### Product data sheet

#### ABL8RPS24100

- **DC Components**

### Characteristics

#### Main
- **Range of product**: Phaseo
- **Product or component type**: Power supply
- **Power supply type**: Regulated switch mode
- **Input voltage**:
  - 100...120 V AC single phase, terminal(s): N-L1
  - 200...500 V AC phase to phase, terminal(s): L1-L2
- **Output voltage**: 24 V DC
- **Rated power in W**: 240 W
- **Provided equipment**: Power factor correction filter conforming to IEC 61000-3-2
- **Power supply output current**: 10 A
- **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
- **Ambient air temperature for operation**:
  - 50...60 °C with
  - -25...50 °C without

#### Complementary
- **Input voltage limits**: 170...550 V
  - 85...132 V
- **Network frequency**: 47...63 Hz
- **Inrush current**: 30 A for 2 ms
- **Cos phi**:
  - 0.068 at 240 V
  - 0.069 at 120 V
- **Efficiency**: 87 %
- **Output voltage limits**: 24...28.8 V adjustable
- **Power dissipation in W**: 31 W
- **Line and load regulation**: 1...3 %
- **Holding time**:
  - >= 120 ms at 400 V
  - >= 20 ms at 100 V
  - >= 40 ms at 240 V

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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.
<table>
<thead>
<tr>
<th><strong>Permissible temporary current boost</strong></th>
<th>1.5 x Iₚ for 4 s</th>
</tr>
</thead>
</table>
| **Connections - terminals**            | Screw type terminals for input connection, connection capacity: 3 x 0.5...3 x 4 mm² AWG 22...AWG 12  
                                       | Screw type terminals for input ground connection, connection capacity: 1 x 0.5...1 x 4 mm² AWG 22...AWG 12  
                                       | Screw type terminals for output connection, connection capacity: 4 x 0.5...4 x 4 mm² AWG 22...AWG 12  
                                       | Screw type terminals for output ground connection, connection capacity: 1 x 0.5...1 x 4 mm² AWG 22...AWG 12  
                                       | Removable screw terminal block for diagnostic relay, connection capacity: 2 x 2.5 mm² |
| **Marking**                            | CE |
| **Mounting support**                   | 35 x 15 mm symmetrical DIN rail  
                                       | 35 x 7.5 mm symmetrical DIN rail |
| **Operating position**                 | Vertical |
| **Operating altitude**                 | 2000 m |
| **Output coupling**                    | Series  
                                       | Parallel |
| **Name of test**                       | Harmonic current emission conforming to EN/IEC 61000-3-2  
                                       | Conducted emissions on the power line conforming to EN 55022 Class B  
                                       | Electrostatic discharges conforming to EN/IEC 61000-4-2  
                                       | Induced electromagnetic field conforming to EN/IEC 61000-4-6  
                                       | Magnetic field conforming to EN 61000-4-8  
                                       | Primary outage conforming to IEC 61000-4-11  
                                       | Radiated electromagnetic field conforming to EN/IEC 61000-4-3  
                                       | Radiated emissions conforming to EN 55022 Class B  
                                       | Rapid transient conforming to IEC 61000-4-4  
                                       | Surge conforming to EN/IEC 61000-4-5 |
| **Status LED**                         | 1 LED green and red for output voltage  
                                       | 1 LED green, red and orange for output current |
| **Depth**                              | 145 mm |
| **Height**                             | 143 mm |
| **Width**                              | 86 mm |
| **Product weight**                     | 1 kg |
| **Environment**                        | |
| **Product certifications**             | UL  
                                       | EAC  
                                       | CCSAus  
                                       | KC  
                                       | RCM |
| **Standards**                          | UL 508  
                                       | CSA C22.2 No 60950-1 |
| **Environmental characteristic**       | EMC conforming to EN 55024  
                                       | EMC conforming to EN 61000-6-1  
                                       | EMC conforming to EN 61000-6-3  
                                       | EMC conforming to EN/IEC 61000-6-4  
                                       | EMC conforming to EN/IEC 61000-6-3  
                                       | Safety conforming to EN/IEC 60950-1  
                                       | Safety conforming to EN/IEC 61204-3  
                                       | Safety conforming to SELV |
| **IP degree of protection**            | IP20 conforming to EN/IEC 60529 |
| **Ambient air temperature for storage**| -40...70 °C |
| **Relative humidity**                  | 0...90 % during operation  
                                       | 0...95 % in storage |
| **Overvoltage category**               | Class I conforming to VDE 0106-1 |
| **Dielectric strength**                | Between input and ground  
                                       | Between output and ground  
                                       | Between input and output |
| **MTBF reliability**                   | 613500 H at 100 V AC with UTE C80-810 calculation method  
                                       | 892000 H at 200...500 V AC with UTE C80-810 calculation method |

**Offer Sustainability**

<p>| <strong>Sustainable offer status</strong> | Green Premium product |</p>
<table>
<thead>
<tr>
<th>RoHS (date code: YYWW)</th>
<th>Compliant - since 0501 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH</td>
<td>Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold</td>
</tr>
<tr>
<td>Product environmental profile</td>
<td>Available Product Environmental Profile</td>
</tr>
<tr>
<td>Product end of life instructions</td>
<td>Available End of Life Information</td>
</tr>
</tbody>
</table>

**Contractual warranty**

| Warranty period | 18 months |
# Regulated Switch Mode Power Supplies

## Dimensions

<table>
<thead>
<tr>
<th>ABL 8</th>
<th>a in mm</th>
<th>a in in.</th>
<th>b in mm</th>
<th>b in in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS24030</td>
<td>125</td>
<td>4.92</td>
<td>45</td>
<td>1.77</td>
</tr>
<tr>
<td>RPS24050</td>
<td>125</td>
<td>4.92</td>
<td>56</td>
<td>2.20</td>
</tr>
<tr>
<td>RPS24100</td>
<td>145</td>
<td>5.71</td>
<td>86</td>
<td>3.39</td>
</tr>
<tr>
<td>RPM24200</td>
<td>145</td>
<td>5.71</td>
<td>146</td>
<td>5.75</td>
</tr>
<tr>
<td>WPS24200</td>
<td>160</td>
<td>6.30</td>
<td>96</td>
<td>3.78</td>
</tr>
<tr>
<td>WPS24400</td>
<td>160</td>
<td>6.30</td>
<td>166</td>
<td>6.54</td>
</tr>
</tbody>
</table>
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

Parallel Connection

<table>
<thead>
<tr>
<th>Family</th>
<th>Series</th>
<th>Parallel</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABL 8RPS/8RPM/8WPS</td>
<td>2 products max. (1)</td>
<td>2 products max.</td>
</tr>
</tbody>
</table>

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.

![Graph showing derating curve]

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

Automatic Reset Protection Mode

“Boost” Repeat Accuracy

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