



Main

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|---------------------------------------|---|
| Range of product | Phaseo |
| Product or component type | Power supply |
| Power supply type | Regulated switch mode |
| Input voltage | 380...500 V AC three phase, terminal(s): L1, L2, L3 |
| Output voltage | 24 V DC |
| Rated power in W | 480 W |
| Provided equipment | Power factor correction filter conforming to IEC 61000-3-2 |
| Power supply output current | 20 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 derating factor) -25...50 °C (without) |

Complementary

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|-------------------------------------|--|
| Input voltage limits | 320...550 V |
| Network frequency | 47...63 Hz |
| Inrush current | 25 A 2 ms |
| Cos phi | 0.65 |
| Efficiency | 92 % |
| Output voltage limits | 24...28.8 V adjustable |
| Power dissipation in W | 38.4 W |
| Line and load regulation | 1...3 % |
| Holding time | ≥ 18 ms at 400 V |
| Permissible temporary current boost | 1.5 x I_n (for 4 s) |
| Connections - terminals | For diagnostic relay: removable screw terminal block, connection capacity: 2 x 2.5 mm ² |

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

For input connection: screw type terminals, connection capacity: 3 x 0.5...3 x 4 mm² AWG 22...AWG 12
 For input ground connection: screw type terminals, connection capacity: 1 x 0.5...1 x 4 mm² AWG 22...AWG 12
 For output connection: screw type terminals, connection capacity: 4 x 0.5...4 x 10 mm² AWG 22...AWG 8

| | |
|--------------------|--|
| Marking | CE |
| Mounting support | 35 x 7.5 mm symmetrical DIN rail 35 x 15 mm symmetrical DIN rail |
| Operating position | Vertical |
| Operating altitude | 2000 m |
| Output coupling | Series Parallel |
| Name of test | 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 Rapid transient conforming to IEC 61000-4-4 Surge conforming to EN/IEC 61000-4-5 Conducted emissions on the power line conforming to EN 55022 class B Radiated emissions conforming to EN 55022 class B Harmonic current emission conforming to EN/IEC 61000-3-2 |
| Status LED | 1 LED (green and red)output voltage: 1 LED (green, red and orange)output current: |
| Depth | 160 mm |
| Height | 143 mm |
| Width | 96 mm |
| Net weight | 1.6 kg |

Environment

| | |
|-------------------------------------|---|
| MTBF reliability | 691000 H at 320 V AC with UTE C80-810 calculation method 670000 H at 550 V AC with UTE C80-810 calculation method |
| Product certifications | CCSAus EAC UL RCM |
| Standards | CSA C22.2 No 60950-1 UL 508 |
| Environmental characteristic | 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 61204-4 Safety conforming to EN/IEC 60950-1 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 | 3500 V between input and ground 4000 V between input and output 500 V between output and ground |

Offer Sustainability

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|--------------------------|---|
| Sustainable offer status | Green Premium product |
| REACH Regulation | REACH Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |

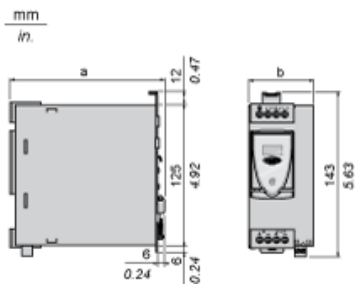
| | |
|----------------------------|---|
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS declaration |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |

Contractual warranty

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

Regulated Switch Mode Power Supplies

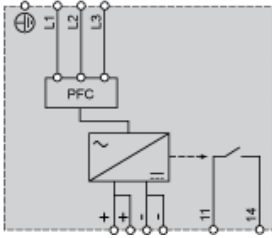
Dimensions



| 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

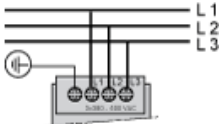
Internal Wiring Diagram



Regulated Switch Mode Power Supply

Line Supply Wiring Diagram

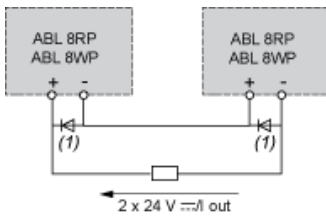
Three-phase (L1-L2-L3) 3 x 380 to 500 V



Regulated Switch Mode Power Supplies

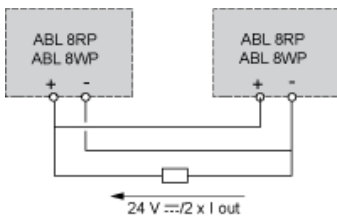
Series or Parallel Connection

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. |

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.

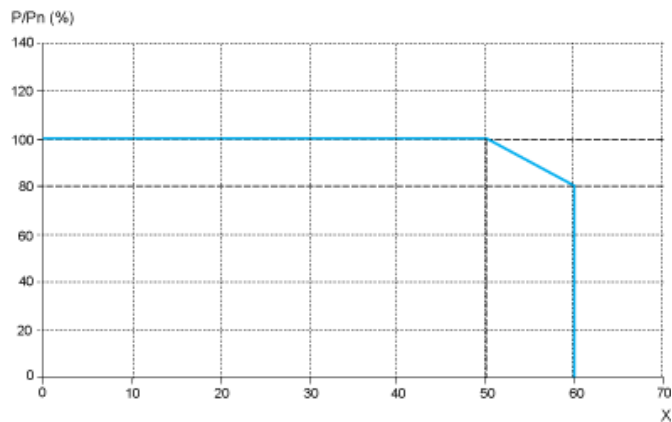
Regulated Switch Mode Power Supplies

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

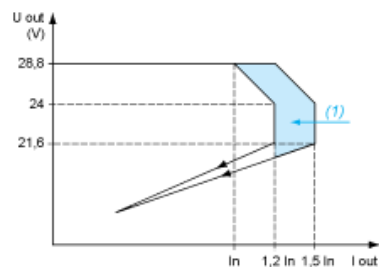
Derating should be considered in extreme operating conditions:

- 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

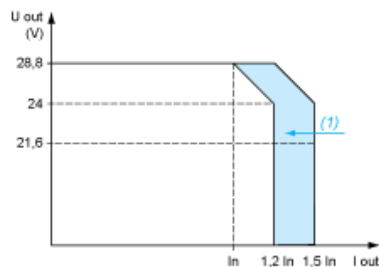
Load Limit

Manual Reset Protection Mode



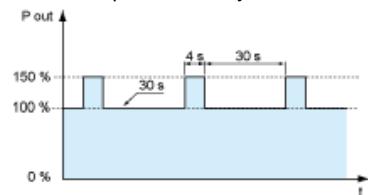
(1) Boost 4s

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.