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POWER SUPPLY 1-PHASE, 24 V DC, DIMENSION C SERIES, GENERATION 2, 5A

CP5.241
PSU 100-240V ac I/P 24V dc 5A 120W O/P



- Output current 5 A
- Efficiency up to 94.3%
- 20% power reserve
- Only 32mm wide

PRODUCT DESCRIPTION

The Dimension CP-Series are cost optimized power supplies without compromising quality, reliability and performance. The CP-Series is part of the DIMENSION power supply family.
The CP5.241 power supplies come with three connection terminal options: screw, spring-clamp or push-in terminals, which are optimized for automated wiring. The CP5.241-C1 is equipped with conformal coated pc-boards preferred for the use in harsh environments and the CP5.242 features an enhanced DC input voltage range.
The most outstanding features of these units are the small size, the high efficiency, the electronic inrush current limitation, active PFC and the wide operational temperature range. The devices have a power reserve of 20% included, which may even be used continuously at temperatures up to +45°C. Additionally, they can deliver 3 times the nominal output current for 12ms which helps to trip fuses on faulty output branches.
High immunity to transients and power surges as well as low electromagnetic emission, a DC-OK signal contact for remote monitoring, and a large international approval package for a variety of applications makes this unit suitable for nearly every situation.

- AC 100-240V Wide-range Input
- Widthonly 32mm
- Efficiencyup to 94.3%
- ExcellentPartial Load Efficiency
- 20%Output Power Reserves
- EasyFuse Breaking – 3 times nominal current for 12ms
- SafeHiccupPLUS Overload Mode
- ActivePower Factor Correction (PFC)
- MinimalInrush Current Surge
- Full Power Between -25°C and +60°C
- DC-OKRelay Contact
- 3Year Warranty

TECHNICAL DATA

INPUT DATA

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	5 A
Inrush current at 230 V ac typical	6 A
Input voltage range	Wide-range
Power factor at 120 V ac, full load. Typical	0.98
Power factor at 230 V ac, full load. Typical	0.91
Number of phases	1

OUTPUT DATA

Output voltage	24 V DC
Output voltage min	24 V DC
Output voltage max	28 V DC
Output current	5 A
Power	120 W

EFFICIENCY / LIFETIME / MTBF

Efficiency at 120 V ac, full load, typical	93.6 %
Efficiency at 230 V ac, typical	92 %
Efficiency at 230 V ac, full load, typical	94.3 %
Lifetime at 120 V ac, full load and +40 ° C	143000 h
Lifetime at 230 V ac, full load and +40 ° C	166000 h
MTBF (IEC 61709) 230 V ac, max load, 40 ° C	876000 h

DIMENSIONS

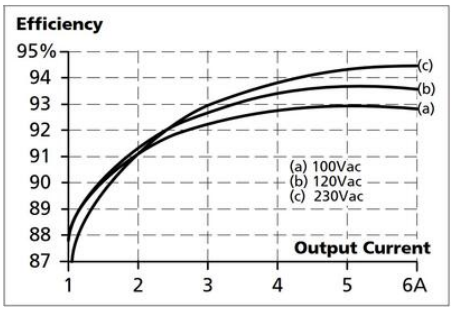
Width	32 mm
Height	124 mm
Depth	102 mm
Weight	0.44 kg

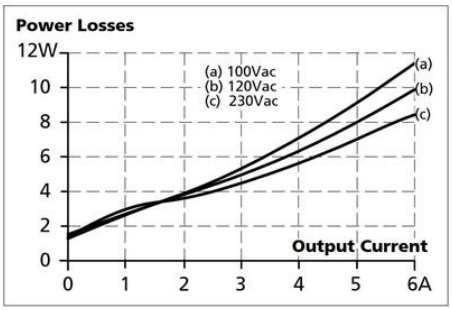
OTHER

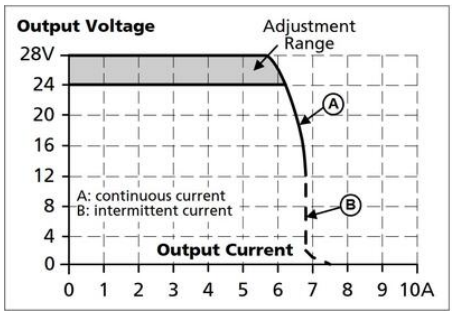
Approvals	ATEX, CE, cULus, IECEx, IEC 62368-1:2018
Hold time at 120 V ac, typical full load	35 ms
Hold time at 230 V ac, typical full load	35 ms
IP class	IP20
Clamp type	Screw
Material protection	Aluminium

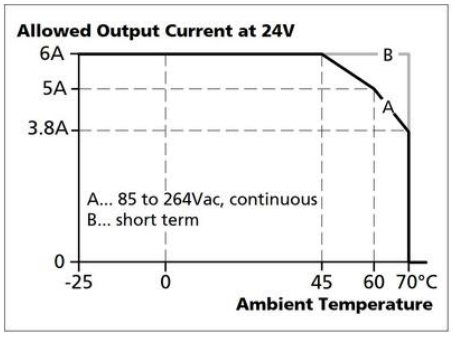
Supply frequency	50-60 ±6 %
Ripple max	50 mV pp
Series	Dimension C
Power consumption 120 V ac	1.09 A
Power consumption 230 V ac	0.6 A
Power drop from +60 °C to + 70 °C	3 W/°C
Temperature min without derating	-25 °C
Temperature max without derating	60 °C

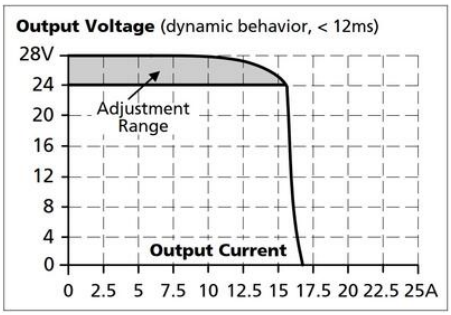
Type Power Supply	AC-DC
Active Transient	Yes
Conformal coated	No
DC relay output	Yes

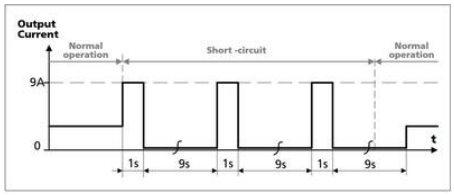




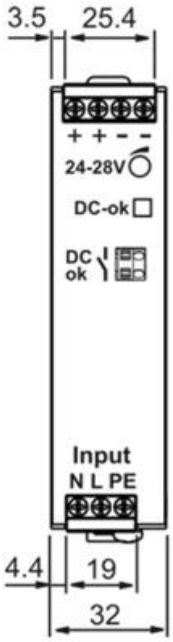


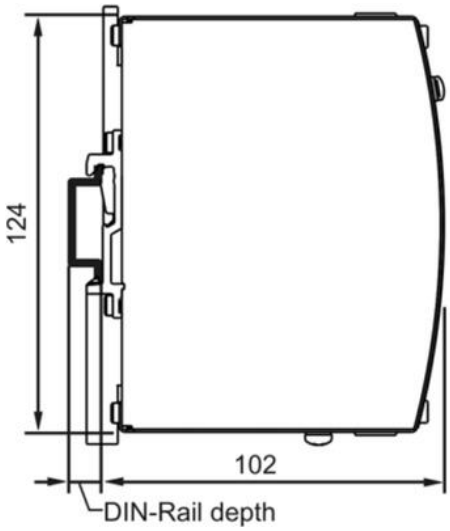


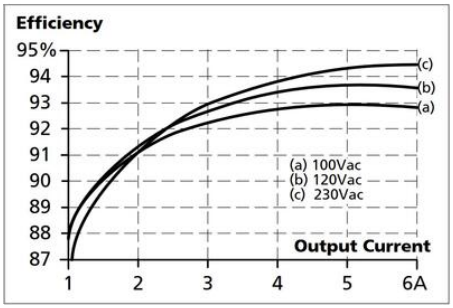


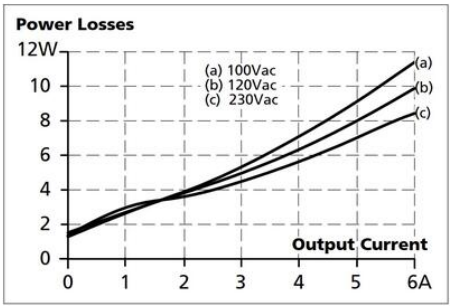


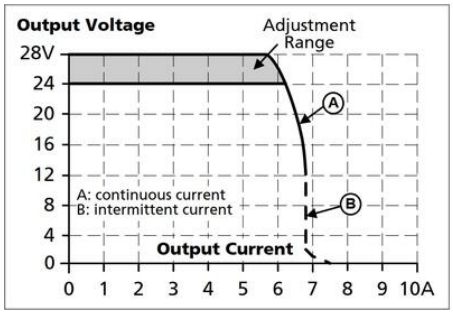

B
+ + − −
DC 24V 5A
24 - 28V
C
DC ok
D
13
14
E
PULS
DIMENSION
CP5.241
Power Supply
AC 100-240V
N L
A

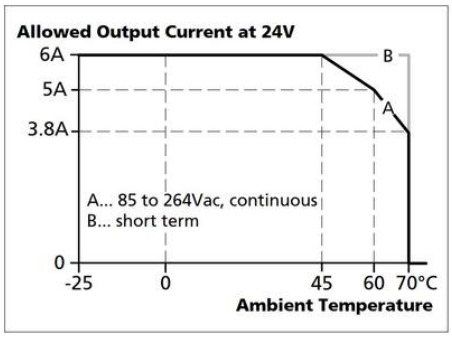

3.5
25.4
+ + − −
24-28V
DC-ok
DC ok
Input
N L PE
4.4
19
32

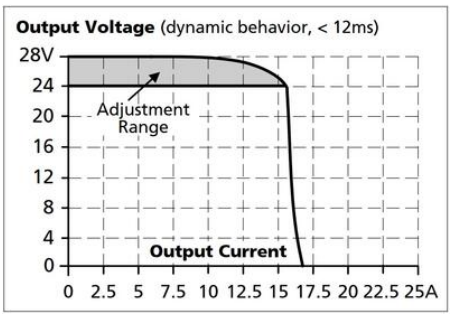

124
102
DIN-Rail depth

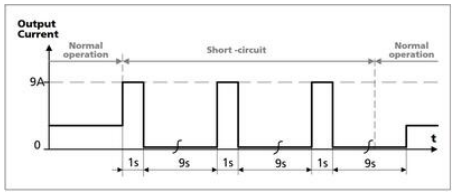

Efficiency
95%
94
93
92
91
90
89
88
87
(c)
(b)
(a)
(a) 100Vac
(b) 120Vac
(c) 230Vac
Output Current
1 2 3 4 5 6A


Power Losses
12W
10
8
6
4
2
0
(a) 100Vac
(b) 120Vac
(c) 230Vac
(a)
(b)
(c)
Output Current
0 1 2 3 4 5 6A


Output Voltage
Adjustment Range
28V
24
20
16
12
8
4
0
A
B
A: continuous current
B: intermittent current
Output Current
0 1 2 3 4 5 6 7 8 9 10A


Allowed Output Current at 24V
6A
5A
3.8A
0
B
A
A... 85 to 264Vac, continuous
B... short term
-25 0 45 60 70°C
Ambient Temperature


Output Voltage (dynamic behavior, < 12ms)
28V
24
20
16
12
8
4
0
Adjustment Range
Output Current
0 2.5 5 7.5 10 12.5 15 17.5 20 22.5 25A


Output Current
Normal operation
Short -circuit
Normal operation
9A
0
1s
9s
1s
9s
1s
9s
t