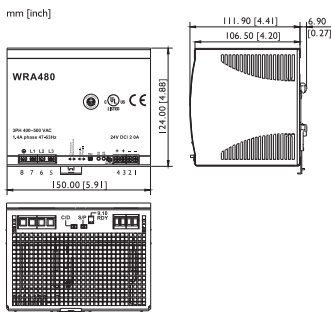
**Monitoring**  
 DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Isolation voltage

Air convection, 25 mm clearance all-round  
 Metal  
 DIN rail mountable TS35 (EN 60715)  
 IP20  
 I  
 II  
 Screw terminal  
 0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>  
 AWG 24 – AWG 10  
 UL 508 Listed (E249179)  
 UL 60950-1, (Class 1, Division 2, Groups A, B, C and D) (E350538)  
 CE  
 UKCA  
 IEC/EN 62368-1  
 EN 61558-1  
 EN 61558-2-16  
 EN 61000-6-3  
 EN 55032 Class B  
 EN 61000-3-2 Class D  
 EN 61000-3-3  
 EN 61000-6-2  
 EN 55024  
 EN 61000-4-2 Level 4  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 L-N Level 3  
 L/N-FG Level 4  
 EN 61000-4-6 Level 3  
 EN 61000-4-8 Level 4  
 EN 61000-4-11 ENV 52024 Level 2  
 EN 61204-3

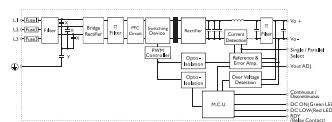
N/O contact  
 DC 60 V  
 Max. 300 mA  
 DC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722805	WRA480-24	1.75	1

### Dimensions



### PIN assignment



# Power supply - Redundant module

## Redundant module 20 A with 2 inputs

Potential-free signalling contact and Status LED per input  
Over- and undervoltage control



### Input

Rated voltage  $U_N$   
Operation voltage range  
Rated current  $I_N$   
No. of inputs

DC 24 V  
DC 21–28 V  
max. 20 A in total  
2

### Approvals

0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>  
AWG 24 – AWG 12  
UL 508 Listed (E249179)  
UL 60950-1  
CE

### Output

Rated voltage  $U_N$   
Rated current  $I_N$   
Max. output current  
Status indication DC ON LED green  
Rated over load protection  
Over voltage protection  
Voltage drop  
Inverse voltage

24 V  
20 A  
30 A, 5 s @ 24 V  
ON: DC input A or B OK / OFF: Error  
No  
No  
0.5 V  
30 V

### Standards

UKCA  
IEC/EN 62368-1  
EN 55032 Class B  
EN 61000-4-2  
EN 61000-4-4  
EN 61000-4-5  
EN 61000-4-6  
EN 61000-4-8  
ENV 50204  
EN 61204-3

### General

Operation temperature range  
MTBF  
Dimensions (w × h × d)  
Cooling  
Housing material  
Mounting  
  
Degree of protection  
Over voltage category  
Connection type

-40 °C ... +71 °C (Derating)  
659000 h  
54.0 mm × 90.0 mm × 114.0 mm  
Air convection  
Plastic  
DIN rail mountable TS35  
(EN 60715)  
IP20 (IEC 529 / EN 60529)  
II  
Screw terminal

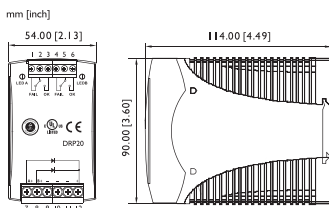
### Monitoring

DC ON Control (Rdy)

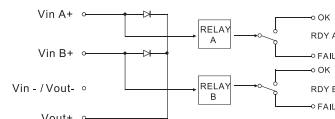
Changeover contact per input  
No error: input voltage >20 V or <30 V,  
connection 2(5) - 3(6) closed  
Error: input voltage <20 V or >30 V,  
connection 2(5) - 1(4) closed  
AC 300 V / DC 150 V  
AC/DC 1 A  
300 VA / 30 W  
AC 100 V

Part No.	Type	Weight/unit kg	PU (units)
722987	DRP20	0.21	1

### Dimensions



### PIN assignment



# Notes

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# COMPACT Power Supplies



## COMPACT Series

- One, two and three phase
- 80 to 2400 Watts
- Regulated
- Wide input voltage ranges: AC 90 - 550 V
- Output voltage range: DC 24/48/72 V
- Output current range: 5 - 100 Amps
- Overload and short circuit protection
- High efficiency
- DIN rail mountable
- Compact footprint
- Subseries: Eco, Universal, Ultra
- 5 year warranty
- UL Listed

# Power supply - Compact Universal, 120 W

## Switchmode power supplies, PFC, 1/2-phase

Input: wide-range input AC 187–550 V, DC 270–725 V

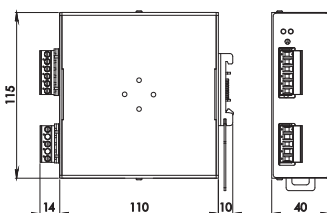
Output: DC 24 V, 5 A



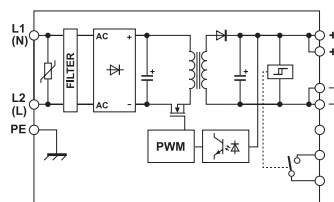
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math>                  Inrush current                  External protection                  Power factor correction P.F.C.                  Number of phases</p>	<p>AC 200–500 V                  AC 187–550 V / DC 270–725 V                  47 Hz – 63 Hz                  1.4 A @ AC 200 V / 0.7 A @ AC 500 V                  &lt;21 A                  Mini-circuit breaker: D 6 A, C 6 A / safety fuse: T 4 A (required)                  &gt;0.55                  2</p>	<p>Cooling                  Housing material                  Mounting                  Degree of protection                  Protection class                  Over voltage category                  Connection type</p>	<p>Air convection, 50 mm distance top/ bottom, 20 mm side                  Aluminum                  DIN rail mountable TS35 (EN 60715)                  IP20 (IEC 529 / EN 60529)                  I                  III                  Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>                  AWG 24 – AWG 12                  plug-in                  CE                  UKCA                  cULus (E249179)                  UL 508</p>
<p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current                  Short-circuit current                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode                  Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p>	<p>DC 24 V                  5 A                  7.5 A, 30 s                  14 A                  23-28 V                  &lt;110 mV pp                  &gt;17 ms @ AC 120 V / &gt;60 ms @ AC 230 V                  ≥21.6 V  <math>I_{out} &gt; 110 \% I_N</math>                  Yes/via external decoupling diode e.g. 722999                  88 %                  Yes                  &gt;DC 33 V                  Hiccup Mode</p>	<p>Approvals                  Standards</p>	<p>EN 55011 (CISPR11) Class A                  EN 55022 (CISPR22) Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 3                  EN 61000-4-5 Level 4                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total</p>
<p><b>General</b>                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range                  Derating                  MTBF                  Relative air humidity                  Dimensions (w × h × d)</p>	<p>DC 4.2 kV                  DC 2.2 kV                  DC 750 V                  -20 °C ... +70 °C (overtemperature protection)                  &gt;60 °C: -1.2 W/°C                  &gt;500000 h: SN29500 / &gt;500000 h: MIL HDBK 217F                  5 – 95 % RH, non-condensing                  40.0 mm × 115.0 mm × 110.0 mm</p>	<p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>N/O contact                  AC/DC 300 V / DC 150 V                  AC/DC 1 A                  300 VA / 30 W                  AC 500 V</p>

Part No.	Type	Weight/unit kg	PU (units)
722995	CPSB2-120-24	0.5	1

### Dimensions



### PIN assignment



# Power supply - Compact Economy, 120 W

## Switchmode power supply, PFC, Single-phase

Input: wide-range input AC 85–264 V, DC 110–345 V

Output: DC 24 V, 5 A



### Input

Rated voltage  $U_N$  AC 120/240 V  
 Operation voltage range AC 85–264 V / DC 110–345 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  2.1 A @ AC 120 V / 1.2 A @ AC 240 V  
 Inrush current  $\leq 30$  A / 0.72 A<sup>2</sup>s  
 Internal fuse T3, 15 A/AC 250 V  
 External protection Mini-circuit breaker: C 6 A / Fusible link: T 10 A  
 Power factor correction P.F.C.  $> 0.6$   
 Number of phases 1

### Output

Rated voltage  $U_N$  DC 24 V  
 Rated current  $I_N$  5 A  
 Max. output current 7 A, 5 s  
 Setting range  $U_{out min.} / U_{out max.}$  DC 23–28 V  
 Ripple and noise  $< 60$  mV  
 Hold up time  $> 20$  ms @ AC 120 V / 50 ms @ AC 230 V  
 Status indication DC ON LED green  $\geq 21.6$  V  
 Status indication DC LOW LED red  $\leq 21.6$  V  
 Parallel / redundant mode Yes/via external decoupling diode e.g. 722999  
 Efficiency  $> 87\%$   
 Over voltage protection  $\geq DC 33$  V  
 Short circuit Hiccup Mode  
 Overtemperature protection Yes

### General

Insulation voltage input / output DC 4.2 kV  
 Insulation voltage input / ground DC 2.2 kV  
 Insulation voltage output / ground DC 750 V  
 Operation temperature range  $-40^\circ\text{C} \dots +70^\circ\text{C}$  (UL approved up to  $+60^\circ\text{C}$ )  
 Derating  $> 60^\circ\text{C}$ :  $-2.4$  W/ $^\circ\text{C}$   
 Relative air humidity 5 – 95 % RH, non-condensing  
 Dimensions (w × h × d) 40.0 mm × 115.0 mm × 110.0 mm

### Cooling

Housing material Aluminum  
 Mounting DIN rail mountable TS35 (EN 60715)  
 Degree of protection IP20 (IEC 529 / EN 60529)  
 Protection class I  
 Over voltage category III  
 Connection type Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> plug-in

### Approvals

### Standards

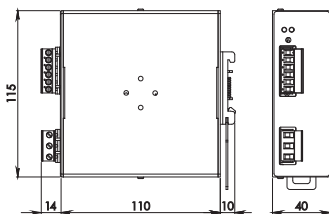
Air convection, 50 mm distance top/ bottom, 20 mm side  
 Aluminum  
 DIN rail mountable TS35 (EN 60715)  
 IP20 (IEC 529 / EN 60529)  
 I  
 III  
 Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> plug-in  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508  
 IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class A  
 EN 55022 (CISPR22) Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 3  
 EN 61000-4-5 Level 3  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz:  $\pm 1.6$  mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total  
 N/O contact  
 AC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

### Monitoring

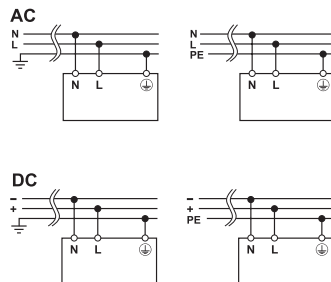
DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

Part No.	Type	Weight/unit kg	PU (units)
723500	CPSB1-120-24E	0.45	1

### Dimensions



### PIN assignment



# Power supply - Compact Ultra, 120 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

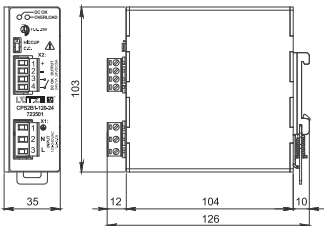
Output: DC 24 V, 5 A



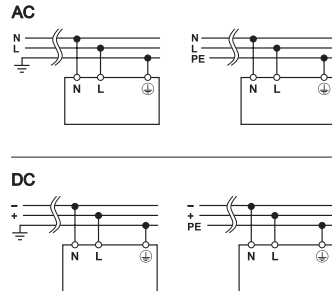
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math></p> <p>Internal fuse                  External protection</p> <p>Power factor correction P.F.C.                  Number of phases                  Inrush peak current</p> <p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current</p> <p>Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time</p> <p>Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode</p> <p>Efficiency                  Over voltage protection                  Short circuit                  Overload limit in constant current mode                  Overtemperature protection</p> <p><b>General</b>                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range                  Derating                  MTBF</p> <p>Relative air humidity</p>	<p>AC 120/240 V (UL certified)                  AC 90–264 V / DC 110–345 V                  47 Hz – 63 Hz                  1.4 A @ AC 120 V / 0.7 A @ AC 240 V                  V1.4 A @ AC 120 V / 0.7 A @ AC 240 V                  T3, 15 A (non-replaceable)                  Mini-circuit breaker: C 4 A / Fusible link: T 4 A                  &gt;0,90, enabled                  1                  ≤32 A / 0.49 A²s</p> <p>DC 24 V                  5 A                  7.5 A, 5 s @ Hiccup Mode                  Hiccup Mode                  DC 11.5–29 V                  ≤60 mV pp                  ≥20 ms @ AC 120 V / ≥30 ms @ AC 240 V                  ≥21.6 V                  ≤21.6 V                  Yes/via external decoupling diode e.g. Part-No. 722999                  &gt;90 % @ AC 240 V                  ≥DC 33 V (<math>U_N=24</math> V)                  Hiccup Mode / Current limit                  7.5 A                  Yes</p> <p>DC 4.2 kV, 1 min.                  DC 2.2 kV, 1 min.                  DC 750 V, 1 min.                  -35 °C ... +70 °C                  &gt;60 °C: -1.2 W/°C                  MIL-HDBK-217F, &gt;500000 h at 25 °C ambient full load</p> <p>5 – 95 % RH, non-condensing</p>	<p>Dimensions (w × h × d)                  Cooling</p> <p>Housing material                  Mounting</p> <p>Degree of protection                  Protection class                  Over voltage category                  Connection type</p> <p>Strip length                  Screwdriver                  Tightening torque                  Approvals</p> <p>Standards</p> <p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>35.0 mm × 103.0 mm × 126.0 mm                  Air convection, 50 mm distance top/                  bottom, 20 mm side</p> <p>Aluminum                  DIN rail mountable TS35                  (EN 60715)</p> <p>IP20 (IEC 529 / EN 60529)</p> <p>I                  III (EN 50178)                  Screw terminal                  0,20 mm² – 2,5 mm² / AWG 24 – 12                  6.0 - 7.5 mm / 0.24 - 0.30 in                  3,0 × 0,5 mm                  0.5 – 0.6 Nm / 4.42 – 5.30 lbf in</p> <p>CE                  UKCA                  cULus (E249179)                  UL 508                  IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class B (EMC Emission)                  EN 61000-3-2 Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 Level 4                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total</p> <p>N/O contact                  AC/DC 300 V / DC 150 V                  AC/DC 1 A                  300 VA / 30 W                  AC 500 V</p>
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Part No.	Type	Weight/unit kg	PU (units)
723501	CPS2B1-120-24	0.45	1

## Dimensions



## PIN assignment



# Power supply - Compact Economy, 120 W

## Switchmode power supply, PFC, Single-phase

Input: wide-range input AC 90–264 V, DC 110–345 V

Output: DC 48 V, 2.5 A



### Input

Rated voltage  $U_N$  AC 120/230 V  
 Operation voltage range AC 90–264 V / DC 110–370 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  2.1 A @ AC 115 V / 1.2 A @ AC 230 V  
 Inrush current  $\leq 30$  A / 0.72 A<sup>2</sup>s  
 Internal fuse T3, 15 A/AC 250 V  
 External protection Mini-circuit breaker: C 6 A / Fusible link: T 10 A  
 Power factor correction P.F.C.  $> 0.6$   
 Number of phases 1

### Output

Rated voltage  $U_N$  DC 48 V  
 Rated current  $I_N$  2.5 A  
 Max. output current 3.7 A, 5 s  
 Short-circuit current 30 A  
 Setting range  $U_{out min.} / U_{out max.}$  DC 45–55 V  
 Ripple and noise 60 mV  
 Hold up time  $> 10$  ms @ AC 120 V / 50 ms @ AC 230 V  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode Yes / decoupling diode contained internally  
 Efficiency  $> 86\%$   
 Rated over load protection Yes  
 Over voltage protection Yes  
 Short circuit Hiccup Mode  
 Overtemperature protection Yes

### General

Switching frequency Approx. 110 kHz  
 Insulation voltage input / output DC 4.2 kV  
 Insulation voltage input / ground DC 2.2 kV  
 Insulation voltage output / ground DC 750 V  
 Operation temperature range -40 °C ... +70 °C (UL approved up to +60 °C)  
 Derating  $> 60$  °C: -2.4 W/°C  
 MTBF  $> 500000$  h: SN29500 /  $> 600000$  h: MIL HDBK 217F

Relative air humidity 5 – 95 % RH, non-condensing  
 Dimensions (w × h × d) 40.0 mm × 115.0 mm × 134.0 mm  
 Cooling Air convection, 50 mm distance top/bottom, 20 mm side

Housing material Aluminum  
 Mounting DIN rail mountable TS35 (EN 60715)  
 Degree of protection IP20 (IEC 529 / EN 60529)  
 Protection class III  
 Connection type Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> plug-in

### Approvals

### Standards

### Monitoring

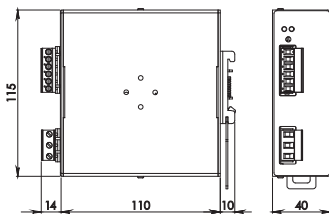
DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

CE  
 UKCA  
 cULus (E249179)  
 UL 508  
 IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class A  
 EN 55022 (CISPR22) Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 3  
 EN 61000-4-5 Level 3  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz:  $\pm 1.6$  mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total

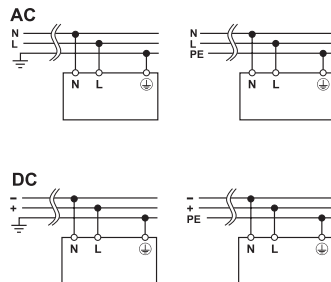
N/O contact  
 AC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722784	CPSB1-120-48R	0.45	1

### Dimensions



### PIN assignment





# Power supply - Compact Ultra, 120 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

Output: DC 48 V, 2.5 A



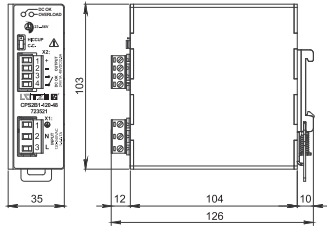
<b>Input</b>			
Rated voltage $U_N$	AC 120/240 V (UL certified)	Dimensions (w × h × d)	35.0 mm × 103.0 mm × 126.0 mm
Operation voltage range	AC 90–264 V / DC 110–345 V	Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Frequency range	47 Hz – 63 Hz	Housing material	Aluminum
Rated current $I_N$	1.4 A @ AC 120 V / 0.7 A @ AC 240 V1.4 A @ AC 120 V / 0.7 A @ AC 240 V	Mounting	DIN rail mountable TS35 (EN 60715)
Internal fuse	T3, 15 A (non-replaceable)	Degree of protection	IP20 (IEC 529 / EN 60529)
External protection	Mini-circuit breaker: C 4 A / Fusible link: T 4 A	Protection class	I
Power factor correction P.F.C.	>0,90, enabled	Over voltage category	III (EN 50178)
Number of phases	1	Connection type	Screw terminal
Inrush peak current	≤32 A / 0.49 A <sup>2</sup> s	Strip length	0,20 mm <sup>2</sup> – 2,5 mm <sup>2</sup> / AWG 24 – 12
		Screwdriver	6,0 - 7,5 mm / 0,24 - 0,30 in
<b>Output</b>		Tightening torque	3,0 × 0,5 mm
Rated voltage $U_N$	DC 48 V	Approvals	0,5 – 0,6 Nm / 4,42 – 5,30 lbf in
Rated current $I_N$	2.5 A		CE
Max. output current	3.75 A, 5 s @ Hiccup Mode		UKCA
Setting range $U_{out min.} / U_{out max.}$	DC 23–56 V	Standards	cULus (E249179)
Ripple and noise	≤60 mV pp		UL 508
Hold up time	≥20 ms @ AC 120 V / ≥30 ms @ AC 240 V		IEC/EN 61010-1
Status indication DC ON LED green	≥43.2 V		IEC/EN 61010-2-201
Status indication DC LOW LED red	≤43.2 V		IEC/EN 60950
Status indication DC ON LED red	Redundancy error		EN 55011 (CISPR11) Class B (EMC Emission)
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999		EN 61000-3-2 Class A
Efficiency	>90 % @ AC 240 V		EN 61000-4-2 Level 3
Over voltage protection	≥DC 68 V		EN 61000-4-3 Level 3
Short circuit	Adjustable: Hiccup, C.C. Mode		EN 61000-4-4 Level 4
Overload limit in constant current mode	3.75 A		EN 61000-4-5 Level 4
Overtemperature protection	Yes		EN 61000-4-11 Level 2
<b>General</b>			IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)
Insulation voltage input / output	DC 4.2 kV, 1 min.	<b>Monitoring</b>	IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total
Insulation voltage input / ground	DC 2.2 kV, 1 min.	DC ON Control (Rdy)	N/O contact
Insulation voltage output / ground	DC 750 V, 1 min.	Switching voltage	AC/DC 300 V / DC 150 V
Operation temperature range	-35 °C ... +70 °C	Switching current	AC/DC 1 A
Derating	>60 °C: -1.2 W/°C	Switching capacity	300 VA / 30 W
MTBF	MIL-HDBK-217F, >500000 h at 25 °C ambient full load	Isolation voltage	AC 500 V
Relative air humidity	5 – 95 % RH, non-condensing		

# Power supply - Compact Ultra, 120 W

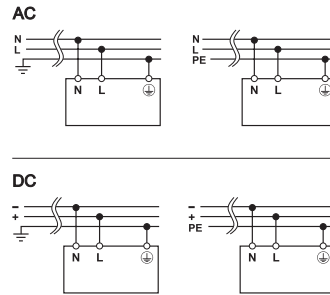
Primary switchmode power supply, PFC, Single-phase  
 Input: AC 90–264 V, DC 110–345 V  
 Output: DC 48 V, 2.5 A

Part No.	Type	Weight/unit kg	PU (units)
723521	CPS2B1-120-48	0.45	1

## Dimensions



## PIN assignment



# Power supply - Compact Economy, 240 W

## Switchmode power supply, PFC, Single-phase

Input: AC 90–132 V, AC 187–264 V, DC 270–345 V

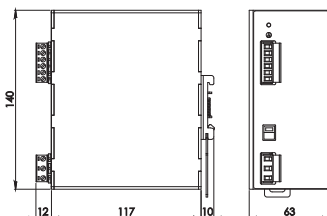
Output: DC 24 V, 10 A



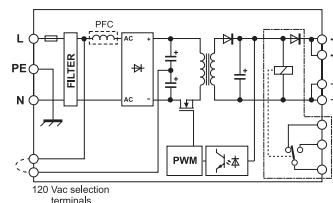
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                    Frequency range                  Rated current <math>I_N</math>                  Inrush current                  Internal fuse                  External protection                    Power factor correction P.F.C.                  Number of phases</p>	<p>AC 120/240 V (manual)                  AC 90–132 V / AC 187–264 V / DC                  270–345 V                  47 Hz – 63 Hz                  4 A @ AC 120 V / 2 A @ AC 240 V                  &lt;40 A                  T6, 3 A/AC 250 V                  Mini-circuit breaker: C 10 A / Safety fuse:                  T 10 A                  &gt;0.6                  1</p>	<p>Cooling                  Housing material                  Mounting                    Degree of protection                  Over voltage category                  Connection type                    Approvals                    Standards</p>	<p>Air convection, 50 mm distance top/                  bottom, 20 mm side                  Aluminum                  DIN rail mountable TS35                  (EN 60715)                  IP20 (IEC 529 / EN 60529)                  III                  Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>                  plug-in                  CE                  UKCA                  cULus (E249179)                  UL 508                  IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class A                  EN 55022 (CISPR22) Class A                  EN 61000-4-3 Level 3                  EN 61000-4-2 Level 3                  EN 61000-4-4 Level 3                  EN 61000-4-5 Level 3                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal),                  5-17.8 Hz: <math>\pm 1.6</math> mm, 17.8-500 Hz: 2 g 2                  hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20                  g 11 ms, 3 bumps / direction, 18 bumps                  total</p>
<p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                    Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode                    Efficiency                  Over voltage protection                  Short circuit                  Overtemperature protection</p>	<p>DC 24 V                  10 A                  13.5 A, 30 s                  DC 23–27.5 V                  &lt;100 mV pp                  &gt;60 ms @ AC 120 V / &gt;70 ms @ AC 240                  V  <math>\geq 21.6</math> V  <math>\leq 21.6</math> V                  Yes/via external decoupling diode e.g.                  722999                  &gt;87 %                  &gt;DC 33 V (<math>U_A=24</math> V)                  Hiccup Mode<sup>a</sup>                  Yes</p>	<p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>N/O contact                  AC 300 V / DC 150 V                  AC/DC 1 A                  300 VA / 30 W                  AC 500 V</p>
<p><b>General</b>                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range                    Derating                  Dimensions (w × h × d)</p>	<p>DC 4.2 kV                  DC 2.2 kV                  DC 750 V                  -40 °C ... +70 °C (UL approved up to                  +50 °C)                  &gt;60 °C: -5 W/°C                  63.0 mm × 140.0 mm × 139.0 mm</p>		

Part No.	Type	Weight/unit kg	PU (units)
723600	CPSB1-240-24E	0.75	1

### Dimensions



### PIN assignment



# Power supply - Compact Ultra, 240 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

Output: DC 24 V, 10 A



### Input

Rated voltage  $U_N$  AC 120/240 V (UL certified)  
 Operation voltage range AC 90–264 V / DC 110–345 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  2.4 A @ AC 120 V / 1.2 A @ AC 240 V  
 Internal fuse T6, 3 A (non-replaceable)  
 External protection Mini-circuit breaker: C 10 A / Safety fuse: T 10 A  
 Power factor correction P.F.C. >0.90, enabled  
 Number of phases 1  
 Inrush peak current  $\leq 34$  A / 0.66 A\*s

### Output

Rated voltage  $U_N$  DC 24 V  
 Rated current  $I_N$  10 A  
 Max. output current 15 A, 5 s @ Hiccup Mode  
 Setting range  $U_{out min.} / U_{out max.}$  DC 22–29 V  
 Ripple and noise  $\leq 260$  mV pp  
 Hold up time  $\geq 20$  ms @ AC 240 V  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode Yes/via external decoupling diode e.g. Part-No. 722999  
 Efficiency >93 % @ AC 240 V  
 Over voltage protection  $\geq DC 33$  V  
 Short circuit Hiccup Mode, Constant current (C.C.)  
 Overload limit in constant current mode 11 A  
 Overtemperature protection Yes

### General

Insulation voltage input / output DC 4.2 kV, 1 min.  
 Insulation voltage input / ground DC 2.2 kV, 1 min.  
 Insulation voltage output / ground DC 750 V, 1 min.  
 Operation temperature range -40 °C ... +70 °C  
 Derating no derating  
 MTBF MIL-HDBK-217F, >600000 h at 25 °C ambient full load  
 Relative air humidity 5–95 %, non-condensing  
 Dimensions (w x h x d) 40.0 mm x 115.0 mm x 133.0 mm  
 Cooling Air convection, 100 mm distance top/

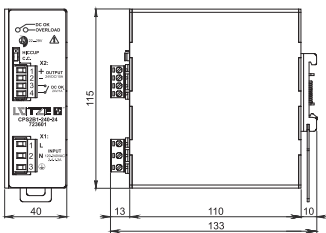
Housing material Aluminum  
 Mounting DIN rail mountable TS35  
 Degree of protection IP20 (IEC 529 / EN 60529)  
 Protection class I  
 Over voltage category III (EN 50178)  
 Connection type Screw terminal  
 Strip length 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> / AWG 24 – 12  
 Screwdriver 6.0 - 7.5 mm / 0.24 - 0.30 in  
 Tightening torque 3,0 x 0,5 mm  
 Approvals 0.5 – 0.6 Nm / 4.42 – 5.30 lbf in  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508

### Standards

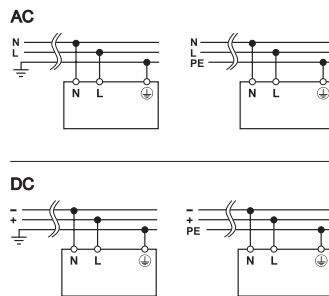
IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class B (EMC Emission)  
 EN 61000-3-2 Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 Level 4  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz:  $\pm 1.6$  mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total  
 Monitoring DC ON Control (Rdy)  
 Switching voltage AC/DC 300 V / DC 150 V  
 Switching current AC/DC 1 A  
 Switching capacity 300 VA / 30 W  
 Isolation voltage AC 500 V

Part No.	Type	Weight/unit kg	PU (units)
723601	CPS2B1-240-24	0.75	1

### Dimensions



### PIN assignment



# Power supply - Compact Universal, 240 W

## Switchmode power supplies, PFC, 1/2/3-phase

Input: wide-range input AC 187–550 V, DC 250–725 V (UL: DC 300–500 V)

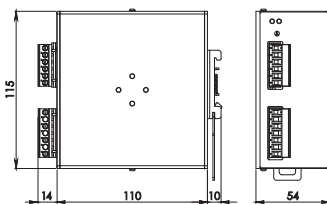
Output: DC 24 V, 10 A



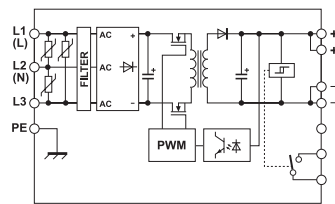
<b>Input</b>					
Rated voltage $U_N$	AC 200–500 V	Relative air humidity	5 – 95 % RH, non-condensing		
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)	Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm		
Frequency range	47 Hz – 63 Hz	Cooling	Air convection, 50 mm distance top/bottom, 20 mm side		
Rated current $I_N$	1-/2-phase: 2.2 A @ AC 220 V / 1.1 A @ AC 500 V, 3-phase: 1.5 A @ AC 220 V / 0.8 A @ AC 500 V	Housing material	Aluminum		
Inrush current	≤45 A / 1.31 A <sup>2</sup> s	Mounting	DIN rail mountable TS35 (EN 60715)		
External protection	Mini-circuit breaker: D 4 A, C 6 A / safety fuse: T 6.3 A (required)	Degree of protection	IP20 (IEC 529 / EN 60529)		
Power factor correction P.F.C.	>0.6 @ 230 V, >0.5 @ 400 V	Protection class	I		
Number of phases	3	Over voltage category	III		
<b>Output</b>		Connection type	Screw terminal		
Rated voltage $U_N$	DC 24 V	Approvals	0.20 mm <sup>2</sup> – 2.5 mm <sup>2</sup>		
Rated current $I_N$	10 A		AWG 30 – AWG 12		
Max. output current	15 A, 6 A	Standards	plug-in		
Short-circuit current	38 A		CE		
Setting range $U_{out min.} / U_{out max.}$	23-28 V		UKCA		
Ripple and noise	<100 mV pp		cULus (E249179)		
Hold up time	>15 ms @ AC 230 V / >100 ms @ AC 500 V		UL 508		
Status indication DC ON LED green	≥21.6 V		IEC/EN 61010-1		
Status indication DC LOW LED red	≤21.6 V		IEC/EN 61010-2-201		
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999		IEC/EN 60950		
Efficiency	>93 %		EN 55011 (CISPR11) Class A		
Rated over load protection	Yes		EN 55022 (CISPR22) Class A		
Over voltage protection	>DC 33 V		EN 61000-4-2 Level 3		
Short circuit	Hiccup Mode		EN 61000-4-3 Level 3		
<b>General</b>			EN 61000-4-4 Level 3		
Insulation voltage input / output	DC 4.2 kV		EN 61000-4-5 Level 1		
Insulation voltage input / ground	DC 2.2 kV		EN 61000-4-11 Level 2		
Insulation voltage output / ground	DC 750 V		IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)		
Operation temperature range	-40 °C ... +70 °C (UL approved up to +50 °C)	<b>Monitoring</b>	IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total		
Derating	>50 °C: -4.2 W/°C	DC ON Control (Rdy)	N/O contact		
MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F	Switching voltage	DC 30 V		
		Switching current	DC 1 A		
		Switching capacity	30 W		
		Isolation voltage	AC 500 V		

Part No.	Type	Weight/unit kg	PU (units)
722996	CPSB-123-240-24	0.65	1

### Dimensions



### PIN assignment



# Power supply - Compact Economy, 240 W

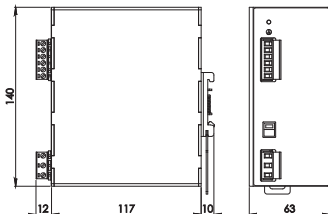
Switchmode power supply, PFC, Single-phase  
 Input: AC 90–132 V, AC 187–264 V, DC 270–345 V  
 Output: DC 48 V, 5 A



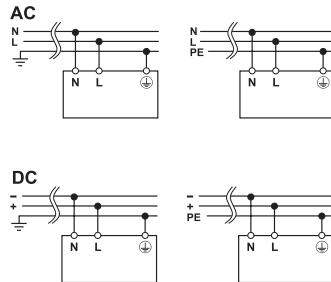
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range</p> <p>Frequency range                  Rated current <math>I_N</math>                  Inrush current                  Internal fuse                  External protection</p> <p>Power factor correction P.F.C.                  Number of phases</p> <p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current                  Short-circuit current                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time</p> <p>Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode</p> <p>Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p> <p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range</p> <p>Derating                  MTBF</p>	<p>AC 120 / 230 V (manual)                  AC 90–132 V / AC 187–264 V / DC                  270–345 V</p> <p>47 Hz – 63 Hz                  4 A @ AC 115 V / 2 A @ AC 230 V</p> <p><math>\leq 32 A / 1.18 A^2s</math>                  T6, 3 A/AC 250 V</p> <p>Mini-circuit breaker: C 10 A / Safety fuse:                  T 10 A                  &gt;0.6</p> <p>1</p> <p>DC 48 V                  5 A                  6.8 A, 5 s                  20 A</p> <p>45-55 V                  100 mV</p> <p>&gt;60 ms @ AC 120 V / &gt;70 ms @ AC 230                  V</p> <p><math>\geq 43.2 V</math>  <math>\leq 43.2 V</math></p> <p>Yes / decoupling diode contained inter-                  nally</p> <p>88 %                  Yes                  Yes                  Hiccup Mode</p> <p>Approx. 110 kHz</p> <p>DC 4.2 kV                  DC 2.2 kV                  DC 750 V</p> <p>-40 °C ... +70 °C (UL approved up to                  +50 °C)                  &gt;60 °C: -5 W/°C</p> <p>&gt;500000 h: SN29500 / &gt;500000 h: MIL                  HDBK 217F</p>	<p>Relative air humidity                  Dimensions (w × h × d)                  Cooling</p> <p>Housing material                  Mounting</p> <p>Degree of protection                  Protection class                  Over voltage category                  Connection type</p> <p>Approvals</p> <p>Standards</p> <p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>5 – 95 % RH, non-condensing                  63.0 mm × 140.0 mm × 117.0 mm                  Air convection, 100 mm distance top/                  bottom, 20 mm side</p> <p>Aluminum                  DIN rail mountable TS35                  (EN 60715)                  IP20 (IEC 529 / EN 60529)</p> <p>I                  III</p> <p>Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>                  plug-in                  max. 0.56 Nm</p> <p>CE                  UKCA                  cULus (E249179)                  UL 508</p> <p>IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class A                  EN 55022 (CISPR22) Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 3                  EN 61000-4-5 Level 3                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal),                  5-17.8 Hz: <math>\pm 1.6</math> mm, 17.8-500 Hz: 2 g 2                  hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20                  g 11 ms, 3 bumps / direction, 18 bumps                  total</p> <p>N/O contact                  AC 300 V / DC 150 V                  AC/DC 1 A                  300 VA / 30 W                  AC 500 V</p>
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Part No.	Type	Weight/unit kg	PU (units)
722786	CPSB1-240-48R	0.75	1

## Dimensions



## PIN assignment





# Power supply - Compact Ultra, 240 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

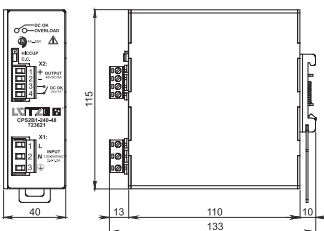
Output: DC 48 V, 5 A



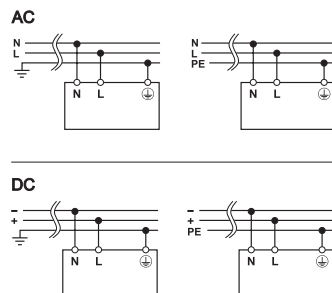
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range          Frequency range          Rated current <math>I_N</math>          Internal fuse          External protection          Power factor correction P.F.C.          Number of phases          Inrush peak current          Touch current (leakage current)</p>	<p>AC 120/240 V (UL certified)          AC 90–264 V / DC 110–345 V          47 Hz – 63 Hz          2.4 A @ AC 120 V / 1.2 A @ AC 240 V          T6, 3 A (non-replaceable)          10AT or MCB 10A C-curve          &gt;0,90, enabled          1  <math>\leq 34</math> A / 0.66 A<sup>2</sup>s  <math>\leq 0.6</math> mA</p>	<p>Housing material          Mounting          Degree of protection          Protection class          Over voltage category          Connection type          Strip length          Screwdriver          Tightening torque          Approvals</p>	<p>Aluminum          DIN rail mountable TS35          (EN 60715)          IP20 (IEC 529 / EN 60529)          I          III (EN 50178)          Screw terminal          0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> / AWG 24 – 12          6.0 - 7.5 mm / 0.24 - 0.30 in          3,0 × 0,5 mm          0,5 – 0,6 Nm / 4.42 – 5.30 lbf in          CE          UKCA          cULus (E249179)          UL 508          IEC/EN 61010-1          IEC/EN 60950          IEC/EN 61010-2-201          EN 55011 (CISPR11) Class B (EMC Emission)          EN 61000-3-2 Class A          EN 55022 (CISPR22) Class B (EMC Emission)          EN 61000-4-2 Level 3          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 Level 4          EN 61000-4-11 Level 2          IEC 60068-2-6 (Vibration sinusoidal),          5-17.8 Hz: <math>\pm 1.6</math> mm, 17.8-500 Hz: 2 g 2          hours / axis (X,Y,Z)          IEC 60068-2-27 (Shock), 30 g 6 ms, 20          g 11 ms, 3 bumps / direction, 18 bumps          total</p>
<p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Max. output current          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Status indication DC LOW LED red          Parallel / redundant mode</p>	<p>DC 48 V          5 A          8.5 A, 5 s @ Hiccup Mode          DC 45–55 V  <math>\leq 400</math> mV pp  <math>\geq 20</math> ms @ AC 240 V  <math>\geq 43.2</math> V  <math>\leq 43.2</math> V          Yes/via external decoupling diode e.g.          Part-No. 722999  <math>&gt;93.5</math> % @ AC 240 V  <math>\geq DC 68</math> V          Adjustable: Hiccup, C.C. Mode          7 A          Yes</p>	<p>Standards</p>	<p>Standards</p>
<p>Efficiency          Over voltage protection          Short circuit          Overload limit in constant current mode          Overtemperature protection</p>	<p>Yes          Yes          Yes          Yes          Yes</p>		
<p><b>General</b>          Insulation voltage input / output          Insulation voltage input / ground          Insulation voltage output / ground          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling</p>	<p>DC 4.2 kV, 1 min.          DC 2.2 kV, 1 min.          DC 750 V, 1 min.          -40 °C ... +70 °C          no derating          MIL-HDBK-217F, &gt;600000 h at 25 °C          ambient full load          5 – 95 %, non-condensing          40.0 mm × 115.0 mm × 133.0 mm          Air convection, 100 mm distance top/          bottom, 20 mm side</p>	<p><b>Monitoring</b>          DC ON Control (Rdy)          Switching voltage          Switching current          Switching capacity          Isolation voltage</p>	<p>N/O contact          AC/DC 300 V / DC 150 V          AC/DC 1 A          300 VA / 30 W          AC 500 V</p>

Part No.	Type	Weight/unit kg	PU (units)
723621	CPS2B1-240-48	0.75	1

## Dimensions



## PIN assignment



# Power supply - Compact Ultra, 480 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

Output: DC 24 V, 20 A



## Input

Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases  
 Inrush peak current

AC 120/240 V (UL certified)  
 AC 90–264 V / DC 110–345 V  
 47 Hz – 63 Hz  
 4.8 A @ AC 120 V / 2.4 A @ AC 240 V  
 8 AT (non-replaceable)  
 Mini-circuit breaker: C 10 A / Safety fuse:  
 T 10 A  
 >0.90, enabled  
 1  
 ≤23 A / 0.56 A\*s

## Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Max. output current  
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode  
 Efficiency  
 Over voltage protection  
 Short circuit  
 Overload limit in constant current mode  
 Overtemperature protection

DC 24 V  
 20 A  
 30 A, max. 5 s @ Hiccup Mode  
 21 A @ CC Mode  
 DC 22–29 V  
 <150 mV pp  
 >25 ms @ AC 240 V  
 ≥21.6 V  
 ≤21.6 V  
 Yes/via external decoupling diode e.g.  
 Part-No. 722999  
 >93 % @ AC 240 V  
 ≥DC 33 V  
 Adjustable: Hiccup, C.C. Mode  
 21 A  
 Yes

## General

Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Operation temperature range  
 Derating  
 MTBF  
 Relative air humidity

DC 4.2 kV, 1 min.  
 DC 2.2 kV, 1 min.  
 DC 750 V, 1 min.  
 -40 °C ... +70 °C (UL approved up to  
 +50 °C) @ AC 120 V or up to +60 °C @  
 AC 240 V  
 >50 °C: -7.6 W/°C @ AC 120 V  
 >60 °C: -7.2 W/°C @ AC 240 V  
 MIL-HDBK-217F, >600000 h at 25 °C  
 ambient full load  
 5 – 95 %, non-condensing

Dimensions (w × h × d)  
 Cooling

Housing material  
 Mounting

Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

Strip length  
 Screwdriver  
 Tightening torque  
 Approvals

Standards

56.0 mm × 140.0 mm × 139.0 mm  
 Air convection, 100 mm distance top/  
 bottom, 20 mm side  
 Aluminum  
 DIN rail mountable TS35  
 (EN 60715)  
 IP20 (IEC 529 / EN 60529)  
 I  
 III (EN 50178)  
 Screw terminal  
 0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> / AWG 24 – 12  
 6.0 - 7.5 mm / 0.24 - 0.30 in  
 3.0 × 0.5 mm  
 0.5 – 0.6 Nm / 4.42 – 5.30 lbf in  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508  
 IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class B (EMC  
 Emission)  
 EN 61000-3-2 Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 Level 4  
 EN 61000-4-11 Level 2  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20  
 g 11 ms, 3 bumps / direction, 18 bumps  
 total  
 IEC 60068-2-6 (Vibration sinusoidal),  
 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2  
 hours / axis (X,Y,Z)

Monitoring  
 DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

N/O contact  
 AC/DC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

# Power supply - Compact Ultra, 480 W

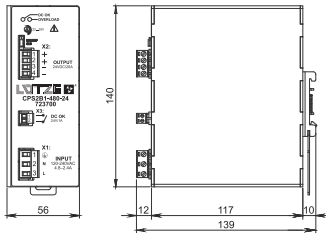
Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

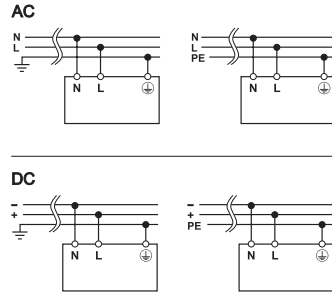
Output: DC 24 V, 20 A

Part No.	Type	Weight/unit kg	PU (units)
723700	CPS2B1-480-24E	1.1	1

## Dimensions



## PIN assignment



# Power supply - Compact Economy, 480 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 187–264 V, DC 250–375 V

Output: DC 24 V, 20 A



## Input

Rated voltage  $U_N$   
 Operation voltage range  
 Frequency range  
 Rated current  $I_N$   
 Internal fuse  
 External protection  
 Power factor correction P.F.C.  
 Number of phases  
 Inrush peak current  
 Touch current (leakage current)

AC 200–240 V (UL certified)  
 AC 187–264 V / DC 250–375 V  
 47 Hz – 63 Hz  
 2.9 A @ AC 200 V / 2.5 A @ AC 240 V  
 No internal fuse, an external fuse must be provided.  
 6.3AT or MCB 6A C-curve or 4A D-curve  
 >0.90, enabled  
 1  
 $\leq 29$  A / 0.61 A\*s  
 $\leq 0.5$  mA

## Output

Rated voltage  $U_N$   
 Rated current  $I_N$   
 Max. output current  
 Setting range  $U_{out min.} / U_{out max.}$   
 Ripple and noise  
 Hold up time  
 Status indication DC ON LED green  
 Status indication DC LOW LED red  
 Parallel / redundant mode

DC 24 V  
 20 A  
 28 A, 5 s @ Hiccup Mode  
 DC 23–28 V  
 $\leq 50$  mV pp  
 $\leq 50$  ms @ AC 240 V  
 $\geq 21.6$  V  
 $\leq 21.6$  V  
 Yes/via external decoupling diode e.g.  
 Part-No. 722999  
 $> 91$  % @ AC 240 V  
 $\geq$  DC 33 V ( $U_A = 24$  V)  
 Hiccup Mode  
 50 A  
 Yes

Efficiency  
 Over voltage protection  
 Short circuit  
 Overload limit in constant current mode  
 Overtemperature protection

## General

Insulation voltage input / output  
 Insulation voltage input / ground  
 Insulation voltage output / ground  
 Operation temperature range  
 Derating  
 MTBF

DC 4.2 kV, 1 min.  
 DC 2.2 kV, 1 min.  
 DC 750 V, 1 min.  
 $-40$  °C ...  $+70$  °C  
 $> 45$  °C:  $-10$  W/°C @ AC 240 V  
 MIL-HDBK-217F,  $> 500000$  h at 25 °C  
 ambient full load

Relative air humidity  
 Dimensions (w × h × d)

5 – 95 %, non-condensing  
 73.0 mm × 140.0 mm × 149.0 mm

## Cooling

Housing material  
 Mounting

Degree of protection  
 Protection class  
 Over voltage category  
 Connection type

Strip length  
 Screwdriver  
 Tightening torque  
 Approvals

## Standards

Air convection, 100 mm distance top/  
 bottom, 20 mm side  
 Aluminum  
 DIN rail mountable TS35  
 (EN 60715)  
 IP20 (IEC 529 / EN 60529)  
 I  
 III (EN 50178)  
 Screw terminal  
 $0,20$  mm<sup>2</sup> –  $2,5$  mm<sup>2</sup> / AWG 24 – 12  
 $6,0$  -  $7,5$  mm /  $0,24$  -  $0,30$  in  
 $3,0$  ×  $0,5$  mm  
 $0,5$  –  $0,6$  Nm /  $4,42$  –  $5,30$  lbf in  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508  
 IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class A  
 EN 55022 (CISPR22) Class A  
 EN 61000-3-2 Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-5 Level 3  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal),  
 $5$ - $17,8$  Hz:  $\pm 1,6$  mm,  $17,8$ - $500$  Hz:  $2$  g  $2$   
 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock),  $30$  g  $6$  ms,  $20$   
 g  $11$  ms,  $3$  bumps / direction,  $18$  bumps  
 total

## Monitoring

DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

N/O contact  
 AC/DC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

# Power supply - Compact Economy, 480 W

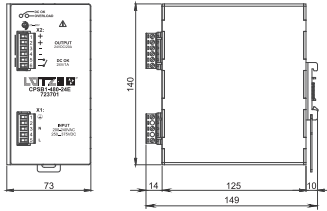
Primary switchmode power supply, PFC, Single-phase

Input: AC 187–264 V, DC 250–375 V

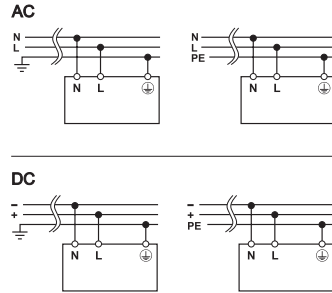
Output: DC 24 V, 20 A

Part No.	Type	Weight/unit kg	PU (units)
723701	CPSB1-480-24E	1	1

## Dimensions



## PIN assignment



# Power supply - Compact Universal, 480 W

## Switchmode power supplies, PFC, 1/2/3-phase

Input: wide-range input AC 187–550 V, DC 250–725 V (UL: DC 300–500 V)

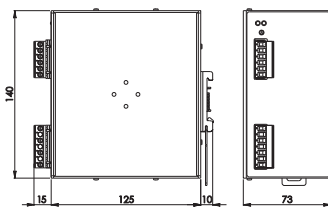
Output: DC 24 V, 20 A



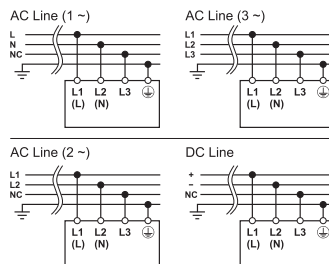
<b>Input</b>				
Rated voltage $U_N$	One-, two- and three-phase AC 200-500 V	Dimensions (w × h × d)	73.0 mm × 140.0 mm × 125.0 mm	
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)	Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side	
Frequency range	47 Hz – 63 Hz	Housing material	Aluminum	
Rated current $I_N$	1-/2-phase: 2.9 A @ AC 200 V / 1.3 A @ AC 500 V, 3-phase: 1.8 A @ AC 200 V / 0.8 A @ AC 500 V	Mounting	DIN rail mountable TS35 (EN 60715)	
Inrush current	≤55 A / 2.16 A <sup>2</sup> s	Degree of protection	IP20 (IEC 529 / EN 60529)	
External protection	Mini-circuit breaker: C 6 A, or D 4 A (required)	Protection class	I	
Power factor correction P.F.C.	>0.9	Over voltage category	III	
Number of phases	3	Connection type	Screw terminal 0,20 mm <sup>2</sup> – 2,5 mm <sup>2</sup> AWG 24 – AWG 12 plug-in	
<b>Output</b>		Approvals	CE UKCA cULus (E249179)	
Rated voltage $U_N$	DC 24 V	Standards	UL 508 IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950 EN 55011 (CISPR11) Class A EN 61000-3-2 Class A EN 61000-4-2 Level 3 EN 61000-4-3 Level 3 EN 61000-4-4 Level 4 EN 61000-4-5 Level 3 EN 61000-4-11 Level 2 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)	
Rated current $I_N$	20 A			
Max. output current	28 A, 5 s			
Short-circuit current	50 A			
Setting range $U_{out.min.} / U_{out.max.}$	23-28 V			
Ripple and noise	<50 mV pp			
Hold up time	>50 ms			
Status indication DC ON LED green	≥21.6 V			
Status indication DC LOW LED red	$I_{out} > 1.1 I_N$			
Parallel / redundant mode	Yes/via external decoupling diode			
Efficiency	>92 %	<b>Monitoring</b>		
Over voltage protection	≥DC 33 V	DC ON Control (Rdy)	N/O contact	
Short circuit	Hiccup Mode	Switching voltage	AC/DC 30 V	
Overtemperature protection	Yes	Switching current	AC/DC 1 A	
		Switching capacity	30 VA / 30 W	
		Isolation voltage	AC 500 V	
<b>General</b>				
Insulation voltage input / output	DC 4.2 kV			
Insulation voltage input / ground	DC 2.2 kV			
Insulation voltage output / ground	DC 750 V			
Operation temperature range	-40 °C ... +70 °C (UL approved up to +45 °C)			
Derating	>45 °C: -10 W/°C			
MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F			
Relative air humidity	5 – 95 % RH, non-condensing			

Part No.	Type	Weight/unit kg	PU (units)
722801	CPSB-123-480-24	1	1

### Dimensions



### PIN assignment





# Power supply - Compact Ultra, 480 W

Primary switchmode power supply, PFC, Single-phase

Input: AC 90–264 V, DC 110–345 V

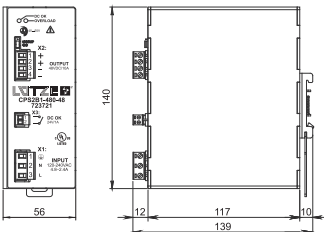
Output: DC 48 V, 10 A



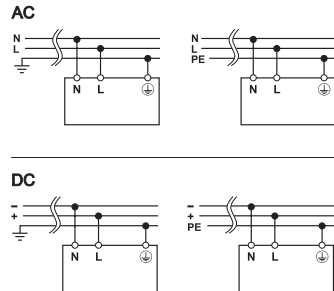
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math>                  Internal fuse                  External protection</p> <p>Power factor correction P.F.C.                  Number of phases                  Inrush peak current</p> <p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode</p> <p>Efficiency                  Over voltage protection                  Short circuit                  Overload limit in constant current mode                  Overtemperature protection</p> <p><b>General</b>                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range                  Derating</p> <p>MTBF                  Relative air humidity                  Dimensions (w × h × d)                  Cooling</p>	<p>AC 120/240 V (UL certified)                  AC 90–264 V / DC 110–345 V                  47 Hz – 63 Hz                  4.8 A @ AC 120 V / 2.4 A @ AC 240 V                  8 AT (non-replaceable)                  Mini-circuit breaker: C 10 A / Safety fuse:                  T 10 A                  &gt;0,90, enabled                  ≤23 A / 0.56 A<sup>2</sup>s</p> <p>DC 48 V                  10 A                  17 A, 5 s @ Hiccup Mode                  DC 45–55 V                  &lt;200 mV pp                  &gt;25 ms @ AC 240 V                  ≥43.2 V                  ≤43.2 V                  Yes/via external decoupling diode e.g.                  Part-No. 722999                  &gt;94 % @ AC 240 V                  ≥DC 68 V                  Hiccup Mode, Constant current (C.C.)                  12 A                  Yes</p> <p>DC 4.2 kV, 1 min.                  DC 2.2 kV, 1 min.                  DC 750 V, 1 min.                  -40 °C ... +70 °C                  &gt;50 °C: -7.6 W/°C @ AC 120 V                  &gt;60 °C: -7.2 W/°C @ AC 240 V                  MIL-HDBK-217F, &gt;600000 h at 25 °C                  ambient full load                  5 – 95 %, non-condensing                  56.0 mm × 140.0 mm × 139.0 mm                  Air convection, 100 mm distance top/</p>	<p>Housing material                  Mounting</p> <p>Degree of protection                  Protection class                  Over voltage category                  Connection type</p> <p>Strip length                  Screwdriver                  Tightening torque                  Approvals</p> <p>Standards</p>	<p>bottom, 20 mm side                  Aluminum                  DIN rail mountable TS35                  (EN 60715)                  IP20 (IEC 529 / EN 60529)                  I                  III (EN 50178)                  Screw terminal                  0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup> / AWG 24 – 12                  6.0 - 7.5 mm / 0.24 - 0.30 in                  3,0 × 0,5 mm                  0.5 – 0.6 Nm / 4.42 – 5.30 lbf in                  CE                  UKCA                  cULus (E249179)                  UL 508                  IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class B (EMC                  Emission)                  EN 61000-3-2 Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-5 Level 4                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal),                  5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2                  hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20                  g 11 ms, 3 bumps / direction, 18 bumps                  total</p> <p>N/O contact                  AC/DC 300 V / DC 150 V                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>
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Part No.	Type	Weight/unit kg	PU (units)
723721	CPS2B1-480-48	1.1	1

**Dimensions**



**PIN assignment**



# Power supply - Compact 3-phase, 960 W

Switchmode power supply, PFC, 3-phase  
 Input: Wide range input AC 340 - 550 V  
 Output: DC 24 V, 40 A



### Input

Rated voltage  $U_N$  AC 400–500 V  
 Operation voltage range AC 340–550 V / DC 520–725 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  2.4 A @ AC 400 V / 2.1 A @ AC 500 V  
 Inrush current  $\leq 50$  A / 1.86 A<sup>2</sup>s  
 External protection Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)  
 Power factor correction P.F.C.  $> 0.7$   
 Number of phases 3

### Output

Rated voltage  $U_N$  DC 24 V  
 Rated current  $I_N$  40 A  
 Max. output current (limited current) 44 A  
 Max. output current (HICCUP, 5 sec) 60 A  
 Setting range  $U_{out min.} / U_{out max.}$  23–28 V  
 Ripple and noise  $< 150$  mV pp  
 Hold up time  $> 15$  ms  
 Status indication DC ON LED green  $\geq 21.6$  V  
 Status indication DC LOW LED red  $\leq 21.6$  V  
 Parallel / redundant mode Max. 2 devices / via external decoupling diodes e.g. 722999  
 Efficiency  $> 92.5\%$   
 Rated over load protection  $> 90^\circ\text{C}$ , auto-reset  
 Over voltage protection  $\geq \text{DC } 33$  V  
 Short circuit Adjustable: Hiccup, current limiting

### General

Switching frequency Approx. 70 - 110 kHz  
 Insulation voltage input / output DC 4.2 kV  
 Insulation voltage input / ground DC 2.2 kV  
 Insulation voltage output / ground DC 750 V  
 Operation temperature range  $-40^\circ\text{C} \dots +70^\circ\text{C}$  (UL approved up to  $+45^\circ\text{C}$ )  
 Derating  $> 45^\circ\text{C}$ : -15 W/ $^\circ\text{C}$   
 MTBF  $> 500000$  h: SN29500 /  $> 500000$  h: MIL HDBK 217F  
 Relative air humidity 5 – 95 % RH, non-condensing

Dimensions (w × h × d) 80.0 mm × 127.0 mm × 137.5 mm  
 Cooling Air convection, forced cooling  $> 50^\circ\text{C}$ , 50 mm distance top/bottom

Housing material Aluminum  
 Mounting DIN rail mountable TS35 (EN 60715)

Degree of protection IP20 (IEC 529 / EN 60529)  
 Protection class I  
 Over voltage category III  
 Connection type Screw terminal  
 0.20 mm<sup>2</sup> – 10.0 mm<sup>2</sup>  
 max. 0.62 Nm  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508

Approvals

Standards

IEC/EN 61010-1  
 IEC/EN 61010-2-201 (EN 60715)  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class A  
 EN 55022 (CISPR22) Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 3  
 EN 61000-4-5 Level 4  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz:  $\pm 1.6$  mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total

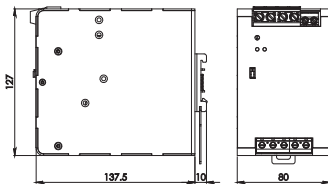
### Monitoring

DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

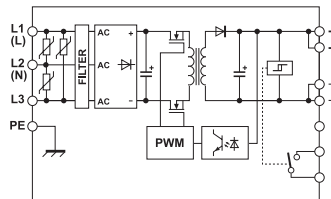
N/O contact  
 AC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722811	CPSB3-960-24	1.3	1

### Dimensions



### PIN assignment



# Power supply - Compact 3-phase, 960 W

## Switchmode power supply, PFC, 3-phase

Input: Wide range input AC 340 - 550 V

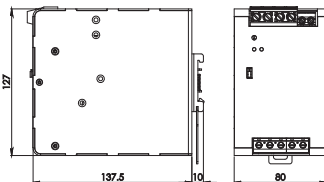
Output: DC 48 V, 20 A



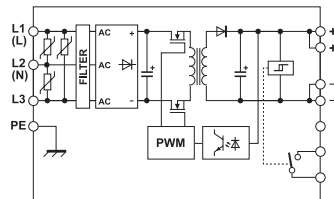
<p><b>Input</b>                  Rated voltage <math>U_N</math>                  Operation voltage range                  Frequency range                  Rated current <math>I_N</math>                  Inrush current                  External protection                  Power factor correction P.F.C.                  Number of phases</p>	<p>3 × AC 400–500 V                  AC 340–550 V / DC 520–725 V                  47 Hz – 63 Hz                  2.4 A @ AC 400 V / 2.1 A @ AC 500 V                  ≤50 A / 1.86 A<sup>2</sup>s                  Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)                  &gt;0.7                  3</p>	<p>Relative air humidity                  Dimensions (w × h × d)                  Cooling                  Housing material                  Mounting                  Degree of protection                  Protection class                  Over voltage category                  Connection type</p>	<p>5 – 95 % RH, non-condensing                  80.0 mm × 127.0 mm × 137.5 mm                  Air convection, forced cooling &gt;50°C, 50 mm distance top/bottom                  Aluminum                  DIN rail mountable TS35 (EN 60715)                  IP20 (IEC 529 / EN 60529)                  I                  III                  Screw terminal                  0.20 mm<sup>2</sup> – 6.0 mm<sup>2</sup>                  max. 0.62 Nm                  CE                  UKCA                  cULus (E249179)                  UL 508</p>
<p><b>Output</b>                  Rated voltage <math>U_N</math>                  Rated current <math>I_N</math>                  Max. output current (limited current)                  Max. output current (HICCUP, 5 sec)                  Setting range <math>U_{out min.} / U_{out max.}</math>                  Ripple and noise                  Hold up time                  Status indication DC ON LED green                  Status indication DC LOW LED red                  Parallel / redundant mode</p>	<p>DC 48 V                  20 A                  22 A                  30 A                  45-55 V                  &lt;150 mV pp                  &gt;15 ms                  ≥43.2 V                  ≤43.2 V                  Max. 2 devices / via external decoupling diodes e.g. 722999                  &gt;92.5 %                  &gt; 90°C, auto-reset                  ≥DC 68 V                  Adjustable: Hiccup, current limiting (C.C. Modus)</p>	<p>Approvals                  Standards</p>	<p>IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class A                  EN 55022 (CISPR22) Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 4                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total</p>
<p><b>General</b>                  Switching frequency                  Insulation voltage input / output                  Insulation voltage input / ground                  Insulation voltage output / ground                  Operation temperature range</p>	<p>Approx. 70 - 110 kHz                  DC 4.2 kV                  DC 2.2 kV                  DC 750 V                  -40 °C ... +70 °C (UL approved up to +45 °C)                  &gt;45 °C: -15 W/°C                  &gt;500000 h: SN29500 / &gt;500000 h: MIL HDBK 217F</p>	<p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>N/O contact                  AC 300 V / DC 150 V                  AC/DC 1 A                  300 VA / 30 W                  AC 500 V</p>
<p>Efficiency                  Rated over load protection                  Over voltage protection                  Short circuit</p>			

Part No.	Type	Weight/unit kg	PU (units)
722812	CPSB3-960-48	1.3	1

### Dimensions



### PIN assignment



# Power supply - Compact 3-phase, 960 W

Switchmode power supply, PFC, 3-phase  
 Input: Wide range input AC 340 - 550 V  
 Output: DC 72 V, 13.3 A



### Input

Rated voltage  $U_N$  AC 400–500 V  
 Operation voltage range AC 340–550 V / DC 520–725 V  
 Frequency range 47 Hz – 63 Hz  
 Rated current  $I_N$  2.4 A @ AC 400 V / 2.1 A @ AC 500 V  
 Inrush current  $\leq 50$  A / 1.86 A<sup>2</sup>s  
 External protection Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)  
 Power factor correction P.F.C.  $> 0.7$   
 Number of phases 3

### Output

Rated voltage  $U_N$  DC 72 V  
 Rated current  $I_N$  13.3 A  
 Max. output current (limited current) 15 A  
 Max. output current (HICCUP, 5 sec) 20 A  
 Setting range  $U_{out min.} / U_{out max.}$  72–85 V  
 Ripple and noise  $< 150$  mV pp  
 Hold up time  $> 15$  ms  
 Status indication DC ON LED green  $\geq 64.8$  V  
 Status indication DC LOW LED red  $\leq 64.8$  V  
 Parallel / redundant mode Max. 2 devices / via external decoupling diodes e.g. 722999  
 Efficiency  $> 93$  %  
 Rated over load protection  $> 90^\circ\text{C}$ , auto-reset  
 Over voltage protection  $< 100$  V  
 Short circuit Adjustable: Hiccup, current limiting (C.C. Modus)

### General

Switching frequency Approx. 70 - 110 kHz  
 Insulation voltage input / output DC 4.2 kV  
 Insulation voltage input / ground DC 2.2 kV  
 Insulation voltage output / ground DC 750 V  
 Operation temperature range  $-40^\circ\text{C} \dots +70^\circ\text{C}$  (UL approved up to  $+45^\circ\text{C}$ )  
 Derating  $> 45^\circ\text{C}$ :  $-15$  W/ $^\circ\text{C}$   
 MTBF  $> 500000$  h: SN29500 /  $> 500000$  h: MIL HDBK 217F  
 Relative air humidity 5 – 95 % RH, non-condensing

Dimensions (w × h × d) 80.0 mm × 127.0 mm × 137.5 mm  
 Cooling Air convection, forced cooling  $> 50^\circ\text{C}$ , 50 mm distance top/bottom

Housing material Aluminum  
 Mounting DIN rail mountable TS35 (EN 60715)

Degree of protection IP20 (IEC 529 / EN 60529)  
 Protection class I  
 Over voltage category III  
 Connection type Screw terminal  
 0.20 mm<sup>2</sup> – 6.0 mm<sup>2</sup>  
 max. 0.62 Nm  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508

Approvals

Standards

IP20 (IEC 529 / EN 60529)  
 I  
 III  
 Screw terminal  
 0.20 mm<sup>2</sup> – 6.0 mm<sup>2</sup>  
 max. 0.62 Nm  
 CE  
 UKCA  
 cULus (E249179)  
 UL 508  
 IEC/EN 61010-1  
 IEC/EN 61010-2-201  
 IEC/EN 60950  
 EN 55011 (CISPR11) Class A  
 EN 55022 (CISPR22) Class A  
 EN 61000-4-2 Level 3  
 EN 61000-4-3 Level 3  
 EN 61000-4-4 Level 3  
 EN 61000-4-4 Level 4  
 EN 61000-4-11 Level 2  
 IEC 60068-2-6 (Vibration sinusoidal),  
 5-17.8 Hz:  $\pm 1.6$  mm, 17.8-500 Hz: 2 g 2  
 hours / axis (X,Y,Z)  
 IEC 60068-2-27 (Shock), 30 g 6 ms, 20  
 g 11 ms, 3 bumps / direction, 18 bumps  
 total

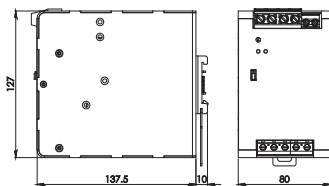
### Monitoring

DC ON Control (Rdy)  
 Switching voltage  
 Switching current  
 Switching capacity  
 Isolation voltage

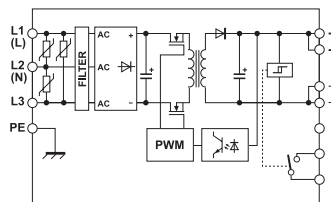
N/O contact  
 AC 300 V / DC 150 V  
 AC/DC 1 A  
 300 VA / 30 W  
 AC 500 V

Part No.	Type	Weight/unit kg	PU (units)
722813	CPSB3-960-72	1.3	1

### Dimensions



### PIN assignment



# Power supply - Compact 3-phase, 2400 W

## Switchmode power supply, PFC, 3-phase

Input: Wide range input AC 340 - 550 V

Output: DC 24 V, 100 A



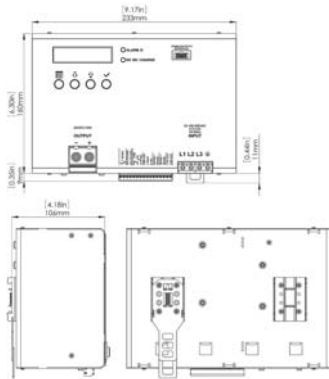
<b>Input</b>			
Rated voltage $U_N$	3 × AC 400–500 V	Housing material	mm distance top/bottom, 10 mm side
Operation voltage range	AC 340–550 V / DC 520–750 V	Mounting	Aluminum
Frequency range	47 Hz – 63 Hz	Degree of protection	DIN rail mountable TS35
Rated current $I_N$	4.5 A @ AC 400 V / 3.5 A @ AC 500 V	Protection class	(EN 60715)
Inrush current	< 12.5 A (active inrush current limitation)	Over voltage category	IP20 (IEC 529 / EN 60529)
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)	Connection type	I
Power factor correction P.F.C.	>0.92		III
Input protection	Surge protection according to VDE 0160, over/undervoltage (auto restart)		Screw terminal
	Phase monitoring (reduced output power): PFC error		Input
			0.20 mm <sup>2</sup> – 4.0 mm <sup>2</sup>
			Output
			0.20 mm <sup>2</sup> – 35.0 mm <sup>2</sup>
			Auxiliary
			0.20 mm <sup>2</sup> – 1.5 mm <sup>2</sup>
Number of phases	3	Approvals	CE
			UKCA
<b>Output</b>			cULus (E249179)
Rated voltage $U_N$	DC 24 V	Standards	UL 508
Rated current $I_N$	100 A		IEC/EN 61010-1
Max. output current (limited current)	>100 A		IEC/EN 61010-2-201
Max. output current (HICCUP, 5 sec)	150 A		IEC/EN 60950
Setting range $U_{out min.} / U_{out max.}$	DC 11.9–29 V		EN 55011 (CISPR11) Class A
Ripple and noise	<200 mV pp		EN 55022 (CISPR22) Class A
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V		EN 61000-3-2 Class A
			EN 61000-4-2 Level 3
Status indication DC ON LED green	Alphanumeric display		EN 61000-4-3 Level 3
Status indication DC LOW LED red	Alphanumeric display		EN 61000-4-4 Level 4
Parallel / redundant mode	Max. 4 devices		EN 61000-4-5 Level 4
Efficiency	>92 %		EN 61000-4-11 Level 2
Over voltage protection	>DC 33 V		IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)		IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total
<b>General</b>		<b>Monitoring</b>	
Insulation voltage input / output	DC 4.2 kV	DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload
Insulation voltage input / ground	DC 2.2 kV		Overtemperature range, charging complete
Insulation voltage output / ground	DC 750 V		Switching capacity
Operation temperature range	-40 °C ... +70 °C (UL approved up to +50 °C)		AC/DC 30 V, 1 A, 30 W
			Isolation voltage
Derating	>50 °C: -60 W/°C		AC 500 V
	Automatic power derating (1200 W) for 2 phases operation		Output current
	>500000 h: SN29500 / >700000 h: MIL HDBK 217F		galvanically isolated: 0–10 V and 4–20 mA
MTBF	5 – 95 % RH, non-condensing		
Relative air humidity	233.0 mm × 160.0 mm × 101.0 mm		
Dimensions (w × h × d)	Air convection, forced cooling >45°C, 80		
Cooling			

# Power supply - Compact 3-phase, 2400 W

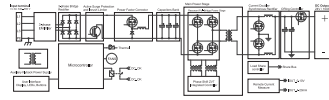
Switchmode power supply, PFC, 3-phase  
 Input: Wide range input AC 340 - 550 V  
 Output: DC 24 V, 100 A

Part No.	Type	Weight/unit kg	PU (units)
722814	CPSB3-2400-24	2.8	1

## Dimensions



## PIN assignment





# Power supply - Compact 3-phase, 2400 W

## Switchmode power supply, PFC, 3-phase

Input: Wide range input AC 340 - 550 V

Output: DC 48 V, 50 A



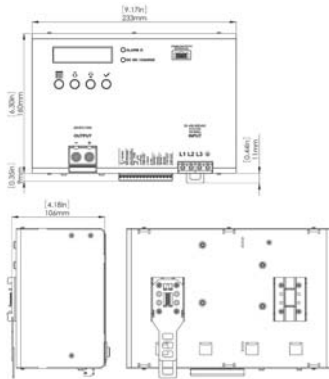
<p><b>Input</b>          Rated voltage <math>U_N</math>          Operation voltage range          Frequency range          Rated current <math>I_N</math>          Inrush current          External protection          Power factor correction P.F.C.          Input protection</p>	<p>3 × AC 400–500 V          AC 340–550 V / DC 520–750 V          47 Hz – 63 Hz          4.5 A @ AC 400 V / 3.5 A @ AC 500 V          &lt; 10 A (active inrush current limitation)          Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)          &gt;0.92          Surge protection according to VDE 0160, over/undervoltage (auto restart)          Phase monitoring (reduced output power): PFC error          3</p>	<p>Housing material          Mounting          Degree of protection          Protection class          Over voltage category          Connection type</p>	<p>mm distance top/bottom, 10 mm side          Aluminum          DIN rail mountable TS35 (EN 60715)          IP20 (IEC 529 / EN 60529)          I          III          Screw terminal          Input          0.20 mm<sup>2</sup> – 4.0 mm<sup>2</sup>          Output          0.20 mm<sup>2</sup> – 35.0 mm<sup>2</sup>          Auxiliary          0.20 mm<sup>2</sup> – 1.5 mm<sup>2</sup>          CE          UKCA          cULus (E249179)          UL 508          IEC/EN 61010-1          IEC/EN 61010-2-201          IEC/EN 60950          EN 55011 (CISPR11) Class A          EN 55022 (CISPR22) Class A          EN 61000-3-2 Class A          EN 61000-4-2 Level 3          EN 61000-4-3 Level 3          EN 61000-4-4 Level 4          EN 61000-4-5 Level 4          EN 61000-4-11 Level 2          IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)          IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total</p>
<p>Number of phases</p>	<p>3</p>	<p>Approvals</p>	<p>Standards</p>
<p><b>Output</b>          Rated voltage <math>U_N</math>          Rated current <math>I_N</math>          Max. output current (limited current)          Max. output current (HICCUP, 5 sec)          Setting range <math>U_{out min.} / U_{out max.}</math>          Ripple and noise          Hold up time          Status indication DC ON LED green          Status indication DC LOW LED red          Parallel / redundant mode          Efficiency          Over voltage protection          Short circuit</p>	<p>DC 48 V          50 A          50 A          75 A          DC 23–56 V          &lt;200 mV pp          &gt;10 ms @ AC 400 V / &gt;10 ms @ AC 500 V          V          Alphanumeric display          Alphanumeric display          Max. 4 devices          &gt;92 %          ≥DC 68 V          Adjustable: Hiccup, current limiting (C.C. Modus)</p>	<p>Approvals</p>	<p>Standards</p>
<p><b>General</b>          Insulation voltage input / output          Insulation voltage input / ground          Insulation voltage output / ground          Operation temperature range          Derating          MTBF          Relative air humidity          Dimensions (w × h × d)          Cooling</p>	<p>DC 4.2 kV          DC 2.2 kV          DC 750 V          -40 °C ... +70 °C (UL approved up to +50 °C)          &gt;50 °C: -60 W/°C          Automatic power derating (1200 W) for 2 phases operation          &gt;500000 h: SN29500 / &gt;700000 h: MIL HDBK 217F          5 – 95 % RH, non-condensing          233.0 mm × 160.0 mm × 101.0 mm          Air convection, forced cooling &gt;45°C, 80</p>	<p><b>Monitoring</b>          DC ON Control (Rdy)</p>	<p>Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload          Overtemperature range, charging complete          AC/DC 30 V, 1 A, 30 W          AC 500 V          galvanically isolated: 0–10 V and 4–20 mA</p>

# Power supply - Compact 3-phase, 2400 W

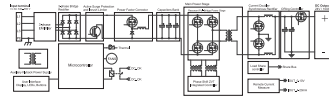
Switchmode power supply, PFC, 3-phase  
Input: Wide range input AC 340 - 550 V  
Output: DC 48 V, 50 A

Part No.	Type	Weight/unit kg	PU (units)
722816	CPSB3-2400-48	2.8	1

## Dimensions



## PIN assignment



# Power supply - Compact 3-phase, 2400 W

## Switchmode power supply, PFC, 3-phase

Input: Wide range input AC 340 - 550 V

Output: DC 72 V, 33 A



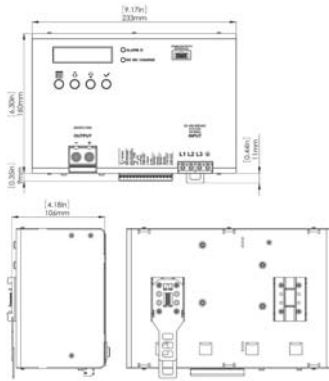
<b>Input</b>	3 × AC 400–500 V	Housing material	mm distance top/bottom, 10 mm side
Rated voltage $U_N$	AC 340–550 V / DC 520–750 V	Mounting	Aluminum
Operation voltage range	47 Hz – 63 Hz	Degree of protection	DIN rail mountable TS35
Frequency range	4.5 A @ AC 400 V / 3.5 A @ AC 500 V	Protection class	(EN 60715)
Rated current $I_N$	< 10 A (active inrush current limitation)	Over voltage category	IP20 (IEC 529 / EN 60529)
Inrush current	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)	Connection type	I
External protection	>0.92		III
Power factor correction P.F.C.	Surge protection according to VDE 0160, over/undervoltage (auto restart)		Screw terminal
Input protection	Phase monitoring (reduced output power): PFC error		Input
	3		Output
Number of phases		Approvals	0.20 mm <sup>2</sup> – 4.0 mm <sup>2</sup>
			Output
<b>Output</b>	DC 72 V		0.20 mm <sup>2</sup> – 35.0 mm <sup>2</sup>
Rated voltage $U_N$	33 A	Standards	Auxiliary
Rated current $I_N$	33 A		0.20 mm <sup>2</sup> – 1.5 mm <sup>2</sup>
Max. output current (limited current)	33 A		CE
Max. output current (HICCUP, 5 sec)	50 A		UKCA
Setting range $U_{out min.} / U_{out max.}$	DC 50–87 V		cULus (E249179)
Ripple and noise	<200 mV pp		UL 508
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V		IEC/EN 61010-1
Status indication DC ON LED green	Alphanumeric display		IEC/EN 61010-2-201
Status indication DC LOW LED red	Alphanumeric display		IEC/EN 60950
Parallel / redundant mode	Max. 4 devices		EN 55011 (CISPR11) Class A
Efficiency	>93 %		EN 55022 (CISPR22) Class A
Over voltage protection	>DC 100 V		EN 61000-3-2 Class A
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)		EN 61000-4-2 Level 3
			EN 61000-4-3 Level 3
<b>General</b>			EN 61000-4-4 Level 4
Insulation voltage input / output	DC 4.2 kV		EN 61000-4-5 Level 4
Insulation voltage input / ground	DC 2.2 kV		EN 61000-4-11 Level 2
Insulation voltage output / ground	DC 750 V		IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)
Operation temperature range	-40 °C ... +70 °C (UL approved up to +50 °C)	<b>Monitoring</b>	IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total
Derating	>50 °C: -60 W/°C	DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload
	Automatic power derating (1200 W) for 2 phases operation		Overtemperature range, charging complete
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F	Switching capacity	AC/DC 30 V, 1 A, 30 W
Relative air humidity	5 – 95 % RH, non-condensing	Isolation voltage	AC 500 V
Dimensions (w × h × d)	233.0 mm × 160.0 mm × 101.0 mm	Output current	galvanically isolated: 0–10 V and 4–20 mA
Cooling	Air convection, forced cooling >45°C, 80		

# Power supply - Compact 3-phase, 2400 W

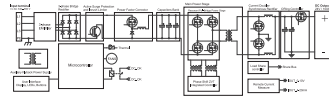
**Switchmode power supply, PFC, 3-phase**  
**Input: Wide range input AC 340 - 550 V**  
**Output: DC 72 V, 33 A**

Part No.	Type	Weight/unit kg	PU (units)
722817	CPSB3-2400-72	2.8	1

## Dimensions



## PIN assignment



# Power supply - Compact series, Redundant module

## Redundant module 12 to 85 V, 50 A

### Potential-free signalling contact

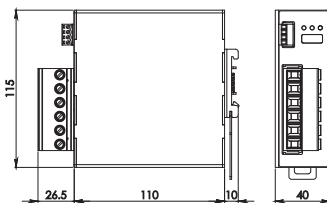
### Status LED per input



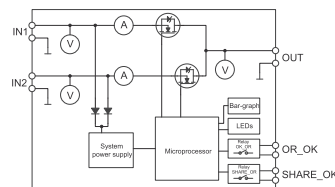
<p><b>Input</b>                  Operation voltage range                  Rated current <math>I_N</math>                  No. of inputs</p> <p><b>Output</b>                  Max. output current                  Status indication DC ON LED green                  Status indication DC ON LED red                  Over voltage protection                  Voltage drop                  Overtemperature protection</p> <p><b>General</b>                  Operation temperature range                  Relative air humidity                  Dimensions (w × h × d)                  Cooling                  Housing material                  Mounting</p> <p>Degree of protection                  Over voltage category                  Connection type</p>	<p>DC 12–85 V                  max. 50 A per input                  2</p> <p>300 A                  IN1, IN2 OK                  Redundancy error                  No                  &lt;0.2 V                  No</p> <p>-40 °C ... +75 °C (UL approved up to +75 °C)                  5 – 95 % RH, non-condensing                  40.0 mm × 115.0 mm × 110.0 mm                  Air convection                  Aluminum                  DIN rail mountable TS35 (EN 60715)                  IP20 (IEC 529 / EN 60529)                  II</p> <p>Input                  Screw terminal                  plug-in                  0.20 mm<sup>2</sup> – 16.0 mm<sup>2</sup>                  Output                  Screw terminal                  plug-in                  0.20 mm<sup>2</sup> – 16.0 mm<sup>2</sup></p>	<p>Approvals</p> <p>Standards</p> <p><b>Monitoring</b>                  DC ON Control (Rdy)                  Switching voltage                  Switching current                  Switching capacity                  Isolation voltage</p>	<p>Relays                  Screw terminal                  plug-in                  0.20 mm<sup>2</sup> – 1.5 mm<sup>2</sup>                  CE                  UKCA                  cULus (E249179)                  UL 508                  IEC/EN 61010-1                  IEC/EN 61010-2-201                  IEC/EN 60950                  EN 55011 (CISPR11) Class A                  EN 55022 (CISPR22) Class A                  EN 61000-4-2 Level 3                  EN 61000-4-3 Level 3                  EN 61000-4-4 Level 3                  EN 61000-4-5 Level 3                  EN 61000-4-11 Level 2                  IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)                  IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total</p> <p>N/O contact                  AC 300 V / DC 24 V                  AC/DC 1 A                  300 VA / 30 W                  DC 100 V</p>
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Part No.	Type	Weight/unit kg	PU (units)
722999	CPSRM50	0.35	1

#### Dimensions



#### PIN assignment



# Power supply - Compact DC/DC-Converter, 240 W

## Programmable DC/DC-Converter

Input: wide-range input DC 12–48 V

Output: DC 5–55 V



### Input

Rated voltage $U_N$	DC 12–48 V
Operation voltage range	DC 11–55 V
Rated current $I_N$	max. 12 A
Inrush current	<40 A
Internal fuse	20 A(not user replacable)
External protection	Mini-circuit breaker: C 20 A
Power factor correction P.F.C.	>0.6
Protection device Input	Overvoltage protection, > 60 V Cut-off
Reverse voltage protection	Yes

### Output

Rated voltage $U_N$	DC 5–55 V
Rated current $I_N$	10 A
Max. output current (limited current)	11 A (264 W)
Max. output current (HICCUP, 5 sec)	15 A (360 W)
Setting range $U_{out min.} / U_{out max.}$	DC 5–55 V
Ripple and noise	<200 mV
Hold up time	≥5 ms
Parallel / redundant mode	yes
Efficiency	77 % – 92 %, depending on the input/output voltage
Over voltage protection	120% of the output voltage
Short circuit	Current limit
	Hiccup Mode
Overtemperature protection	Yes

### General

Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C ... +70 °C (UL approved up to +60 °C)
Derating	>60 °C: -2.4 W/°C
MTBF	>600000 h: MIL-HDBK-217F
Relative air humidity	5 – 95 % RH, non-condensing

### Dimensions (w × h × d)

Cooling

### Housing material

Mounting

Degree of protection

Protection class

Over voltage category

Connection type

Approvals

Standards

Monitoring

DC ON Control (Rdy)

Switching voltage

Switching current

Switching capacity

Isolation voltage

40.0 mm × 115.0 mm × 132.2 mm  
Air convection, 50 mm distance top/  
bottom, 20 mm side

Aluminum  
DIN rail mountable TS35  
(EN 60715)

IP20 (EN 60529)

I (EN 70178)  
Screw terminal  
0,20 mm<sup>2</sup> – 2,5 mm<sup>2</sup>  
AWG 24 – AWG 12

plug-in  
CE  
UKCA  
cULus (E249179)

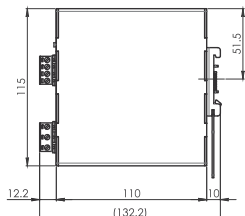
UL 508  
IEC/EN 61010-1  
IEC/EN 61010-2-201  
IEC/EN 60950

EN 61000-6-2  
EN 61000-6-3  
IEC 60068-2-6 (Vibration sinusoidal),  
5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2  
hours / axis (X,Y,Z)  
IEC 60068-2-27 (Shock), 30 g 6 ms, 20  
g 11 ms, 3 bumps / direction, 18 bumps  
total

N/O contact  
AC/DC 24 V  
AC/DC 1 A  
24 W  
AC 500 V

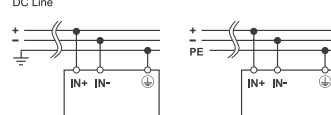
Part No.	Type	Weight/unit kg	PU (units)
723300	CUDC-240-55	0.4	1

### Dimensions



### PIN assignment

#### Input connection





# Power supply - Compact DC UPS, 240 W

## Uninterrupted DC power supply

### DC UPS for lead batteries

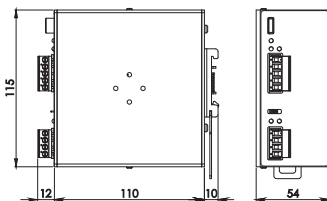
Input: DC 24 V, Output: max. DC 10 A



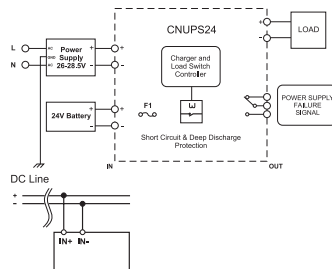
<b>Input</b>			
Input voltage	DC 26 – 28.5 V	Over voltage category	II
Input current	DC 3 – 10 A	Connection type	Connector with screws: 2.5 mm <sup>2</sup> (AWG 24–12)
Status display input	LED green: PS OK, LED red: Reverse polarity	Approvals	CE UKCA cULus (E249179)
	LED green: Battery OK, LED red: Battery low	Standards	UL 508 IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950 EN 55011 (CISPR11) Class A EN 55022 (CISPR22) Class A EN 61000-4-2 Level 3 EN 61000-4-3 Level 3 EN 61000-4-4 Level 3 EN 61000-4-5 Level 1 EN 61000-4-11 Level 2 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z) IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total
Parameterisation	Charging current adjustable by jumper		
Protection device Input	None		
<b>Energy storage</b>			
Memory type	Chemical (lead based)		
Nominal battery voltage	DC 24 V		
Max. charging current	DC 2 A or DC 4 A		
Max. battery capacity	75 % @ 26 V, 85 % @ 27 V, 100 % @ 28 V		
Backup time	Depends on battery and charging current		
Fuse for memory medium	Vehicle fuse 15 A / 32 V, Mini Type		
Deep discharge protection	18.5 V ± 0.5 V		
<b>Output</b>			
Rated voltage U <sub>N</sub>	DC 24 V	Comments	Suitable for power supply with applicable output voltage
Max. output current	DC 10 A		Load mode with simultaneous charging
Status display output	LED yellow: Load OK		Integrated battery fuse
Output voltage	DC 20 - 28 V		Deep discharging protection
			Battery not included
<b>General</b>			
Operation temperature range	-40 °C ... +70 °C (UL approved up to +60 °C)	<b>Monitoring</b>	
Derating	>60 °C: -0.25 A/°C	Switching voltage	DC 24 V
Relative air humidity	5 – 95 % RH, non-condensing	Switching current	DC 1 A
Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm	Isolation voltage	0.5 kV, 1 min.
Cooling	Free convection	Number of channels	1
Housing material	Aluminum	Monitored functions	Battery mode
Mounting	DIN rail mountable TS35 (EN 60715)	Contact type	Change over contact
Degree of protection	IP20 (EN 60529)		

Part No.	Type	Weight/unit kg	PU (units)
723110	CNUPS24	0.3	1

#### Dimensions



#### PIN assignment



# Power supply - Compact DC UPS, 480 W

## Uninterrupted DC system voltage

### DC UPS for lead batteries, NiMH (NiCd), Li-ION (LiFePO4)

Input: wide-range input DC 12 V, DC 24 V, output: max. DC 20 A



<b>Input</b>			
Input voltage	DC 12 V or 24 V	Max. power loss (Nominal operations)	<13 W
Input current	Max. DC 20 A	Max. power loss (Battery mode)	<18 W
Status display input	See monitoring	Charging efficiency	>90 %
Parameterisation	Button/LCD display Software Powermaster (free Download LUTZE web page)	Approvals	CE UKCA cULus (E249179)
Power Dissipation	<3 W	Standards	UL 508 IEC/EN 61010 IEC/EN 61010-2-201 IEC/EN 60950 EN 61000-6-4 EN 61000-6-2 IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z)
Protection device Input	None		
<b>Energy storage</b>			
Memory type	Chemical (lead based, Ni-MH / Ni-Cd, Li-ION / LiFePo <sub>4</sub> )	Comments	Monitoring via LCD display Suitable for lead batteries, NI-MH, Li Digital control Battery charging current up to 5 A Output current up to 20 A Cold start automatic Configuration / monitoring also via software Remote On / Off Battery not included
Nominal battery voltage	DC 12 V or DC 24 V		
Max. charging current	DC 5 A		
Max. battery capacity	Max. 150 Ah		
Switching time on memory medium	<5 µs		
Backup time	Can be configured max. up to deep discharging protection		
<b>Output</b>			
Rated voltage U <sub>N</sub>	DC 24 V		
Rated current I <sub>N</sub>	20 A		
Max. output current	DC 20 A, 35 A @ 5 s		
Status display output	See monitoring		
Output voltage	DC 10 - 29 V		
<b>General</b>			
Insulation voltage input / ground	0,5 kV, 1 min.	<b>User Interface</b>	
Operation temperature range	-40 °C ... +60 °C (UL approved up to +60 °C)	USB	Connection to PC
Relative air humidity	5 – 95 % RH, non-condensing	Control Elements	4 keys (menu selection and programming)
Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm	Status indication	LED red ON: System error, flashing: Battery mode
Cooling	Free convection	LCD display	1.5 inch, colour, graphic
Housing material	Aluminum	<b>Monitoring</b>	
Mounting	DIN rail mountable TS35 (EN 60715)	Switching voltage	30 V
Degree of protection	IP20 (EN 60529)	Switching current	2 A
Over voltage category	I (EN 50178)	Number of channels	2
Connection type	IN/Battery/Out : 6 pin connector 2.5 mm <sup>2</sup> , Grid dimensions 5.08 Auxiliary: 7 pin connector 0.5 mm <sup>2</sup> , Grid dimensions 2.54 Temperature sensor: 2 pin, friction lock, Grid dimensions 2 mm USB: Mini USB connector	Monitored functions	Coulomb counter, battery temperature, battery operating hours, no. of charging cycles
		Contact type	N/O contact

# Power supply - Compact DC UPS, 480 W

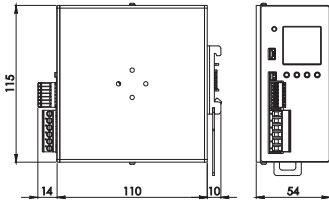
Uninterrupted DC system voltage

DC UPS for lead batteries, NiMH (NiCd), Li-ION (LiFePO4)

Input: wide-range input DC 12 V, DC 24 V, output: max. DC 20 A

Part No.	Type	Weight/unit kg	PU (units)
723100	CDCU20 12/24DC UPS	0.5	1

## Dimensions



# Power supply · Compact DC UPS, buffer module

Uninterrupted DC system voltage

Capacitive energy store

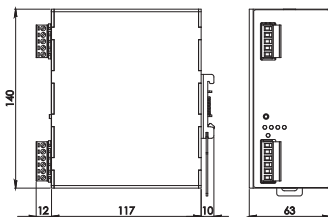
Input: wide-range input DC 12 V - DC 85 V, output: max. DC 20 A



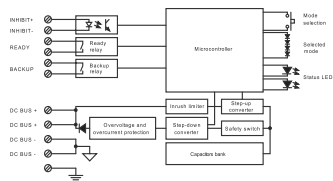
<p><b>Input</b> Input voltage</p> <p>Input current Status display input Parameterisation</p> <p><b>Energy storage</b> Memory type Discharge time at load current max</p> <p><b>Output</b> Rated current <math>I_N</math> Max. output current Ripple and noise Status display output Short circuit Output voltage Protection device</p> <p><b>General</b> Insulation voltage input / ground Operation temperature range</p> <p>Relative air humidity Dimensions (w x h x d) Cooling Housing material Mounting</p> <p>Degree of protection</p>	<p>DC 12 V / 24 V / 48 V / 72 V or automatic recognition Max. DC 20 A LED green: selected voltage Button Selection of input voltage</p> <p>Capacitive 12 V: 600 ms, 24 V: 300ms, 48 V: 150 ms, 72 V: 75 ms</p> <p>20 A 20 A &lt;250 mV @ DC 24 V, 20 A LED green: DC OK, LED red: Overload Enabled Input voltage -1 V Over voltage protection, active</p> <p>0.75 kV -40 °C ... +70 °C (UL approved up to +70 °C) 5 – 95 % RH, non-condensing 63.0 mm x 140.0 mm x 139.0 mm Free convection Aluminum DIN rail mountable TS35 (EN 60715) IP00 (EN 60529)</p>	<p>Connection type</p> <p>Approvals</p> <p>Standards</p> <p>Comments</p> <p><b>Monitoring</b> Switching voltage Switching current Number of channels Contact type</p>	<p>Plug-in screw terminal 2.5 mm<sup>2</sup> (AWG 24–12) CE UKCA cULus (E249179) UL 508 IEC/EN 61010-1 IEC/EN 61010-2-201 IEC/EN 60950 EN 55011 (CISPR11) Class A EN 55022 (CISPR22) Class A EN 61000-4-2 Level 3 EN 61000-4-3 Level 3 EN 61000-4-4 Level 2 EN 61000-4-5 Level 1 IEC 60068-2-6 (Vibration sinusoidal), 5-17.8 Hz: ±1.6 mm, 17.8-500 Hz: 2 g 2 hours / axis (X,Y,Z) IEC 60068-2-27 (Shock), 30 g 6 ms, 20 g 11 ms, 3 bumps / direction, 18 bumps total Input voltage range DC 12 V to DC 85 V Automatic detection of DC supply Economical design thanks to standard electrolyte capacitors Digital control Compact size</p> <p>DC 12 V DC 1 A 2 N/O contact</p>
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Part No.	Type	Weight/unit kg	PU (units)
723120	CBU150U	0.9	1

## Dimensions



## PIN assignment



# Power supply - Compact DC UPS, Lead acid battery housing

## Battery housing for two lead batteries 12 V / 1.2 Ah



### Energy storage

Memory type  
Max. charging current  
Fuse for memory medium

2× lead batteries DC 12 V / 1.2 Ah  
600 mA @ DC 12 V, 300 mA @ DC 24 V  
15 A, automatic resetting

### Output

Max. output current

5 A @ DC 2 V, 3 A @ DC 24 V

### General

Insulation voltage input / ground  
Operation temperature range

0.5 kV, 1 min.  
-20 °C ... +40 °C (or equivalent battery  
limit values)

Relative air humidity

5 – 95 % RH, non-condensing

Dimensions (w × h × d)

Cooling  
Housing material  
Mounting

54.0 mm × 115.0 mm × 135.0 mm

Free convection  
Aluminum  
DIN rail mountable TS35  
(EN 60715)

Degree of protection  
Over voltage category  
Connection type

IP20 (EN 60529)

II

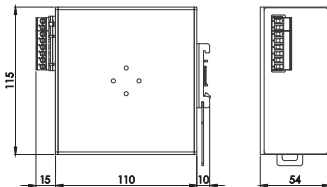
Connector with screws: 2.5 mm<sup>2</sup> (AWG  
24–12)

Comments

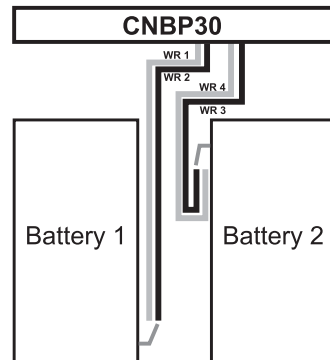
Suitable for DC 12 V and DC 24 V appli-  
cations, integrated self-healing fuse  
Batteries not included

Part No.	Type	Configured weight max./unit kg	PU (units)
723115	CNBP30	1.2	1

### Dimensions



### PIN assignment



# Notes

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# Business Management Sustainable and forward



## The future is blue

Sustainable enterprise means thinking and planning ahead, understanding and embedding the belief that long lasting success is more important than short-term profit maximisation.

This is an attitude that has existed within LUTZE for quite some time. Economic and environmental responsibilities complement each

other well and are reflected in the sustainable management and product policy - and from now in the **SkyBLUE** campaign.

We manufacture our products in a resourceful and energy-conscious manner. We use long lasting, environmentally-friendly materials. And our products, in turn, help our customers save energy and

resources.

Good for everyone: for us, for the environment, for our customers a win-win-win situation.

# ward-looking

*“The competitiveness of our industry and of its suppliers depends quite substantially on how we succeed in developing practical results. The results that we produce together today, are our competitive advantages in the future.”*

*Udo Lütze,  
Member of the Executive Committee of  
the Green Carbody Innovation Alliance*



## Goods with real value

The value of a product or a solution from LUTZE is determined by its sustainable qualities as well. Every innovation is only as successful in the future if it has a long-term positive effect. Therefore, we provide long lasting as well as highly efficient components. We are incorporating the necessary knowledge and manufacturing competence in numerous joint

projects with the objective of improving energy efficiency and sustainable technologies and industries. Thus, LUTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.



# RoHS

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723621	44										
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Highly flexible tray cables and continuous motion cables for industrial control, Ethernet, motor, VFD, and servo applications

### Connectivity Solutions

Servo cable assemblies, industrial Ethernet and M12 connectors, panel pass through devices and cable entry systems

### Cabinet Solutions

Control cabinet wiring with energy efficient and space saving *AirSTREAM* wiring system

### Control Solutions

Industrial power supplies, electronic control circuit protection, network gateways for IIoT, relays and signal converters

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