Product datasheet

Specifications



regulated SMPS - 1 or 2-phase - 100..500 V - 24 V - 5 A

ABL8RPS24050

Main

Range of product	Modicon Power Supply
Product or component type	Power supply
Power supply type	Regulated switch mode
Nominal input voltage	100...120 V AC single phase, terminal(s): N-L1 200...500 V AC phase to phase, terminal(s): L1-L2
Rated power in W	120 W
Output voltage	24 V DC
Power supply output current	5 A
Permissible temporary current boost	1.5 x In (for 4 s)
Anti-harmonic filter	Low frequency harmonic currents

Complementary

Input voltage limits	85...132 V AC 170...550 V AC
Inrush current	30 A
Power factor	0.51 at 240 V AC 0.59 at 120 V AC
Efficiency	87 %
Output voltage adjustment	24...28.8 V adjustable
Power dissipation in W	15.5 W
Provided equipment	Power factor correction filter conforming to IEC 61000-3-2
Output protection type	Against overload, protection technology: manual or automatic reset Against overvoltage, protection technology: 30...32 V, manual reset Against short-circuits, protection technology: manual or automatic reset Against undervoltage, protection technology: tripping if U < 21.6 V Thermal, protection technology: automatic reset
Connections - terminals	Removable screw terminal block: 2 x 2.5 mm², for diagnostic relay Screw type terminals: 3 x 0.5...3 x 4 mm², (22 AWG...12 AWG) for input connection Screw type terminals: 1 x 0.5...1 x 4 mm², (22 AWG...12 AWG) for input ground connection Screw type terminals: 4 x 0.5...4 x 4 mm², (22 AWG...12 AWG) for output connection Screw type terminals: 1 x 0.5...1 x 4 mm², (22 AWG...12 AWG) for output ground connection
Status LED	1 LED (green and red) output voltage 1 LED (green, red and orange) output current
Depth	125 mm
Height	143 mm
Width	56 mm

Excluding VAT, FCA Jabal Ali & are subject to change – check with your local distributor.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Net weight	0.7 kg
Output coupling	Parallel Series
Marking	CE
Mounting support	35 x 15 mm symmetrical DIN rail 35 x 7.5 mm symmetrical DIN rail
Operating position	Vertical
Supply	SELV conforming to IEC 60950-1 SELV conforming to IEC 60204-1 SELV conforming to IEC 60364-4-41
Dielectric strength	3500 V with between input and ground 4000 V with between input and output 500 V with between output and ground

Environment

Standards	CSA C22.2 No 60950-1 UL 508 EN/IEC 62368-1
Product certifications	CCSAus EAC KC RCM UL
Environmental characteristic	EMC conforming to IEC 61000-6-1 EMC conforming to IEC 61000-6-3 EMC conforming to EN 55024 EMC conforming to IEC 61000-6-4 EMC conforming to EN/IEC 61204-3 Safety conforming to IEC 60950-1 Safety conforming to EN/IEC 61204-3
Operating altitude	2000 m
IP degree of protection	IP20 conforming to IEC 60529
Ambient air temperature for operation	50…60 °C with derating factor mounting position A < 2000 m -25…50 °C without derating mounting position A < 2000 m

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	7.800 cm
Package 1 Width	14.500 cm
Package 1 Length	16.500 cm
Package 1 Weight	906.000 g
Unit Type of Package 2	S06
Number of Units in Package 2	105
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	109.600 kg

Contractual warranty

Warranty (in months)	18

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

Environmental footprint

Total lifecycle Carbon footprint	**236 kg CO2 eq.**
Carbon footprint of the manufacturing phase [A1 to A3]	**24 kg CO2 eq.**
Carbon footprint of the distribution phase [A4]	**0.5 kg CO2 eq.**
Carbon footprint of the installation phase [A5]	**0.3 kg CO2 eq.**
Carbon footprint of the use phase [B2, B3, B4, B6]	**209 kg CO2 eq.**
Carbon footprint of the end-of-life phase [C1 to C4]	**2 kg CO2 eq.**

Use Better

Materials and Substances

Packaging made with recycled cardboard	**No**
Packaging without single use plastic	**Yes**
SCIP Number	**974297e5-68e4-4a61-9a40-1443e8973a61**
EU RoHS Directive	**Compliant By Exemption**
REACh Regulation	**Reference contains Substances of Very High Concern above the threshold**
PVC free	**Yes**

Use Again

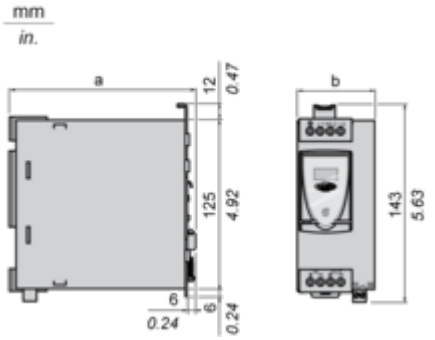
Repack and remanufacture

Recyclability potential, in %	**40**
Take-back	**No**
WEEE Label	**The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins**

Dimensions Drawings

Regulated Switch Mode Power Supplies

Dimensions

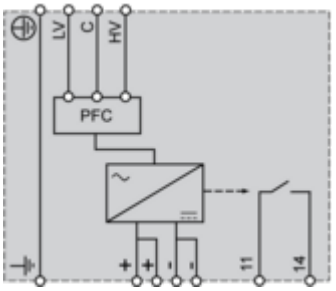


ABL 8	a in mm	a in.	b in mm	b in in.
RPS24030	125	4.92	45	1.77
RPS24050	125	4.92	56	2.20
RPS24100	145	5.71	86	3.39
RPM24200	145	5.71	146	5.75
WPS24200	160	6.30	96	3.78
WPS24400	160	6.30	166	6.54

Connections and Schema

Regulated Switch Mode Power Supply

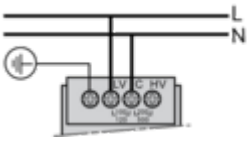
Internal Wiring Diagram



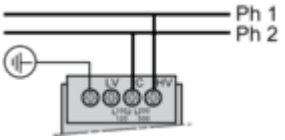
Regulated Switch Mode Power Supply

Line Supply Wiring Diagram

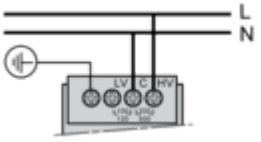
Single-phase (L-N) 100 to 120 V



Phase-to-phase (L1-L2) 200 to 500 V



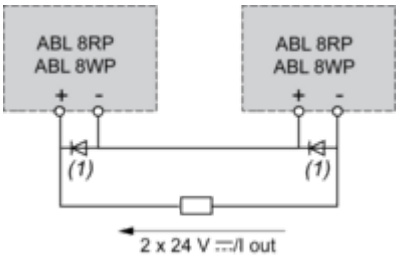
Single-phase (L-N) 200 to 500 V



Regulated Switch Mode Power Supplies

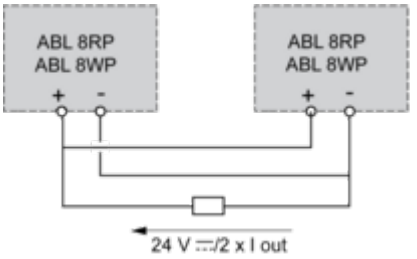
Series or Parallel Connection

Series Connection



(1) Two Shottky diodes Imin = power supply In and Vmin = 50 V

Parallel Connection



Family	Series	Parallel
ABL 8RPS/8RPM/8WPS	2 products max. (1)	2 products max.

NOTE: Series or parallel connection is only recommended for products with identical references.

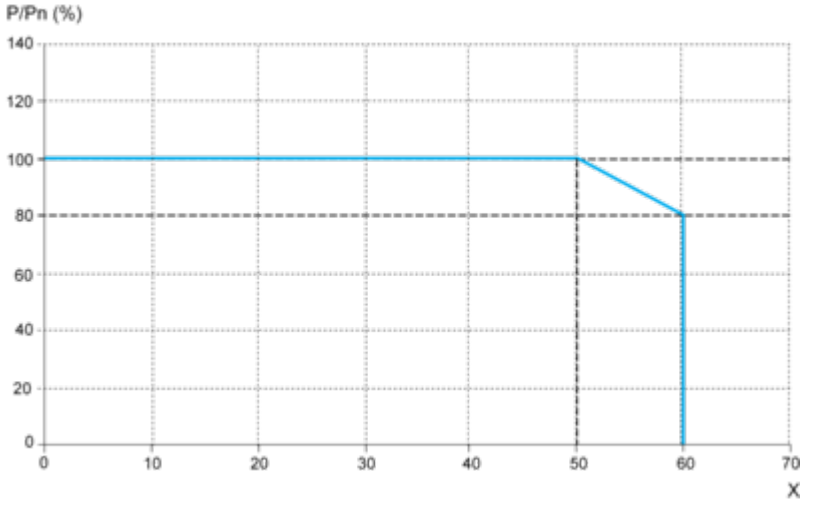
For better availability, the power supplies can also be connected in parallel using the **ABL8RED24400** Redundancy module.

Performance Curves

Regulated Switch Mode Power Supplies

Derating

The ambient temperature is a determining factor that limits the power an electronic power supply can deliver continuously. If the temperature around the electronic components is too high, their life will be significantly reduced.
The nominal ambient temperature for the Universal range of Phaseo power supplies is 50°C. Above this temperature, derating is necessary up to a maximum temperature of 60°C.
The graph below shows the power (in relation to the nominal power) that the power supply can deliver continuously, depending on the ambient temperature.



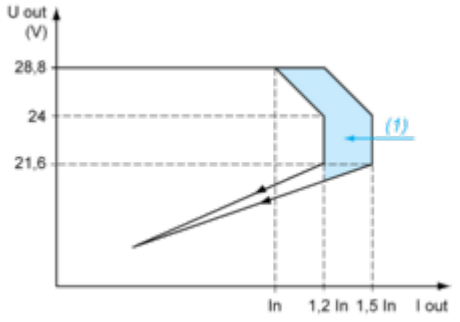
X Maximum operating temperature (°C)
ABL 8RPM, ABL 8RPS, ABL 8WPS mounted vertically
Derating should be considered in extreme operating conditions:

- Intensive operation (output current permanently close to the nominal current, combined with a high ambient temperature)
- Output voltage set above 24 Vdc (to compensate for line voltage drops, for example)
- Parallel connection to increase the total power

Regulated Switch Mode Power Supply

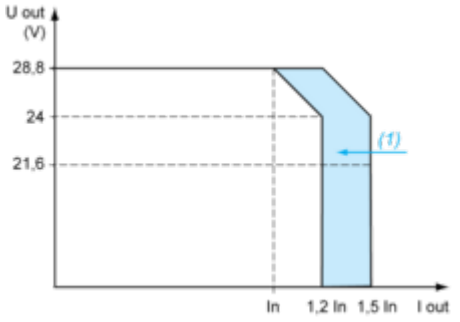
Load Limit

Manual Reset Protection Mode



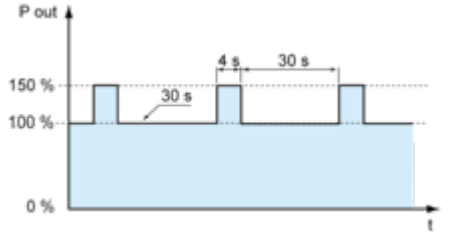
(1) Boost 4s

Automatic Reset Protection Mode



(1) Boost 4s

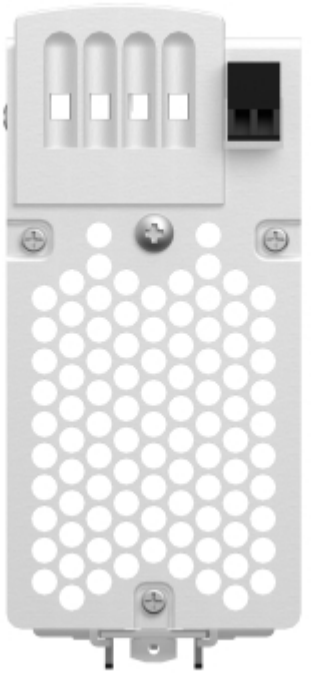
“Boost” Repeat Accuracy

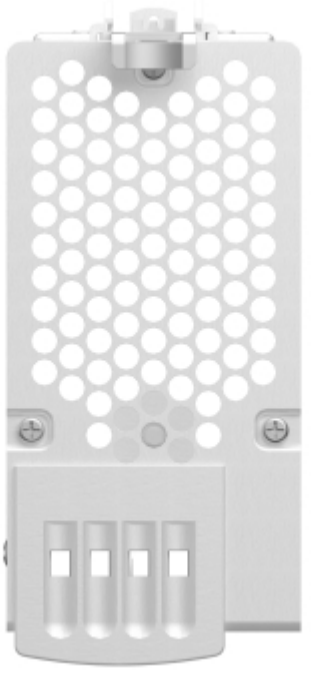


This type of operation is described in detail in the user manual, which can be downloaded from the website.

Image of product / Alternate images

Alternative










LV C HV
ABL8RPS24050
24VDC-5A
AUTO
MANU
24V
28.5V
+ + − −

