Primary switch mode power supplies
CP-D range
Benefits and advantages


2CDC 275 031 F0b07

- Output voltages 12 V, 24 V
- Adjustable output voltages (devices > 10 W)
- Output currents 0.42 A / 0.83 A / 1.3 A / 2.1 A / 2.5 A / 4.2 A
- Power range 10 W, 30 W, 60 W, 100 W
- Wide range input 100-240 V AC (90-264 V AC, 120-370 V DC)
- High efficiency of up to 89 %
- Low power dissipation and low heating
- Free convection cooling (no forced cooling with ventilators)
- Ambient temperature range during operation -10...+70 °C
- Open-circuit, overload and short-circuit stable
- Integrated input fuse
- U/I characteristic (fold-forward behaviour at overload – no switch-off)
- LEDs for status indication
- Light-grey enclosure in RAL 7035
- Approvals / Marks (depending on device, partly pending):

Width and structural form

With their width between 18 to 90 mm only, the CP-D range switch mode power supplies are ideally suited for installation in distribution panels.


2CDC 271 027 F0007

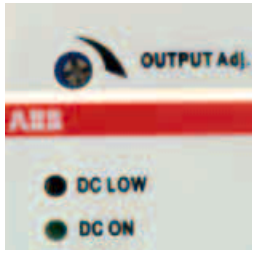
Wide range input

Optimised for world-wide applications: The CP-D power supplies can be supplied with 90-264 V AC or 120-370 V DC.

2CDC 276 033 F0007

Adjustable output voltage

The CP-D range types > 10 W feature a continuously adjustable output voltage. Thus, they can be optimally adapted to the application, e.g. compensating the voltage drop caused by a long line length.



2CDC 276 032 F0007-a

Primary switch mode power supplies
CP-D range
Ordering details

CP-D 12/0.83,
CP-D 24/0.42

CP-D 12/2.1
CP-D 24/1.3

CP-D 24/2.5

CP-D 24/4.2

Type	Rated input voltage	Rated output voltage / current	Order code	Pack. unit pieces	Price 1 piece	Weight 1 piece kg / lb
CP-D 12/0.83	100-240 V AC	12 V DC / 0.83 A	**1SVR 427 041 R1000**	1		0.06 / 0.13
CP-D 12/2.1	100-240 V AC	12 V DC / 2.1 A	**1SVR 427 043 R1200**	1		0.19 / 0.41
CP-D 24/0.42	100-240 V AC	24 V DC / 0.42 A	**1SVR 427 041 R0000**	1		0.06 / 0.13
CP-D 24/1.3	100-240 V AC	24 V DC / 1.3 A	**1SVR 427 043 R0100**	1		0.19 / 0.41
CP-D 24/2.5	100-240 V AC	24 V DC / 2.5 A	**1SVR 427 044 R0200**	1		0.25 / 0.55
CP-D 24/4.2	100-240 V AC	24 V DC / 4.2 A	**1SVR 427 045 R0400**	1		0.32 / 0.71

• Approvals 168
• Dimensional drawings 176
• Technical data 172
• Technical diagrams 176

Primary switch mode power supplies
CP-D range
Technical data

Data at T_a = 25 °C, U_{IN} = 230 V AC and rated values, if nothing else indicated

Type		CP-D 12/0.83	CP-D 12/2.1
Input circuit - supply circuit		**L, N**	
Rated input voltage U_{IN}		100-240 V AC	
Input voltage range		90-264 V AC / 120-370 V DC	
Frequency range AC		47-63 Hz	
Typical input current / typical power consumption	at 110 V AC	200 mA / 12.68 W	502 mA / 31.14 W
	at 230 V AC	128.3 mA / 13.01 W	277 mA / 31.2 W
Inrush current	at 230 V AC	30 A (max. 3 ms)	50 A (max. 3 ms)
Power failure buffering		> 30 ms	
Internal input fuse		1 A slow-acting / 250 V AC	2 A slow-acting / 250 V AC
Indication of operational states			
Output voltage	DC ON: green LED	⎍: output voltage applied	
	DC LOW: red LED	⎍: output voltage too low	
Output circuit		**+, -**	**++, --**
Rated output voltage		12 V DC	
Tolerance of the output voltage		±1 %	
Adjustment range of the output voltage		-	12-14 V DC
Rated output power		10 W	30 W
Rated output current I_r	$T_a \leq 60$ °C	0.83 A	2.1 A
Derating of the output current	60 °C < $T_a \leq$ 70 °C	2.5 %/K	
Deviation with load change	statical	max. 1 %	
	dynamical 10-90%		
change of input voltage within the input voltage range		max. 1 %	
Control time		< 1 ms	
Starting time after applying the supply voltage	at I_r	1000 ms	
Response time	at rated load	typ. 1 ms	
Residual ripple and switching peaks	BW = 20 MHz	50 mV	
Parallel connection		no	
Series connection		yes, to increase voltage	
Resistance to reverse feed		18 V / 1 s	
Power factor correction (PFC)		no	
Output circuit - No-load, overload and short-circuit behaviour			
Output curve		U/I curve	
Short-circuit protection		continuous short-circuit statility	
Short-circuit behaviour		continuation with current limitation	
Current limitation at short circuit		typ. 1.4 A	typ. 5.9 A
Overload protection		current limitation	
No-load protection		continuous no-load stability	
Starting of capacitive loads		unlimited	
Gerneral data			
Efficiency		typ. 78 %	typ. 82 %
Duty time		100 %	
Dimensions (WxHxD)		18 x 91 x 57.5 mm [0.71 x 3.58 x 2.26 in]	53 x 91 x 57.5 mm [2.09 x 3.58 x 2.26 in]
Weight		0.06 kg (0.13 lb)	0.19 kg (0.41 lb)
Material of enclosure		plastic	
Mounting		DIN rail (EN 60715), snap-on mounting without any tool	
Mounting position		horizontal	
Minimum distance to other units	horizontal / vertical	25 mm / 25 mm (0.98 in / 0.98 in)	
Degree of protection	enclosure / terminals	IP20 / IP20	
Protection class		II	

Primary switch mode power supplies
CP-D range
Technical data

Data at T_a = 25 °C, U_{IN} = 230 V AC and rated values, if nothing else indicated

Type		CP-D 12/0.83	CP-D 12/2.1
Electrical connection - Input circuit / Output circuit			
Wire size	fine-strand with wire end ferrule	0.2-2 mm² (24-14 AWG)	
	fine-strand without wire end ferrule		
	rigid		
Stripping length		6 mm (0.24 in)	
Tightening torque		0.36-0.56 Nm	
Environmental data			
Ambient temperature range	operation	-25…+70 °C	
	full load	-25…+60 °C	
	storage	-25…+85 °C	
Damp heat (cyclic) (IEC/EN 60068-2-30)		4 x 24 cycles, 40 °C, 95 % RH	
Vibration (sinusoidal) (IEC/EN 60068-2-6)		50 m/s², 10 Hz - 2 kHz	
Shock (half-sine) (IEC/EN 60068-2-27)		40 m/s², 22 ms	
Isolation data			
Rated insulation voltage U_i	input circuit / output circuit	3 kV AC	
Pollution category		2	
Standards			
Product standard		EN 61204	
Low Voltage Directive		2006/95/EC	
EMC Direcitve		2004/108/EC	
Electrical safety		UL 508, UL 60950-1, EN 60950-1	
Protective low voltage		SELV (EN 60950-1)	
Electromagnetic compatibility			
Interference immunity		EN 61000-6-2	
electrostatic discharge (ESD)	IEC/EN 61000-4-2	Level 4 (4 kV / 8 kV)	Level 4 (8 kV / 15 kV)
electromagnetic field (HF radiation resistance)	IEC/EN 61000-4-3	Level 3 (10 V/m)	
fast transients (Burst)	IEC/EN 61000-4-4	Level 4 (4 kV)	
powerful impulses (Surge)	IEC/EN 61000-4-5	Level 4 (2 kV L-L)	
HF line emission	IEC/EN 61000-4-6	Level 3 (10 V)	
Interference emission		EN 61000-6-3	
electromagnetic field (HF radiation resistance)	IEC/CISPR 22, EN 55022	Class B	
HF line emission	IEC/CISPR 22, EN 55022	Class B	

Primary switch mode power supplies
CP-D range
Technical data

Data at T_a = 25 °C, U_{IN} = 230 V AC and rated values, if nothing else indicated

Type		CP-D 24/0.42	CP-D 24/1.3	CP-D 24/2.5	CP-D 24/4.2
Input circuit - supply circuit		**L, N**			
Rated input voltage U_{IN}		100-240 V AC			
Input voltage range		90-265 V AC / 120-370 V DC			
Frequency range AC		47-63 Hz			
Typical input current / typical power consumption	at 110 V AC	184 mA / 11.62 W	600 mA / 37.92 W	1120 mA / 69.3 W	1800 mA / 117.3 W
	at 230 V AC	120.6 mA / 12 W	344 mA / 38.16 W	660 mA / 70.1 W	900 mA / 114.4 W
Inrush current	at 230 V AC	30 A (max. 3 ms)	50 A (max. 3 ms)	60 A (max. 3 ms)	
Power failure buffering		> 30 ms		> 60 ms	
Internal input fuse		1 A slow-acting / 250 V AC	2 A slow-acting / 250 V AC		3.15 A slow-acting / 250 V AC
Indication of operational states					
Output voltage	DC ON: green LED	⎍: output voltage applied			
	DC LOW: red LED	⎍: output voltage too low			
Output circuit		**+, -**	**++, --**		
Rated output voltage		24 V DC			
Tolerance of the output voltage		±1 %			
Adjustment range of the output voltage		-	24-28 V DC		
Rated output power		10 W	30 W	60 W	100 W
Rated output current I_r	$T_a \leq 60$ °C	0.42 A	1.3 A	2.5 A	4.2 A
Derating of the output current	60 °C < $T_a \leq$ 70 °C	2.5 %/K			
Deviation with load change	statical	max. 1 %			
	dynamical 10-90%				
	change of input voltage within the input voltage range	max. 1 %			
Control time		< 1 ms			
Starting time after applying the supply voltage	at I_r	1000 ms			
Response time	at rated load	typ. 1 ms			
Residual ripple and switching peaks	BW = 20 MHz	50 mV			
Parallel connection		no			
Series connection		yes, to increase voltage			
Resistance to reverse feed		35 V / 1 s			
Power factor correction (PFC)		no			
Output circuit - No-load, overload and short-circuit behaviour					
Output curve		U/I curve			
Short-circuit protection		continuous short circuit statility			
Short-circuit behaviour		continuation with current limitation			
Current limitation at short circuit		typ. 0.78 A	typ. 4.2 A	typ. 6.05 A	typ. 11.5 A
Overload protection		current limitation			
No-load protection		continuous no-load stability			
Starting of capacitive loads		unlimited			
Gerneral data					
Efficiency		typ. 80 %	typ. 83 %	typ. 75 %	typ. 89 %
Duty time		100 %			
Dimensions (WxHxD)		18 x 91 x 57.5 mm [0.71 x 3.58 x 2.26 in]	53 x 91 x 57.5 mm [2.09 x 3.58 x 2.26 in]	71 x 91 x 57.5 mm [2.80 x 3.58 x 2.26 in]	89.9 x 91 x 57,5 mm [3.54 x 3.58 x 2.26 in]
Weight		0.06 kg (0.13 lb)	0.19 kg (0.41 lb)	0.25 kg (0.55 lb)	0.32 kg / (0.72 lb)
Material of enclosure		plastic			
Mounting		DIN rail (EN 60715), snap-on mounting without any tool			
Mounting position		horizontal			
Minimum distance to other units	horizontal / vertical	25 mm / 25 mm (0.98 in / 0.98 in)			
Degree of protection	enclosure / terminals	IP20 / IP20			
Protection class		II			

4

Primary switch mode power supplies
CP-D range
Technical data

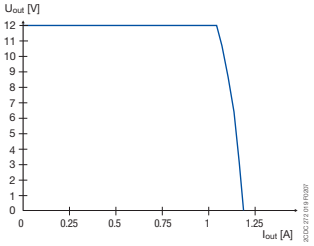
Data at T_a = 25 °C, U_{IN} = 230 V AC and rated values, if nothing else indicated

Type		CP-D 24/0.42	CP-D 24/1.3	CP-D 24/2.5	CP-D 24/4.2
Electrical connection - Input circuit / Output circuit					
Wire size	fine-strand with wire end ferrule	0.2-2 mm² (24-14 AWG)			
	fine-strand without wire end ferrule				
	rigid				
Stripping length		6 mm (0.24 in)			
Tightening torque		0.36-0.56 Nm			
Environmental data					
Ambient temperature range	operation	-25…+70 °C			
	full load	-25…+60 °C			
	storage	-25…+85 °C			
Damp heat (cyclic) (IEC/EN 60068-2-30)		4 x 24 cycles, 40 °C, 95 % RH			
Vibration (sinusoidal) (IEC/EN 60068-2-6)		50 m/s², 10 Hz - 2 kHz			
Shock (half-sine) (IEC/EN 60068-2-27)		40 m/s², 22 ms			
Isolation data					
Rated insulation voltage U_i	input circuit / output circuit	3 kV AC			
Pollution category		2			
Standards					
Product standard		EN 61204			
Low Voltage Directive		2006/95/EC			
EMC Direcitve		2004/108/EC			
Electrical safety		UL 508, UL 60950-1, EN 60950-1			
Protective low voltage		SELV (EN 60950-1)			
Electromagnetic compatibility					
Interference immunity		EN 61000-6-2			
electrostatic discharge (ESD)	IEC/EN 61000-4-2	Level 4 (4 kV / 8 kV)	Level 4 (8 kV / 15 kV)		Level 4 (4 kV / 8 kV)
electromagnetic field (HF radiation resistance)	IEC/EN 61000-4-3	Level 3 (10 V/m)			
fast transients (Burst)	IEC/EN 61000-4-4	Level 4 (4 kV)			
powerful impulses (Surge)	IEC/EN 61000-4-5	Level 4 (2 kV L-L)			
HF line emission	IEC/EN 61000-4-6	Level 3 (10 V)			
Interference emission		EN 61000-6-3			
electromagnetic field (HF radiation resistance)	IEC/CISPR 22, EN 55022	Class B			
HF line emission	IEC/CISPR 22, EN 55022	Class B			

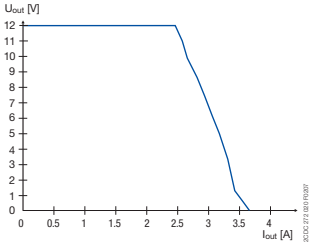
Primary switch mode power supplies
CP-D range
Technical diagrams, Dimensional drawings

Technical diagrams

Output curve at T_a = 25 °C

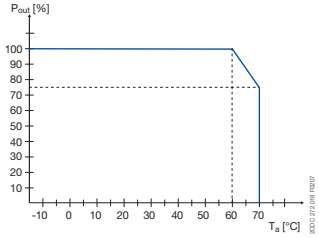


CP-D 12/0.83

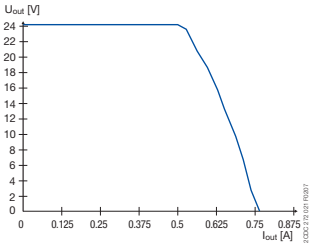


CP-D 12/2.1

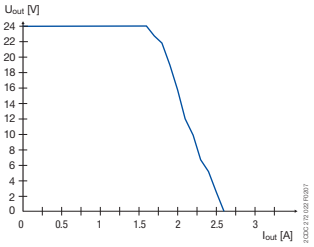
Temperature curve at rated output voltage



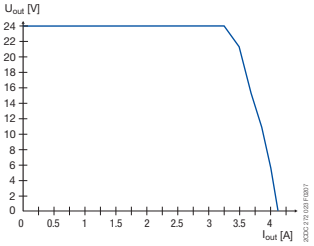
CP-D



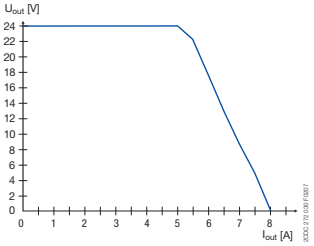
CP-D 24/0.42



CP-D 24/1.3



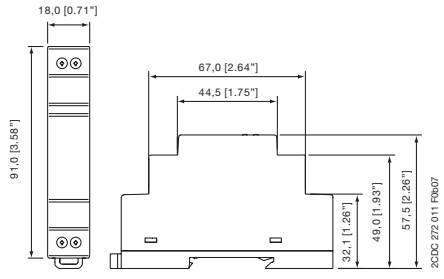
CP-D 24/2.5



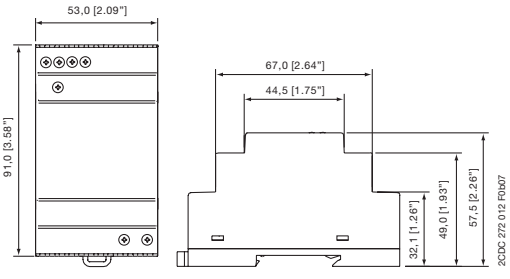
CP-D 24/4.2

Dimensional drawings

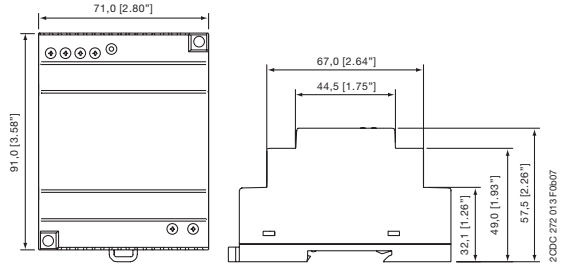
dimensions in mm



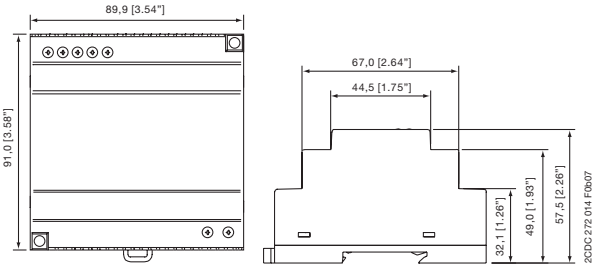
CP-D 12/0.83, CP-D 24/0.42



CP-D 12/2.1, CP-D 24/1.3



CP-D 24/2.5



CP-D 24/4.2