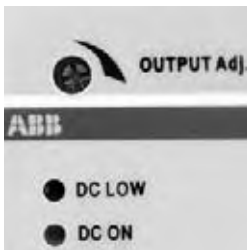




# Switched mode power supplies CP-D Range



### 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.



### 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.



### 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.

- 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 behavior at overload – no switch-off)
- LEDs for status indication
- Light-grey enclosure in RAL 7035

• Approvals / Marks

## Power supplies CP-D



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	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

# Technical data

## CP-D range

Data at  $T_a = 25\text{ °C}$ ,  $U_{IN} = 230\text{ V AC}$  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 DC LOW: red LED	V: output voltage applied V: output voltage too low
Output circuit	+, -	++, --
Rated output voltage	12 V DC	
Tolerance of the output voltage	$\pm 1\%$	
Adjustment range of the output voltage	-	12-14 V DC
Rated output power	10 W	30 W
Rated output current $I_r$	$T_a$ m 60 °C 0.83 A	2.1 A
Derating of the output current	60 °C < $T_a$ m 70 °C 2.5 %/K	
Deviation with load change	statical max. 1 %	
	dynamical 10-90% max. 1 %	
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 stability	
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	
General 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	

## Technical data CP-D range

Data at  $T_a = 25\text{ °C}$ ,  $U_{IN} = 230\text{ V AC}$  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 mm <sup>2</sup> (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/s <sup>2</sup> , 10 Hz - 2 kHz	
Shock (half-sine) (IEC/EN 60068-2-27)		40 m/s <sup>2</sup> , 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 Directive		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

# Technical data

## CP-D range

Data at  $T_a = 25\text{ °C}$ ,  $U_{IN} = 230\text{ V AC}$  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-act- ing / 250 V AC
Indication of operational states				
Output voltage	DC ON: green LED	V: output voltage applied		
	DC LOW: red LED	V: 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 $I_r$	$T_a$ m 60 °C 0.42 A	1.3 A	2.5 A	4.2 A
Derating of the output current	60 °C < $T_a$ m 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 behavior				
Output curve	U/I curve			
Short-circuit protection	continuous short circuit stability			
Short-circuit behavior	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			
General 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			

## Technical data CP-D range

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

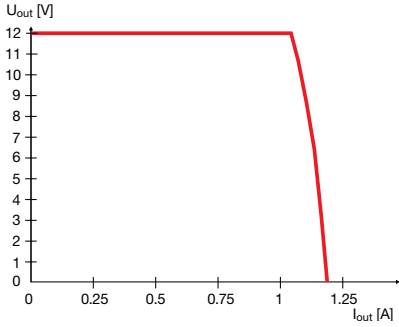
Type		CP-D 24/0.42	CP-D 24/1.3	CP-D 24/2.5	CP-D 24/4.2
Electrical connection - Input circuit / Output circuit					
Wire size	fine-strand with wire end ferrule	0.2-2 mm <sup>2</sup> (24-14 AWG)			
	fine-strand without wire end ferrule				
	rigid				
Stripping length		6 mm (0.24 in)			
Tightening torque		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/s <sup>2</sup> , 10 Hz - 2 kHz			
Shock (half-sine) (IEC/EN 60068-2-27)		40 m/s <sup>2</sup> , 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 Directive		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			

# Technical diagrams CP-D range

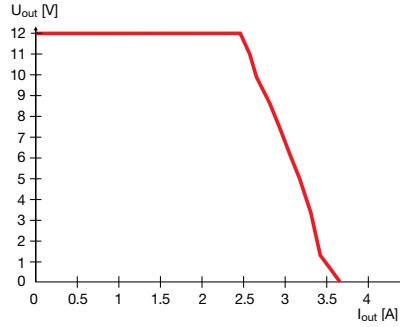


## Technical diagrams

Output curve at  $T_a = 25^\circ\text{C}$

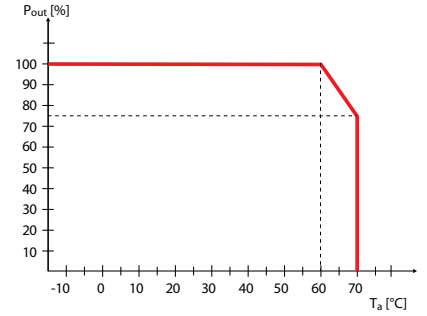


CP-D 12/0.83

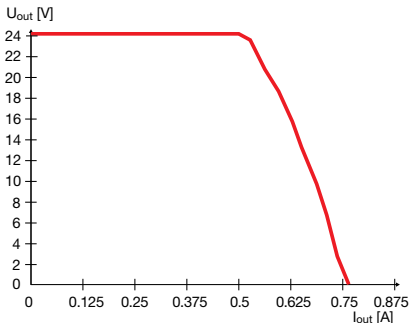


CP-D 12/2.1

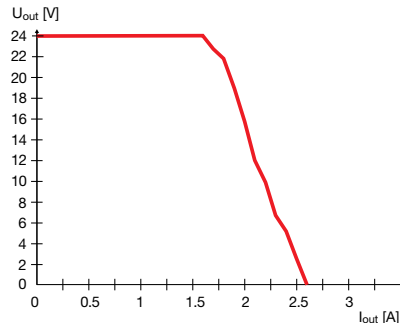
Temperature curve  
at rated output voltage



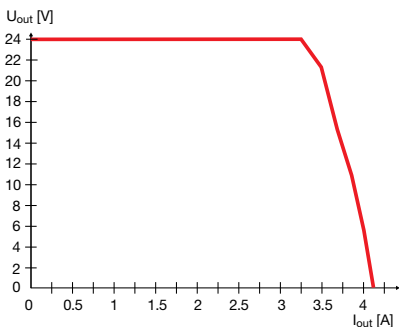
CP-D



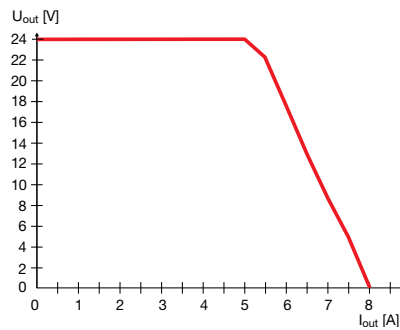
CP-D 24/0.42



CP-D 24/1.3



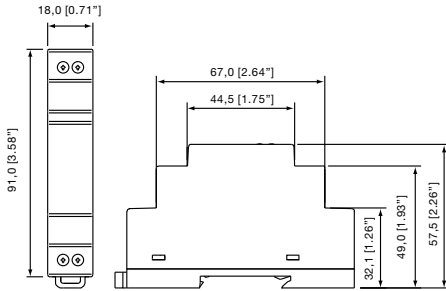
CP-D 24/2.5



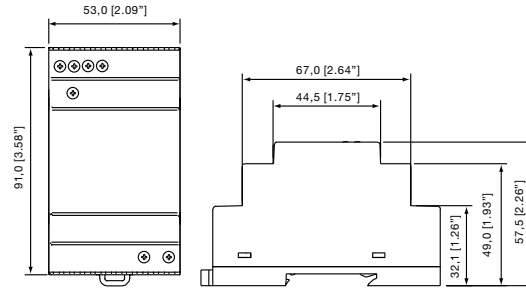
CP-D 24/4.2

## Approximate dimensions CP-D range

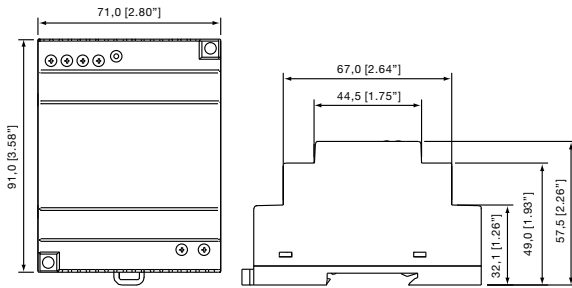
dimensions in mm



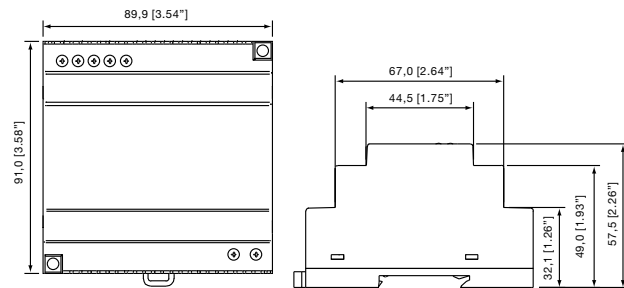
CP-D 12/0.83, CP-D 24/0.42



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



CP-D 24/2.5



CP-D 24/4.2