

# Product Guide

## UPS SYSTEMS



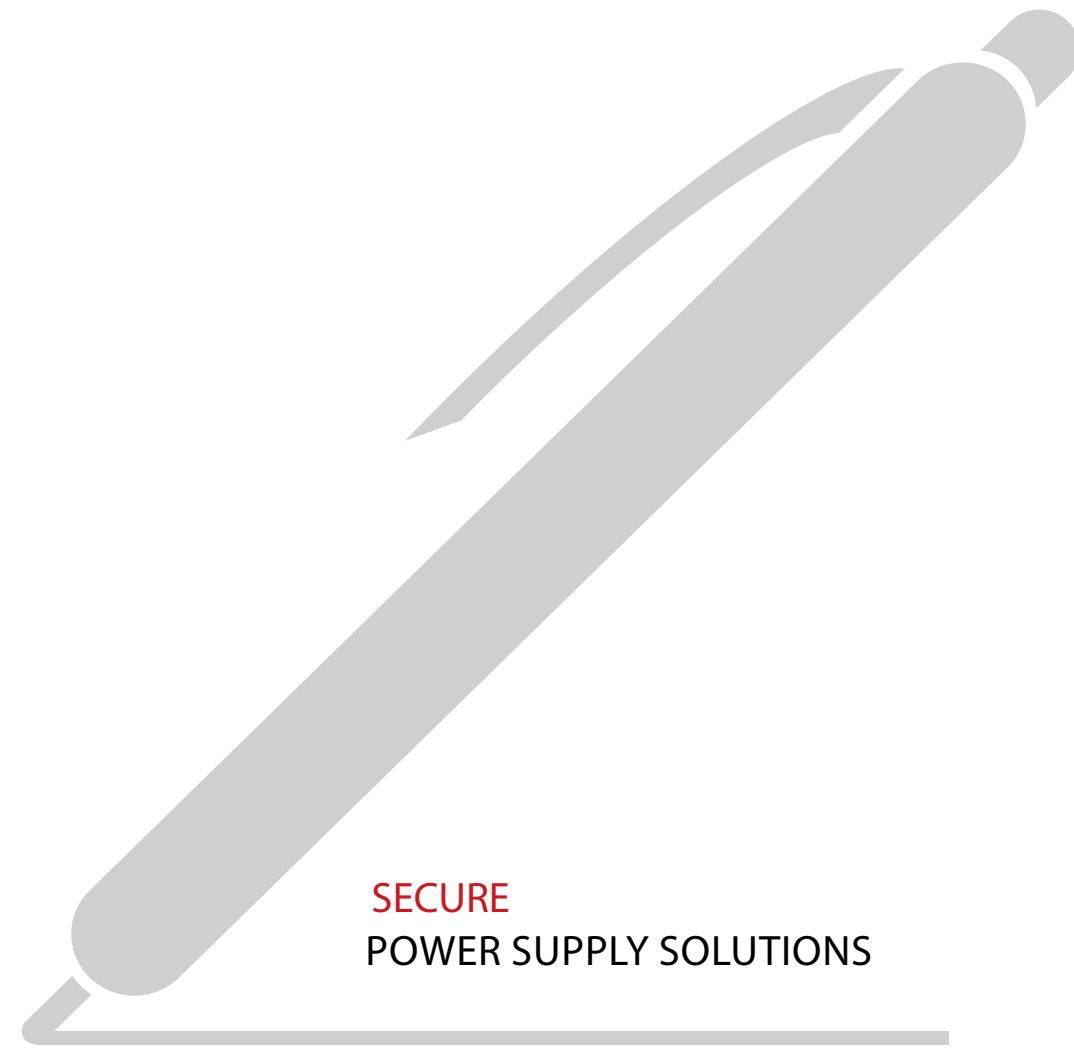
## SECURE POWER SUPPLY SOLUTIONS

Wärtsilä JOVYATLAS  
**INNOVATIONS**  
FOR A VARIOUS WIDE RANGE  
OF TECHNICAL APPLICATIONS



[WWW.TAMINTABLO.COM](http://WWW.TAMINTABLO.COM)





SECURE  
POWER SUPPLY SOLUTIONS

TAMIN TABLO  
WARTSILA  
JOVYATLAS



PREFERENCES  
UPS SYSTEMS

Wärtsilä JOVYATLAS designs and manufactures UPS systems for a various wide range of technical applications and with ratings from 625 VA up to 800 kVA per unit or of several MVA as system solution. Uninterrupted Power Supply Systems (UPS systems) take over general power supply in cases where mains power supply systems fail or are switched off. Secure power supply does not only imply protection in case of power failures, but also guarantees the quality of power. UPS systems protect reliably and their applications are manifold: whether for PCs, home offices, networks / server systems or large production lines in industrial sectors – lack of power quality or even blackouts result in system crashes up to total failures. In many areas like e.g. in hospitals, the safeguard of power supply is vital.

- TTC INDUSTRIAL GROUP



## ALL-WEATHER UPS SYSTEMS

All-weather UPS systems of Wärtsilä JO-VYATLAS work reliably even under extreme conditions, e.g. at temperatures of -30°C up to +45°C. Our UPS systems are partial air-conditioned and fitted with NiCad batteries and special input filters, so that efficient functioning of the UPS is guaranteed even at extreme ambient temperatures and difficult grid conditions.

All-weather UPS systems are used in wind energy plants or in extreme environmental conditions, e.g. in the antenna project ALMA in the Atacama Desert, Chile.



## UPS SOFTWARE JUMP

The software JUMP (JOVYATLAS UPS Management Program) offers our customers a user-friendly and easy-to-use interface to control and monitor Wärtsilä JOVYATLAS UPS systems as stand-alone applications. Precondition for the use of JUMP software as monitoring tool is a PC directly linked to the UPS.

The JUMP software enables not only control and monitoring of the UPS, but provides also for a controlled cross-system shutdown of all computers in the network (multiserver shutdown).

## NAVAL UPS SYSTEMS

UPS systems have proven to be indispensable in the naval sector for the supply of critical equipment consumers on board. In case of a power failure of the on-board grid system full capacity of essential systems like emergency lights, radio, navigation, automation as well as communication must be assured for a defined period of time.

With more than 70 years of experience in the production of UPS and rectifier systems and complying with classification societies like e.g. DNVGL, Lloyds Register of Shipping, American Bureau of Shipping, Bureau Veritas and R.I.N.A.



## SNMP ADAPTER AND RELAY BOARDS

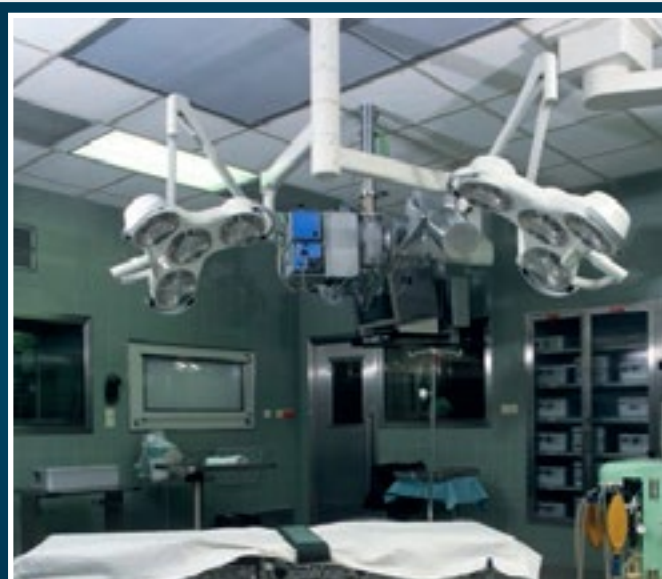
In case the UPS cannot/should not be linked directly with a PC and a network exists in the vicinity of the UPS system a comprehensive monitoring of the system via SNMP adapter is possible. The SNMP protocol (Simple Network Management Protocol) represents a globally defined standard to control hardware connected to a network and to receive information about the cross-network status of a system.

Using a SNMP adapter the UPS system receives an independent IP address via the SNMP protocol allowing any PC via a web browser to select, monitor and control the UPS system.

## UPS SYSTEMS FOR HOSPITALS, LABORATORIES AND HEALTHCARE

In the field of healthcare an uninterrupted power supply is vital. Battery powered central safety power supply (BSV systems) of Wärtsilä JOVYATLAS provide their service in numerous hospitals and laboratories worldwide. Systems of these fields of application are manufactured specifically for each order and tailored to the individual requirements.

The production of these systems is monitored by our quality assurance system DIN ISO 9001 and complies with the valid standard for medical locations of group 2, DIN VDE 0100-710.



## TEMPERATURE METER

Many of our UPS systems can be equipped with remote display / remote control.

## SENSOR MANAGER

The sensor manager collects various measured values. In principle, it is an interface gathering and recording information of different sensors.

## REMOTE DISPLAY FOR VARIOUS UPS SYSTEMS

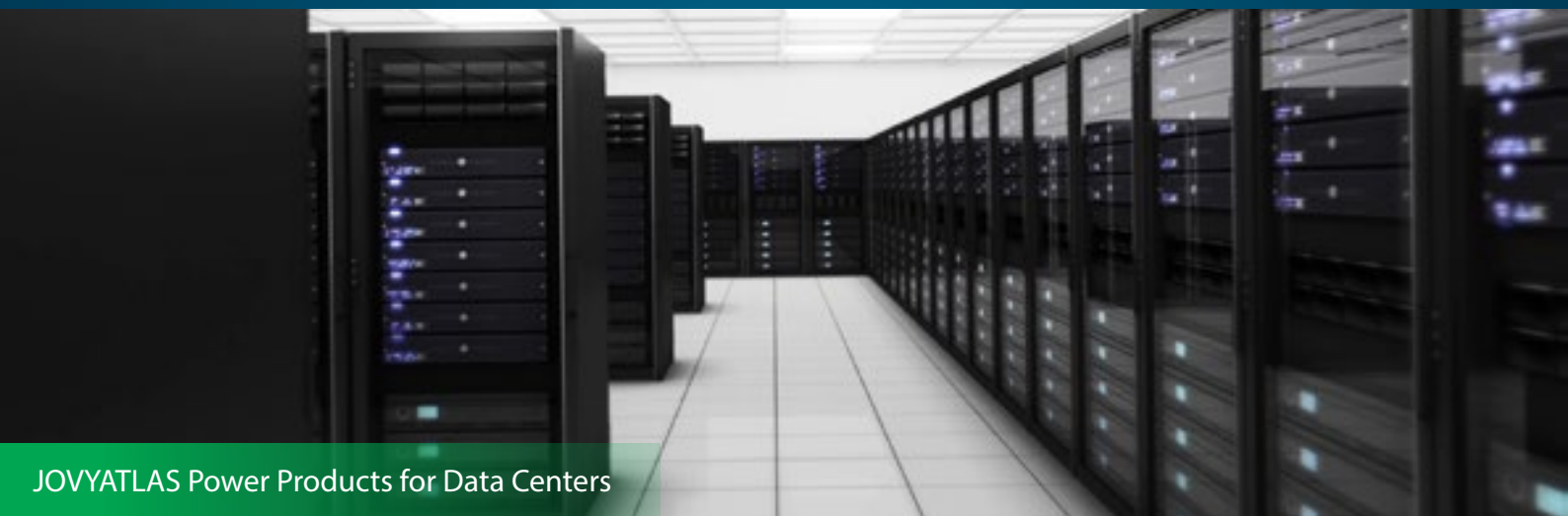
Many of our UPS systems can be equipped with remote display / remote control.

A Power Distribution Unit distributes the power – similar to a multiple socket – to the consumers. Intelligent versions allow e.g. to switch individual consumers on and off in a defined way.



# Data Centers

JOVYATLAS manufactures, supplies and supports secure power components and/or systems for Data Centers world-wide. Modular products and engineered solutions are designed to realize Tier 1, 2, 3 and 4 configurations to meet our customers' needs.



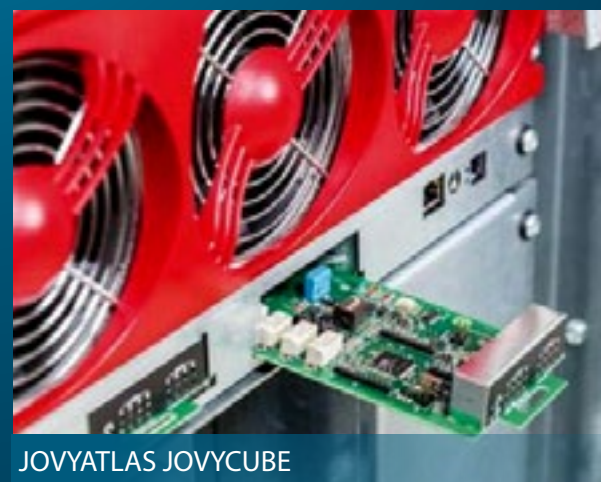
JOVYATLAS Power Products for Data Centers

## JOVYATLAS JOVYSTAR HE

Scalable UPS (200 kVA steps)  
Very high efficiency up to 99%



JOVYATLAS JOVYSTAR HE



JOVYATLAS JOVYCUBE

## JOVYATLAS JOVYCUBE

Modular UPS Systems  
19 inch, 20 kVA modules  
No single point of failure

### PROPERTIES

Scalable UPS Systems are growing with power increasing  
Very high efficiency up to 99%  
Static Transfer Switches – high speed, proven performance  
Service and Support Network

## SECURITY AND RELIABILITY

The original purpose of an UPS system is the back-up of power failures. In our times of energy change policy, however, there is a further aspect not to be underestimated: power disturbances in the form of fluctuations, sudden power peaks, harmonic waves etc. Each of those can harm or limit the functionality of sensitive systems such as e.g. computers.

During a failure or interruption of the power supply the UPS system automatically switches into battery operation mode. During the period of interruption the connected consumers remain supplied with power generated via an inverter from the DC voltage of the batteries. Here, the necessary duration of the backup time is an important criterion for the choice of the UPS system and its batteries. To guarantee the power fail safe function of the UPS system the functionality of the batteries is of vital importance. Therefore, the maintenance of the batteries is as important as the choice of the suitable type of battery.



UPS system with integrated batteries

For our UPS systems we use batteries with a lifetime of 5 up to 20 years. In the end customers' requirements determine the choice of batteries. Vented batteries have a long lifetime of 10 to 20 years.



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# POWER PLANTS, GAS & OIL

## SERVICE

We deliver service throughout the entire product lifecycle ,logistical and technical support , commissioning and maintenance , repair and rental.

## QUALITY AND LIFETIME

If you stop trying to get better you will stop being good!

Quality is not one of those things that one can just buy and then lock in a safe to use when needed - Quality has to be worked on every day afresh!

We aim to develop a long-term partnership and collaboration with our customers.



EMERGENCY POWER SUPPLIES FOR POWER PLANTS

## RELIABLE EMERGENCY POWER SUPPLIES FOR POWER PLANTS OR SUBSTATIONS, WITH JOVYATLAS INVERTERS & UPS SYSTEMS

- INDUSTRIAL UPS SYSTEMS WITH HIGH DEMANDS ON VIBRATION RESISTANCE
- BRAKING RESISTORS FOR COAL CONVEYORS
- INVERTERS FOR OFFSHORE PLATFORMS
- RESISTOR LOAD BANKS FOR TESTING GENERATORS AT NUCLEAR POWER PLANTS

## JOVYATLAS POWER PRODUCTS FOR POWER PLANTS, GAS & OIL :

### INDUSTRIAL UPS SYSTEMS

MEETING HIGHEST DEMANDS ON VIBRATION RESISTANCE FOR OPEN CAST MINING EXCAVATORS E.G.

### INVERTERS

JOVYATLAS JOVYSTAR HPI - 110 OR 220VDC > 230/400VAC

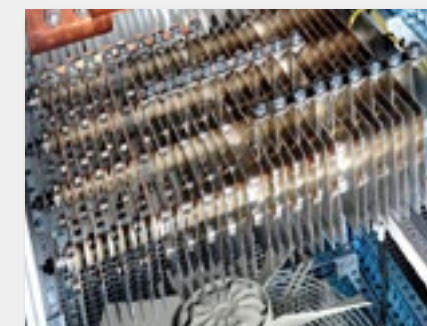
### RESISTORS

JOVYATLAS CONPOWER UP TO 4 MW FOR TESTING GENSETS AT NUCLEAR POWER PLANTS E.G

INDUSTRIAL UPS



INVERTERS



RESISTORS







WARTSILA OFFSHORE POWER PLANT

## RENEWABLE ENERGIES

Our products especially for use in wind turbines on- or offshore are custom designed. By using high quality materials and high production standards, we are able to meet the special requirements of the wind energy sector and the requirements of various classification societies such as GL, LRoS, DNV, BV and RINA.

Enercon  
Senvion  
Suzlon  
AREVA (ADWEN)



## JOVYATLAS POWER PRODUCTS FOR RENEWABLE ENERGY MARKET

In the field of wind energy JOVYATLAS provides reliable power solutions both onshore and offshore. Key products in this sector are (all-weather) UPS systems, single-phase or three-phases, DC power supplies, battery systems and chargers, filter-, brake- and load resistors and neutral grounding resistors.



ENERGY CONVERTER  
patented control system for power-generating, Biogas and cogeneration plants.



JOVYATLAS UPS SYSTEMS  
with certification by different classification authorities



# JOVYATLAS POWER PRODUCTS FOR MARINE MARKET



Marine UPS systems on cruise liners

Marine UPS Systems made by JOVYATLAS secure the power on cruise liners and private super yachts all over the world.



Security  
and reliability

JOVYATLAS has a range of UPS products specifically designed to meet the demands of the maritime industry. Our products are compact and efficient as well as meeting Marine Classification requirements.

JOVYATLAS manufactures special Marine UPS Systems according to the requirements of all main certification associations :

- > Double mains feeding
- > High short circuit current
- > Maintenance-friendly



Wärtsilä JOVYSTAR OCEAN



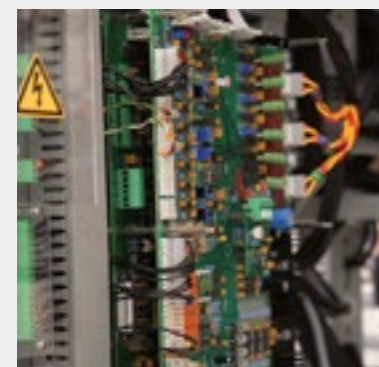
## RECTIFIERS

24V/10A – 950V/3000A  
charging rectifiers for submarine batteries  
diverse rectifiers for automation



## JOVYATLAS RESISTORS

braking resistors for bow thrusters or cranes  
star point earthing resistors load resistors for generator tests



## UPS Systems 1kVA – 1MVA

with certification by different classification authorities





SAFETY POWER SUPPLY FOR HOSPITALS, LABORATORIES AND MEDICAL AREAS

## Wärtsilä JOVYMED UPS Systems for HOSPITALS & MEDICAL CARE

The BSV -107- series BBPS-Systems from JOVYATLAS are operating in "online mode". In the event of a power outage there are no switching events. The consumer loads are supplied without interruption as before, as is the case with an online UPS System.

### Wärtsilä JOVYMED

These systems are central battery-backed power supply systems for facilities of medical purposes according to DIN VDE 0100-710 used explicitly to secure power supply within medical facilities such as hospitals, laboratories etc. The manufacturing of these systems is controlled by our quality management system DIN ISO 9001 and meets the valid standard DIN VDE 0100-710 for locations used for medical purposes of group 2. The systems guarantee optimal supply security for system and equipment in the medical sector, such as e.g. in the area of operating rooms, intensive care etc.



Wärtsilä JOVYMED UPS Systems (5 - 100 kVA) for hospitals and medical care offer safe power supply according to VDE 0558-507.



EXTREMELY HIGH  
OVERLOAD CAPACITY



DATA LOGGER WITH USB PORT  
AND USB FLASH DRIVE



STATIC SWITCH





WÄRTSILÄ JOVYCUBE MODULARES USV-SYSTEM



# SERVICE WORLDWIDE

## OUR PRODUCTS

- > Uninterruptable Power Supplies UPS
- > Frequency Converters
- > Rectifiers
- > Power Resistors
- > Load Banks
- > Batteries

## OUR MARKETS

- > Industry
- > Nuclear Power Plants
- > Railway
- > Data Center
- > Ship Yards
- > Renewable Energies
- > On - and Offshore

# UPS TECHNOLOGY

Suitable UPS systems for various areas of application and requirements – UPS topologies ensure different protection classes. For the selection of suitable UPS systems different parameters need to be taken into account, e.g. the type of equip-

ment to be protected, the required degree of availability and the required backup time and, last but not least, the question of applicability in the respective environment. The most frequent three UPS technologies described below differ in terms of their functionality and their requirements regarding the batteries used.

### OFFLINE / STANDBY UPS SYSTEMS

Passive offline standby technology is the most commonly used UPS technology to protect PCs against power failure as well as against sub voltage or surge voltage. The systems of this type of technology are voltage and frequency dependent (VFD). In normal operation UPS systems of this type provide the equipment with filtered power without active changes of voltage directly from the

power grid. The battery is charged via the main grid. In case of grid failures or disturbances the UPS system provides a stabilized voltage from the battery. The benefits include low costs and the suitability for office environments due to low noise pollution from the equipment. UPS systems of this type of technology are not appropriate for environments with low grid quality (e.g. industrial sites) or with high grid failures.

### LINE-INTERACTIVE UPS SYSTEMS

The line-interactive technology is used to protect in-house grid systems and IT sectors against grid failures, sub voltage or surge voltage. UPS systems of this type ensure the quality of the supply voltage and respond to power fluctuations. In such a way the output voltage can be adapted via a booster or a fader mode. The main benefit of this voltage independent (VI) technology is, that sub voltage and harmonic waves can be compensated without affecting the batteries. Line-interactive UPS systems operate at a high degree of efficiency.

### ONLINE / DOUBLE CONVERSION UPS SYSTEMS

UPS systems ensuring a permanent voltage protection for mission-critical corporate systems and protecting against all types of voltage problems, require online – double conversion technology. This technology guarantees an on-going protection of power supply independent of grid quality. The systems work independently of voltage and frequency (VFI = Voltage and Frequency Independent) and offer safe protection against sub voltage or surge voltage, frequency noise, harmonics and transient protection. The power supply is completely undisturbed thanks to permanent double conversion (AC/DC, DC/AC) of the output voltage. The double conversion UPS systems are compatible with all types of consumers as no interruptions occur when switching from normal operation to battery operation.



Wärtsilä JOVYSTAR PRO  
60 kVA - 160 kVA

Systems of the Wärtsilä JOVYSTAR PRO series are available with power output of 60, 80, 100, 125 und 160 kVA and are used worldwide in both, industry and production. For redundant operation (half load parallel operation, n+1 operation) or for power increase a parallel connection of multiple systems is easily possible. An almost sinusoidal current input improves the power factor at the input of the rectifier. In comparison to conventional UPS systems with thyristor rectifiers Wärtsilä JOVYSTAR PRO systems consume up to 30% less power. The standard series is equipped with AGM technology lead batteries. For larger backup autonomy we offer solutions with OPzS or OGi batteries.



Power	60 kVA / 80 kVA / 100 kVA / 125 kVA / 160 kVA
Input	Voltage: 3 x 400/230V / 3 x 415/240V / 3 x 380/220V ±10% , Frequency: 50/60 Hz ±5%
Output	Voltage: 3 x 400/230V / 3 x 415/240V / 3 x 380/220V, Frequency: 50/60 Hz
Classification	VFI-SS-111 according to IEC/DIN/EN 62040-3
Battery	Valve regulated, maintenance-free, lifetime 10-12 years according to EUROBAT

Wärtsilä JOVYSTAR COMPACT S/M  
30 kVA - 160 kVA

The three-phase UPS systems of the Wärtsilä JOVYSTAR COMPACT series convince by its very high efficiency. These UPS systems include a PFC rectifier with a very large input voltage range of IGBT technology and a power factor  $\cos \varphi \approx 1$  (JST COMPACT M). The systems of theses series can be operated as both, online systems (double conversion) or in standby / offline mode in order to make use of the efficiency of >98 %. The power factor of almost 1 allows high cost savings in the dimensioning of the supply lines and the potential emergency power systems. The three types of modes: EHE mode, online mode and filter mode can be chosen manually via the user-friendly display or via the integrated, intelligent control of the UPS system. This integrated control optimises the mode autonomously and ensures the best possible operation of the UPS system.



Power	30 kVA / 40 kVA / 50 kVA / 60 kVA / 80 kVA / 100 kVA / 125 kVA / 160 kVA
Input	Voltage: 3 x 400/230 V, Frequency: 50/60 Hz ± 5Hz , Power factor: > 0,99
Output	Voltage: 3 x 380/220V / 3 x 400/230V / 3 x 415/240V, Frequency: 50/60 Hz
Classification	VFI-SS-111 according to IEC/DIN/EN 62040-3
Battery	Valve regulated, maintenance-free, lifetime 10-12 years according to EUROBAT

Wärtsilä JOVYCUBE MODULARES USV-SYSTEM  
20 kVA - 640 kVA

UPS systems of the Wärtsilä JOVYCUBE series are based on a 20 kVA UPS module and offer a flexible solution for power supply from 20 kVA up to 640 kVA. The three types of control cabinets JOVYCUBE 60, JOVYCUBE 160 and JOVYCUBE 200 can each accommodate a different number of modules of 20 kVA; power values of up to 640 kVA can be achieved by combining multiple JOVYCUBE control cabinet systems. The UPS modules convince with efficient power control, dynamic transition without failover times as well as with a high efficiency of 96%. The UPS system can work single-phased as well as three-phased. The AC input and AC output frequency are independent from each other. A permanent power saving mode ensures optimal efficiency. The Wärtsilä JOVYCUBE modules dispose of an extensive battery management with dynamic load control. Optional available is an external battery monitoring system with separate block measuring, temperature and impedance measuring as well as equalisation charge function for even cell voltage. The communication/information passes via UPS interfaces for parameterisation and system information, via 6 digital inputs and 7 relay outputs.



Power	20 kVA - 640 kVA
Input	Voltage: 3 x 380/220 V / 3 x 400/230 V / 3 x 415/240 V , Frequency: 45-65 Hz
Output	Voltage: 3 x 380/220 V / 3 x 400/230 V / 3 x 415/240 V, Frequency: 50 or 60 Hz
Power Factor	> 0,99 at 80 % load
Efficiency AC - AC	96% at full load
Efficiency DC - AC	97% at full load
Overload capacity	130% for 15 sec, 4xIn 20 ms (optional)
Classification	VFI-SS-111 according to IEC/DIN/EN 62040-3
Battery	Valve regulated, maintenance-free, lifetime 10-12 years according to EUROBAT

UPS SYSTEMS FOR HOSPITALS, LABORATORIES AND  
HEALTHCARE ACCORDING TO DIN VDE 0558-507  
5 kVA - 100 kVA

These systems are central battery-backed power supply systems for facilities of medical purposes according to DIN VDE 0100-710 used explicitly to secure power supply within medical facilities such as hospitals, laboratories etc. The manufacturing of these systems is controlled by our quality management system DIN ISO 9001 and meets the valid standard DIN VDE 0100-710 for locations used for medical purposes of group 2. The systems guarantee optimal supply security for system and equipment in the medical sector, such as e.g. in the area of operating rooms, intensive care etc.



Power	5 kVA/10 kVA/15 kVA/20 kVA/30 kVA/ 40 kVA/60 kVA/80 kVA/100 kVA
Input - rectifier	Voltage: 3 x 400/230 V AC ± 10 % , 50 Hz - Voltage: 3 x 400/230 V AC ± 10 % , 50 Hz
Input - bypass	Voltage: 1 x 230 V AC ± 10 % - Voltage: 3 x 400/230 V AC ± 10 % , 50 Hz
Output	Voltage: 1 x 230 VAC ± 10 % , 50 Hz - Voltage: 3 x 400/230 V AC ± 10 % , 50 Hz





# BATTERIES AND BATTERY CABINETS

Valve regulated accumulators have a typical lifetime of 6 to 9 respectively 10-12 years. The real lifetime, however, is effected significantly by maintenance and ambient condition. Generally, batteries should not be permanently exposed to a temperature of more than 25°C as the lifetime will decrease considerably.

In order to ensure optimal function of the batteries in use, we recommend regular inspections of the battery status by our qualified staff. For safe operation of UPS systems inspections of the battery system are absolutely necessary. Therefore, battery inspections are included in all our maintenance contracts for UPS systems – our service staff, however, will also carry out separate battery checks irrespectively of their field of application.



UPS SYSTEM WITH INTEGRATED BATTERIES

For our UPS systems we use batteries with a lifetime of 5 up to 20 years. In the end customers' requirements determine the choice of batteries. Vented batteries have a long lifetime of 10 to 20 years.

For high capacity UPS systems and long backup periods additional battery cabinets are necessary for the storage of batteries. Wärtsilä JOVYATLAS manufactures various types of battery cabinets suitable for industrial use as well as for the ship-

ping industry, open cast mining or data centres. The battery cabinets are of high mechanical resistance and ensure safe protection against accidental contact, very good accessibility of all monitoring equipment and an easy and fast battery installation (in parts drawer systems). The installation of an air condition in the front or rooftop section enables the use of the battery system also in heated up spaces (production halls) without risking lifetime due to temperature increase.



## PORTABLE UPS SYSTEMS

JOVYATLAS has a range of UPS products specifically designed to meet the demands of your industry. Our products are compact and efficient as well as meeting each classification requirements.



625 VA / 1200 VA / 2200 VA  
JOVYLINE  
Wärtsilä

Wärtsilä  
JOVYSTAR PLUS  
10000 VA / 15000 VA / 20000 VA

700 VA / 1000 VA / 1500 VA /  
2000 VA / 3000 VA  
Wärtsilä JOVYLINE

Wärtsilä  
JOVYTEC L  
6000 VA / 8000 VA / 10000 VA



Wärtsilä  
JOVYSTAR DELTA  
40 kVA - 150 kVA





# JOVYATLAS

## Quality and HS&E Management

JOVYATLAS was among the first companies who undergo voluntary certification according to DIN EN ISO 9001:2008 as early as 1995.



SINCE 06/2015  
JOVYATLAS IS CERTIFIED  
ACCORDING TO  
OHSAS 18001

Continuity and improvement of our Quality Management System are guaranteed by on-going annual monitoring audits and certification measures.



We guide you during the entire product cycle.

From the idea to the manufactured product: we provide you with the individual solution for your needs, from the individual power supply components to the overall concept as off-the-shelf or customised solution. The reliable quality of our components guarantees safe use during the entire product life cycle. In case upgrades or modifications are necessary or replacement parts are needed, we are happy to assist you with our knowledge and this for decades to come.

## FROM THE IDEA TO THE PRODUCT WE GUIDE YOU!



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