

**besecke**

## Smart Automation & System Technologies

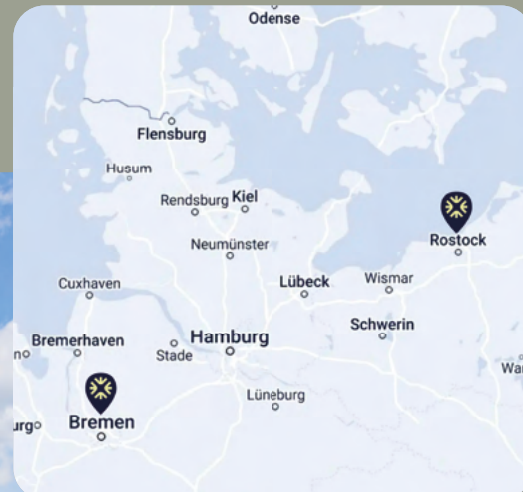
Flexible, precise, efficient and transparent – that's how our automation and systems technology can be described in a nutshell. For decades, we at besecke GmbH & Co. KG have been developing tailor-made solutions for customers all over the world. Our claim: technology that works reliably and perfectly suits your requirements.

We place particular emphasis on maritime systems – from energy supply to ship automation. We also implement industrial automation solutions for the food, automotive and special machinery industries.

Our approximately 180 employees work in an interdisciplinary manner and accompany you through all project phases – from detailed planning to commissioning and beyond.

We offer not only complete systems, but also service and support during ongoing operation. Thanks to our independence in the choice of components, we use exactly the technologies that are best suited to your application – manufacturer-independent, innovative and future-proof.

Whether it's a single project or a complex overall system: with besecke, you are choosing a partner who combines technology with experience and passion – and makes your vision a reality.



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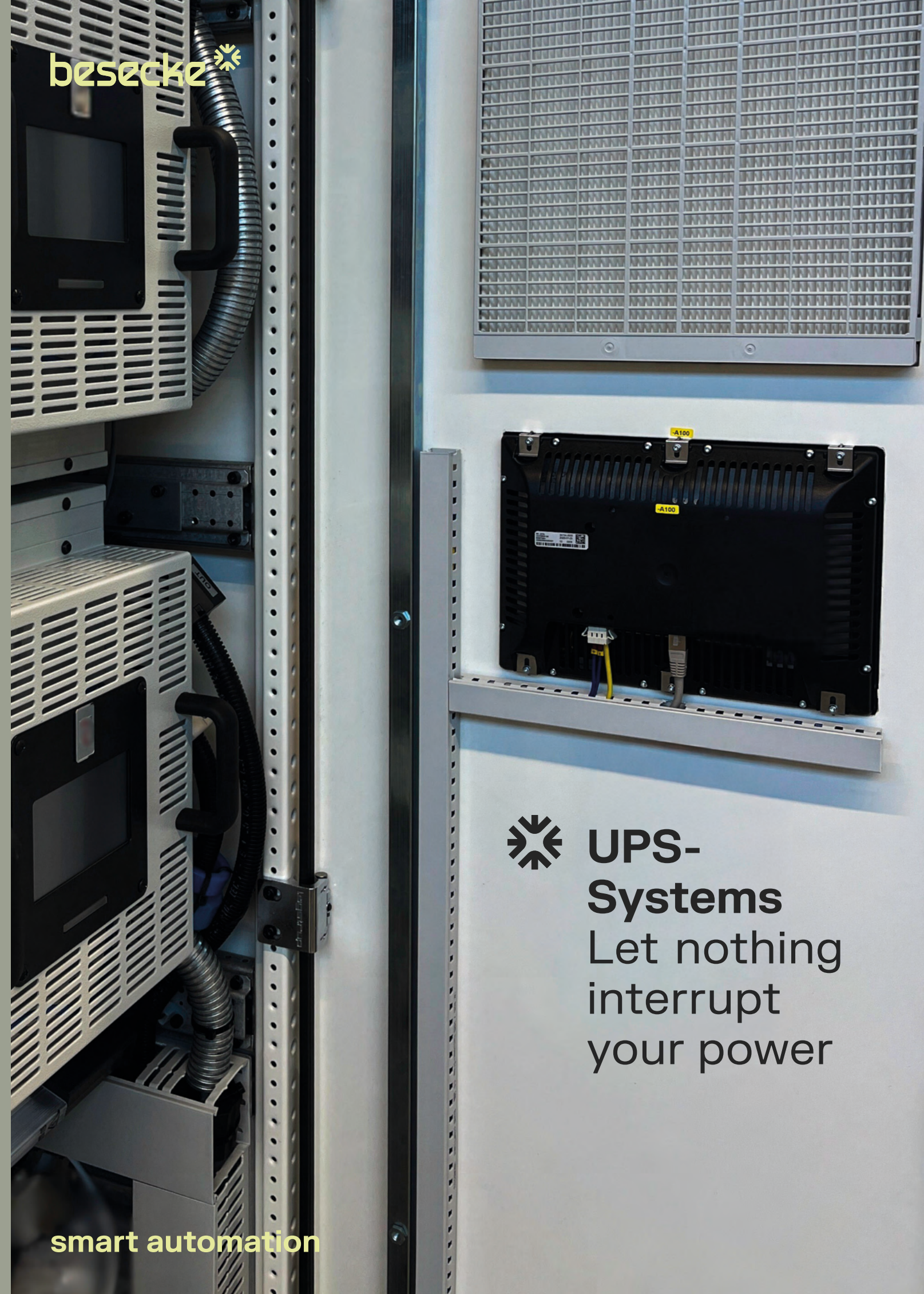
In everything we do, we seek the smartest solution:


**minimum Input, ➔  
maximum Impact.**

**besecke**



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 **UPS-  
Systems**  
Let nothing  
interrupt  
your power

**smart automation**



# Uninterruptible power supply (UPS)

An uninterruptible power supply (UPS) is a central element of modern energy and automation systems. It protects electrical and electronic consumers from failures, voltage fluctuations and mains disturbances. In the event of an interruption, the UPS immediately takes over the supply via integrated batteries, thus preventing data loss, system crashes or damage to hardware.

UPS systems are used wherever maximum availability and security of supply are required: in ship automation systems, bridge installations, data centres, hospitals or security-critical government networks.

## UPS 400V AC Systems

The 400V/230V UPS systems from **besecke** are specially designed for use in marine operations. They ensure the supply of sensitive and safety-related consumers – reliably, efficiently and in accordance with current classification regulations.

### Technical highlights

- Main power supply: 3/N/PE 400/230V AC, 50 Hz
- Technology: Online double conversion for maximum power supply reliability
- Smart Battery Management: extended service life and optimised charging cycles
- Batteries: AGM technology, separately located in battery cabinet (autonomy time as required)
- Battery installation: in series or separately
- Integrated voltage conversion, monitoring and alarm system
- Protection class: IP22 (optional IP44)
- Power classes: 10 – 120 kVA
- Ambient temperature: 35°C (optional 45°C with air conditioning unit)

Customised UPS – as unique as your project.



UPS 400V AC Systems

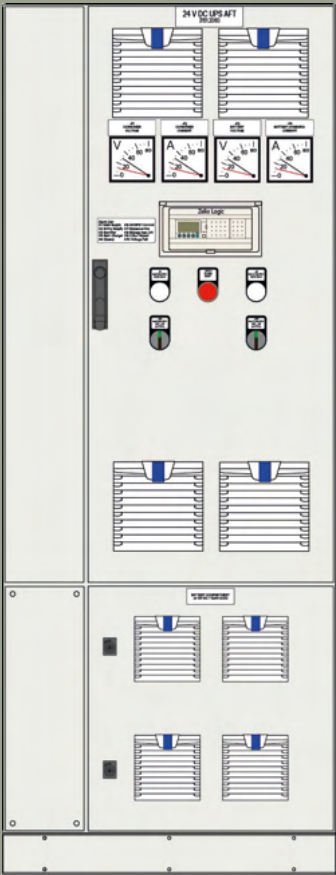
### Special features

- Selective protection of all outputs
- With integrated maintenance bypass
- Integrated PLC with touch display: graphical display of measured values, collective alarms, error lists
- Communication via Ethernet TCP/IP with the ship automation system (AMS)
- Freely selectable housing colours in all RAL shades (textured or high-gloss)

### Typical application

- Ship automation
- Bridge systems
- Control systems and consumers with high safety relevance

UPS 24V DC Systems



## UPS 24 V DC Systems

The 24V DC power supply systems from **besecke** are designed for the reliable supply of consumers in the ship's electrical system and for charging electrical system and automation batteries.

### Technical highlights

- Main power supply: 3/N/PE 400/230V AC, 50/60Hz
- Power class: 20 – 160 A at 24V DC (higher currents on request)
- Batteries: AGM technology in sealed battery compartment
- Autonomy time: approx. 30 minutes (configurable as required)
- Protection rating: IP22 (optional IP44)
- Ambient temperature: up to max. 45°C

### Special features

- Compact PLC for monitoring and fault display
- Forwarding of all messages to the central AMS
- Design in accordance with the regulations of the classification societies for control, monitoring and safety systems
- Freely selectable housing colours in all RAL shades (textured or high-gloss)

### Typical application

- Automation systems
- Control systems and signalling systems
- Emergency power supply in the event of failure of the main and emergency power supply

## Functionality and technologies

### Online-UPS (double conversion)

- Permanent conversion AC → DC → AC
- No switchover time, maximum supply reliability
- Preferred for business-critical and security-critical applications

### Line-Interactive UPS

- Hybrid technology, response time 2 – 4 ms
- Offers protection against under/overvoltage
- Suitable for medium criticality

### Offline UPS

- Only active in the event of a power failure
- Response time up to 10 ms
- Basic protection for less

## besecke – Expertise and added value

**besecke** develops and manufactures UPS systems in accordance with international ship classifications. The systems have a modular design, can be individually adapted and can be seamlessly integrated into existing automation environments.

### Advantages

- Planning, design and manufacture from a single source
- Integration into ship automation systems (AMS)
- Can be combined with fuel cell technology
- Can be used for new builds and retrofit projects
- Service, maintenance and long-term spare parts supply

### Maritime requirements

Design in accordance with current classifications (e.g. Lloyd's Register, DNV, SOLAS) – for safe use in maritime environments.