






CP-E range

Technical data

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

Type		CP-E 5/3.0	CP-E 12/2.5	CP-E 12/10.0
Input circuit				
Rated input voltage U_{in}		100-240 V AC	L, N	
Input voltage range		90-264 V AC / 120-375 V DC	85-264 V AC / 90-375 V DC	115 / 230 V AC auto_select 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	$T_a \leq 60\text{ °C}$	3.0 A	2.5 A	10 A
Derating of the output current	$60\text{ °C} < T_a \leq 70\text{ °C}$	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 $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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 mm ² (24-14 AWG)		0.2-4 mm ² (24-11 AWG)
	fine-strand without wire end ferrule			0.2-6 mm ² (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 182

CP-E range

Technical data

Data at $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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	$T_a \leq 60\text{ °C}$	0.75 A	1.25 A	2.5 A
Derating of the output current	$60\text{ °C} < T_a \leq 70\text{ °C}$	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 $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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 fine-strand without wire end ferrule rigid	0.2-2.5 mm ² (24-14 AWG)		
Stripping length		6 mm (0.24 in)		
Tightening torque	input / output	0.6 Nm (5 lb.in)		
Environmental data				
Ambient temperature range	operation rated load storage	-20...+70 °C -20...+60 °C -20...+85 °C	-40...+70 °C -40...+60 °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 input / PE output / PE	3 kV AC 1.5 kV AC 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 182

CP-E range

Technical data

Data at $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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	$T_a \leq 60\text{ °C}$	5 A	10 A	-
	$T_a \leq 55\text{ °C}$	-	-	20 A
Derating of the output current	$60\text{ °C} < T_a \leq 70\text{ °C}$	2.5 %/°C		
	$55\text{ °C} < T_a \leq 70\text{ °C}$	-	-	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	$\geq 60\text{ V DC}$, $\leq 0.3\text{ A}$ fast-acting		
Maximum deviation with	load change statical change of output voltage within the input voltage range	$\pm 1\%$ (single mode), $\pm 5\%$ (parallel mode) $\pm 0.5\%$		
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 I_r - max. 0.9 I_r		
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 $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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 mm ² (24-11 AWG)		
	fine-strand without wire end ferrule rigid	0.2-6 mm ² (24-10 AWG)		
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 electrostatic discharge	IEC/EN 61000-4-2	IEC/EN 61000-6-2 Level 4 (air discharge 15 kV / contact discharge 8 kV)		
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	IEC/EN 61000-6-3 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 182

CP-E range

Technical data

Data at $T_a = 25\text{ °C}$, $U_{in} = 230\text{ V AC}$ 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	$T_a \leq 60\text{ °C}$ 0.625 A	1.25 A	5 A	-
	$T_a \leq 55\text{ °C}$ -	-	-	10 A
Derating of the output current	$60\text{ °C} < T_a \leq 70\text{ °C}$ 2.5 %/°C			-
	$55\text{ °C} < T_a \leq 70\text{ °C}$ -	-	-	2.5 %/°C
Signalling output for output voltage OK	DC OK	-	-	-
Maximum deviation with load change statical	$\pm 0.5\%$		$\pm 1\%$ (single mode) $\pm 5\%$ (parallel mode)	
	change of output voltage within the input voltage range $\pm 0.5\%$		$\pm 0.5\%$	
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 $T_a = 25\text{ °C}$, $U_n = 230\text{ V AC}$ 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			0.2-4 mm ² (24-11 AWG)
	fine-strand without wire end ferrule	0.2-2.5 mm ² (24-14 AWG)		
	rigid			0.2-6 mm ² (24-10 AWG)
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			
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/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

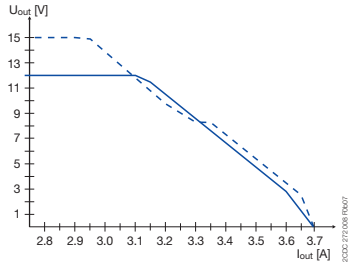
"Approvals and marks" on page 182

CP-E range

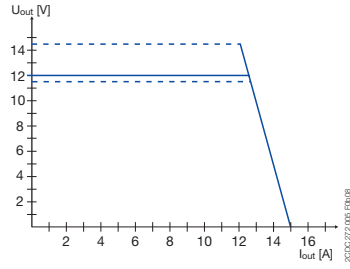
Technical diagrams, Wiring instructions

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

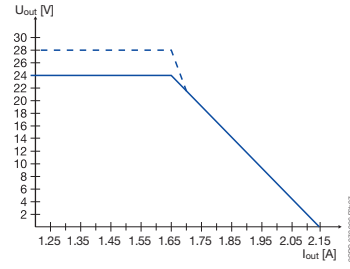
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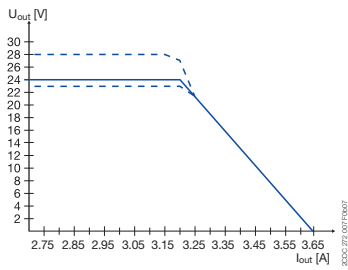
CP-E 12/2.5



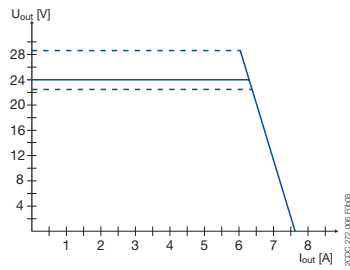
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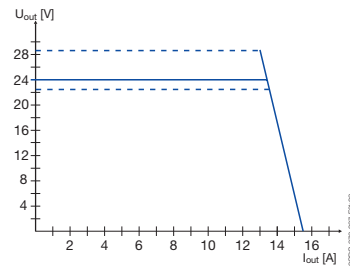
CP-E 24/1.25



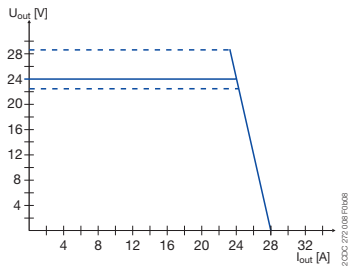
CP-E 24/2.5



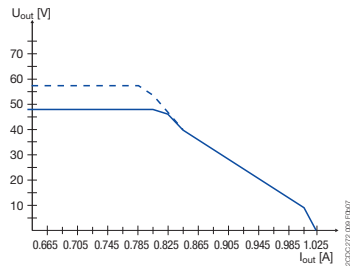
CP-E 24/5.0



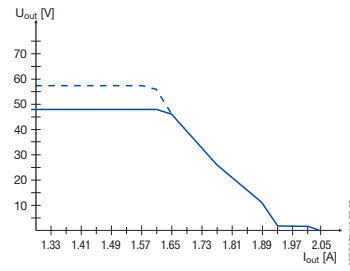
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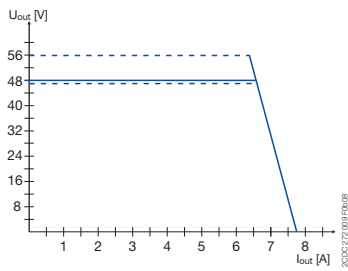
CP-E 24/20.0



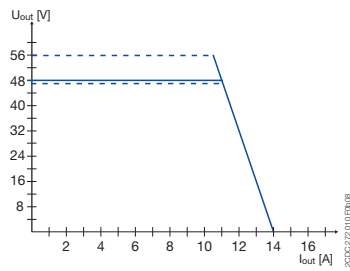
CP-E 48/0.62



CP-E 48/1.25

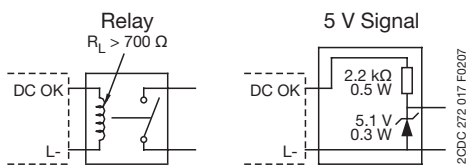


CP-E 48/5.0



CP-E 48/10.0

Wiring instructions



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