

# Product datasheet

Specifications



## Regulated Switch Power Supply, 1 or 2-phase, 100..500V, 24V, 10 A

ABL8RPS24100

### 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	240 W
Output voltage	24 V DC
Power supply output current	10 A
Permissible temporary current boost	1.5 x I <sub>n</sub> (for 4 s)
Anti-harmonic filter	Low frequency harmonic currents

### Complementary

Input voltage limits	170...550 V AC 85...132 V AC
Inrush current	30 A
Power factor	0.68 at 240 V AC 0.69 at 120 V AC
Efficiency	87 %
Output voltage adjustment	24...28.8 V adjustable
Power dissipation in W	31 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 mm <sup>2</sup> , for diagnostic relay Screw type terminals: 3 x 0.5...3 x 4 mm <sup>2</sup> , (AWG 22...AWG 12) for input connection Screw type terminals: 1 x 0.5...1 x 4 mm <sup>2</sup> , (AWG 22...AWG 12) for input ground connection Screw type terminals: 4 x 0.5...4 x 4 mm <sup>2</sup> , (AWG 22...AWG 12) for output connection Screw type terminals: 1 x 0.5...1 x 4 mm <sup>2</sup> , (AWG 22...AWG 12) for output ground connection
Status LED	1 LED (green and red) output voltage 1 LED (green, red and orange) output current
Depth	145 mm
Height	125 mm

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

<b>Width</b>	86 mm
<b>Net weight</b>	1 kg
<b>Output coupling</b>	Parallel Series
<b>Marking</b>	CE
<b>Mounting support</b>	35 x 7.5 mm symmetrical DIN rail 35 x 15 mm symmetrical DIN rail
<b>Operating position</b>	Vertical
<b>Supply</b>	SELV conforming to EN/IEC 60950-1 SELV conforming to EN/IEC 60204-1 SELV conforming to IEC 60364-4-41
<b>Dielectric strength</b>	3500 V with between input and ground 4000 V with between input and output 500 V with between output and ground

## Environment

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

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1
<b>Package 1 Height</b>	11.4 cm
<b>Package 1 Width</b>	16.2 cm
<b>Package 1 Length</b>	18.0 cm
<b>Package 1 Weight</b>	1.615 kg
<b>Unit Type of Package 2</b>	S06
<b>Number of Units in Package 2</b>	60
<b>Package 2 Height</b>	73.5 cm
<b>Package 2 Width</b>	60.0 cm
<b>Package 2 Length</b>	80.0 cm
<b>Package 2 Weight</b>	113.0 kg

## Offer Sustainability

<b>Sustainable offer status</b>	Green Premium product
<b>REACH Regulation</b>	<a href="#">REACH Declaration</a>
<b>EU RoHS Directive</b>	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>

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<b>Mercury free</b>	Yes
<b>China RoHS Regulation</b>	<a href="#">China RoHS declaration</a>
<b>RoHS exemption information</b>	Yes
<b>Environmental Disclosure</b>	<a href="#">Product Environmental Profile</a>
<b>Circularity Profile</b>	<a href="#">End of Life Information</a>
<b>PVC free</b>	Yes

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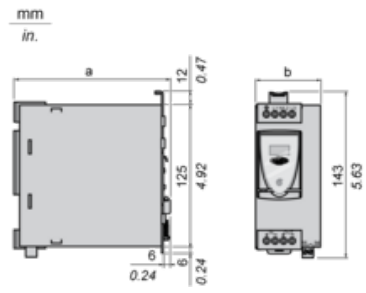
### **Contractual warranty**

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<b>Warranty</b>	18 months
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**Regulated Switch Mode Power Supplies**

**Dimensions**

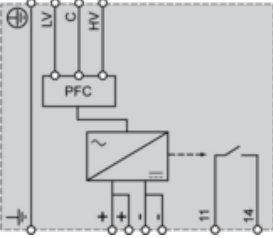


ABL 8	a in mm	a in in.	b in mm	b in in.
RPS24030	125	4.92	45	1.77
RPS24050	125	4.92	56	2.20
RPS24100	145	5.71	86	3.39
RPM24200	145	5.71	146	5.75
WPS24200	160	6.30	96	3.78
WPS24400	160	6.30	166	6.54

**Regulated Switch Mode Power Supply**

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**Internal Wiring Diagram**

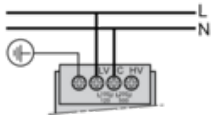


**Regulated Switch Mode Power Supply**

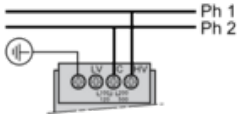
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**Line Supply Wiring Diagram**

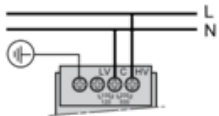
Single-phase (L-N) 100 to 120 V



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



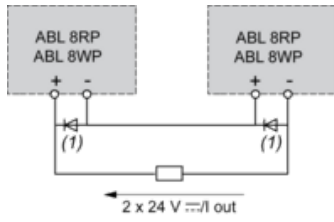
Single-phase (L-N) 200 to 500 V



**Regulated Switch Mode Power Supplies**

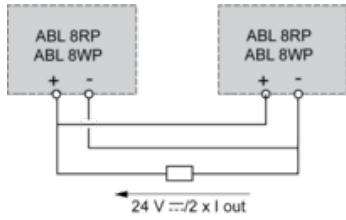
**Series or Parallel Connection**

**Series Connection**



(1) Two Schottky diodes I<sub>min</sub> = power supply I<sub>n</sub> and V<sub>min</sub> = 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.

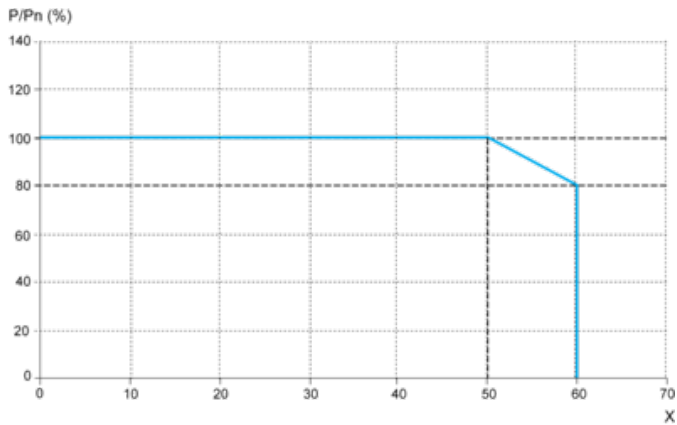
### Regulated Switch Mode Power Supplies

#### 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:

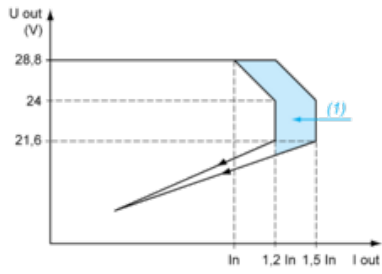
- Intensive operation (output current permanently close to the nominal current, combined with a high ambient temperature)
- Output voltage set above 24 Vdc (to compensate for line voltage drops, for example)
- Parallel connection to increase the total power



**Regulated Switch Mode Power Supply**

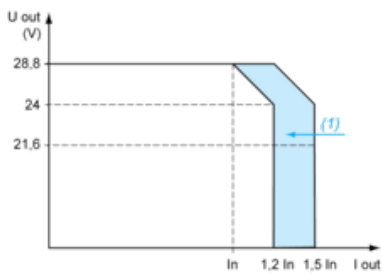
**Load Limit**

**Manual Reset Protection Mode**



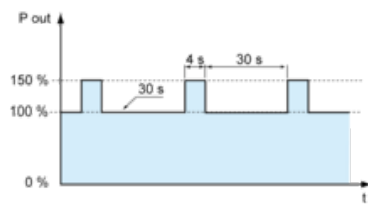
(1) Boost 4s

**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.

**Recommended replacement(s)**