Product data sheet
Characteristics

ABL8WPS24400
regulated SMPS - 3-phase - 380..500 V - 24 V - 40 A

Main

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	960 W
Provided equipment	Power factor correction filter conforming to IEC 61000-3-2
Power supply output current	40 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

Input voltage limits	320...550 V
Network frequency	47...63 Hz
Inrush current	25 A 2 ms
Cos phi	0.85
Efficiency	92 %
Output voltage limits	24...28.8 V adjustable
Power dissipation in W	76.8 W
Line and load regulation	1...3 %
Holding time	>= 14 ms at 400 V
Permissible temporary current boost	1.5 x In (for 4 s)
Connections - terminals	For diagnostic relay: removable screw terminal block, connection capacity: 2 x 2.5 mm²

	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	Parallel Series
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	166 mm
Net weight	2.7 kg

Environment

MTBF reliability	560000 H at 320 V AC with UTE C80-810 calculation method 593000 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

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

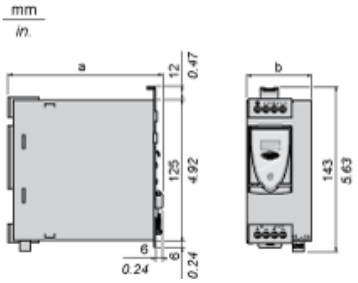
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information

Contractual warranty

Warranty	18 months

Regulated Switch Mode Power Supplies

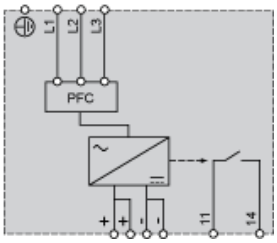
Dimensions



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

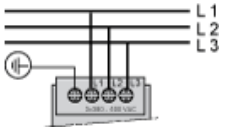
Internal Wiring Diagram



Regulated Switch Mode Power Supply

Line Supply Wiring Diagram

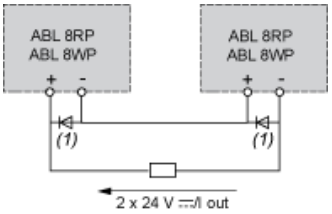
Three-phase (L1-L2-L3) 3 x 380 to 500 V



Regulated Switch Mode Power Supplies

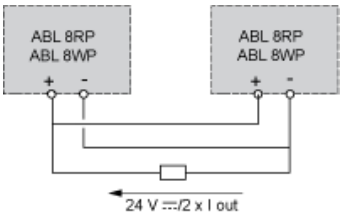
Series or Parallel Connection

Series Connection



(1) Two 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.

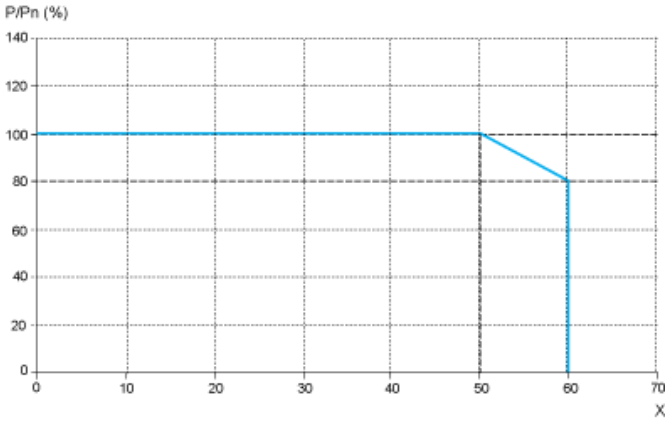
Regulated Switch Mode Power Supplies

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

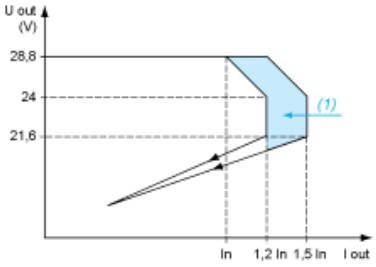
Derating should be considered in extreme operating conditions:

- 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

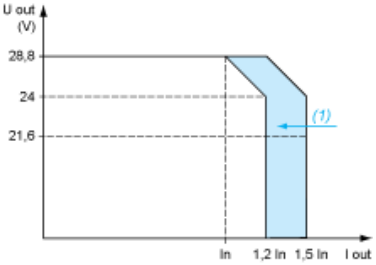
Load Limit

Manual Reset Protection Mode



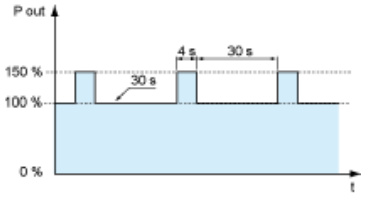
(1) Boost 4s

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.