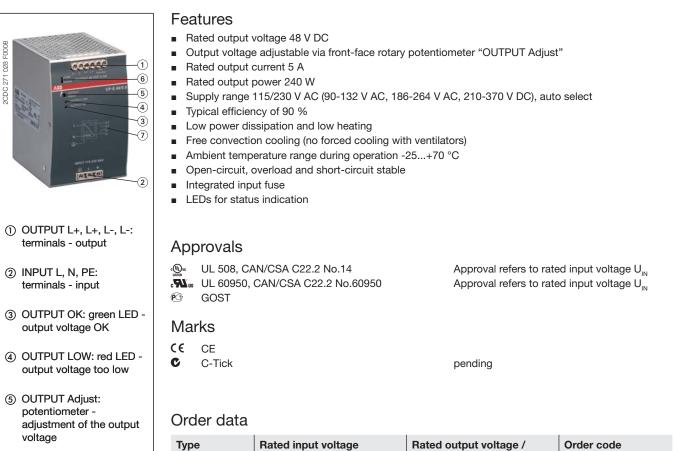
# Primary switch mode power supply

Data sheet



- 6 single/parallel: sliding switch adjustment of single or parallel operation
- ⑦ Circuit diagram

Туре	Rated input voltage	Rated output voltage / current	Order code		
CP-E 48/5.0	115/230 V AC auto select	48 V DC / 5 A	1SVR 427 034 R2000		

### Application

The primary switch mode power supply offers two voltage input ranges. This enables the supply with AC or DC. Furthermore it is equipped with two generous capacitors, which ensure mains buffering of at least 30 ms (at 230 V AC). That is why the devices can be used worldwide also in high fluctuating networks and battery-powered plants.

# Operating mode

By means of the potentiometer "OUTPUT Adjust" the output voltage can be adjusted within a range of 47 to 56 V DC. Thus, the power supply can be optimally adapted to the application, e.g. compensating the voltage drop caused by a long line length.

The green LED "OUTPUT OK" is lightening during proper operation, i.e. when the output voltage is more than 75 %.

The red LED "OUTPUT LOW" is lightening when the output voltage is less than 70 % of the rated output voltage.

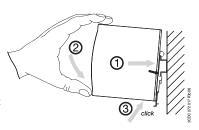
1

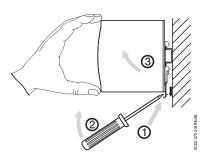
Primary switch mode power supply Data sheet

### Installation

#### Mounting

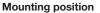
The switch mode power supply can be snapped on a DIN rail according to EN 50022 as shown in the accompanying picture. For that the device is set with its mounting rail slide on the upper edge of the mounting rail and locked by lifting it downwards.



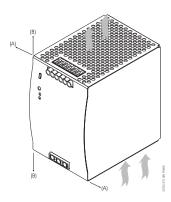


#### Demounting

Remove the switch mode power supply as shown in the accompanying picture. For that the latching lever is pulled downwards by means of the screwdriver. Alternatively you can press the unlock button to release the device. Then in both cases the device can be unhinged from the mounting rail edge and removed.



The devices have to be mounted horizontally with the input terminals on the bottom. In order to ensure a sufficient convection, the minimum distance to other modules should not be less than 25 mm in vertical and horizontal direction.



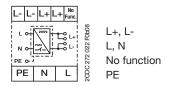
#### **Electrical connection**

Connect the input terminals L and N. The protective earth conductor PE must be connected. The installation must be executed acc. to EN 60950, provide a suitable disconnecting device (e. g. line protection switch) in the supply line. The input side is protected by an internal input fuse. Rate the lines for the maximum output current (considering the short-circuit current) or provide a separate fuse protection. We recommend to choose the cable section as large as possible in order to minimize voltage drops. Observe the polarity. The device is overload, short-circuit and open-circuit proof. The secondary side of the power supply unit is electrically isolated from the input and internally not earthed (SELV) and can therefore be earthed by the user according to the needs with L+ or L- (PELV).

Primary switch mode power supply

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### Connection diagram



Output voltage Input voltage not connected Protective earth

### Safety instructions and warnings

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The device must be installed by qualified persons only and in accordance with the specific national regulations (e.g., VDE, etc.). The devices are maintenance-free chassis-mounted units.

#### Disconnect system from supply network!

Before any installation, maintenance or modification work: Disconnect the system from the supply network and protect against switching on.

#### Before start of operation:

Attention! Improper installation/operation may impair safety and cause operational difficulties or destruction of the unit. Before operation the following must be ensured:

- Connect to main according t the specific national regulations.
- Power supply cables and unit must be sufficiently fused. A disconnecting device has to be provided for the end product to disengage unit and supply cables from supply mains if required.
- The protective earth conductor must be connected to the terminal (Protection class I)
   The secondary side of the power supply unit is not control and can be control by the
- The secondary side of the power supply unit is not earthed and can be earthed by the user according to the needs with L+ or L-.
- Rate the output lines for the output current of the power supply and connect thme with the correct polarity.
- In order to ensure sufficient air-cooling the distance to other devices has to be considered.

#### In operation:

- Do not modify the installation (primary and secondary side)! High current! Risk of electric arcs and electric shocks (danger to life)!
- Risk of burns: Depending on the operation conditions the enclosure can become very hot.
- The internal fuse is not user-replaceable. If the internal fuse blows, most probably the device is defective. In this case, an examination of the switch mode power supply by the manufacturer is necessary.

### Attention! High voltage! Danger to life!



The power supplies contain components with high stored energy and circuits with high voltage! Do not introduce any objects into the unit, and do not open the unit. With some units of this range the output is capable of providing hazardous energy. Ensure that the service personnel is protected against inadvertent contact with parts carrying energy.

Primary switch mode power supply

Data sheet

## Technical data

Data at  $T_{a}$  = 25 °C,  $U_{_{\rm IN}}$  = 230 V AC and rated values, if nothing else indicated

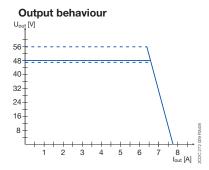
Туре		CP-E 48/5.0	
Input circuit		L, N	
Rated input voltage U <sub>IN</sub>		115/230 V AC auto select	
Input voltage range		93-132 V AC, 186-264 V AC /	
		210-370 V DC	
Frequency range AC		47-63 Hz	
Typical input current	at 115 V AC	5.4 A	
at 230 V AC		2.2 A	
Typical power consumption		267 W	
Inrush current	at 115 V AC	30 A (max. 5 ms)	
	at 230 V AC	60 A (max. 5 ms)	
Power failure buffering	at 115 V AC	min. 25 ms	
	at 230 V AC	min. 30 ms	
Internal input fuse		6.3 A slow-acting / 250 V AC	
Indication of operational states			
Output voltage	OUTPUT OK: green LED	: output voltage OK	
	OUTPUT LOW: red LED	: 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		47-56 V DC	
Rated output power		240 W	
Rated output current I,	$T_a \le 60 \text{ °C}$	5 A	
Derating of the output current	60 °C < T <sub>a</sub> ≤ 70 °C	2.5 %/°C	
Maximum deviation with	land abanga station	±1 % (single mode)	
	load change statical	$\pm 5$ % (parallel mode)	
	change of input voltage within the input voltage range	±0.5 %	
Control time		< 2 ms	
Starting time after applying the supp	oly voltage at I	max. 1 s	
Response time	at rated load		
Residual ripple and switching peaks	BW = 20 MHz	100 mV	
Parallel connection		configurable, to increase power, up to 3 devices, reduction: (number of devices x $I_x$ ) x 0.9	
Series connection		yes, to increase voltage, max. 2 devices	
Resistance to reverse feed			
Power factor correction (PFC)		yes	
Output circuit - No-load, overload a	nd short-circuit behaviour		
Output curve		U/I curve	
Short-circuit protection		continuous short-circuit proof	
Short-circuit behaviour		continuation with output power limitation	
Overload protection		output power limitation	
No-load protection		continuous no-load stability	
Starting of capacitive loads		unlimited	

Primary switch mode power supply Data sheet

Efficiency         typ. 90 %           Duty time         100 %           Dimensions (W x H x D)         83 x 123.6 x 123.6 mm           Bit straid of enclosure         83 x 123.6 x 123.6 mm           Meatrial of enclosure         Metail           Mounting position         Metail           Mounting position         Metail           Mounting position         horizontal           Mounting position         horizontal / vertical           Difference         1.8 kg 3.0 lb )           Best co other units         horizontal / vertical           Minimum distance to other units         horizontal / vertical           Protection class         I           Effectrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)           Wire size         fine-strand with write end ferrule           C.2-6 mm² (24-10 AWG)         8 mm (0.31 ln)           Tightening torque         input / output           Ambient temperature range         operation           first of load         -25+70 °C           first of load         -25+80 °C           Do	Туре		CP-E 48/5.0	
Daytyme         100 %           Dimensions (W x H x D)         83 x 123.6 x 123.6 mm (3.27 x 4.87 nm)           Weight         1.36 kg 30.1 b)           Material of enclosure         Metall           Mounting position         Metall           Mounting position         DIN rail (EN 60715), snap-on mounting without any tool Mounting position           Mounting position         Interview           Minimum distance to other units         horizontal / vertical           Direction closs         I           Electrical connection - input circuit / output circuit         I           Vire size         fine-strand withwire end ferrule raige         0.2-4 mm² (24-11 AWG)           Fine-strand without wire end ferrule raige         0.2-4 mm² (24-10 AWG)         I           Stripping length         mput / output         1 Nm / 0.6 Nm         I           Environmental data         -         -         -           Ambient temperature range         operation         -25470 °C         -           Stripping length         storage         -25470 °C         -           Tightening torque         input / output         1 Nm / 0.6 Nm         -           Stripping length         storage         -25470 °C         -           Damp east (cyclic) (EC/EN 60068-2-3	Gerneral data			
Daytyme         100 %           Dimensions (W x H x D)         83 x 123.6 x 123.6 mm (3.27 x 4.87 nm)           Weight         1.36 kg 30.1 b)           Material of enclosure         Metall           Mounting position         Metall           Mounting position         DIN rail (EN 60715), snap-on mounting without any tool Mounting position           Mounting position         Interview           Minimum distance to other units         horizontal / vertical           Direction closs         I           Electrical connection - input circuit / output circuit         I           Vire size         fine-strand withwire end ferrule raige         0.2-4 mm² (24-11 AWG)           Fine-strand without wire end ferrule raige         0.2-4 mm² (24-10 AWG)         I           Stripping length         mput / output         1 Nm / 0.6 Nm         I           Environmental data         -         -         -           Ambient temperature range         operation         -25470 °C         -           Stripping length         storage         -25470 °C         -           Tightening torque         input / output         1 Nm / 0.6 Nm         -           Stripping length         storage         -25470 °C         -           Damp east (cyclic) (EC/EN 60068-2-3	Efficiency		typ. 90 %	
(3.27 × 4.87 × 4.87 in)           Weight         1.36 kg (3.01 hb)           Mutring of enclosure         Metall           Mounting position         DIN rail (EN 60715), snap-on mounting without any tool horizontal           Minimum distance to other units         horizontal / vertical         25 mm / 25 mm (0.98 in / 0.98 in / 0.98 in)           Degree of protection         enclosure / terminals         II/201         II/20           Protection closs         I         I         III           Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)         III           Vite size         fine-strand with wire end ferrule         0.2-4 mm² (24-11 AWG)         IIII           Tightening torque         input / output         0.2-4 mm² (24-11 AWG)         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Duty time			
Weight         1.36 kg (3.01 lb)           Material of enclosure         Metall           Mounting         DIN rail (EN 60715, snap-on mounting without any tool           Mounting position         01N rail (EN 60715, snap-on mounting without any tool           Mounting position         10N rail (EN 60715, snap-on mounting without any tool           Dargee of protection class         1           Electrical connection - input circuit / output circuit         1           Wire size         fine-strand with wire end femule         0.2-4 mm² (24-11 AWG)           fine-strand with wire end femule         0.2-6 mm² (24-10 AWG)         1           Stripping langth         input / output         1 Nm (0.8 Im         0.2-8 mm² (24-10 AWG)           Stripping langth         input / output         1 Nm (0.8 Im         0.2-8 mm² (24-10 AWG)           Stripping langth         sorrage         -25+70 °C         -25+80 °C           Ambient temperature range         operation         -25+80 °C         -25+80 °C           Storage         -25+80 °C         -25+80 °C         -25+80 °C           Storado adu         CE/CN 60068-2-9.7)         Eoel condition output circuit / output circuit         3 KV AC           Pollution degree         2         2         2	Dimensions (W x H x D)		83 x 123.6 x 123.6 mm	
Material of enclosure         Metall           Mounting position         DIN rail (EN 60715), snap-on mounting without any tool           Mounting position         horizontal           Mounting costion         enclosure / terminals         IP/20 / IP20           Protection class         I         I           Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)         I           Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)         I           Tipping length         0.2-6 mm² (24-10 AWG)         8 mm (0.31 in)         I           Tipping length         goperation         -25+70 °C         rated lead         -25+70 °C           Trathening torque         input / output         1 Nm / 0.6 Nm         I         I           Environmental data         -         -         -25+70 °C         -25+70 °C           Trated lead         -25+70 °C         -         -25+70 °C			[3.27 x 4.87 x 4.87 in]	
Mounting         DIN rail (EN 60715), snap-on mounting without any tool           Mounting position         horizontal / vertical         25 mm (25 mm (0.98 in / 0.98 in	Weight		1.36 kg (3.01 lb)	
Mounting position         horizontal           Minimum distance to other units         horizontal / vertical         25 mm / 25 mm (0.98 in / 0.98 in)           Degree of protection class         I         I           Electrical connection - input circuit / output circuit         I         I           Electrical connection - input circuit / output circuit         I         I           Electrical connection - input circuit / output circuit         I         I           Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)         I           Stripping length         fine-strand with wire end ferrule         0.2-4 mm² (24-10 AWG)         I           Tightening torque         input / output         1 Nm / 0.6 Nm         I         I           Environmental data         -25+70 °C         rated load         -25+80 °C         I           Ambient (explic) (IEC/EN 60068-2-30)         55 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-30)         Storage         -25+83 °C           Damp heat (cyclic) (IEC/EN 60068-2-30)         55 % without condensation         2         2           Stock (haft-sine) (IEC/EN 60068-2-30)         55 % without condensation         2         2           Stock (haft-sine) (IEC/EN 60068-2-30)         2         2         2	Material of enclosure			
Minimum distance to other units         horizontal / vertical         25 mm / 0.98 in	Mounting		DIN rail (EN 60715), snap-on mounting without any tool	
Degree of protection         enclosure / terminals         IP/20 / IP20           Protection class         I           Electrical connection - input circuit / output circuit         I           Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)           fine-strand with wire end ferrule         0.2-4 mm² (24-11 AWG)           fine-strand with wire end ferrule         0.2-6 mm² (24-10 AWG)           Stripping length         8 mm (0.31 in)           Tightening torque         input / output           Ambient temperature range         operation	01			
Protection class       1         Electrical connection - input circuit / output circuit       0.2-4 mm² (24-11 AWG)         Mire size       fine-strand with wire end ferule       0.2-6 mm² (24-11 AWG)         Stripping length       0.2-6 mm² (24-10 AWG)         Tightening torque       input / output       0.2-6 mm² (24-10 AWG)         Tightening torque       input / output       1 Nm / 0.6 Nm         Environmental data       0       -25470 °C         Ambient temperature range       operation       -25470 °C         rated load       -2540 °C       -2540 °C         Storage       -25470 °C       -25485 °C         Damp heat (cyclic) (IEC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-27)       -25470 °C         Storage       -25485 °C         Damp heat (cyclic) (IEC/EN 60068-2-27)       -25470 °C         Storadot data       -25470 °C         Pollution degree       2         Storage       -25470 °C         Storadot data       -25470 °C         Pollution degree       2         Storage       2         Storage       2         Product standard       -2006/95/EG         Electroal safety <td></td> <td></td> <td></td>				
Electrical connection - input circuit / output circuit         0.2-4 mm² (24-11 AWG)           fine-strand with wire end ferrule         0.2-6 mm² (24-11 AWG)           fine-strand with wire end ferrule         0.2-6 mm² (24-10 AWG)           Stripping length         8 mm (0.31 in)           Tightening torque         input / output         1 Nm / 0.6 Nm           Environmental data         0           Ambient temperature range         operation         -25+70 °C           fine-strand with output circuit         -25+85 °C           Damp heat (cyclic) (IEC/EN 60068-2-30)         95 % without condensation           Vibration (sinusoldal) (EC/EN 60068-2-6)         Storage         -25+85 °C           Shock (half-sine) (IEC/EN 60068-2-27)         Isolation data         Isolation data           Rated insulation voltage U         input circuit / output circuit         3 kV AC           Pollution dagree         2         StandardS           Low Voltage Directive         2006/95/EG         2006/95/EG           Electrical safety         IEC/EN 61000-4-2         EleC/EN 61000-6-2           Iterference immunity         IEC/EN 61000-4-3         ELC/EN 61000-6-2           electromagnetic field         IEC/EN 61000-4-3         EL/EN 61000-6-3           electromagnetic field         IEC/EN 61000-4-3 <td< td=""><td>Degree of protection</td><td>enclosure / terminals</td><td>IP/20 / IP20</td></td<>	Degree of protection	enclosure / terminals	IP/20 / IP20	
Mire size         fine-strand with wire end ferrule         0.2-4 mm² (24-11 AWG)           fine-strand without wire end ferrule         0.2-6 mm² (24-10 AWG)           Stripping length         8 mm (0.31 in)           Tightening torque         input / output         1 Nm / 0.6 Nm           Environmental data             Arnbient temperature range         operation         -25+70 °C           fated load         -25+70 °C            Stripping length         input / output         1 Nm / 0.6 Nm           Environmental data             Arnbient temperature range         operation         -25+70 °C           fated load         -25+85 °C            Damp heat (cyclic) (IEC/EN 60068-2-6)             Storage         -25+85 °C            Storage Diroclive (IEC/EN 60068-2-6)             Storage Diroclive (IEC/EN 60068-2-6)             Storage Diroclive (IEC/EN 60068-2-6)          2           Storadards         2             Product standard           2           Low Voltage Directive         20004/108/EG          2002/95/EG	Protection class			
Ine-strand without wire end ferrule rigid         0.2-6 mm² (24-10 AWG)           Stripping length         8 mm (0.31 in)           Tightening torque         input / output           Ambient temperature range         operation           -25+70 °C         -25+70 °C           rated load         -25+70 °C           attrad load         -25+70 °C           rated load         -25+85 °C           Damp heat (cyclic) (IEC/EN 60068-2-30)         95 % without condensation           Vibration (sinusoidal) (IEC/EN 60068-2-6)         Stock (half-sine) (IEC/EN 60068-2-7)           Isolation data         2           Rated insulation voltage U,         input circuit / output circuit           Pollution degree         2           Standards         2           Product standard         2006/95/EG           Low Voltage Directive         2002/95/EG           Electronagnetic compatibility         IEC/EN 61000-6-2           Protective low voltage         SELV           Electronagnetic discharge (ISD)         IEC/EN 61000-4-2           electromagnetic field         IEC/EN 61000-4-2           electromagnetic field         IEC/EN 61000-4-3           (HF radiation resistance)         IEC/EN 61000-4-5           Hef line emission         I	Electrical connection - input circuit	/ output circuit		
rigid         0.2-6 mm² (24-10 AWG)           Stripping length         8 mm (0.31 in)           Tightening torque         input / output         1 Nm / 0.6 Nm           Environmental data         1 Nm / 0.6 Nm           Ambient temperature range         operation        25+70 °C           rated load         -25+70 °C           gamp heat (cyclic) (IEC/EN 60068-2-30)         95 % without condensation           Vibration (sinusoidal) (IEC/EN 60068-2-6)         Storage         -25+85 °C           Shock (half-sine) (IEC/EN 60068-2-7)         95 % without condensation           Isolation data         Reted insulation voltage U         input circuit / output circuit           Pollution degree         2         2           Standards         2         2           Product standard         2         2004/108/EG           Electroite         2002/95/EG         2002/95/EG           Electroite         2002/95/EG         2002/95/EG           Electromagnetic compatibility         IEC/EN 61000-6-2         IEC/EN 61000-6-2           electromagnetic field (EC/EN 61000-4-3         IEC/EN 61000-6-2         IEC/EN 61000-6-2           electromagnetic field (IEC/EN 61000-4-5         IEC/EN 61000-6-3         IEC/EN 61000-6-3           HF radiation resistance)         IE	Wire size	fine-strand with wire end ferrule	0.2-4 mm <sup>2</sup> (24-11 AWG)	
rigid         R           Stripping length         8 mm (0.31 in)           Tightening torque         input / output         1 Nm / 0.6 Nm           Environmental data         0           Ambient temperature range         operation         -25+70 °C           artade load         -25+70 °C           gamp heat (cyclic) (IEC/EN 60068-2-30)         95 % without condensation           Vibration (sinusoidal) (IEC/EN 60068-2-6)         95 % without condensation           Shock (haff-sine) (IEC/EN 60068-2-7)         95 % without condensation           Isolation data         92           Rated insulation voltage U input circuit / output circuit         3 kV AC           Pollution degree         2           Standards         2           Product standard         2006/95/EG           Low Voltage Directive         2006/95/EG           Electrical safety         IEC/EN 60050-1           Protective low voltage         SELV           Electromagnetic compatibility         IEC/EN 61000-6-2           electromagnetic field         IEC/EN 61000-4-2           electromagnetic field         IEC/EN 61000-4-5           HF ine emission         IEC/EN 61000-4-5           HF line emission         IEC/EN 61000-4-5           HF line emi		fine-strand without wire end ferrule	$0.2.6 \text{ mm}^2 (24.10 \text{ AWG})$	
Tightening torque         input / output         1 Nm / 0.6 Nm           Environmental data            Ambient temperature range         operation         -25470 °C           Ambient temperature range         operation         -25470 °C           Image temperature range         operation         -25470 °C           Image temperature range         operation         -25485 °C           Damp heat (cyclic) (IEC/EN 60068-2-30)         95 % without condensation           Vibration (sinusoidal) (IEC/EN 60068-2-7)         95 % without condensation           Isolation data          -25485 °C           Bated insulation voltage U,         input circuit / output circuit         3 kV AC           Pollution degree         2         2           Standards         2         2           Product standard         2006/95/EG         2002/95/EG           Low Voltage Directive         2002/95/EG         2002/95/EG           Electrical safety         IEC/EN 61000-45         2           Protective low voltage         SELV         2           Electronagnetic compatibility         IEC/EN 61000-4-2         2           Interference immunity         IEC/EN 61000-4-5         2           electromagnetic field (HF radiation resistance)		rigid	0.2-0 IIIII- (24-10 AWG)	
Environmental data         Ambient temperature range       operation         7 rated load       -25+70 °C         rated load       -25+85 °C         Damp heat (cyclic) (IEC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-6)       95 % without condensation         Shock (half-sine) (IEC/EN 60068-2-7)       95 % without condensation         Isolation data       2         Rated insulation voltage U_       input circuit / output circuit         Asted insulation voltage U_       input circuit / output circuit         Voltage Directive       2006/95/EG         EMC directive       2006/95/EG         Electrical safety       IEC/EN 60950-1         Protouct standard       2002/95/EG         Electronagnetic compatibility       IEC/EN 61000-6-2         electrostatic discharge (ESD)       IEC/EN 61000-4-2         electromagnetic field       IEC/EN 61000-4-3         (HF radiation resistance)       IEC/EN 61000-4-4         powerful imputes (Surge)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference minssion       IEC/EN 61000-4-6         Interference mission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-6-3	Stripping length		8 mm (0.31 in)	
Ambient temperature range       operation      25+70 °C         rated load       -2560 °C         storage       -25485 °C         Damp heat (cyclic) (EC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-6)       95 % without condensation         Shock (half-sine) (IEC/EN 60068-2-7)       95 % without condensation         Isolation data       2         Rated insulation voltage U_       input circuit / output circuit         Oblution degree       2         Standards       2         Product standard       2006/95/EG         Low Voltage Directive       2006/95/EG         Electrical safety       IEC/EN 60950-1         Protect standard       2002/95/EG         Electroagnetic compatibility       IEC/EN 60950-1         Interference immunity       IEC/EN 61000-4-2         electrosatic discharge (ESD)       IEC/EN 61000-4-2         electromagnetic field (HF radiation resistance)       IEC/EN 61000-4-4         powerful impulses (Surge)       IEC/EN 61000-4-4         powerful impulses (Surge)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-6-	Tightening torque	input / output	1 Nm / 0.6 Nm	
rated load       -2560 °C         storage       -25+85 °C         Damp heat (cyclic) (IEC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-6)       95 % without condensation         Shock (half-sine) (IEC/EN 60068-2-27)       95 % without condensation         Isolation data       2         Rated insulation voltage U       input circuit / output circuit       3 kV AC         Pollution degree       2         Standards       2         Product standard       2         Low Voltage Directive       2006/95/EG         EMC directive       2002/95/EG         Electromagnetic compatibility       IEC/EN 60950-1         Protective low voltage       SELV         Electromagnetic compatibility       IEC/EN 61000-6-2         electromagnetic field       IEC/EN 61000-4-2         electromagnetic field       IEC/EN 61000-4-3         (HF radiation resistance)       IEC/EN 61000-4-4         powerful impulses (Surge)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-4-6         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference emi	Environmental data			
storage      25+85 °C         Damp heat (cyclic) (IEC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-6)       95 % without condensation         Shock (half-sine) (IEC/EN 60068-2-7)       95 % without condensation         Isolation data       1000000000000000000000000000000000000	Ambient temperature range	operation	-25+70 °C	
Damp heat (cyclic) (IEC/EN 60068-2-30)       95 % without condensation         Vibration (sinusoidal) (IEC/EN 60068-2-6)       Shock (half-sine) (IEC/EN 60068-2-7)         Isolation data       95 % without condensation         Rated insulation voltage U       input circuit / output circuit         Bated insulation voltage U       input circuit / output circuit         Standards       2         Product standard       2006/95/EG         Low Voltage Directive       2006/95/EG         EMC directive       2002/95/EG         Electrical safety       IEC/EN 60950-1         Protective low voltage       SELV         Electromagnetic compatibility       IEC/EN 61000-4-2         Interference immunity       IEC/EN 61000-4-2         electromagnetic field       IEC/EN 61000-4-3         (HF radiation resistance)       IEC/EN 61000-4-4         powerful impulses (Surge)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF ine emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-4-6         Herefore emission       IEC/EN 61000-4-6         HF line emission       IEC/EN 61000-4-6         Hereforence emission       IEC/EN 61000-6-3		rated load	-2560 °C	
Vibration (sinusoidal) (IEC/EN 60068-2-6)         Shock (half-sine) (IEC/EN 60068-2-27)         Isolation data         Rated insulation voltage U       input circuit / output circuit         3 kV AC         Pollution degree       2         Standards       2         Product standard       2         Low Voltage Directive       2006/95/EG         EMC directive       2002/95/EG         EleCtrical safety       IEC/EN 60950-1         Protective low voltage       SELV         Electromagnetic compatibility       IEC/EN 61000-6-2         electromagnetic field       IEC/EN 61000-4-2         electromagnetic field       IEC/EN 61000-4-3         (HF radiation resistance)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF Ine emission       IEC/EN 61000-4-5         HF radiation resistance)       IEC/CISPR 22		storage	-25+85 °C	
Shock (half-sine) (IEC/EN 60068-2-27)         Isolation data         Rated insulation voltage U       input circuit / output circuit         Pollution degree       2         Standards       2         Product standard       2006/95/EG         Low Voltage Directive       2006/95/EG         EMC directive       2004/108/EG         RoHS directive       2002/95/EG         Electrical safety       IEC/EN 60950-1         Protective low voltage       SELV         Electromagnetic compatibility       IEC/EN 61000-4-2         electromagnetic field (HF radiation resistance)       IEC/EN 61000-4-3         fast transients (Burst)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         Herference emission       IEC/EN 61000-6-3         electromagnetic field (HF radiation resistance)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-6-3         electromagnetic field (HF radiation resistance)       IEC/EN 61000-6-3	Damp heat (cyclic) (IEC/EN 60068-2-3	30)	95 % without condensation	
Isolation data       Input circuit / output circuit       3 kV AC         Rated insulation voltage U       input circuit / output circuit       3 kV AC         Pollution degree       2         Standards       2         Product standard       2         Low Voltage Directive       2006/95/EG         EMC directive       2002/95/EG         Electrical safety       1EC/EN 60950-1         Protective low voltage       SELV         Electromagnetic compatibility       1EC/EN 61000-6-2         Interference immunity       1EC/EN 61000-4-2         electrostatic discharge (ESD)       1EC/EN 61000-4-3         (HF radiation resistance)       1EC/EN 61000-4-3         Hart transients (Burst)       1EC/EN 61000-4-5         HF line emission       1EC/EN 61000-4-5         Interference emission       1EC/EN 61000-6-3         electromagnetic field (HF radiation resistance)       1EC/CISPR 22, EN 55022       Class B	Vibration (sinusoidal) (IEC/EN 60068-2	2-6)		
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powerful impulses (Surge)       IEC/EN 61000-4-5         HF line emission       IEC/EN 61000-4-6         Interference emission       IEC/EN 61000-6-3         electromagnetic field (HF radiation resistance)       IEC/CISPR 22, EN 55022       Class B	EC/EN 6100-4-31			
HF line emission     IEC/EN 61000-4-6       Interference emission     IEC/EN 61000-6-3       electromagnetic field (HF radiation resistance)     IEC/CISPR 22, EN 55022     Class B	fast transients (Burst) IEC/EN 61000-4-4			
Interference emission IEC/EN 61000-6-3 electromagnetic field IEC/CISPR 22, EN 55022 Class B	powerful impulses (Surge) IEC/EN 61000-4-5			
electromagnetic field IEC/CISPR 22, EN 55022 Class B	HF line emission IEC/EN 61000-4-6			
(HF radiation resistance)	Interference emission		IEC/EN 61000-6-3	
HF line emission IEC/CISPR 22, EN 55022 Class B	0	IEC/CISPR 22, EN 55022	Class B	
	HF line emission	IEC/CISPR 22, EN 55022	Class B	

Primary switch mode power supply Data sheet

**Technical diagrams** 

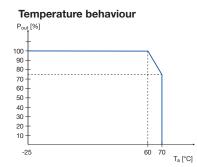


Output curve at T<sub>a</sub> = 25 °C

The switch mode power supply CP-E 48/5.0 is able to supply at 48 V DC output voltage and

- at an ambient temperature of:
  - ≤ 60 °C a continuous output current of approx. 5 A
- at ambient temperatures of:

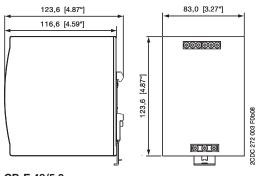
60 °C <  $T_a \le 70$  °C the output power has to be reduced by 2.5 % per °C temperature increase. If the switch mode power supply is loaded with an output current > 5 A, the operating point is passing through the U/I characteristic curve shown.



Temperature curve at rated load

### Dimensions





СР-Е 48/5.0

### **Further Documentation**

Document title	Document type	Document number
Electronic Products and Relays	Technical catalogue	2CDC 110 004 C020x
Power Supply Units	Application manual	2CDC 114 048 M020x

You can find the documentation in the internet under www.abb.com/lowvoltage  $\rightarrow$  Control Products  $\rightarrow$  ...



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