

## smart automation

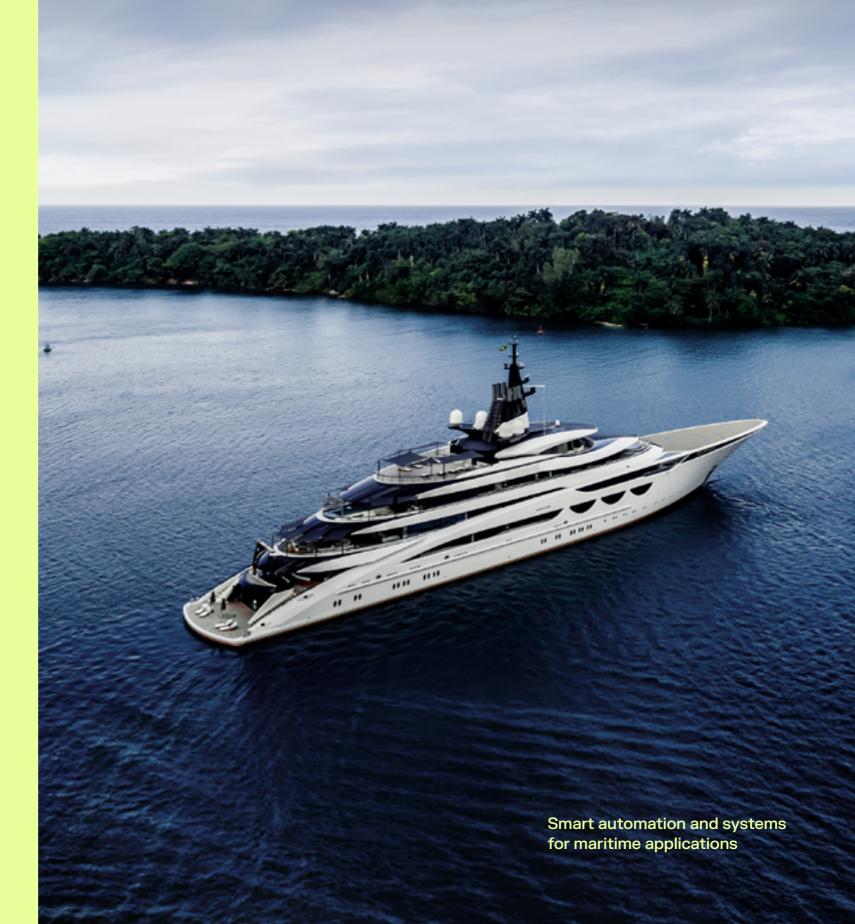
Smart automation and systems for maritime applications

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## Minimum input, maximum impact





## Set a course for the future: with automation

Hello! We're besecke, and we're here to guide you through the rough waters and send you sailing into a safe, secure and smart future.

Because with our technology, your vessels use only as much energy as they actually need. And operating them is easier than ever thanks to intelligent, datadriven technologies.

Turn the page to see how our smart solutions can make you even smarter.

Talk to an expert who speaks your language:



Maritime team +49 421 63 69 80 sales@besecke.de



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Training and careers	



Turn this brochure over to read about our solutions for industry

Smart solutions for maritime applications

## We're experts in maritime efficiency



Bremen N 53° 09' 50" E 8° 42' 24" Steindamm 24 · 28719 Bremen



Rostock N 54° 04' 29" E 12° 03' 56" Tannenweg 22K · 18059 Rostock

+49 421 63 69 80 kontakt@besecke.de www.besecke.de/en

## 60%

of the ten largest megayachts use alarm, monitoring and control systems from besecke



Want a partner who has automated 60% of the world's ten biggest megayachts?

We've been developing cutting-edge solutions for maritime vessels for years – from the switchboard cabinet to high-end control systems.

Our software easily monitors up to 20,000 individual measuring points. So you can operate your vessel in a whole new way: with data. It's smarter and more convenient.

We're happy to offer everything you need from a single source. And serve as your general contractor.

Turn the page to explore the possibilities.

## AllViu – Your vessel on a digital dashboard

## be\*VISION

Scalable alarm, monitoring and control system for up to 20,000 individual measuring points. Monitors the status of electrical systems on board – including motors and generators. Alerts you to irregularities.

## be\*SECUR

Security system for megayachts: sophisticated monitoring of the ship's exterior, interior and surroundings. Reports intruders, detects drones and controls access to individual areas by way of a door access and control system.

## be<sup>\*</sup>SAFE

System for clearly indicating the status of all fire zones, detectors and dampers as well as exterior doors and hatches. Reports irregularities affecting the ship's hull, such as fire, water ingress or open dampers.

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## be\*WATCH

BNWAS – Bridge Navigational Watch Alarm System. Wheelmark-approved and DNVcertified. Automatically generates multiple levels of alarms and communicates through the onduty system. Suitable for all types of vessels.

## be\*MOTION

Helicopter approach system: Displays roll, pitch and heel. Controls landing lights. Flexible and adaptable to all conditions and requirements.

## Training

## AllViu system training course

Know your stuff. Benefits: minimal downtime, fast error detection and troubleshooting plus lower service costs.

## 10.000 m<sup>2</sup> on a single dashboard

AllViu is a monitoring system for all readings and statuses on board.

Through the dashboard, your crew can monitor all critical functions at once – from energy management and fire protection to exhaust damper controls and the pH level of the swimming pool.

Intuitive, level-of-detail interface

• Individual display options with widgets

• Modular, decentralized system structure / infrastructure

User-specific logins with personalized layout



## Power distribution and energy systems

## MarESiS

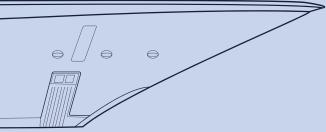
For new construction and retrofits: Maritime energy simulation for optimized design of electrical and hybrid ship systems.

## Maritime power distribution solutions

Systems for efficient power management: Construction and in-house production of everything from switchboards to panels, UPS and motor starter systems to hybrid systems.

## Turnkey

We operate as your general contractor to create fully customized solutions for your new build or refit project. We're reliable and we're with you at every turn – from selecting systems to installation to sea trials.





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## The smart way to navigate: with data

With simulation and intelligent analysis, your vessels use only as much energy as they actually need. In combination with our control cabinets, the AllViu automation solution delivers smart, autonomous power distribution management.

## Maintenance & retrofit

## Premium retrofit

We'll bring your on-board systems up to the latest state of the art. That includes both hardware and software. From the control cabinet to the security technology to the late version of AllViu. For you, that means lower costs for maintenance and spare parts.

## AllViu service and maintenance

Your contract includes a regular system checkup and guarantees fast response. With an attractive pricing model.

## Control cabinet cleaning

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Professional cleaning with dry ice – no need to shut the system down. Prevents system failure caused by buildup or overheating.



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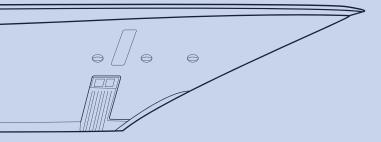
## Power distribution and energy systems

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## **Process**

## Consultation

We identify which solutions your vessel needs and whether additional items make sense.

## Engineering

We produce all documents – from the schematic diagram through to final documentation. We develop algorithms, programs and the visualization of your boat's systems.

## Production

We build complex power distribution systems – from the smallest panel to the main switchboard. We make bridge racks, consoles and automation cabinets, too.

## Installation

Our colleagues in the shipyards build our systems into the vessels.

## **Focus**



## Yachts

Our modular AllViu systems are designed to fit any size yacht from 20 to 180 meters. They increase convenience, security and efficiency on board. The integrated energy management system uses hybrid solutions to reduce energy consumption and environmental impact.



## Authority and special-purpose vessels

Our software products allow you to automate highly complex operational sequences on board. We implement all systems customized to your needs. Our solutions are extremely robust and reliable – even for LNG-powered vessels.



## Maritime vessels

Our products meet the highest quality standards and norms, even stringent military standards. We deliver lightningfast remote support and on-site service worldwide to maximize system performance.

# Before. After. Smarter.

## Commissioning

Parameter-setting and testing ensure that our systems will operate efficiently when your ship is underway.

smart!

» We've been building maritime systems to meet the needs of the most exacting customers for more than 20 years. Our experienced technicians design, manufacture and install bespoke solutions. We never stop growing our knowledge and expertise and we deploy smart technologies to ensure the highest levels of reliability and longevity. «

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<u>LÜRSSEN</u>

besecke Maritime team

AIDA

**NEPTUN WERFT** 

**MEYER WERFT** 

BURGESS



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VIKING

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Blohm + Voss AG

Y.CO

control cabinets built and

installed each year

PLC systems installed each year

AllViu systems installed

on megayachts



meters of cable laid per vessel

## About besecke

## 75 years of innovation towards smarter thinking

Founded in 1948 as an armature winding company, we are now Northern Germany's leading provider of automation and electrical engineering.

More than 170 employees at our manufacturing plant in Bremen and our research facility in Rostock deliver to customers around the world.

## 2003

New Maritime Systems business unit is established, specializing in power distribution, alarm and monitoring systems for yachts and special-purpose vessels.

### 2004

besecke enters the maritime industry, building switchgear and control gear for the electrical equipment and implementing the alarm and monitoring system (AMS) on three megayachts.

## 2006

besecke delivers the electrical technology and the AMS of the private sailing yacht EOS, the largest of its kind at the time.

## 2013

The Rostock site is established as an engineering and project management office and research facility.

### 2021

besecke takes over the Hamburg-based startup dintegra. This strengthens besecke's IoT and SaaS operations and expands its software portfolio.

## 2024

We implement a large-scale project as general contractor for all electrical equipment on three LNG-powered authority vessels.



## On our own, we're smart ...

Rotate this brochure 180° to find out about our solutions

## Our mission

We aim to be a top employer and to become the leader in energy efficient automation for production plants and maritime vessels by 2027.

To achieve our ambitious goals, we'll need a strong team. So, we want to be the best employer there is.

## What drives us

The most efficient energy is the energy you don't use. That's why we automate production plants and maritime vessels. So they use only the energy they actually need.

For that to work, everything we make has to be built to last. Because that saves resources. And when systems are driven by data, they use resources wisely.

Our values





## ...together, we're brilliant

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## On our ov we're sma

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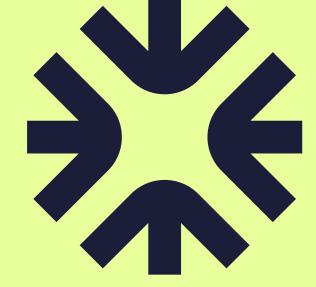
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## smart mindset

We believe there is always an even smarter way to do things.



# For us, smart means always developing the most efficient way of doing things. But that doesn't mean we make it easy for our-selves - we make it easy for you.

We employ people who make us smarter. smart people ං

Philosophy

## Our



## smart service

We are not necessarily smarter than others. We simply have greater tenacity to understand the problem.

We believe in the power of partnership. On our own, we're smart. Together, we're brilliant.

smart relationships

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Automate what can be automated. So we have more time for the work that really matters. smart operations

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## ...together, we're brilliant

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Rotate this brochure 180° to find out about our solutions for industry

## On our own, we're smart...



## Work at besecke

## Vocational training with a bright future

We see it as our duty to pass our knowledge and expertise on to the next generation. This is why we train our own electronics technicians for automation, power engineering and building systems in-house. Additional vocational training opportunities are listed on our website.

## Family-friendly

We encourage a good work-life balance. And we can be flexible when you need us to be. Whether it's working from home, using flexible working hours or planning your parental leave. Our family-friendly policies were even recognized by the Bremen city council.





Discover how we work. Visit our blog at besecke.de/en/blog-posts/





Human resources +49 421 63 69 80 karriere@besecke.de



## ...together, we're brilliant

Rotate this brochure 180° to find out about our solutions for industry



We relocate to today's headquarters in Bremen and add industrial automation to our portfolio.

## 1983

We implement PLC systems and process visualization systems from Siemens for the first time.

## 1989

Now a wholly owned subsidiary of the Lürssen Group, besecke remains an independent electrical engineering company with a focus on the manufacturing industry.

## 1995

besecke earns ISO 9001 certification. We've passed all recertification and customer audits since then.

2017

About besecke

## 75 years of innovation towards smarter thinking

Founded in 1948 as an armature winding company, we are now Northern Germany's leading provider of automation and electrical engineering.

More than 170 employees at our manufacturing plant in Bremen deliver to customers around the world.

New manufacturing and testing facilities at headquarters. besecke sets new standards of quality and output.

## 2023

besecke completes comprehensive retrofits on fuselage production systems at Airbus and other projects for customers in the food and beverage industry.

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» One third of our employees work in the Industry business area. Having our own design and software divisions as well as our own installation team makes us the system integrator in northern Germany for industrial automation and systems engineering. From new plants to retrofits, besecke will take your systems into the future. «



8 BECKS ALDI ZEPPELIN Power Systems **JDE** BOSCH FRoSTA olenex Melitta œrlikon MARKUS **HAVANGARD** Vitakraft N·V·I **KUKA AUTOSTADT** 



**PLC systems** programmed each year



installation hours at our customers' locations each year

## **Process**

## Consultation

We tell you what is possible and what makes sense for you. For example, which data we display so you can spot potential errors before they happen.

## Engineering

Hardware: We design the circuit diagrams for your plant. Software: We program the PLC system and create the user interface.

## Production

We build your new control cabinets based on those circuit diagrams. You may also supply your own circuit diagrams.

### Installation

We assemble all of the electrical systems on site: That means connecting the control cabinets with each component of your plant.

## Focus



## Food industry

We've got you covered – from coffee to frozen foods, for people and pets. We can accommodate individual requests and virtual pre-tests. We visualize all processes for maximum efficiency.



Special-purpose machine engineering

In Germany and internationally, we solve tomorrow's exciting challenges. Optimize. Simplify. Accelerate. Or upgrade when time is tight.



**Production plants** 

We know our way around manufacturing facilities. We design, program and commission. Our ultimate goal is to ensure your production operations run smoothly.



# Before. After. Smarter.

## Commissioning

First, we check all sensors and actuators. Then we test each area to make sure it is functioning. In the end, the whole thing works. smart!

**IIoT and visualization** 

## System and process visualization

We give you X-ray vision. Finally, a single dashboard that lays out the latest consumption figures and all fault and error messages. And an overview of all maintenance and cleaning intervals.

Power distribution and energy systems

## Electrical control panel and circuit diagram design

With the latest EPLAN software, you get a custom design as well as construction documents that meet the safety requirements under the EU Machinery Directive.

Control cabinet construction and assembly

## Switchboard construction

We build your new control cabinets in our own facility. Based on your plans or ours. Either way, we'll build to the highest standards of quality.

Charging infrastructure for electric vehicles

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## besecke fleet charging system

The full-service solution for your charging infrastructure. Precisely adapted for corporate fleets, employee parking lots or homeowners' associations.

Automation technology

## Process control system

We visualize your process technology systems. So you can better control, operate and monitor them.

## PLC system

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It's finally easier to change, expand and control your processes. Because you can see it all. You can also now connect to recipe and fault report databases.

## Behind every efficient plant is a smart control system

With automation, your plant uses only as much energy as it actually needs. And operating the plant is easier than ever before.

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## From PDA to MES

## Manufacturing execution system (MES) integration

Finally, you can see the whole thing: Process automation makes it possible to get an overview of the process control system and production. And you can control it transparently and efficiently.

## PDA

With our production data acquisition systems, you can keep an eye on your plant and quickly respond to changes. All production data is recorded and visualized in real time – so you can recognize potential for optimization and make your production processes more efficient.

## Energy and production data management

Our system records and analyzes energy data, transparently visualizes consumption and enables comprehensive production data management. So you have an overview and can take targeted steps to streamline.



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Charging infrastructure for electric vehicles

## besecke fleet charging system

The full-service solution for your charging infrastructure. Precisely adapted for corporate fleets, employee parking lots or homeowners' associations.

## Your dashboard gives you X-ray vision

With automation, you can precisely monitor your system and control it proactively.

Installation, maintenance and retrofitting

## Retrofitting

We increase your plant uptime with smart solutions for reducing unscheduled downtime. That increases OEE and improves the serviceability of your systems.

## Installation

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We assemble all of the electrical systems on site. That means connecting the control cabinets with each component of your system.

## Fiber-optic cables

Copper wiring, fiber optics and all the splicing work that entails – we do it all. Laying wiring or cables over long distances comes easy to us – and you can rest assured that we'll do it right.

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## Navigation

## Smart solutions

Services and systems for industry

Our approach Process and focus

About us Vision, milestones and philosophy

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Work at besecke Training and careers

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Turn this brochure over to read about our solutions for maritime applications

Smart solutions for industry

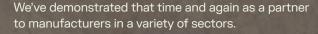
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## We make your plant smarter

Bremen N 53° 09' 50" E 8° 42' 24" Steindamm 24 · 28719 Bremen



**Rostock** N 54° 04' 29" E 12° 03' 56" Tannenweg 22K · 18059 Rostock +49 421 63 69 80 kontakt@besecke.de www.besecke.de/en higher plant uptime with a smart reduction in unplanned downtimes



Our expertise is the result of decades of experience looking after our customers' systems. Whether it's for the food and beverage industry – from production through to filling and packaging – or conveyor technology and even HVAC systems.

We optimize, simplify and accelerate. We also upgrade, even when time is tight. And you finally have a control system with total process visualization. Which is smart, efficient and convenient.

Turn the page and explore the possibilities.

## Minimum input, maximum impact



## It's time to automate

Hello! We're besecke, and we're here to offer you intelligent solutions for industry's biggest challenges and convey your facility into a safe, secure and smart future.

Because with our technology, your production facility uses only as much energy as it actually needs. And operating your systems is easier than ever thanks to intelligent, data-driven technologies.

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besecke \*\* Ι ď 00 smart automation Smart automation and systems for industry