

PULS

# CP DIMENSION

CP Series | 120, 240, 480W | DIN rail power supplies



Efficient. Compact. Reliable.

# Efficient. Compact. Reliable.

The PULS CP series breaks all records in terms of efficiency, lifetime and dimensions. Using the latest power electronic technologies and highly sophisticated thermal design, this series sets new benchmarks in the field of single phase DIN rail power supplies.

Lowest power losses, breakthrough space-saving design and long product lifetime deliver the lowest cost of ownership to the customer.

Well suited for a wide range of international applications, the CP series comes with a variety of output voltage options and complies fully with the demands of hazardous locations (Class I Div 2, IECEx, ATEX) by design.



# Technical data

	240W CP10			
<b>Output</b>				
Output voltage nominal	12V	24V	36V	48V
Adjustment range	12 – 15V	24 – 28V	36 – 42V	48 – 56V
Output current nominal	16A	10A	6.7A	5.4A
Output current boost	19.2A	12A	8A	6A
Output current peak	48A	30A	21.5A	15A
<b>Input</b>				
AC input voltage nominal	100 – 240V	100 – 240V	100 – 240V	100 – 240V
AC input voltage range	85 – 264V	85 – 264V	85 – 264V	90 – 264V
Power factor	0.99 – 0.96	0.99 – 0.97	0.99 – 0.97	0.99 – 0.98
AC inrush current typical	6A	6A	6A	6A
DC input voltage nominal	110 – 150V	110 – 150V	110 – 150V	110 – 150V
DC input voltage range	88 – 187V	88 – 187V	88 – 187V	88 – 187V
<b>Efficiency</b>	<b>94.3%</b>	<b>95.2%</b>	<b>95.4%</b>	<b>95.5%</b>
<b>MTBF SN 29500 at +40°C,</b>	<b>690kh</b>	<b>661kh</b>	<b>661kh</b>	<b>699kh</b>
<b>Lifetime expectancy at +40°C, 100% load, AC 230V</b>	<b>&gt; 97kh</b>	<b>&gt; 120kh</b>	<b>&gt; 130kh</b>	<b>&gt; 109kh</b>
<b>Mechanical data</b>				
Dimensions WxHxD	39 x 124 x 117mm			
Weight	600g			
<b>Order number</b>	<b>CP10.121 <sup>1)</sup></b> <b>CP10.122 <sup>1) 2)</sup></b>	<b>CP10.241</b> <b>CP10.242 <sup>2)</sup></b>	<b>CP10.361</b>	<b>CP10.481</b>

All parameters are specified at nominal values, 230Vac, 50Hz, +25°C ambient temperature and 5 minutes run-in time unless otherwise noted. Technical data is subject to change without notice. 1) With integrated shut down input. 2) With extended DC input voltage range up to 360V.

## General data for all units

Power reserves (Output current boost)	20% continuous < 45°C short-term from +45°C up to +60°C
Connection type (except special versions)	screw terminals max. wire diameter (incl. ferrules) 2.8mm
Operating temp. range	-25°C to +70°C
Output derating	2.5% / K from +60°C
Humidity	5% to 95% r. h.
Altitude (with derating)	0 to 2000m (up to 6000m)
Shock test	30g 6ms, 20g 11ms according IEC60068-2-27
Harmonic current emissions	according EN 61000-3-2, Class A, C <sup>1)</sup>
Overload protection	Hiccup <sup>plus</sup> <13V
DC-OK relay contact	integrated
Warranty	3 years

\*) See details in data sheet.



# Technical data

	<b>120W CP5</b>		<b>480W CP20</b>	
<b>Output</b>				
Output voltage nominal	12V	24V	24V	48V
Adjustment range	12 – 15V	24 – 28V	24 – 28V	48 – 56V
Output current nominal	10A	5A	20A	10A
Output current boost	12A	6A	24A	12A
Output current peak	30A	15A	60A	30A
<b>Input</b>				
AC input voltage nominal	100 – 240V	100 – 240V	100 – 240V	100 – 240V
AC input voltage range	85 – 264V	85 – 264V	85 – 264V	85 – 264V
Power factor	0.99 – 0.91	0.99 – 0.91	0.95	0.95
AC inrush current typical	4A	4A	4.5A	4.5A
DC input voltage nominal	110 – 150V	110 – 150V	110 – 150V	110 – 150V
DC input voltage range	88 – 187V	88 – 187V	88 – 187V	88 – 187V
<b>Efficiency</b>	<b>94%</b>	<b>94.3%</b>	<b>95.6%</b>	<b>96.3%</b>
<b>MTBF SN 29500 at +40°C,</b>	TBD	TBD	<b>590kh</b>	TBD
<b>Lifetime expectancy at +40°C, 100% load, AC 230V</b>	<b>&gt;110kh</b>	<b>&gt;131kh</b>	<b>&gt; 94kh</b>	<b>&gt; 110kh</b>
<b>Mechanical data</b>				
Dimensions WxHxD	32 x 124 x 102mm		48 x 124 x 127mm	
Weight	440g		820g	
<b>Order number</b>	<b>CP5.121</b>	<b>CP5.241 CP5.242 <sup>2)</sup></b>	<b>CP20.241 CP20.241-V1 <sup>1)</sup> CP20.242 <sup>2)</sup></b>	<b>CP20.481</b>

All parameters are specified at nominal values, 230Vac, 50Hz, +25°C ambient temperature and 5 minutes run-in time unless otherwise noted. Technical data is subject to change without notice. 1) With integrated shut down input. 2) With extended DC input voltage range up to 360V.

## General data for all units

Power reserves (Output current boost)	20% continuous < 45°C short-term from +45°C up to +60°C
Connection type (except special versions)	screw terminals max. wire diameter (incl. ferrules) 2.8mm
Operating temp. range	-25°C to +70°C
Output derating	2.5% / K from +60°C
Humidity	5% to 95% r. h.
Altitude (with derating)	0 to 2000m (up to 6000m)
Shock test	30g 6ms, 20g 11ms according IEC60068-2-27
Harmonic current emissions	according EN 61000-3-2, Class A, C <sup>1)</sup>
Overload protection	Hiccup <sup>plus</sup> <13V
DC-OK relay contact	integrated
Warranty	3 years

\*) See details in data sheet.



# Special versions

## Screwless terminal options

Spring-clamp and push-in terminals are an efficient alternative to the traditional screw terminal connections allowing time-saving installation without the need for tools.



### Push-in terminals

**CP5.241-S2**  
**CP10.241-S2**  
**CP20.241-S2**

### Spring-clamp terminals

**CP5.241-S1**  
**CP10.241-S1**  
**CP20.241-S1**

## Conformal coating

A specially applied protective coating protects internal electronic components from moisture, dust, extreme shocks and vibration.



**CP5.241-C1**  
**CP10.241-C1**  
**CP10.241-R2-C1**  
**CP20.241-C1**  
**CP20.241-R2-C1**

# Market-specific versions

## For medical applications

These power supplies are 100% convection cooled, highly efficient, reliable and certified according to IEC 60601-1 3<sup>rd</sup> edition, 2 MOPP (Means Of Patient Protection) and IEC 60601-1-2 4<sup>th</sup> edition (EMC).



**CP10.241-M1**

## For railway applications

The power supply is EN 50155 certified and has conformal coated PCBs. It is optimised for the railway standard DC input voltage of 96 – 110V (-30% / +40%) and has a wide operational temperature range (-40 °C to +70 °C) without derating.



**CP10.241-60**

# Redundancy revolution

## Redundant systems without additional modules

PULS offers CP power supplies with an integrated decoupling function based on efficient MOSFET technology. This means there is no need for additional redundancy modules in 1+1 and n+1 redundant systems.



## Keep the system simple

- Reduced system complexity and costs
- Shorter installation times
- Space-savings of more than 45%
- Versions with hot-swap or spring-clamp terminals

24V 10A	<b>CP10.241-R1</b>	Spring-clamp terminals
	<b>CP10.241-R2</b>	Hot-swap connectors
	<b>CP10.241-R2-C1</b>	Hot-swap and conformal coating
	<b>CP10.242-R2</b>	Hot-swap and max. DC input 360V
24V 20A	<b>CP20.241-R1</b>	Spring-clamp terminals
	<b>CP20.241-R2</b>	Hot-swap connectors
	<b>CP20.241-R2-C1</b>	Hot-swap and conformal coating
	<b>CP20.242-R2</b>	Hot-swap and max. DC input 360V

# Performance and quality benchmarks

Data for 24V versions

**CP series**  
PULS

vs.

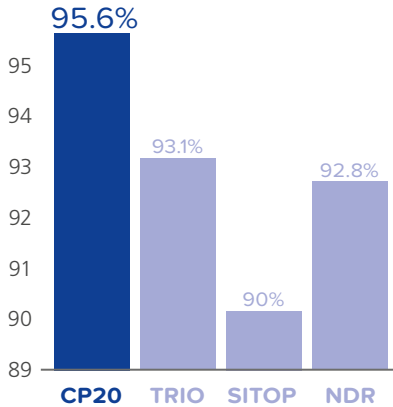
**TRIO-PS-2G**  
PHOENIX CONTACT

**SITOP PSU100S**  
Siemens

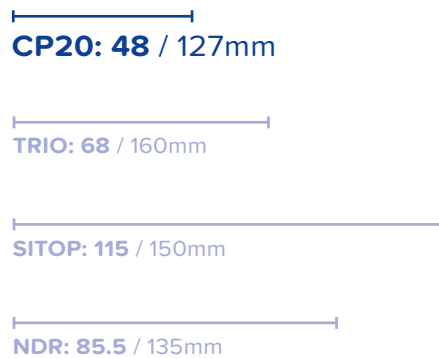
**NDR**  
MEAN WELL

## 480W

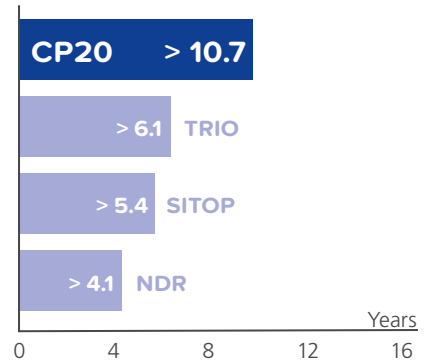
### Efficiency



### Width / Depth

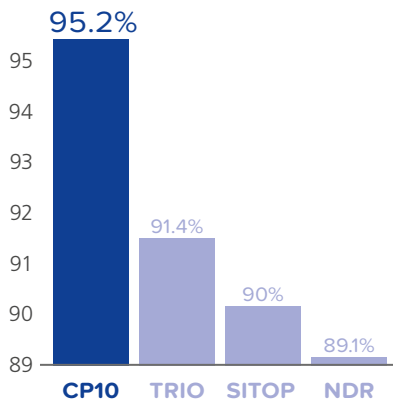


### Minimum lifetime



## 240W

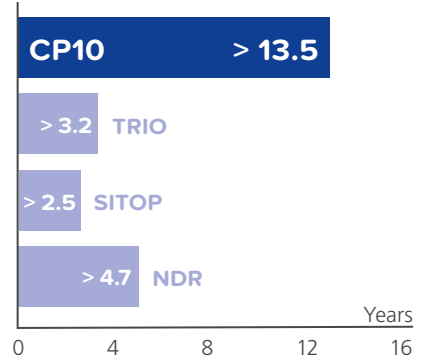
### Efficiency



### Width / Depth

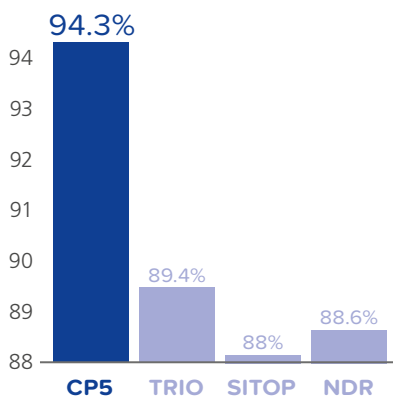


### Minimum lifetime



## 120W

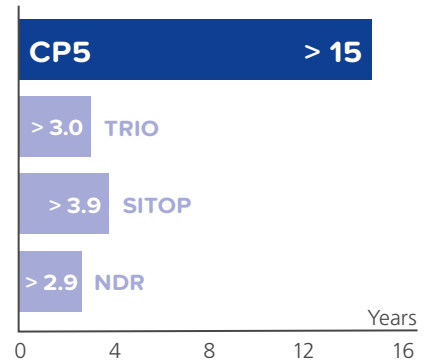
### Efficiency



### Width / Depth



### Minimum lifetime



All data are based on laboratory assessments and the technical measurements were conducted under equal conditions: 230Vac / Full load / +40°C

# Benefits at a glance

**480W power supply in  
48mm**

CP20.241 | 480W



## Reduces system costs

Thanks to a high power density and small size, CP power supplies save valuable space in the cabinet. They can provide up to 20% power boost continuously for ambient temperatures below +45°C; and short-term from +45°C up to +60°C. The screwless spring-clamp and push-in terminals reduce installation time and the low inrush current saves costs on fuses and switches.

**Minimum lifetime  
> 15 years**

CP5.241 | 120W



## Improves process uptime

Due to very low heat losses, electronic components are under significantly less stress. This leads to typical lifetime values of 11 to 15 years and in addition reduces cooling energy required for the system.

**High MTBF  
699 000 hours**

CP10.481 | 240W



## Increases reliability

All CP power supplies are characterised by a very high reliability specification. The high typical lifetime and MTBF (Mean Time Between Failures) values make them a safe investment in any system. In addition the use of high-quality electrical components and the robust mechanical design reduce the risk of failures significantly.

**Low operating costs  
96.3% efficiency**

CP20.481 | 480W



## Minimises operating costs

The CP series sets a new benchmark in terms of low power consumption. With their high efficiency values the power supplies help companies to save operating costs and reduce CO<sub>2</sub> emissions permanently.

**Perfect solutions  
Worldwide**



## Application Support

For further information, simply talk to our experienced application and sales support. Our engineers are pleased to learn more about your applications and help you to find the perfect solution for your system or machine.

**Please check our website for your PULS appointed contact person.**