



CP-S.1 Power Supply

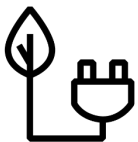
Product presentation

Introduction CP-S.1

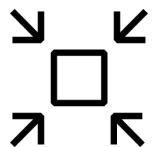
Features



Continuous operation



Energy efficient



Space saving

Features

- Output voltage 24 V DC; adjustable 24 ... 28 V DC
- Output current 3 A, 5 A, 10 A, 20 A and 40 A
- Rated output power 72 W, 120 W, 240 W, 480 W and 960 W
- High efficiency up to 94 %
- Power reserve design delivers 150 % I_N for up to 5 s
- Ambient temperature range during operation -25...+70 °C
- Wide certified AC and DC input voltage range
- Additional 'L-' – Terminal for grounding*)
- 'OUTPUT OK' relay output
- Active PFC**)
- Parallel connection of up to 3 devices directly
- Approvals / Marks: CB scheme, CE, UKCA, cULus, DNV, EAC, RCM
- Compact design in metal housing
- Coated PCBA



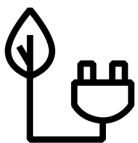
The high-performance range for automation – Perfect fit for OEM machine builder applications

Introduction CP-S.1

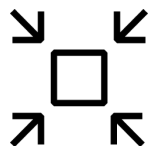
Benefits



Continuous operation



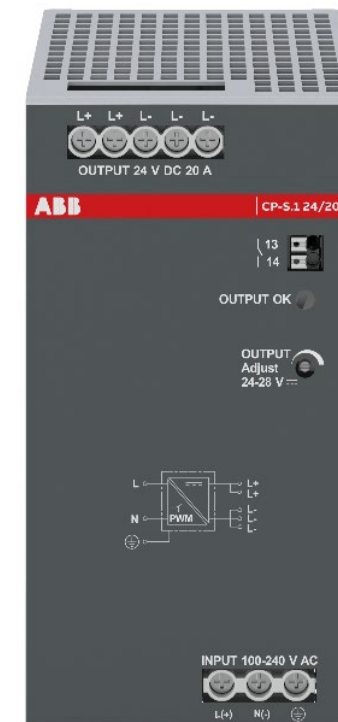
Energy efficient



Space saving

Benefits

- Complete 24 V DC offering not only for OEM machine building segment
- Very compact design reduces required space within the cabinet
- Power reserve functionality provides additional power of starting heavy loads
- Wide certified AC and DC input voltage range for worldwide installations
- Alarm relay contact and 'OUTPUT OK'-LED, if output voltage < 90%, giving customer the opportunity to initiate counter-measures
- Additional 'L'-terminal for grounding to prevent ground fault and unwanted starting of application
- Reduction of operating cost due to high efficiency and minimized losses
- Reduction of 'wear and tear' of other devices due to limited Inrush current, e.g. ≤ 19 A with 40 A device
- To increase output voltage to 48 V DC: up to 2 devices directly connected in series
- To increase output power or simple redundancy: up to 3 devices directly connected in parallel
- 40 A single phase power supply for mid-high segment closing gap to competitors
- Variety of approvals available, incl. marine applications (all locations on a ship, e.g. bridge)
- If buffer times of up to 560 s are required to increase system availability use CP-B range offering
- Additional redundancy unit CP-C.1-A-RU available to establish true redundancy



The high-performance range for automation – Perfect fit for OEM machine builder applications

Introduction CP-S.1

Variants



CP-S.1 24/3.0

- Rated supply voltage range from 100-240 V AC / 100-250 V DC
- Rated output voltage: 24 V DC
- Rated output current: 3.0 A
- Rated output power: 72 W
- High efficiency of 90 %
- Power reserve of 150 % up to 5 s



CP-S.1 24/5.0

- Rated supply voltage range from 100-240 V AC / 100-250 V DC
- Rated output voltage: 24 V DC
- Rated output current: 5.0 A
- Rated output power: 120 W
- High efficiency of 90 %
- Power reserve of 150 % up to 5 s



CP-S.1 24/10.0

- Rated supply voltage range from 100-240 V AC / 100-250 V DC
- Rated output voltage: 24 V DC
- Rated output current: 10.0 A
- Rated output power: 240 W
- High efficiency of 93 %
- Power reserve of 150% up to 5 s



CP-S.1 24/20.0

- Rated supply voltage range from 100-240 V AC / 100-250 V DC
- Rated output voltage: 24 V DC
- Rated output current: 20.0 A
- Rated output power: 480 W
- High efficiency of 93 %
- Power reserve of 150% up to 5 s



CP-S.1 24/40.0

- Rated supply voltage range from 110-240 V AC / 110-250 V DC
- Rated output voltage: 24 V DC
- Rated output current: 40.0 A
- Rated output power: 960 W
- High efficiency of 94 %
- Power reserve of 150% up to 5 s

Introduction

Operating controls

OUTPUT L+, L-:

Output terminals
24 V DC

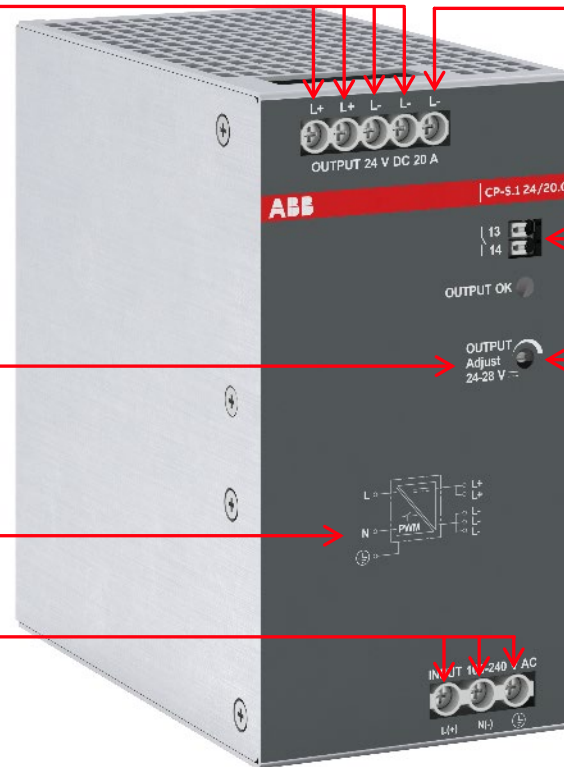
OUTPUT Adjust:

Rotary potentiometer -
Adjustment of output
voltage 24-28 V DC

Circuit diagram

INPUT L(+), N(-), PE*:

Input terminals
100 - 240 V AC /
100 - 250 V DC



**Additional L(-)
terminal for e.g. grounding**

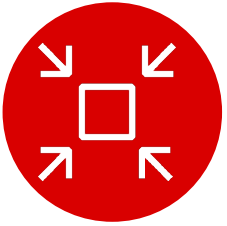
13-14: Relay output

Relay output to
signal 'Output OK'

**OUTPUT OK: green LED for
indication of 24 V DC**

- on: output voltage >92%
of adjusted voltage
- flashes: output voltage
<90% of adjusted voltage

CP-S.1 Value Propositions



Space saving: outstanding power to space ratio

In comparison to some other power supply ranges on the market, ABB's CP-S.1 range achieves space savings up to 50 %. Together with the high-efficiency and reduced power losses features, CP-S.1 is a space and cost saving solution for applications where size matters.



Continuous operation and system reliability

The power reserve functionality provides additional power of starting heavy loads. CP-S.1 offers 150 % of the nominal current for five seconds to start e.g. heavy loads reliably. Together with ABB's redundancy modules CP-C.1-A-RU as well as buffer modules CP-B range - buffering the load in case of power losses on grid side - increase the availability and finally the system reliability further. Coated PCBA completes CP-S.1 range offering for OEM machine builders.



Global availability

CP-S.1 range can be used in multiple installations in the world. A certified wide AC and DC input voltage range as well as a variety of approvals incl. marine, giving you the confidence of world-wide sourcing – no matter where you build, install or operate your equipment.

CP-S.1 Benefits

CP-S.1 power supplies: high efficiency and reliability delivered in a compact footprint

Complete offering

A complete 24 V DC offering from 3 A up to 40 A in metal enclosure suits perfectly to OEM machine building requirements.



Small footprint

CP-S.1 power supplies can save the valuable installation space of the control cabinet due to compact design and high efficiency.



Robust design

Coated PCBA and marine certification enable CP-S.1 power supplies being the perfect match for e.g. Wind, Solar, Marine applications.



Redundancy units

True redundancy could be achieved by using the optional redundancy unit CP-C.1-A-RU.



CP-S.1 Benefits

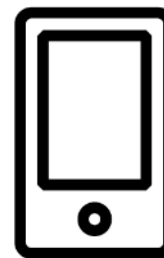
CO₂ Reduction



CO₂

1400

**kilograms of CO₂
reduction over the
lifetime**



>160,000

**Smartphones
charged**

**By increasing the efficiency by just 2 %, 1,4 tons of CO₂ can be saved,
which corresponds to the CO₂ emissions of 167.000 numbers of smartphone charges***

Features and benefits

Wide AC and DC input voltage range



Rated input voltage

| | |
|--------------|-----------------------------|
| 3/5/10/20 A: | 100-240 V AC / 100-250 V DC |
| 40 A: | 110-240 V AC / 110-250 V DC |



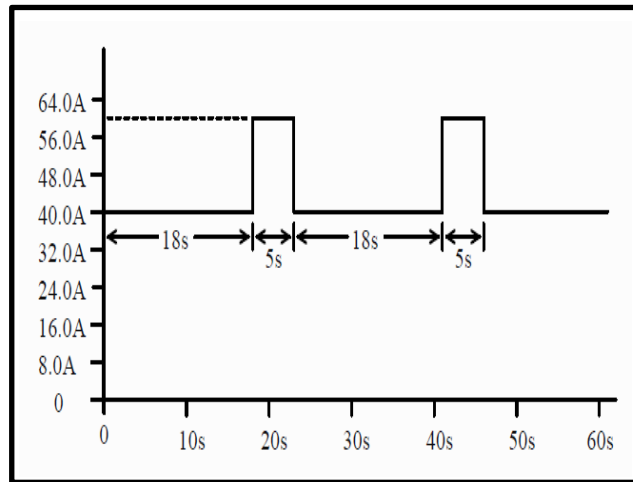
Input voltage range

| | |
|--------------|---------------------------|
| 3/5/10/20 A: | 85-264 V AC / 90-277 V DC |
| 40 A: | 99-264 V AC / 99-277 V DC |

According IEC/EN/UL 61010-1, IEC/EN/UL 61010-2-201;
certified AC and DC input voltage range

Features and benefits

Power reserve design delivers 150 % I_N for up to 5s



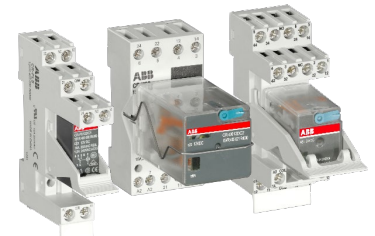
40 A version
60 A for 5s -- to start the heavy loads (with inrush current) , e.g.:



DC motors



DC contactors

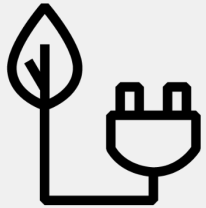


Interface relays

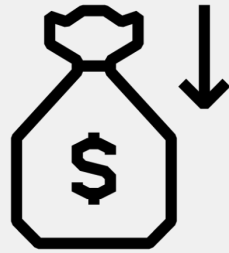
Bigger drive capacitance in smaller rated output version → cost saving

Features and benefits

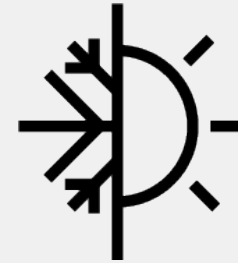
High efficiency up to 94 %



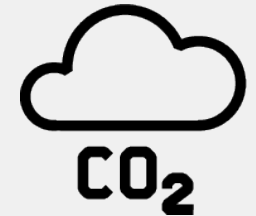
**Efficiency:
from 90% to 94%**



**Low operational
costs**



**Low heat – low
requirement for
external colling and
affection to other
devices in same
cabinet**



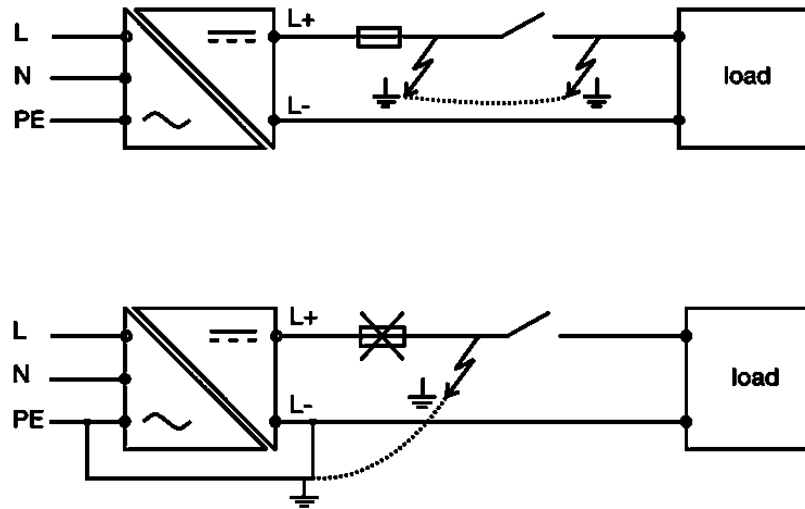
**Less CO₂
emissions**

Features and benefits

Additional 'L-' – Terminal for grounding



10/20/40 A

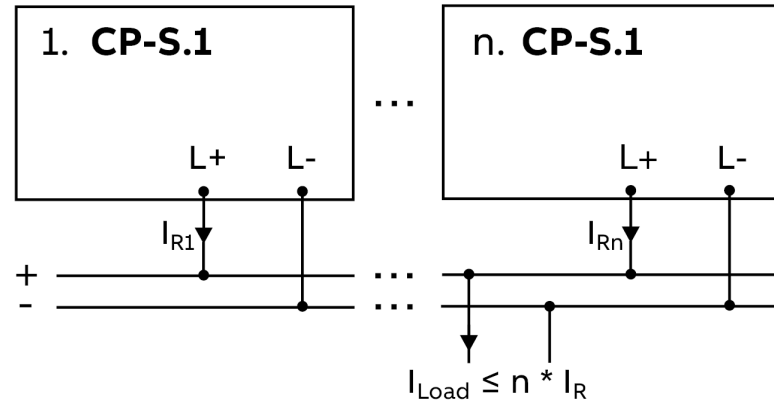


If secondary grounding is used, the occurrence of such a ground fault leads to a so-called short-circuit to earth which causes the fuses in the secondary circuit to trip.

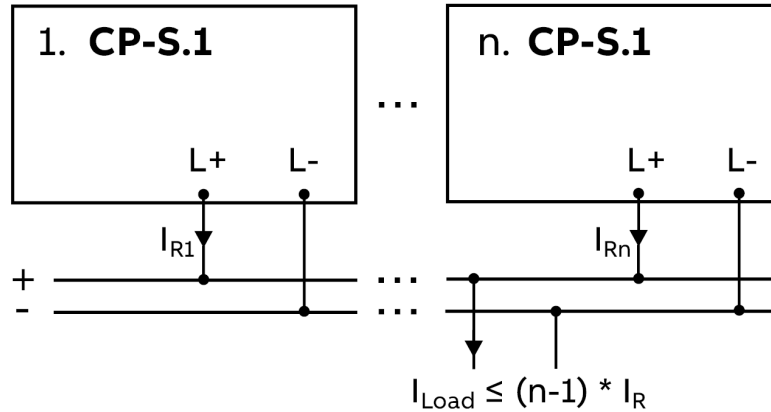
Features and benefits

Parallel connection

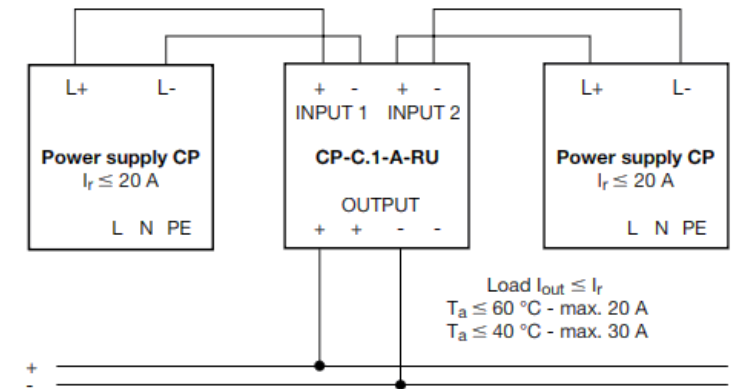
Parallel operation, increased power ($n \leq 3$)



Parallel operation, redundancy ($n \leq 3$)

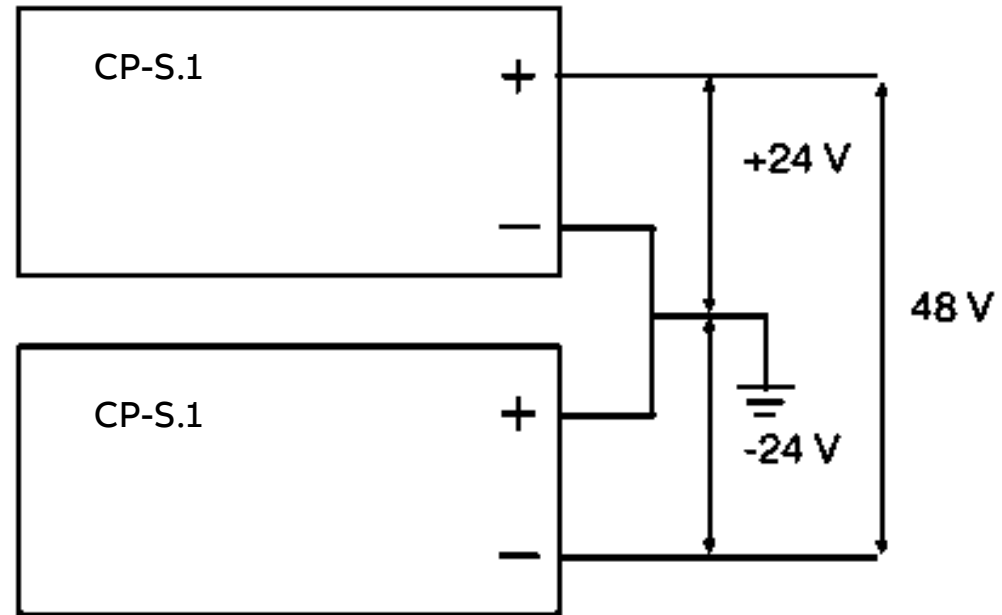


True redundancy using a CP-C.1-RU redundancy unit



Features and benefits

Connection diagram for +/- 24 V DC or 48 V DC output voltage

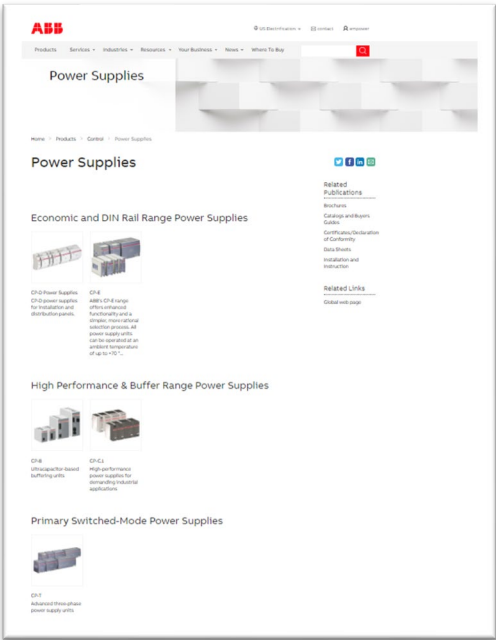


Resources

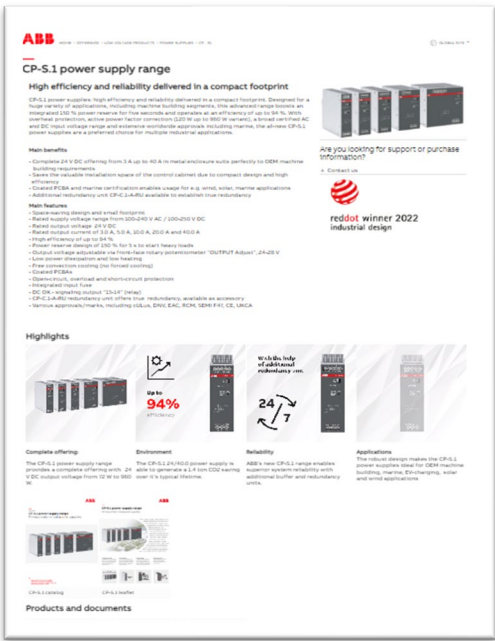
CP Power Supplies

General

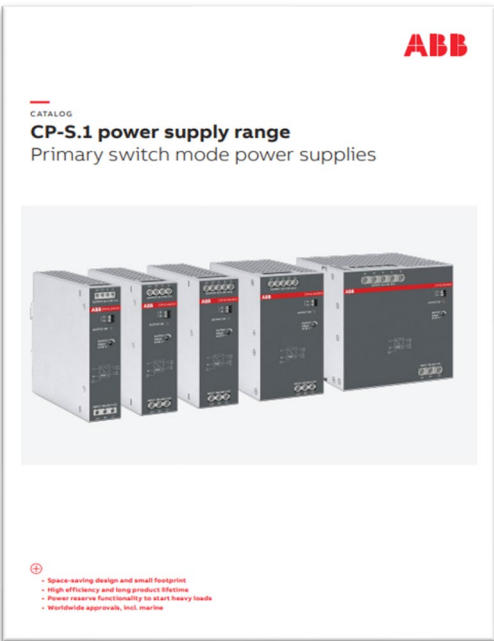
US Webpage



Global Webpage



Catalog



ABB