



# Powerware

## Powerware® 9120M Uninterruptible Power System for Marine Applications

Product Focus

2000 & 3000 VA



### Features

- DNV type approved
- Compliant with IEC 60945 standard
- Designed for marine environments
- Easy to install
- Compact and complete package in one box
- Series 9 double conversion online
- Internal automatic bypass switch
- Superior electrical performance
- Extended backup time
- Parallel redundant internal battery
- Hot Swappable battery
- User-friendly, informative LCD display
- ABM™, prolongs battery service life by 50%

Today's sophisticated high technology equipment on board can fail to do its work or even be damaged if the input power has disturbances or breaks down completely.

#### **Powerware 9120M a DNV (Det Norske Veritas) type approved UPS for critical applications**

The Powerware 9120M —type approved by DNV—has been developed for critical onboard computer and communication equipment that has to keep working even in case of a general power failure. With its double conversion design, the 9120M provides uninterruptible clean sine wave power to the critical loads. The 9120M is the ideal solution for bridge systems such as ECDIS (Electronic Chart Display and Information Systems), other navigation systems and DPS

(Dynamic Positioning System), CAMS (Control and Alarm Monitoring Systems), VDR (Voyage Data Recorder) and communication systems.

The 9120's extremely compact design makes installation easy even in tight spaces. Its tower configuration allows installation on the deck or on shelf as necessary.

With its wide input voltage window, the 9120M is capable of working with mains power in most conditions without discharging batteries, thus saving battery capacity for when it is really needed. The power range – 2 and 3 kVA—and electrical performance of the 9120M ensure that it can be used for almost any application. In addition, the wide range of options such as external battery cabinets and transformer cabinets enable further customisation.

#### **Hardened design for marine environments**

The design of the Powerware 9120M is based on Eaton's industry leading global UPS technology platform. Eaton's range of marine UPSs combine advanced base technology with the necessary marine modifications. Both the 2 and 3 kVA Powerware 9120 models are adapted for use in the ungrounded electrical distribution system (IT mains), have hardened mechanical design, mechanical shock absorbers and meet the classification societies' special safety regulations and requirements.

#### **Service wherever your ship operates**

The use of the global UPS platform also ensures that the field services around the world can use the standard spares,

documentation, training and tools. Powerware's global service network comprises more than 1,200 service professionals worldwide. They make sure you get the same high-quality, quick services wherever you operate, delivered by your local Powerware Authorised Service Provider. We are available for our customers in all main ports around the world.

## Advanced features for marine applications

### DNV type approval for confidence

Type approval by Det Norske Veritas, combined with IEC 60945 compliance, allows installation of the 9120 for almost any onboard application without extensive formalities.

### Compact design

With a cabinet measuring only 225 x 470 x 365 mm (WxDxH), the 9120 is easy to mount almost anywhere. Even with these compact dimensions, the 9120 packs a lot of power. Whether you choose the 2-kVA or 3-kVA version, one 9120 provides the classification-society required backup for any application. Installation brackets that come standard with the device allow firm mounting to the deck or shelf.

### Excellent electrical properties

At a competitive price, the 9120 gives you higher power than most competitors, as well as abundant power reserves, long backup times and overload tolerance. Thanks to its high power rating, the 9120 is the all-in-one solution for most bridge applications—with Eaton's acknowledged operating reliability.

### Advanced Battery Management

The unique Powerware ABM™ technology provides a three-stage charging technique that only recharges when necessary. The battery experiences less internal corrosion and battery service life is prolonged by up to 50%.

### Hot swappable batteries

All the Powerware 9120 models have been developed with hot-swappable batteries, therefore internal batteries can be changed without powering down the load.

### Extended runtimes

Both the 2 and 3 kVA Powerware 9120 marine models have redundant batteries as standard. If necessary, they can additionally be equipped with External Battery Cabinets, this can extend the runtimes to hours.

### Load segments

Load Segments are groups of independently controllable outlets. Less critical loads can be shut down and battery capacity preserved for more critical loads.

### External bypass options

All Powerware 9120 units can be installed with an External Bypass option which enables service without powering down the critical load.

### User interface

Informative user interface with LCD, and four LED and audible alarms. This enables easy configuration of your UPS by changing UPS settings using the LCD panel.



## Solutions to manage and monitor your UPS

### Emergency Power Off as standard

All Powerware 9120 models come equipped with an EPO port enabling the shutdown of connected equipment from a remote location in an emergency. After the EPO port has been activated the unit has to be restarted manually by pushing the ON button.

### USB and RS 232 ports as standard

The standard serial connection has two interfaces; RS 232 and USB. In addition, the 9120 is equipped with a connectivity slot that works in parallel to either RS232 or USB port.



### Software suite

Eaton offers a full line of shutdown and monitoring software products to enhance the protection provided by its UPSs. The software suite, conveniently packed on one CD-ROM, follows every UPS free of charge.

The software suite includes LanSafe, network shutdown software that currently supports up to 20 operating systems. It ensures controlled sequential shutdown of up to 64 computers protected by a

### ConnectUPS Web/SNMP card for connectivity slot (option)

This is a complete UPS monitoring, control and shutdown solution in a networked IT environment. In case of alert the Web/SNMP card can notify users and administrators through email and SNMP traps. In case of a prolonged power failure, the protected systems can be shut down in a graceful manner with NetWatch and LanSafe software.

### Relay card

provides an easy connection to other computers as well as network management systems. You can also build a solution for a remote ON/OFF function with the relay card.

single UPS across platforms in case of a prolonged power failure.

NetWatch is a shutdown agent for the ConnectUPS Web/SNMP card. It is a very compact piece of software, but still features powerful configuration options for shutdown actions, timings and user notification.

### Monitoring software

PowerVision® is performance monitoring and trend analysis software for critical UPSs

### Environmental Monitoring Probe for ConnectUPS Web/SNMP adapters (option)

The Environmental Monitoring Probe adds the capability to monitor temperature, humidity and two contact closures to the ConnectUPS Web/SNMP card. Operating system shutdown can be triggered if user-defined thresholds are exceeded or contact closure status changes.

### Remote control panel, ViewUPS (option)

LCD display that allows monitoring the UPS within a 50-metre radius of the unit.

and multiple UPSs in a network. It calculates trends and stores information about the operation of the UPS device in its database. PowerVision's alert and notification behaviour is highly configurable, which makes it a great tool for system administrators. The optional shutdown controller module can host hundreds of shutdown clients and it can also be used in case of paralleled UPSs.

# Technical Specifications

## POWERWARE 9120M MARINE UPS

Rating	2000 VA	3000 VA	3000 VA LV
Capacity (VA/watts)	2000/1400	3000/2100	3000/2100
Dimensions WxDxH (mm)	225x470x365	225x470x365	225x470x365
Weight (kg)	37	38	38
Input connection	IEC320/10A	IEC320/16A	Cord with L5-30 plug
Output connection	1xIEC320/16A 4xIEC320/10A	1xIEC320/16A 4xIEC320/10A	1xL5-30, 2x5-20R 4x5-15R
Typical runtime (full load)	14 min	8 min	8 min
(half load)	30 min	20 min	20 min

### Operational

Nominal input voltage (Vac)	120/220/230/240 Vac	100/110/120/127 Vac
Input voltage range	120/140/160-276 Vac	80-144 Vac
Operating frequency	50/60 Hz auto sensing ( $\pm 3$ Hz, adjustable)	
Input power factor	>0.97	
Nominal output voltage	208/220/230/240 Vac	100/110/120/127 Vac
Output voltage regulation	$\pm 2\%$ online; $\pm 3\%$ on battery mode	
Overload capacity	Up to 125 % for minute, 125-150% for 10 sec	
Efficiency	>88%	

### User interface

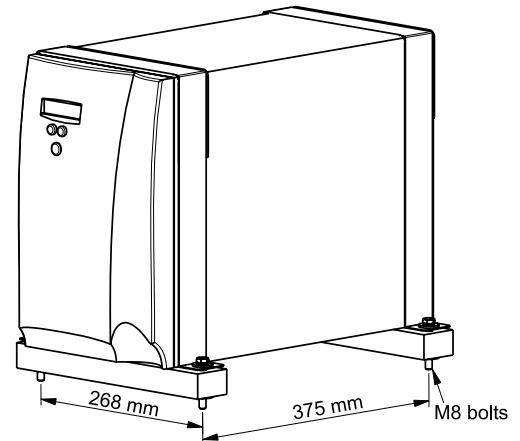
LCD display	LCD display showing both UPS meters and UPS settings
LED	Four LEDs; UPS on, UPS on battery, UPS on bypass, alarm
Standard communication ports	RS232 and USB as standard on all models
Optional	Connectivity slot for SNMP/Web card and relay card

### Environmental

Operating temperature	0°C - +40°C
Storage temperature	-15°C - +40°C
Altitude	<3000 m
Audible noise at 1 metre	<50 dB

### Certification

Markings	CE/GS
Safety	EN 50091-1-1
EMC	IEC 60945, EN 50091-2, EN 6100-3-2



9120M with its installation brackets

## External battery cabinets

9120	Backup time*	Dimensions	Weight
BAT 2000/3000	Approx 50/30 min	225x470x365 mm	50 kg

\* Backup time internal + one battery cabinet

Load	Internal batteries	With 1 EBM	With 2 EBM
<b>9120 2000-3000VA</b>			
500VA/350W	65	>240	>420
1000VA/700W	30	125	220
1500VA/1050	19	70	140
2000VA/1400W	14	55	100
2500VA/1750W	10	45	80
3000VA/2100W	8	30	65

In the interests of continual product improvement all specifications are subject to change without notice.

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