

Power supplies CP-E, CP-S and CP-C range



The new CP-E range power supplies



Modern switch mode AC to DC power supplies are a vital component in most information gathering systems, energy management, automation technology and closed loop equipment control systems. This technology reduces size, weight, heat losses and ensures maximal efficiency. ABB, as your global technology partner, has invested a countless resources and man hours into producing the most advanced automation sensors, process controllers and power supplies to supply energy for these to operate.

Our research and development group has created a line of innovative power supplies and accessories, rich in technology and delivered at competitive pricing.

The new CP-E range offers enhanced functionality while reducing the number of components required to cover typical applications. They offer output voltages from 5 VDC to 48 VDC and output currents of 0.625 A to 3 A. They are designed for high thermal efficiency to provide very low power and heat dissipation, allowing operation without fan cooling. Their operating temperature range has been increased to 70°C to allow installation in panels and equipment designed for high ambient temperature locations. Functionality has been enhanced while the number of different models has been reduced.

The CP-E range is designed to meet or exceed popular world-wide standards like cULus and IEC/EN 60950 and have both CE and C-TICK marks.



“DC OK” output

The 24 V units of the CP-E range, offer a transistor output for monitoring and remote diagnosis.



Wide input range

Designed for global input voltages: The CP-E power supplies can operate with input voltages from 85...265 VAC or 90...375 VDC.

NEW!



Characteristics of the CP-E range

- Output voltage 5 V, 12 V, 24 V, 48 VDC
- Adjustable output voltages
- Output current 0.625 A, 0.75 A, 1.25 A, 2.5 A, 3 A
- Power range 15 W, 18 W, 30 W, 60 W
- Wide input range 100–240 VAC (85–265 VAC, 90–375 VDC)
- High efficiency of up to 89 %
- Low power dissipation and low internal heating
- Free convection cooling (no forced cooling with fans)
- Ambient temperature range during operation –10...+70 °C
- Open-circuit, overload and short-circuit protection, automatic fault recovery
- Integrated input fuse
- V/I characteristic curve for devices > 18 W (fold-forward behavior at overload – no shutdown)
- Redundancy unit CP-A RU offering true redundancy
- LED(s) for status indication
- DC OK output (transistor) on 24 V units (> 18 W)

Approvals/Marks of the power supplies

- Approvals:



508, TUV (IEC/EN 60950),
1310 Listed Class 2 Power Supply*

- Marks:



* depending on device



Adjustable output voltage

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.



Ambient temperature range during operation of up to +70°C

The components used in the CP-E power supplies are rated for up to 105°C. This allows an operating temperature rating of +70°C.



Redundancy unit CP-RUD 1SVR 423 418 R9000

For decoupling of parallel power supply units. Thus, true redundancy can be achieved.

The proven power supplies of the CP-S and CP-C range

The CP-C range features an ABB design innovation. It has plug and play function modules. These modules can be selected to exactly match the CP-C's operation to the equipment or system. All ABB power supplies feature primary switch mode design, are designed for rugged industrial environments and have UL and CSA approval and carry the CE & C-Tick marks.

Characteristics of the CP-S and CP-C power supplies

- Output current 5 A, 10 A and 20 A
- Integrated power reserve of up to 50 %
- Constant or adjustable output voltage (depending on type)
- High efficiency of approx. 88–89 %
- Low power dissipation and low internal heating
- Open-circuit, overload and short-circuit protected, automatic fault recovery
- Integrated input fuse
- May be connected in parallel to increase power output or to provide a redundant power source.
- Select the CP-A RU accessory module for isolated redundant and backup power applications.
- Pluggable output terminals for up to 10A
- Status LED "OUTPUT OK"

CP-S range

- Autorange input (only 5 A version)
- Input voltage adjustable via front-face selector switch (10 A, 20 A version)
- Fixed output voltage 24 V
- Possibility to be operated in parallel for redundancy purposes

CP-C range

- Autorange input 85–264 VAC, 100–350 VDC
- Output voltage adjustable 22–28 V
- Possibility to be operated in parallel to increase capacity and for redundancy purposes
- Power Factor Correction (PFC) in accordance to EN 61000-3-2
- Front-face pluggable function modules

Function modules for CP-C range

- CP-C MM, messaging module with relay outputs for INPUT OK, OUTPUT OK and REMOTE ON/OFF
- CP-C CB, current balancing module (under development)

Approvals/Marks of the power supplies

- Approvals:



- Marks:



Integrated power reserve

The CP-S and CP-C range power supplies feature an integrated power reserve of up to 50 %. Up-sizing the power supply is not needed for heavy short term load applications.



Double terminal assignment + pluggable terminals

The double output terminals reduces the amount of wiring by reducing the need for external terminal blocks for load connections. The connection terminals are removable to make wire connections faster and easier. (removable terminal are not available on all models).

NEW!



Extension devices

Redundancy unit CP-A RU 1SVR 427 071 R0000

- For decoupling of parallel power supply units. Thus, true redundancy can be achieved.
- 2 input terminals; each up to 20 A
- Output up to 40 A
- 2 integrated diodes for decoupling
- Control module CP-A CM can be mounted on the front of the unit.



Pluggable function modules for highest flexibility

The CP-C range power supplies can be equipped with pluggable modules to add specific functions. This provides a superior cost to performance ratio and allows future upgrades on existing hardware. CP-C power supplies provide all basic functionality without any function module installed. The module attachment terminals are covered when not used.



Messaging module CP-C MM 1SVR 427 081 R0000

- LED display and relay outputs for "INPUT OK" and "OUTPUT OK"
- REMOTE ON/OFF function to remotely power-down and power-up the device
- Pluggable on the front of every CP-C power supply.



Control module CP-A CM 1SVR 427 075 R0000

- Voting unit plugs onto the CP-A RU to allow monitoring the voltage in each channel of the CP-A RU.
- Adjustable threshold values (14–28 V) and relay output terminals per input / circuit

Product overview: Power supplies CP-E, CP-S and CP-C range

NEW!



CP-E Range Selection Guide

	CP-E 24/0.75	CP-E 24/1.25	CP-E 24/2.5	CP-E 5/3.0	CP-E 12/2.5	CP-E 48/0.62	CP-E 48/1.25	
Power supplies CP-E range	24 V / 0.75 A	24 V / 1.25 A	24 V / 2.5 A	5 V / 3.0 A	12 V / 2.5 A	48 V / 0.62 A	48 V / 1.25 A	
Part number	1SVR 427 030 R0000	1SVR 427 031 R0000	1SVR 427 032 R0000	1SVR 427 033 R3000	1SVR 427 032 R1000	1SVR 427 030 R2000	1SVR 427 031 R2000	
Technical data, Input								
Rated input voltage	100–240 VAC	100–240 VAC		100–240 VAC	100–240 VAC			
Input voltage range	AC	90–265 V	85–264 V		90–265 V	85–264 V		
	DC	120–370 V	90–375 V		120–370 V	90–375 V		
Input frequency (AC)	47–63 Hz							
Power failure buffering at nom. input	> 75 ms	> 30 ms		> 75 ms	> 30 ms			
Typ. current consumption	at 110 VAC	344 mA	565 mA	1.1 A	308 mA	577 mA	563 mA	1.1 A
	at 240 VAC	214 mA	336 mA	620 mA	188 mA	335 mA	334 mA	620 mA
Inrush current	18 A	40 A	60 A	18 A	40 A	40 A	60 A	
Internal input fuse	2 AT / 250 VAC ¹⁾							
Technical data, Output								
Output voltage	24 VDC ± 1 %	24 VDC ± 1 %	24 VDC ± 1 %	5 VDC ± 1 %	12 VDC ± 1 %	48 VDC ± 1 %	48 VDC ± 1 %	
Adjustable range	21.6–28.8 VDC	24–28 VDC	24–28 VDC	4.5–6 VDC	12–15 VDC	48–55 VDC	48–55 VDC	
Output power	18 W	30 W	60 W	15 W	30 W	30 W	60 W	
Output current (T _A < 60 °C)	0.75 A	1.25 A	2.5 A	3.0 A	2.5 A	0.625 A	1.25 A	
Efficiency	> 77 %	> 86 %	> 89 %	> 75 %	> 84 %	> 86 %	> 89 %	
Short-circuit / overload protection	continuous short circuit stability							
Overload characteristic	hiccup mode	V/I characteristic curve		hiccup mode	V/I characteristic curve			
Short-circuit current limiting	yes	yes	yes	yes	yes	yes	yes	
Direct connection of parallel supplies	no							
Other data								
Protection enclosure / terminals	IP 20 / IP 20							
Ambient temperature range during operation	–10 ... + 70 °C (derating at 60 °C: 2,5% at Kelvin)							
Dimensions (W x H x D, mm) (W x H x D, inches)	23.9 x 88.5 x 115 0.94 x 3.48 x 4.52	43.5 x 88.5 x 115 1.71 x 3.48 x 4.52		23.9 x 88.5 x 115 .94 x 3.48 x 4.52	43.5 x 88.5 x 115 1.71 x 3.48 x 4.52			
Weight (kg) (oz)	approx. 0.15 approx. 5.3	approx. 0.29 approx. 10.2	approx. 0.36 approx. 10.7	approx. 0.15 approx. 5.3	approx. 0.29 approx. 10.2	approx. 0.29 approx. 10.2	approx. 0.36 approx. 10.7	

All data at rated input voltage, rated load, T_A = 25 °C

1) internal device protection, not accessible



Power supplies CP-S and CP-C range

	CP-S 24/5.0	CP-S 24/10.0	CP-S 24/20.0	CP-C 24/5.0	CP-C 24/10.0	CP-C 24/20.0
Power supplies CP-S and CP-C range	24 V / 5 A	24 V / 10 A	24 V / 20 A	24 V / 5 A	24 V / 10 A	24 V / 20 A
Part number	1SVR 427 014 R0000	1SVR 427 015 R0100	1SVR 427 016 R0100	1SVR 427 024 R0000	1SVR 427 025 R0000	1SVR 427 026 R0000
Technical data, Input						
Rated input voltage	110–240 VAC	switch selectable 110: 110–120 VAC switch selectable 230: 220–240 VAC		110–240 VAC		
Input voltage range	85–264 VAC	switch selectable 110: 85–132 VAC switch selectable 230: 184–264 VAC		85–264 VAC		
	AC					
DC	100–350 VDC	220–350 VDC		100–350 VDC		
Input frequency (AC)	47–63 Hz					
Power failure buffering at rated input	typ. > 100 ms	typ. > 50 ms		typ. > 100 ms	typ. > 40 ms	
Typ. current consumption	at 110–240 VAC	2,2–1,2 A		2,2–1,2 A	3,5–1,6 A	5,5–2,5 A
	at 110–120 VAC		4,2–4,0 A	9,0–8,0 A		
	at 220–240 VAC		2,4–2,2 A	4,5–4,0 A		
Inrush current / i²t (cold start)	< 23 A / approx. 0.9 A²s	< 40 A / approx. 1.8 A²s	< 70 A / approx. 8 A²s	< 23 A / approx. 0.9 A²s	< 33 A / approx. 0.2 A²s	< 40 A / approx. 1.9 A²s
Internal input fuse	4 AT ¹)	6.3 AT ¹)	12 AF ¹)	4 AT ¹)	6.3 AT ¹)	12 AF ¹)
Technical data, Output						
Output voltage	24 VDC (CP-C +/- 1%) (CP-S -1 ... +5%)					
Adjustable range	fixed output voltage			22–28 V, factory setting 24 V ± 0.5%		
Output current (T _A < 60 °C)	5 A	10 A	20 A	5 A	10 A	20 A
Peak output current I _{OUTMAX} (power reserve at T _A < 40 °C)	typ. ≤ 7.25 A	typ. ≤ 12.25 A	typ. ≤ 22.5 A	typ. ≤ 7.25 A	typ. ≤ 12.25 A	typ. ≤ 22.5 A
Efficiency	> 88 %					
Short-circuit / overload protection	continuous short-circuit stability, thermal protection					
Overload characteristic	V/I characteristic curve					
Short-circuit current limitation	approx. 11 A	approx. 19 A	approx. 25 A	approx. 11 A	approx. 19 A	approx. 25 A
Parallel operation	yes, up to 5 devices					
Other data						
Power factor correction (EN 61000-3-2)	no			yes		
Protection enclosure / terminals	IP 20 / IP 20					
Ambient temperature range during operation	–25 ... +70 °C (derating at 60 °C: 2.5 % at Kelvin)					
Dimensions (W² x H x D, mm) (W x H x D, inches)	≤ 60 x 130 x 137 ≤ 2.36 x 5.12 x 5.39	≤ 93.5 x 130 x 137 ≤ 3.69 x 5.12 x 5.39	≤ 203.5 x 130 x 137 ≤ 8.012 x 5.12 x 5.39	≤ 60 x 130 x 137 ≤ 2.36 x 5.12 x 5.39	≤ 93.5 x 130 x 137 ≤ 3.69 x 5.12 x 5.39	≤ 203.5 x 130 x 137 ≤ 8.012 x 5.12 x 5.39
Weight (kg) (oz)	approx. 0.96 kg approx. 33.9 oz	approx. 1.07 kg approx. 37.7 oz	approx. 2.83 kg approx. 99.8 oz	approx. 0.96 kg approx. 33.9 oz	approx. 1.34 kg approx. 47.3 oz	approx. 3.15 kg approx. 111.11 oz

All data at rated input voltage, rated load, $T_A = 25^\circ\text{C}$

1) Internal device protection, not accessible

2) Lateral screw increases width by 3.5mm; max width shown