

Future Hub

Results of basic industrial research

- Basic scientific research
- Basic research in electric and electronic engineering
- Basic research in the field of mechanical engineering activities
- Basic research in the field of materials technology
- Basic research in the field of aerospace engineering
- Basic research in civil engineering and building activities
- Basic research in the field of industrial management and industrial applied economics
- Basic research in the field of nanotechnology
- Basic research on chemistry, biochemistry
- Basic research for power engineering
- Basic research in the field of information technology, computer technology
- Basic research in the field of artificial intelligence
- Other basic research

Cross-industry application research

Optical technologies (Future Hub)

- Optical technologies for biotechnological applications (Future Lab)
- Optical technologies for medical applications (Future Lab)
- Optical information technology and communication technology (Future Lab)
- Optical technologies for industrial light (Future Lab)
- Optical technologies for photovoltaic technology, solar cells (Future Lab)
- Laser technology in production technology (Future Lab)
- Optical metrology, laser metrology (Future Lab)
- Optical components and systems (Future Lab)

Organic electronics (optical technologies)

- Organic materials for electronics and optics, organic materials
- Manufacturing processes, thin-layer technology for organic materials
- Organic electronics components, diodes,

transistors, microprocessors, solar cells

- Other organic electronics (optical technologies)
- Other optical technologies (Future Lab)

Nanotechnology

Research of nanotechnology

- Research in the field of nanocoatings
- Research in the field of nanobiotechnology
- Research in the field of nanoelectronics
- Research in the field of nanomaterials
- Research in the field of nanostructuring
- Research in the field of nanosystems, nanosensors, nanoactuators
- Other research in the field of nanotechnology

Operational research in nanotechnology

- Operational research in nanolithography
- Operational research in X-ray lithography
- Operational research in layer production in the field of nanotechnology
- Operational research in particle production in the field of nanotechnology
- Other operational research in nanotechnology

Nanotechnology plants

Nano technology materials and components

- Nanoparticles
- Nanocrystals, nanoparticles
- Nanocomposites
- Nanostructures
- Nanofilters
- Nanosuspensions
- Nanoprobes
- Metallic nanofibres, polymer nanofibres, other nanofibres
- Nanoceramics
- Nanometals and nanometal alloys
- Nanosemiconductors
- Nanoplastics, nanopolymers
- Nanomembranes
- Nanopigments
- Other nano technology materials and components
- Technical literature, technical magazines, publishing houses for nanotechnology
- Organisations, associations, networking for nanotechnology
- Bionics (Future Hub)

Research on material bionics
 Research to structural bionics, construction bionics
 Research on bionic prosthetics
 Research on bionic robotics
 Research to bionic kinematics and dynamics
 Research on bionics design
 Research on process bionics
 Research on bionic sensor technology
 Research on marine bionics
 Research on bionic component optimisation
 Other research on bionics
 Artificial intelligence, application research (Future Hub)
 Applied materials research
 Metals research
 Glass and ceramics research
 Tribology research
 Polymers research
 Composite materials research
 Other new materials research
 Materials testing
 Other applied materials research
 Physical research and technology
 Research to nuclear fusion research, ultra-high temperature technology
 Research to hydrogen technology
 Research to solar technology and photoelectrics
 Research for electroplated layers
 Research to vacuum engineering
 Research to plasma physics, plasma technology
 Research to high-frequency and microwave engineering
 Research to magnetic field engineering
 Research to electronics, semiconductors, power electronics
 Research to sensors
 Research to optics, image technology
 Research to acoustics
 Research to membranes, separation technology
 Research to thin films
 Research to flow engineering, aerodynamics, hydrodynamics
 Research to precision mechanics
 Research to laser technology

Other physical research and technology
 Neuro-sciences
 Systems research
 Intelligent and innovative textiles; Applied research on
 Applied research on functional, innovative textiles
 Applied research on process technology for innovative textiles
 Industry applications for innovative textiles
 Innovative textiles for the electronics manufacturing and semiconductor industry
 Innovative textiles for medical technology
 Innovative textiles for the automobile industry
 Innovative textiles for the building industry
 Innovative textiles for the clothing industry
 Innovative textiles for other industries
 Application research on adaptronics
 Adaptive systems (optimized anti-vibration, improvement of functional capability of previous passive systems, etc.)
 Intelligent materials, structures and actuators in the field of adaptronics
 Adaptronics application research and solutions
 Other adaptronics systems
 Industry-specific application research
 Biotechnological research
 Research on biotechnologies for food
 Research on pharmaceutical biotechnology
 Research to biotechnological processes for the production of raw materials and reuse thereof
 Research on genetic engineering
 Research to cell biology and molecular biology
 Research to biochemistry
 Research to biological materials
 Other biotechnological research
 Medical research
 Research to medical analysis technology and diagnosis technology
 Research to medical operation technology and therapy technology
 Research to medical monitoring technology
 Research to medical implantation, prostheses, orthopaedics
 Other medical research

Research and Technology for ensuring raw material supplies

Applied research on mining and exploitation of raw materials

Applied research on ocean technology, offshore technology

Applied research on recycling of raw materials, secondary raw materials

Applied research on renewable biomass raw materials

Other research and technology for ensuring raw material supplies

Micro technology research

Research to micromechanics, precision engineering

Research to microsensor technology

Research on micro-dosing technology

Other micro technology research

Applied research in the field of electrical engineering

Research to electrical power engineering

Research to measuring technology

Research to electronics production

Research to testing technology

Research to lighting engineering

Research to safety monitoring

Research to simulation engineering

Other applied research in the field of electrical engineering

Applied research in the field of information transmission and communication

Applied research on digital communication

Applied research on communication networks and communication systems

Other applied research in the field of information transmission and communication

Applied research in the field of industrial automation

Applied research on process automation

Applied research on production automation

Applied research on robots

Applied research on fieldbus systems

Applied research on production techniques

Applied research on process techniques

Applied research on quality control and quality

assurance

Applied research on generative production techniques/Rapid Prototyping

Other applied research in the field of industrial automation

Research machine and plant construction, factory operation

Applied research on motive power engineering

Applied research on hydraulics, pneumatics

Applied research on surface technology

Applied research on welding and fastening

Applied research on conveyor and materials handling engineering

Other research in the field of machine and plant construction

Research in the field of transport and traffic

Applied research on railway technologies

Applied research on; motor vehicle technologies and road transport technologies

Applied research on shipping technologies

Applied research on aerospace research

Applied research on logistics

Applied research on hoisting, lifting, hauling (lifting devices)

Other research in the field of transport and traffic

Energy research and environmental research

Energy research

Applied research on primary energy, new sources of energy

Applied research on energy conversion

Applied research on energy transport, energy conduction

Applied research on energy storage

Applied research on energy saving

Research and development of diesel engines

Applied research for power engineering

Other research for power engineering

Environmental research and technologies

Applied research on water pollution prevention

Applied research on air pollution prevention

Applied research on harmful substances, toxicology

Applied research on recycling of wastes and garbage, pyrolysis

Applied research on chemical safety engineering
 Other environmental research and technologies
 Research and technology for water supply
 Technology transfer and research services
 Consultancy for Research and Technology
 Innovation consultancy
 Management consultancy for the field of research and innovation
 Services for patents and licences
 Consultancy in research financing
 Consultancy in research promotion, subsidising organizations
 Technology appraisals
 Innovation appraisals for technology-oriented start-ups
 Start-up consultancy for researchers and developers
 Other consultancy for research
 Engineering and development in the Future Lab
 Subcontracted research work
 Subcontracted development work
 Scientific technical services
 Analysis, diagnosis and optimization of systems
 Knowledge management services
 Product design, industrial design
 Other engineering and development for Future Lab
 Management, financing, organisation for research
 Project organization for the field of research and development
 Research management, technology management, innovation management
 Marketing for universities
 Hosting of conferences and workshops in the field of research
 Hosting of congresses and exhibitions in the field of research
 Other management, financing, organisation for research
 Technology transfer
 Provision of know-how
 Information, documentation, standards for new technologies
 Publishing for the field of research and

innovation
 Organisations and associations for research and development
 Working worlds of the future
 Offers of employment
 Job placement
 Career consultancy
 Vocational counselling
 Education (technical and other colleges, universities)
 Colleges, universities, higher technical colleges, vocational training schools
 Technical courses at colleges, universities, higher technical colleges, vocational training schools
 Commercial and business management courses at colleges, universities, higher technical colleges, vocational training schools
 Scientific courses at colleges, universities, higher technical colleges, vocational training schools
 Courses of further study
 Job-related courses at universities
 Technical colleges and training colleges
 Technical education at technical colleges and training colleges
 Additional education at technical colleges and training colleges
 Other education (technical and other colleges, universities)
 Further education and qualification
 Seminars and courses for further education and qualification
 Seminars for further education and qualification
 In-house seminars for further education and qualification
 One-day and multiday training courses for further education and qualification
 Single and multiweek training courses for further education & qualification
 Further education and qualification by subjects
 Further education and qualification in the technical field
 Further education and qualification in automation technology
 Further education & qualification in electrical engineering, information technology & sensor

technology

Further education & qualification in mechanical engineering

Further education and qualification in quality assurance, quality management

Further education and qualification in power engineering

Other further education and qualification in the technical field

Further education and qualification in the commercial field

Further education and qualification in other fields

Other further education and qualification eLearning services, web-based learning

Teaching systems and learning systems

Interactive learning programs, computer-based training (CBT)

Multimedia learning systems for training and advanced training

Instructive teaching systems for automation technology

Training and instructional apparatus (hydraulics)

Training and instructional apparatus (pneumatics)

Instructive teaching systems for new professions in the field of mechatronics

Interactive teaching systems for CNC education

Other teaching systems and learning systems

Personnel leasing, temporary employment

Consultancy on company succession

Consultancy on start-ups

Publications on job and career

Workers representation

Organisations and associations for education, job and career

WoMenPower

Startup Hub (Young Tech Enterprises)

Private equity, venture capital for start-ups, spin-offs

Public funding for start-ups, spin-offs

Mergers & acquisitions for start-ups, spin-offs

Consultancy for start-ups, spin-offs

Services for start-ups, spin-offs

Other resources for start-ups, spin-offs

Start up Company

Innovative technologies in the Future Hub

Materials and process technology (innovative technologies)

Mechanical components and systems (innovative technologies)

Precision engineering and optics (innovative technologies)

Micro technology and nano technology (innovative technologies)

Coating technology and surface technology (innovative technologies)

Plasma technology (innovative technologies)

Laser technology (innovative technologies)

Electronics and optoelectronics (innovative technologies)

Microelectronics (innovative technologies)

Computer hardware and software (innovative technologies)

Communication technology (innovative technologies)

Sensors and metrology (innovative technologies)

Control, automation and robot technology (innovative technologies)

Production technology methods (innovative technologies)

Materials handling technology, materials flow, logistics (innovative technologies)

Biotechnology and genetic engineering (innovative technologies)

Environmental technology (innovative technologies)

Chemistry and chemical process technology (innovative technologies)

Energy technology (innovative technologies)

Traffic engineering (innovative technologies)

Aerospace technology (innovative technologies)

System analysis and system development (innovative technologies)

Development methods (CAD, simulation) (innovative technologies)

Services (innovative technologies)

Other innovative technologies

Engineered parts and solutions

Lightweight engineering

Lightweight material construction

- High-strength steels for lightweight construction, lightweight steels
- Titanium, titanium alloys for lightweight construction
- Aluminium, magnesium, light metal alloys for lightweight construction
- Plastics, elastomers, plastic fibres for lightweight construction
- Fibre-plastic composite materials for lightweight construction
- Foams for lightweight construction
- Lightweight composites
- Lightweight engineering composites
- Other lightweight material construction

Lightweight mould making

- Structured sheet metal for lightweight construction
- Other lightweight mould making

Lightweight engineering concepts, constructive lightweight construction

- Lightweight engineering concept profiles
- Sandwich structures for lightweight construction
- Lightweight plane load-bearing structures, adaptive load-bearing structures
- Honeycomb structures, honeycomb papers
- Other lightweight construction concepts, constructive lightweight construction

Lightweight production

Lightweight products

- Formed parts for lightweight construction
- Other lightweight products

Production processes for lightweight construction

- Bonding for lightweight construction
- Aluminium forges, light alloy forges for lightweight construction
- Aluminium casting, light alloy casting, die casting for lightweight construction
- Zinc die casting for lightweight construction
- Folding, bending for lightweight construction
- Metal forming technologies, other for lightweight construction
- Thin-walled steel casting for lightweight

construction

- Other production processes for lightweight construction
- Prototyping for lightweight construction
- Other lightweight production

Lightweight engineering applications (parts, semi-finished products, processes)

Lightweight engineering for vehicle construction and mobile machines, automotive (parts, semi-finished products, processes)

- Lightweight engineering for chassis (parts, semi-finished products, processes)
- Lightweight engineering for drives (parts, semi-finished products, processes)
- Lightweight engineering for car bodies, attached parts (parts, semi-finished products, processes)
- Lightweight engineering for vehicle interiors (parts, semi-finished products, processes)

Materials for lightweight construction in vehicle technology (parts, semi-finished products, processes)

- Lightweight engineering for motorcycles and bicycles (parts, semi-finished products, processes)
- Lightweight engineering for rail vehicles (parts, semi-finished products, processes)
- Lightweight engineering for other vehicles and mobile machines (parts, semi-finished products, processes)

Lightweight engineering for construction, structures, supporting structures (parts, semi-finished products, processes)

- Lightweight engineering for boatbuilding, yacht building (parts, semi-finished products, processes)
- Lightweight engineering for electrical and household appliances (parts, semi-finished products, processes)
- Lightweight engineering for filter technology (parts, semi-finished products, processes)
- Lightweight engineering for air-conditioning technology (parts, semi-finished products, processes)
- Lightweight engineering for shop fittings (parts, semi-finished products, processes)
- Lightweight engineering for aerospace, aircraft

construction (parts, semi-finished products, processes)

Lightweight engineering for mechanical engineering (parts, semi-finished products, processes)

Lightweight engineering for medical technology (parts, semi-finished products, processes)

Lightweight engineering for furniture and stairs (parts, semi-finished products, processes)

Lightweight engineering for military technology (parts, semi-finished products, processes)

Lightweight engineering for wind energy plants (parts, semi-finished products, processes)

Other lightweight applications (parts, semi-finished products, processes)

Lightweight engineering services

Engineering services, construction services for lightweight construction

Simulations, technical calculations for lightweight construction

Contract manufacture of lightweight products

Consultancy on lightweight construction

Research and development for lightweight construction

Analyses, tests for lightweight construction

Other lightweight construction services

Journalism, specialist portals, specialist publishers for lightweight construction

Organisations and associations for lightweight construction

Additive manufacturing

Additive manufacturing systems

Additive manufacturing systems, 3D printers with stereolithography, SLA, STL

Additive manufacturing systems, 3D printers with fused deposition modelling, FDM, thermal extrusion printing

Additive manufacturing systems, 3D printers with multijet modelling, MJM

Additive manufacturing systems, 3D printers with 3DP technology

Additive manufacturing systems, 3D printers with selective laser sintering, SLS for non-metals

Additive manufacturing systems, 3D printers with selective laser melting, SLM for metals

Other additive manufacturing systems, 3D printers for non-metals

Hybrid production systems (additive and subtractive manufacturing) for nonmetals

Additive manufacturing applications for non-metals

Additive manufacturing systems, 3D printers for rapid prototyping for non-metals

Additive manufacturing systems, 3D printers for direct digital manufacturing with non-metals

Additive manufacturing systems for 3D printing for nonmetals, 3D-Printer

Additive manufacturing systems, 3D printers for presentation models, visual aids made from non-metals

Additive manufacturing systems for casting die manufacture

Other additive manufacturing applications for non-metals

Supplementary systems and services for additive manufacturing with non-metals

3D scanners, 3D laser scanners for additive manufacturing

3D digitalisation systems for adaptive manufacturing

3D modelling for additive manufacturing

3D visualization of models (services)

3D graphics software and 3D modelling software for additive manufacturing

Develop and manufacture 3D printing monofilaments

Other supplementary systems and services for additive manufacturing with non-metals

Industry applications for additive manufacturing with non-metals

Additive manufacturing with non-metals for aerospace engineering

Additive manufacturing for automotive technology

Additive manufacturing with non-metals for medical technology

Additive manufacturing with non-metals for lifestyle products

Additive manufacturing with non-metals for tool manufacture

Additive manufacturing with non-metals for mechanical engineering
 Additive manufacturing with non-metals for lightweight engineering
 Additive manufacturing with non-metals for other industries
 Parts and components made of metal
 Original formed parts (casting, sintering)
 Casting parts
 Cast products according to casting processes
 Chill casting (Gussprodukte)
 Low-pressure chill casting (Gussprodukte)
 Centrifugal casting (Gussprodukte)
 Precision casting
 Lost wax process (investment casting)
 Investment casting according to other investment casting processes
 General precision cast products
 Diecasting processes (Gussprodukte)
 Continuous casting processes (Gussprodukte)
 Sand casting processes (Gussprodukte)
 Sand casting processes; iron/steel castings
 Sand casting process; iron/steel cast products up to 1t
 Sand casting process; iron/steel cast products over 1t
 Sand casting processes; light metal castings
 Sand casting processes; non-ferrous heavy metal castings
 Sand casting processes; non-ferrous castings
 General sand casting
 Sand casting processes, other castings
 Castings according to other casting processes
 Castings according to moulding processes
 Hand moulding processes (Gussprodukte)
 Mechanical moulding processes (Gussprodukte)
 Shell moulding processes (Gussprodukte)
 Investment casting with ceramic mould (Gussprodukte)
 Vacuum moulding processes (Gussprodukte)
 Castings according to other moulding processes
 Cast iron with lamellar graphite (grey cast iron)
 Unalloyed cast iron with lamellar graphite
 Alloyed cast iron with lamellar graphite
 Cast iron with lamellar graphite; Ferrocast

quality
 Other cast iron with lamellar graphite (grey cast iron)
 Cast iron with nodular graphite (spheroidal graphite cast iron)
 Unalloyed spheroidal graphite cast iron
 Alloyed spheroidal graphite cast iron
 Austempered ADI cast iron
 Meehanite spheroidal graphite cast iron
 Spheroidal graphite cast iron; Ferrocast quality
 Other cast iron with nodular graphite
 Steel castings
 Unalloyed steel castings
 Low alloy steel castings
 High alloy steel castings
 Steel castings; for flame and induction hardening
 Heat-resistant steel castings
 Cold-tough steel castings
 Non-magnetizing steel castings
 Stainless steel castings
 Heat-treatable steel castings
 Steel castings; creep resistant at high temperatures
 Ferritic stainless steel castings
 Austenitic stainless steel castings
 Other steel castings
 Chill castings
 Non-ferrous metal casting (NF metal casting)
 Aluminium castings
 Aluminium die castings
 Magnesium castings
 Titanium castings
 Copper castings
 Zinc castings
 Brass castings
 Bronze castings
 Other non-ferrous metal casting (NF metal casting)
 Other foundry products
 Rapid Prototyping/Rapid Manufacturing castings
 Powdered metal injection moulding
 Special foundry products, other
 Sintering parts

Sintered compacts	Processed aluminium sections
Sintered bearings	Accessories for aluminum profile technology
Sintered filters	Other aluminium sections and light metal sections
Friction linings, sintered friction linings, brake bands	Other massive forming products
Sintered powder magnets	Sheet metal forming products, sheet metal forming
Sintered cutting tools	Pressed metal parts
Sintered metal/plastic composite products	Pressed parts made of steel, stainless steel
Other sintered parts	Pressed parts made of nonferrous metals
Solid forming, sheet metal forming and metal parts formed without cutting	Spun metal parts
Solid forming products, solid forming	Deep drawn parts
Open-die forgings	Bent plate parts
Precision-forged parts (Freiformschmieden)	Stamped bent plate parts
Forged rings (Freiformschmieden)	Other pressing products
Forged discs and perforated discs (Freiformschmieden)	Special metal-forming parts
Forged rods (Freiformschmieden)	Rolled metal parts
Forged shafts (Freiformschmieden)	Metal chains
Forged bushes (Freiformschmieden)	Metal sections
Forged shapes (Freiformschmieden)	Bent metal parts
Other open-die forgings	Pipe fittings
Drop forgings	Pipe shaping, pipe working (ancillary supplier services)
Hot-pressed parts	Bellows of metal
Drop-forged safety parts	Other special metal-forming parts
Precision forgings	Parts separated without cutting
Drop forged parts made of steel	Punched metal parts
Drop forged parts made of aluminium, light alloy	Stamped parts made of steel
Drop forged parts made of copper	Stamped parts made of stainless steel
Other drop-forged parts	Stamped parts made of nonferrous metals
Upset forgings	Precision metal stampings
Extruded parts	Nibbled metal parts
Hot-extruded parts	Laser-cut parts made of metal
Semicold-extruded parts	Jet-cut parts made of metal
Cold-extruded parts	Other parts separated without cutting
Other extruded parts	Shape memory alloy parts
Rolled rings	Energy-optimised strand forming processes and solid forming processes
Stamped material	Machined metal parts
Cold-rolled parts	Turned parts
Hot-rolled parts	Automatic lathe work
Brass mouldings	CNC turned parts
Hydroforming parts	CNC turned parts made of steel
Aluminium sections and light metal sections	CNC turned parts made of steel up to 0.5 kg
Unprocessed aluminium sections	CNC turned parts made of steel up to 5 kg

CNC turned parts made of steel 5 kg to 100 kg	Special machined parts
CNC turned parts made of steel over 100 kg	Precision steel shafts
CNC turned parts made of stainless steel	Other precision components
CNC turned parts made of nonferrous metals	Other machined parts
CNC turned parts made of nonmetals	Parts & components made of plastic and rubber
Large-dimension turned parts	Plastic parts (plastomers)
Precision turned parts	Plastic mouldings
Precision turned parts made of steel	Injection mouldings, injection moulded articles
Precision turned parts made of nonferrous metals	Injection mouldings, injection moulded articles up to 1 kg
Precision turned parts made of nonmetals	Injection mouldings, injection moulded articles over 1 kg
Precision turned parts made of stainless steel	Synthetic foam parts, injection mouldings
Mass turned parts	Plastic pressed parts (Formteile)
Other turned parts	Plastic mouldings
Milled parts	Moulded plastic articles with inserts
CNC milled parts	Thermoformed plastic parts
CNC milled parts up to 10 kg	Compact machined parts made of polyurethane
CNC milled parts up to 100 kg	Moulded Interconnected Devices (MID)
CNC milled parts 100 kg to 1000 kg	Other plastic mouldings
CNC milled parts over 1000 kg	Semifinished plastic parts
Automatic milling parts	Plastic sheeting (Zulieferungen)
Mass milling parts	Sheets and panels; plastic
Precision milling parts	Sections; plastic
Precision milled parts made of steel and iron	Pipes; plastic
Precision milled parts made of nonferrous metals	Flexible tubes made of compound materials and woven plastics
Precision milled parts made of nonmetals	Other semifinished plastic products
Planed and planer-milled parts	Reinforced plastic parts
Other milled parts	GRP parts/glass reinforced plastics
Drilled parts	CRP parts/carbon reinforced plastics
Deep-drilled parts	Pultrusion-produced parts
Bored parts	Laminated plastic parts
Precision drilling parts	Covered plastic parts
Other drilling parts	Other reinforced plastic parts
Threaded parts (machined parts)	Machined parts and special products made of plastic
Whirled parts	Rollers; plastic
Broached parts	Rolls; plastic
Ground parts	Plastic ball-bearings, plastic bearings, plastic bearing shells
Flat-ground parts	Containers and tanks; plastic
Round-ground parts	Chains; plastic
Precision-ground parts	Hoses; plastic
Other ground parts	Plastic balls
Honed and lapped parts	
Parts manufactured by electrical discharge machining (wire and electrodes)	

Protective spirals for tubes made of plastic, tube protection

Other machined parts and special products made of plastic

Silicone parts

Silicone mouldings

Silicone injection mouldings

Extruded silicone profile elements

Other silicone parts

Plastic processing

Plastic forming processes

Injection moulding of plastic

Plastic extrusions, plastic extrudes

Compression moulding of plastic

Foam moulding of plastic

Thermoforming of plastic

GRP processing, glass-fiber reinforcing of plastic

CRP processing, carbon-fiber reinforcing of plastic, carbonfaser

ARP processing, aramide-fiber reinforcing of plastic

Outsert technology/metal-plastic hybrid technology (spray-coat plastic onto metal parts)

Insert technology/metal-plastic hybrid technology (extrusion-coat metal parts with plastic)

Other forming in plastic processing

Plastic processing

Forming of plastic parts

Machining of plastic parts

Joining of plastic parts

Stamping and cutting of plastic parts

Processing of high-performance plastic

Other plastic processing

Treatment of plastic parts, coating, painting

Products made of rubber and elastomers

Formed parts made of rubber/polyurethane (incl. rubber buffers)

Sections of rubber

Rubber slabs, polyurethane slabs

Hoses of rubber

Driving elements made of rubber (incl. V-belts, toothed belts)

Conveyor belts of rubber

Bellows made of rubber

Bellows of rubber

Rubber pneumatic dampers

Rubber-metal links

Shaped parts of foam rubber

Shaped parts of cellular rubber

Products made of elastomer-coated fabrics

Bellow expansion joints and pipe joints made of rubber

Material and surface technology made of rubber, elastomers

Other rubber parts

Rubber processing

Vulcanizing of rubber parts

Joining of rubber parts

Mechanical processing of rubber parts (punching, milling, drilling, cutting, etc.)

Other rubber processing

Parts and components made of technical ceramics

Workable ceramic substrates and ceramic components

Ceramic injection mouldings (Teile & Komponenten aus Technischer Keramik)

Precision ceramics parts

High-performance ceramics parts

Other ceramic parts (Subcontracting)

Parts and components made of other materials

Parts made of asbestos substitutes

Cork parts (Subcontracting)

Products made of carbon and graphite

Bought-in parts made of other materials (Subcontracting)

Assemblies and metal structures

Sheet metal and wire products, springs

Sheet metal parts

Assembled sheet metal parts

Sheet metal housings

Assembled sheet metal parts made of black steel

Assembled sheet metal parts made of coated steel

Assembled sheet metal parts made of high-grade steel

Other assembled sheet metal parts

Sheet metal ducts and guards

Precision machined sheet metal parts
 Industrial components made of flat band
 Industrial knives and blades
 Sheet metal pulleys
 Other sheet metal parts
 Wire products
 Wire coils
 Wire components
 Wire cables
 Wire bending parts
 Other wire products
 Springs
 Sheet metal springs
 Disk springs
 Springs made of flat band
 Other sheet metal springs
 Wire springs
 Tension springs
 Compression springs
 Torsion springs
 Coil springs
 Other springs made of wire
 Pins and shafts (miniature wire parts, precision parts)
 Laser-cut parts (structural components, sheet metals, springs)
 Other sheet metal and wire products, springs
 Metal structures
 Parts and structures (from subcontractors)
 Structures for production plants (from subcontractors)
 Heavy metal structures (from subcontractors)
 Welded constructions, steel plate towers, lightweight steel constructions
 Other metal structures
 Apparatus, containers, tubular constructions
 Apparatus, vessels, tanks (non-pressurized)
 Apparatus, vessels, tanks (pressurized)
 Pipework
 Rolls made of metal, roll barrels
 Other apparatus, containers, tubular constructions
 Models, dies, jigs and fixtures
 Model making and Rapid Prototyping
 Models for foundries

Models for industrial design
 Prototypes (Modellbau und Rapid Prototyping)
 Rapid Prototyping products
 Die making and mould making
 Permanent moulds and moulds for foundries
 Diecasting dies
 Injection moulding dies
 Forging tools (dies)
 Cutting dies and punching tools, forming and drawing tools
 Deformation and deep drawing dies
 Embossing dies
 Injection moulding, extrusion and pressing moulds for plastic and caoutchouc articles
 Jigs and fixtures for mould construction and die construction
 Accessories for mould construction and die construction
 Standards for mould construction and die construction
 Standards for die construction
 Standards for jigs and fixtures construction
 Other standards and standard parts
 Standards for machine construction and apparatus construction
 Dies (supply parts)
 Machine components, operating controls, locks, fittings, and other individual components (bought-in parts)
 Machine components
 Wheels and rolls (Subcontracting)
 Ball-bearings in steel and other metals, shifting balls (Subcontracting)
 Gear units (incl. planetary and turbo gears)
 Hydraulic rotational screw fittings
 Sealing (machine sealing, door sealing, window sealing) (Subcontracting)
 Securing rings (Subcontracting)
 Pumps wings, pumps impellers
 Other machine components (Subcontracting)
 Locks and fittings
 Locks (Subcontracting)
 Fasteners, fastening systems (Subcontracting)
 Electro-mechanical and electronic locking systems

Iron mounting (Subcontracting)
 Hinges
 Other locks and fittings
 Operating elements (mechanical), handles, handwheels (Subcontracting)
 Accessories for the construction of housings and switch cabinets
 Front panels for housing construction and switch cabinet construction (Subcontracting)
 Housing handles and locks (Subcontracting)
 Empty housings (Subcontracting)
 Other accessories for housing construction and switch cabinet construction (Subcontracting)
 Supply products for switchgear manufacture
 Supplied products for switchgear construction (power, energy field)
 Supplied products for switchgear construction (low voltage, MCR field)
 Supplied products for switchgear construction (electronics field)
 Optical components and assemblies
 Coil winding components, steel sheets and bought-in electrical parts for transformer manufacture and electric motor manufacture
 Coil winding wire, cables and conductors
 Enamelled copper wire
 Resistance wire for coil technology
 Connection flex, connection terminals, cable lugs, connector sleeves for coil technology
 Other coil winding wire, cables and conductors
 Bobbins for coil technology
 Moulded parts, stamped parts for coil technology
 Electric motor housings, generator housings
 Transformer housings
 Components for electric motor construction, generator construction and transformer construction
 Bearings for electric motors and generators
 Insulators for electric motors, generators and transformers
 Seals and gaskets for transformers, generators and electric motors
 Fans, fan impellers for electric motors and generators

Terminal boxes, connection technology for electric motors and generators
 Rotors and stators for electric motors and generators
 Other components for electric motor construction and transformer construction
 Electric sheet steel
 Mechanical power transmission equipment, supply
 Gear wheels and gear systems (Mechanische Antriebselemente, Zulieferung)
 Bevel gears (Mechanische Antriebselemente, Zulieferung)
 Spur gears (Mechanische Antriebselemente, Zulieferung)
 Chain wheels (Mechanical power transmission equipment, supply)
 Worms and worm wheels (Mechanische Antriebselemente, Zulieferung)
 Drive shafts, spline shafts, standard couplings and clutch units, special couplings and clutch units for drive technology
 Toothed racks (Mechanische Antriebselemente, Zulieferung)
 Other mechanical power transmission equipment
 Joint bearings, ball bearings, slewing rings
 Torque limiters for power engineering
 Clamping elements for power engineering
 Hydraulic components for power engineering
 Other assemblies and metal constructions
 Materials & semi-finished products: steels, non-ferrous metals, plastics, ceramics, composite materials
 Steel and ferrous materials
 Iron and steel (iron and steelworks products)
 Pig iron
 Cast iron (engineering materials)
 Cast steel (engineering materials)
 Hard alloys
 Other new ferrous materials
 Other iron and steel products
 Rolled steel (basic and quality grades)
 Semifinished products (rolled steel)
 Structural shapes, profiles and mine supports

Steel bars	Rods (non-ferrous metals)
Reinforced concrete, reinforcing steel, reinforcing iron, concrete reinforcing iron	Pipes (non-ferrous metals)
Special sections (Stahl)	Wires (non-ferrous metals)
Heavy and medium plate	Bare flex and ropes (non-ferrous metals)
Shipbuilding steel	Copper flexible braids, copper flexible strands, copper flexible braided connectors
Other rolled steel (basic and quality grades)	Copper laminated flexible shunts / connectors / expansion joints
Pipes (iron and steel)	Non-ferrous metal products
Seamless or welded steel tubes/pipes	Technical extrusion parts (non-ferrous metals)
Tubes/pipes of stainless steel	Other non-ferrous metal products
Stainless steels	Surface-treated semi-finished metal products (Nichteisen-Metalle)
Tool steels (Edelstahl)	Lightweight metals
Stainless steels (Edelstahl)	Aluminium alloys
Special structural steels (Edelstahl)	Cast aluminium alloys
Highly heat-resistant steels	Other aluminium alloys
Anti-friction bearing steels	Titanium alloys
Ball bearing steels	Other light metals
Other stainless steels	Heavy metals
Drawn and cold-rolled steel products	Heavy metal alloys
Cold-rolled sections with treated surface	Copper-zinc alloys (brasses)
Precision steel tubing	Copper-tin alloys (bronzes)
Cylindrical tubing for hydraulics and pneumatics	Copper-aluminium alloys (aluminium-bronzes)
Other drawn and cold-rolled steel products	Superalloys
Wire and wire products made of steel	Nickel-based alloys
Finished wire products (e.g. wire bending parts)	Other superalloys
Spring-steel wire	Copper
Other wire and wire products made of steel	Other heavy metals
Plate products	Technical ceramics
Pressed, flanged, dished, bent, rolled, and edge-worked plate products	Engineering ceramics
Plate products in stainless steel	Engineering alumina ceramics
Pressed and bevelled sections	Unstabilised zirconium oxide
Other heavy plate products	Partly stabilised zirconium oxide
Extruded steel sections	Tetragonal polycrystalline zirconium oxide
Non-ferrous products, NF products	Aluminium titanate
Non-ferrous metals	Silica-infiltrated silicon carbide
Non-ferrous crude metal	Sintered silicon carbide
Noble metals	Silicon nitride
Aluminium and aluminium alloys in pigs and shapes	Sintered silicon nitride
Sintered metals, powder metallurgy, sintered iron, sintered steel	Hot-pressed silicon nitride
Semifinished metal products (non-ferrous metals)	Fiber-reinforced industrial ceramics
Sheet metals (non-ferrous metals)	Other engineering ceramics
	Ceramics for electronics
	Alumina ceramics for electronics

Aluminium nitride ceramics for electronics
 Piezo-ceramics
 Other ceramics for electronics
 Cutting ceramics
 Special ceramic materials, special technical ceramics
 Glass ceramics
 High-temperature isolation materials
 Ceramic injection mouldings (Spezielle keramische Werkstoffe, spezielle technische Keramik)
 Medical ceramics
 Other ceramic materials, technical ceramics
 Mineral materials
 Industrial diamonds
 Steatite (ceramic)
 Codierite (ceramic)
 Other mineral materials
 Polymer materials (industrial plastics)
 Thermoplastics
 Thermoplastic plastics (moulding materials, semifinished products), PTFE, PEEK, PA, PET, PP
 Expanded polymer materials (thermoplastic)
 Thermoplastic membrane materials
 Semifinished thermoplastic products
 Thermosetting plastics
 Thermosetting plastics (moulding materials)
 Highly heat-resistant thermosetting plastics
 Fire/flame-protected thermosetting plastics
 Other duroplastic moulding materials
 Expanded polymer materials (thermosetting)
 Semifinished thermosetting plastic products
 Other duroplastics
 Elastomers
 Highly damping elastomer materials
 Highly wear-resistant elastomer materials
 Flame-resistant elastomer materials
 Electrically conductive elastomer materials
 Non-ageing and weathering-resistant elastomer materials
 Temperature-resistant elastomer materials
 Elastomer materials with special properties
 Plastics/rubber composites (Elastomere)
 Other elastomers
 Polymer materials for special applications

Silicones, silicone rubber
 Composite materials
 Fiber composites
 Glass-fiber reinforced plastics (GRP)
 Carbon-fiber reinforced plastics (CRP)
 Carbon-fiber reinforced carbons
 Aramide-fiber reinforced plastics (ARP)
 Other fiber composites
 Reinforcing materials, fibers (glass fibers, metal fibers, quartz fibers, oxide fibers)
 Laminated composite materials
 Multi-layer composite materials
 Metal/plastic composite materials
 Metal/ceramics composite materials
 Hard anodising, plasma-chemical oxide ceramics
 PVD-coated plastics (electrically conductive/shielding)
 Galvanic coatings (Schichtverbundwerkstoffe)
 Other multi-layer composite materials
 Special composite materials, fibre composites
 Plastic composite materials
 Other composite materials
 Materials for electrical engineering
 Soft magnetic materials for electrical engineering
 Permanent magnets and directional systems for electrical engineering
 Piezoelectric materials
 Contact materials for electrical engineering
 Bimetals and thermostatic bimetals
 Other materials for electrical engineering
 Electrical insulation materials and electrical insulation products
 Materials for electrical insulation
 Plastics, artificial resins (Elektroisolierstoffe)
 Hard paper and hard fabric (Elektroisolierstoffe)
 Casting compounds, putties and cast resins, polyester/polyurethane resins, epoxy resins, methacrylates (Elektroisolierstoffe)
 Other electrical insulation materials
 Electrical insulation products, plastic pressed parts, insulating tapes
 Wear-reducing materials, coating materials
 Heat-insulating components and materials

Material testing
 Material testing procedures
 Materials testing devices and materials testing equipment
 Intelligent materials, smart materials
 Memory alloys (Metallwerkstoffe)
 Intelligent functional materials
 Piezoelectric ceramic foils
 Smart structures
 Other intelligent materials, smart materials
 Joining techniques
 Systems and equipment for detachable joining connections
 Systems and equipment for screw connections, automatic screwing machines
 Systems and equipment for shrink connections
 Bolt firing tools and accessories
 Other systems and equipment for detachable joining connections
 Systems, equipment and weld fillers for non-detachable joining connections
 Systems, equipment and weld fillers for welding
 Gas welding plants
 Electric welding/electric cutting plants
 Arc welding and cutting machines and arc welding apparatus
 Inert gas welding machines and apparatus (MIG/MAG systems)
 Tungsten inert-gas welding machines and apparatus (TIG systems)
 Plasma welding and cutting machines and apparatus
 Special welding systems
 Electron-beam welding and cutting machines
 Surfacing systems, cladding systems
 Other special welding systems
 Accessories and equipment for welding technology
 Welding masks and goggles
 Welding fume extraction systems
 Handheld water jet cutting devices (equipment for welding technology)
 Other accessories and equipment for welding technology
 Weld fillers and welding aids (electrodes,

powder, gases, wire)
 Systems, equipment and weld fillers for soldering
 Automatic soldering systems
 Soldering machines and stations
 Systems, equipment and weld fillers for adhesive bonding
 Adhesives and sealants
 Adhesives and sealants for metals
 Adhesives and sealants for textiles and leather
 Adhesives and sealants for glass and ceramics
 Adhesives and sealants for plastics
 Adhesives and sealants for composite materials
 Other adhesives and sealants
 Adhesive tapes, stampings, labels and adhesive films
 Systems, equipment and weld fillers for crimping, flanging
 Crimping machines (Anlagen, Ausrüstungen & Zusatzwerkstoffe für Crimpen, Bördeln)
 Crimping tools, crimping tongs
 Other systems, equipment and weld fillers for crimping, flanging
 Systems, equipment and weld fillers for force fitting, forming connections
 Systems, equipment and weld fillers for riveting
 Riveting and stamping tools
 Rivets
 Other systems, equipment and weld fillers for riveting
 Other systems, equipment and weld fillers for non-detachable joining connections
 Fasteners
 Bolts and screws (Subcontracting)
 Nuts (Subcontracting)
 Bolt accessories
 Feather keys and sunk tapered keys
 Clips
 Swivel heads (Subcontracting)
 Tapered pins, grooved pins, parallel pins
 Hydraulic connectors and pneumatic connectors, nipples
 Shim rings
 Bolts, pins
 Dowels
 Connectors and fasteners for hoses and pipes

Hose clamps
 Pipe and hose clips
 Screw connections for pipes and hoses
 Pipe clamping joints
 Hose connectors, hose couplings
 Pipe connector components
 Suction cups (supply parts)
 Mounting parts, mounting clips, fasteners,
 mounting parts plastics and metals
 Other fasteners, connectors, mounting materials
 Joining systems
 Joining systems for the automobile industry
 Jointing systems for electrical
 engineering/electronics
 Jointing systems for mechanical engineering
 and plant construction
 Jointing systems for the aviation industry
 Other joining systems
 Joining technology services
 Contract welding
 Bonding (service)
 Contract welding (service)
 Hard soldering (service)
 Soft soldering (service)
 Riveting (service)
 Other joining technology services
 Outsourcing production
 Complete outsourcing production
 Complete outsourcing production of vehicles
 Complete outsourcing production of machines
 and plants
 Electronic Manufacturing Services, EMS
 (Outsourcing)
 Complete outsourcing production of medical
 technology products
 Complete outsourcing production of household
 and consumer goods
 Complete outsourcing of other products
 Outsourcing production of components and
 assemblies
 Building of special jigs
 Building of special hydraulic or pneumatic
 components and assemblies
 Building of special mechanical individual
 components and assemblies

Building of special precision mechanical or
 optical components and assemblies
 Building of electromechanical components and
 assemblies
 Building of special electrical or electronic
 assemblies
 Building of special cable harness
 Special manufacture of other products
 Waged work for the subcontracting industry
 Waged work in surface treatment (Industrial
 Supply)
 Chrome-free conversion of aluminium surfaces
 Surface coating of magnesium
 Galvanic and thermal coatings for the
 subcontracting industry
 Chemical surface coatings (contract coating)
 PVD surface coatings
 Teflon coatings, fluoropolymer coatings, PTFE
 coatings
 Hard Chroming
 Polishing (Lohnarbeiten in der
 Oberflächenbehandlung (Industrial Supply))
 Etching (machined parts, surfaces)
 Other waged work in surface treatment
 (Industrial Supply)
 Production, processing and manufacture of
 quality tested and finish machined components
 Production services soldering for the
 subcontracting industry
 Production services thermal treatment of
 metals/steel
 Deburring or cleaning of castings for the
 subcontracting industry
 Laser wage work
 Wage work in the sheet metal working
 Contract painting, cathophoretic painting, surface
 coating, electrostatic dip-coating
 Precision grinding, external grinding, indoor
 grinding, circular grinding (Industrial Supply)
 Processing, CNC processing and precision
 engineering of exotic metals
 Outsourcing product development
 Rapid Prototyping, prototype development and
 prototype construction
 Construction and manufacture of models and

tool models

- Other outsourcing product development
- Subcontracting of systems
 - Complete system supply (supplier responsible for design, development and production), sector-independent
 - Sector-independent system supply including responsibility for quality
- System supply in the automotive sector
 - Automotive system supply for structural components, bodies
 - Automotive system supply for engines
 - Automotive system supply for interior fittings
 - Automotive system supply for electrical equipment and electronics
 - Automotive system supply for brakes
 - Automotive system supply for safety systems
 - Other automotive system supply
 - System supply for embedded systems and displays
 - System supply for electronics
 - System supply for mechanical engineering
 - Installations, assembling in the manufacturing chain (Systemzulieferung)
 - Other system suppliers
- Surface Technology
 - Units for cleaning and pre-treatment of surfaces
 - Units and systems for cleaning and pre-treatment of surfaces
 - Pickling plants
 - Chromating plants
 - Degreasing and cleaning plants using organic solutions
 - Degreasing and cleaning plants using aqueous solutions
 - Degreasing systems and pollution abatement systems with hydrous solutions for even surfaces
 - Degreasing systems and pollution abatement systems with hydrous solutions for whole bodies
 - Degreasing systems and pollution abatement systems with hydrous solutions for any surfaces
 - Other degreasing and cleaning plants using aqueous solutions
 - Derusting plants and equipment, descaling plants and equipment

Passivating plants

- Shot-blasting plants using shot-blasting media
 - Shot-peening plants, shot-peening forming plants
 - Sandblasting systems for surface cleaning
 - Glass bead blasting systems
 - Wet blasting equipment, water jet systems for surface cleaning
 - Other shot-blasting plants using shot-blasting media
 - Micro cleaning systems, e.g. with CO2 snow
 - Accessories for units and systems for cleaning and pre-treatment of surfaces
- Operating materials, auxiliary equipment for cleaning and pre-treatment of surfaces
 - Cleaning agents, degreasants
 - Rust removers for surface technology
 - Surface protection agents, corrosion inhibitors
 - Other operating materials, auxiliary equipment for cleaning and pre-treatment of surfaces
- Electroplating technology units
 - Systems for electroplating technology
 - Plants for chemical and electrolytic metal separation on metal
 - Plants for electrolytic oxidation and colouring
 - Plants for electrolytic polishing and deburring
 - Mass electroplating systems and mass electroplating facilities
 - Other electroplating systems
 - Auxiliary systems and auxiliary facilities for electroplating
 - Recovery systems and regeneration systems for electroplating technology
 - Bath heaters for electrodeposition
 - Other auxiliary systems and auxiliary facilities for electroplating
 - Accessories for electroplating technology
- Lacquering systems, enamelling systems, plastic coating systems
 - Units and systems for lacquering, enamelling and coating with plastic
 - Spray coating machines
 - Powder coating systems
 - Other units and systems for lacquering, enamelling and coating with plastic

Complete spray systems for varnishing, enamelling and coating with plastic

- Complete spraying systems for surface coating
- Systems for automatic spray painting
- Other complete spraying systems for surface coating
- Automation equipment for lacquering, enamelling and coating with plastic
- Spray guns and spraying equipment for lacquering, enamelling and coating with plastic
- Washing and cleaning equipment for spray guns
- Accessories for spray guns and spraying equipment for lacquering, enamelling, and plastic coating
- Plants for exhaustion, separation and recovery of coating materials
- Equipment and plants for handling materials and auxiliaries for surface technology processes
- Filters, filtering equipment for surface technology
- Pumps for auxiliary materials for surface technology
- Pumps for materials for surface technology
- Compressors for enamelling machines and coating machines
- Other equipment and systems for material and auxiliaries supply for surface technology
- Drying installations and ovens for surface technology
- Convection dryers for surface technology
- Indirectly heated drying plants
- Directly heated drying plants
- Other drying installations and ovens for surface technology
- Systems for industrial plasma surface technology and laser surface technology
- PVD (Physical Vapour Deposition) coating systems
- Plasma pre-treatment systems, plasma coating systems, plasma surface technology systems
- Laser coating systems, systems for laser surface technology systems, CVD, PVD
- Vacuum components and vacuum systems for surface technology
- Accessories and incidentals for industrial plasma

surface technology and laser-coating technology

- Other systems for industrial plasma surface technology and laser surface technology
- Thermal spraying systems (arc, flame, plasma)
- Microstructure production systems
- Special systems for surface treatment
- Brush machines and brush plants in surface technology
- Mechanical deburring equipment and plants
- Grinding and polishing equipment and plants, belt sanding machines
- Etching plants (chemical engraving)
- Plant and equipment for surface modification, surface patterning and surface finishing with nanotechnology (s.a. Future Lab)
- Technical brushes, abrasives and surface treatment accessories
- Digital printing systems, screen printing systems on aluminium and printing under anodized coating
- Zinc-nickel alloy coating plants, zinc-nickel corrosion protection plants
- Other special systems for surface treatment
- Environmental protection systems and supply systems for surface technology
- Waste-gas cleaning plants for surface technology
- Exhaust systems
- Absorption plants, adsorption plants (waste-gas cleaning)
- Dry dust extraction units for surface technology
- Waste-gas recovery plants
- Thermal/catalytic afterburning systems, waste gas catalysts
- Other waste-gas cleaning plants for surface technology
- Measuring equipment for air pollution control, emission measuring systems
- Effluent-cleaning plants for surface technology
- Oil separators, light-density material traps, grease traps
- Fine filter plants for water
- Sedimentation systems for the water technology
- Waste-to-value recovery of valuable recyclable materials from waste water

Water recovery plants
 Water treatment plants for industrial applications
 Other sewage purification systems for surface technology
 Water treatment plants for surface technology
 Water filtration plants for surface technology
 Drinking water treatment plants
 Other water treatment plants for surface technology
 Precious metal recovery plants
 Cooling systems for surface technology
 Analysis, measuring and testing technology for surface technology
 Measuring and testing equipment for surface technology
 Surface testing instruments
 Roughness testing instruments
 Coating thickness measuring instruments, film thickness measuring instruments
 Other measuring and testing equipment for surface technology
 Laboratory supplies for surface technology
 Coatings, coating materials, paint, paint raw materials, paint manufacturing technology
 Paints
 Coating plastics
 Film, sheeting and laminates for surface technology
 Nanotechnology in surface technology
 Methods and processes in nanotechnology for surfaces
 Nanoanalytics systems, nano components and nano processes for surfaces
 Characterization methods for nano scaled materials
 Nanocoatings
 Nano coatings, according to function
 Antibacterial nano-coatings
 Nano anti-fog coatings
 Nano anti-fingerprint coatings
 Electrically conductive nano-coatings
 Hydrophilic or hydrophobic nano-coatings
 Corrosion-resistant nanocoatings
 Multifunctional nanocoatings

Abrasionproof nanocoatings
 Decorative nano-coatings
 Optical nano-coatings
 Nano-coatings, according to material type
 Powder varnish putty, high temperature putty
 Other lacquers and coating materials
 Services for surface technology
 Consulting, planning, engineering and development for surface technology
 Process optimization in surface technology
 Measuring, testing and analysis for surface technology
 Materials science simulation for surface technology
 Development of recycling and environmental concepts for surface technology
 Other consulting, planning, engineering and development for surface technology
 Waged work for surface technology
 Mechanical surface treatment
 Sand blasting
 Water blasting
 Rolling
 Grinding
 Polishing (Mechanische Oberflächenbehandlung)
 Other mechanical surface treatments
 Chemical electroplating surface treatment
 Phosphatising
 Electropolishing
 Chemical, galvanic metal coating
 Copper plating
 Nickel plating, dull-gloss-semigloss-pearly gloss, chemical nickel plating
 Chromium plating
 Other chemical, galvanic metal coating
 Metallochroming
 Precious metal coatings (except gold and silver)
 Functional corrosion protection for surfaces
 Functional corrosion proofing with zinc
 Functional corrosion proofing with zinc alloys
 Functional corrosion proofing through passivating
 Functional corrosion proofing through sealing
 Cr-VI-free surface coating

Other functional corrosion proofing for surfaces
 Other chemical electroplating surface treatment
 Plasma-assisted, vacuum-assisted and thermal surface treatment processes
 PVD coating (Physical Vapour Deposition)
 CVD coating (Chemical Vapour Deposition)
 Plasma coatings
 Laser surface treatment
 Thermal spraying
 Heat treatments
 Other plasma-aided, vacuum-aided and thermal surface treatment
 Non-galvanic plating
 Lacquering, enamelling, powder coating
 Zinc coating
 Nano-coating
 Sol-gel coatings
 Other non-galvanic surface coating
 Special surface treatments
 Special surface treatments of plastic parts
 Special surface treatment of aluminium
 Grinding and coating of tools (complete solutions)
 Thin-film corrosion proofing
 Surface hardening
 Wear-proof coating
 Paint stripping
 Degreasing
 Washing
 General corrosion proofing
 Other special surface treatments
 Support, after-sales services for surface technology
 Recycling for surface technology
 Documentation, information for surface technology
 Technical publications and publishers for surface technology
 Associations, organizations for surface technology
 Engineering and services for engineered parts and solutions
 Consultancy, planning, engineering and development for engineered parts and solutions
 Optimization of construction processes and

production processes for subcontracted products
 Production engineering consultancy for the supplied product
 Calculation, FEM calculation for the subcontracting industry
 Modelling and simulation for the subcontracting industry (3D modelling)
 Studies and conception of new products for the subcontracting industry
 Product form, design, construction for the subcontracting industry
 Materials and component characterisation for the subcontracting industry
 Project planning, personnel planning and plant planning for the subcontracting industry
 Process planning
 Other consultancy, planning, engineering and development for engineered parts and solutions
 Services for the field of materials technology
 Engineering, development for metallic materials
 Material analysis using material characteristic values and performance characteristics
 Process consultation for the field of materials technology
 Characterisation of materials
 Examination of materials
 Testing of materials and work pieces
 Analyses, damage analyses and certificates for the field of materials technology
 Material development
 Material recycling and upcycling
 Other services for the field of materials technology
 Quality management, materials testing, measuring for engineered parts and solutions
 Database services and information services for the subcontracting industry
 On-line offers and quotations for the subcontracting industry
 Information processing for the subcontracting industry
 Databases for materials information
 Information services for the field of materials technology
 Publishers in the field of iron, steel and

non-ferrous metals, engineering materials
 Trade publications, publishers in the field of engineered parts and solutions
 Organisations, associations for engineered parts and solutions
 Maintenance and repair services
 Life cycle management services (Wartung & Instandhaltungsdienstleistungen)
 Machine upgrades, disassembly, reassembly of machinery
 Diagnostic and measuring technology services in maintenance and repair
 Wear measurings
 Vibration measurings
 Condition monitoring services
 Machine diagnosis services
 Other measuring technology services
 Maintenance and repair services
 Maintenance, sharpening, setting of tools
 Maintenance and repair of machinery and plants
 Service, maintenance, repair service for automation systems
 Maintenance, service and repair for clean-room technology
 Maintenance and repair of buildings, real estate, hall floors
 Maintenance and repair of electrical installations
 Maintenance planning
 Teleservice, remote maintenance for facility management
 Other maintenance and repair services
 Troubleshooting services, fault clearance services, 24h hotlines for machinery and plants
 Consultancy on maintenance and repair, plant management
 Engineering, tele-engineering for maintenance and repair
 Spare parts service for maintenance and repair
 Facility management services
 Technical Facility Management Services
 Commercial facility management
 Logistics
 Cranes, hoists and industrial trucks

Cranes
 Complete cranes
 Bridge cranes
 Overhead travelling cranes
 Iron and steel works cranes
 Rolling mill cranes
 Forge cranes
 Engine house cranes
 Reactor cranes (power plant cranes)
 Other bridge cranes
 Suspension cranes
 Wall travelling cranes
 Swivelling cranes
 Slewing cranes
 Portal cranes
 Storage yard cranes
 Building site cranes
 Portal cranes for shipbuilding
 Other portal cranes
 Container cranes
 Ship unloaders
 Deck cranes
 Electro-hydraulic cranes
 Vehicle-mounted cranes
 Mobile cranes, truck-mounted cranes
 Crawler-mounted cranes
 Truck loading cranes
 Other vehicle-mounted cranes
 Pick & Carry Cranes
 Tool handling cranes
 Other cranes
 Crane assemblies, crane components
 Crane travelling drives
 Hoisting gears for cranes
 Brakes for cranes
 Crane travelling wheels
 Crane controls
 Crane remote control units
 Crane weighers
 Crane cabins
 Other crane assemblies, crane components
 Accessories for cranes and hoists
 Slings means
 Lifting magnets for cranes and hoists
 Grabs for cranes and hoists

Lifting hooks (Zubehör für Krane und Serienhebezeuge)
 Tongs for cranes and hoists
 Vacuum lifters for cranes and hoists
 Vacuum lifting devices
 Vacuum tubing lifters
 Vacuum grabs for sheet metals
 Other vacuum lifters for cranes and hoists
 Clamps, claws for cranes and hoists
 Load turning/diverting equipment for lifting devices
 Lifting crossbeams for cranes and hoists
 Wire-rope pulleys for cranes and hoists
 Control switches for cranes and hoists
 Overload protection equipment for cranes and hoists
 Other accessories for cranes and hoists
 Series lifting equipment and lifting platforms
 Electric hoists
 Electric wire-rope hoists
 Electric chain hoists
 Other electric hoists
 Hoists without electric drive (series hoists), blocks, crab, rams
 Compressed-air hoists (wire-rope hoists, chain hoists)
 Hand-operated pulley blocks
 Multi-purpose hoists (lever hoists, pull-lift hoists, ratchet hoists, tensioning hoists)
 Crabs and suspended trolleys
 Other hoists without electric drive (series hoists), blocks, crabs, rams
 Winches
 Drum winches, hand-driven (incl. rope winches)
 Power driven winches
 Vehicle winches (incl. rope winches)
 (Fördertechnik)
 Draw winches
 Lifting winches
 Rack jacks, screw jacks
 Other winches
 Lifting platforms
 Load lifting platforms
 Scissor-type lifting platforms
 Hydraulic lifting platforms

Vehicle lifting platforms
 Elevating tables
 Industrial lifting platforms
 Hydraulic lifting stands
 Lifting-type loading platforms
 Mast climbing work platforms
 Lifting platforms; other
 Elevators
 Other series lifting equipment
 Platforms lifting persons
 Working platforms
 Scissor-type working platforms
 Steerable platforms
 Snorkel platforms
 Hydraulic working platforms
 Truck working platforms
 Other platforms lifting persons
 Accessories for platforms lifting persons
 Continuous mechanical handling equipment and monorail conveyors
 Continuous mechanical handling equipment
 Conveyor belts and accessories for materials handling technology
 Belt conveyors for bulk materials
 Belt conveyors for unit loads
 Standard belt conveyors for unit loads
 Articulated belt conveyors for unit loads
 Curved belt conveyors for unit loads
 Z-belt conveyors for unit loads
 Plastic link belt conveyors for unit loads
 Other belt conveyors for unit loads
 Accessories for belt conveyors
 Drums for belt conveyors
 Corner transfer units for belt conveyors
 Other accessories for belt conveyors
 Steel belt conveyors
 Conveyor belts
 Telescopic belt conveyors
 Link conveyors and plate conveyors
 Other belt conveyors
 Slides and chutes
 Chain conveyors for unit loads
 Power and free conveyors
 Roller conveyors
 Gravity roller conveyors and non-driven roller

conveyors	Manual high-lift truck (incl. hand-controlled electric devices)
Roller conveyors, live roller conveyors	High-lift trucks with motor drive
Accessories for roller conveyors	Straddle lifts
Accordion roller conveyors, driven and flexible	Side-seat fork-lift trucks
Ball roller conveyors, ball transfer units	Fork-lift trucks
Other roller conveyors	Weighing low lift platform trucks
Accumulating conveyors	Other lift trucks
Monorail conveyors	Stackers for containers, container handling facilities
Special-purpose continuous handling systems	Container stackers for empty containers
Goods distribution systems, sorting systems	Container stackers for full containers
Pallet conveying systems	Reach stackers for containers
Product cooling lines	Container handling equipment, mobile Portainers
Other special-purpose continuous handling systems	Other stackers for containers, container handling facilities
Accessories for continuous conveyors and monorail conveyors	Tractors (Flurförderzeuge)
Conveyor belts for continuous conveyors	Platform trucks
Supporting rollers for belt conveyors	Air bearing transport systems and air bearing equipment
Rollers and small rollers or wheels for continuous conveyors	Driverless shopfloor trucks
Drum motors and geared pulleys for continuous conveyors	Road/Rail vehicles
Other accessories for continuous handling equipment and monorail conveyors	Explosion-proof industrial trucks
Industrial trucks and fork-lift trucks	Other Industrial trucks
Industrial trucks	Stair climber
Fork-lift trucks	Accessories for industrial trucks
Fork-lift trucks with internal combustion engine	Attachments for stacker trucks
Fork-lift trucks with diesel engine	Forks for fork-lift trucks
Fork-lift trucks with gas engine	Hoisting masts and hoisting frames for industrial trucks
Other fork-lift trucks with internal combustion engine	Caster wheels for lifting forks
Fork-lift trucks with electric drive	Fork-lift truck weighing machines
Side-loader fork-lift trucks, side-loader lift trucks	Drive batteries for industrial trucks
Push stackers, reach stackers	Wheels for industrial trucks
Straddle trucks	Tyres for industrial trucks
Radar-aided fork-lift trucks	Spareparts for fork-lifts, industrial trucks
Off-highway stacker trucks	Motive power engineering, axles and gears for industrial trucks
Telescopic stackers	Steering systems for fork-lift trucks, industrial trucks
Truck-mounted fork-lift	Tilt cylinders for fork-lift trucks, industrial trucks
Other fork-lift trucks	Contactors for battery-powered vehicles and power supplies (Zubehör für Flurförderzeuge)
Lift trucks	Diesel particle filters/soot particle filters for
Low-lift platform trucks and commissioners, hand elevating trucks	
Motorised low-lift trucks	

industrial trucks
 Chargers for traction batteries (Zubehör für Flurförderzeuge)
 Monitoring equipment for accumulators, battery monitoring equipment
 Multifunctional displays, display panels for vehicles and industrial trucks
 Rear-view mirrors for fork-lift trucks and industrial trucks, safety mirrors
 Hydraulic fork positioner
 Sideshifters for fork-lift trucks
 Charging plug connectors for batteries
 Control elements for industrial trucks
 Vibration absorbers for fork-lift trucks, industrial trucks
 Electrical components, transformers for industrial trucks
 Seats for industrial trucks, vehicles
 Lighting for industrial trucks, vehicles
 Access control systems and theft protection for industrial trucks, mobile machines
 Other accessories for industrial trucks
 Heavy duty trucks, heavy duty skidding systems
 Driverless/remote controlled transport systems and hand-operated transport equipment
 Driverless/remote-controlled rail-dependent transport systems
 Driverless/remote controlled off-track transport systems
 Magnetically guided driverless transport systems
 Optically guided driverless transport systems
 Driverless/remote controlled off-track transport systems; other
 Autonomous vehicles, autonomously navigating systems
 Parcel robot
 Navigation systems for autonomous, driverless vehicles
 Obstacle recognition systems for driverless vehicles
 Other driverless transport systems, driverless vehicles
 Hand-operated transport equipment and trailers
 Manual trolleys

Lever rollers (dollies, hydraulic multipurpose machine lifters)
 Industrial use, baggage and warehouse trailers
 Carrier trolleys for drag chain conveyors
 Hand-operated transport equipment and trailers; other
 Components of power transmission, hydraulics and pneumatics
 Components of power transmission
 Couplings and clutch units (Komponenten der Antriebstechnik)
 Brakes
 Steering and axles
 Belt and chain drives (Zubehör & Komponenten der Fördertechnik, Antriebstechnik, Hydraulik & Pneumatik)
 Special power transmission equipment
 Electric motors, electric drive systems
 Internal combustion engines, gas engines, diesel engines
 Gear units, geared motors
 Linear motors
 Anti-friction bearings, plain bearings
 Slewing rings, ball bearing slewing rings, roller bearing slewing rings
 Other components of power transmission
 Components of hydraulics
 Hydraulic pumps and hydraulic motors (Komponenten der Hydraulik)
 Hydraulic variable speed drive units (Komponenten der Hydraulik)
 Hydraulic cylinders (Komponenten der Hydraulik)
 Hydraulic fittings
 Complete hydraulic units
 Other components of hydraulics
 Components of pneumatics
 Pneumatic cylinders
 Pneumatic actuators
 Pneumatics fittings, pneumatics valves
 Pneumatics controllers
 Pneumatic equipment
 Pneumatics pipes, hoses and connections
 Compressors, vehicle compressors
 Other components of pneumatics

Accessories for all mechanical handling
 Collision/impact protection for machines and other production equipment
 Power leads and power supplies for materials handling technology
 Conveyor chains (sprocket chains, bush chains)
 Round steel chains for materials handling technology
 Wire ropes for materials handling technology
 Wire-rope accessories for materials handling technology
 Drive controls for materials handling technology
 Bands and belts for materials handling technology
 Hoses, crew connections and couplings
 Chain guides/belt guides
 Hydraulic lines
 Attachment profiles and top hat rails for materials handling technology
 Vehicle equipment and accessories in materials handling technology
 Contactless energy transmission
 Busbar systems
 Radio and infrared remote control systems
 Other accessories for all mechanical handling
 Condition monitoring systems
 Lifts, escalators, moving walkways and cableways
 Port handling equipment
 Complete port handling systems
 Container transshipment systems, loading systems for containers, portainers, stackers for containers, container handling equipment
 Ship loading and ship unloading equipment for bulk goods
 Conveying systems for harbour operation, harbour logistics
 Port handling equipment; other
 Traffic engineering
 Road vehicles, commercial vehicles and accessories
 Commercial vehicles
 Commercial vehicles, lorries, heavy goods vehicles, vans
 Electrically powered vehicles

Other commercial vehicles
 Trailers, bodywork and mounted implements for commercial vehicles
 Trailers
 Bodywork for commercial vehicles
 Vehicle cabs
 Attachments and mounted implements for vehicles
 Other trailers, bodywork and mounted implements for commercial vehicles
 Vehicle equipment and accessories
 Tyres (Zubehör für Fahrzeuge)
 Wheels (Zubehör für Fahrzeuge)
 Anti-skid chains (Zubehör für Fahrzeuge)
 Vehicle seats
 Other vehicle equipment and accessories
 Rail vehicles, railway technology
 Shipbuilding
 Road maintenance equipment and machinery
 Automatic multi-storey car park systems
 Traffic control technology, traffic control systems
 Integrated traffic systems
 Satellite navigation systems (GPS, Galileo)
 Mobile traffic control and information systems
 Satellite traffic telematics (e.g. for fleet/hazardous materials management, theft protection systems, toll systems, etc.)
 Co-operative transport management (goods and personnel transport in networked systems)
 Other integrated traffic systems
 Complete facilities for combined rail/road transport
 Complete belt conveyor systems
 Complete systems for materials handling technology; general
 Conveying systems for cold stores
 Hospital conveying systems
 Conveying systems for packaging technology
 Baggage conveying systems
 Postal distribution and sorting systems
 Complete belt conveyor systems; other
 Warehouse technology & loading technology
 Warehousing systems, shelving systems, shelving technology
 Compartment shelving systems

Small component shelving systems	Four-way sideloaders
Commissioner shelving systems	Industrial trucks with adjustable driver seat
Overall shelving systems (including multi-level)	Other industrial vehicles for storage and retrieval
Shelving systems	Storage and retrieval equipment for shelves and racks
Broad span shelving units	Storage and retrieval equipment for order picking
Special shelving units	Shelf and rack servicing equipment for storage and retrieval
File, archive and library shelving units	Vertical order picking devices
False floors for compartment shelving systems	Storage and retrieval machines for small parts
Other compartment shelving systems	Other storage and retrieval equipment for shelves and racks
Pallet shelving units	High-level open storage systems (silos)
Single-place pallet shelving units	Movable shelving units (drawer, pallet, jib boom types)
Multi-place pallet shelving units	Mobile/roller shelves (archives, offices)
High-level pallet shelving units	Warehouse platforms
Drive-in and drive-through shelving units	System profiles for warehouses, shelving
Heavy-load pallet shelving units	Small-pieces stores
Pallet shelving units; other	Safety nets for high-rack storage systems, storage systems
Cantilever type shelves	Drawer racks for sheet metal
One-sided cantilever type shelves	Rollout racks for long goods
Double-sided cantilever type shelves	Warehousing systems, shelving systems, shelving technology; other
Cantilever racks for sheets, panels	Factory equipment
Cantilever type shelves for long goods	Cabinets (business equipment)
Heavy-load cantilever type shelves	Workshop shelving units
Other cantilever type shelves	Workshop trolleys
Automatic storage systems, dynamic storage systems	Work benches
Flow storage units	Workshop chairs (work chairs, standing tools)
Circumferential shelving systems	Workplaces, ergonomically designed
Automatic small-pieces stores	Industrial cases
Carousel storage systems (horizontal rotating shelving systems)	Other factory equipment
Paternoster systems (vertical rotating shelving systems)	Pallets, bins and containers
Vertical storage systems	Pallets
Other dynamic storage systems	Flat pallets, Euro pallets, top frames, top frame separators
Automatic stacker warehouse systems	Box pallets (wiremesh box pallets)
Satellite storages	Post pallets
Logistics systems for mail-order firms	Plastic paletts
Other automatic storage systems	Pallets with RFID transponders
Industrial vehicles for storage and retrieval	Air freight pallets
High-bay stackers	
Order picking stackers	
Independently-operating warehouse vehicles	
Narrow-aisle stackers	
Three-way stackers	
Lateral stacking trucks	

Other pallets
 Equipment and systems for pallet handling
 Pallet stores (e.g. Euro pallets)
 Pallet changing systems (e.g. Euro pallets)
 Pallet lifting equipment and pallet turning equipment
 Packer materials for paletting glass bottles and plastic bottles
 Other equipment and systems for pallet handling
 Stacking containers and transport containers
 Stacking transport boxes
 Wiremesh containers
 Rack boxes
 Small-pieces magazines
 Containers, freight containers
 Handling containers
 Reusable transport containers
 Safety containers, dangerous goods containers
 Interchangeable containers
 IBCs
 Barrels
 Other stacking containers and transport containers
 Equipment and systems for container handling
 Container tipping equipment (e.g. drum turning equipment)
 Lifting devices, tilting devices and emptying devices for tanks and pallets
 Barrel transport equipment
 Container dumping stations
 Other equipment and systems for container handling
 Systems for storing hazardous goods
 Identification means and display pockets for storage containers and transport containers
 Industrial doors and industrial gates
 Industrial doors
 Industrial gates
 Folding gates
 Roller gates
 Sliding gates
 Quick-opening gates
 Vertical high-speed gates
 Horizontal high-speed gates

Other quick-opening gates
 Gate drives
 Gate remote controls
 Gate seals and gate awning roofs
 Gate curtain systems
 Safety fittings and equipment for industrial gates
 Other industrial gates
 Cleaning devices for warehouses and warehouse fittings
 Sweeping machines
 Scouring machines and polishing machines
 High-pressure cleaners
 Industrial vacuum cleaners
 Cleaning equipment for pallets, boxes and containers
 Coatings and repair material for industrial floors and warehouse floors
 Other cleaning devices for warehouses and warehouse fittings
 Loading technology
 Dock levellers
 Transfer bridges for materials handling technology
 Transfer bridges for loading and reloading
 Other dock levellers
 Loading ramps
 Dock levellers
 Loading locks
 Loading tables
 Loading ramps for materials handling technology
 Loading systems
 Safety fittings and equipment for loading ramps
 Other loading ramps
 Loading systems for bulk goods, containers, etc.
 Loading systems for bulk goods
 Loading systems for containers
 Loading systems for unit loads
 Loading systems for unit loads on ships
 Loading systems for unit loads on trucks
 Loading systems for unit loads; other
 Loading systems for liquid goods
 Loading systems for gaseous goods
 Automated transshipment systems for

containers
 Bulk handling facilities
 Other loading systems
 Robot systems and automatic handling systems for warehousing, loading and unloading
 Order picking systems
 Commissioning technologies, sorting technologies and distribution technologies (Lagertechnik & Verladetechnik)
 Combined packaging systems and order picking systems (Lagertechnik & Verladetechnik)
 Voice-controlled commissioning systems
 Complete order picking systems (Komplettlösungen und schlüsselfertige Anlagen für die Logistik)
 Material supply systems (Lagertechnik & Verladetechnik)
 Robots for picking (Lagertechnik & Verladetechnik)
 Smart commissioning systems (Lagertechnik & Verladetechnik)
 Other order picking systems (Lagertechnik & Verladetechnik)
 General accessories for warehousing
 Packaging and labelling
 Packaging
 Packaging and packaging materials
 Paper, corrugated cardboard and carton
 Synthetic and flexible materials
 Wood
 Metals
 Glass
 Composites
 Big bag, FIBCs, containers
 Film and shrink film
 Air pillows
 Biodegradable materials
 Other packaging and packaging materials
 Transport and Shipping
 Cargo securing and edge protection
 Packaging machines & packaging technology
 Fill, form and closing machines
 Box creation and closing machines
 Packaging lines
 End of line packaging machines

Packaging robots & automation
 Adhesive technology machines
 Packaging robots
 Other packaging machines & packaging technology
 Automatic unpacking
 Scales, dosing equipment & monitoring systems for packaging technology
 Scales, weighing equipment for packaging technology
 Counting machines, counting scales and sensors for packaging technology
 Dosing equipment, volumetric fillers, dosing scales, augur fillers, dosing pumps
 Detection machines
 Other scales, dosing equipment and monitoring systems for packaging technology
 Consumables for for packaging technology
 Tapes
 Protection materials
 Adhesives
 Other consumables for packaging technology
 Machine Components for packaging technology
 Drive and automation systems for packaging technology
 Rollers, cylinders and sleeves
 Tapes and Chains
 Other machine components for packaging technology
 Identification equipment
 Digital solutions and laser technology for labelling
 Labelling machines and labelling systems
 Lettering systems, coding systems
 Security seals
 Holographic labels and materials
 Printers, print machinery and equipment for identification
 Converting and finishing systems
 Control systems and inspection systems for printing technology
 Labelling and identification components and infrastructure
 Consumables for lettering, printing and coding systems

Inks/Varnishes/Coatings/ Lacquers
 Starch, chemical, solvents for printing
 technology, lettering
 Adhesives for printing technology
 Other consumables
 Paper and substrates
 Logistics services
 Logistics management
 Logistics management for commerce
 Logistics management for the automotive
 industry and automobile suppliers
 Logistics management for the food industry
 Logistics management for the consumer goods
 industry
 Logistics management for the electrical and
 electronic industry
 Other logistics management
 Logistics, intralogistics services
 Identification, labelling of goods
 Commissioning of goods
 Packaging of goods
 Information services in the field of logistics
 Operation of storage centres
 Warehouse control for logistics
 Special services for logistics
 Security services in logistics, logistics security
 Other logistics services and intralogistics
 services
 Joint and system logistics services
 Supply Chain Solution Centres
 Complete logistics services for traffic and
 transport
 Distribution logistics services
 Provision services
 Logistics centres
 Complete storage centres and storage systems
 services
 Materials handling management in logistics
 (services)
 Supply Chain Management (SCM) logistics
 services
 Other joint and system logistics services
 eLogistics services
 Transport logistics services
 Multimodal, combined transports

Courier services, express parcel services and
 parcel services
 Letter services
 Goods transport centres, terminal companies
 Multimodal logistics, intermodal logistics
 services
 Road transports, road traffic
 Road transports, road transport companies
 Forwarding agents
 City logistics services, last-mile logistics services
 Rail transports, rail traffic
 Sea transports, shipping
 Ocean shipping transports, sea transports,
 shipping companies
 Roro traffic, roll-on/roll-off transports
 Seaports
 Inland waterway transports, inland waterway
 shipping companies
 Inland ports
 Air transportation, air traffic
 Means-independent transport logistics services
 Customs clearance processing
 Packaging services providers
 Storage, handling and stevedoring services
 Other transport logistics services
 Consultancy, planning, financing services for
 logistics
 Consultancy and planning in the field of
 Intralogistics, Materials Handling Technology and
 Logistics
 Consulting and planning for materials handling
 technology
 Consulting and planning for warehouse
 technology
 Consulting and planning for logistics
 Consulting and planning for intralogistics
 Technology consulting and technical consulting
 in logistics
 Consulting for logistics outsourcing
 Layout planning for material flow
 Planning and consulting for container
 management (container cycles)
 Planning of loading and unloading facilities
 Planning of packaging for logistics
 Planning of complete systems for materials

handling technology, warehouse technology and logistics

Customizing and consulting for user-related software in logistics

Legal consultation and mediation for drawing up contracts with service providers

Process design, process optimization in logistics
Consulting in the field of materials handling technology

Consulting and planning for warehousing
Consulting and planning for logistics management

Project planning for logistic equipments
Other consulting and planning in the field of intralogistics, materials handling technology and logistics

Engineering, development for logistics
Development of logistics strategies
Modelling of logistics systems
Simulation of logistics systems
Development of interfaces for an integrated information platform in logistics

Other engineering, development for logistics
Certification, quality management for logistics
Project management for materials flow and logistics

Project management in materials handling technology

Project management in warehouse technology
Project management in transport logistics
Project management in the field of intralogistics
Other project management for materials flow and logistics

System services and software services for intralogistics and logistics

Custom specific software development
System development and system integration
Re-engineering, system design
Training and seminars
Other system services and software services for intralogistics and logistics

Establishing guidelines for technical logistics

Repair services for logistics
Maintenance and repair of plants, machines and buildings for logistics

Consulting and support of software systems for logistics

Service of technical systems for logistics
Technical services in warehouse technology
Technical services in materials handling technology

Battery changing
Other service of technical systems for logistics
Maintenance of crane systems, cranes and elevators

Service, repair for transport and traffic
Floor flatness tests
Floor flatness improvement, floor repair, floor coating, floor cleaning

Other maintenance and services for logistics
Logistics real estate, logistics locations
Logistics locations, logistics real estate

Logistics locations, commercial areas and industrial parks for logistics real estate (undevelopped)

Logistics real estate for sale
Logistics real estate for lease
Other logistics locations, logistics real estate

Logistics buildings, logistics real estate solutions
Cross docks
Storage houses

Ware houses
Special ware houses (dangerous goods, cold storage, ...)

High bay ware house
Other logisitcs buildings, logistics building solutions

Other logistics real estate
Publishers and media for logistics
Authorities, associations, organisations for logistics

Automation, motion and drives
Electrical components

Electric switches, contactors and components
Coils, capacitors and interference suppressors
Resistors, capacitors, coils, quartzes

Resistors (Baelemente der Mikrowellentechnik)
Capacitors
Coils and magnetic devices (inductive components)

Small transformers	Power relays
Other electromagnetic components	Safety relays
Quartzes and piezoelectric components	Pump safety relays
Microwave components	Other measuring and monitoring relays
Contactors and relays	Parts and accessories for measuring and monitoring relays
Contactors	Modular relay interface modules for industrial electronics
General contactors	Relay modules with mini switching relays
Mini-contactors	Relay terminals
Ancillary contactors	Plug-in relays
Heating contactors	Other parts and accessories for measuring and monitoring relays
Power contactors	Command and signalling relays
High-current contactors	Command equipment
Direct current contactors, direct voltage contactors	Command and signalling devices with bus capability
Contactors for battery-powered vehicles and power supply systems	Limit sensors, limit switches for command and signalling relays
Other contactors	Position switches
Contactor combinations	Cam-operated controllers
Measuring relays and monitoring relays, control switches	Control switches (Industrielle Energietechnik)
Switching relays, auxiliary relays	Joysticks and master switches
Switching relays for pc boards (Meß- und Überwachungsrelais)	Push-buttons
Time relays	Push-button switches
Safety relays	Membrane push-buttons
Voltage relays	Push-buttons
Phase sequence relays	Illuminated push-buttons
Frequency relays	Other push-buttons
Current relays	Other command equipment
Overcurrent relays (Industrielle Energietechnik)	Signalling devices
Differential current relays	Signalling devices (incl. optical and acoustic signalling devices)
Monitor relays	Lamp control modules, LED control modules
Electronic level monitors	Digit displays
Electronic temperature monitoring devices	Text displays for tripping apparatus devices and signalling devices
Posistor tripping equipment	Signal lamps
Twilight switches (Meß- und Überwachungsrelais)	Alarms
Measuring relays	Other signalling devices
Insulation monitoring equipment	Parts and accessories for command and signalling devices
Earth fault relays	Command equipment housings
Special electronic relays	Contacts for command equipment
Industrial relays	Other parts and accessories for command and
Thermostats, temperature switches	
Semiconductor relays	
Controllers (monitoring relays)	

signalling devices
 Lighting media for command systems and signalling systems
 LEDs
 Multi-chip LEDs (multi-LEDs)
 Fluorescent lamps and incandescent lamps
 Other lighting media for control systems and signalling systems
 Other command devices and signalling devices
 Proximity switches
 Inductive proximity switches
 Capacitive proximity switches
 Optoelectronic proximity switches
 Magnetic proximity switches
 Proximity switches on ultrasound basis
 Proximity switches with bus capability
 Proximity switches in areas subject to explosion risk
 Proximity switches with protection class (IP)
 Printed circuit board switches
 Housings (19" housings, switch cabinet systems, air conditioning units)
 19" module systems
 19" cabinets
 19" LAN network cabinets
 19" rack systems
 19" cabinet systems
 Housings and housing accessories for Automation
 Explosion-proof operating equipment for switching systems
 Switch cabinet systems for Automation
 Special housings for Automation
 Cable throughlets for housings and 19" module systems (Gehäuse und Gehäusezubehör für die Automation)
 Switch cabinet air conditioning
 Other housings and housing accessories for Automation
 Electronic components
 Electronic components for SMD technology
 Microelectronic modules, microelectronic components
 Power supply units
 Microelectronics module technology for

telecommunications technologies and communication technologies
 Thermoelectric modules for the cooling switch cabinet cooling modules
 Other microelectronics module technology for professional applications
 Development systems for microelectronics, microprocessors
 Components for microelectronics
 Transistors, diodes
 Optoelectronics
 Optoelectronic components
 Optoelectronic equipment and systems
 Display technology and display system integration
 Liquid crystal displays (LCDs)
 LCD display modules
 LED displays
 OLED displays
 Large-text displays
 Large digital displays
 LED large displays
 Large-digit displays
 Display usage in industrial applications
 Other displays
 Production engineering for electrical engineering and electronics
 Components insertion automation
 Components insertion systems
 Component insertion machines and systems (conventional automatic component insertion machines)
 Automatic component insertion machines for SMDs
 Other component insertion systems
 Feed equipment for automated component insertion
 Production plants for electrical circuits
 Coil technology
 Coil winding machines
 System periphery for coil winding machines
 Impregnating machines, coating systems, casting machines for coil technology
 Special machines for coil technology
 Software and services for coil winding

technology
 Test systems, measuring systems, diagnostic systems for coil technology
 Sensors for monitoring electric machines
 PTC thermistors, thermistors for electric machines
 Other sensors for monitoring electric machines
 Testing devices, automatic test equipment, computer-aided test systems for coil technology
 Other test systems, measuring systems, diagnostic systems for coil technology
 Automatic manufacturing machines in electronics
 Production machines and production equipment for electronics
 Impregnating and drying systems, cast-resin systems for electronics
 Accessories, tools and fabricated materials for electronics manufacture
 Laser lettering devices
 Adhesive dosing devices for electronics
 Adhesives for electronics manufacture
 Other accessories, tools and fabricated materials for electronics manufacture
 Cable processing technology, cable assembly
 Cable assembly machines
 Complete cable assembly machines
 Cable winding and cable binding machines
 Wire cutting machines and devices
 Cutting-to-length machines and insulation stripping machines
 Crimping machines
 (Kabelkonfektioniermaschinen)
 Other cable assembly machines
 Automatic cable assembly machines and cabling systems
 Automatic cable assembly machines
 Cable marking systems
 Wiring systems
 Other automatic cable assembly machines and cabling systems
 Cable assembly machines and cable lug crimpers
 Cable assembly devices
 Insulation stripping tools
 (Kabelkonfektioniergeräte)

Sheath stripping devices
 Cable lug presses
 Compression moulding dies for cable manufacture
 Accessories for cable processing technology
 Shrink products (Kabelbearbeitungstechnik)
 Silicones, silicone rubber for cable processing technology
 Casting compounds and casting resins, and cable fittings
 Electrical insulation material
 Insulated hoses for cables
 (Kabelbearbeitungstechnik)
 Insulating tapes (Kabelbearbeitungstechnik)
 Marking tapes, cable markers
 Wiring tools
 Other cable tools, cable processing devices and processing tools
 Other accessories for cable processing technology
 Inspection and testing systems for the manufacturing technology of electrical engineering and electronics
 Testing devices for the manufacturing technology of electrical engineering and electronics
 High-voltage automatic testing devices
 Optical inspection systems for electrical engineering and electronics manufacture
 Other testing devices for the manufacturing technology of electrical engineering and electronics
 Automated testing devices for the manufacturing technology of electrical engineering and electronics
 Fully-automatic test stations (hardware and software) for transformers, contactors, coils, capacitors, etc.
 Calibration in testing technology, including auto-calibration (Fertigungstechnik für die Elektrotechnik und Elektronik)
 Other automated testing devices for the manufacturing technology of electrical engineering and electronics
 Production systems for transformers/transformer cores

Measuring technology, sensors, open and closed loop technology

Controls, control systems and technology

Controls

Numerical and programmable controls

- NC systems
- CNC control systems
- CNC control systems with bus connection
- Programmable Automation Controllers (PAC)
- Fixed-programmable control systems
- Fault-tolerant controllers

Programmable logic control systems (PLCs)

- Complex programmable logic controls

PLCs/high-power PLCs

- Medium programmable logic controls (PLCs)
- Mini programmable logic controls (miniature PLCs/mini PLCs)
- Decentralized programmable logic controls (PLCs)
- PLC networks
- PLCs with built-in industrial PC
- PC-based PLC systems
- Programmable logic controls with fuzzy logic (PLCs)
- Soft PLCs (PLC software)

Accessories and modules for programmable logic control systems (PLCs)

- CAN modules and systems for programmable logic controls (PLCs)
- Profibus modules and systems for programmable logic controls (PLCs)
- Other bus modules for programmable logic control systems (PLCs)
- PLC visualization systems
- Peripheral devices (e.g. analyzers, operating and display equipment) for programmable logic controls (PLCs)
- Other accessories and modules for programmable logic control systems (PLCs)
- Failsafe PLCs

Control systems; special

- Lighting control systems
- Stepping motor controls and switchgear

Radio remote control systems

- Radio remote control systems

- Radio remote control systems for machinery
- Radio remote control systems for areas subject to explosion risk
- Radio control equipment for cranes
- Radio control systems for locomotives
- Other radio remote control systems
- Electropneumatic and electrohydraulic control systems
- Other electrical and electronic control systems
- Peripherals and accessories for control systems
- Terminals for controls
- Operator terminals for controls
- Full graphic-capability operator terminals for controls
- Touch panels for controls
- Flat operating panels for controls
- Operator panels for controls
- Other terminals for controls (e.g. hand-held operating equipment)
- Parts and accessories for control systems
- Text displays for control systems
- Flexible interface systems for areas subject to explosion risk (control systems)
- Cables and leads for control systems
- Halogen-free cables and wires for control systems
- Other parts and accessories for controls
- Regulating devices and controls
- Automatic control systems
- Universal automatic control systems
- Process controls
- Automatic control systems for special applications
- Digital regulating systems
- Component systems (open and closed-loop systems)
- Other automatic control systems
- Controllers and control systems, programming devices
- Automatic controls
- Measuring controllers
- Electronic On/Off controllers
- PID controllers
- Universal controllers with bus connection
- Process controllers

Temperature controllers (Industrial Automation)
 Voltage regulators for step transformers
 Pressure regulators (Industrial Automation)
 Other controllers
 Electronic control systems
 Set-point value transmitters and actual value transmitters
 Programmable control systems
 Special process automation controls and individual controllers
 Time and sequence control systems; batch control systems
 Hydraulic controller systems
 Single loop controllers for process automation
 Pressure controllers for process automation
 Flow controllers for process automation
 Temperature controllers for process automation
 Other single loop controllers for process automation
 Parts and accessories for automatic controls and automatic control systems
 Control technology, human machine interface, HMI
 Control systems
 Production control systems
 Process control systems (PCSs), distributed control systems (DCSs)
 Management control systems and process control systems
 PLC-aided control systems
 Security control systems
 Turnkey process I&C systems for industrial applications
 Process visualization systems (s.a. Digital Ecosystems)
 Other control systems
 Components and accessories for industrial control systems and process control systems
 Visualization equipment, multimedia
 Visualization computers and visualization systems
 Virtual reality based visualization systems
 Other visualization systems
 Operating systems and monitoring systems
 Display terminals for control systems

Single operator stations and panels
 Other operating systems and monitoring systems
 Panel board devices, displays, display modules
 Analog displays
 Digital displays
 Alphanumeric displays
 Big screen displays
 Counters and integrators
 Software tools and application software for human machine interfaces (HMI), control systems
 Industrial automation solutions, solutions for open- and closed-loop control technology
 Control systems for assembly, handling and robotics
 Controls for assembly bays
 General robot control systems
 Positioning controls (Steuerungen für Montage, Handhabung & Robotik)
 Highly developed positioning controls (Servos, Advanced Motion Control Products)
 Pneumatic controls and regulators
 Programmable control systems for assembly, handling and robotics
 PC-based control systems for assembly, handling and robotics
 Other control systems for assembly, handling and robotics
 Controls for special industrial applications
 Axis control systems
 Modular multi-axis controls
 Contouring and path controls
 Sequence controls (Steuerungen für besondere industrielle Anwendungen)
 Monitoring controls
 Fieldbus security controls
 Controls for A.C. drives via bussystems
 Customized controls
 Industrial control technology according to application areas
 Control systems for power stations
 Control equipment for energy generation
 Network control systems for gas supply systems
 Power system controls
 Other industrial control technology

Task-specific control applications

Constant voltage control of transformers with step switch

Other task-specific control applications

Controls and measuring systems for material flow and logistics

Control engineering for materials flow and logistics

Controls for materials flow engineering

Controls for materials handling technology

Controls for warehouse technology

Warehouse automation systems

Complete control systems for intralogistics

Mobile automation systems for material flow and logistics

Other control engineering for materials flow and logistics

Occupational safety systems for intralogistics

Personnel protection systems for intralogistics

Machine protection systems for intralogistics

Protection systems for industrial trucks and transport systems

Occupational safety systems for intralogistics; other

measuring systems for unit loads measuring, profiles measuring, parcels measuring

Other controls and measuring systems for material flow and logistics

Decentralised automation systems with client-server architecture and embedded systems

Turnkey system solutions in the field of industrial automation

Complete flexible automated manufacturing plants

Measuring technology and testing technology for automation

Measuring of electrical values

Voltmeters, ammeters

Digital voltmeters

Current meters

Split-core current transformers

Current transformers

Other voltmeters, ammeters

Multimeters

Digital multimeters

Hand-held multimeters

System-integrated multimeters

Clip-on multimeters

Other multimeters

Other measuring equipment, calibration equipment and systems

Precision measuring instruments for electric variables

Power measuring instruments

Calibrating instruments and calibration systems for electric variables

Transient recorders

Other measuring equipment, calibration equipment and systems

Recording measuring equipment and instruments

Electricity meters

D.C. meters

A.C. meters

3-phase meters

Measuring of geometrical and mechanical values

Length measuring instruments, distance measuring instruments, thickness measuring instruments

Optical length measuring equipment

Magnetic length measuring equipment

Digital-absolute distance measuring systems

Distance measuring systems for hydraulic and pneumatic cylinders

Distance measuring devices

Optical distance measuring devices

Thickness meters

Laser measuring instruments for geometrical parameters (spacing, distance, thickness)

Other length measuring instruments, distance measuring instruments, thickness measuring instruments

Measuring for surface roughness, form and force

Measuring devices for shape deviations and dimensions

Devices for measuring force, pressure, mass, extension, and oscillation

Vibration measuring machines

Other surface measuring devices for roughness, shape and force

Measuring of velocity and acceleration
 Velocity measuring instruments
 Acceleration measuring instruments
 Electronic weighing equipment
 Torque measuring devices and testing devices
 Torque measuring instruments
 Electronic torque testing systems
 Torque wrenches
 Speed measuring instruments
 Limit switches for speed
 Rotary pulse generators (Drehzahl-Messtechnik)
 Analog and digital speed indicators
 Speed (rpm) monitoring devices
 Other speed measuring instruments
 Other measuring of geometrical and mechanical values
 Measuring optical and photometric values
 Light metrology, photometer, luxmeter and spectroscopy
 UV measuring equipment and IR measuring equipment
 Optical measuring technology and testing technology
 Measuring of physical, chemical and biological values
 Materials testing equipment
 Destructive materials testing and construction components testing
 Non-destructive materials testing and construction components testing
 Oil test devices
 Ultrasonic testing equipment
 Other material testing devices
 Density measuring devices, viscosimeters
 Measuring of acoustic values
 Surface-borne noise measuring devices
 Sound level meters
 Ultrasonic measuring instruments
 Other acoustic measuring instruments
 Flow and filling level measuring
 Flow measuring devices
 Filling level measuring devices
 Moisture measuring
 Moisture meters
 Air humidity meters

Capacitive; humidity meters
 Humidity sensors
 Electrochemical measuring instruments
 O2 measuring instruments, oxygen measuring instruments
 Other electrochemical instruments
 Leakage meters
 Pressure measurement
 Pressure gauges
 Differential pressure measuring devices, differential pressure test devices
 Other measuring of physical, chemical and biological values
 Measuring of thermal values
 General temperature measuring devices
 Digital temperature measuring instruments (temperature monitoring devices)
 Non-contact temperature measuring instruments
 Non-contact infrared temperature measuring instruments for industrial use
 Non-contact infrared temperature measuring instruments for mobile use
 Temperature measuring instruments with thermocouples
 Calibrators for temperature measuring instruments
 Thermoanalytic measuring equipment, heat image cameras
 Measuring instruments for quantities of heat, heat counters
 Measuring of other values
 Time and frequency measuring
 Harmonic analyzers
 Network analyzers
 Three-phase calibrators
 Other industrial chronometers, frequency meters
 Counters
 Electronic counters
 Pulse counters
 Digital counters
 Magnetic testing devices, testing devices for permanent magnets (magnetic field detectors)
 Electrical measuring equipment for special

applications

- EMC measuring instruments, harmonic distortion measuring instruments and LCR measuring instruments
- Built-in measuring instruments
 - Digital built-in measuring instruments
 - Analog built-in measuring instruments
- Other measuring configurations
 - Continuity testers, voltage testers
 - Instruments for fault locating
 - Measuring equipment and testing equipment for transient network surge voltages, harmonics, and for dielectric strength of power electronics
 - Instruments for measuring the network quality
- Measuring amplifiers, measuring transducers
 - Measuring amplifiers
 - Isolating amplifiers
 - Measuring transducers
 - Measuring transducers/isolating transformers for standard busbars, PCBs, measuring heads
 - Parts and accessories for measuring amplifiers and measuring transducers
- Measuring transformers
 - U/I-converters - I/U-converters
 - U/F-converters - F/U-converters
 - A/D-converters - D/A-converters (Meßwandler)
 - Current transformers and voltage transformers for high voltage
 - D.C. transformers
 - Temperature measuring transducers
 - Current transformers and voltage transformers for low voltage
 - Other measuring transformers
 - Parts and accessories for measuring transformers
- Industrial measuring data acquisition and measuring data processing
 - Measuring generators, signal generators, calibration current sources
- Measuring data acquisition, measuring acquisition
 - Measuring recording equipment
 - Data loggers
 - Wireless measured value recording systems
 - General measuring acquisition systems

(measuring data acquisition systems)

- Measuring data acquisition with fieldbus
- Customized measuring data acquisition systems
- Bus components for measuring technology
- Linear encoders (measuring data acquisition systems)
- Computer-aided measuring acquisition and processing;
 - Mobile measuring data systems
- Measuring transmission systems
 - Measuring transmission systems (Mess- und Regeltechnik)
 - Combined contact-free data transfer and energy transfer (rotary connectors)
- PC measuring equipment
 - PC measuring data acquisition systems
 - PC software for measuring data acquisition, analysis and graphics
 - Application-specific measuring software (PC-Meßtechnik)
 - Programmable measuring equipment and systems
- Laser-aided measuring technology, industrial measuring technology
- 2D measuring technology
 - Angle measuring equipment
 - Optical 2D scanners, laser systems for two-dimensional surface measuring
- 3D measuring technology
 - Stationary and mobile multicoordinate measuring technology
 - Position measuring instruments (3D-Messtechnik)
 - Laser systems for three-dimensional surface measuring (surface testing)
 - 3D object surveying
 - Coordinate gauges
- Laser-assisted measuring procedures, test procedures and analysis procedures
 - Laser optical measuring procedures and test procedures for production and environmental technology
 - Laser-assisted measuring technology in manufacturing and quality assurance
 - Mobile laser-assisted measuring equipment

Other laser-assisted measuring procedures, test procedures and analysis procedures
 Measuring and testing technology according to application areas
 Measuring technology and testing technology for telecommunication
 Measuring technology and testing technology for information technology
 Measuring technology and testing equipment for laboratories
 General measuring equipment and analysis equipment for laboratories
 Testing equipment and instruments for laboratory use
 Computer-aided inspection systems
 Automatic test systems (ATE systems)
 Programmable testing equipment
 Computer-aided inspection and test systems
 Testing equipment for electric motors and generators
 Testing devices for components and functions
 Testing equipment for electric and electronic components, modules and systems
 Press test stand
 Leak testers
 Testing equipment for other safety applications
 Measuring technology and testing technology in the field of assembly, handling and robotics
 Measuring technology and testing technology in quality assurance
 Measuring automation/measuring robots
 Measuring systems for quality assurance
 X-ray inspection systems in quality assurance
 Testing equipment for measuring instruments, sensors and controllers
 Testing equipment for manometers and pressure measuring devices
 Testing equipment for thermocouples and temperature measuring devices
 Testing equipment for electricity meters
 Other testing facilities for measuring equipment, sensors and actuators
 Measuring technology and testing technology with radiation systems
 Calibration standards, reference standards,

calibration equipment
 Calibration standards, reference standards
 Calibration equipment
 Calibrators
 Test chambers, cabinets, rooms
 Industrial image processing
 Cameras and sensors for image processing
 Standard video cameras for image processing
 High-resolution cameras for image processing
 Special cameras for image processing
 Intelligent cameras, intelligent PC cameras, intelligent line cameras for image processing
 Infrared cameras for image processing
 Surveillance cameras for image processing
 Optical identification systems for image processing
 Other special cameras for image processing
 Sensors for image processing
 Identity recognition, code recognition sensors
 Sensors for object recognition, object comparison
 Sensors for recognising object presence, object absence
 Object surveying; sensors for
 Sensors for relative movement analysis
 Other sensors for image processing
 Distance scanners for image processing
 Components and accessories for image processing
 Vision lighting systems
 Other components and accessories for image processing
 Image processing systems and image processing processors
 Task-specific image processing applications
 Optical identification systems
 Optical identification systems for component identification
 Optical identification systems for pattern recognition and identification marking recognition
 Other optical identification systems
 Image processing systems for quality assurance
 Image processing systems for quality assurance
 Image processing systems for surface inspection

Image processing systems for non-contact measuring instruments

Image processing systems for optical 2D measuring

Image processing systems for optical 3D measuring

Image processing systems for colour inspection and colour image processing

Image processing systems for inspection of correct assembly and completeness

Image processing systems for adhesive coating inspection

Image processing systems for fracture detection

Application-specific image processing system solutions for non-contact measuring and quality assurance (Bildverarbeitungssysteme für die Qualitätsprüfung)

Other image processing systems for quality assurance

Image processing systems for industrial applications

Image processing systems for production automation

Image processing systems for pick & place applications

Image processing systems for positioning

Image processing systems for the controlling of robots and of machines

Image processing systems for object recognition

Other task-specific image processing applications

Image processing systems according to application areas

Image processing systems for general industrial applications

Image processing systems for general machine building

Image processing systems for the automotive industry

Image processing systems for the metal producing and working industry

Image processing systems for the packaging industry

Image processing systems for the provisions industry/foodstuffs industry

Image processing systems for the plastics industry

Image processing systems for the timber and woodworking industry

Image processing systems for the paper industry and printing industry

Image processing systems for the pharmaceutical industry and medical technology

Image processing systems for other application areas

Sensors and actuators

Sensor technology

Industrial products - sensors and sensor systems

Sensors for geometrical measured variables

Sensors for angle, inclination, orientation

Sensors for length, paths

Sensors for length, paths (measuring range < 0.001 m)

Sensors for length, paths (measuring range < 0.01 m)

Sensors for length, paths (measuring range < 0.1 m)

Sensors for length, paths (measuring range < 0.5 m)

Sensors for length, paths (measuring range < 5 m)

Sensors for length, paths (measuring range \geq 5 m)

LVDT sensors, Linear Variable Displacement Transducers

Sensors for space, distance, sag

Sensors for intervals, distances, sag (measuring range < 0.001 m)

Sensors for intervals, distances, sag (measuring range < 0.01 m)

Sensors for intervals, distances, sag (measuring range < 0.1 m)

Sensors for intervals, distances, sag (measuring range < 0.5 m)

Sensors for intervals, distances, sag (measuring range \geq 0.5 m)

Sensors for filling and other levels (level monitors, float switches)

Sensors for filling and other levels (tolerance < 0.5 %)

Sensors for filling and other levels (tolerance < 1 %)
 Sensors for filling and other levels (tolerance >= 1 %)
 Sensors for diameter, particle size, size
 Sensors for presence
 Motion sensors
 Proximity switches (Industrie-Sensoren und Sensorsysteme)
 End-of-travel switches
 Sensors for volume
 Sensors for position (surface/spatial)
 Sensors for contour (surface/spatial)
 Other sensors for geometric measured variables
 Sensors for mechanical measured variables
 Sensors for force
 Sensors for mass, weight, weighing, metering
 Sensors for pressure (relative)
 Sensors for pressure (relative) (tolerance < 0.1 %)
 Sensors for pressure (relative) (tolerance < 0.5 %)
 Sensors for pressure (relative) (tolerance < 1 %)
 Sensors for pressure (relative) (tolerance >= 1 %)
 Sensors for absolute pressure (Sensoren für mechanische Messgrößen)
 Sensors for very low pressures < 20 mbar
 Sensors for hyper-pressures > 1000 bar
 Sensors for differential pressure
 Sensors for differential pressure (tolerance < 0.5 %)
 Sensors for differential pressure (tolerance < 1 %)
 Sensors for differential pressure (tolerance >= 1 %)
 Sensors for vibration damping
 Sensors for viscosity
 Sensors for torque
 Sensors for torsion, torsional moment, reaction moment
 Other sensors for mechanical measured variables
 Sensors for dynamic measured variables
 Sensors for acceleration, vibration, shock
 Sensors for oscillation, vibration displacement,

vibration speed
 Sensors for movement
 Sensors for flow
 Sensors for mass rate of flow, mass flow (in gases)
 Sensors for mass rate of flow, mass flow (in fluids)
 Sensors for volumetric rate of flow, volumetric flow (in gases)
 Sensors for volumetric rate of flow, volumetric flow (in fluids)
 Sensors for flow rates (in gases)
 Sensors for flow rates (in fluids)
 Sensors for angular acceleration, rotational acceleration
 Sensors for revolution speed
 Other sensors for dynamic measured variables
 Sensors for thermal and calorific measured values
 Sensors for temperature (contact) (tolerance < 1 %)
 Resistance thermometers (tolerance < 1 %)
 Thermocouples (tolerance < 1 %)
 Temperature sensors, PT 100, posistors, etc. (tolerance < 1 %)
 Sensors for temperature (contact) (tolerance >= 1 %)
 Resistance thermometers (tolerance >= 1 %)
 Thermocouples (tolerance >= 1 %)
 Temperature sensors, PT 100, posistors, etc. (tolerance >= 1 %)
 Non-contact sensors for temperature, infrared radiation
 Sensors for temperature distribution (e.g. infrared cameras)
 Other thermal measured variables
 Other sensors for calorific measured variables
 Sensors for climatic measured variables
 Sensors for relative humidity (gas humidity)
 Sensors for absolute humidity (gas humidity), dewpoint
 Sensors for evaporation, precipitation
 Sensors for indoor environment
 Sensors for dust density, particle density, soot density

Sensors for wind velocity
 Sensors for barometric pressure, air pressure
 Other sensors for meteorological measured variables
 Other sensors for climatic measured variables
 Sensors for optical and acoustic measured variables
 Sensors for radiation, radiation energy, radiation density
 Sensors for turbidity, absorption, transmission
 Sensors for reflexion, remission, gloss
 Sensors for colour values
 Sensors for infrared measuring
 Sensors for sound, acoustics
 Sensors for structure-borne noise
 Sensors for ultrasound
 Other sensors for optical measured variables
 Other sensors for acoustic measured variables
 Sensors for electrical measured variables (not stand-by measuring transducers)
 Sensors for voltage
 Contact sensors for electric current
 Non-contact sensors for electric current
 Sensors for electrical/magnetic field strengths
 Other sensors for electrical measured variables
 Sensors for chemical and biological measured variables
 Sensors for pH value
 Sensors for electrochemical conductivity
 Sensors for redox potential
 Sensors for hydrogen
 Sensors for oxygen (gaseous)
 Sensors for carbon oxides (CO₂)
 Sensors for methane
 Sensors for hydrocarbons
 Sensors for multi gas analysis (electronic nose)
 Other sensors for gas-analytic values
 Sensors for water content in oil
 Other sensors for biological variables (biosensors)
 Other sensors for chemical measured variables
 Diagonal photoelectric barriers
 General photoelectric barriers
 Diagonal light barriers
 Frame light barriers

One-way light barriers
 Reflection light barriers
 Laser light barriers
 Laser reflection light barriers
 Photoelectric sensors
 Fiber-optic sensors
 Photoelectric barriers (photoelectric security barriers)
 Special sensor systems and sensors
 Radar distance sensors
 Hall effect sensors
 Magnetic sensors (squids)
 Sensors for gas analytics and fluid analytics
 Sensor actuator boxes
 Rotary transducers and resolvers (Spezielle Sensorensysteme und Sensoren)
 Rotation rate sensors
 Steering angle sensors
 Sensors on ultrasound basis
 Magnetic shaft encoders
 Linear measuring systems and rotary measuring systems, magnetic
 Other special sensor systems and sensors
 Peripheral sensor equipment and sensor components
 Specific sensor technology components (current bushings, plugs, casings, etc.)
 ASICs for sensors
 Power supply units for sensors/sensor systems
 Data loggers for sensors
 Other peripheral sensor equipment and sensor components
 New developments in sensor technology
 Sensors according to task-specific application areas
 Machine integrated sensor technology for assembly, handling and robotics
 Machine integrated sensors, sensor systems and sensor modules for assembly, handling and robotics
 Sensors for assembly, handling and robotics
 Proximity switches for assembly, handling and robotics
 Photoelectric barriers for assembly, handling and robotics

Sensors for customer-specific industrial applications

- Sensors for manufacturing technology
- Sensors for process technology
- Sensors for other tasks

Actuator technology

- Linear motors (actuator technology)
- Drives and manipulators for actuator technology

Servo components

- Metering systems, floodgates, valves and controls (actuators) for solids

Final control elements (actuators) for flowing material

- Control valves for flowing material
- Butterfly valves for flowing material
- Dosing equipment for flowing material, pumps
- Other final control elements (actuators) for flowing material
- Rotary positioners

New developments in actuator technology

- Local intelligence in actuator technology, actuators
- New developments and trends in actuator technology

Micro-actuators

- Piezoelectric actuators
- Shape memory actuators
- Low-power electromagnetic actuators
- Other microactuators

Accessories for final control elements (actuators)

Sensor/actuator bus systems

Complete sensor/actuator bus systems

- Sensor/actuator bus systems for building automation
- Sensor/actuator bus systems for machines and system manufacture
- Other sensor/actuator bus systems
- Sensor/actuator interface systems (actuator sensor interface/AS-I)

Interfaces, parts and accessories for sensor/actuator bus systems

- Sensor/actuator interface modules
- Sensor/actuator interfaces for I/O modules in IP

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- Sensor/actuator interfaces for incorporating pneumatic drives
- Sensor/actuator bus components for the input/output level
- Other interfaces, parts, and accessories for sensor/actuator bus systems
- Safety-oriented electric and electronic engineering products and components for machine and plant safety
- Safe actuators
- Safe sensors
- Safe control systems
- Safety-oriented communication
- Adaptronics systems and solutions (s.a. Futura Lab)
- Special sensors and actuators for process automation
- Sensors, measuring equipment and transducers for flow, flow velocity
- Sensors, measuring equipment and transducers for flow, flow velocity according to the suspended particle principle
- Sensors, measuring equipment and transmitters for flow, flow velocity according to the differential pressure principle
- Sensors, measuring equipment and transducers for flow, flow velocity according to the vortex principle
- Sensors, measuring equipment and transducers for flow, flow velocity according to the Coriolis principle
- Sensors, measuring equipment and transducers for flow, flow velocity according to the ultrasonic principle
- Calorimetric sensors, measuring equipment and transducers for flow, flow velocity
- Magnetic-inductive sensors, measuring equipment and transducers for flow, flow velocity
- Other sensors, measuring equipment and transducers for flow, flow velocity
- Sensors, measuring equipment, mass flow transmitter, quantity for gases, liquids, solids
- Sensors, measuring equipment and transducers for level

Sensors, measuring equipment and transducers for level according to the floating principle

Sensors, measuring equipment and transducers for level according to the pressure principle, differential pressure principle

Sensors, measuring equipment and transducers for level according to the vibration principle

Sensors, measuring equipment and transducers for level according to the ultrasonic principle

Sensors, measuring equipment and transducers for level according to the conductivity principle

Capacitive sensors, measuring equipment and transducers for level

Sensors, measuring equipment and transducers for level according to the radar principle

Sensors, measuring equipment and transducers for absolute humidity (in gases, liquids, solids)

Sensors, measuring transducers for vapour concentration for gaseous substances

Sensors, measuring transducers for vapour concentration for liquid substances

Alarm contacts, monitors, limiters

Proximity switches and limit switches with safety function

Overspeed monitors, revolution monitors

Level switches and monitors, level limiters

Pressure and differential pressure switches, partial vacuum monitors

Flow control monitors and flow monitors, flow limiters

Temperature monitors

Current and voltage monitors

Gas detectors and gas monitoring devices

Other alarm contacts, monitors, limiters

Pneumatic measuring equipment and transducers

Analyzers

Process analyzers for gases

Process analyzers for liquids and viscous substances

Measuring equipment for conductivity and specific accessories

Measuring equipment for liquid analysis with electrochemical auxiliary reactions (including amperometric and coulometric oxygen sensors)

Analyzers for liquids utilizing

Turbidity meters (Prozessanalysengeräte für Flüssigkeiten und viskose Stoffe)

Other measuring equipment for liquid analysis

Instrumentation for laboratory measuring and analysis

Dosing equipment, accessories for analytics

Test gases, test gas generators, test gas injectors

Calibration equipment (for operational use)

Pumps (analysis equipment)

Thermostats, coolers for laboratories

Motion drives, servo drives, actuator drives

Actuator drives for process automation

Electric actuator drives

Electromechanical actuator drives

Pneumatic actuator drives

Other actuator drives

Servo drives

Variable speed drives (actuator drives)

Components and accessories for actuator drives

Electric motors (actuator drives)

Incremental rotary position encoders

Braking systems and motors (actuator drives)

Gearing units and motors (actuator drives)

Positioners, electropneumatic (i/p) positioners for actuating drives

Other motion drives, servo drives, actuator drives

Hygienic design in automation

SCADA and monitoring systems for process automation

Monitoring systems, safety systems and SCADA systems for the process industry

Industrial security systems for the process industry

Diagnosis systems for the process industry

Remote monitoring systems for the process industry

SCADA systems (Supervisory Control and Data Acquisition) for the process industry

Alarm systems for the process industry

Data acquisition systems for the process industry

SCADA software (Supervisory Control and Data Acquisition) for the process industry

Other monitoring systems, safety systems and SCADA systems for the process industry
 Pattern recognition and fault recognition for process automation
 Camera measurement systems for process automation
 Fault recognition systems for process automation
 Analyzer systems
 Components & systems of drive technology
 Electric motors, frequency converters and magnetic technology
 Industrial motors, electric motors
 Normal type industrial motors
 Single-phase capacitor motors, industrial motors
 Standard 3-phase motors (squirrel cage)
 Standard 3-phase motors (slip-ring)
 Trans-standard 3-phase motors (squirrel cage)
 Trans-standard 3-phase motors (slip-ring)
 3-phase motors for high voltage, medium voltage
 3-phase synchronous motors
 Direct-current collector motors for low voltage
 Direct-current collector motors for medium voltage
 Brushless direct-current motors
 High-efficiency and premium efficiency motors, IE2, IE3, IE4
 Other normal type industrial motors
 Special type industrial motors
 Direct-current motors with electronic commutation (brushless D.C. motors), industrial motors
 Traction motors
 Brake motors
 Geared and drum-type motors
 Explosion-proof motors
 Firedamp-proof motors
 Linear motors
 Extrarobust motors (e.g. for rolling mill, roller table, cutter drives and excavator drives)
 Motors for fans
 Vibrator and shaker motors
 Spindle motors
 Asynchronous main spindle motors

Other special type industrial motors
 Servomotors
 A.C. servomotors
 Three-phase A.C. servomotors
 D.C. servomotors
 Frequency converters, electronic drive systems, electric drives
 Frequency converters, current conversion equipment and components
 Frequency converters for three-phase drives from 5 kW
 Frequency converters for three-phase drives up to 5 kW
 Mini frequency converters
 Frequency converters with servo properties
 Frequency converters with extended control functions
 Frequency converters with sensor-free flow vector control (sensor-free field orientation)
 Frequency converters/servo-controllers with digital communications unit (bus capability)
 Smooth start devices for asynchronous motors
 Electronic starters for electric drives
 Braking equipment for electric drives
 Starting current limiters for large synchronous motors and asynchronous motors
 Accessories for frequency converters
 Adapters and function models for frequency converters
 EMC network filters for frequency converters
 Intermediate circuit chokes for frequency converters
 Other accessories for frequency converters
 Low-loss frequency converters
 Quiet frequency converters and power electronics components
 Other frequency converters, current conversion equipment and components
 Electrical drive control systems
 Servo-drive control units for 3-phase drives (ASM/synchronous)
 Servo-drive control units for brushless motors (ECM)
 Servo-drive control units for direct-current motors

Engine controllers
 Engine starters
 Other electrical drive control systems
 Parts and accessories for electrical drive control units
 Speed-regulated electric drives
 Variable-speed D.C. motors
 Servo drives (D.C.)
 Positioning drives (D.C.)
 Variable-speed A.C. and 3-phase motors
 Servo drives (A.C. current and three-phase current)
 Positioning drives (A.C. current and three-phase current)
 Linear motors/electro-cylinders
 Linear actuators
 Digital drive systems
 Electronic drive systems
 Electro-mechanical drives (Drehzahlgeregelte Elektroantriebe)
 Other speed-regulated electric drives
 Compact drives
 Direct current drives
 Systems and components for safe power transmission
 Electromagnetic equipment, magnets
 Electromagnetic equipment
 Electromagnetic couplings and brakes
 Permanent magnetic couplings and brakes
 Electromagnetic D.C. braking equipment
 Reciprocating magnets, electromagnetic driving devices
 Solenoid valves
 Actuating magnets and locking magnets
 Magnetizing devices and demagnetizing devices
 Load lifting magnets (Elektromagnetische Geräte)
 Separating magnets
 Solenoid valve magnets for pneumatics
 Control magnets and proportional magnets for hydraulics
 Other electromagnetic equipment
 Permanent magnets
 Hard ferrite magnets
 Samarium-cobalt magnets

Neodym ferrous boron magnets
 Plastics-bonded magnets
 Aninico magnets
 Other permanent magnets
 Parts and accessories for electromagnetic equipment
 Small motors and miniature motors
 Small motors for general application (up to 750 W)
 Single-phase capacitor motors (up to 750 W)
 3-phase motors (up to 750 W)
 D.C. collector motors (up to 750 W)
 Small geared motors (Kleinmotoren für allgemeine Anwendung (bis 750 Watt))
 Stepping motors
 Split-pole motors
 Synchronous motors (up to 750 W)
 Servomotors (up to 750 W)
 Servomotors with positioning system (up to 750 W)
 Small motors, all-current (A.C./D.C.)
 Special design small motors (up to 750 W)
 D.C. motors with electronic commutation (brushless D.C. motors)
 Small motors to customer-specific designs
 Brushless permanent magnet motors
 External rotor motors
 Other special design small motors
 Miniature motors
 D.C. miniature motors
 Ultrasonic motors, travelling wave motors, piezo motors
 Miniature geared motors
 Other miniature motors
 Instrumentation and control electronics for small and miniature motors
 Control electronics for small-power motors and subfractional horsepower motors
 Electronic modules for controls and regulators
 Stepping motor drivers for small motors and miniature motors
 Piezo servo drives for small motors and miniature motors
 Rotary pulse transmitters for small motors and miniature motors

Other instrumentation and control electronics for small and miniature motors
 Ventilators and fans for electric drives, electronics
 Fans, blowers for electric drives, electronics
 Equipment fans (e.g. for cooling electronic equipment)
 Miniature ventilators
 Parts and accessories for ventilators and fans (electric drives)
 Accessories and components for electric motors and generators
 Electrical carbon elements, carbon brushes
 V-belt drives, synchronous belt drives
 Other accessories and components for electric motors and generators
 Gear units and geared motors
 Gear units for stationary arrangement
 Spur gear units, cylindrical gear units
 Small spur gear units
 Spur gear units medium size
 Large spur gear units
 Bevel gear units, angular gear units
 Small bevel gear units
 Large bevel gear units
 Bevel spur gear units
 Worm gear units
 Spur worm gear units
 Planetary worm gear units
 Planetary gear units
 Hollow shaft gear units
 High-speed gear units
 Heavy gear units
 Lifting gear units
 Elevator transmissions
 Shaft-mounted gear units
 Special gear systems
 Speed variators, variable-speed drives
 Mechanical speed variators
 Hydro-dynamic speed variators
 Other variable-speed drives
 Special gear units
 Cycloid gear units
 Mechanical linear gear units
 Low backlash (zero backlash) gearboxes
 Geared motors

Geared and drum-type motors
 Small geared motors
 Miniature geared motors
 Other geared motors
 Other gear units and geared motors
 Plain bearings and anti-friction bearings
 Plain bearings
 Hydro-dynamic radial plain bearings
 Hydro-dynamic thrust plain bearings
 Hydrostatic radial plain bearings
 Hydrostatic thrust plain bearings
 Pedestal plain bearings
 Maintenance-free plain bearings
 Low maintenance plain bearings
 Air bearings, aerostatic bearings, aerodynamic bearings
 Magnetic bearings
 Other plain bearings
 Anti-friction bearings
 Radial ball bearings
 Radial ball bearings
 Radial insert ball bearings (Radial-Kugellager)
 Angular contact ball bearings
 Other radial ball bearings
 Radial roller bearings
 Cylindrical roller bearings
 Needle bearings
 Other radial roller bearings
 Tapered roller bearings
 Axial ball bearings
 Axial groove ball bearings
 Axial angular contact ball bearings
 Other axial ball bearings
 Axial roller bearings
 Axial cylindrical roller bearings
 Axial needle roller bearings
 Other axial roller bearings
 Combined axial/radial bearings (roller bearings)
 Needle roller/angular contact ball bearings
 Needle roller/axial ball bearings
 Needle roller/axial cylindrical roller bearings
 Axial/radial roller bearings
 Crossed roller bearings
 Special ball bearings, special roller bearings
 Plastic ball bearings

Stainless steel ball bearings	Recirculating ball screws
Ball bearings, roller bearings for high temperatures	Planetary roller screws
Ball bearings for aggressive media	Steep thread spindles
Low-friction bearings	Tapping pinions, ball screws
Slewing rings (rolling bearings)	Threaded spindles
Ball bearing slewing rings	Turning spindles
Roller bearing slewing rings	Grinding spindles
Other slewing rings (Wälzlager)	Other spindles, threaded spindles, tapping pinions
Joint bearings, swivel heads	Gear wheels and gear systems
Joint bearings	Spur gears
Swivel heads	Cylindrical gears
Hydraulic joint heads	Elliptical gears
Track rollers (rolling bearings)	Bevel gears
Housing units (Wälzlager)	Hypoid gears
Rolling bearing parts and accessories	Helical bevel gears
Roller components	Worms and worm wheels
Slotted locknuts	Helical gear wheels
Inductive mounting devices	Racks and toothed segments
Inductive ball bearing preheating equipment	Spline shafts
Other rolling bearings and accessories	Threaded spindles
Rolling bearing linear guidance systems	Chain wheels (Gear wheels and gear systems)
Linear technology	Internally toothed gears
Linear units, linear modules	Gear tools
Linear slides and carriages	Other gear wheels and gear systems
Linear systems	Power transmission equipment, couplings and clutch units and brakes
Linear axles and axis modules	Couplings and clutch units
Linear axles, electrically operated	Rigid couplings
Linear axles, pneumatically operated	Torsionally rigid couplings
Linear axles with synchronous belt drive	Flexible couplings
Linear axles with spindle drive	Joint couplings
Linear axis modules	Propeller shafts
Linear guides	Joints
Sectional rails	Friction clutches
Roller guides	Centrifugal clutches
Wave ducts	Safety couplings
Miniature linear guides	Free wheel clutches
Linear bearings	Fluid couplings
Linear roller bearings (Linearführungen)	Electromagnetic clutches (Antriebstechnik)
Telescope tracks	Gear couplings
Other linear guides	Other couplings and clutch units
Clamping elements and decelerating elements for linear guides	Accessories for couplings and clutches
Spindles, threaded spindles, tapping pinions	Brakes and brake systems
Ball bearing screws	Belt drives and chain drives

Flat belt drives	Hydraulic rotary actuators
V-belt drives (Riemen- und Kettentriebe)	Hydraulic cylinders special-purpose
Timing belt drives (Antriebstechnik)	Hydraulic industrial shock absorbers
Belt tensioners	Other hydraulic cylinders
Chain tensioners	Hydraulic rotary drives
Roller chains	Hydraulic control valves, hydraulic valves
Conveyor chains (Riemen- und Kettentriebe)	Hydraulic directional control valves
Toothed chains	Hydraulic check or non-return valves
Agricultural machines chains	Hydraulic pressure control valves
Other belt and chain drives	Hydraulic flow control valves
Special mechanical power transmission equipment	Hydraulic shut-off valves
Profiled shafts	Servo valves
Shaft-hub connections	Hydraulic proportional valves
Clamping elements for power engineering	Two-way valves
Other special mechanical power transmission equipment	Hydraulic sensor valves
Components & systems of fluid technology	Hydraulic modular block systems
Oil hydraulics	Hydraulic press safety valves
Hydraulic pumps (Öl-Hydraulik)	High-pressure ball valves for hydraulics
Hydraulic gear pumps	Hydraulic control blocks, hydraulic-manifolds
Hydraulic vane pumps	Other hydraulic valves
Hydraulic axial piston pumps	Hydraulic accumulators
Hydraulic radial piston pumps	Hydraulic piston type accumulators
Hydraulic screw pumps	Hydraulic bladder type accumulators
Hydraulic hand pumps	Hydraulic; membrane type accumulators
Hydraulic oil pumps	Spring type accumulators for hydraulic
Other hydraulic pumps	Metall bellows type accumulators for hydraulik
Hydraulic motors	Other hydraulic accumulators
Hydraulic gear motors	Hydraulic pressure switches
Hydraulic vane motors	Pipes, hoses and connections (hydraulics)
Hydraulic axial piston motors	Hydraulic tube lines
Hydraulic rotary piston motors	Hydraulic hose lines
Hydraulic radial piston motors	Hydraulic fittings
Hydraulic-oscillating motors	Hydraulic flanged connections
Hydraulic fixed displacement motors	Hydraulic quick-acting and other self-sealing couplings
Hydraulic variable displacement motors	Hydraulic rotary connections
Hydraulic oil engines	Rotary swivels, sealing heads (rotating)
Other hydraulic motors	Torsion joints for pipes
Hydraulic variable speed drive units (Öl-Hydraulik)	Hydraulic hoses
Hydraulic cylinders (Öl-Hydraulik)	Hoses for high-pressure cleaners
Single-acting hydraulic cylinders (Fluidtechnik)	Other pipes, hoses and connections (hydraulics)
Double-acting hydraulic cylinders (Fluidtechnik)	Assemblies and complete hydraulic systems
Hydraulic cylinders telescopic	Hydraulic driven assemblies
	Control assemblies; hydraulic
	Complete hydraulic systems (incl. remote

control driven)

High-pressure hydraulics - assemblies for extremely high working pressures

Complete hydraulic units, hydraulic power packs

Hydraulic test rigs

Special hydraulics equipment

Hydraulic filters

Hydraulic heat exchangers

Hydraulic measuring instruments

Hydraulic reservoirs

Actuators (electro-hydraulic)

Speed control units and control units for hydraulic pumps

Parts and accessories for hydraulic pumps, hydraulic motors (wobble plates, pressure plates, gaskets and washers, drive shafts)

Water hydraulics

Hydraulic pumps (water)

Hydraulic valves (water)

Hydraulic cylinders (water)

Hydraulic motors (water)

Complete hydraulic systems (water)

Pneumatics

Pneumatic cylinders

Single-acting pneumatic cylinders

Double-acting pneumatic cylinders

Telescopic pneumatic cylinders

Pneumatic multi-position cylinders

Pneumatic rotary actuators

Pneumatic tandem cylinders

Without piston rod pneumatic cylinders

Other pneumatic cylinders

Pressure intensifiers and air-oil actuators

Pneumatic pressure transformers

Pneumatic pressure intensifiers

Pneumatic air-oil actuators

Pneumatic motors

Pneumatics working units, feed units, rotary indexing tables, clamping tools

Pneumatic valves

Pneumatic directional control valves

Pneumatic check or non-return valves

Pneumatic pressure control valves

Pneumatic flow control valves

Pneumatic shut-off valves

Pneumatic quick exhaust valves

Pneumatic valve interlinking systems

Press safety valves; pneumatic

Other pneumatic valves

Actuators (pneumatic)

Complete pneumatic control systems, including fluidic controls

Compressed air conditioning (pneumatics)

Maintenance units for compressed air

Filters for compressed air (Pneumatik)

Pneumatic pressure regulators

Lubricators for compressed air

Pipes, hoses and connections (pneumatics)

Compressed air tube lines

Compressed air hose lines

Compressed air screwed connections

Compressed air hose fittings

Compressed air flanged connections

Compressed air quick-acting couplings and other

Compressed air rotary connections

Compressed air multi-hose connectors

Shearing pins for compressed-air pipes, manifolds, and compressed air hoses

Other pneumatic apparatus

Compressed air measuring apparatus

Compressed air silencers

Pneumatic double membrane pumps

Pneumatic reciprocating pumps

Seals, accessories, lubricants, and lubrication systems for drive technology and fluid technology

Sealing devices and supplementary equipment for hydraulics

Hydraulic sealing devices

Other hydraulic accessories

Sealing devices and accessories for pneumatics

Pneumatic sealing devices and compressed air sealing devices

Other pneumatic accessories and compressed air accessories

Accessories for power transmission

Seals for power transmission engineering

Retaining rings

Automatic lubricant dispensers

Oil-level gauges
 Lubricating equipment
 Other accessories for power transmission
 Hydraulic liquids, heat transfer media
 Lubricants, oils, fats
 Central lubrication systems and lubricating pumps
 Expert systems for power transmission and fluid engineering
 Equipment for hydraulic pipe and hydraulic tube manufacture
 Robotics
 Industrial robots (basic systems)
 Linear robots
 Swivel-arm robots (SCARA robots)
 Horizontal elbow-arm robots
 Vertical elbow-arm robots
 Articulated robots
 Portal robots
 Microrobots
 Industrial robots of special design
 Robot periphery
 Application components for industrial robots
 Tool changing systems for industrial robots
 Robot periphery for painting and coating
 Robot periphery for gluing and sealing
 Robot periphery for processing applications
 Robot periphery for loading/unloading
 Other robot periphery
 System periphery for robots and robot controls
 Operator terminals for robotics
 Control wiring for robotics
 Security systems for robots
 Other system periphery for robots and robot controls
 Mobile robots and special robots
 System platforms for mobile robots
 Components for mobile robots
 Entertainment robots
 Security robots, monitoring robots
 Autonomous, mobile robots
 Underwater robots
 Two-arm robot systems
 Walking robots
 Educational robots

Service robots
 Service robots for production and workshop
 Service robots for indoor use
 Collaborative robots, cobots
 Other mobile robots and special robots
 Driverless transport systems (s.a. Robotik)
 Turnkey systems and complete systems for robotics
 Services for robotics
 Engineering for robotics
 Programming for robotics
 Service for robotics
 Publishing for robotics
 Organizations and associations for robotics
 Assembly, handling, maintenance and factory equipment
 Assembly and handling
 Assembly equipment, assembly devices, assembly applications
 Basic units for the basic construction of manually operated assembly machines
 Basic units for single assembly workstations
 Assembly tables
 Other basic units for manually operated assembly machines
 Manually operated assembly installations
 Individual assembly bays
 Assembly equipment (manuelle Montageeinrichtungen)
 Assembly tools
 Levelling elements
 Other assembly installations for manually operated assembly
 Basic units for the basic construction of machine-operated assembly machines
 Basic units for assembly machines
 Assembly cells
 Basic units for machine substructures (e.g. frameworks)
 Assembly conveyors (e.g. double-belt assembly conveyors)
 Other basic units for the basic construction of machine-operated assembly machines
 Machine-operated assembly installations
 Assembly machines (Maschinelle)

Montageeinrichtungen)
 Linear transfer automatic assembly machines
 Flexible assembly systems
 Presses for the assembly technology
 Other assembly installations for machine-operated assembly
 Other assembly installations, assembly equipment, assembly applications
 Assembly lines
 Basic units and drive units for the basic construction of assembly lines
 Basic units for assembly lines
 Power units for assembly machines, automatic assembly machines and lines, general
 Electric lifting cylinders
 Hydraulic drives for assembly machines, automatic assembly machines and assembly lines
 Toothed-belt drives
 Single-acting hydraulic cylinders (Montagelinien)
 Double-acting hydraulic cylinders (Montagelinien)
 Hydraulic cylinders, special solutions
 Other basic units and drive units for the basic construction of assembly lines
 Assembly lines, assembly transfer installations
 Assembly lines
 Assembly transfer installations
 Compact assembly plants
 Stationary constructional units with or without integrated workpiece feeding (assembly technology)
 Process units for connecting and joining
 Adhesive bonding and sealing units (assembly technology)
 Welding units (assembly technology)
 Other process units for connecting and joining
 Marking units for assembly technology
 Other stationary constructional units with or without integral workpiece feeding (Montagetchnik)
 Manually operated assembly installations with or without integrated workpiece feeding
 Screwing systems for assembly technology and equipment

Screwing systems (Montagetchnik)
 Screw assembly systems (Montagetchnik)
 Assembly centres (for screw tasks, press-fitting tasks and handling tasks)
 Other manually operated assembly installations
 Assembly devices, clamping devices
 Handling installations for stockpiling and provision in random condition
 Handling installations for stockpiling and provision in arranged condition
 Handling apparatus for stocking, organizing, sorting and supply
 Handling apparatus for input and output, loading and unloading
 Handling installations for positioning workpieces and parts
 Workpiece carriers for positioning of workpieces and parts
 Positioning systems for handling technology
 System periphery for assembly, handling and robotics
 Grabs for assembly, handling and robotics
 Grab systems for the field of robotics
 Small component grabs, grabs for pins and rods
 General gripping tools
 Turning units, turning modules
 Pivoting units and lifting units
 Pneumatic cutting pliers
 Other grabs for assembly, handling and robotics
 Grabs by type of drive
 Electric grabs
 Pneumatic grabs
 Grabs with other drives
 Clamping devices for assembly, handling and robotics
 Systems for tool pickup and positioning
 Energy guidance systems, data guidance systems and media guidance systems
 General energy guidance systems
 Energy channels made of steel and plastic (piping systems, cable conduits/flexible conduits)
 Energy carrying chains
 Vacuum guide systems for assembly, handling and robotics
 Other energy guide systems, data guide systems

and media guide systems

- Planetary gear systems for robotics
- Other system periphery for assembly, handling and robotics

Special periphery and assembly tools

- Torque wrenches
- Screwdrivers, screwdriver sets, screwdriver bits
- Tensioning systems, fastening tools
- Special assembly tools

Safety and supply technology in the field of assembly, handling and robotics

Safety technology in the field of assembly, handling and robotics

- Safety systems for assembly, handling and robotics
- Safety cabinets and enclosures for assembly, handling and robotics
- Monitoring systems for safety zones
- Other safety technology in the field of assembly, handling and robotics

Protective devices for assembly, handling and robotics

- General protective devices
- Shock absorbers for assembly, handling and robotics
- Limit switches for assembly, handling and robotics
- Anti-vibration mountings and vibration dampers for assembly, handling and robotics
- Protective housings and enclosures for assembly, handling and robotics
- Other protective devices for assembly, handling and robotics

Supply technology in the field of assembly, handling and robotics

- General pneumatic technology for assembly, handling and robotics
- Pneumatic installation equipment for assembly, handling and robotics
- Pneumatic units for assembly, handling and robotics
- Vacuum technology, vacuum generation for assembly, handling and robotics
- Hydraulic assemblies for assembly, handling and robotics

Ventilation technology and extraction systems for assembly, handling and robotics

- Other supply technology in the field of assembly, handling and robotics

Assembly and handling according to task-specific application areas

- Assembly and handling systems for warehousing/logistics
- Assembly systems and handling systems for loading and unloading
- Customer-specific assembly technology and handling technology applications
- Turnkey systems and complete systems for assembly technology
- Turnkey systems and complete systems for handling technology

Vibration reduction systems

- Active vibration reduction systems

Damping units, passive vibration reduction

- Dampeners for machines
- Vibration reducing machine bearings
- Vibration dampers
- Spring-damper systems
- Other damping units

Equipment and material for maintenance and repair

- Lubrication systems, auxiliary and operating materials, oils, lubricants and coolants
- Lettering and marking equipment
- Measuring and testing equipment for maintenance
- Electronic length measuring instruments
- Calibrating and measuring systems
- Other measuring and testing equipment for maintenance
- Lubricating and oil changing tools and equipment
- Repair tools and sealing for maintenance and repair
- Seals
- Anticorrosive agents
- Technical aerosols/sprays
- Other repair media and devices for maintenance and repair
- Other equipment and sealing for maintenance

and repair
 Workshop technology
 Workshop technology (equipment and systems)
 Chip removal systems
 Electric tools
 Twist drill point grinding machines
 (Werkstattmaschinen)
 Workplace exhaust systems
 Automatic cable reeling devices
 (Werkstatttechnik)
 Engraving equipment and engraving machines
 Roll-up covers/roller blinds, apron covers
 Explosion-proof flashlights, explosion-proof
 lights
 LED lamps, LED lights
 Hydraulic presses for the workshop
 Workshop bending machines, workshop pipe
 bending machines
 Recooling units, heat exchangers for oils, water,
 cutting oils (Werkstatttechnik)
 Formed wipers, wipers for machines, slideway
 and linear guides
 Sliding guides
 Thermowelded bellows
 Other workshop technology (equipment and
 systems)
 Ergonomic equipment and workplaces
 Building Automation
 Measuring and control systems for building
 automation
 Technical building technology and building
 automation systems
 Building services management systems
 Building systems engineering
 DDC building automation engineering (Direct
 Digital Control)
 Automation systems in technical building
 equipment systems
 Systems for building automation
 Visualization systems for building automation
 Fault signalling systems for building automation
 Switchgear, switch cabinets, switchboards, and
 switching consoles for building automation
 Back-up power supplies, UPS systems for
 building automation

Other automation systems in technical building
 equipment systems
 Building communications technology
 Communications networks for building
 automation
 Transmission systems for building automation
 Network communications for building
 automation
 Fieldbuses for building automation (s. a. Digital
 Ecosystems)
 Radio data transfer for building automation (s.a.
 Digital Ecosystems)
 Mobile data acquisition and data
 communications for building automation
 Modems, multiplexers, controllers, concentrators
 for building automation
 Multifunctional communication systems
 Other communications and data networks for
 building automation
 Remote control technology, remote monitoring,
 remote display systems for building automation
 Signalling devices for building engineering
 Sensors and actuators for building automation
 Cables and lines for building automation and
 transmission equipment
 Insulated wires and lines for transmission
 equipment
 Special cables for signalling and data
 transmission
 Flat strip cables
 Computer lines and lines for electronic
 equipment
 Other special cables for signalling and data
 transmission
 Cables for transmission equipment
 Indoor cables for transmission equipment
 Outdoor cables for transmission equipment
 Installation cables
 Ship wiring cables, marine cables, off-shore
 cables for transmission equipment
 Long-distance cables and long-distance lines
 Special cables for signalling and data
 transmission
 Antenna cables, RF cables
 Co-axial cables

Instrument cables, LAN cables
 Connecting cables
 Fiber optic cables
 Cables for transmission technology; other
 Cable fittings for communication networks
 (Andere Kabel für die Übertragungstechnik)
 Ready-made cables for transmission equipment
 Other cables for transmission equipment
 Cable fittings, parts and accessories for
 transmission technology
 Waterproof connectors and cable assemblies
 Modular cabling systems for building
 automation
 Software for building automation
 Application-specific automation systems for
 building automation
 Building management systems
 Energy management systems
 Other building management systems
 Automation systems in building security
 technology
 Access control systems
 Identification devices for access control systems
 RFID access control systems
 Access control systems
 Gate and door-opening systems for access
 control
 Biometric access control systems
 Other access control systems
 Monitoring systems for indoor environments
 Watchman monitoring and recording systems
 Alarm systems and emergency call systems,
 intrusion and hold-up alarm systems
 Software for security systems
 Other automation systems in building security
 technology
 Automation systems in structural fire protection,
 fire alarm systems
 Monitoring systems in building automation
 (heating, air conditioning, lifts, lighting, doors, etc.)
 Automation systems for heating, air
 conditioning, ventilation, HVAC
 Automation systems for lighting technology
 Fully automatic lighting automation systems for
 buildings

Light controls with central functions for building
 automation
 Other automation systems for lighting
 technology
 Automation systems for building services
 technology (heating, air conditioning, water,
 compressed air, electricity)
 Complete home automation, home automation
 systems
 Other application-specific automation systems
 for building automation
 Integrated automation solutions for building
 automation
 Clean-room technology
 Ventilation and air-conditioning systems for
 clean rooms
 Other equipment and installations of
 clean-room technology
 Precision air-conditioned rooms and booths,
 measuring rooms
 Other integrated automation solutions for
 building automation
 Engineering and services for building automation
 Project management services, site management
 for building automation
 Repair services, maintenance services for
 building automation
 Certification services, testing services for
 building automation
 Technical literature, technical publications,
 publishers for building automation
 Industrial applications for automation, motion
 and drives
 Application-specific solutions and
 function-specific solutions for automation,
 motion and drives
 Automation solutions for industrial processes
 Process automation solutions for batch
 processes, batch control, coupled batch processes
 Process automation solutions for multivariable
 flow processes
 Process automation solutions for logistics and
 material flow
 Process automation solutions for utility
 networks

Process automation solutions for buildings
 Process automation solutions for laboratories
 Process automation solutions for power plants
 Integrated solutions for data acquisition and data storage in process technology
 Other automation solutions for industrial processes
 Functional drive solutions
 Functional drive solutions for changes of areas and bodies
 Functional drive solutions for dimensional changes
 Other functional drive solutions for changes of areas and bodies
 Functional drive solutions for movement
 Functional drive solutions for linear movement
 Functional drive solutions for rotation
 Other functional drive solutions for movement
 Functional drive solutions for power transmission
 Functional drive solutions for bearings
 Functional drive solutions for torque transmission
 Other functional drive solutions for power transmission
 Functional drive solutions for energy change
 Functional drive solutions for energy storage
 Other functional drive solutions for energy change
 Other functional drive solutions
 Task-specific applications for industrial robots
 Industrial robots for workpiece processing
 Industrial robots for welding
 Industrial robots for deburring
 Industrial robots for cutting
 Industrial robots for grinding
 Robots for waterjet cutting
 Industrial robots for coating and painting
 Robot cells for jointing, separation, handling, processing
 Other industrial robots for processing
 Industrial robots for workpiece handling (linking) and magazining
 Industrial robots for assembly work
 Industrial robots for storage, materials management and control, and logistics

Industrial robots for packaging tasks
 Robots for handling applications, palleting applications
 Other industrial robots for storage, materials management and control, and logistics
 Special industrial robotics applications
 Robots for dimensional and QA inspection tasks
 Industrial robots for clean-room areas
 Industrial robots for image recognition
 Testing robots, inspection robots
 Other special industrial robot applications
 Industry solutions for automation, motion and drives
 Industry related automation solutions for process industries
 Process automation solutions for chemical and pharmaceutical industries
 Process automation solutions for petroleum industries (refineries and petrochemical industries)
 Process automation solutions for the metal-producing industries (steel works, foundries, hot-rolling mills and cold-rolling mills)
 Process automation solutions for cement and construction material industries (cement, lime, gypsum, concrete, glass, bricks, ceramics)
 Process automation solutions for foodstuff and feed industries
 Process automation solutions for mining (extraction and preparation of ores, coal, petroleum, and gas)
 Process automation solutions for liquefaction of coal and gas
 Other automation solutions for process industries
 Process automation solutions for suppliers and disposal companies
 Process automation solutions for utility companies (electricity, water, natural gas, district heating)
 Process automation solutions for disposal companies (waste water treatment, waste treatment, recycling)
 Industry related process automation solutions for manufacturing industries

Process automation solutions for vehicle industries

Process automation solutions for electrical and electronics industries

Process automation solutions for mechanical engineering

Process automation solutions for consumer goods industries (wood, textiles, paper, printing, etc.)

Integrated solutions for process optimization and advanced control

Integrated solutions for process optimization and advanced control in chemical and pharmaceutical industries

Integrated solutions for process optimization and advanced control in petroleum industries (refineries and petrochemical industries)

Integrated solutions for process optimization and advanced control in the metal-producing industry (steel works, foundries, hot-rolling and cold-rolling mills)

Integrated solutions for process optimization and advanced control in cement and construction material industries (cement, lime, gypsum, concrete, glass, bricks, ceramics)

Integrated solutions for process optimization and advanced control in food and feed industries

Integrated solutions for process optimization and advanced control in pulp, paper and cardboard industries

Mining (extraction and preparation of ores, coal, crude oil and gas)

Integrated solutions for process optimization and advanced control in utility companies (electricity, water, natural gas, district heating)

Integrated solutions for process optimization and advanced control in vehicle industries

Integrated solutions for process optimization and advanced control in mechanical engineering

Other integrated solutions for process optimization and advanced control

Industry applications for automatic control technology

Automatic control engineering for general industrial applications

Automatic control engineering for general machine building

Automatic control engineering for the automotive industry

Automatic control engineering for other vehicle construction

Automatic control engineering for the metal producing and working industry

Automatic control engineering for the packaging industry

Automatic control engineering for the electrical engineering industry

Automatic control engineering for the provisions industry/foodstuffs industry

Automatic control engineering for the plastics industry

Automatic control engineering for the construction industry

Automatic control engineering for the timber and woodworking industry

Automatic control engineering for the textile industry

Automatic control engineering for the paper industry and printing industry

Automatic control engineering for the chemical industry

Automatic control engineering for precision engineering and the optical industry

Automatic control engineering for measuring technology and control technology

Automatic control engineering for the semiconductor industry

Automatic control engineering for the pharmaceutical industry and medical technology

Complete automation systems in forging press plants

Open and closed loop technology for other industries

Measuring technology and testing technology in industrial applications

Measuring technology and testing technology for production engineering

Measuring technology and testing technology for process engineering

Measuring technology and testing technology

for electronics production
 Measuring technology and testing technology for customer-specific industrial applications
 Measuring technology and testing technology for general industrial applications
 Measuring technology and testing technology for general machine building
 Measuring technology and testing technology for the automotive industry
 Measuring technology and testing technology for other vehicle construction
 Measuring technology and testing technology for the packaging industry
 Measuring technology and testing technology for the electric engineering industry, electronics industry
 Measuring technology and testing technology for the provisions industry/foodstuffs industry
 Measuring technology and testing technology for the plastics industry
 Measuring technology and testing technology for the paper industry
 Measuring technology and testing technology for the chemical industry
 Measuring technology and testing technology for the printing industry
 Measuring technology and testing technology for the medical technology
 Measuring technology and testing technology for electrical power engineering
 Sensors for industry-specific application areas
 Sensors for general industrial applications
 Sensors for general machine building
 Sensors for the automotive industry
 Sensors for other vehicle construction
 Sensors for the metal producing and working industry
 Sensors for the packaging industry
 Sensors for the provisions industry/foodstuffs industry
 Sensors for the construction industry
 Sensors for the timber and woodworking industry
 Sensors for the textile industry
 Sensors for the paper industry and printing

industry
 Sensors for the chemical industry
 Sensors for precision engineering and the optical industry
 Sensors for measuring technology and control technology
 Sensors for the semiconductor industry
 Sensors for the pharmaceutical industry and medical technology
 Sensors for other branch-specific applications
 Microactuator applications
 Industry applications for industrial robots
 Industrial robots for general industrial applications
 Industrial robots for general machine building
 Industrial robots for the automotive industry
 Industrial robots for other vehicle construction
 Industrial robots for the metal producing and working industry
 Industrial robots for the packaging industry
 Industrial robots for the electrical and electronic industry
 Industrial robots in provisions industry/foodstuffs industry
 Industrial robots in the plastics industry
 Industrial robots for precision engineering and the optical industry
 Robots for medical use
 Industrial robots for other branch-specific applications
 Assembly systems and handling systems according to branch-specific application areas
 General assembly systems and handling systems in industrial applications
 Assembly systems and handling systems for general machine building
 Assembly systems and handling systems for the automotive industry
 Assembly systems and handling systems for other vehicle construction
 Assembly systems and handling systems for the metal producing and working industry
 Assembly systems and handling systems for the packaging industry
 Assembly systems and handling systems for the

electrical engineering industry

Assembly systems and handling systems for the provisions industry, foodstuffs industry

Assembly systems and handling systems for the pharmaceutical industry and medical technology

Assembly systems and handling systems for the timber and woodworking industry

Assembly systems and handling systems for the paper industry and printing industry

Assembly systems and handling systems for the chemical industry

Assembly systems and handling systems for precision engineering and the optics industry

Assembly systems and handling systems for the semiconductor industry

Assembly systems and handling systems for other branch-specific application areas

Drive system industry solutions

Drive system solutions for general industrial areas

Drive system solutions for the building industry

Drive system solutions for the wood industry

Drive system solutions for the textile industry

Drive system solutions for the paper industry and printing industry

Drive system solutions for the chemical industry

Drive system solutions for the glass industry, ceramics industry

Drive system solutions for precision engineering and optics

Drive system solutions for measuring technology and control technology

Drive system solutions for the semiconductor industry

Drive system solutions for the pharmaceutical industry and medical technology

Drive system solutions for general mechanical and plant engineering

Drive system solutions for the automobile industry

Drive system solutions for other vehicle construction

Drive system solutions for the metal industry

Drive system solutions for the packaging industry

Drive system solutions for the electrical industry, electrical engineering

Drive system solutions for the food industry

Drive system solutions for the plastics industry

Drive system solutions for municipal enterprises

Drive system solutions for the aircraft industry

Drive system solutions for the shipping industry

Drive system solutions for sheet metal working

Drive system solutions for other industries

Automation systems in traffic engineering

Automation systems for rail traffic systems and for tracked vehicles

Signal systems and safety systems for local and long-distance transport, rail transport

Automation systems for rail vehicles and trolley buses

Automation systems for hoists

Automation systems for other rail vehicles (e.g. for mining)

Automation systems for road vehicles

GPS on-board systems (Global Position Systems) for road vehicles

Automation systems for battery driven vehicles

Other automation systems for vehicles

Parts and accessories for automation systems for vehicles

Automation systems for ships

Automation systems for airports and aerospace

Solutions and components for medical technology and pharmaceutical industry

Mobile automation

Basic systems for mobile automation

Automation devices for mobile applications

Control panels for mobile automation

Displays for mobile applications

Sensors for mobile automation

RFID transponders and transponder readers for mobile automation

Wireless communication systems for mobile automation

Modular robotics platforms and automation platforms for mobile automation

Energy supplies for mobile automation

Battery systems for mobile automation

Fuel cells for mobile automation

Other energy supplies for mobile automation
 Pneumatic systems for mobile automation
 Other basic systems for mobile automation
 Mobile automation systems and applications
 Mobile automation systems for mobile machines and intralogistics systems
 Mobile automation systems for supply and disposal
 Container handling systems, container identification systems (mobile automation)
 Other mobile automation systems for supply and disposal
 Mobile automation systems for rail vehicles
 Mobile automation systems for aircraft
 Mobile automation systems for motor vehicles, building and agricultural machinery
 Ignition monitoring systems (mobile automation)
 Headway control systems (mobile automation)
 Telematics systems (mobile automation)
 Fleet management systems (Mobile Automation Systeme für Kraftfahrzeuge, Baumaschinen & Landmaschinen)
 Geographic information systems
 Driver's cab control unit
 Mobile automation systems for agricultural machinery
 Mobile automation systems for building machinery
 Mobile automation systems for security applications, danger zones
 Mobile automation systems for the fire brigade
 Other mobile automation systems & applications
 Safety and security in automation
 Business continuity and risk management
 Risk management services for the industry (global business and markets) (s.a. Global Business & Markets)
 Consultancy on business continuity and risk management
 Other business continuity management and risk management
 Technical plagiarism protection
 Services for technical plagiarism protection

Other technical plagiarism protection
 Anti-counterfeit systems, labelling, marking, materials
 Plagiarism protection systems, plagiarism protection labelling, product protection systems, product protection marking, product protection systems
 Chemical, optical, fluorescent-based product marking agents
 Security protection & services against white-collar crime
 Services for object & personal security
 Occupational health services and safety services
 Seminars and training on occupational health and safety
 Safety technology consultancy
 Safety engineer services; safety specialist services
 Risk assessments for workplaces
 Technical control, expert checks
 Technical control for lifts, cranes
 Technical control for vehicles, utility vehicles
 Functional safety for railway systems, testing and certification
 Functional safety for automation systems, testing and certification
 Other technical control
 Fire protection consulting, reports
 Consultancy on product placement (Equipment and Product Safety Act ProdSG, EU Machine Directive, EU Pressure Equipment Directive, EMC Directive, other EU Directives)
 Software for occupational safety and product safety
 Other occupational health and safety services
 Plant safety equipment
 Explosion protection equipment for machinery and plants (ATEX)
 Machine guards (Betriebstechnik)
 Safety guards for machinery and plants
 Access monitoring equipment for machinery and plants
 Light barrier systems for machine monitoring
 Intelligent machine and plant protection systems

Safety devices for electrical installations
 Other machine protection equipment
 Personal safety devices
 Active and passive fire protection systems for machines and plants
 Personal protective equipments
 Other safety and security in automation
 Laser technology
 Industrial, technical laser beam sources
 Laser optics
 Laser components
 Lasers according to task-specific application areas
 Laser cutting systems (not machine tools)
 Systems for laser beam welding
 Systems for laser beam coating
 Systems for laser beam marking
 Systems for laser inscription
 Laser systems for innovative manufacturing technology (not machine tools)
 Laser micromaterial processing (not machine tools)
 Laser technology in microtechnology (not machine tools)
 Laser technology for Rapid Prototyping
 Laser systems for visual alignment
 Laser systems for other tasks
 Lasers according to branch-specific application areas
 Lasers for general machine building
 Lasers for the automotive industry
 Lasers for the metal producing and working industry
 Lasers for the packaging industry
 Lasers for the electrical engineering industry
 Lasers for the plastics industry
 Lasers for the paper industry and printing industry
 Lasers for the glass industry, ceramics industry
 Lasers for precision engineering and the optical industry
 Lasers for the pharmaceutical industry and medical technology
 Lasers for other branch-specific application areas
 Microtechnology - smart systems

Production systems and test systems for microtechnology
 Measuring and testing technology for microtechnology
 Tool and mould manufacture for microtechnology
 Laser technology for microtechnology
 Systems for printed electronics and printed intelligence
 Other production facilities and equipment for microtechnology
 Ultraprecisions processing in microtechnology
 Systems and plants for ultraprecision manufacturing in microtechnology
 Ultraprecision manufacturing machinery in microtechnology (not machine tools)
 Plants for micro-optic manufacturing, micro-optic processing
 Microtechnology manufacturing systems & plants for micromachining (not machine tools)
 Other microtechnology systems and plants for ultraprecision manufacturing (not machine tools)
 Ultraprecision manufacturing (contract manufacture) in microtechnology
 Microtool manufacture (Ultrapräzisionsfertigung)
 Precision mould making for microtechnology
 Mold-making for micro plastic parts
 Mechanical micromachining
 Micro injection molding
 Micromachining
 Other ultraprecision manufacturing (contract manufacture) in microtechnology
 Micro-optics and optical engineering
 Microsensors, components for microtechnology
 Micromechanics components
 Components and systems for microchemistry and microbiotechnology
 Microfluid technology components
 Micropumps
 Microvalves
 Micro-turbines
 Other microfluid technology components
 Microelectric components
 Microswitches

Microelectronic components
 System-on-a-chip components
 Other microelectric components
 Micromechatronics components, MEMS, microelectromechanical systems
 Other components for microtechnology
 Materials, substances and semifinished products for microtechnology
 Functional ceramics for microtechnology, microsystem technology
 Microstructured films
 Other materials, substances and semifinished products for microtechnology
 Microtechnology application solutions
 Microtechnical solutions for microstructure technology and microelectronics
 Microtechnical solutions for sensor, measuring and control technology
 Microtechnical solutions for environmental engineering
 Microtechnical solutions for dosing, dispensing
 Other microtechnology application solutions
 Microtechnology industry solutions
 Microtechnical solutions for automotive and vehicle engineering
 Microtechnical solutions for mining and primary industries
 Microtechnical solutions for the aerospace industry
 Microsystem technology solutions for medical technology and prosthetics
 Microtechnical solutions for biotechnology and gene technologies
 Other microtechnology industry solutions
 Engineering and services for microtechnology
 Engineering, contract development for microtechnology
 Engineering, contract development for micro sensor technology
 Engineering, contract development for microelectronics
 Engineering, contract development for microfluidics
 Other engineering, contract development for the field of microtechnology

Organizations, associations for microtechnology
 Logistics automation and autonomous logistics in production
 Order picking systems, pick and pack
 Commissioning technologies, sorting technologies and distribution technologies (Logistik-Automation und autonome Logistik in der Produktion)
 Combined packaging systems and order picking systems (Logistik-Automation und autonome Logistik in der Produktion)
 Voice-controlled commissioning systems
 Complete order picking systems
 Material supply systems (Logistik-Automation und autonome Logistik in der Produktion)
 Robots for picking (Logistik-Automation und autonome Logistik in der Produktion)
 Smart commissioning systems (Logistik-Automation und autonome Logistik in der Produktion)
 Pick and pack systems
 Other order picking systems (Logistik-Automation und autonome Logistik in der Produktion)
 Autonomous logistics systems, integrated logistics
 Dispatch logistics
 Other logistics integration and logistics automation in production; autonomous logistics
 Services automation, motion and drives
 Application-specific services for automation, motion and drives
 Services for the field of assembly, handling and robotics
 Consultancy, project planning, engineering for the field of assembly, handling and robotics
 CAD/CAM and CAD/CAM services for the field assembly, handling and robotics
 Simulation in the field of assembly, handling and robotics
 Other assembly, handling and robotics services
 Services in the field of laser technology
 Precision machining using solid-state lasers (surface processing)
 Manufacture of small production runs and

prototypes using laser processing
 Services in the field of electrical equipment manufacture
 Consultancy, planning in the field of manufacturing technology for electrical engineering and electronics
 Manufacture of electronic assemblies
 PCB design (service)
 Development of electronic components
 Flat component manufacture in SMD, COB, and wired
 Instrument manufacture for electronics, electrical engineering
 PCB manufacture
 Other services in the field of production engineering for electrical engineering and electronics
 Services in the field of measuring and testing technology in industrial automation
 Consultancy, planning for the field of measuring and testing technology
 Development of customer-specific measuring and testing apparatus
 2D/3D measurements (services)
 (Dienstleistungen)
 EMC measurings as service
 Other services in the field of measuring and testing technology in industrial automation
 Services, development for the field of sensor technology
 Industrial communication services
 Production data management and engineering data management services
 Rapid Prototyping services
 Rapid Prototyping services
 Rapid Manufacturing services
 Solid Freeform Manufacturing services
 Quality management and quality assurance service
 Consultancy, planning for quality assurance
 Analysis, diagnostics and optimization of processes and products for quality assurance
 Consultancy for ecological certification (eco audit)
 Consultancy for product certification (CE, GS,

etc.)
 Quality audits (system, product, process)
 Quality documentation (quality manual, process instructions, guidelines)
 Inspecting authorities & certification authorities for explosion protection, (ATEX)
 Consultancy for product certification in china
 Consultancy for product certification in the Eurasian Economic Union, Russia
 Services in the field of quality assurance
 Inspection services (quality, EMC protection, etc.), quality assurance for sensor technology/actuator technology
 Material testing as a service
 Engineering, services in the field of process automation systems
 General system planning for production systems
 Engineering and integration
 Engineering and integration in process automation technology
 Engineering and integration for electrical and electronic technologies
 Engineering for total plants and factories
 Modeling and simulation (process manufacturing, process automation)
 Individual services and executing services for process automation plants
 Technical services for start-up and commissioning of process automation plants
 Technical planning of process automation plants
 Designing and testing of electrical modules (PCBs, application specific circuits and functional modules)
 Further technical services for process automation
 System optimisation and modernisation (process automation systems)
 Safety services for process automation
 Other technical consultancy and services (process automation systems)
 Education and training systems and programs (process automation systems)
 Consultancy services (process automation systems)
 Other services (process automation)
 Databases, Internet information services, online

information for the field of automation

Services in the field of drive technology, hydraulics, pneumatics

Other application-specific services for automation, motion and drives

Consultancy on industrial automation and drive technology

Consultancy on company management and organization

Business analysis (e.g. analyses of strengths and weaknesses, efficiency measurements, benchmarking)

Consultancy on business process optimization

Production controlling (management consultancy)

Other consultancy for company management and organization

Consultancy on development and production

Consultancy regarding innovations and technology

Product development consultancy

Design; consultancy for

Other consultancy services for development and production

Consultancy for industrial engineering and manufacturing technology

Consultancy for factory planning and plant planning

Logistics consultancy

Personnel consultancy, personnel department and personnel development

Consultancy on marketing and business management economics

Market research and market analysis

Consultancy for strategic marketing (e.g. target group strategy, business segment strategy, product diversification)

Consultancy for operative marketing (e.g. service concepts, communication concepts, trade fair organizations)

Foreign trade consultancy

Other consultancy for marketing

Other business management consultancy

Other consultancy on industrial automation and drive technology

General project management (service)

Product Life Cycle Management (PLM) consultancy

Management consultancy according to branch-specific application areas

Management consultancy for general machine building

Management consultancy for the automotive industry

Management consultancy for other branch-specific application areas

Industry-specific services for automation, motion and drives

Industrial services for general industrial applications

Industrial services for the pharmaceutical industry

Industrial services for general machine building

Industrial services for the automotive industry

Industrial services for the metal producing and working industry

Industrial services for the electrical engineering industry

Industrial services for the provisions industry/foodstuffs industry

Industrial services for the medical technology

Industrial services for other sectors

Engineering Services Outsourcing and for engineering, plant engineering, electrical engineering, automotive, aviation, marine, IT

After-sales services, maintenance, spare parts for automation and drive technology

Maintenance services for machinery and plants

Spare part services for machines, installations, automation technology, drive technology

Publishers and organisations for industrial automation and drive technology

Publishers and specialist literature for industrial automation and drive technology

Industrial automation literature, journals

Publishers in the field of power transmission and fluid engineering

Trade publications, publishers (process automation technology)

Organisations and associations for industrial

automation and drive technology
 Industrial automation organisations and associations
 Motive power engineering associations/organizations
 Fluid technology, pneumatics, hydraulics associations/organizations
 Organizations, associations for process automation technology
 Energy solutions
 Climate neutrality and energy supply
 Electricity generation, generators, combustion engines
 Plants for extraction of primary energy sources
 Plants for processing of primary energy sources
 Plants for processing of mineral oil
 Plants for gas processing
 Other plants for processing of primary energy sources
 Plants for transport of primary energy
 Transport and conveyor plants for solid fuels
 Transport and conveyor equipment for liquid fuels
 Vehicle loading equipment and unloading equipment and plants for liquid fuels
 Tubing and fittings for liquid fuels
 Pumping stations as well as pumps and their drives for liquid fuels
 Measuring equipment and metering equipment for liquid fuels
 Other transport and conveyor plants for liquid fuels
 Transport and conveyor equipment for gaseous fuels
 Compressor equipment (driving motors, compressors) for gaseous fuels
 Gas pressure and gas quality control and measuring equipment
 Other transport and conveyor plants for gaseous fuels
 Pipeline Technology and pipelines
 Piping system and pipeline components
 Pipelines, fittings
 Pipes, bends, reductions, fittings
 Pipes, bends, reductions, fittings made of steel

Pipes, bends, reductions, fittings made of stainless steel
 Pipes, bends, reductions, fittings made of cast iron
 Pipes, bends, reductions, fittings made of nonferrous metals
 Pipes, bends, reductions, fittings made of plastic and other nonmetals
 Pipes, pipeline systems for underground installation
 Other pipes, bends, reductions, fittings
 Special fittings and equipment for pipelines
 Flexible connections, compensators for pipework systems
 Pipe bracket systems
 Bracket systems, supports, bedding systems for pipelines and piping
 Corrosion protection systems for pipelines and pipeline systems
 Rupture disks
 Hoses
 Metal-armoured hoses
 Protective tubing
 Industrial hoses
 Other hoses
 Pipe coatings, protective coatings
 Screwed pipe joints
 Seals for pipeline applications
 Other special fittings and accessories for pipelines
 Fittings
 Valves and fittings for water pipes, water pipelines
 Valves and fittings for high-pressure applications and high-temperature applications
 Industrial valves
 Stop valves
 Control fittings, control valves, regulating valves, regulating flaps
 Safety and control valves
 Jet check valves, high-pressure check valves
 Other industrial valves and accessories
 Needle valves
 Other fittings
 Pumps, conveyors, compressors

Pumps	Gas transportation equipment, gas distribution equipment
Centrifugal pumps	Piping material for gas lines
Positive-displacement pumps	Fittings for gas lines
Large pumps	Gas pressure reduction systems and gas pressure regulating systems
Thick matter pumps, dirt pumps	Services for gas engineering
Industrial pumps	Pipeline construction and trench construction for gas pipelines
Submersible pumps	Leakage detection in gas lines
Pump accessories	Other services for gas engineering
Pumps of stainless steel	Natural gas filling stations
Pumps in Hygienic Design	Gas generators for oxygen and nitrogen
High-efficiency pumps	Water technology
Impeller pumps	Facilities for water distribution and canalization
Magnetic drive pumps	Pipes and fittings for water pipes and canalization
Other pumps	Shafts and special constructions for water pipes and canalization
Compressors, conveyors	Pumps, pumping plants for water technology
Gas compressors	Water pumping stations
Rotary piston blowers and roots blowers (compressors)	Pumps for water technology
Ventilators and blowers for pneumatic conveying	Drains for water technology
Other pumps, conveyors, compressors	Filters and fittings for water technology
Terminals, reservoirs	Separators for water technology
Off-shore equipment	Equipment for sewer maintenance and cleaning
Pipeline automation systems	Plant construction for the water technology
Monitoring systems and control systems for pipelines and pipeline systems	Measuring instruments and measuring systems for water technology
Condition monitoring systems for pipelines	Electrical energy generation systems
Other pipeline automation systems	Electric power supply equipment
Pipeline construction and pipeline replacement, pipeline rehabilitation	Industrial energy supply systems
Equipment and systems for pipeline construction and pipeline rehabilitation	Electric power generation equipment
Pipeline welding systems	Decentralized energy supply systems
Equipment and systems for tunnel construction, tunnel drilling	Generators
Leakage detecting systems for pipelines	3-phase generators
Equipment for non-destructive testing of pipelines	Synchronous generators for medium voltages, three-phase generators
Other equipment and systems for pipeline construction and pipeline rehabilitation	Synchronous generators for low voltages, three-phase generators
Services for pipeline construction and pipeline replacement, pipeline rehabilitation	Asynchronous generators for medium voltages, three-phase generators
Pipeline planning and pipeline engineering	Asynchronous generators for low voltages, three-phase generators
Gas engineering and water technology	Single-phase generators
Gas engineering	

Asynchronous generators, single-phase generators
 Synchronous generators, single-phase generators
 D.C. generators
 Special-type generators
 Parts and accessories for generators
 Stationary and mobile power supply equipment
 Rotary uninterruptible electric power supply systems (no-break power supply systems)
 Emergency power systems
 Stationary emergency power systems
 Mobile emergency power systems
 Other electric power supply systems
 Parts and accessories for electric power supply systems
 Primary elements and batteries, battery systems, also for electric mobility
 Combustion engines, stirling engines
 Otto engines (Verbrennungsmotoren)
 Diesel engines <Otto> (Verbrennungsmotoren)
 Diesel gas engines
 Engines for other fuels
 Research engines and experimental engines
 Stirling engines
 Parts and accessories for i.c. engines and gas turbines
 Pistons, piston rings and piston rods
 Cylinder liners
 Crankshafts
 Turbochargers for i.c. engines
 Other engine components
 Coolers, cooler groups for i.c. engines
 Filters for i.c. engines
 Gaskets and sealing rings for i.c. engines
 Measuring instruments for i.c. engines
 Monitoring devices and alarm instruments for i.c. engines
 Exhaust systems for i.c. engines
 Other accessories for i.c. engines and gas turbines
 Hydrogen technology systems and Hydrogen technology installations
 Hydrogen technology systems
 Hydrogen generation plants

Hydrogen storage plants
 Hydrogen transport systems
 Hydrogen compression plants
 Hydrogen fuelling stations
 Other hydrogen technology systems
 Components and equipment for hydrogen technology
 Electrolysis systems for hydrogen technology, electrolyser, PEM electrolyser stack, PEM electrolyser
 Fuel cells for hydrogen technology
 Hydrogen generating systems
 Hydrogen tanks
 Hydrogen burners
 Hydrogen sealing devices
 Other components and equipment for hydrogen technology
 Measuring equipment and control equipment for hydrogen technology
 Fuel cell systems and equipment
 Stationary fuel cell equipment
 Mini block-type thermal power stations with fuel cells
 Block-type thermal power stations with fuel cells
 Combined installations with fuel cells and gas turbines
 Mobile fuel cell equipment
 Fuel cells for private cars
 Fuels cells for busses, trucks
 Fuel cells for consumer applications (notebooks, cell phones, camcorders..)
 Portable fuel cell systems
 Fuel cells
 Polymer electrolyte membrane fuel cells, PEFC
 Melting carbonate fuel cells, MCFC
 Oxide ceramic fuel cells, SOFC
 Direct methanol fuel cells, DMFC
 Proton Exchange membrane PEM fuel cells
 Other fuel cells
 Components and equipment for fuel cell systems
 Reformers for fuel cells
 Membranes for fuel cells
 Electrodes, electrode plates, bipolar plates for fuel cells

Fuel cell stacks
 Electrolytes for fuel cells
 Measurement and control systems for fuel cells
 Pressure regulators and pressure controllers for fuel cells
 Pumps for fuel cells
 Other components and equipment for fuel cell systems
 Other electricity and heat generation, power for industry
 Power plant technology, energy engineering
 Power plants, heating stations
 Combined heat and power plants, decentralised combined heat and power plants
 Combined heat and power plants for fuel oil, gas
 Biomass-fired combined heat and power plants with steam process
 Organic Rankine Cycle (ORC) combined heat and power plants (biomass, other fuels)
 Low temperature ORC plants for waste heat electricity production
 Block-type thermal power stations for fuel oil/diesel, natural gas, biogas, biodiesel, vegetable oil
 Other combined heat and power generation plants
 Large-scale power plants for power generation
 Solar thermal power plants
 Other large-scale power plants for power generation
 Heating stations, heat generation plants
 Power plant components
 Boilers, reactors, heaters
 Steam generators, steam boilers, waste heat steam boilers
 Nuclear reactors, reactor safety systems, nuclear technology components
 Thermal heaters, waste heat thermal heaters
 Thermal devices for power plant technology
 Water treatment plants for power plant technology
 Furnaces for power plant technology
 Firing systems for solid fuels
 Burners, firing systems for liquid and gaseous fuels

Prime movers and power generation sets
 Steam turbines
 Gas turbines
 Motors for electricity generation
 Electricity generator sets
 Environmental protection systems
 Dust extraction systems
 Systems for reducing NOx
 Special components for power plant technology
 Air filter systems and gas filter systems for power plant technology
 Components for steam systems
 Heat carrier systems, thermal oil systems
 Other components for power engineering and thermal engineering
 Cooling towers
 Thermal insulation, sound protection, fire protection, insulations (power plant technology, systems, piping)
 Heat exchangers
 Plate heat exchangers
 Shell and tube heat exchangers
 Heat exchangers for various fluids
 Finned heat exchangers
 Air heat exchangers, air coolers, air heaters
 Heat exchange tubes, heat pipes
 Recuperators, heat exchangers
 Regenerative heat exchangers
 Other heat exchangers
 Engineering and services for power plant technology
 Engineering services for power plant technology
 Planning, project management and construction management for power plants and power generation plants
 Engineering, development of energy extraction and generation plants
 Planning, project management and construction management for block-type combined heat and power plants and combined heat and power plants/systems
 Other engineering services for power plant technology
 Operation and financing of power plants, heating stations, block-type thermal power stations

Contracting for power plants, heating stations, block-type thermal power stations (complete)

Leasing for power plants, heating stations, block-type thermal power stations

Other Operation and financing of power plants, heating stations, block-type thermal power stations

Maintenance services for power plant technology

Maintenance and service for power plants and power generation plants

Maintenance and service for block-type combined heat and power plants and combined heat and power plants/systems

Power station redevelopment/power station dismantling

Other maintenance services for power plant technology

Publishers, trade publications for power plant technology

Energy production utilizing renewable and future primary energy sources

Wind energy plants, wind power plants, components and services for wind power plants

Wind energy systems, wind power systems

Onshore wind energy systems

Small-scale wind energy systems up to 1000 kW

Medium-scale wind energy systems up to 2500 kW

Large-scale wind energy systems above 2500 kW

Other onshore wind energy systems

Offshore wind energy plants, near-shore wind energy plants

Composite wind power energy

Components for wind energy systems, towers, rotors, rotor blades

Machine train components

Gear systems for wind energy systems

Brakes for wind energy systems

Frequency converters for wind energy systems

Magnets, permanent magnets for wind energy systems

Hubs, shafts, flanges for wind energy plants

Couplings for wind energy systems

Waves for wind energy plants

Bearings, bearing housings for wind energy plants

Toroidal tape cores for generator bearings

Other power train components

Foundations for wind energy systems

Climbing systems for wind energy plants, work systems for high altitudes

Service platforms, hoists for wind energy plants

Other climbing systems for wind energy plants, work systems for high altitudes

Equipment for wind energy plants

Surge voltage protection equipment for wind energy systems

Power electronics for wind energy systems

Measuring and control equipment for wind energy systems

Central lubrication systems for wind energy plants

Rotor blade adjustment systems, pitch hydraulic systems, pitch adjustment systems

Automation systems for wind energy plants

Cable fittings for wind energy systems

Internal tower cabling

Oil filtration systems for wind energy plants

Vibration reduction systems for wind energy plants

Sensors for wind energy plants

Condition monitoring systems for wind energy plants

Heatings, strip heaters for power trains, transmissions for wind power plants

Software for wind energy plants

Other equipment for wind energy plants

Coatings, corrosion systems for wind energy plants

Corrosion protection for screw fittings

Other coatings, corrosion systems for wind energy plants

Screwing for wind energy plants

Material and supplies for wind energy plants

Cable brackets for wind energy systems

Seals for wind energy systems

Joining methods, clamps for offshore use

Other material and supplies for wind energy plants

Other components for wind energy systems
 Grid connection systems for wind energy plants
 Transformers for wind energy systems
 Cables for wind energy systems
 Cable ducts and cable troughs for wind energy systems
 Substations for wind energy systems
 Reactive current, reactive power control systems for wind energy plants
 Energy storage systems for wind energy plants
 Grid protection relays for wind energy plants
 Substations for wind energy plants
 Other grid connection systems for wind energy plants
 Wind energy, wind power services
 Solar energy systems
 Photovoltaic technology systems
 Complete photovoltaic technology systems, photovoltaic electricity generation
 Autonomous photovoltaic systems, autonomous stand-alone photovoltaic systems
 Networked photovoltaic systems
 Solar power supplies for traffic control systems
 Solar chargers
 Solar water supply systems
 Small solar devices
 Other complete photovoltaic technology systems, photovoltaic electricity generation
 Components and equipment for photovoltaic electricity generation
 Solar cells
 Transformers for photovoltaic electricity generation
 Surge voltage protection equipment for photovoltaic technology systems
 Inverters for photovoltaic electricity generation
 Solar panels, photovoltaic modules
 Installation systems for solar panels and photovoltaic systems
 Tracking systems for photovoltaic systems
 Thin-film solar modules
 Photovoltaic monitoring systems
 DC circuit breakers
 Other components and equipment for photovoltaic electricity generation

Measuring equipment and control equipment for photovoltaic electricity generation
 Solar heat engineering systems, solar heat systems
 Complete solar heat systems
 Components for solar thermal systems
 Solar collectors
 Tracking systems for solar thermal systems
 Storage units for solar thermal systems
 Other components for solar thermal systems
 Measuring equipment and control equipment for solar thermal systems
 Hydroelectric power systems
 Hydroelectric power stations, hydroelectric power systems
 Hydroelectric power stations (run-of-river power stations, storage power stations or pumped storage power stations)
 Small-scale hydroelectric power stations (100 - 1000 kW)
 Mini hydroelectric power stations and systems (up to 100 kW)
 Other hydroelectric power stations, hydroelectric power systems
 Components, systems and equipment for hydroelectric power systems
 Water turbines for hydroelectric power systems
 Water turbine generator sets for hydroelectric power systems
 Fittings for hydroelectric power systems
 Control systems for hydroelectric power systems
 Switchgear and switching systems for hydroelectric power systems
 Other components for hydroelectric power systems
 Measuring equipment and control equipment for hydroelectric power stations
 Biomass plants, wood recycling plants
 Systems for utilising biomass
 Boilers, components and equipment for biomass systems
 Biodiesel systems
 Biogas systems and biogas systems components
 Biogas systems
 Components and equipment for biogas systems

Measuring equipment and control equipment for biogas systems
 Geothermal energy systems
 Systems and power stations for the use of geothermal energy
 Measuring technology for geothermal energy systems
 Additional energy production utilizing renewable and future primary energy sources
 Services for energy production utilizing renewable and future primary energy sources
 Consultancy and planning for energy production utilizing renewable and future primary energy sources
 Consultancy and planning for solar power
 Consultancy and planning for hydrogen technology
 Consultancy and planning for further renewable and future energy sources
 Services for energy production utilizing renewable and future primary energy sources
 Developments for regenerative and future primary energy sources
 Financing services for regenerative energy sources
 Documentation, information for regenerative energy sources
 Organizations, associations in the field of regenerative energy sources
 Electric power systems, power transmission technology
 Electric energy conversion and energy storage
 Electrical machines
 Asynchronous machines
 Low-voltage asynchronous machines
 High-voltage asynchronous machines
 Synchronous machines
 D.C.-powered machines
 Electrical machines, special versions
 Rotary converters
 Frequency converters
 Motor generators
 Other rotary converters
 Transformers
 Liquid-insulated power transformers

Liquid-insulated power transformers up to 1,600 kVA
 Liquid-insulated power transformers 1,600 up to 10,000 kVA
 Liquid-insulated power transformers above 10,000 kVA
 Dry transformers
 Resin transformers
 Toroidal transformers
 Choke coils, power chokes
 Regulating transformers
 (Trockentransformatoren)
 Other dry transformers
 Safety transformers, constant-voltage transformers (stabilizers), step switches
 Safety transformers and isolating transformers
 Stabilizers for transformers
 Step switches/circuit breakers for transformers
 Parts and accessories for transformers
 Compact transformer stations
 High-voltage transformers
 High-frequency transformers
 Other Transformers
 Uninterruptible power supplies, UPS technology
 UPS/BFV systems, special stand-by power supplies
 UPS systems
 UPS systems/on-line
 UPS systems/off-line
 UPS systems/line-interactive
 UPS systems/Ferro
 19" rack UPS
 UPS systems for industrial applications
 Other UPS plants
 Chargers
 Chargers for starter batteries
 Chargers for traction batteries (Elektrische Energieumwandlung und Energiespeicherung)
 Chargers for fixed batteries
 Chargers for other batteries
 Chargers and power supplies for batteries in small equipment
 Other Chargers
 Power supply units for industrial applications
 Power supply units, power packs, switching

power supplies (Stromversorgungen für industrielle Anwendungen)
 D.C. voltage converters (Stromversorgungen für industrielle Anwendungen)
 Other D.C. power supplies (Stromversorgungen für industrielle Anwendungen)
 D.C.-A.C. converters for industrial applications
 Frequency transformers for industrial applications
 Constant-voltage regulators
 Other power supply units for industrial applications
 Rectifier equipment, converter systems
 High-voltage rectifying equipment
 Special D.C. supplies
 Accumulators
 Lead-acid accumulators (batteries)
 Lithium ion accumulators
 Lithium polymer accumulators
 Battery monitoring equipment and battery bus systems
 Other accumulators
 Parts and accessories for accumulators
 Electrical heating equipment
 Electrical industrial furnaces
 Electrical heating systems
 Electrical heating devices
 Electrical drying devices
 Electrical room heaters
 Electrical auxiliary heating
 Electrical radiators and heating elements
 Electrical area heating elements, incl. pliable ones
 Electrical infrared radiators for industrial applications
 Devices for electrical resistance heating
 Electrical external pipe heating
 Other electrical heating devices
 Parts and accessories for electrical heating devices for industry
 Electrical switching equipment, switchgear and distributing systems
 Switching technology up to 1 kV
 Low-voltage switching equipment, switching equipment up to 1 kV

No-load and load breaker switches up to 1 kV
 Safety isolators, fuses up to 1 kV
 Overvoltage arresters up to 1 kV
 Thyristor switches, thyristor reversing switches up to 1 kV
 Appliance switches, appliance safety switches up to 1 kV
 Fault current safety switches up to 1 kV
 Fault current protection devices
 Rail-mounting automatic fuse devices for automation technology
 Automatic power-factor correction equipment up to 1 kV
 Reactive power electronic regulators up to 1 kV
 Control switches up to 1 kV
 Housings for low-voltage switching equipment up to 1 kV
 Main switches up to 1 kV
 Emergency-off switches up to 1 kV
 Control switches and safety switches for D.C.
 Control switches and safety switches for three-phase current
 Parts and accessories for low-voltage switching equipment up to 1 kV
 Other Low-voltage switching equipment, switching equipment up to 1 kV
 Circuit breakers, load switches and busbars up to 1 kV
 Circuit breakers up to 1 kV
 Circuit breakers with communication capability up to 1 kV
 Compact circuit breakers up to 1 kV
 High-power circuit breakers up to 1 kV
 Synchronizable power circuit breakers of up to 1 kV
 Power circuit breakers up to 1 kV
 Load switching strips up to 1 kV
 Safety load break switches up to 1 kV
 Safety load breakers up to 1 kV
 Safety load fuses up to 1 kV
 Fuses, safety load switching fuses up to 1 kV
 Electronic circuit breaker strips up to 1 kV
 Isolating links with fuses up to 1 kV
 Surge current relays and load relays up to 1 kV
 Surge current relays and trippers up to 1 kV

Electronic load relays up to 1 kV
 Parts and accessories for contactors up to 1 kV
 Other surge current relays and load relays up to 1 kV
 Other low-voltage switching equipment up to 1 kV
 Low-voltage quick-break fuse links up to 1 kV
 Low-voltage fuse bases up to 1 kV
 Starters, controllers up to 1 kV
 Resistance equipment up to 1 kV
 Low-voltage switching equipment, components and operating media, special protective type
 Motor protection systems up to 1 kV
 Motor protection relays up to 1 kV
 Electronic multi-function protection relays
 Protective relays and protective systems for motors with integrated sensors
 Motor circuit breakers, motor protection devices up to 1 kV
 Motor protection power switches up to 1 kV
 Other motor protection systems
 Parts and accessories for motor protection systems
 Low-voltage switchgear, low-voltage distributors and components
 Switching desks, switching panels for low-voltage switching systems and low-voltage distributor systems
 Encapsulated low-voltage distributors (insulation, casting, steel)
 Low-voltage bus bar distributors
 3-phase bus bars up to 1 kV
 Cable distribution cabinets up to 1 kV
 Low-voltage motor control centers, MCCs
 Switching systems - modular design up to 1 kV
 Switching systems with fixed equipment up to 1 kV
 Low-voltage distribution boards
 Other low-voltage switching systems
 Parts and accessories for low-voltage switching systems
 Electrical switching equipment, switchgear and distributing systems with direct current, 600V DC systems and components
 Switching technology from 1 kV to 60 kV

Medium-voltage switching equipment, switching equipment from 1 kV to 60 kV
 Medium-voltage load switching systems
 Load switches from 1 kV to 60 kV
 Isolating links, earthing isolators from 1 kV to 60 kV
 Power switch systems from 1 kV to 60 kV
 Power switches from 1 kV to 60 kV
 Ring-main switches from 1 kV to 60 kV
 Vacuum power switches from 1 kV to 60 kV
 Surge arresters for switchgear and switching systems from 1 kV to 60 kV
 HV fuses, high-voltage equipment, medium-voltage equipment
 Control equipment and protective equipment from 1 kV to 60 kV
 High-voltage fields up to 60 kV with removable devices
 High-voltage fields up to 60 kV with fixed devices
 Ring-main switch gear installations from 1 kV to 60 kV
 Ready-made switching stations from 1 kV to 60 kV
 Medium-voltage switches and medium-voltage switchboards
 Complete medium-voltage switch cabinets
 Medium-voltage switches and switchboards, encapsulated to SF₆
 Parts and accessories for switchgear and switching systems from 1 kV to 60 kV
 Power circuit breakers from 1 kV to 60 kV
 Power circuit breakers for external assembly from 1 kV to 60 kV
 Power circuit breakers for internal assembly from 1 kV to 60 kV
 Motor protection systems from 1 kV to 60 kV
 Switching technology above 60 kV
 High-voltage switching equipment and switching systems above 60 kV
 High-voltage fields
 High-voltage power circuit breakers
 High-voltage isolators
 High-voltage isolating links
 High-voltage earthing isolators

Lightning protection and earthing equipment for switchgear and switching systems from 1 kV to 60 kV

Parts and accessories for switching equipment and switching systems (e.g. earthing resistors, earthing choke coils, etc.)

Switchgear systems, transfer stations and transformer substations

High and low-voltage switching systems for power supply boards and companies and industrial use

Medium-voltage transfer stations, low-voltage transfer stations

Prefabricated medium-voltage/low-voltage transfer stations

Medium-voltage switching systems, low-voltage switching systems using insertion and push-in technology

Low-voltage switching systems using push-in module technology

Modular switchboards for electrical switchgear systems

Switchgear for decentralised energy supply

Switchgear for solar power plants, solar energy production

Switchgear for automotive plants

Switchgear for process plants

Reactive power compensation systems

Parts and accessories for switching systems, transformer substations

Other switchgear systems stations, transfer stations and transformer substations

Heavy-current capacitors and inductors

Capacitors for heavy-current technology

Capacitors for low-voltage systems

Capacitors for high-voltage systems

Power capacitors

Capacitors for lights and motors

Capacitors for power electronics

Capacitors for inductive heating

Coupling capacitors and control capacitors

Radio interference suppression capacitors for heavy-current technology

Ready-to-connect capacitor systems with and without control

Other high-voltage capacitors

Parts and accessories for high-voltage capacitors

Inductive resistors for applications in electrical energy equipment

Compensating choke coils

Filter choke coils

Smoothing choke coils

Damping choke coils

Blocking choke coils

Other inductive resistors for applications in electrical energy equipment

Harmonic suppressor filters

Supplementary equipment for power supply and switchgear systems

Housings and switch cabinets for electrical switchgear systems and distributing systems

Housings for electrical equipment and electronics

Empty cabinets and casings for low-voltage switching systems

Electronic equipment cabinets (19" design)

Housings for control stations (Gehäuse für Elektrotechnik und Elektronik)

Switch cabinet systems

Housings for panels

Metal switch cabinet housings

Plastic switch cabinet housings

Switch cabinet housings for outdoor installation

Switch cabinet housings according to EMC for modular systems

Installation wall distributors

Installation upright distributors

Housings for medium-voltage switching systems

Special housing forms / switch cabinets

Switching desks

Wall-mounted housings for electrical switchgear systems

Mini housings for electrical switchgear systems

Special housings for electrical switchgear systems

User specific housings for electrical switchgear systems

External housings for electrical switchgear systems

Hinge systems for electrical switchgear systems

Casings - Accessories for electrical engineering and electronics

Parts and accessories for casings

Screwed cable glands as accessories for electrical engineering and electronics

Cable glands for housings and 19" module systems (Gehäuse-Zubehör für Elektrotechnik und Elektronik)

Cooling systems for electrical switchgear systems

Switch cabinet air-conditioning (Gehäuse-Zubehör für Elektrotechnik und Elektronik)

Busbar systems

Automatic boring machines and threading machines for the machining of switch cabinet casings

Chassis, modular frames for electrical switchgear systems

Chassis accessories for electrical switchgear systems

Connection technology for electrical switchgear systems

Conductor rails for switching systems

Current distribution components for electrical switchgear systems

Other housing accessories for electrical engineering and electronics

Connection technology for Energy

Complete plug connector systems for electrical connection technology

Contact inserts for electrical connection technology

Contact inserts with threaded connection (electrical connection technology)

Contact inserts with caged tension spring connection (electrical connection technology)

Contact inserts for high ambient temperatures (electrical connection technology)

Other contact inserts for electrical connection technology

Housings for electrical connection technology

Special tools for electrical connection technology

Energy conduction, current lines

Bare conductors

Power current lines and energy cables

Insulated power cables

Power current lines and power current cables

Pre-assembled power current lines

House wiring power cables

Appliance connection cables

Control wiring (insulated power cables)

Heat-resistant wiring

Vehicle wiring and vehicle cable sets

Flat neoprene and PVC cables

Other insulated power cables

Power cables

Low-voltage cables 0.6/1 kV with plastic insulation

Medium-voltage cables above 0.6/1 - 20/35 kV with paper insulation/plastic insulation

High-voltage and extra-high voltage cables over 20/35 kV with paper insulation (oil or pressure cables)

High-voltage cables over 20/35 kV with plastic insulation (VPE cables)

Off-shore cables, power cables

Ship wiring cables, power cables

Fire-resistant halogen-free safety cables (FRNC)

Direct current cables, DC cables

Other Power cables

Power cable fittings

Coupling sleeves, cable sleeves (Energie|kabelgarnituren)

Transition sleeves (Energie|kabelgarnituren)

Cable joints (Energie|kabelgarnituren)

Branch sleeves (Energie|kabelgarnituren)

Sealing ends (Energie|kabelgarnituren)

Screwed cable glands for power cables

Cable protection hoses (Energie|kabelgarnituren)

Shrink tubing (Energiekabelgarnituren)

Other heat-shrunk products (Energiekabelgarnituren)

Accessories for cable fittings

Other cable fittings for power cables

Power plug-and-socket devices and insulators

Power plug-and-socket devices and connector systems

Insulators

- High-voltage overhead line insulators
- High-voltage equipment insulators
- Bushings, post insulators (energy conduction, current lines)
- Low-voltage insulators
- Other Insulators
- Components and systems for contact line construction and overhead line construction
- Sliding contact power supplies for moving loads
 - Slip-rings (energy conduction, current lines)
 - Current collectors (energy conduction, current lines)
 - Busbar systems (energy conduction, current lines)
 - Other sliding contact power supplies for moving loads
- Moving cable power supplies for moving loads
 - Trailing cable systems
 - Lightning conductor cables/material for contact line construction and overhead line construction
 - Energy management systems (Stromzuführung für ortsveränderliche Verbraucher mittels beweglicher Kabel)
 - Moving cable power supplies for moving loads; other
- Cable laying material, cable laying systems
 - Cable carrier systems for cable laying, line construction
 - Tools for cable laying and line construction
 - Cable trays, cable carriers, cable troughs
 - Cable troughs and ducting for cable laying/line construction
 - Cable guide systems
 - Cable bushings for cable laying, line construction
 - Protective cable conduits for cable laying, line construction
 - Other cable laying material, cable laying systems
- Equipment and components for electric power systems
- Devices and components used in power electronics
 - Power supply units, general (Leistungselektronik)

Inverters

- Heavy-current power supplies
- Stand-by power supplies for D.C. voltage and A.C. voltage
- Laboratory mains power supplies
- D.C./D.C. converters
- D.C./A.C. converters
- D.C./A.C. converters for power electronics
- Transformers for power electronics
- Power supplies for circuitry
- Energy-efficient switch-mode power supplies
- Network modules
- Power semiconductors
- IGBTs (Insulated Gate Bipolar Transistors)
- Thyristors and Triacs, Thyristor Power Controller
- Heavy-duty rectifiers for industry
- Self-induction coils for power electronics
- Other devices and components used in power electronics
 - Battery charging ICs and switching regulator ICs
- Small transformers and components
 - Transformers (control transformers)
 - Bell transformers
- Electro-mechanical and mechanical components
 - Lead and line connectors
 - Winding materials (electro-mechanical components)
 - Industrial plug devices
 - Power resistors
 - Neozed fuses and accessories
 - Protective motor fuses
 - Fuses for electronics
 - Busbar distributors (Elektromechanische und mechanische Komponenten)
 - Heat sinks for electronics
 - Protective semiconductor fuses
 - Busbar systems for control cabinets
 - Pre-assembled cables (Leistungselektronik)
 - Cable ties (Leistungselektronik)
 - Cable brackets and cable bushings (Leistungselektronik)
 - Shrink tubing (Elektromechanische und mechanische Komponenten für die Industrielektronik)
 - Terminals, series terminals (Elektromechanische

und mechanische Komponenten für die Industrieelektronik)
 Terminal strips (Elektromechanische und mechanische Komponenten)
 Switchgear and control equipment
 Switchgear with communications capability
 Pressure switches (Schaltgeräte und Steuergeräte)
 Switchgear and control devices
 Actuating mechanisms, servo drives, actuators (electrical energy equipment)
 Magnetic switches
 Timers, switching clocks for control devices
 Electrical safety-switch mats
 Interface modules
 Limit switches
 Safety position switches
 Safety switchgear and control gear, incl. line safety switches
 Contact safety relays
 Switching equipment for Emergency Stop
 Switching equipment for PT100
 Other switchgear
 Parts and accessories for switchgear
 Industrial plug-in connectors
 Plug-in connectors for high currents and high voltages
 Round plug-in connectors to protection class IP65 and above
 Plug-in connectors in customer-specific design
 Parts and accessories for plug-in connectors (e.g. safety interlocks)
 Contact springs for connectors
 Switches for casings and operating panels
 Special switches, pushbuttons, keyboards
 Manufacture of custom designed keyboards/control panels
 Lock switches, key-operated switches (Spezielle Schalter)
 Foot actuated switches (Spezielle Schalter)
 Emergency-Off switches (Spezielle Schalter)
 Push-button rotary switches (Spezielle Schalter)
 Special manufacture of push-buttons and switches
 Other special switches, pushbuttons, keyboards

superconductor
 Energy storage systems with superconductor
 Energy transport with superconductor
 High-temperature superconductors
 Applications on superconduction
 Superconductors in generators
 Superconductors in motors and engines
 Cooler for superconduction
 Cryogenics systems, cryogene systems for superconduction
 Other applications for superconduction
 Insulation material for transformers and coil technology
 Digital energy and energy efficiency
 Measuring equipment and control equipment for power engineering
 Measuring equipment and automation systems for power engineering
 Protective systems and regulator systems (for boilers, generators, turbines)
 Danger alarm systems and other monitoring systems
 Switching control points and measuring control points, control rooms as well as software for power station control equipment
 Measuring equipment and automation plants for heat distribution
 Other measuring equipment and automation systems for power engineering
 Measuring equipment and control equipment, control equipment for power engineering
 Measuring equipment and control technology, control devices for heat generation plants
 Measuring equipment and control technology, control devices for electricity generation plants
 Measuring equipment and control technology, control devices for combined heat and power generation
 Measuring equipment and control technology, control devices for electricity generation sets
 Measuring equipment and control technology, control devices for ventilation and air-conditioning systems
 Other measuring and control equipment, control devices for power engineering

Measuring equipment and automation plants for heat distribution

Measuring equipment and automation plants for electric power distribution

Monitoring systems for electric power distribution

Load dispatchers for power systems

Network control rooms, switchgear control rooms, software for electric power distribution

Mains protection and plant protection for electric power distribution

Control systems and monitoring systems for high-voltage stations

Display systems and message systems for electric power distribution

Current transformers and voltage transformers for high voltages and medium voltages

Measured value recording systems, status signalling systems and fault notification systems for electric power distribution

Data transfer and data concentration for high-voltage equipment

Other measuring plants and automation plants for electric power distribution

Measuring and automation systems for supply and disposal technology

Metering technology for power engineering

Electricity meters (s.a. Automation, Motion & Drives)

Gas meters

Remote control systems (Mess- und Regelungstechnik für die Energietechnik)

Remote acting systems (Mess- und Regelungstechnik für die Energietechnik)

Remote diagnosis systems

Environmental measuring technology (systems, devices)

Complete environmental measuring systems and networks (simultaneous measuring of different components)

Stationary environmental measuring systems, air pollution monitoring, measuring stations/measuring networks

Mobile environmental measuring systems, measuring vehicles, mobile measuring containers

UPS systems for measuring stations/measuring networks

Measuring equipment for laboratory applications

Stand-alone measuring devices for environmental technology

Concentration measuring devices (CSB, BSB, TOC, ph, etc.)

Flow meters and level meters for environmental measuring technology

Sound measuring devices for environmental technology

Particle meters for environmental measuring technology

Moisture meters for environmental measuring technology

Spectrometers, spectrophotometers, photometers

Other individual measuring devices for environmental technology

Measuring devices for industrial safety applications

Analysis equipment and analysis systems for environmental technology

Moisture analyzers

Automatic analysis systems for environmental technology

Other analysis devices and analysis systems

Other environmental measuring technology (systems, devices)

Cable testing equipment

Equipment for electrical testing/safety testing of equipment and systems

High-voltage testing equipment

High-voltage dielectric strength testing devices

Insulation testers, devices for testing insulation resistance

High-current testing equipment and high-current measuring equipment

Meter testing devices

Testing devices for measuring transducers

Devices for testing leakage current, equivalent leakage current testing

Devices for testing luminaires, LEDs, luminaire heat-up testers

Devices for testing residual voltage
 Surge testers
 Devices for testing partial discharge
 Devices for testing wind power plants
 Fault recognition systems, fault locating systems for medium-voltage cables
 Other equipment for electrical testing, safety testing of equipment and systems
 Other measuring and control technology for energy technology
 Energy management in the industrial, commercial and infrastructure businesses
 Energy management systems (EnMS) and energy management services
 Energy consulting, energy audits & energy certification (ISO 50001, ISO 50003, DIN EN 16247)
 Energy data management systems (EDMS)
 Load management systems for the industry
 Intelligent lighting and Intelligent lighting control
 Building automation and building control (digital energy)
 Energy and facility management (EFM), computer-aided facility management (CAFM)
 Energy management as a service
 Virtual power plants
 Combined heat and power (Digital Energy)
 System solutions for energy-efficient production processes and production plants
 Other energy management systems and energy management services
 Energy management for application-specific areas of use
 Energy management for manufacturing industry
 Energy management for the process industry
 Energy management in trade and commerce
 Energy management in infrastructure operations
 Energy management in public institutions
 Other energy management
 Building energetics, building technology for office buildings & production buildings
 Electric building energetics

Power generation in building energetics
 Micro gas turbine systems
 Photovoltaic technology systems for building roofs
 Other power generation in building energetics
 Lighting systems, lighting technology for buildings
 Positioners and actuators for building engineering
 Control valves for building engineering
 Electrical drive systems for building engineering
 Other servo components and actuators for building engineering
 Fuses, safety switches, earthing material for electrical building installations
 Fuses for low voltages
 Screw-in fuses
 Equipment fuses
 Fuse bases
 Holders for equipment fuses
 D/DO fuses
 Fine-wire fuses
 Overvoltage arresters for building engineering
 Other fuses for low voltages
 Installation safety switches
 Surge voltage safety devices
 Surge arresters for low voltages
 Surge voltage protection equipment for powerline communication systems
 Other surge voltage safety devices (Technische Gebäudeausrüstung)
 Lightning protection materials and earthing materials
 Lightning conductor materials
 Earthing material, earthing systems
 Safety equipment, earthing and short-circuit devices
 Accessories for lightning protection materials and earthing materials
 Other lightning protection and earthing material
 Meter boards, series installation equipment, distribution systems for electrical building installations
 Tapping connections and counter panels

House connection boxes
 Meter panels
 Meter cabinets
 Installation distribution systems
 Installation distributors
 Small distributors
 Fuse boxes
 Accessories for installation distributors
 Other installation distributors
 Installation systems, duct systems and routing systems for electrical building installation
 Switches, sockets, plugs, lamp holders for electrical building installations
 Switches (installation technology)
 Plug ranges (installation technology)
 Plugs, couplings
 Plugs
 Couplings (Schalter, Steckdosen, Stecker, Fassungen für die elektrische Gebäude|installationstechnik)
 Plug inserts, inserts for cold and warm appliance sockets
 Switches, plug-and-socket connectors, parts and accessories for equipment
 Building communication, cables and wiring, timer switches for electrical building installation technology
 Heat generation, heat distribution in building engineering
 Heat pumps for building heating systems
 Thermal solar systems for building heating systems
 Heating boilers for building engineering
 Heating blowers
 Industrial water heaters
 Flow heaters
 Heat exchangers for building engineering
 Heat recovery systems for building engineering
 Heating elements (radiators, baseboard heaters, panel and flat surface radiators)
 Floor heating systems for building engineering
 Other surface heating systems (wall and ceiling heating systems, etc.)
 Heating units and radiators (electric/gas) for building engineering

Heat storage systems for the building heating technology
 Accessories for heating systems (pipes, fittings, valves, etc.) (Gebäudetechnik)
 Other heat generation in building energetics
 Air-conditioning, refrigeration, ventilation in building energetics
 Refrigeration engineering plants
 Small refrigerating machines and small refrigerating plants
 Large refrigerating machines and large refrigerating plants
 Compression refrigerating plants
 Liquid coolers, cold water aggregates
 Heat pumps and heat pump systems
 Fittings and accessories (refrigeration engineering)
 Other refrigeration engineering plants
 Ventilation systems for building energetics
 Aeration systems, ventilation systems, air-conditioning systems for plants and workshops
 Ventilation and air-conditioning systems for offices and business premises
 Other building heating technology, refrigeration engineering and ventilation and air conditioning
 Fans
 Axial fans
 Radial fans
 Cross-flow fans
 Fan impellers
 Roof-mounted fans
 High-efficiency ventilators
 Devices and components for ventilation and air conditioning
 Heat exchangers (air heaters, air coolers) for ventilation and air-conditioning
 Air filters for ventilation and air-conditioning
 Other ventilation and air-conditioning elements
 Other ventilation and air-conditioning equipment
 Ventilation systems and air-conditioning systems
 Air supply and extraction systems for ventilation and air conditioning
 Air humidification and dehumidification

systems

Air heating systems

Air conditioning systems for ventilation and air-conditioning

Drying systems for ventilation and air conditioning

Energy-efficient ventilation technology

Smart system technologies in building energetics

Building information modelling (BIM)

Energy management systems (EMS), demand-side management systems, load management systems for buildings

Intelligent electricity meters, smart meters

Intelligent systems for building automation

Facility management systems for buildings

Other smart system technologies in building energetics

Thermal insulation & sound insulation for power engineering & building technology

Heat insulation, cold insulation

Thermal insulation facades, windows, doors

Energy advice for buildings

Energy efficiency & resource efficiency

Resource efficiency and energy efficiency in production

Ecoeffective production technologies (cradle to cradle)

Heat recovery systems, heat saving systems

Energy recovery systems

Waste heat utilisation systems for waste air, waste gas

Systems for waste heat recovery from water and liquid process fluids

Heat storage systems for temporal isolation of processes

Coupling of heating processes and cooling processes with heat pumps, absorption refrigerating systems, etc.

Other heat recovery systems, heat saving systems

Power-saving production technologies

System solutions for energy-efficient production processes and production plants, smart efficiency

System solutions for energy-efficient ancillary processes, smart efficiency

Process substitution for energy-saving joining technology (e.g. adhesive bonding instead of welding)

Other Energy-saving production technologies

Energy-efficient lighting

Energy-efficient outdoor lighting

Energy-efficient hall lighting (high ceilings)

Energy-efficient room lighting, office lighting

Intelligent, brightness-related, motion-related lighting control systems

Lighting, light markings with photovoltaics power generation

Other energy-efficient lighting

Energy-efficient supply technology (heating, air-conditioning, refrigeration, ventilation, compressed air supply, heat pumps)

Other resource efficiency and energy efficiency in production

Recycling

Secondary raw material production

Production and marketing of products made of secondary raw materials and recycling material

Recycling of industrial waste materials, material recycling

Sludge and waste treatment

Thermal recycling of industrial waste and communal waste

Composting

Recycling plants

Biogas production systems, biogas systems

Other recycling and residual waste recovery

Energy supply, energy trading, gas supply, electricity supply

Network monitoring and network control for power supply

Digital energy solutions for businesses

Util: IT - digital solutions for utilities and network operators

Network control and network monitoring, telecontrol, smart grids

Intelligent local network stations

Critical infrastructure protection, cyber security

Intelligent measurement systems, smart meters & smart gateways (Util: IT)

Customer management (utilities & network

operators)

New business models, added value services for utilities & network operators

Smart city solutions

Consultant, rollout service provider for utilities & network operators

Energy services

Consultancy and planning for power engineering

Consultancy and planning for mains operation for electricity, gas, water

Process optimization for power engineering

Consultancy and planning in further areas of power engineering

Electric and electronic consultancy and planning

Consultancy for occupational safety and health protection systems in power engineering

Energy contracting and consultancy services for energy users and power supply companies

Consultancy for power supply companies

Consultancy services for optimizing the usage of power and water

Contracting and energy contracting for energy users

Energy contracting services

Certificates, studies and contract documentation for power engineering

Environmental impact assessments, environmental impact analyses for energy technology

Feasibility studies for power engineering

Performance of certification procedures, adherence to legal framework conditions in power engineering

Consultancy in public promotional programmes for power engineering

Other certificates and studies for power engineering

Measurements and analyses for power engineering

Fault analyses for power engineering

Mains analyses for power engineering

System safety analyses for power engineering

EMC measurements for power engineering

Other measurements and analyses for power engineering

Consultancy and services for energy efficiency

and energy saving

Environmental consulting for companies, environmental protection services for companies

Planning and tendering for power engineering

Engineering, development, software, documentation for power engineering

Simulation for power engineering

Engineering, development of electronic systems

Application software and systems for power supply

Application software for power supply companies

Application software for remote meter reading

Conception of power indicators and power controlling

Other complete DP solutions for power engineering

Preparation of technical documentation for power engineering

Engineering, development in further areas of power engineering

Quality management, environmental management for power engineering

Certification according to DIN ISO 9000 ff for power engineering

Environmental certification (eco-audit) in power engineering, ISO 14000

Product certification (CE, GS, etc.) for power engineering

Support, service for power engineering

Maintenance and services for power engineering

Maintenance and services of transport systems and storage systems for (solid, liquid and gaseous) fuels

Maintenance and services of transformers and generators

Maintenance and services of electrical systems

Maintenance and services of electrical appliances for energy conversion and energy storage

Maintenance and services for medium voltage systems

Maintenance and services of other systems and accessories for power engineering

Conversion and extension, modernisation of

installations for power engineering

- Plant consultancy, plant service for power engineering
- 24hr repair service/spare parts service for power engineering
- Teleservice, remote maintenance for power engineering
- Installation of power engineering systems
- Installation electrical systems
- Cable installation, cable laying for power engineering
- Testing of electrical equipment and installations
- Testing of electrotechnical devices and installations (low-voltage products)
- Testing of electrotechnical devices and installations (high-voltage products)
- Commissioning tests of high-voltage cable installations and GIS
- CE test certificates for electrical devices, power engineering plants
- Testing of protection devices for electrical installations
- Testing of current transformers and voltage transformers
- Complete solutions, turnkey plants for power engineering
- Complete solutions for high systems, medium systems and low-voltage systems
- Complete solutions for open-air systems
- Complete solutions for cable networks and local networks
- Complete solutions for high voltage switching systems and low-voltage switching systems
- Complete solutions for systems of electricity supply companies and industrial use
- Complete solutions for cable systems in power engineering
- Production of turn-key plants and turn-key sub-plants for power engineering
- Cable laying, cable building
- Overhead line construction
- Other complete solutions for other systems in power engineering
- Publishers, technical publications for power engineering

- Organizations, associations, authorities in power engineering
- E-mobility and charging infrastructure
- Electric transport systems for goods transport, electric utility vehicles, work machinery
- Electric transport vehicles for short-haul logistics, intralogistics
- Communal vehicles, mobile road sweepers (application of hybrid drives, electric drives)
- Electric industrial trucks, autonomous transport systems
- Electric aircraft for goods transport
- Mobile, electric agricultural machinery
- Mobile, electric construction machinery
- Mobile, electric machinery, other work machinery, off-highway
- Other electric transport systems for goods transport, electric utility vehicles, work machinery
- Electric transport systems for passenger transport
- New mobility concepts with electric drives, electric vehicles
- Multimodal passenger transport
- Urban mobility concepts
- Urban traffic management
- Mobility concepts with autonomous, electric vehicles
- Mobility stations
- Car sharing systems
- On-demand mobility, ride-hailing, ride-sharing
- Other new mobility concepts
- Infrastructure solutions for electric mobility, electric transport systems
- Charging technology, electric filling stations
- Charging stations for electric vehicles
- Charging cables, plugs for electric vehicles
- Wireless charging systems, inductive charging
- Replaceable battery systems, battery replacement systems, infrastructure for replaceable batteries
- Stationary energy storage units
- Quick charge stations
- Other charging technology, electric filling stations
- Network operators, network expansion and

network integration for electricity infrastructure and mobility

Other electricity infrastructure for mobility

Hydrogen infrastructure for mobility

Services for electric mobility, hybrid and electric drive technology

Operator models for hybrid, electric mobility (batteries, removable battery systems, vehicles, fleets, mobility concepts)

Other services for electric mobility, hybrid and electric drive technology

Specialist publications, publishers for electric mobility, electric transport systems

Organisations, associations for electric mobility, electric transport systems

Trade associations for electric mobility, hybrid and electric drive technology

Research associations, groups and organisations for electric mobility, hybrid and electric drive technology

Research facilities and institutes for electric mobility, hybrid and electric drive technology

Electric mobility model regions

Compressed-Air and vacuum

Compressed air technology

Compressors for compressed air generation (acc. to. type)

Piston compressors

Stationary piston compressors

Mobile piston compressors

High-pressure piston compressors

Wobble piston compressors

Dry-running compressors

Membrane compressors

Rotation compressors; single-shaft (e.g. multi-cell compressors, liquid ring compressors, spiral compressors)

Two-shaft rotary piston compressors, blowers (e. g. roots, claw-type and tooth-type rotary compressors)

Screw compressors

Dry-running screw-type compressors

Oil-injection screw-type compressors

Water-injected screw-type compressors

Axial/radial turbo-compressors and

turbo-blowers

Side channel compressors (gas-ring compressors)

Other compressors for compressed air generation

Application-related compressors

Filling compressors

Start-up compressors

Brake air compressors

Marine compressors

Instrument air compressors, control air compressors

Compressors for redensification, booster compressors

Compressors for bulk goods transport

Compressors for excessive air pressure, high-pressure compressors

Pneumatic compressors for general applications

Accessories and components for compressors and compressed air technology

Compressor regulating systems, compressor control systems, pressure switches

Valves for compressors and compressed air technology

Pressure gauges, pressure reducers for compressors and compressed air technology

Silencers, suction filters for compressors and compressed air technology

Heat recovery systems and cooling systems for compressors and compressed air technology

Other accessories and components for compressors and compressed air technology

Compressed air processing plants

Intercoolers and recoolers for compressed air

Heat exchangers for compressed air

Compressed air dryers

Absorption dryers for compressed air

Adsorption dryers for compressed air

Cooling dryers for compressed air

Membrane dryers for compressed air

Other compressed air dryers

Equipment for pressure dew-point measurement and pressure dew-point monitoring

Liquid separators and diverters of solid, liquid and

gaseous matter for compressed air

- Steam traps, also automatic for compressed air
- Oil/water separation systems for compressed air
- Compressed air filters
- Catalytic hydrocarbon removal and oil removal for compressed air
- Other liquid separators and diverters of solid, liquid and gaseous matter for compressed air
- Compressed air maintenance units (filters, oilers, regulators) (Druckluft-Aufbereitung)
- Other compressed air processing plants
- Systems for compressed air storage and distribution
- Pressure tanks
- Fittings for compressed air
- Safety valves for compressed air
- Compressed air lines and accessories
- Pneumatic hoses and accessories
- Compressed air pipe connections (couplings, screw fittings, quick release couplings) and accessories (seals)
- Compressed air measuring equipment (pressure, temperature, volumetric flow, leakage)
- Pneumatic brakes and brake systems
- Pneumatic tools, equipment and accessories
- Gas compressors for industrial gases
- Energy-efficient compressed air technology, compressed air distribution systems, compressors and control systems
- Other compressed air equipment and compressed air systems

Vacuum technology

Vacuum pumps (ComVac)

- Liquid ring pumps, (Vacuum technology)
- Rotary vane pumps, (Vacuum technology)
- Roots pumps (rotary piston), (Vacuum technology)
- Gas ring pumps (side channel blowers), (Vacuum technology)
- Membrane pumps, (Vacuum technology)
- Rotating plunger pumps, (Vacuum technology)
- Reciprocating piston pumps, (Vacuum technology)
- Cryogenic pumps, (Vacuum technology)
- Fluid entrainment jet pumps, (Vacuum

technology)

- Turbomolecular pumps, (Vacuum technology)
- Dry-running pumps, (Vacuum technology)
- Sorption pumps, (Vacuum technology)
- Scroll pumps, (Vacuum technology)
- Screw-type pumps, (Vacuum technology)
- Pump stands, (Vacuum technology)

Vacuum fittings, vacuum seals, vacuum valves & accessories

- Vacuum valves
- Vacuum flanges
- Sealing devices, vacuum
- Vacuum tanks
- Vacuum feed-throughs
- Vacuum measuring devices
- Vacuum leak detectors
- Systems and components for/involving vacuum

Vacuum technology applications, solutions

- Vacuum drying plants
- Vacuum distillation plants
- Vacuum technology solutions for the woodworking industry
- Vacuum technology solutions for the textile industry
- Vacuum technology solutions for paper industry, printing industry
- Vacuum technology solutions for chemical industry
- Vacuum technology solutions for glass industry, ceramics industry
- Vacuum technology solutions for precision mechanics and optics
- Vacuum technology solutions for measurement and control technology
- Vacuum technology solutions for the semiconductor industry
- Vacuum technology solutions for the pharmaceutical industry and medical technology
- Vacuum technology solutions for mechanical engineering
- Vacuum technology solutions for the automobile industry
- Vacuum technology solutions for the packaging industry
- Vacuum technology solutions for electrical

engineering, electronics

Vacuum technology solutions for the food industry

Vacuum technology solutions for the aircraft industry

Vacuum technology solutions for the plastics industry

Vacuum technology solutions for other industries

Services for the compressed air and vacuum

Services in the field of compressed air technology

Consultancy, planning in the field of compressed air technology

Analyses and optimisation of compressed air systems (audit)

Compressed air quality analysis

Conversion, modernisation in the field of compressed air technology

Measurements of delivery quantities in the field of compressed air technology

Support, after sales service for the field of compressed air technology

Spare parts supply for the field of compressed air technology

Services for the field of vacuum technology

Consultancy, planning in the field of vacuum technology

Support and after-sales service for the field of vacuum technology

Spare parts supply for the field of vacuum technology

Trade literature, trade journals for the field of compressed air technology

Technical literature, technical publications for the field of vacuum technology

Organizations, associations for the field of compressed air technology

Organizations, associations for the field of vacuum technology

Digital ecosystems

Manufacturing execution systems, MES and factory operation

Manufacturing execution systems, MES

Manufacturing execution systems, MES for mass producers

Manufacturing execution systems, MES for small-scale producers

Manufacturing execution systems, MES for the process industry

Manufacturing execution systems, MES with high availability servers

Other manufacturing execution systems, MES

Software and solutions for production data acquisition, factory data collection, FDC, MDA

Software and solutions for production data management

Software and solutions for manufacturing systems, manufacturing control stations

Software and solutions for manufacturing control systems

Software and solutions for machine monitoring and machine control

Application software for quality assurance and quality management/CAQ

Software and solutions for CAQ systems

Application software for quality assurance (measuring)

Application software for quality assurance (testing)

Integrated quality assurance software

Software and solutions for quality management

Software and solutions for maintenance and repair

Software for maintenance in industry

Software and solutions for maintenance management

MPS, maintenance systems

Other software and solutions for maintenance and repair

Software and solutions for customer service and support

Application software for vertical IT integration

Software and solutions for factory planning

Other business software and manufacturing software

Enterprise resource management systems, ERP

Software and solutions for Enterprise Resource Planning, ERP and production planning, PPC

Software and solutions for Enterprise Resource Planning, ERP, order processing

Software and solutions for Enterprise Resource Planning, ERP for series production

Software and solutions for Enterprise Resource Planning, ERP for services

Software and solutions for Enterprise Resource Planning, ERP for small-scale producers

Software and solutions for production planning/computer-aided planning, CAP

Software and solutions for production planning and control, PPC

Software and solutions for production planning and control, PPC in small-scale enterprises

Software and solutions for production planning and control, PPC in large/medium-scale enterprises with single-piece production

Software and solutions for production planning and control, PPC in large-scale, medium-scale enterprises with series production

Interfaces for production planning and production control systems

Other software and solutions for production planning and control, PPC

Software and solutions for integrated manufacturing control and scheduling

Other software and solutions for Enterprise Resource Planning, ERP and production planning, PPC

Software and solutions for management and business tasks

Software and solutions for company management, organization and management

Software and solutions for human resources, personnel management

Software and solutions for project management

Software and solutions for risk management

Software and solutions for environmental management

Software and solutions for business process optimization, business process management

Software for production cost calculations

Personnel time management software

Asset management software and solutions

Content management software

Document management systems, DMS

Workflow systems

Other software and solutions for management and the commercial sector

Logistics IT

Systems and solutions for intralogistics and logistics

Route planning systems and scheduling systems

Call-up delivery systems

Customs relevant systems

Warehouse management systems

Warehouse management systems for PCs

Warehouse management systems (large systems)

Warehouse management systems for automated warehouses

Warehouse control systems

Production orientated logistic systems

Commissioning systems, smart commissioning systems (software)

Distribution systems/transport logistics systems

Recycling logistic systems

Logistics management systems

Simulation systems for materials flow and logistics

Material handling and logistics software solutions for industrial trucks, cranes and elevators

Application software for warehousing

Procurement logistics systems

Forwarding agent management systems

Telematic systems for logistics

Vehicle fleet management systems (Systeme und Lösungen für Intralogistik und Logistik)

Cargo tracking systems

Fleet management systems

Visualisation systems for materials flow, warehouses and logistics

Supply-Chain systems & solutions for intralogistics and logistics

Software and solutions for electronic kanban, automatic material supplies control

eLogistics systems

Industrial 4.0 solutions and logistics 4.0 solutions

Image processing systems for intralogistics and transport logistics

Other special systems and solutions for intralogistics and logistics

Software and solutions for procurement, materials management and logistics

Software and solutions for materials management

Software and solutions for storage management

Software and solutions for transportation, operating logistics

Software and solutions for supply chain management, SCM

Software and solutions for demand chain management, DCM

Software and solutions for material flow control and material flow optimization

Software and solutions for distribution and dispatch

Advanced Planning and Scheduling (APS) solutions

Software & solutions for logistics management

Software and solutions for electronic kanban, automatic material supplies control

Other software and solutions for procurement, materials management and logistics

Business software for intralogistics and logistics companies

ERP systems, order processing systems for logistics

Business process management systems for logistics

Fiscal systems, accounting and personnel management systems in the field of logistics

Marketing, distribution and CRM systems for logistics

Software and solutions for quality assurance in the field of logistics

Software and solutions for documentation and document management in the field of logistics

Software and solutions for Internet, Intranet, multimedia in the field of logistics

Customer service software and solutions for logistics

Mobile computing solutions for logistics

Other business software for intralogistics and logistics companies

Other application software and solutions for intralogistics and transport logistics

Computer retailers and automation system providers for intralogistics and transport logistics

Customer relationship management, CRM, sales and marketing

Software and solution for marketing, eMarketing, mobile marketing

Software and solutions for distribution

Application software for technical sales

Application software for customer relationship management, CRM and technical sales

Application software for Customer Relationship Management, CRM, standard software

Application software for Customer Relationship Management, CRM, individual software

Application software for Customer Relationship Management, CRM, mobile computing systems

Other application software for Customer Relationship Management, CRM

eCommerce and eBusiness solutions

Software and solutions for CRM, distribution and marketing

Virtual reality and augmented reality systems

General virtual and augmented reality in automation technology

Virtual prototyping systems

Virtual reality software for industrial applications

Virtual reality in production planning

Virtual reality in robotics

Smart glasses

Other virtual reality and augmented reality systems

Product life cycle management, PLM, computer aided design, CAD, CAM

Product Life Cycle Management, PLM software and solutions

Complete Product Life Cycle Management, PLM systems and solutions

Software and solutions for Total Life Cycle Management, TLM

Software and solutions for product request management

CAD software and solutions for the generation of

product data

- CAD software for 2D
- CAD software for 3D
- CAD software for electrical circuit plans and electrical engineering
- CAD software for mechanical engineering and plant construction
- CAD software for tank construction and pipeline construction
- CAD software for software design/programme design
- CAD software for mould and die construction
- CAD software for heating, air conditioning, ventilation, technical building equipment and installations
- Supplementary CAD software packs
- Other CAD software and solutions for the generation of product data
- Software and solutions for Computer Aided Engineering, CAE, technical calculations and simulation
- CAE software and solutions
 - CAE software and solutions for mechanical engineering and plant construction
 - CAE software and solutions for toolmaking, diemaking and mould making
 - CAE software and solutions for heating, air conditioning, ventilation, technical building equipment and installations
 - CAE software and solutions for hydraulics
 - CAE software and solutions for pneumatics
 - CAE software and solutions for electrical engineering
 - Other CAE software and solutions
- Software and solutions for technical calculations and simulation
 - Software and solutions for continuous computer simulation/process simulation/computational fluid dynamics
 - Software and solutions for discrete computer simulation
 - Software and solutions for finite element calculations
 - Software and solutions for manufacturing simulation

- Software and solutions for business process modelling and business process simulation
- Other software and solutions for technical calculations and simulation
 - Software for engineering, construction and product development
 - Software for collaborative engineering and cross-sector product development
- Software and solutions for the provision and management of product data (PDM, EDM)
 - Software and solutions for engineering data management, EDM
 - Software and solutions for product data management, PDM
 - Product configurators
 - Software for product versions, version configurators
 - Systems knowledge-based product configuration
- Other software and solutions for the provision and management of product data (PDM, EDM)
 - Software and solutions for production planning, operations scheduling for products
 - Software and solutions for experiment, prototyping and development
 - Software and solutions for technical documentation
 - Software and solutions for Media Asset Management, media databases
 - Other Product Life Cycle Management, PLM software and solutions
- Computer Aided Manufacturing, CAM solutions
 - Software and solutions for computer-aided manufacturing/CAM
 - Software and solutions for NC programming
 - CAD/CAM automation software
 - Software and solutions for industrial controls
 - Other computer aided manufacturing, CAM solutions
- Predictive maintenance, condition monitoring
 - Condition monitoring and diagnosis systems
 - Portable offline vibration monitoring systems
 - Online vibration monitoring systems
 - Equipment and systems for condition-oriented maintenance, condition monitoring
 - Systems for Condition Based Monitoring

Wall thickness measuring systems
 Intelligent machine diagnosis systems
 Ultrasound condition monitoring systems
 Other condition monitoring and diagnosis systems
 Systems and solutions for predictive maintenance, PdM
 Systems and solutions for reliability-centred maintenance, RCM
 Information technology, communication technology, ICT, 5G
 Networks, field bus systems, wireless automation
 Industrial networks
 Industrial networks, Ethernet, TCP/IP
 Fiber-optic industrial Ethernet
 Industrial Ethernet systems, industrial Ethernet EtherNet/IP systems
 Fail-safe, redundant Ethernet networks
 High-speed networks, 10Gbit/s networks
 Other industrial networks on TCP/IP
 Components for industrial networks
 Over-voltage protection in high-speed data networks
 Interface converters for industrial networks
 Ethernet controllers (fieldbus, Internet and network applications)
 Network metrology, network analyzers
 Parts and accessories for networks and transfer systems
 Explosion-proof ethernet components
 Other components for industrial networks
 Factory bus systems
 Industrial network applications
 Industrial networks and serial bus systems in automation technology
 Transfer systems in automation technology
 Communication networks for process automation
 Ethernet for industrial automation
 Other industrial network applications
 Software for industrial networks
 PROFIBUS systems
 Complete PROFIBUS systems, Profibus DP, Profibus PA
 PROFIBUS components and interfaces

PROFIBUS-DP interfaces
 PROFIBUS interfaces
 Plug and Play technology for PROFIBUS systems
 PROFIBUS network components
 Certified PROFIBUS devices with tests in multi-vendor environment
 Parts and accessories for PROFIBUS systems
 Wireless PROFIBUS transfer systems
 Industrial PROFIBUS applications
 PROFIBUS tools and software
 CANbus
 CANbus technology, CANBus systems
 CANbus, interfaces, components, tools
 CANopen-specific tools and interfaces
 CANopen bus systems
 CANopen I/O modules
 CANopen input devices, CANopen output devices
 CANopen sensors (e.g. for temperatures or pressure)
 CANopen actuators (e.g. drive control units)
 CANopen analysis tools
 Other CANopen specific tools and interfaces
 CAN development tools, engineering, training
 CANbus applications
 ControlNet systems and ControlNet modules
 PCI bus systems and components
 DeviceNet bus systems and components
 Other fieldbus systems and automation bus systems
 Fieldbus systems and building automation buses
 Wireless fieldbus systems
 LON bus systems (Local Operating Network), e.g. LONWORKS
 ARCNET systems and components
 sercos interface systems
 KNX systems and KNX components
 Modbus, Modbus Plus bus systems and Modbus components
 Fieldbus systems in areas subject to the risk of explosion
 Other fieldbus systems and building automation buses
 Interfaces and tools for fieldbus systems
 General bus interfaces

DDE servers, OPC servers, OPC UA servers
 Remote I/O systems for fieldbus systems
 Metrology on the fieldbus
 Engineering FDT (Field Device Tools)
 Fieldbus interfaces for industrial PCs
 Other interfaces and tools for fieldbus systems
 Fieldbus components
 Fieldbus components for input/output level
 Analog input/output modules (fieldbus)
 Digital input/output modules (fieldbus)
 I/O modules with separation for explosion hazardous areas for fieldbus systems
 ASICs for fieldbus systems
 On-site control panels for fieldbus systems
 Control terminals with TouchScreen and/or keyboard for fieldbus systems
 Fieldbus gateways
 Fieldbus terminals
 Bus couplers for fieldbus systems
 Bus controllers for fieldbus systems
 Components and accessories for fieldbus systems
 Segment couplers for fieldbus systems
 Actuator Sensor interface (AS interface) for fieldbus systems
 HART interfaces, HART (Highway Addressable Remote Transducer), HART Communication Foundation (HCF)
 Other fieldbus components
 Software for fieldbus systems
 General software for fieldbus systems
 Configuration tools and test tools for fieldbus systems
 Diagnostic tools, programming devices, AT cards for fieldbus systems
 Wireless Automation, wireless communication, optical data transmission
 Wireless data transfer, wireless LANs
 Wireless Ethernet LAN systems
 Wireless communication systems
 Bluetooth-based data transfer systems, LAN systems
 Wireless communication, monitoring and control with Zigbee standard
 Wireless communication & power supply

systems
 Other wireless data transmission systems
 Data transfer by radio, mobil radio
 Radio data transfer systems
 Data radio modems
 Radio transfer systems for measuring data
 ISM Band (Industrial, Scientific, Medical Band) transfer systems
 Industrial transfer systems with mobile radio phone (GPRS, HSCSD, UMTS)
 Communication modems, alarm modems for mobile radio communication/GSM, fault sensors and alarm modules for mobile radio communication/GSM
 Wireless automation systems
 Optical data transfer
 Optical transfer systems for industrial applications
 Fiber-optic transmitters
 Pre-assembled fiber-optic cables
 Other optical data transfer
 Remote control technology, teleservice systems
 Remote control technical systems on a teleservice basis
 Modules and unit groups for remote control, remote measuring and remote monitoring
 Other remote control technology systems and remote control technology components
 Other wireless automation, wireless communication, optical data transmission
 Connection technology for automation
 Plug connectors in automation
 PCB plug-in connectors
 USB plug-in connectors
 Cable pre-assemblies with plug connectors with connection leads
 Sub-Miniature-D appliance plug-in connectors
 Rectangular plug-in connectors
 Optical fiber plug connectors
 Optical fiber plug connector systems
 Hybrid connectors for different kinds of contacts
 High-density plug-in connectors
 Ribbon cable plug connectors
 DIN plug-in connectors
 Plug connectors with crimp connection

Plug connectors in other connection techniques
 (spring terminals and screw connections, etc.)
 Plug connectors with integrated electronics
 Compact plug connector systems
 HF plug connectors
 Circular connectors and couplings
 Plug-in connectors with designed EMC characteristics
 Coaxial plug-in connectors
 Other plug connectors
 Complete plug systems for automation
 Plug inserts for automation
 Connector shells in automation
 Standard housings for connection technology in automation
 Housings for high ambient temperatures
 Housings for aggressive ambience conditions
 Housings for high screen attenuation
 Special cables and connection units for automation
 Special cables for networks, transfer systems, fieldbus systems (fiberglass, coaxial cables, copper cables, twisted copper cables, etc.)
 Cable fittings, connection units and accessories for special cables for networks, transfer systems, fieldbus systems
 Slip ring transformers and accessories for automation
 Industry telephones
 Industry telephones, explosion-protected
 Other industry telephones
 Machine-to-machine communication, M2M
 Systems for machine-to-machine communication, M2M
 Software for machine-to-machine communication, M2M
 Machine-to-machine communication, M2M via wireless networks
 Wired machine-to-machine communication, M2M
 Machine-to-machine communication, wireless M2M, Zigbee, Bluetooth, RFID
 Machine-to-machine (M2M) communication via public networks
 M2M communication systems for mobile

automation
 Other machine-to-machine communication, M2M
 Servers, industrial PCs and embedded systems
 Servers and industrial PCs
 Industrial PCs and software for industrial PCs
 Industrial PCs (IPCs) for normal environmental conditions
 Industrial PCs (IPCs) for harsh environmental conditions
 Industrial PCs (IPCs) for explosion-proof areas
 Dust-proof industrial PCs
 Water-proof industrial PCs
 Dirt-proof industrial PCs
 Portable industrial PCs
 Compact industrial PCs (IPC) in 19" installation technology
 Industrial PCs for top-hat rail installation
 Slimline industrial PCs for operation in harsh environments
 Industrial PCs for operation in vicinity of machines
 Industrial PCs (IPCs) with integrated hardware - programmable controllers
 Industrial PC-based automation
 Panel PCs, touch panel PCs
 Server systems, servers for 19" racks, blade server for industrial use
 High availability servers for industrial applications (systems stability)
 Data centres
 Tablets, tablet PCs
 Other servers and industrial PCs (IPCs)
 Industrial workstations, industrial process control computers and mobile computers
 Industrial workstations
 Industrial PC workstations
 PC-based control systems
 Graphics workstations
 Other industrial workstations and industrial process control computers
 Microprocessors and microcontrollers
 Interface components for industrial PCs
 Visualization technology, display systems
 Complete visualization systems

PC-based operation systems
 Touch panels (display, operation)
 Peripherals for industrial PCs and automation systems
 Terminals for automation
 General production management terminals
 Time acquisition terminals
 Terminals for order acquisition
 Machine terminals
 Mobile data acquisition terminals with radio transmission/data acquisition systems with radio transmission
 Mobile data acquisition terminals with cable transmission/data acquisition systems with cable transmission
 Other terminals for automation
 Keyboards, printers and monitors for automation
 Keyboards for harsh environmental conditions
 Keyboards for industrial PCs
 Monitors, computer displays
 KVM switches (keyboard, video, mouse switches)
 Modular touch panels for industrial computers
 Large screens
 Industrial printers for harsh environmental conditions
 Printers
 Plotters
 Accessories for recorders, printers, plotters
 Other keyboards, printers and monitors for automation
 UPS systems (uninterruptible power supply systems) for automation & industrial PCs
 Power supplies for automation and industrial PCs
 Installation sets and mounting sets for industrial environments, e.g. in 19" module carriers, switchboards, or IP 65 housings
 Other peripheral equipment for industrial PCs (IPC) and automation systems
 Embedded systems
 Embedded computer hardware
 Embedded PCs
 Embedded Control
 Embedded networking
 Micro-controllers for real-time embedded

systems
 Embedded modules
 Single-board computers
 Other embedded computer hardware
 Software for embedded systems
 Embedded software development tools (embedded tool kits)
 Embedded Linux
 Drivers and system software for embedded computer technology
 Communication software for embedded systems
 Other software for embedded systems
 Embedded applications
 Complete embedded systems
 Industrial identification, automatic data capturing (ADC), tracking & tracing
 Identification systems
 Optical/optoelectrical identification systems
 Identification systems by means of image analysis, codeless identification systems
 Identification systems by means of radio frequency and transponders (RFID)
 Identification systems using microwaves
 Identification systems using ultrasound
 Other identification systems
 Identification systems and coding systems
 Inductive identification systems and coding systems
 Identification systems and coding systems by means of radio frequency (high-frequency signals) and transponders (RFID)
 Identification systems and coding systems by means of microwaves
 Other identification systems and coding systems
 Special identification systems
 Inductive identification and coding systems in areas subject to explosion risk
 Identification systems for difficult operating conditions
 High-temperature identification systems and coding systems
 Mobile identification and coding systems
 Other special identification systems and coding systems
 Barcode systems

Barcode scanners for automation
 Hand-held barcode readers for automation
 Other barcode readers for automation
 Barcode printers for automation
 Barcode recognition software for automation
 2D barcode systems, 2D symbol systems for automation
 Accessories for barcode systems
 Barcode labels and barcode forms for automation
 Other accessories for barcode systems
 Components for identification systems
 Radio frequency identification chips, RFID chips
 Other components for identification systems
 Complete identification systems listed according to application
 Attendance data acquisition systems
 Other complete solutions for automatic data acquisition and identification
 Production data acquisition, PDA
 Factory data collection systems and equipment, FDC
 FDC/MDA terminals, with storage data acquisition
 Machine data acquisition systems and equipment
 Handheld operating data capture/ODC terminals
 Vehicle operating data capture, ODC terminals
 Decentralized data acquisition modules
 Tracking & tracing systems for workpieces and products
 Tracking & tracing systems (logistics)
 Hardware and automation technology for Industry 4.0 and Internet of Things, IoT
 Equipment, sensors, communication technology for Industry 4.0 and industrial internet
 Components, systems for the Internet of Things, IoT in industrial applications, Industrial Internet of Things, IIoT
 Other technical automation solutions for industry and 4.0 Industrial Internet
 5G-Technology
 5G Infrastructure
 5G modules

5G applications
 Communication services, fixed-line and mobile carriers
 Digital platforms
 Basic software and system-oriented software
 Operating systems for industrial IT
 Operating system extensions and system management programs for industrial IT
 OPC drivers, OPC servers, driver software for Industrial IT, OPC UA
 Software for computer management, maintenance and installation
 Software for computer data backup
 Other operating system extensions for industrial IT
 Data management software for industrial IT
 Database management systems
 Knowledge management systems
 Other data management software for industrial IT
 Software for application development for industrial IT, development tools
 PLC programming systems, application development systems for automation equipment
 Application development systems, expert systems, diagnosis systems, artificial intelligence systems
 Application development systems for Soft-PLC systems
 Application development systems for Virtual Reality
 Application development systems for Rapid Prototyping
 Application development systems for mobile, industrial applications
 Application development systems for process control systems, visualization systems
 Application development systems for CNC controls
 Application development systems for robot controls
 Application development systems for embedded systems
 Application development systems using C++, C, Basic

Application development systems with Java
 Other software for application development for industrial IT, development tools
 Communication software and network software for industrial IT
 Voice processing systems, voice input systems, voice output systems
 Visualization systems
 Visualization systems (man-to-process communication)
 Software for operating stations (man/machine interface)
 Visualization software
 Visualization systems in industrial applications
 General visualization systems in industrial applications
 Visualization systems for automation
 Visualization systems for machines and installations
 Visualization systems for building automation and facility management
 Visualization systems for process plants, power stations, remote maintenance
 Visualization systems according to customer-specific requirements
 Visualization systems for all industrial sectors
 Visualization systems for the process engineering industry
 Visualization systems for the automobile industry
 Systems for Operating and Observing (O and O)
 Image processing software
 General image processing software
 Program packages and libraries for image processing
 Software tools for image processing
 Future-oriented image processing software technologies
 Software for identification systems
 Image processing development systems
 Software for pattern recognition, image analysis, image processing
 Artificial intelligence, machine learning, diagnostic systems and simulation systems
 Artificial intelligence (AI)-systems, expert

systems
 Real-time simulation in industrial applications
 Software for fuzzy logic systems and fuzzy control in industrial applications
 Tools for simulation and offline programming of industrial robots
 Simulation software for design, optimization and operation in manufacturing automation/production
 General simulation software for robotic applications
 Simulation software for assembly technology and handling technology, hydraulics and pneumatics
 Simulation systems for optimizing the material flow and the manufacturing layout
 PLC simulation software (programmable logic controls)
 Systems and software for remote diagnosis systems for machines and installations
 Cognitive computing systems for production technology, production processes
 Machine learning systems for industrial application, deep learning
 Digital Twins
 Other expert systems, diagnosis systems and simulation systems
 Blockchain systems and blockchain applications in the industry
 Multimedia software for industrial application
 Multimedia machine information systems
 Multimedia virtual product development systems
 Multimedia technical product documentation systems
 Internet solutions for industrial application
 On-line monitoring systems
 Internet solutions for industrial automation
 Web-based solutions for automation systems
 Other internet solutions for industrial application
 Corporate Translation Management systems, CTM
 Videoconferencing systems
 Public Resource Computing Systems and

Software

Blockchain systems and blockchain applications in the industry

Other basic software and systems-oriented industrial software

Software & solutions for business analytics, big data, smart data for the industry

Software & solutions for business analytics, business intelligence for the industry

Software & solutions for big data, smart data for the industry

Software and solutions for data warehousing and data mining for the industry

Other software & solutions for business analytics, big data for the industry

IT security

Anti-virus systems, anti-spam systems and e-mail security

Virus protection programs for computers, workstations

Virus protection programs for servers

Virus protection programs for networks, gateways, routers

Virus protection hardware systems

Virus protection programs for e-mail systems

Hardware e-mail disinfection systems

E-mail security systems

Anti-spam software, e-mail filter software

Other anti-virus systems and e-mail security

Cloud and Internet security

Cloud security systems and services

Managed security services

Security services

Trust centres, certificate management services, public key servers, certificate servers

Intrusion testing and detection services (IT Security)

Complete IT security services

Vulnerability management services

Security planning for information systems, communication systems

Security management for information systems, communication systems

Security analyses for information systems, communication systems

Security certification for information systems, communication systems

Manufacturing services for smart cards, security tokens, key cards, identification media

IT security consulting

IT security damage potential analyses

Other IT security services

Internet and network security systems

Personal computing access protection

Personal firewall

Endpoint security systems and packages, endpoint protection

Information system security suites

Network access protection, server access protection

Firewall systems

Firewall hardware systems

Firewall software

Firewall systems with VPN feature

Firewall systems with stateful inspection

Web application firewalls (WAF), application level firewalls

Software firewall systems for networks

Virtual private network systems, VPN

Virtual private network (VPN) servers

Virtual private network (VPN) clients

Virtual private network (VPN) hardware

Virtual private network (VPN) software, server software

Other virtual private network systems

Secure web gateways, gateway security systems

Intrusion detection systems

Security analysis tools

Security management tools

Evidence preservation systems and tools

Spyware defence systems

Secure data erasure software

Other internet and network security systems

Wireless gateways (security)

Special security appliances

Complete security platforms, certified security systems

Intrusion prevention systems

Trusted computing systems, trusted platform modules

Unified threat management appliances
 Industrial security, network systems for secure automation
 Network switches & routers for secure automation
 Secure switches and routers for automation networks
 Firewalls and virus protection components for secure automation
 Security appliances for industrial networks and systems
 Other network systems for Secure Automation
 Security systems and security solutions for the Internet of Things, M2M
 Other hardware-based internet and network access protection
 Other software-based internet and network access protection
 Cyber defence solutions and services
 Business continuity solutions
 Comprehensive business continuity solutions
 IT disaster recovery solutions
 IT incident management solutions
 Other business continuity solutions
 Secure communications and mobile security
 Cryptographic systems, encryption systems and encoding systems
 Hardware-based encryption systems and encoding systems
 Software-based encryption and encoding systems
 Cryptoprocessors
 Public key systems, PKI systems, public key infrastructure systems
 Encryption software
 Hard drive encryption systems, drive encryption
 Secure VOIP systems
 Secure voice systems
 Password manager, password safe, PIN safe
 Other encryption and encoding equipment
 Digital signature systems
 Hardware-based digital signature systems
 Software-based digital software systems
 Systeme für mobile, digitale Signatur
 Electronic mass signature systems

Electronic single signature systems
 Security systems for communication equipment
 Access protection for communication systems
 Hardware-based access protection for communication systems
 Software-based access protection for communication systems
 Encryption systems for telecommunication equipment
 Other security systems for communication equipment
 Security systems for mobile devices
 Virus protection programs for mobile phones, smartphones, mobile networks
 Access protection for mobile devices
 Encryption systems for mobile phones, VPN systems, PDAs, organisers
 Biometric identification for mobile devices
 User authentication solutions for mobile devices
 System management solutions for mobile devices, mobile device management, MDM
 Data backup for mobile devices
 Management & security solutions for Bring Your Own Device (BYOD) environments, managed mobile devices
 Other security systems for mobile devices
 Mobile security services
 Mobile security tools
 Instant messaging security appliances, IM security systems
 IT security services
 Cloud security solutions
 Trusted cloud computing
 Cloud computing security solutions, cloud security
 Other cloud solutions for business security
 Industry 4.0 & industrial internet
 Software solutions for Industry 4.0 and Internet of Things, IoT, Industrial Internet of Things, IIoT
 Industrial internet solutions, industrial internet systems
 Components, systems for the Internet of Things, IoT in industrial applications
 Cyber physical systems in industrial applications
 Integrated industry solutions

Other software-based industry 4.0 Industrial & Internet Solutions

Organizations and associations for industrial software

Cloud and industrial IT services

Custom industrial software and systems development

Custom CAD software (add-on)

Custom manufacturing execution systems, MES

Custom software for other technical applications

Contract development of automatization software

PLC development and programming

Development of customer-specific control modules

Other custom automatization software

Industrial engineering services

Re-engineering services

Simulation of production planning and production control

Documentation services

System planning, system simulation, system realization as well as engineering for flexible automated manufacture fields

Application programming and engineering for Factory Automation

Software consultancy

Translation services

Other industrial engineering services

Internet services for automatisisation and industrial use

Internet portals for industrial software and engineering

Services for on-line marketplaces (industrial software and engineering)

Other internet services for automatisisation and industrial use

Cloud services, IT services & outsourcing

Application Service Providing (ASP) for industry

Application and system hosting

Business process outsourcing

IT and network services (outsourcing)

Software attendance and maintenance

IT and outsourcing consultancy

Industrial cloud services

Infrastructure as a Service, SaaS, for industrial applications

Platform as a Service, PaaS, for industrial applications

Software as a Service, SaaS, for industrial applications

Cloud services for condition monitoring, predictive maintenance

Cloud services for mobile sensor systems

Other cloud services for industrial applications

Managed services for industrial applications

Shop floor services, shop floor solutions

Other cloud and industrial IT services

IT Consulting and industry solutions

IT Consulting

Software and solutions for specific sectors

Software and solutions for the general industry

Software and solutions for the construction industry

Software and solutions for the timber and woodworking industry

Software and solutions for the textile industry

Software and solutions for the paper industry

Software and solutions for the chemical industry

Software and solutions for measuring technology and control technology

Software and solutions for the semiconductor industry

Software and solutions for the pharmaceutical industry

Software and solutions for general mechanical engineering and plant construction

Software and solutions for supply companies, utilities

Software and solutions for the automotive industry

Software and solutions for other vehicle construction

Software and solutions for the metal producing and metal working industry

Software and solutions for the packaging industry

Software and solutions for the electronics

industry, electrical engineering
 Software and solutions for the provisions industry/foodstuffs industry
 Software and solutions for the plastics industry
 Software and solutions for the transport industry
 Software and solutions for the aircraft industry
 Software and solutions for the shipping industry
 Software and solutions for the printing industry
 Software and solutions for sheet metal working
 Software and solutions for the production of drive technology and fluid technology
 Software and solutions for the medical technology
 Software and solutions for other sectors
 Industry-specific automation software solutions
 Automation software solutions for general industrial applications
 Automation software solutions for general machine building
 Automation software solutions for the automotive industry
 Automation software solutions for other vehicle construction
 Automation software solutions for the metal producing and metal working industry
 Automation software solutions for the packaging industry
 Automation software solutions for the electrical engineering industry, electronic industry
 Automation software solutions for the provisions industry/foodstuffs industry
 Automation software solutions for the construction industry
 Automation software solutions for the timber and woodworking industry
 Automation software solutions for the textile industry
 Automation software solutions for measuring technology and control technology
 Automation software solutions for the printing industry
 Automation software solutions for other branch-specific applications
 Global business and markets

Management consultancy (international management)
 International marketing (Dienstleistung)
 Financial services for foreign trade
 Trade and export promotion
 Business development, industrial settlement, industrial parks
 International Chambers of Industry and Commerce
 Organizations and associations for international trade
 Government, state and regional representations
 Quality assurance and certification for foreign trade
 Export consulting
 Other services for foreign trade
 Consultancy and support of economic cooperations
 Economic Information, databases on economic data
 Legal advice
 Risk management for foreign trade
 Insurance, insurance management for foreign trade
 Standards and standards information, standards institutes
 Publishers, purchasing, B2B platforms for international trade
 Industry Cluster for foreign trade
 Auditing and tax consulting for foreign trade
 Other economic services for foreign trade
 Certification and inspection organizations for international trade
 Patent and industrial property rights management
 Transport and procurement, sourcing services
 Translation services for foreign trade
 Accounting services for foreign trade