



Your partner in safe energy supply

ESA Elektroschaltanlagen Grimma GmbH



The Company

ESA Elektroschaltanlagen Grimma GmbH is an expanding medium-sized company of the electrical industry in the heart of Saxony. Our own research and development department is a cornerstone for the manufacture of innovative products. Today, Grimma has around 300 employees at its location. Our human and technical base allows us to also process major projects in the shortest possible time.

- own technical innovations,
- continuous product development,
- technical expertise and experience,
- quality, reliability and
- service

form the basis for future-oriented technical solutions and shape our corporate philosophy.



Consulting

Our Products

- low voltage switchgears in type-approved design according to IEC 61439 -1/-2 / DIN EN 61439 -1/-2
- management and control system for the power supply in medically locations according to DIN VDE 0100, Part 710 and IEC 60364-7-710
- electrical point heating systems and special power supplies for railways
- detection and control panels in foil technology
- insulation, residual and operating current monitoring systems

Benefits

- the highest standard of quality by means of industrial production based on a certified quality management system according to DIN ISO 9001:2008
- flexible expansion – no restrictions on the types of switching devices
- individual solutions can also be implemented at short notice due to the nature of the system
- duplex arrangement and corner installation
- high level of operating safety and optimum personnel protection
- arc resistant design according to IEC/TR 61641 is possible
- short throughput times - from planning through installation to commissioning

Services

- consultation on the preparation of concepts
- implementation of line and load analysis
- short-circuit and selectivity calculation
- planning, configuration and project management
- hotline service
- maintenance and repairs service (e.g. for power switches)





Engineering



Assembly and commissioning

Approved quality in industrial production

Since 2002, administration, engineering, production, research and development as well as our service centre have been bundled at one site in Grimma. The research and development department is now situated in Leipzig. We produce on a production area of 9,700 sqm using our own CAD-based switchgear and copper machining centre. Naturally, we work on the basis of the quality management system according to DIN ISO 9001:2008 and SCC.

Technical equipment

- sheet metal working
 - TruPunch 5000 (punching)
 - TruBend 8170 (bending)
- powder coating
- labelling systems
- CNC - fully automatic crimping machine Komax Zeta 633



sheet metal working

Engineering

- consulting and assistance before your investment
- planning and technical assistance for your projects
- short-circuit and selectivity calculations
- grid and load analyses
- programming of control systems/robots

Planning

- planning of the construction documents (factory planning) for your project
- modern CAD planning systems
- more than 20 CAD work stations in use
 - CAD - copper
 - CAD - KomA
 - CAD - sheet metal
 - CAD - electric
 - CAD - roboter programme
- EPLAN P8
- ElektroCAD
- Pro Engineer
- AutoCAD

Assembly and commissioning

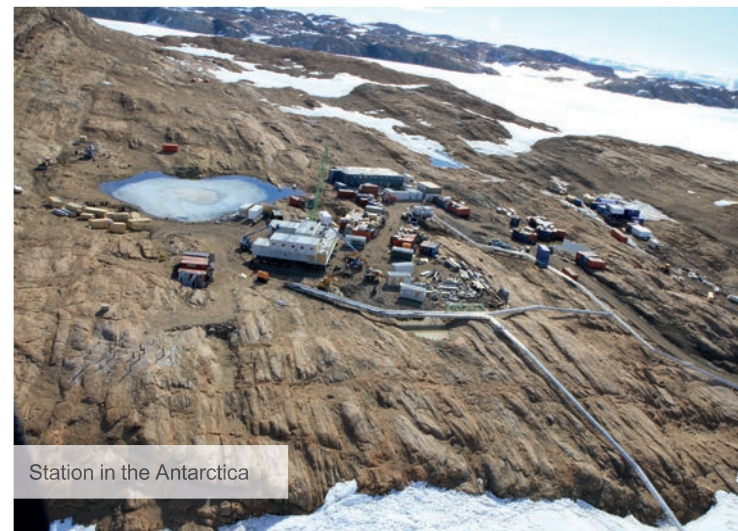
- production of the switchgears in the factory
- installation and assembly of our systems on-site
- complete commissioning

Service and trainings

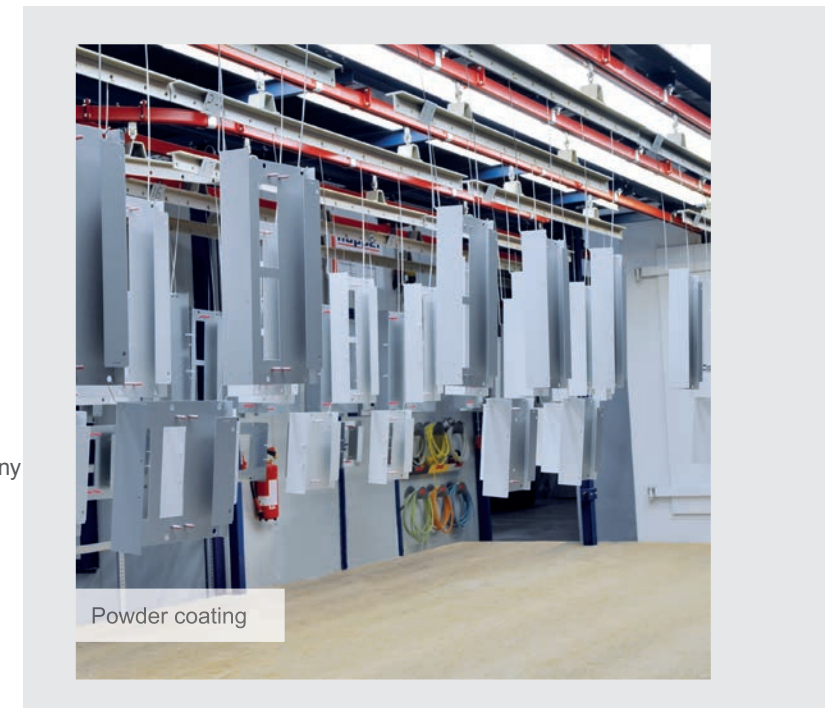
- service for all products via our hotline
- repair services and system maintenance
- trainings regarding products and systems

Research and development

- residual and operating current monitoring with the web-based monitoring system *WebVisiEC®*
- multi-channel monitoring devices of the series RCM for detection of residual and operating currents
- residual current detection RCM AB sensitive to universal current with the respective connection to different control systems
- controlling and steering components for electrical point heating systems
- devices for our system *HotEC®*



- 1992**
 - entry into the Commercial Register – four employees (shareholders)
 - first “major” order (35,000 DM) over 50 terminal boxes for electrical point heatings in Berlin
 - first framework agreement with Deutsche Reichsbahn
 - 15 employees – annual turnover 1.2 mio. DM
- 1993**
 - introduction of the quality management according to ISO 9001 in ESA
 - start of the development of own products for electrical point heatings
- 1994**
 - first order for electrical point heatings in former West Germany
- 1995**
 - first order for distribution boards for safe power supply in operating theatres for a hospital in Schönebeck
- 1996**
 - start of the development of own products for our system *HotEC®* (safe power supply in hospitals)
 - delivery of control systems for flight control of Eastern Europe in Berlin Tempelhof
- 1998**
 - ESA obtains framework contract of ABB regarding the production of type-approved switchgears up to 6,300 A, system MNS (GNS)
 - 55 employees – annual turnover 9.5 mio. DM
- 1999**
 - first order for TSK switchgears of the system MNS (GNS)
- 2001**
 - first major order for a data centre in Frankfurt/Main – Digital Island
order volume: 2.5 mio. DM, customer: Structurtone London
 - 95 employees – annual turnover 15.7 mio. DM
- 2003**
 - completion of the development of the system *HotEC®* – start of the sale of this system abroad
 - first direct export order from China
order volume: 25,000 €
- 2005**
 - opening of an industrial representation in UK (Brandon Medical in Leeds)
 - major order for traffic hub 3 in Erfurt
order volume: 3.5 mio. €, customer: Balfour Beatty
 - contract conclusion with two industrial representations in China (Beijing and Guangzhou)
- 2006**
 - development of new products for electrical point heating systems regarding energy optimisation and reduction of CO2 emissions
 - orders for 15 hospitals in Russia



- 2007**
 - delivery of switchgears and distribution boards for Plazamedia GmbH
order volume: appr. 1.6 mio. €
- 2008**
 - inauguration of a new production hall with copper machining centre
 - upgrade of data centres in Germany with residual current monitoring
order volume: appr. 1.8 mio € customer: Cadolto
 - 185 employees – annual turnover 25.9 mio. €
- 2010**
 - low-voltage distribution boards for the feeder of the Brenner basis tunnel (55 km length)
customer: DB Bahnbau
- 2011**
 - new business segment automation/robotics
 - orders from BMW and VW as well as from suppliers of the automotive industry
 - order for a station in the Antarctica
delivery of a programmable control system which is responsible for the energy management of the station – fail-safe even under extreme weather conditions
- 2012**
 - inauguration of a new production hall for sheet metal working and powder coating
 - appr. 240 employees – annual turnover appr. 32 mio. €
- 2013**
 - Major order for a data centre
Order volume: appr. 6.0m EUR (6.37M USD)
- 2016**
 - Opening of a representative office in China



Low-voltage switchgears

If quality is required, the whole project from planning to production and commissioning should be performed by experts. The industrial production using CAD and CNC technology is essential for a constant product quality. This is represented by technicians, engineers and highly-qualified skilled workers of ESA Elektroschaltanlagen Grimma GmbH.

ESA-Grimma produces its special solution for all uses – the design-approved low-voltage switchgear and controlgear assembly GNS 5.1 according to IEC 61439-1/-2 /DIN EN 61439-1/-2 and VDE 0660-600-1/-2 up to a rated current of 6,300 A, also with Motor Control Center (MCC) in fully withdrawable technology. With the in-house developed and produced installation distribution of the series GIV, we offer a flexible solution for applications up to 850 A for building and hospital technology. In any case, it is suitable as solution for all relevant energy distribution and control functions.

Our production programme includes the switchgear systems SIVACON S8 as well as FourLine and TriLine of our license partners Siemens and ABB/Striebel+John. For this, there are technology and system partnerships. The switchgear system TS 8 of Rittal is often used for automation and control systems – also with MCC outgoing sections in fully withdrawable technology.



Production



Busbar



Motor Control Center in fully withdrawable technology



Products and services

- low-voltage switchgear and controlgear assemblies up to a busbar rated current of 7,000 A
- Motor Control Center in fully withdrawable technology
- automation and control systems
- installation distribution boards
- planning and project management
- performance of grid and load analyses
- short-circuit and selectivity calculation
- maintenance and repair services

Fields of use

- | | |
|-----------------------|----------------------------------|
| ■ data centres | ■ building technology in general |
| ■ industry | ■ power plants |
| ■ hospitals | ■ infrastructure |
| ■ water management | ■ chemical plants |
| ■ conveyor technology | ■ railway |



Air-insulated medium-voltage switchgears

The type-approved, factory-built and air-insulated medium-voltage switchgears are for all-round use. They can be used by public energy suppliers and by companies of the industry. Medium-voltage switchgears can be used universally as ring wire switchgear or as complex energy distribution.

Our switching fields are equipped with all resources, locks and accessories. These are required to ensure a high level of safety and reliability for the staff and the system.



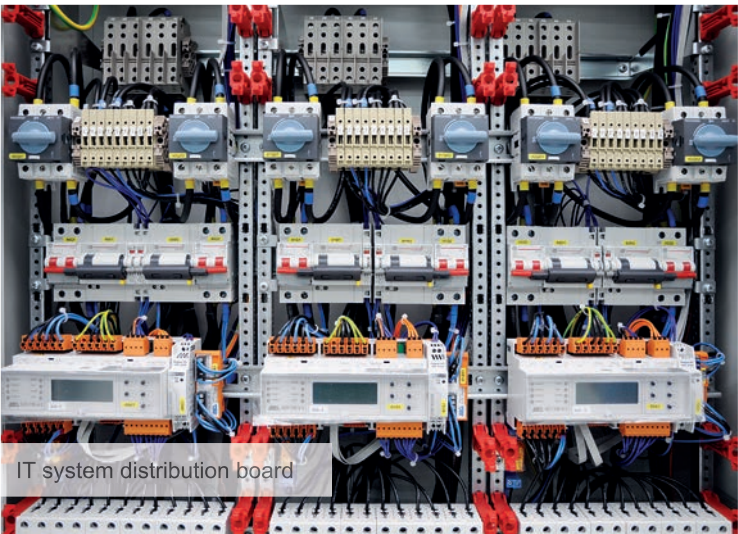
Products and services

- air-insulated medium-voltage switchgear to 24 kV, metal-clad, indoor installation
- more efficiency and flexibility due to a component system
- single busbar system
- highest possible people and system protection by internal arc test, IAC A FRL 31,5 kA, 1 s
- partition class PM: metallic partition between all devices, busbars and wires
- optionally with approved pressure relief duct
- optionally with current and voltage sensors

Fields of use

- | | |
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| ■ data centres | ■ building technology in general |
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IT system distribution board



IT distribution board transformer section

Complete power supply for medical locations

DIN VDE 0100, Teil 710 demands especially high requirements from the power supply in medical locations. These are e. g. operation theatres or intensive care units. Failures or insulation faults of the power supply system may cause damage to the patients' health. Therefore, ESA-Grimma has developed the control and monitoring system *HarpeC*.

The system is a complete solution. It includes all components – low-voltage main distribution boards, complete distribution boards of the user group 2 for the installation of unearthed systems including all control and monitoring devices as well as displaying and operating devices.

In-house developed devices and solutions are used for the specific control functions. Safety combined with user-friendly operation is always in focus.



Annunciator and control systems

Products and services

- Low-voltage main distribution board LVMD for all sectors (GS/SS)
- building main distribution board with automatic switchover devices
- distribution boards of the user group 2 with insulation fault detection system for the power supply of operating theatres and intensive care units e. g.
- switchover and monitoring devices

Fields of use

- hospitals
- medical locations





Main distribution board



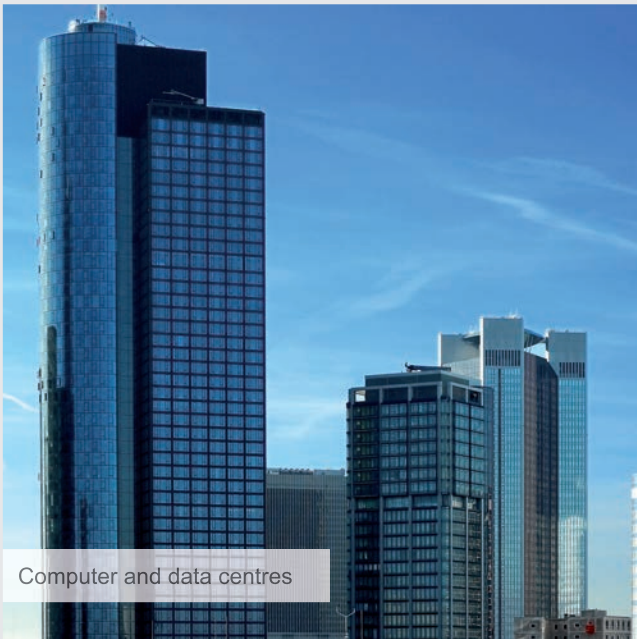
Residual and operating current monitoring device

Residual and operating current monitoring – Monitoring system RCM with *WebVisEC*®

The constant monitoring of residual currents in electrical systems is an important component for highly-available power supply. ESA-Grimma developed an innovative solution for the monitoring of residual and operating currents with only one system. Nowadays, we have a leading position due to this application and to many patent applications.

Monitoring devices connected to a failure-safe bus system detect all relevant currents of systems and users. All currents are displayed independent from their location. If required, the values can be transferred to a data base. The maintenance staff is informed in detail via application or e-mail before a system failure occurs.

The system is used in failure-critical systems. Even some thousands of monitoring channels can be monitored with this system. Additional staff, special knowledge or additional software are not necessary. The requirements according to § 5 UVV-BGV A3 are met.



Computer and data centres

Products and services

- residual current monitoring devices sensitive to universal currents (multi-channel)
- residual and operating current monitoring devices (multi-channel)
- monitoring devices, also with integrated current transformers
- monitoring system *WebVisEC*® as web-based solution application-specific information and consulting
- planning and technical assistance
- commissioning
- service via hotline

Fields of use

- computer and data centres
- conveyor technology
- rail and road tunnels
- industry
- hospitals





Point heating systems and switchgears for railway

Point heating systems of ESA-Grimma prevent the moveable parts of points from freezing in winter in case of ice and snow. Therefore, the systems guarantee constant availability of the rail traffic.

In-house developed control units, switchgears, data transfer systems, monitoring and diagnosis solutions as well as the visualisation system VIS-CM are part of the whole system. Point heating systems made in Grimma ensure the rail traffic of many rail lines in Europe. They are used on simple industry track systems and also on high-speed lines. Our certification as Q1 supplier of Deutsche Bahn AG which has been valid for several years now is an additional sign for our performance.



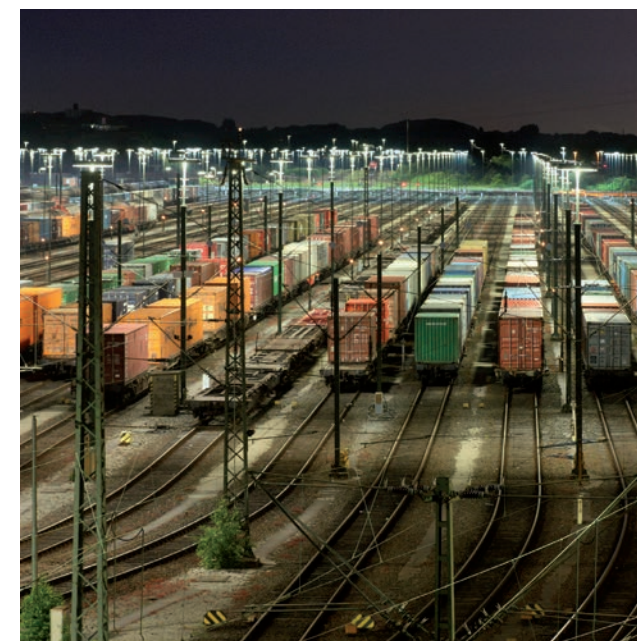
Visualisation



Service



Installation

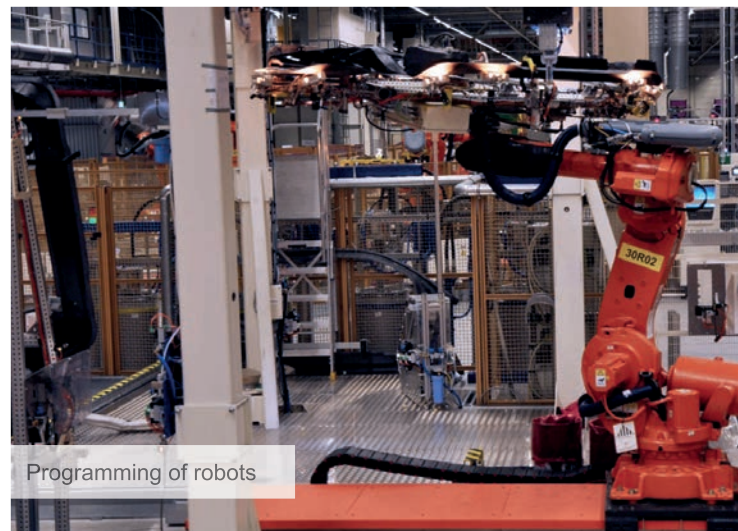


Products and services

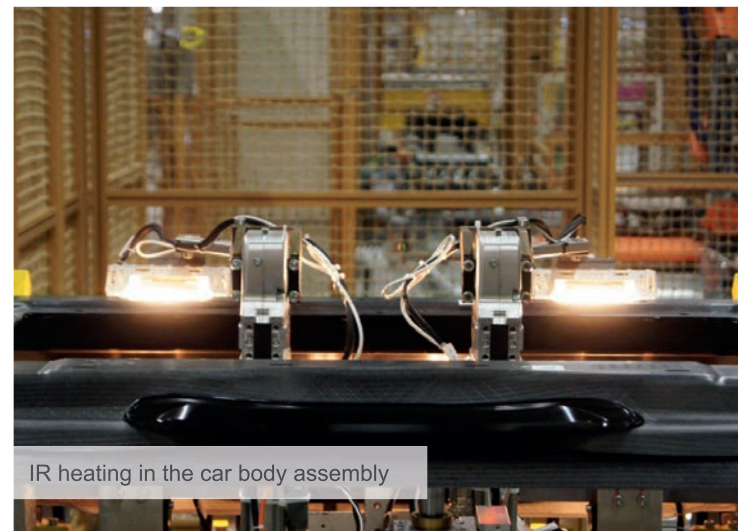
- point heating systems
- lighting controls for track fields and platforms
- emergency power systems – for power supply from the catenary for signal boxes and other applications
- ready-to-connect transformer stations
- control and visualisation system VIS-CM
- consulting and creating of concepts
- planning and project management
- complete installation including wire civil engineering
- Service on site, via hotline/remote maintenance

Fields of use

- systems of railbound traffic



Programming of robots



IR heating in the car body assembly

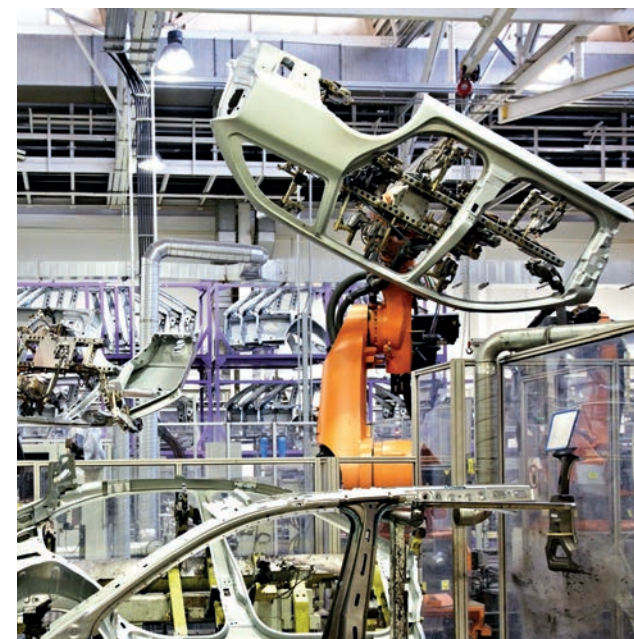
Automation technology & robotics

With our products and services, our customers get complete solutions for the automation of production systems. Notable and internationally acting contractors are already using these solutions.

Self-programmable controls including complete switching and control cabinets are used in the production lines of BMW AG, for example.



Commissioning, service



Products and services

- electrical construction
- switching cabinet production and electrical installation
- PLC programming
- software development
- visualisation
- robot online programming
- simulation
- commissioning, tests and service
- application technology:
IR heating car body assembly and final assembly

Fields of use

- automotive industry
- processing industry
- fiber composite construction



Low-voltage switchgears

Computer centre e-shelter GmbH & Co. KG Frankfurt/Main

- component F/G
- NSHV 250 fields

Residual and operating current monitoring – monitoring system *WebVisEC®*

Data centre of a German major bank in Frankfurt/Main

- 5 locations in Germany
- 1317 multi-channel monitoring devices RCM
- 10,038 monitoring channels in total
- complete switchgears



Complete power supply for medical locations

Rems-Murr Hospital Winnenden

- appr. 625 beds, 13 operating theatres, 1 hybrid operating room
- low-voltage switchgears as main and main building distribution boards
- sub-distributions (GS/SS) with switch cabinet system (GIV)
- use of the control and regulation system *HostEC®*
- IT system distribution, completely equipped with insulation fault detection system
- lighting control for operating rooms and public areas with separate CAN-bus
- battery-based central power supply (BSV)

Medium-voltage switchgears

German Aerospace Center Cologne

- 10 circuit breaker panels with pressure relief duct

Electrical point heating systems & switchgears for railway

ESTW Würzburg Heidingsfeld

- supply and installation switch heating 16.7 Hz, DB Netz, DB S&S, track lighting

Automation technology & robotics

BMW Leipzig

- development, production and commissioning of the infrared heating system in project i (production of the electric car i3 and of the plug-in-hybrid i8) in the car body assembly and final assembly



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Information about products, system solutions and services

Product segment	Telephone	Email
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Hospital technology	+49 3437 9211-594	kht@service.esa-grimma.com
Panel technology	+49 3437 9211-593	tab@service.esa-grimma.com
Calculating/tendering	+49 3437 9211-324	kalkulation@esa-grimma.com

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Changes in the scope of technical advances are reserved.

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