



# Powerware

## Powerware 9355M Uninterruptible Power System for Marine Applications

Product Focus

Single UPS solutions 20, 30 and 40kVA  
Hot Sync® parallel redundant solutions up to 3+1 configuration



### Features

- Very compact design for saving space
- Easy to install, mounting rails can be bolted or welded to the deck/bulk head
- IP22 protection class
- Vibration absorbers under and back of the cabinet
- Maintenance from the front
- 20 and 30kVA: Internal space for 2 optional input/output transformers
- 40kVA Internal space for one optional input or output transformer
- Active, power factor corrected rectifier, power factor 0.99, harmonics less than 5% THD(i)
- High performance PWM inverter providing output power factor of 0.9
- Internal automatic static bypass switch
- Internal mechanical bypass switch
- Advanced Battery Management (ABM™) for monitoring and improved battery life time
- Configurable and multilingual LCD control panel with backlit graphical mimic screen
- Versatile connectivity options for remote monitoring
- Hot Sync® redundancy/capacity up to 3 + 1 configuration
- Configurable to frequency converter operation (50>60Hz and 60>50Hz)

### Product Snapshot

Technology: Double conversion (Series 9)  
Rating: 20-40 kVA at 0.9 p.f.  
Voltage: 400 V 50/60 Hz  
Options: IP22, vibration absorbers, frequency converter

Powerware® 9355M series UPS is specially designed for marine installations. The 9355M can be used for any load application of this power range on board the vessels. They are widely used to protect the operation of the critical equipment such as emergency power and lighting, navigation, communication, integrated bridge, ship automation and computer systems.

The 9355M enables optimal power protection for modern 0.9 p.f. rated, critical equipment without the needs of oversizing. The 9355M is extremely "mains-friendly" and does not interfere with other critical equipment in the same network due to its high 0.99 input power factor and low <5% THD(i).

All models are adapted for use in the IT mains, have hardened mechanical design, an IP22 cabinet, mechanical shock absorbers and they meet the classification societies' safety requirements.

The 9355M is built into one cabinet that houses all the electronics: rectifier, inverter,

static bypass, mechanical bypass and microprocessor control. This configuration allows the entire system to be controlled as one integral device. This leads to higher reliability than using separate power converters. It also saves plenty of valuable space, allowing easy installation.

Eaton's patented Hot Sync® technology makes it possible to parallel one or more Powerware 9355M UPS units to increase availability. Hot Sync enables load sharing without a communication line, thus eliminating a single point of failure. The 9355M also features the unique Advanced Battery Management (ABM) that charges batteries only when necessary, thus increasing battery life by up to 50%.

Eaton has more than 30 years of experience in supplying the marine industry with Uninterruptible Power Systems (UPS). Eaton integrates a full line of power conversion products and systems, power management software, remote monitoring, turnkey integration services and site support.

# Technical Specifications

## POWERWARE 9355M MARINE UPS

### General

Output rating	20, 30, 40 kVA 0,9 p.f.
Efficiency	93% at nominal load
Audible noise	<50 dB (A)

### Input voltage depends on input transformer (e.g. 230, 400, 440, 690 VAC)

Nominal voltage for UPS	400 V (3-phase input/output)
Frequency	45-65 Hz
Power factor	0,99 (2-5% THDi at nominal load)

### Output voltage depends on output transformer (e.g. 230, 400, 440, 690 VAC)

Selectable voltage for UPS	380/400/415 VAC; 50 or 60 Hz
Regulation	±2% static
Power factor	0,9 (e.g. 27 kW at 30 kVA)
Permitted load power factors	0.7 lagging - 0.8 leading
Overload	150% for 1 min, 125% for 10 min, 110% for 60 min (mains available)

### Battery

Type	Maintenance free VRLA batteries
Battery charging	Advanced Battery Management (ABM™)
Battery nominal voltage	432 V (36 x12 V, 216 cells)
Battery max. voltage	507 V (2.35 VPC)
Battery min. voltage	378 V (1.75 / 1.67 VPC)

### Options

Isolation transformers,  
Long-life 10y battery options,  
External battery cabinets,  
XSlot connectivity (potential free relays,  
ModBus, Web/SNMP

### Markings

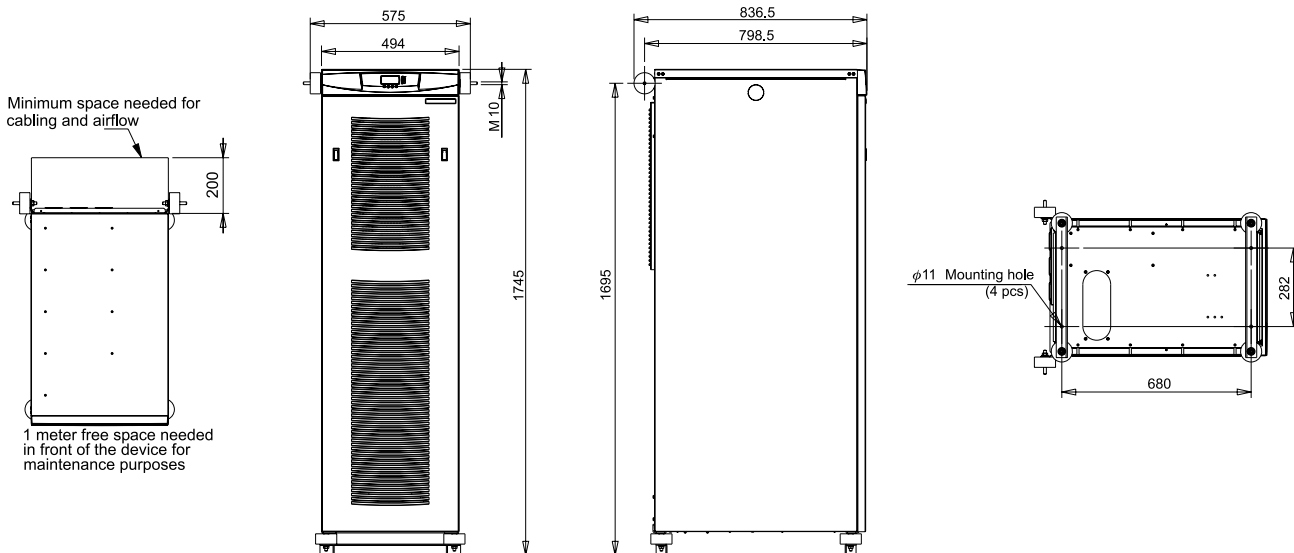
Approvals	CE, Classification survey report on request
Quality	ISO9001:2000 & ISO14001:2004

## Standard UPS with 3-phase input

Description	Rating	Dimensions (HxWxD)	Weight
9355-20-NT-M	20 kVA / 18 kW	1745x575x762 (+200) mm	425 kg with I/O transformers
9355-30-NT-M	30 kVA / 27 kW	1745x575x762 (+200) mm	455 kg with I/O transformers
9355-40-NT-M	40 kVA / 36 kW	1745x575x762 (+200) mm	355 kg with Output transformer

## External battery cabinets

Description	Rating	Runtime	Dimensions (HxWxD)	Weight
9355-BAT-M-1x24Ah (30 kVA)	1x36x24 Ah	See runtime spec	1745x575x762 (+200) mm	550 kg
9355-BAT-M-2x24Ah (30 kVA)	2x36x24 Ah	See runtime spec	1745x575x762 (+200) mm	970 kg



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

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Mailing address:  
Powerware Products and Services,  
Marketing  
P.o. Box 54, 02921 Espoo, FINLAND  
Tel: +358 9 452 661  
Fax: +358 9 452 66396  
emea@powerware.com  
http://www.powerware.com

DENMARK  
Tel: +45 3686 7910  
denmark.sales@powerware.com

FINLAND  
Tel: +358 9 452 661  
finland.sales@powerware.com

FRANCE  
Tel: +33 1 60 12 74 00  
powerware.france@powerware.com

GERMANY  
Tel: +49 7841 6040  
info.germany@powerware.com

ITALY  
Tel: +39 02 957 430 65  
info@powerware.it

NORWAY  
Tel: +47 23 03 65 50  
norway.sales@powerware.com

UNITED KINGDOM  
Tel: +44 1753-608 700  
powerware.help@powerware.com

UNITED STATES  
Tel: +1 919 972 3020  
info@powerware.com

CHINA  
Tel: +86 21 6361 5599

SINGAPORE  
Tel: +65 6829 8888  
eatonSEA@eaton.com



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