
ABB

CP-E range
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CP-E range
Benefits and advantages

ABB's CP-E range offers enhanced functionality and a simpler, more rational selection process. All power supply units can be operated at an ambient temperature of up to +70 °C (158 °F).

Affordable range

Products with exactly the functions you require.
Designed for best possible price-performance ratio.

Global availability

The product can be used in any installations in the world. Giving you the confidence of worldwide sourcing – no matter where you build, install or operate your equipment.

Speed up your projects

Data available for common planning software: Less engineering time required.

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, up to 90 %
- Low power dissipation and low heating
- Free convection cooling (no forced cooling with ventilators)
- Open-circuit, overload and short-circuit stable
- Integrated input fuse
- U/I characteristic curve on devices > 18 W (fold-forward behavior 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
- Various approvals and marks

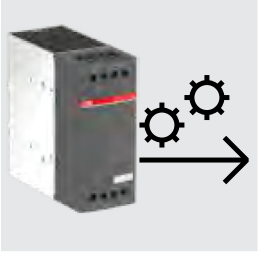
Main benefits

Signalling output / contact
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
Optimized for worldwide applications: The CP-E power supplies can be supplied with a wide range of AC or DC voltages.

Adjustable output voltage
A continuously adjustable output voltage ensures optimal adaptation to the application, e.g. compensating the voltage drop caused by a long line length.

Redundancy units
For decoupling of paralellized power supply units ≤ 40 A. Thus, true redundancy can be achieved.



CP-E range
Operating controls

OUTPUT Adjust:
Potentiometer - adjustment of output voltage

Single/parallel:
Sliding switch - adjustment of single or parallel operation

OUTPUT L+, L+, L-, L-:
Terminals - output 5 V / 12 V / 24 V / 48 V

13-14:
Terminals - signalling contact (or solid-state)

Circuit diagram

Indication of operational states:
OUTPUT OK:
green LED - output voltage OK
OUTPUT LOW:
red LED - output voltage too low

INPUT L, N, PE: terminals - input
90-132 V AC, 180-265 V AC / 210-375 V DC
90-264 V AC / 120-375 V DC
85-264 V AC / 90-375 V DC

CP-E range
Applications

Tooling machines

Packaging industry

Food industry

Textile industry

Printing industry

Electro-mobility

CP-E range
Ordering details


2CDC 271 017 F0006

CP-E 5/3.0


2CDC 271 013 F0006

CP-E 12/2.5


2CDC 271 028 F0008

CP-E 48/5.0


2CDC 271 027 F0008

CP-E 24/20.0

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. With their high thermal efficiency of up to 90 %, these power supplies have very low power and heat dissipation and can be operated 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.

Ordering details - CP-E < 100 W

Input voltage range	Rated output voltage / current	Type	Order code	Weight (1 pc.) 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 ≥ 120 W

Input voltage range	Rated output voltage / current	Type	Order code	Weight (1 pc.) 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	at 115 V AC	15 A	20 A	24 A
	at 230 V AC	30 A	40 A	48 A
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 %
Recovery time T_R		< 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 behavior				
Characteristic curve of output		hiccup-mode	U/I characteristic curve	
Short-circuit protection		continuous short-circuit proof		
Short-circuit behavior		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 loss		typ. 5 W	typ. 5.6 W	typ. 24 W
Efficiency		typ. 75 %	typ. 84 %	typ. 84 %
Duty cycle		100 %		
Dimensions		see “Dimensional drawings”		
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				
Connecting capacity	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		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		II		
Standards / Directives				
Standards		IEC/EN62368-1		
Low Voltage Directive		2014/35/EU		
EMC Directive		2014/30/EU		
RoHS Directive		2011/65/EU		
Protective low voltage		SELV (IEC60950-1)		
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		class B		
high-frequency conducted		class B		
limits for harmonic current emissions	IEC/EN 61000-3-2	class D	class A	class D

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 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	at 115 V AC	15 A	20 A (max. 3 ms)	30 A
	at 230 V AC	30 A	40 A (max. 3 ms)	60 A
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 %	
Recovery time T_R		< 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 behavior				
Characteristic curve of output		hiccup-mode	U/I characteristic curve	
Short-circuit protection		continuous short-circuit proof		
Short-circuit behavior		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 24/0.75	CP-E 24/1.25	CP-E 24/2.5
General data				
Power loss		typ. 4.45 W	typ. 5.5 W	typ. 8.8 W
Efficiency		typ. 77 %	typ. 86 %	typ. 89 %
Duty cycle		100 %		
Dimensions		see “Dimensional drawings”		
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				
Connecting capacity	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		II		
Standards / Directives				
Standards		IEC/EN62368-1		
Low Voltage Directive		2014/35/EU		
EMC Directive		2014/30/EU		
RoHS Directive		2011/65/EU		
Protective low voltage		SELV (IEC60950-1)		
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		class B		
high-frequency conducted		class B		
limits for harmonic current emissions	IEC/EN 61000-3-2	class D	class A	

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 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	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, passive, 0.75	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 %		
Recovery time T_R		< 2 ms		
Starting time after applying the supply voltage	at I_r	max. 1 s	2.5 s (at -40 °C / 90 V AC starting time >2.5 s has to be expected)	max. 1 s
	with 3500 µF	max. 1.5 s	-	-
	with 7000 µF	-	2.5 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	
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 I_r - max. 0.9 I_r		
Series connection		yes, to increase voltage, max. 2 devices		
Resistance to reverse feed		max. 35 V DC		

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 24/5.0	CP-E 24/10.0	CP-E 24/20.0
Output circuit - No-load, overload and short-circuit behavior				
Characteristic curve of output		U/I characteristic curve		
Short-circuit protection		continuous short-circuit proof		
Short-circuit behavior		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	
General data				
Power loss		typ. 20 W	typ. 35 W	typ. 63 W
Efficiency		typ. 86 %	typ. 89 %	typ. 89 %
Duty cycle		100 %		
Dimensions		see “Dimensional drawings”		
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				
Connecting capacity	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		II		
Standards / Directives				
Standards		IEC/EN 62368-1		
Low Voltage Directive		2014/35/EU		
EMC Directive		2014/30/EU		
RoHS Directive		2011/65/EU		
Protective low voltage		SELV (IEC60950-1)		

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 24/5.0	CP-E 24/10.0	CP-E 24/20.0
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	IEC/EN 61000-3-2	class D		

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 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	at 115 V AC	20 A	30 A	30 A (max. 5 ms)	25 A (max. 5 ms)
	at 230 V AC	40 A	60 A	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 %	
Recovery time T_R		< 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			

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 48/0.62	CP-E 48/1.25	CP-E 48/5.0	CP-E 48/10.0
Output circuit - No-load, overload and short-circuit behavior					
Characteristic curve of output		U/I characteristic curve			
Short-circuit protection		continuous short-circuit proof			
Short-circuit behavior		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
General data					
Power loss		typ. 4.9 W	typ. 7.8 W	typ. 32 W	typ. 60 W
Efficiency		typ. 86 %	typ. 89 %	typ. 90 %	
Duty cycle		100 %			
Dimensions		see “Dimensional drawings”			
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					
Connecting capacity	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		II			
Standards / Directives					
Standards		IEC/EN 62368-1			
Low Voltage Directive		2014/35/EU			
EMC Directive		2014/30/EU			
RoHS Directive		2011/65/EU			
Protective low voltage		SELV (IEC60950-1)			

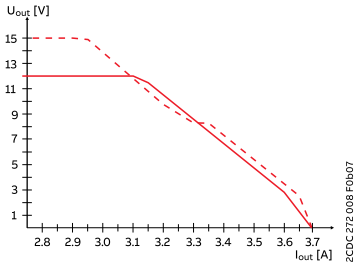
CP-E range
Technical data

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

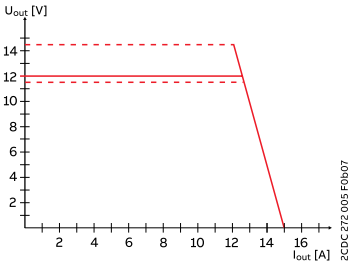
Type		CP-E 48/0.62	CP-E 48/1.25	CP-E 48/5.0	CP-E 48/10.0
Electromagnetic compatibility					
Interference immunity to		IEC/EN 61000-6-2			
electrostatic discharge	IEC/EN 61000-4-2	level 4 (air discharge 15 kV / contact discharge 8 kV)			
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	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	IEC/EN 61000-3-2	class A		class D	

CP-E range
Technical diagrams

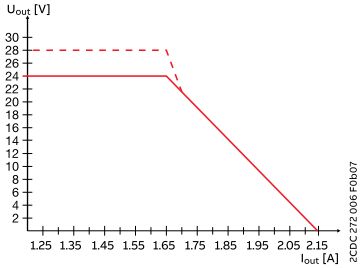
Output curve at T_a = 25 °C



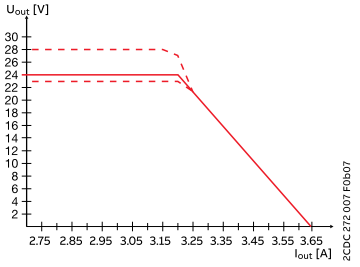
CP-E 12/2.5



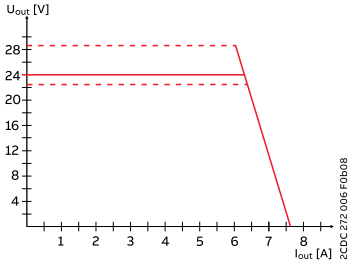
CP-E 12/10.0



CP-E 24/1.25



CP-E 24/2.5



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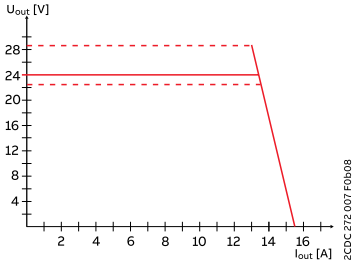
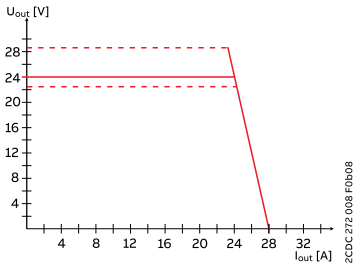
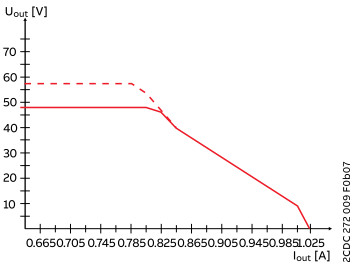


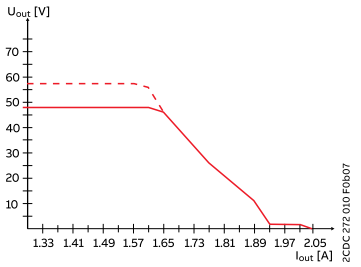
CP-E 24/10.0



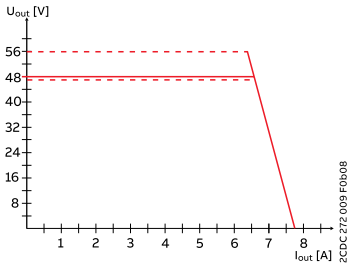
CP-E 24/20.0



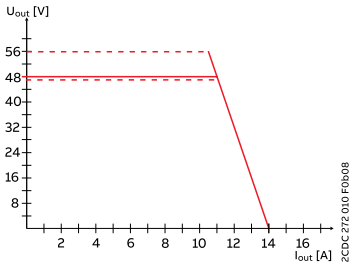
CP-E 48/0.62



CP-E 48/1.25



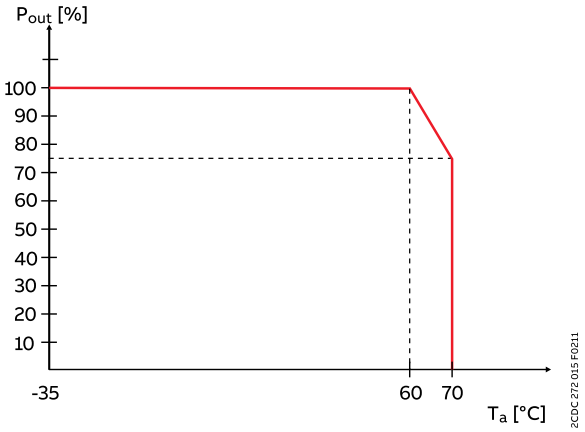
CP-E 48/5.0



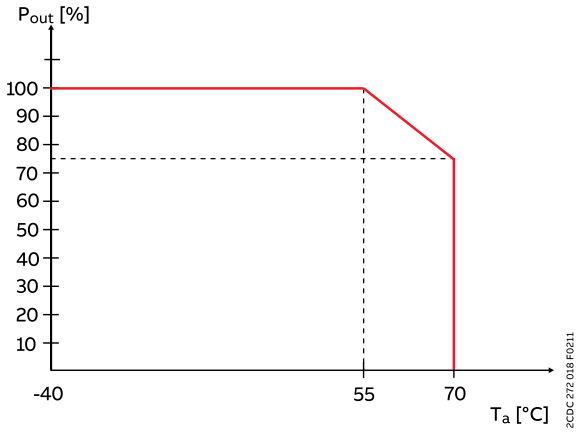
CP-E 48/10.0

CP-E range
Technical diagrams

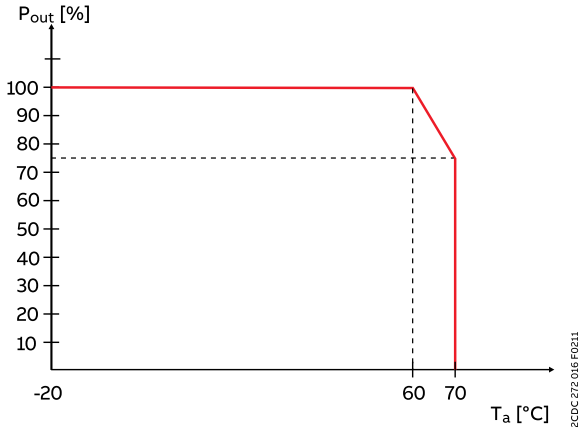
Temperature behavior



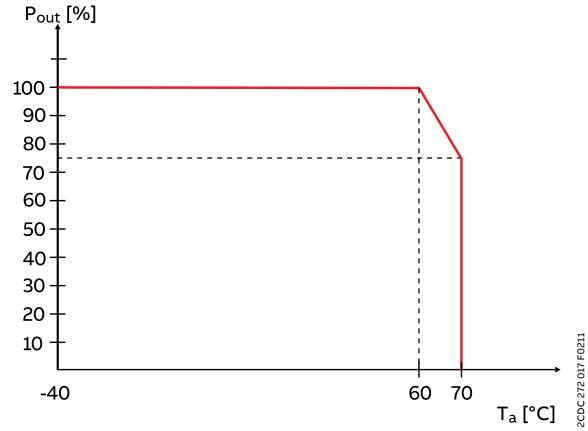
CP-E 12/10.0, CP-E 24/5.0



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



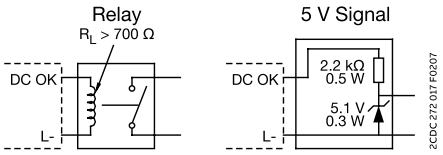
CP-E 5/3.0, CP-E 24/0.75



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

CP-E range
Technical diagrams

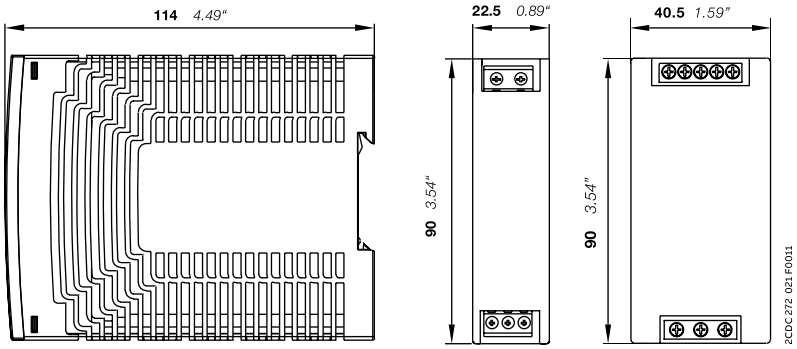
Wiring instructions



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

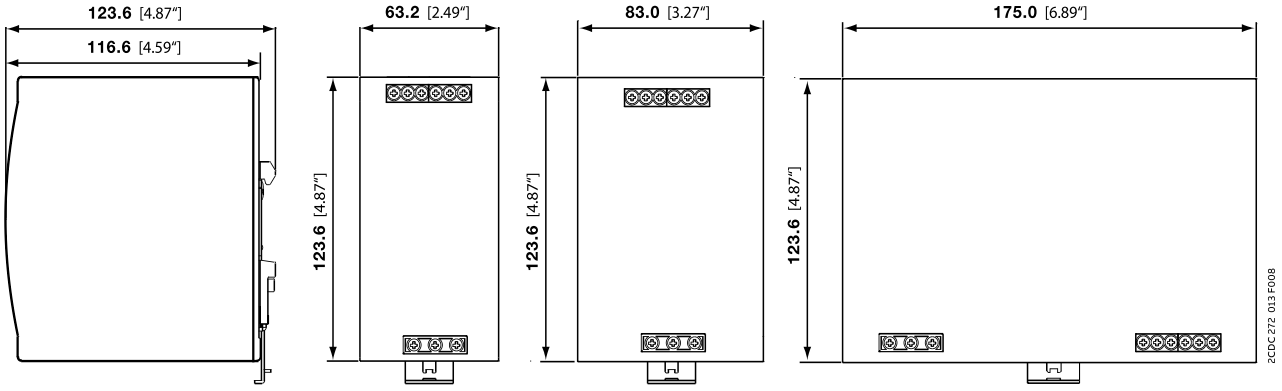
Dimensional drawings

Dimensions in **mm** and inches



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