CP-E range
Product group picture

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CP-E range
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CP-E range
Benefits and advantages

Characteristics
- Output voltages 5 V, 12 V, 24 V, 48 V DC
- Adjustable output voltages
- Output currents 0.625 A / 0.75 A / 1.25 A / 2.5 A / 3 A / 5 A / 10 A / 20 A
- Power range 15 W, 18 W, 30 W, 60 W, 120 W, 240 W, 480 W
- High efficiency of up to 90 %
- Low power dissipation and low heating
- Free convection cooling (no forced cooling with ventilators)
- Ambient temperature range during operation -40...+70 °C
- Open-circuit, overload and short-circuit stable
- Integrated input fuse
- U/I characteristic curve on devices > 18 W (fold-forward behaviour at overload – no switch-off)
- Redundancy units offering true redundancy
- LED(s) for status indication
  - Signalling output/contact for output voltage OK Transistor on 24 V devices > 18 W and < 120 W
  - Solid-state on 24 V devices ≥ 120 W
- Approvals / Marks (depending on device, partly pending):
- cULus, cULus, EAC, RCM / CE, KC

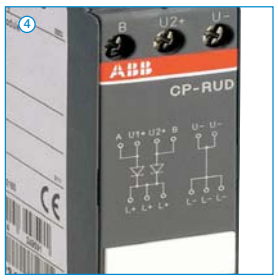
Benefits

Signalling output/contact ①
The CP-E range 24 V devices > 18 W offer an output/contact for monitoring of the output voltage and remote diagnosis.

Wide range input ②
Optimised for world-wide applications: The CP-E power supplies can be supplied within a wide range of AC or DC voltage.

Adjustable output voltage ③
The CP-E range types 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.

Redundancy units ④
For decoupling of parallelized power supply units ≤ 40 V. Thus, true redundancy can be achieved.
Further information about redundancy unit on page 51.



1 **INPUT L, N, PE: terminals - input**
2 **Circuit diagram**
3 **single/parallel: sliding switch - adjustment of single or parallel operation**
4 **Indication of operational states**
DC ON: green LED - green LED - output voltage OK
DC LOW: red LED - output voltage too low
5 **OUTPUT L+, L+, L-, L-: terminals - output**
6 **OUTPUT Adjust: potentiometer - adjustment of output voltage**

CP-E range
Ordering details

Description

This range offers types with output voltages from 5 V DC to 48 V DC at output currents of 0.625 A to 20 A. The high thermal efficiency of up to 90 %, corresponding to very low power and heat dissipation, allows operation without forced cooling. The functionality has been enhanced while the number of different types has been considerably reduced.
Of course all power supplies of the CP-E range are approved in accordance with all relevant international standards.

CP-E 24/0.75

CP-E 12/2.5

CP-E 48/5.0

Ordering details - CP-E < 100 W

Input voltage range	Rated output voltage / current	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
90-264 V AC / 120-375 V DC	5 V DC / 3 A	CP-E 5/3.0	1SVR427033R3000		0.15 (0.33)
85-264 V AC / 90-375 V DC	12 V DC / 2.5 A	CP-E 12/2.5	1SVR427032R1000		0.29 (0.64)
90-132 V AC, 180-264 V AC / 210-375 V DC	12 V DC / 10 A	CP-E 12/10.0	1SVR427035R1000		1.00 (2.20)
90-264 V AC / 120-375 V DC	24 V DC / 0.75 A	CP-E 24/0.75	1SVR427030R0000		0.15 (0.33)
85-264 V AC / 90-375 V DC	24 V DC / 1.25 A	CP-E 24/1.25	1SVR427031R0000		0.29 (0.64)
85-264 V AC / 90-375 V DC	24 V DC / 2.5 A	CP-E 24/2.5	1SVR427032R0000		0.36 (0.79)

Ordering details - CP-E M 120 W

Input voltage range	Rated output voltage / current	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 5 A	CP-E 24/5.0	1SVR427034R0000		1.00 (2.20)
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 10 A	CP-E 24/10.0	1SVR427035R0000		1.36 (3.01)
90-264 V AC / 120-375 V DC	24 V DC / 20 A	CP-E 24/20.0	1SVR427036R0000		1.90 (4.18)
85-264 V AC / 90-375 V DC	48 V DC / 0.625 A	CP-E 48/0.62	1SVR427030R2000		0.29 (0.64)
85-264 V AC / 90-375 V DC	48 V DC / 1.25 A	CP-E 48/1.25	1SVR427031R2000		0.36 (0.79)
90-132 V AC, 180-264 V AC / 210-375 V DC	48 V DC / 5 A	CP-E 48/5.0	1SVR427034R2000		1.36 (3.01)
90-264 V AC / 120-375 V DC	48 V DC / 10 A	CP-E 48/10.0	1SVR427035R2000		1.90 (4.19)

CP-E range
Technical data

Data at T_a = 25 °C, U_{in} = 230 V AC and rated values, unless otherwise indicated

Type		CP-E 5/3.0	CP-E 12/2.5	CP-E 12/10.0
Input circuit		L, N		
Rated input voltage U_{in}		100-240 V AC		115 / 230 V AC auto select
Input voltage range		90-264 V AC / 120-375 V DC	85-264 V AC / 90-375 V DC	90-132 V AC, 180-264 V AC / 210-375 V DC
Frequency range AC		47-63 Hz		
Typical input current	at 115 V AC	335 mA	560 mA	2.2 A
	at 230 V AC	210 mA	330 mA	0.83 A
Typical power consumption		19.8 W	35.9 W	143 W
Inrush current limiting	at 115 V AC	10 A (max. 3 ms)	20 A (max. 3 ms)	24 A (max. 5 ms)
	at 230 V AC	18 A (max. 3 ms)	40 A (max. 3 ms)	48 A (max. 5 ms)
Discharge current	input / output	0.25 mA		
	input / PE	3.5 mA		
Power failure buffering time	at 115 V AC	min. 20 ms	min. 20 ms	min. 25 ms
	at 230 V AC	min. 75 ms	min. 30 ms	min. 30 ms
Internal input fuse		2 A slow-acting / 250 V AC		3.15 A slow-acting / 250 V AC
Power factor correction (PFC)		no		yes, passive, 0.7
Indication of operational states				
Output voltage	green LED	OK: ⎍: output voltage OK	OUTPUT OK: ⎍: output voltage OK	OUTPUT OK: ⎍: output voltage OK
	red LED	LOW: ⎍: output voltage too low	-	OUTPUT LOW: ⎍: output voltage too low
Output circuit		L+,L-	L+, L+, L-, L-	
Rated output voltage		5 V DC	12 V DC	
Tolerance of the output voltage		0...+1 %		
Adjustment range of the output voltage		4.5-5.75 V DC	12-14 V DC	11.4-14.5 V DC
Rated output power		15 W	30 W	120 W
Rated output current I_r	$T_a \leq 60$ °C	3.0 A	2.5 A	10 A
Derating of the output current	60 °C < $T_a \leq$ 70 °C	2.5 %/°C	2.5 %/°C	
Maximum deviation with	load change statical	±2 %	±0.5 %	±1 % (single mode) ±5 % (parallel mode)
	change of output voltage within the input voltage range	±1 %	±0.5 %	±0.5 %
Control time		< 2 ms		
Starting time after applying the supply voltage	at I_r	max. 1 s		
	with 3500 µF	-	max. 2 s	-
	with 7000 µF	max. 1.5 s	-	max. 1.5 s
Rise time	at rated load	max. 150 ms		
	with 3500 µF	-	max. 500 ms	-
	with 7000 µF	max. 500 ms	-	max. 500 ms
Fall time		max. 150 ms		
Residual ripple and switching peaks	BW = 20 MHz	50 mV		
Parallel connection		yes, to enable redundancy		configurable, to increase power,up to 3 devices, min. 0.1 I_r - max. 0.9 I_r
Series connection		yes, to increase voltage		yes, to increase voltage, max. 2 devices
Resistance to reverse feed		1 s - max. 7.5 V DC	1 s - max.18 V DC	max. 18 V DC
Output circuit - No-load, overload and short-circuit behaviour				
Characteristic curve of output		Hiccup-mode	U/I characteristic curve	
Short-circuit protection		continuous short-circuit proof		
Short-circuit behaviour		Hiccup-mode	continuation with output power limiting	
Overload protection		output power limiting		
No-load protection		continuous no-load stability		
Starting of capacitive loads		7000 µF	3500 µF	7000 µF

CP-E range
Technical data

Data at T_a = 25 °C, U_{in} = 230 V AC and rated values, unless otherwise indicated

Type			CP-E 5/3.0	CP-E 12/2.5	CP-E 12/10.0
General data					
Power dissipation			typ. 5 W	typ. 5.6 W	typ. 24 W
Efficiency			typ. 75 %	typ. 84 %	typ. 84 %
Duty time			100 %		
Dimensions (W x H x D)			22.5 x 90 x 114 mm (0.89 x 3.54 x 4.49 in)	40.5 x 90 x 114 mm (1.59 x 3.54 x 4.49 in)	63.2 x 123.6 x 123.6 mm (2.49 x 4.87 x 4.87 in)
Weight			0.144 kg (0.317 lb)	0.287 kg (0.633 lb)	0.888 kg (1.958 lb)
Material of housing			Plastic		Metal
Mounting			DIN rail (IEC/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		housing / terminals	IP20 / IP20		
Protection class			I		
Electrical connection - input circuit / output circuit					
Wire size		fine-strand with wire end ferrule	0.2-2.5 mm² (24-14 AWG)		0.2-4 mm² (24-11 AWG)
		fine-strand without wire end ferrule			0.2-6 mm² (24-10 AWG)
		rigid			
Stripping length			6 mm (0.24 in)		8 mm (0.31 in)
Tightening torque		input / output	0.6 Nm (5 lb.in)		1.0 Nm (9 lb.in) / 0.62 Nm (5.5 lb.in)
Environmental data					
Ambient temperature range		operation	-20…+70 °C	-40…+70 °C	-35…+70 °C
		rated load	-20...+60 °C	-40...+60 °C	-35...+60 °C
		storage	-20…+85 °C	-40…+85 °C	-40…+85 °C
Damp heat (cyclic) (IEC/EN 60068-2-30)			95 RH, % without condensation		
Vibration (sinusoidal) (IEC/EN 60068-2-6)			10-500 Hz, 2 G, along X, Y, Z each axis, 60 min. for each axis		
Shock (half-sine) (IEC/EN 60068-2-27)			15 G, 11 ms, 3 axes, 6 faces, 3 times for each face		
Isolation data					
Rated insulation voltage U_i		input circuit / output circuit	3 kV AC		
		input / PE	1.5 kV AC		
		output / PE	0.5 kV AC; 0.71 kV DC		
Pollution degree			2		
Overvoltage category (UL/IEC/EN 60950-1)			II		
Standards					
Product standard			EN 61204-3		
Low Voltage Directive			2006/95/EC		
EMC directive			2004/108/EC		
RoHS directive			2011/65/EC		
Electrical safety			EN 60950-1, UL 60950-1, UL 508	EN 60950-1, UL 60950-1, UL 508, EN 61558-1, EN 61558-2-17; EN 60204-1	
Protective low voltage			SELV (EN 60950)		
Electromagnetic compatibility					
Interference immunity to			IEC/EN 61000-6-2		
electrostatic discharge	IEC/EN 61000-4-2		Level 4 (air discharge 15 kV / contact discharge 8 kV)		
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3		Level 3 (10 V/m)		
electrical fast transient/burst	IEC/EN 61000-4-4		Level 4 (4 kV / 2,5 kHz)	Level 4 (4 kV / 5 kHz)	
surge	IEC/EN 61000-4-5		L-L Level 3 (2 kV) / L-PE Level 4 (4 kV)		
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6		Level 3 (10 V)		
power frequency magnetic fields	IEC/EN 61000-4-8		Level 4 (30 A/m)		
voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11		dip: >95 % 10 ms / >30 % 500 ms interruptions: >95 % 5000 ms		
Interference emission			IEC/EN 61000-6-3		
high-frequency radiated	IEC/CISPR 22, EN 55022		Class B		
high-frequency conducted	IEC/CISPR 22, EN 55022		Class B		
limits for harmonic current emissions	IEC/EN 61000-3-2		Class D	Class A	Class D

„Approvals and marks“ on page 3/4.

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type		CP-E 24/0.75	CP-E 24/1.25	CP-E 24/2.5
Input circuit		L, N		
Rated input voltage U_{in}		100-240 V AC		
Input voltage range		90-264 V AC / 120-375 V DC	85-264 V AC / 90-375 V DC	
Frequency range AC		47-63 Hz		
Typical input current	at 115 V AC	335 mA	560 mA	1060 mA
	at 230 V AC	210 mA	330 mA	590 mA
Typical power consumption		22.8 W	36.7 W	69.2 W
Inrush current limiting	at 115 V AC	10 A (max. 3 ms)	20 A (max. 3 ms)	20 A (max. 3 ms)
	at 230 V AC	18 A (max. 3 ms)	40 A (max. 3 ms)	40 A (max. 3 ms)
Discharge current	input / output	0.25 mA		
	input / PE	3.5 mA		
Power failure buffering time	at 115 V AC	min. 20 ms	min. 20 ms	
	at 230 V AC	min. 75 ms	min. 30 ms	
Internal input fuse		2 A slow-acting / 250 V AC		
Power factor correction (PFC)		no		
Indication of operational states				
Output voltage	green LED	OK: ⎍: output voltage OK	OUTPUT OK: ⎍: output voltage OK	
	red LED	LOW: ⎍: output voltage too low	-	-
Output circuit		L+,L-	L+, L+, L-, L-	
Rated output voltage		24 V DC		
Tolerance of the output voltage		0 ... +1 %		
Adjustment range of the output voltage		21.6-28.8 V DC	24-28 V DC	
Rated output power		18 W	30 W	60 W
Rated output current I_r	$T_a \leq 60$ °C	0.75 A	1.25 A	2.5 A
Derating of the output current	60 °C < $T_a \leq$ 70 °C	2.5 %/°C		
Signalling output for output voltage OK	DC OK	-	transistor	
Maximum deviation with	load change statical	±2 %	±0.5 %	
	change of output voltage within the input voltage range	±1 %	±0.5 %	
Control time		< 2 ms		
Starting time after applying the supply voltage	at I_r	max. 1 s		
	with 3500 µF	-	max. 2 s	-
	with 7000 µF	max. 1.5 s	-	max. 1.5 s
Rise time	at rated load	max. 150 ms		
	with 3500 µF	-	max. 500 ms	-
	with 7000 µF	max. 500 ms	-	max. 500 ms
Fall time		max. 150 ms		
Residual ripple and switching peaks	BW = 20 MHz	50 mV		
Parallel connection		yes, to enable redundancy		
Series connection		yes, to increase voltage		
Resistance to reverse feed		1 s - max. 35 V DC		
Output circuit - No-load, overload and short-circuit behaviour				
Characteristic curve of output		Hiccup-mode	U/I characteristic curve	
Short-circuit protection		continuous short-circuit proof		
Short-circuit behaviour		Hiccup-mode	continuation with output power limiting	
Overload protection		output power limiting		
No-load protection		continuous no-load stability		
Starting of capacitive loads		7000 µF	3500 µF	7000 µF

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type			CP-E 24/0.75	CP-E 24/1.25	CP-E 24/2.5
General data					
Power dissipation			typ. 4.45 W	typ. 5.5 W	typ. 8.8 W
Efficiency			typ. 77 %	typ. 86 %	typ. 89 %
Duty time			100 %		
Dimensions (W x H x D)			22.5 x 90 x 114 mm (0.89 x 3.54 x 4.49 in)	40.5 x 90 x 114 mm (1.59 x 3.54 x 4.49 in)	
Weight			0.143 kg (0.315 lb)	0.270 kg (0.60 lb)	0.331 kg (0.73 lb)
Material of housing			Plastic		
Mounting			DIN rail (IEC/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		housing / terminals	IP20 / IP20		
Protection class			I		
Electrical connection - input circuit / output circuit					
Wire size		fine-strand with wire end ferrule	0.2-2.5 mm² (24-14 AWG)		
		fine-strand without wire end ferrule			
		rigid			
Stripping length			6 mm (0.24 in)		
Tightening torque		input / output	0.6 Nm (5 lb.in)		
Environmental data					
Ambient temperature range		operation	-20…+70 °C	-40…+70 °C	
		rated load	-20…+60 °C	-40…+60 °C	
		storage	-20…+85 °C	-40…+85 °C	
Damp heat (cyclic) (IEC/EN 60068-2-30)			95 % RH, without condensation		
Vibration (sinusoidal) (IEC/EN 60068-2-6)			10-500 Hz, 2 G, along X, Y, Z each axis, 60 min. for each axis		
Shock (half-sine) (IEC/EN 60068-2-27)			15 G, 11 ms, 3 axes, 6 faces, 3 times for each face		
Isolation data					
Rated insulation voltage U_i		input circuit / output circuit	3 kV AC		
		input / PE	1.5 kV AC		
		output / PE	0.5 kV AC; 0.71 kV DC		
Pollution degree			2		
Overvoltage category (UL/IEC/EN 60950-1)			II		
Standards					
Product standard			EN 61204-3		
Low Voltage Directive			2006/95/EC		
EMC directive			2004/108/EC		
RoHS directive			2011/65/EC		
Electrical safety			EN 50178, EN 60950-1, UL 60950-1, UL 508	EN 60950-1, UL 60950-1, UL 508, EN 61558-1, EN 61558-2-17; EN 60204-1	
Protective low voltage			SELV (EN 60950)		
Electromagnetic compatibility					
Interference immunity to			IEC/EN 61000-6-2		
electrostatic discharge	IEC/EN 61000-4-2		Level 4 (air discharge 15 kV / contact discharge 8 kV)		
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3		Level 3 (10 V/m)		
electrical fast transient/burst	IEC/EN 61000-4-4		Level 4 (4 kV / 2.5 kHz)	Level 4 (4 kV / 5 kHz)	
surge	IEC/EN 61000-4-5		L-L Level 3 (2 kV) / L-PE Level 4 (4 kV)		
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6		Level 3 (10 V)		
power frequency magnetic fields	IEC/EN 61000-4-8		Level 4 (30 A/m)		
voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11		dip: >95 % 10 ms / >30 % 500 ms, interruptions: >95 % 5000 ms		
Interference emission			IEC/EN 61000-6-3		
high-frequency radiated	IEC/CISPR 22, EN 55022		Class B		
high-frequency conducted	IEC/CISPR 22, EN 55022		Class B		
limits for harmonic current emissions	IEC/EN 61000-3-2		Class D	Class A	

„Approvals and marks“ on page 3/4.

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type		CP-E 24/5.0	CP-E 24/10.0	CP-E 24/20.0
Input circuit		L, N		
Rated input voltage U_{in}		115 / 230 V AC auto select		115-230 V AC
Input voltage range		90-132 V AC, 180-264 V AC / 210-375 V DC	90-132 V AC, 180-264 V AC / 210-375 V DC	90-264 V AC, 120-375 V DC
Frequency range AC		47-63 Hz		
Typical input current	at 115 V AC	2.2 A	4.0 A	4.9 A
	at 230 V AC	0.83 A	1.55 A	2.5 A
Typical power consumption		140 W	270 W	539 W
Inrush current limiting	at 115 V AC	24 A (max. 5 ms)	30 A (max. 5 ms)	25 A (max. 5 ms)
	at 230 V AC	48 A (max. 5 ms)	60 A (max. 5 ms)	50 A (max. 5 ms)
Discharge current	input / output	0.25 mA		
	input / PE	3.5 mA		
Power failure buffering time	at 115 V AC	min. 25 ms		
	at 230 V AC	min. 30 ms		
Internal input fuse		3.15 A slow-acting / 250 V AC	6.3 A slow-acting / 250 V AC	10 A slow-acting / 250 V AC
Power factor correction (PFC)		yes, passive, 0.7		yes, active 115 V AC: 0.99 230 V AC: 0.97
Indication of operational states				
Output voltage	green LED	OUTPUT OK: ⎍: output voltage OK		
	red LED	OUTPUT LOW: ⎍: output voltage too low		
Output circuit		L+, L+, L-, L-		
Rated output voltage		24 V DC		
Tolerance of the output voltage		0...+1 %		
Adjustment range of the output voltage		22.5-28.5 V DC		
Rated output power		120 W	240 W	480 W
Rated output current I_r	$T_a \leq 60$ °C	5 A	10 A	-
	$T_a \leq 55$ °C	-	-	20 A
Derating of the output current	60 °C < $T_a \leq 70$ °C	2.5 %/°C		-
	55 °C < $T_a \leq 70$ °C	-	-	2.5 %/°C
Signalling contact for output voltage OK	13-14	solid-state (max. 60 V DC, 0.3 A)		
Minimum fuse rating to achieve short-circuit protection	13-14	≥ 60 V DC, ≤ 0.3 A fast-acting		
Maximum deviation with	load change statical	±1 % (single mode), ±5 % (parallel mode)		
	change of output voltage within the input voltage range	±0.5 %		
Control time		< 2 ms		
Starting time after applying the supply voltage	at I_r	max. 1 s		
	with 3500 µF	max. 1.5 s	-	-
	with 7000 µF	-	max. 1.5 s	
Rise time	at rated load	max. 150 ms		
	with 3500 µF	max. 500 ms	-	-
	with 7000 µF	-	max. 500 ms	
Fall time		max. 150 ms		
Residual ripple and switching peaks	BW = 20 MHz	50 mV	100 mV	
Parallel connection		configurable, to increase power, up to 3 devices, min. 0.1 Ir - max. 0.9 Ir		
Series connection		yes, to increase voltage, max. 2 devices		
Resistance to reverse feed		max. 35 V DC		
Output circuit - No-load, overload and short-circuit behaviour				
Characteristic curve of output		U/I characteristic curve		
Short-circuit protection		continuous short-circuit proof		
Short-circuit behaviour		continuation with output power limiting		
Overload protection		output power limiting		
No-load protection		continuous no-load stability		
Starting of capacitive loads		3500 µF	7000 µF	

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type		CP-E 24/5.0	CP-E 24/10.0	CP-E 24/20.0
General data				
Power dissipation		typ. 20 W	typ. 35 W	typ. 63 W
Efficiency		typ. 86 %	typ. 89 %	typ. 89 %
Duty time		100 %		
Dimensions (W x H x D)		63.2 x 123.6 x 123.6 mm (2.49 x 4.87 x 4.87 in)	83 x 123.6 x 123.6 mm (3.27 x 4.87 x 4.87 in)	175 x 123.6 x 123.6 mm (6.89 x 4.87 x 4.87 in)
Weight		0.882 kg (1.945 lb)	1.334 kg (2.941 lb)	1.850 kg (4.079 lb)
Material of housing		Metal		
Mounting		DIN rail (IEC/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	housing / terminals	IP20 / IP20		
Protection class		I		
Electrical connection - input circuit / output circuit				
Wire size	fine-strand with wire end ferrule	0.2-4 mm² (24-11 AWG)		
	fine-strand without wire end ferrule	0.2-6 mm² (24-10 AWG)		
	rigid			
Stripping length		8 mm (0.31 in)		
Tightening torque	input / output	1.0 Nm (9 lb.in) / 0.62 Nm (5.5 lb.in)		
Environmental data				
Ambient temperature range	operation	-35…+70 °C	-40…+70 °C	
	rated load	-35…+60 °C	-40…+60 °C	-40…+55 °C
	storage	-40…+85 °C	-40…+85 °C	
Damp heat (cyclic) (IEC/EN 60068-2-30)		95 %RH, without condensation		
Vibration (sinusoidal) (IEC/EN 60068-2-6)		10-500 Hz, 2 G, along X, Y, Z each axis, 60 min. for each axis		
Shock (half-sine) (IEC/EN 60068-2-27)		15 G, 11 ms, 3 axes, 6 faces, 3 times for each face		
Isolation data				
Rated insulation voltage U_i	input circuit / output circuit	3 kV AC		
	input / PE	1.5 kV AC		
	output / PE	0.5 kV AC; 0.71 kV DC		
	signalling contact / PE	0.5 kV DC		
Pollution degree		2		
Overvoltage category (UL/IEC/EN 60950-1)		II		
Standards				
Product standard		EN 61204-3		
Low Voltage Directive		2006/95/EC		
EMC directive		2004/108/EC		
RoHS directive		2011/65/EC		
Electrical safety		EN 60950-1, UL 60950-1, UL 508, EN 61558-1, EN 61558-2-17; EN 60204-1		
Protective low voltage		SELV (EN 60950)		
Electromagnetic compatibility				
Interference immunity to		IEC/EN 61000-6-2		
electrostatic discharge	IEC/EN 61000-4-2	Level 4 (air discharge 15 kV / contact discharge 8 kV)		
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	Level 3 (10 V/m)		
electrical fast transient/burst	IEC/EN 61000-4-4	Level 4 (4 kV / 5 kHz)	Level 4 (4 kV / 2.5 kHz)	
surge	IEC/EN 61000-4-5	L-L Level 3 (2 kV) / L-PE Level 4 (4 kV)		
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3 (10 V)		
power frequency magnetic fields	IEC/EN 61000-4-8	Level 4 (30 A/m)		
voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11	dip: >95 % 10 ms / >30 % 500 ms interruptions: >95 % 5000 ms		
Interference emission		IEC/EN 61000-6-3		
high-frequency radiated	IEC/CISPR 22, EN 55022	Class B		
high-frequency conducted	IEC/CISPR 22, EN 55022	Class B		
limits for harmonic current emissions		Class D		

„Approvals and marks“ on page 3/4.

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type		CP-E 48/0.62	CP-E 48/1.25	CP-E 48/5.0	CP-E 48/10.0
Input circuit		L, N			
Rated input voltage U_{in}		100-240 V AC		115 / 230 V AC auto select	115-230 V AC
Input voltage range		85-264 V AC / 90-375 V DC		90-132 V AC, 180-264 V AC / 210-375 V DC	90-264 V AC, 120-375 V DC
Frequency range AC		47-63 Hz			
Typical input current	at 115 V AC	560 mA	1060 mA	4.0 A	4.9 A
	at 230 V AC	330 mA	590 mA	1.55 A	2.5 A
Typical power consumption		35.7 W	69.0 W	267 W	528 W
Inrush current limiting	at 115 V AC	20 A (max. 3 ms)	20 A (max. 3 ms)	30 A (max. 5 ms)	25 A (max. 5 ms)
	at 230 V AC	40 A (max. 3 ms)	40 A (max. 3 ms)	60 A (max. 5 ms)	50 A (max. 5 ms)
Discharge current	input / output	0.25 mA			
	input / PE	3.5 mA			
Power failure buffering time	at 115 V AC	min. 20 ms		min. 25 ms	min. 25 ms
	at 230 V AC	min. 30 ms			
Internal input fuse		2 A slow-acting / 250 V AC		6.3 A slow-acting / 250 V AC	10 A slow-acting / 250 V AC
Power factor correction (PFC)		no		yes, passive, 0.7	yes, active 115 V AC: 0.99 230 V AC: 0.97
Indication of operational states					
Output voltage	green LED	OUTPUT OK: ⎍: output voltage OK			
	red LED	-	-	OUTPUT LOW: ⎍: output voltage too low	
Output circuit		L+, L+, L-, L-			
Rated output voltage		48 V DC			
Tolerance of the output voltage		0...+1 %			
Adjustment range of the output voltage		48-55 V DC		47-56 V DC	
Rated output power		30 W	60 W	240 W	480 W
Rated output current I_r	$T_a \leq 60$ °C	0.625 A	1.25 A	5 A	-
	$T_a \leq 55$ °C	-	-	-	10 A
Derating of the output current	60 °C < $T_a \leq 70$ °C	2.5 %/°C			-
	55 °C < $T_a \leq 70$ °C	-	-	-	2.5 %/°C
Signalling output for output voltage OK	DC OK	-	-	-	-
Maximum deviation with	load change statical	±0.5 %		±1 % (single mode) ±5 % (parallel mode)	
	change of output voltage within the input voltage range	±0.5 %		±0.5 %	
Control time		< 2 ms			
Starting time after applying the supply voltage	at I_r	max. 1 s			
	with 3500 µF	max. 2 s	-	-	-
	with 7000 µF	-	max. 1.5 s	max. 1.5 s	
Rise time	at rated load	max. 150 ms			
	with 3500 µF	max. 500 ms	-	-	-
	with 7000 µF	-	max. 500 ms	max. 500 ms	
Fall time		max. 150 ms			
Residual ripple and switching peaks	BW = 20 MHz	50 mV		100 mV	
Parallel connection		yes, to enable redundancy		configurable, to increase power, up to 3 devices, min. 0.1 I_r - max. 0.9 I_r	
Series connection		yes, to increase voltage		yes, to increase voltage, max. 2 devices	
Resistance to reverse feed		1 s - max. 63 V DC			
Output circuit - No-load, overload and short-circuit behaviour					
Characteristic curve of output		U/I characteristic curve			
Short-circuit protection		continuous short-circuit proof			
Short-circuit behaviour		continuation with output power limiting			
Overload protection		output power limiting			
No-load protection		continuous no-load stability			
Starting of capacitive loads		3500 µF	7000 µF	unlimited	7000 µF

CP-E range
Technical data

Data at Ta = 25 °C, Uin = 230 V AC and rated values, unless otherwise indicated

Type			CP-E 48/0.62	CP-E 48/1.25	CP-E 48/5.0	CP-E 48/10.0
General data						
Power dissipation			typ. 4.9 W	typ. 7.8 W	typ. 32 W	typ. 60 W
Efficiency			typ. 86 %	typ. 89 %	typ. 90 %	
Duty time			100 %			
Dimensions (W x H x D)			40.5 x 90 x 114 mm (1.59 x 3.54 x 4.49 in)		83 x 123.6 x 123.6 mm (3.27 x 4.87 x 4.87 in)	175 x 123.6 x 123.6 mm (6.89 x 4.87 x 4.87 in)
Weight			0.264 kg (0.582 lb)	0.316 kg (0.697 lb)	1.322 kg (2.915 lb)	1.839 kg (4.054 lb)
Material of housing			Plastic		Metal	
Mounting			DIN rail (IEC/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		housing / terminals	IP/20 / IP20			
Protection class			I			
Electrical connection - input circuit / output circuit						
Wire size		fine-strand with wire end ferrule	0.2-2.5 mm² (24-14 AWG)		0.2-4 mm² (24-11 AWG)	
		fine-strand without wire end ferrule			0.2-6 mm² (24-10 AWG)	
		rigid				
Stripping length			6 mm (0.24 in)		8 mm (0.31 in)	
Tightening torque		input / output	0.6 Nm (5 lb.in)		1.0 Nm (9 lb.in) / 0.62 Nm (5.5 lb.in)	
Environmental data						
Ambient temperature range		operation	-40...+70 °C			
		rated load	-40...+60 °C			-40...+55 °C
		storage	-40...+85 °C			
Damp heat (cyclic) (IEC/EN 60068-2-30)			95 % RH, without condensation			
Vibration (sinusoidal) (IEC/EN 60068-2-6)			10-500 Hz, 2 G, along X, Y, Z each axis, 60 min. for each axis			
Shock (half-sine) (IEC/EN 60068-2-27)			15 G, 11 ms, 3 axes, 6 faces, 3 times for each face			
Isolation data						
Rated insulation voltage U_i		input circuit / output circuit	3 kV AC			
		input / PE	1.5 kV AC			
		output / PE	0.5 kV AC; 0.71 kV DC			
Pollution degree			2			
Overvoltage category (UL/IEC/EN 60950-1)			II			
Standards						
Product standard			EN 61204-3			
Low Voltage Directive			2006/95/EC			
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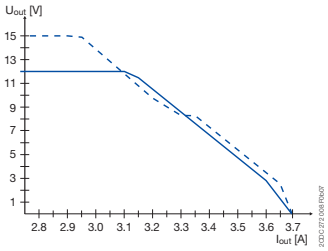
RoHS directive			2011/65/EC			
Electrical safety			EN 60950-1, UL 60950-1, UL 508, EN 61558-1, EN 61558-2-17; EN 60204-1			
Protective low voltage			SELV (EN 60950)			
Electromagnetic compatibility						
Interference immunity to			IEC/EN 61000-6-2			
electrostatic discharge	IEC/EN 61000-4-2		Level 4 (air discharge 15 kV / contact discharge 8 kV)			
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3		Level 3 (10 V/m)			
electrical fast transient/burst	IEC/EN 61000-4-4		Level 4 (4 kV / 5 kHz)		Level 4 (4 kV / 2.5 kHz)	
surge	IEC/EN 61000-4-5		L-L Level 3 (2 kV) / L-PE Level 4 (4 kV)			
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6		Level 3 (10 V/m)			
power frequency magnetic fields	IEC/EN 61000-4-8		Level 4 (30 A/m)			
voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11		dip: >95 % 10 ms / >30 % 500 ms, interruptions: >95 % 5000 ms			
Interference emission			IEC/EN 61000-6-3			
high-frequency radiated	IEC/CISPR 22, EN 55022		Class B			
high-frequency conducted	IEC/CISPR 22, EN 55022		Class B			
limits for harmonic current emissions			Class A		Class D	

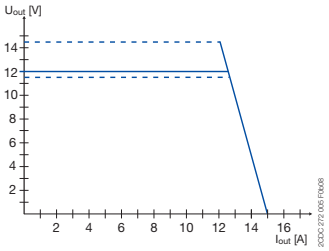
„Approvals and marks“ on page 3/4.

CP-E range
Technical diagrams, Wiring instructions

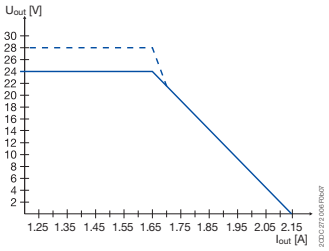
Output curve at T_a = 25 °C



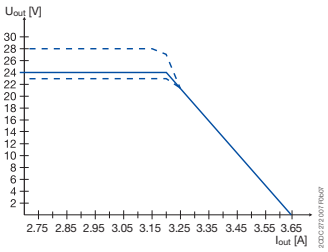
CP-E 12/2.5



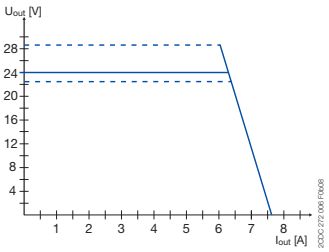
CP-E 12/10.0



CP-E 24/1.25



CP-E 24/2.5



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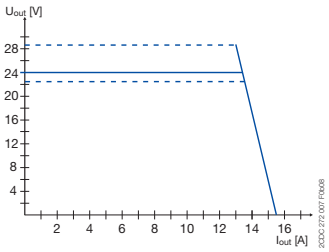
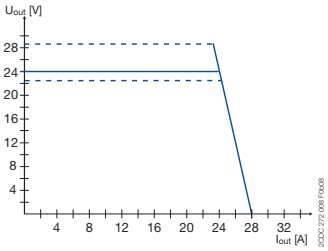
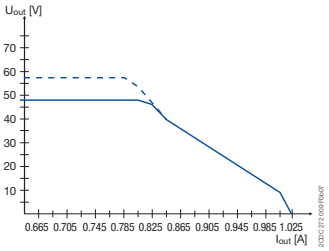


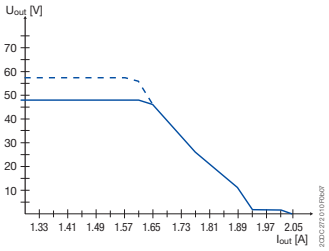
CP-E 24/10.0



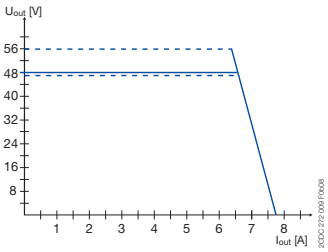
CP-E 24/20.0



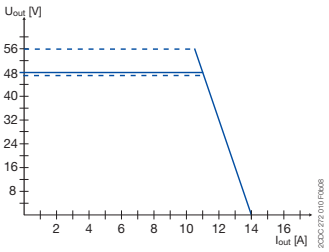
CP-E 48/0.62



CP-E 48/1.25

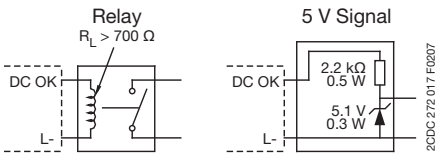


CP-E 48/5.0



CP-E 48/10.0

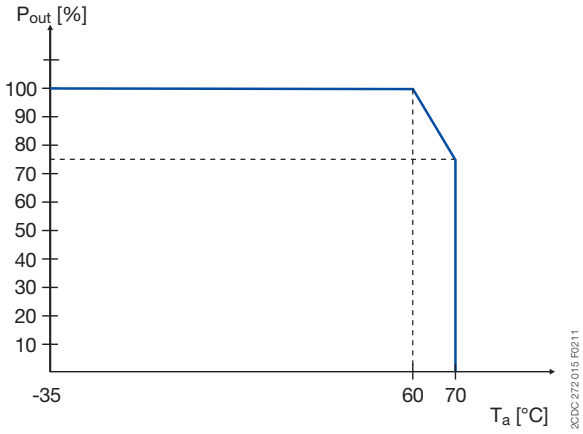
Wiring instructions



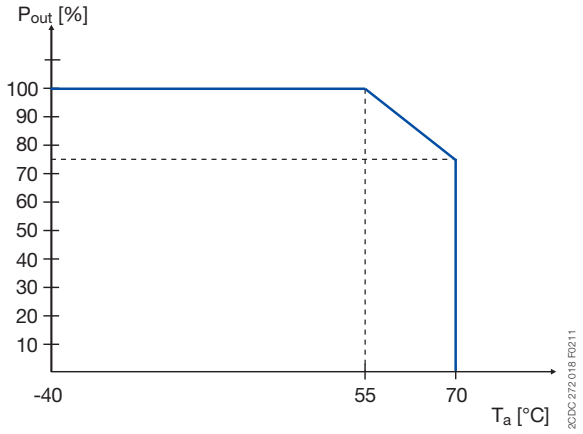
CP-E 24/1.25, CP-E 24/2.5

CP-E range
Technical diagrams, Dimensional drawings

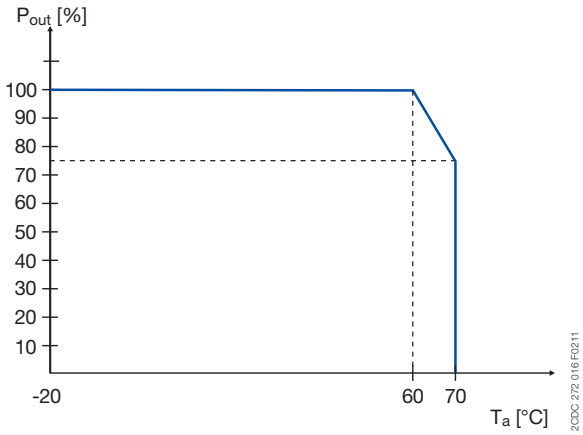
Temperature behaviour at T_a = 25 °C



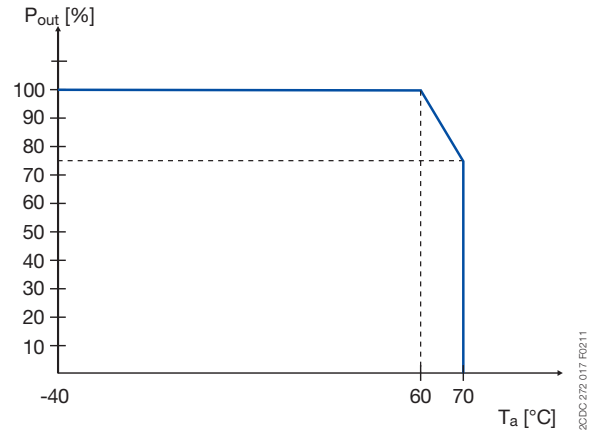
CP-E 12/10.0, CP-E 24/5.0



CP-E 24/20.0, CP-E 48/10.0

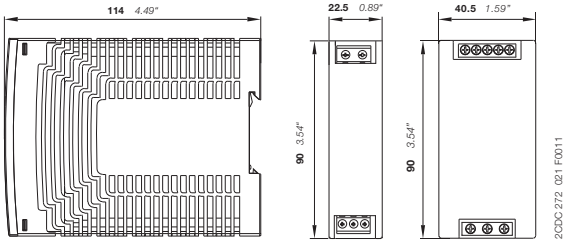


CP-E 5/3.0, CP-E 24/0.75



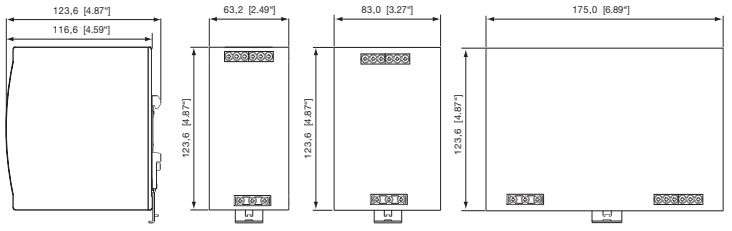
CP-E 12/2.5, CP-E 24/1.25, CP-E 48/0.62,
CP-E 24/2.5, CP-E 48/1.25, CP-E 24/10.0, CP-E 48/5.0

Dimensional drawings dimensions in mm



CP-E 5/3.0,
CP-E 24/0.75

CP-E 12/2.5,
CP-E 24/1.25,
CP-E 24/2.5,
CP-E 48/0.62,
CP-E 48/1.25



CP-E 12/10.0,
CP-E 24/5.0

CP-E 24/10.0,
CP-E 48/5.0

CP-E 24/20.0,
CP-E 48/10.0