

CP-S and CP-C

Benefits and advantages

Characteristics

CP-S and CP-C range

- Output current 5 A, 10 A and 20 A
- Integrated power reserve of up to 50 %
- 5 A and 10 A devices with pluggable connecting terminals
- Approvals / marks
(depending on device, partly pending)
- 

CP-S range

- 10 A and 20 A device with front-face selector switch to adjust rated input voltage range:
110-120 V AC or 220-240 V AC
- Output voltage fixed at 24 V DC
- Parallel operation for redundancy

CP-C range

- Wide range input 110-240 V AC (85-264 V AC, 100-350 V DC)
- Output voltage adjustable within a range of 22-28 V DC
- Parallel operation for increased capacity and redundancy
- Power factor correction (PFC) acc. to EN 61000-3-2
- Function module pluggable onto the front side

Messaging module CP-C MM:

- LED for status indication
- Relay outputs "Input OK" and "Output OK"
- REMOTE ON/OFF function to switch on and off the power supply externally
- Output voltage monitoring is only possible in decoupled parallel operation

Benefits

Integrated power reserve ①

The new CP-S and CP-C range power supplies feature an integrated power reserve of up to 50 %. No oversized electricity supply is needed, especially under heavy load conditions.

Pluggable connecting terminals ②

Extended flexibility in operation due to pluggable connecting terminals (this feature is not offered on all devices).

Adjustable output voltage ③

The CP-C range types feature a continuously adjustable output voltage from 22 to 28 V. Thus, they can be optimally adapted to the application, e.g. compensating the voltage drop caused by long line length.

Pluggable function modules ④

The CP-C range power supplies can be equipped with pluggable modules to add additional functions (e.g. messaging module). Thus, the power supplies can be ideally adapted to the relevant application.



CP-S and CP-C

Operating control



- 1** OUTPUT L+, L-: terminals - output
- 2** Indication of operational states
OUTPUT OK: green LED - output voltage OK
- 3** OUTPUT Adj.: rotary potentiometer - adjustment of output voltage
- 4** Circuit diagram
- 5** INPUT L, N, PE: terminals - input

3



- 1** OUTPUT L+, L-: terminals - output
- 2** Indication of operational states
OUTPUT OK: green LED - output voltage OK
- 3** Circuit diagram
- 4** INPUT L, N, PE: terminals - input

CP-S and CP-C

Ordering details

3



CP-S 24/5.0



CP-S 24/20.0



CP-C 24/10.0

Description

The power supply units in the CP-S and CP-C range are ABB's high-end solutions. Designed with an integrated 50 % power reserve and an efficiency of approximately 89 % these are the perfect products for all complex, highly reliable applications. All the devices cover the U-I output characteristic and are built with thermal protection which switches off in case of overheating. In particular, the devices of the CP-C range feature a much broader functionality, including active power factor correction and pluggable function modules. These products are designed to trip MCB's in the 24 V DC output circuit. Coordination tables are available.

Ordering details - CP-S

Input voltage range	Rated output voltage / current	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
85-264 V AC / 110-350 V DC	24 V DC / 5 A	CP-S 24/5.0	1SVR427014R0000		0.96 (2.11)
85-132 V AC, 184-264 V AC / 220-350 V DC	24 V DC / 10 A	CP-S 24/10.0	1SVR427015R0100		1.07 (2.35)
85-132 V AC, 184-264 V AC / 220-350 V DC	24 V DC / 20 A	CP-S 24/20.0	1SVR427016R0100		2.83 (6.23)

Ordering details - CP-C

Input voltage range	Rated output voltage / current	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
85-264 V AC / 110-350 V DC	24 V DC / 5 A	CP-C 24/5.0	1SVR427024R0000		0.96 (2.11)
85-264 V AC / 110-350 V DC	24 V DC / 10 A	CP-C 24/10.0	1SVR427025R0000		1.34 (2.95)
85-264 V AC / 110-350 V DC	24 V DC / 20 A	CP-C 24/20.0	1SVR427026R0000		3.15 (6.94)

Description	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
Messaging module for CP-C range power supplies	CP-C MM	1SVR427081R0000		0.065 (0.14)

CP-S and CP-C

Technical data

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

Type		CP-C 24/5.0 CP-S 24/5.0	CP-C 24/10.0 CP-S 24/10.0	CP-C 24/20.0 CP-S 24/20.0
Input circuit - supply circuit		L, N		
Rated input voltage U_{in}	CP-C	110-240 V AC		
	CP-S	switch position 115	110-240 V AC	110-120 V AC
		switch position 230		220-240 V AC
Input voltage range	CP-C	85-264 V AC / 100-350 V DC ¹⁾		
	CP-S	switch position 115	85-264 V AC / 100-350 V DC ¹⁾	85-132 V AC
		switch position 230		184-264 V AC / 220-350 V DC ¹⁾
Frequency range AC		47-63 Hz		
Typical input current	CP-S and CP-C at 110-240 V AC	2.2-1.2 A	2.6-1.2 A	5.5-2.5 A
	CP-S at 110-120 V AC	-	4.2-4.0 A	9.0-8.0 A
	CP-S at 220-240 V AC	-	2.4-2.2 A	4.5-4.0 A
Typ. power consumption		135 W	269 W	538 W
Inrush current limiting / I^2t (cold start)	CP-C	< 23 A / approx. 0.9 A ² s	< 33 A / approx. 0.2 A ² s	< 40 A / approx. 1.9 A ² s
	CP-S		< 40 A / approx. 1.8 A ² s	< 70 A / approx. 8 A ² s
Power failure buffering time		min. 100 ms	min. 40 ms	min. 40 ms
Transient overvoltage protection		varistors		
Internal input fuse (apparatus protection, not accessible)		4 A (slow-acting)	6.3 A (slow-acting)	12 A (fast-acting)
Power factor correction (PFC)	CP-C	yes, active		
	CP-S	no		
Indication of operational states				
Output voltage	OUTPUT OK: green LED	L: output voltage OK		
Output circuit		L+, L+, L-, L- : short-circuit, no-load and overload proof		
Rated output voltage		24 V DC		
Tolerance of the output voltage	CP-C	±1 %		
	CP-S	-1...+5 %		
Adjustment range of the output voltage	CP-C	22-28 V DC, default setting 24 V ±0.5 %		
	CP-S	fixed		
Rated output power		120 W	240 W	480 W
Rated output current	$T_a \leq 60\text{ °C}$	5 A	10 A	20 A
Peak output current (power reserve)	$T_a \leq 40\text{ °C}$	typ. $\leq 7.25\text{ A}$	typ. $\leq 12.25\text{ A}$	typ. $\leq 22.5\text{ A}$
Derating	$60\text{ °C} < T_a \leq 70\text{ °C}$	2.5 % per Kelvin temperature increase		
Deviation with	CP-C load change statical 10-90 %	typ. < ±0.05 %		
	CP-S load change statical 10-90 %	typ. < ±0.1 %		
	load change dynamical 10-90 %	typ. < ±3 %		
	change of the input voltage of ±10 %	typ. < ±0.05 %		
Control time		typ. < 1 ms		
Starting time after applying supply voltage	CP-C	< 200 ms	< 200 ms	typ. < 200 ms
	CP-S		< 250 ms	typ. < 300 ms
Rise time 10-90 %	CP-C	typ. < 30 ms	typ. < 4 ms	typ. < 12 ms
	CP-S		typ. < 5 ms	typ. < 15 ms
Residual ripple and switching peaks	BW = 20 MHz	typ. < 50 mV _{pp}		
Parallel connection		yes, up to 5 devices, to enable redundancy and to increase power, current not symmetrical (CP-S only redundancy)		
Series connection		yes, to increase voltage, for decoupling refer to the application manual		
Resistance to reverse feed		approx. 35 V DC		
Output circuit - No-load, overload and short-circuit behaviour		see also U/I- and I/T-characteristic curves		
Characteristic curve of output		U/I characteristic curve with power reserve		
Current limiting at short circuit		approx. 11 A	approx. 19 A	approx. 25 A
Short-circuit protection		continuous short-circuit stability		
Overload protection		thermal protection		
Starting of capacitive loads		unlimited		
General data				
Power dissipation		typ. < 15 W	typ. < 29 W	typ. < 58 W
Efficiency		typ. 89 %		
Discharge current for PE		< 3.5 mA		
MTBF	CP-C	500.000 h		
	CP-S	350.000 h		
Dimensions (W x H x D)		56.5 (60 2)) x 130 x 135.5 mm (2.22 (2.36 2)) x 5.12 x 5.35 in)	90 (93.5 2)) x 130 x 135.5 mm (3.54 (3.68 2)) x 5.12 x 5.35 in)	200 (203.5 2)) x 130 x 135.5 mm (7.87 (8.01 2)) x 5.12 x 5.35 in)
Weight	CP-C	approx. 0.96 kg (2.12 lb)	approx. 1.34 kg (2.95 lb)	approx. 3.15 kg (6.94 lb)
	CP-S		approx. 1.07 kg (2.36 lb)	approx. 2.83 kg (6.23 lb)
Minimum distance to other units	horizontal / vertical	10 mm / 80 mm (0.39 in / 3.15 in)		
Degree of protection	housing / terminals	IP20 / IP20		
Material of housing	housing shell / cover	aluminium / zinc-coated sheet steel		
Protection class (EN 61140)		I		
Mounting		DIN rail (IEC/EN 60715), snap-on mounting		
Mounting position		horizontal		

CP-S and CP-C

Technical data

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

Type		CP-C 24/5.0 CP-S 24/5.0	CP-C 24/10.0 CP-S 24/10.0	CP-C 24/20.0 CP-S 24/20.0
Electrical connection - Input circuit		3)	3)	-
Wire size	fine-strand with wire end ferrule	0.2-2.5 mm² (24-14 AWG)		2.5-10 mm² (14-8 AWG)
	fine-strand without wire end ferrule			0.5-10 mm² (20-8 AWG)
	rigid			0.5-16 mm² (20-6 AWG)
Stripping length		7 mm (0.28 in)		12 mm (0.47 in)
Tightening torque		0.4 Nm		1.2-1.5 Nm
Electrical connection - Output circuit		3)	3)	-
Wire size	fine-strand with wire end ferrule	0.12-2.5 mm² (26-14 AWG)		2.5-10 mm² (14-8 AWG)
	fine-strand without wire end ferrule			0.5-10 mm² (20-8 AWG)
	rigid			0.5-16 mm² (20-6 AWG)
Stripping length		8 mm (0.31 in)		12 mm (0,47 in)
Tightening torque		0.4 Nm		1.2-1.5 Nm
Environmental data				
Ambient temperature range	operation	-25...+70 °C		
	rated load	0...+60 °C (without derating)		
	storage	-40...+85 °C		
Damp heat (IEC/EN 60068-2-3)		93 % at +40 °C, no condensation		
Climatic category (IEC/EN 60721)		3K3		
Vibration (IEC/EN 60068-2-6)				
Shock (IEC/EN 60068-2-27)				
Isolation data				
Rated insulation voltage U _i between all isolated circuits (IEC/EN 60950-1; EN 50178)	input / output	300 V		
	input / PE	300 V		
	output / PE	50 V		
Rated impulse withstand voltage U _{imp} between all isolated circuits (IEC/EN 60950-1; EN 50178)	input / output	4 kV; 1.2/50 µs		
	input / PE	2.5 kV; 1.2/50 µs		
	output / PE	500 V; 1.2/50 µs		
Power-frequency withstand voltage test (test voltage) (routine test / type test)	input / output	1.5 kV AC / 3.0 kV AC		
	input / PE	1.5 kV AC / 3.0 kV AC		
	output / PE	500 V DC / 500 V DC		
Pollution degree (IEC/EN 60950-1; EN 50178)		2		
Overvoltage category (IEC/EN 60950-1; EN 50178)		II		
Standards				
Product standard		IEC/EN 61204		
Low Voltage Directive		2006/95/EC		
EMC Directive		2004/108/EC		
Electrical safety		EN 50178, EN 60950, UL 60950, UL 508		
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 (8 kV / 15 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)		
surge	IEC/EN 61000-4-5	Level 4 (2 kV symmetrical, level 3 - 3 kV asymmetrical)		
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3 (10 V)		
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		

¹⁾ at $U > 264\text{ V}$ use additionally an appropriate external fuse

²⁾ with lateral screw

³⁾ pluggable connecting terminals, actuate only when power is off

„Approvals and marks“ on page 3/4.

CP-S and CP-C

Technical data

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

Type		CP-C MM
Input circuit - Supply circuit		
Rated input voltage U_{in}		110-240 V AC / 100-350 V DC
Input voltage range		70-264 V AC / 80-350 V DC
Power consumption		2.5 VA / 1.5 W
Input circuit - Control circuit		
Kind of triggering		volt-free triggering
Control input, control function	Remote OFF	remote off
Threshold "Switching-off power supply unit"		$R \leq 1\text{ k}\Omega$
Threshold "Switching-on power supply unit"		$R \geq 10\text{ k}\Omega$
Input current		typ. 1 mA (200 mA for 200 μ s)
Maximum cable length to the control input		25 m - 100 pF/m
Measuring circuit - INPUT		
Monitoring function		powered by the input circuit of the power supply unit
		undervoltage monitoring of input voltage of the power supply unit
Thresholds		85 V AC / 90 V DC
Hysteresis, related to the threshold value		AC: typ. -8 % / DC -30 %
Accuracy, tolerance		-5 % at AC and DC
Maximum measuring cycle		typ. < 50 ms
Measuring circuit - OUTPUT		
Monitoring function		powered by the output circuit of the power supply unit
		undervoltage monitoring of output voltage of the power supply unit
Thresholds		20 V DC
Hysteresis, related to the threshold value		typ. 5 %
Accuracy, tolerance		$\pm 1\%$
Maximum measuring cycle		typ. < 10 ms
Indication of operational states		
Remote off	REMOTE OFF: green LED	 : „REMOTE OFF" input $R \leq 1\text{ k}\Omega$
Status of power supply input	Input OK: green LED	 : relay „INPUT OK" energized
Status of power supply output	OUTPUT OK: green LED	 : relay „OUTPUT OK" energized
Output circuits		
Kind of output		11-12/14, 21-22/24
Operating principle		relays, 2 x 1 c/o contacts
Contact material		closed-circuit principle
Rated voltage (VDE 0110, IEC/EN 60947-1)		AgNi
Minimum switching voltage / Minimum switching current		250 V
Maximum switching voltage / Maximum switching current		24 V / 10 mA
Rated operating current I_e (IEC/EN 60947-1)		250 V / 1 A
	AC-12 (resistive) at 230 V	1 A
	AC-15 (inductive) at 230 V	1 A
	DC-12 (resistive) at 24 V	1 A
	DC-13 (inductive) at 24 V	1 A
Mechanical lifetime		30 x 10 ⁶ switching cycles
Electrical lifetime		0.1 x 10 ⁶ switching cycles
Short circuit proof, maximum fuse rating	n/c contact	2 A, gL
	n/o contact	2 A, gL
General data		
Duty time		100 %
Dimensions (W x H x D, when mounted)		56.5 x 54 x 24 mm (2.22 x 2.13 x 0.94 in)
Weight		0.065 kg (0.14 lb)
Degree of protection	housing / terminals	IP20 / IP20
Material of housing		Plastic
Protection class (EN 61140)		II
Mounting		snap-on mounting, without any tool
Mounting position		plugged onto the power supply unit
Electrical connection		
Wire size	fine-strand with wire end ferrule	0.2-2.5 mm ² (24-14 AWG)
	fine-strand without wire end ferrule	
	rigid	0.2-4 mm ² (24-12 AWG)
Stripping length		7.5 mm (0.3 inch)
Tightening torque		0.4-0.6 Nm

CP-S and CP-C

Technical data

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

Type	CP-C MM	
Environmental data		
Ambient temperature range	operation	-25...+70 °C
	storage	-40...+85 °C
Damp heat (IEC/EN 60068-2-3)		93 % at +40 °C, no condensation
Climatic category (IEC/EN 60721)		3K3
Vibration (IEC/EN 60068-2-6)		
Shock (IEC/EN 60068-2-27)		
Isolation data		
Rated insulation voltage U _i (IEC/EN 60974-1, EN 50178, VDE 0160)		250 V
Protective separation (EN 50178, EN 60950) supply / measuring circuits / relay outputs		yes
Rated impulse withstand voltage U _{imp} between all isolated circuits (IEC 664, VDE 0110)		4 kV; 1.2/50 µs
Test voltage between all circuits (type test)		2.5 kV AC
Pollution degree (EN 60950)		2
Overvoltage category (EN 60950)		II
Standards		
Product standard		IEC/EN 61204
Low Voltage Directive		2006/95/EC
EMC Directive		2004/108/EC
Electrical safety		EN 50178, EN 60950, UL 60950, UL 508
Elektromagnetic compatibility		
Interference immunity to		IEC/EN 61000-6-2
electrostatic discharge	IEC/EN 61000-4-2	Level 3 and 4 (6 kV / 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 and 2 (4 kV power input / 1 kV control input)
surge	IEC/EN 61000-4-5	Level 3 and 2 (4 kV symmetrical power input / 1 kV control input)
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level (10 V)
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

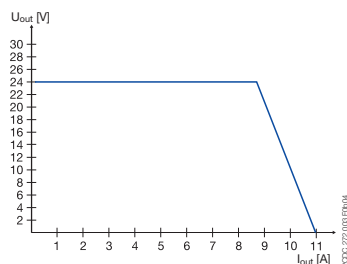
„Approvals and marks“ on page 3/4.

CP-S and CP-C

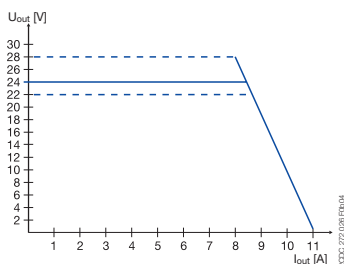
Technical diagrams, Dimensional drawings

Technical diagrams

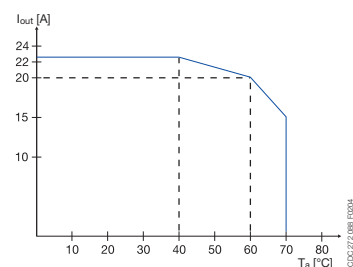
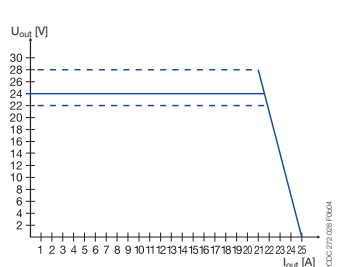
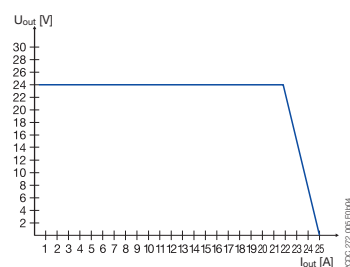
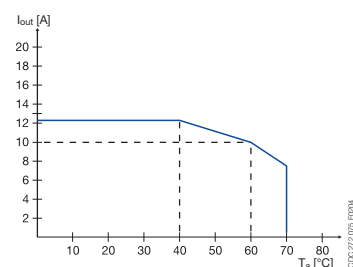
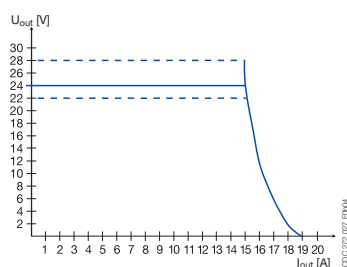
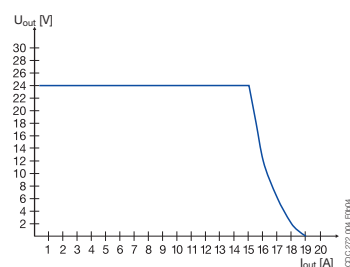
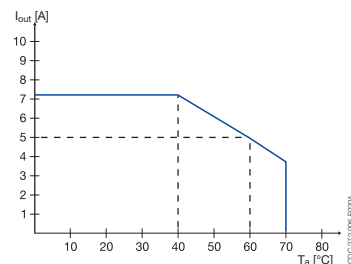
Output curve at 25 °C



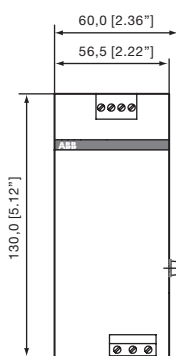
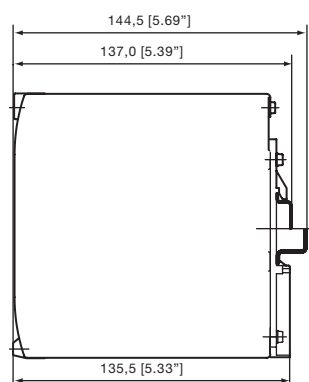
Output curve at 25 °C



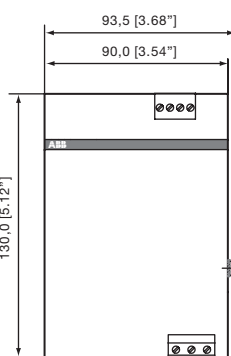
Temperature curve at $U_{out} = 24 \text{ V DC}$



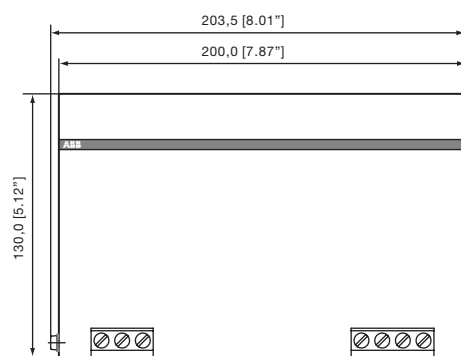
Dimensional drawings dimensions in mm



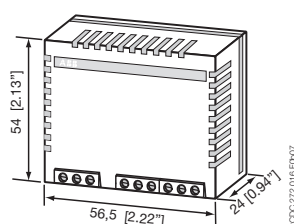
CP-S 24/5.0
CP-C 24/5.0
CP-A RU



CP-S 24/10.0
CP-C 24/10.0



CP-S 24/20.0
CP-C 24/20.0



CP-C MM

Redundancy units

Ordering details

3



CP-A RU + CP-A CM



CP-A RU



CP-RUD



CP-D RU

Ordering details					
Description	suitable for decoupling of two CP-24 V DC power supply units or suitable for decoupling of CP-E power supply units	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
2 inputs each up to 20 A and 1 output up to 40 A	≤ 40 V and ≥ 5 A	CP-A RU	1SVR427071R0000		0.89 (1.96)
Control module for CP-A RU redundancy units	-	CP-A CM	1SVR427075R0000		0.063 (0.14)
2 inputs each up to 2.5 A and 1 output up to 5 A	≤ 35 V and < 5 A	CP-RUD	1SVR423418R9000		0.15 (0.33)

Ordering details - CP-D RU for decoupling of two CP-D power supply units						
Input voltage range	Rated input current	Rated output voltage / current	Type	Order code	Price	Weight (1 pce) kg (lb)
9-35 V DC	2 x 5 A	24 V DC / 1 x 10 A	CP-D RU	1SVR427049R0000		0.075 (0.165)

Redundancy units

Technical data

Type	CP-A RU		CP-A RU
			in combination with CP-A CM
Input circuit - Supply circuit	(+/ -, +/-)		
Rated input voltage U_{in}	24 V DC		
Input voltage range per channel	10-28 V DC	13-28 V DC	
Rated input current I_{in} per channel	1-20 A		
Maximum input current per channel	30 A for 300 s		
Transient overvoltage protection	yes		
Output circuit	(++)		
Rated output voltage U_{out}	24 V DC		
Voltage drop	typ. 0.6 V, max. 0.9 V		
Rated output current I_{out}	1-40 A		
Output ratings per channel	$T_a = 60\text{ °C}$	10-28 V DC / 40 A	13-28 V DC / 40 A
	$T_a = 70\text{ °C}$	10-28 V DC / 30 A	13-28 V DC / 30 A
Derating	$60\text{ °C} < T_a \leq 70\text{ °C}$	2.5 % per Kelvin temperature increase	
Peak output current	60 A for 300 s		
Resistance to reverse feed	< 40 V		
General data			
Dimensions (W x H x D)	56.5 (60 ¹⁾) x 130 x 135.5 mm; (2.22 (2.36 ¹⁾) x 5.12 x 5.35 in)		
Weight	0.89 kg (1.96 lb)		
Minimum distance to other units	horizontal / vertical	10 mm / 50 mm (0.39 in / 1.97 in)	
Degree of protection	housing / terminals	IP20 / IP20	
Material of housing	housing shell / cover	aluminium / zinc-coated sheet steel	
Protection class	III ²⁾		
Mounting	DIN rail (IEC/EN 60715)		
Mounting position	horizontal		
Electrical connection - Input circuit / Output circuit			
Wire size	fine-strand with wire end ferrule	2.5-10 mm ² (14-8 AWG)	
	fine-strand without wire end ferrule	0.5-10 mm ² (20-8 AWG)	
	rigid	0.5-16 mm ² (20-6 AWG)	
Stripping length	12 mm (0.47 in)		
Tightening torque	1.2-1.5 Nm		
Environmental data			
Ambient temperature range	operation	-25...+70 °C	
	rated load	-25...+60 °C (without derating)	
	storage	-40...+85 °C	
Damp heat (IEC/EN 60068-2-3)	93 % at 40 °C, no condensation		
Climatic category (IEC/EN 60721)	3K3		
Vibration (IEC/EN 60068-2-6)			
Shock (IEC/EN 60068-2-27)			
Isolation data			
Insulation voltage	between input / output / housing	500 V AC (routine test)	
Pollution degree (EN 50178)	2		
Standards			
Product standard	IEC/EN 61204		
Low Voltage Directive	2006/95/EC		
EMC Directive	2004/108/EC		
Electrical safety	EN 50178, EN 60950, UL 60950, UL 508		
Electromagnetic compatibility			
Interference immunity to	IEC/EN 61000-6-2		
electrostatic discharge	IEC/EN 61000-4-2	Level 3 (air discharge ±8 kV, contact discharge ±6 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 3 (±2 kV)	
surge	IEC/EN 61000-4-5	Level 1 (±0.5 kV)	
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3 (10 V)	
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	

¹⁾ incl. lateral screw

²⁾ This device is designed for connection to a safety extra-low voltage source. If no safety extra-low voltage is used at the input side, the lateral screw can be used for grounding of the housing (protection class I).

Redundancy units

Technical data

3

Type		CP-A CM
Input circuit - Supply circuit		
Rated input voltage U_{in}		24 V DC
Input voltage range		13-28 V DC
Rated input current	at rated sense load and 24 V DC	120 mA
Power consumption	at 24 V DC	approx. 1 W
Measuring circuit		
		11-12/14, 21-22/24
Monitoring function		undervoltage monitoring
Measuring voltage		rated operational voltage
Thresholds		14-28 V
Hysteresis, related to the threshold value		fix: 3-5 %
Accuracy, tolerance		10 % of full-scale value
Maximum measuring cycle		6 ms
Indication of operational states		
Status of input 1	IN 1: green LED	 L: voltage at input 1 > than threshold 1 = no faults present
Status of input 2	IN 2: green LED	 L: voltage at input 2 > than threshold 2 = no faults present
Output status	OUT: green LED	 L: $U_{OUT} > 3 V$ = no faults present
Output circuit		
		+, +, -
Kind of output		relays, 2 x 1 c/o contact
Contact material		AgNi
Operating principle		closed-circuit principle
Rated operational voltage U_e (IEC/EN 60947-1, VDE 0110)		250 V
Minimum switching voltage / Minimum switching current		24 V / 10 mA
Maximum switching voltage / Maximum switching current		250 V / 1 A
Rated operational current I_e (IEC/EN 60947-5-1)	AC-12 (resistive) at 230 V	1 A
	AC-15 (inductive) at 230 V	1 A
	DC-12 (resistive) at 24 V	1 A
	DC-13 (inductive) at 24 V	1 A
Mechanical lifetime		30 x 10 ⁶ switching cycles
Electrical lifetime		0.1 x 10 ⁶ switching cycles
Rating according UL 508	General purpose (GP) 250 V AC	1 A
Maximum fuse rating to achieve short-circuit protection	n/o contact	2 A, gL
	n/c contact	2 A, gL
Sense output (+, +, -)		
		1 SVR 427 075 R0000
Sense output voltage		13-28 V DC
Sense output current		0.1 A
Maximum fuse rating		For applications acc. UL the sense output shall be provided with a listed DC fuse 3 A
General data		
Duty time		100 %
Dimensions (W x H x D, when mounted)		56.5 x 54 x 24 mm (2.22 x 2.13 x 0.94 in)
Material of housing		plastic
Weight		0.063 kg (0.14 lb)
Degree of protection	housing / terminals	IP20 / IP20
Protection class		II
Mounting		snap-on mounting, without any tool
Mounting position		plugged onto the redundancy unit CP-A RU
Electrical connection		
Wire size	fine-strand with wire end ferrule	0.2-2.5 mm ² (24-14 AWG)
	fine-strand without wire end ferrule	
	rigid	0.2-4 mm ² (24-12 AWG)
Stripping length		7.5 mm (0.3 in)
Tightening torque		0.4-0.6 Nm
Isolation data		
Rated insulation voltage U_i (IEC/EN 60947-1, EN 50178, VDE 0160)		250 V
Rated impulse withstand voltage U_{imp} (type test) between all circuits (IEC 664, VDE 0110)		2.5 kV
Power-frequency withstand voltage test (routine test) between all circuits		1.2 kV AC
Protective separation (EN 50178) between input and output		yes
Pollution degree		2
Overvoltage category		II
Environmental data		
Ambient temperature range	operation	-25...+70 °C
	storage	-40...+85 °C
Damp heat (IEC/EN 60068-2-3)		93 %at 40 °C, no condensation
Climatic category (IEC/EN 60721)		3K3
Vibration (IEC/EN 60068-2-6)		
Shock (IEC/EN 60068-2-27)		

Redundancy units

Technical data

3

Type	CP-RUD	
Input circuit - Supply circuit	A: U1+/-U ; B: U2+/-U	
Rated input voltage U_{in}	24 V DC	
Input voltage range	5-35 V DC	
Rated input current I_{in} per channel	0.5-2.5 A	
Maximum input current per channel	10 A for 300 s	
Transient overvoltage protection	no	
Output circuit	L+, L+, L+, L-, L-, L-	
Rated output voltage U_{out}	24 V DC	
Voltage drop	typ. 0.6 V, max. 0.7 V	
Rated output current I_{out}	0.5-5 A	
Peak output current	20 A for 150 s	
Resistance to reverse feed	< 35 V	
General data		
Dimensions (W x H x D)	22.5 x 78 x 100 mm (0.89 x 3.07 x 4.02 in)	
Weight	0.135 kg (0.30 lb)	
Minimum distance to other units	horizontal / vertical	10 mm / 10 mm (0.39 in / 0.39 in)
Degree of protection	housing / terminals	IP20 / IP20
Material of housing	housing shell / cover	plastic / plastic
Protection class	-	
Mounting	DIN rail (IEC/EN 60715)	
Mounting position	horizontal	
Electrical connection - Input circuit / Output circuit		
Wire size	fine-strand with wire end ferrule	2 x 0.75-2.5 mm ² (2 x 18-14 AWG)
	fine-strand without wire end ferrule	
	rigid	2 x 0.5-4 mm ² (2 x 20-12 AWG)
Stripping length	7 mm (0.28 in)	
Tightening torque	0.6-0.8 Nm	
Environmental data		
Ambient temperature range	operation	-20...+60 °C
	rated load	-20...+60 °C
	storage	-40...+85 °C
Damp heat (IEC/EN 60068-2-3)	93 % at 40 °C, no condensation	
Climatic category (IEC/EN 60721)	-	
Vibration (IEC/EN 60068-2-6)		
Shock (IEC/EN 60068-2-27)		
Isolation data		
Insulation voltage	between input / output / housing	-
Pollution degree (EN 50178)	2	
Standards		
Product standard		
Low Voltage Directive	2006/95/EC	
EMC Directive	2004/108/EC	
Electrical safety	EN 50178	
Electromagnetic compatibility		
Interference immunity to	IEC/EN 61000-6-2	
electrostatic discharge	IEC/EN 61000-4-2	Level 3 (air discharge ±8 kV, contact discharge ±6 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 3 (±2 kV)
surge	IEC/EN 61000-4-5	Level 1 (±0.5 kV)
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3 (10 V)
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

¹⁾ incl. lateral screw

²⁾ This device is designed for connection to a safety extra-low voltage source. If no safety extra-low voltage is used at the input side, the lateral screw can be used for grounding of the housing (protection class I).

Redundancy units

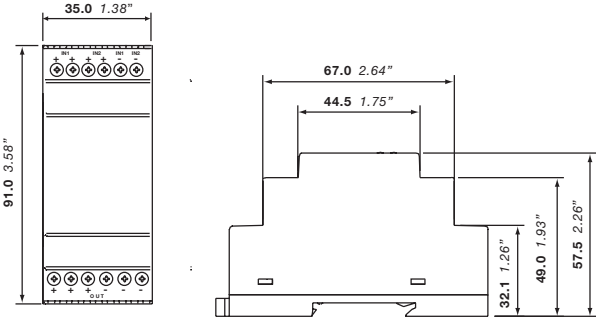
Technical data

3

Type	CP-D RU	
Input circuit - Supply circuit	IN 1 + + -, IN 2 + + -	
Rated input voltage U _{in}	24 V DC	
Input voltage range	9-35 V DC	
Rated input current I _{in} per channel	5 A	
Maximum input current per channel	10 A for 300 s	
Transient overvoltage protection	no	
Output circuit	OUT + + +, - - -	
Rated output voltage U _{out}	24 V DC	
Voltage drop	typ. 0.5 V	
Rated output current I _{out}	10 A	
Resistance to reverse feed	< 35 V	
General data		
MTBF	on request	
Duty time	100 %	
Dimensions (W x H x D)	product dimensions	35 x 91 x 56.5 mm (1.38 x 3.58 x 2.22 in)
	packaging dimensions	134 x 94 x 48 mm (5.28 x 3.70 x 1.89 in)
Weight	net weight	0.075 kg (0.165 lb)
	gross weight	0.130 kg (0.286 lb)
Material of housing	plastic	
Mounting	DIN rail, snap-on mounting without any tool	
Mounting position	horizontal	
Minimum distance to other units	horizontal / vertical	25 mm (0.98 in) / 25 mm (0.98 in)
Electrical connection - Input circuit / Output circuit		
Wire size	fine-strand with (out)wire end ferrule	0.2-2.5 mm² (24-14 AWG)
	rigid	0.2-2.5 mm² (24-12 AWG)
Stripping length	7.0 mm (0.28 in)	
Tightening torque	0.67 Nm (6 lb.in)	
Environmental data		
Ambient temperature range	operation	-40...+70 °C
	storage	-40...+85 °C
Relative humidity	RH at 40 °C	20-95 %, no condensation
Vibration (IEC/EN 60068-2-6)	Mounting by rail: 10-500 Hz, 2 G, along X, Y, Z each axis, 60 min for each axis	
Shock (IEC/EN 60068-2-27)	15 G, 11 ms, 3 axis, 6 faces, 3 times for each face	
Standards		
Product standard	IEC/EN 61204-3	
Low Voltage Directive	2006/95/EC	
EMC Directive	2004/108/EC	
RoHS Directive	2011/65/EC	
Electromagnetic compatibility		
Interference immunity to	EN 55024	
electrostatic discharge	IEC/EN 61000-4-2	Level 3, air discharge 8 kV, contact discharge 4 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 3, 2 kV / 5 kHz
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3, 10 V
Interference emission	EN 55022	
high-frequency radiated	IEC/CISPR 22 / EN 55022	Class B
high-frequency conducted	IEC/CISPR 22 / EN 55022	Class B

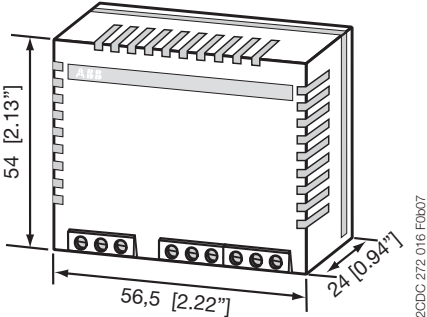
Redundancy units

Dimensional drawings



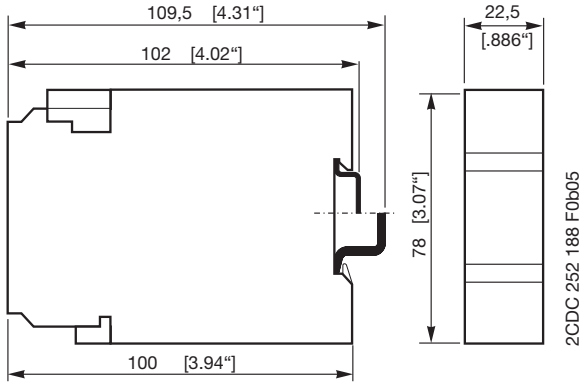
CP-D RU

2CDC272039F0010



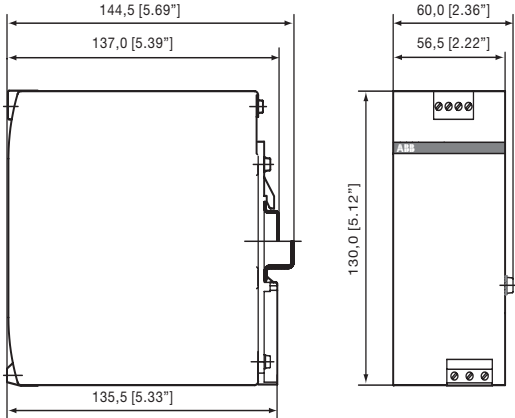
CP-A CM

2CDC 272 016 F0b07



CP-RUD

2CDC 252 188 F0b05



CP-A RU

2CDC 272 015 F0b07