POWER SUPPLY 1-PHASE, 24 V DC DIMENSION C SERIES, GENERATION 2

CP10.241
POWER SUPPLY 24VDC 240W 10A



- Output 10 A
- Up to 95.2% efficiency
- Only 39 mm wide
- 20% power reserve
- Hiccup Plus

PRODUCT DESCRIPTION

Puls Dimension C-series stands for cost optimization without compromising quality, reliability or performance.

CP10.241 is the second generation C-series 1-phase 10 A that sets new records by using the latest technology and sophisticated thermal design. With an efficiency of 95%, the power losses are very small and thus the width is reduced down to 39 mm. The efficiency is also very high at lower loads which is the normal operating condition. The mean value is on the whole 94.3% at 230 V ac. No-load loss is only 1.8 W.

Power boost of 20% enables higher current extraction without voltage drops. This is especially useful during start-ups and to bridge the current peaks in the application. The power reserve can be used continuously up to + 45°C and short periods from +45 to +60°C.

Short-circuit currents. CP10 can provide short circuit current which is 3 times the nominal current for at least 12 ms, which helps secondary fuses and achieve selectivity. For more information see under Sec, fuses.

Hiccup Plus.
With Pulse new short circuit technology ensures optimum protection. The unit leaves a very high short circuit that solves secondary fuses and provide sufficient starting current for example dc motors. If the output voltage drops below 13 V dc will be 2x the rated current is left for 2 seconds, then close the unit by the end to make a new restart attempts after about 18 seconds. This feature ensures a high short-circuit / overload current while avoiding a constant high current that can lead to thermal problems with cables and component damage.

More technical advantages. CP10 has active power factor correction (PFC) and active inrush current limiter that effectively reduces start currents which are ideal if several units are connected in the same phase or if the supply is current limited through example. AC UPS. The protection is always active, regardless of the temperature. DC-OK output, wide temperature range, a large number of approvals and transient filter which ensures operation in störrik electrical environment makes the unit suitable for virtually all installations.

For ventilation, we recommend a clearance of 40 mm over 20 mm below.
We recommend 5 mm air gap to the sides. (15 mm on the sides of adjacent product is a heat source.)

Switching



A:Primary side/control voltage

B: Secondary. Output voltage

C: Potentiometer adjustable output voltageg 24-28 V dc

D: DC-OK LED. Lights when the voltage is 90% of the set value

E: DC-OK relay output. Closes when the output voltage is OK

Secondary fuses

Breakers is the most common type of fuse for ac voltage but is also used for dc voltages. Power supply always has a current limitation compared with an electricity network which hampers tripping of a circuit breaker of the magnetic field, especially if the voltage is as low as 24 V dc. Greater consideration must be given to the cable diameter and cable lengths. This even if the power supply is able to deliver high short circuit currents. For long cables and / or thin cable area so the solution is electronic fuses. Click on the link for more information.

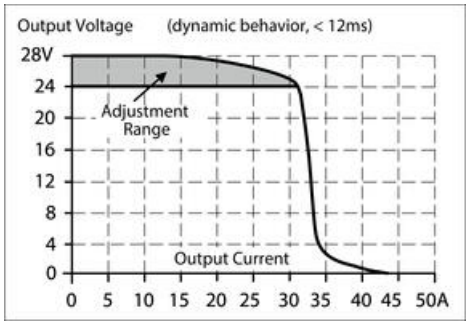
Pulse CT10.241 have high short-circuit currents which enables tripping within 10 ms of length and cross sectional area is included within the specification.

Save tripping of breakers with different cable lengths/diameters

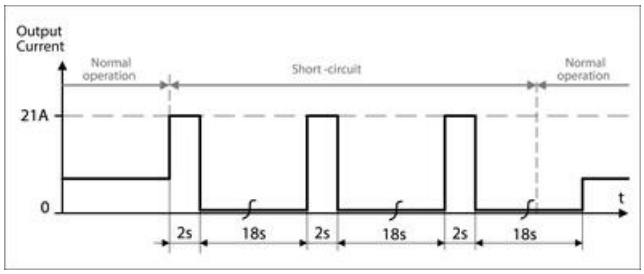
Maximal wire length*) for a fast (magnetic) tripping:

	0.75mm²	1.0mm²	1.5mm²	2.5mm²
C-2A	30m	37m	54m	84m
C-3A	25m	30m	46m	69m
C-4A	9m	15m	25m	34m
C-6A	3m	3m	4m	7m
B-6A	12m	15m	21m	34m
B-10A	3m	3m	4m	9m
B-13A	2m	2m	3m	6m

Short circuit. Fig 3-2



Hiccup-function. Fig 3-3



Description of Hiccup^{plus}-function

Thanks to the unique Pulse Hiccup^{plus} ensures a high short circuit current while avoiding the risk of overheated cables and damage to the connected loads. When a short circuit occurs following
1. High peak power that enables tripping in 12 ms Figure 3-2

2. The unit leaves the double power for 2 s 21 A

3. After 2 seconds the unit shuts off. Then try to restart every 18 seconds. If the fault is removed, the unit starts automatically, otherwise it will lose further 18 s. The operation does not burden the cabling and does not cause damage to the electronics

SPECIFICATIONS

Input voltage range	Wide-range
Number of phases	1
Input voltage AC	100-240 V
Input voltage ac min	85 V AC
Input voltage ac max	264 V AC
Input voltage DC	110-150 V
Input voltage dc min	88 V DC
Input voltage dc max	180 V DC
Inrush current at 120 V ac typical	6 A
Input current at 230 V ac typical	9 A
Power Factor at 120 V AC, full load. Typical	0.99
Power Factor at 230 V AC, full load. Typical	0.97
Supply Frequency	50-60 ±6 %
Power Consumption At 120 V AC	2.15 A
Power Consumption At 230 V AC	1.13 A
Type Power Supply	AC-DC

Output voltage	24 V DC
Output voltage min	24 V DC
Output voltage max	28 V DC
Output Current	10 A

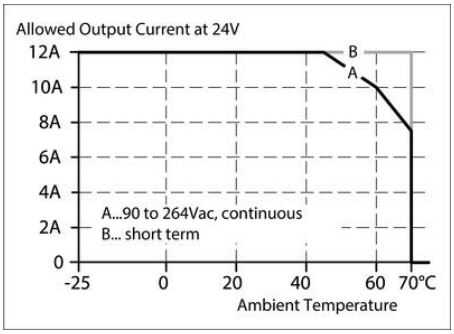
Effect	240 W
Power Reduction Of 60 To 70 ° C	6 W/°C
Ripple. max	50 mV pp
Temperature Range Without Derating From	-25 °C
Temperature Range Without Derating To	60 °C

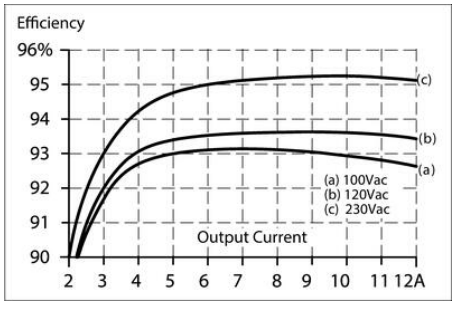
Efficiency At 120 V AC, full load. Typical	93.6 %
Efficiency At 230 V AC. Typical	94.3 %
Efficiency At 230 V AC, full load. Typical	95.2 %
Lifetime at 120 V ac, full load and +40 ° C	75000 h
Lifetime at 230 V ac, full load and +40 ° C	120000 h
MTBF (IEC 61709) 230 V AC, Maximum Load, 40 ° C	661000 h

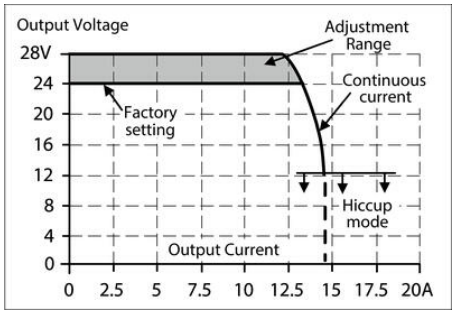
Width	39 mm
Height	124 mm
Depth	117 mm
Weight	0.6 kg

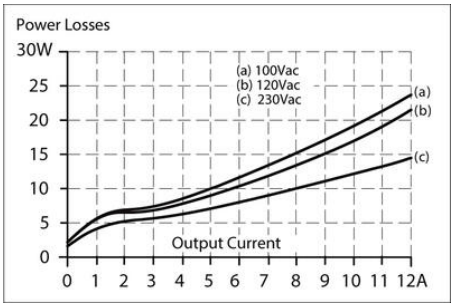
Clamp type	Screw

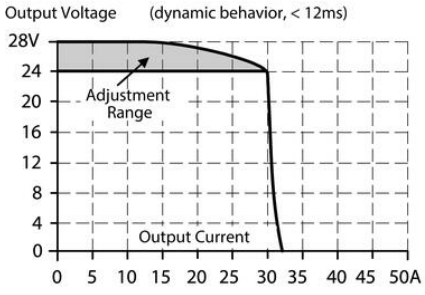
Series	Dimension C
Approvals	ABS, CB, CE, CSA, EX, GL, IECEx, UL
DC relay output	Yes
Material Protection	Aluminium
Hold-up time at 120 V AC, full load. Typical.	37 ms
Hold-up time at 230 V AC, full load. Typical.	37 ms
IP Class	IP20
Active Transient	Yes











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C-6A	3 m	3 m	4 m	7 m
C-8A				
B-6A	12 m	15 m	21 m	34 m
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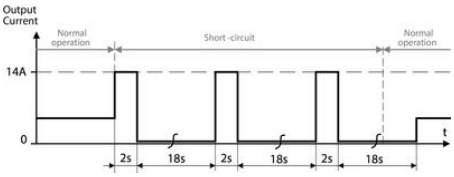
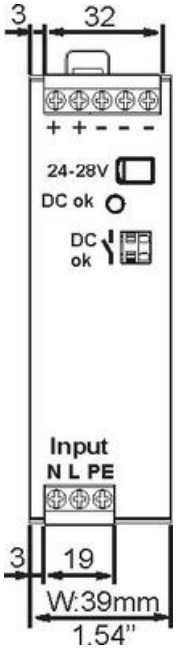
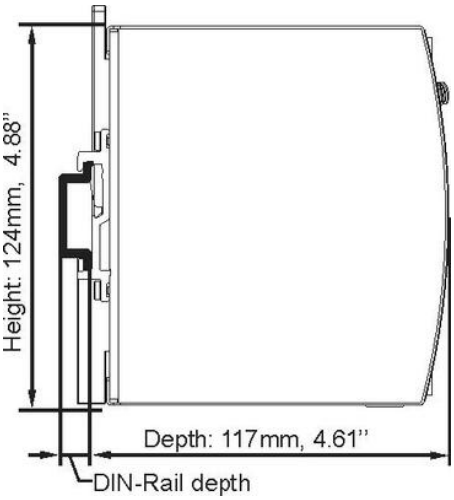
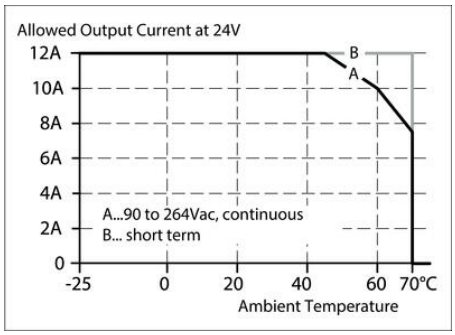
*) Don't forget to consider twice the distance to the load (or cable length) when calculating the total wire length (+ and – wire).

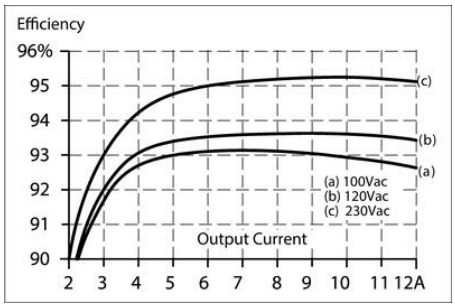


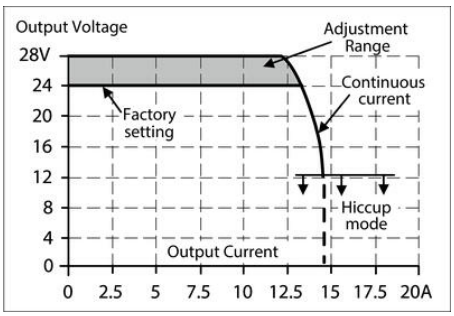


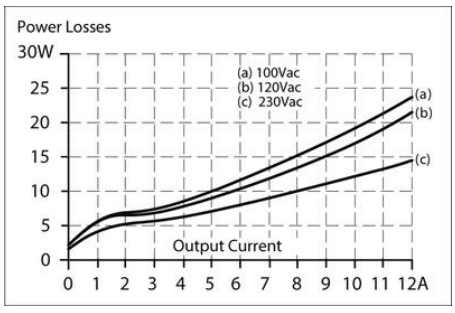


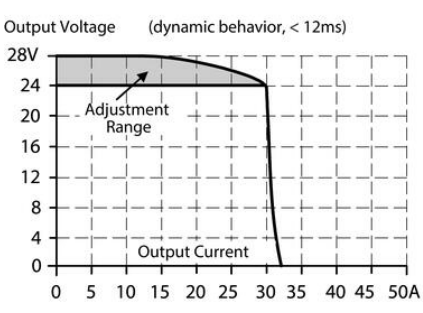












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