# Product datasheet
## Characteristics

# ABL8RPS24100
## Regulated Switch Power Supply, 1 or 2-phase, 100..500V, 24V, 10 A

## 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<br>200...500 V AC phase to phase, terminal(s): L1-L2 |
| Input voltage limits | 170...550 V AC<br>85...132 V AC |
| Rated power in W | 240 W |
| Output voltage | 24 V DC |
| Power supply output current | 10 A |
| Permissible temporary current boost | 1.5 x In (for 4 s) |
| Anti-harmonic filter | Low frequency harmonic currents |

## Complementary

| | |
|---|---|
| Inrush current | 30 A |
| Power factor | 0.68 at 240 V AC<br>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<br>Against overvoltage, protection technology: 30...32 V, manual reset<br>Against short-circuits, protection technology: manual or automatic reset<br>Against undervoltage, protection technology: tripping if U < 21.6 V<br>Thermal, protection technology: automatic reset |
| Connections - terminals | Removable screw terminal block: 2 x 2.5 mm², for diagnostic relay<br>Screw type terminals: 3 x 0.5...3 x 4 mm², (AWG 22...AWG 12) for input connection<br>Screw type terminals: 1 x 0.5...1 x 4 mm², (AWG 22...AWG 12) for input ground connection |

| | |
|---|---|
| | Screw type terminals: 4 x 0.5...4 x 4 mm², (AWG 22...AWG 12) for output connection<br>Screw type terminals: 1 x 0.5...1 x 4 mm², (AWG 22...AWG 12) for output ground connection |
| Status LED | 1 LED (green and red)output voltage:<br>1 LED (green, red and orange)output current: |
| Depth | 145 mm |
| Height | 125 mm |
| Width | 86 mm |
| Net weight | 1 kg |
| Output coupling | Parallel<br>Series |
| Marking | CE |
| Mounting support | 35 x 7.5 mm symmetrical DIN rail<br>35 x 15 mm symmetrical DIN rail |
| Operating position | Vertical |

## Environment

| | |
|---|---|
| Standards | UL 508<br>CSA C22.2 No 60950-1 |
| Product certifications | CCSAus<br>EAC<br>KC<br>RCM<br>UL |
| Environmental characteristic | EMC conforming to EN 61000-6-1<br>EMC conforming to EN 61000-6-3<br>EMC conforming to EN 55024<br>EMC conforming to EN/IEC 61000-6-4<br>EMC conforming to EN/IEC 61204-3<br>Safety conforming to EN/IEC 60950-1<br>Safety conforming to EN/IEC 61204-3<br>Safety conforming to SELV |
| Operating altitude | 2000 m |
| IP degree of protection | IP20 conforming to EN/IEC 60529 |
| Ambient air temperature for operation | 50…60 °C (with derating factor)<br>-25…50 °C (without) |
| Ambient air temperature for storage | -40…70 °C |
| Relative humidity | 0…90 % during operation<br>0…95 % in storage |
| Dielectric strength | 3500 V between input and ground<br>4000 V between input and output<br>500 V between output and ground |

## Offer Sustainability

| | |
|---|---|
| Sustainable offer status | Green Premium product |
| REACh Regulation | REACh Declaration |
| REACh free of SVHC | Yes |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope)<br>EU RoHS Declaration |
| Mercury free | Yes |
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS declaration |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| PVC free | Yes |

## Contractual warranty

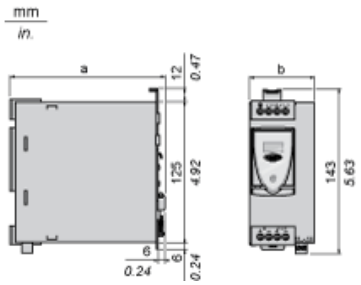
| | |
|---|---|
| Warranty | 18 months |

# Product datasheet
## Dimensions Drawings

# ABL8RPS24100

## Regulated Switch Mode Power Supplies

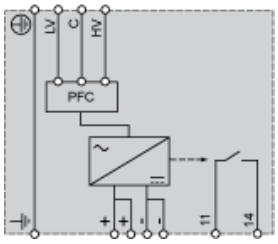
### Dimensions




| 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

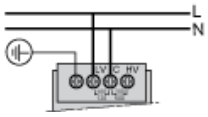
### Internal Wiring Diagram



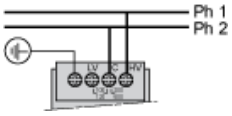
## Regulated Switch Mode Power Supply

### Line Supply Wiring Diagram

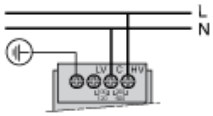
Single-phase (L-N) 100 to 120 V




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



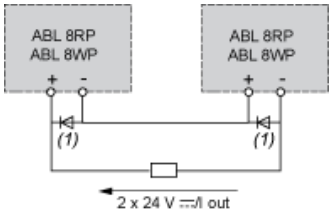

Single-phase (L-N) 200 to 500 V



## Regulated Switch Mode Power Supplies

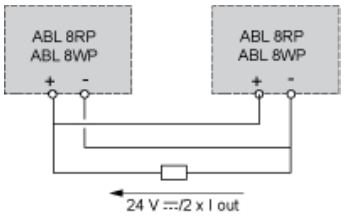
### Series or Parallel Connection

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.

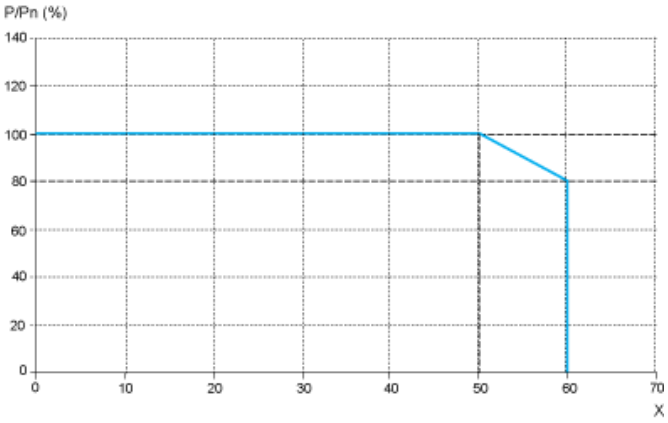
## Regulated Switch Mode Power Supplies

### 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

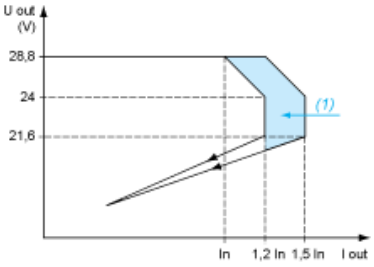
Derating should be considered in extreme operating conditions:

- 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

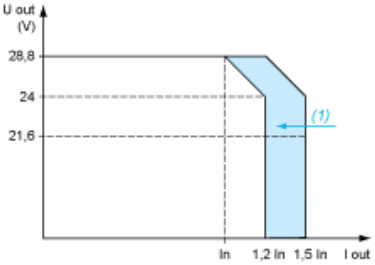
### Load Limit

Manual Reset Protection Mode



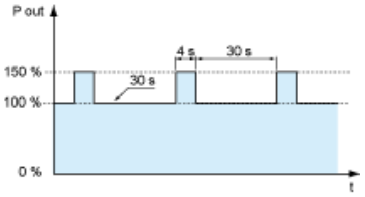

(1) Boost 4s

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.