

ABL8RPS24050

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



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 | 120 W |
| Provided equipment | Power factor correction filter conforming to IEC 61000-3-2 |
| Power supply output current | 5 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 | 0.51 at 240 V 0.59 at 120 V |
| Efficiency | 87...100 % |
| Output voltage limits | 24...28.8 V adjustable |
| Power dissipation in W | 15.5 W |
| Line and load regulation | 1...3 % |
| Holding time | ≥ 120 ms at 400 V ≥ 20 ms at 100 V ≥ 40 ms at 240 V |
| Permissible temporary current boost | 1.5 x I_n for 4 s |
| Connections - terminals | Removable screw terminal block for diagnostic relay, connection capacity: 2 x 2.5 mm ² Screw type terminals for input connection, connection capacity: 3 x 0.5...3 x 4 mm ² AWG 22...AWG 12 Screw type terminals for input ground connection, connection capacity: 1 x 0.5...1 x 4 mm ² AWG 22...AWG 12 Screw type terminals for output connection, connection capacity: 4 x 0.5...4 x 4 mm ² AWG 22...AWG 12 Screw type terminals for output ground connection, connection capacity: 1 x 0.5...1 x 4 mm ² AWG 22...AWG 12 |
| 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 | Parallel |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. 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. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

| | Series |
|----------------|--|
| Name of test | 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 Harmonic current emission conforming to EN/IEC 61000-3-2 |
| Status LED | 1 LED green and red for output voltage 1 LED green, red and orange for output current |
| Depth | 120 mm |
| Height | 143 mm |
| Width | 56 mm |
| Product weight | 0.7 kg |

Environment

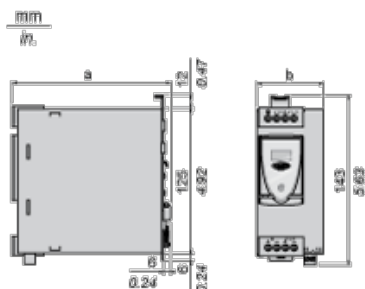
| | |
|-------------------------------------|---|
| product certifications | RCM EAC KC CB Scheme |
| standards | UL 508 CSA C22.2 No 60950-1 |
| environmental characteristic | EMC conforming to EN 61000-6-1 EMC conforming to EN 61000-6-3 EMC conforming to EN/IEC 61000-6-2 EMC conforming to EN/IEC 61000-6-4 EMC conforming to EN/IEC 61204-3 Safety conforming to EN/IEC 60950-1 Safety conforming to EN/IEC 61204-3 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 |

Offer Sustainability

| | |
|----------------------------------|---|
| Sustainable offer status | Green Premium product |
| RoHS (date code: YYWW) | Compliant - since 0501 - Schneider Electric declaration of conformity |
| REACH | Reference not containing SVHC above the threshold |
| Product environmental profile | Available |
| Product end of life instructions | Available |

Regulated Switch Mode Power Supplies

Dimensions

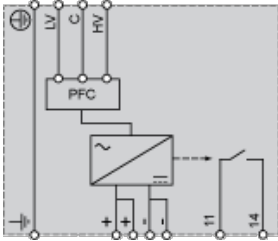


| | | | | |
|-------|---------|----------|---------|----------|
| ABL 8 | a in mm | a in in. | b in mm | b in in. |
|-------|---------|----------|---------|----------|

| | | | | |
|----------|-----|------|-----|------|
| RPS24030 | 120 | 4.72 | 44 | 1.73 |
| RPS24050 | 120 | 4.72 | 56 | 2.20 |
| RPS24100 | 140 | 5.51 | 85 | 3.34 |
| RPM24200 | 140 | 5.51 | 145 | 5.70 |
| WPS24200 | 155 | 6.10 | 95 | 3.74 |
| WPS24400 | 155 | 6.10 | 165 | 6.49 |

Regulated Switch Mode Power Supply

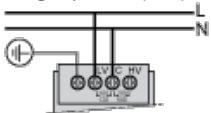
Internal Wiring Diagram



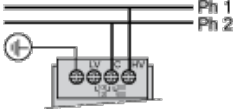
Regulated Switch Mode Power Supply

Line Supply Wiring Diagram

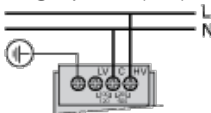
Single-phase (L-N) 100 to 120 V



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



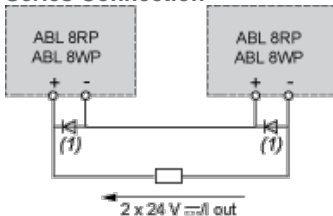
Single-phase (L-N) 200 to 500 V



Regulated Switch Mode Power Supplies

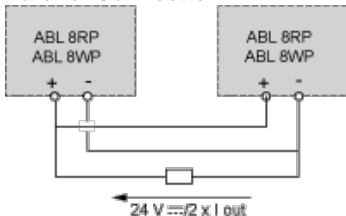
Series or Parallel Connection

Series Connection



(1) Two Schottky diodes I_{min} = power supply I_n and V_{min} = 50 V

Parallel Connection



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

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.

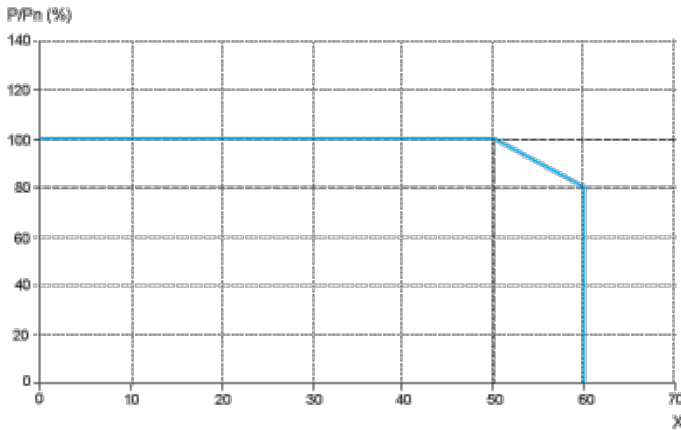
Regulated Switch Mode Power Supplies

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

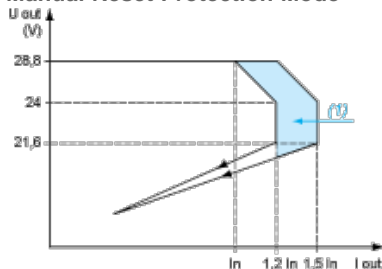
Derating should be considered in extreme operating conditions:

- | 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

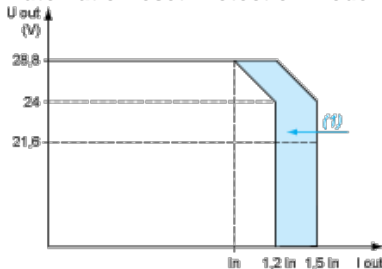
Load Limit

Manual Reset Protection Mode



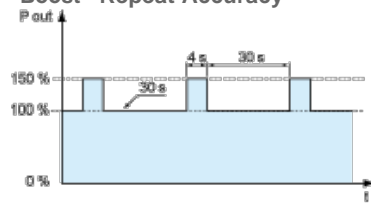
(1) Boost 4s

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.