

# Index of Product Groups for belektro 2022

## November 8–10, 2022

Please enter the numbers of your Product groups in the registration form I.

<p><b>1 Drive technology / assemblies</b></p> <p><b>1.1 Drive technology</b></p> <p>1.1.1 Starter</p> <p>1.1.2 Brake devices</p> <p>1.1.3 Electric motors</p> <p>1.1.4 Gear motors</p> <p>1.1.5 Actuators</p> <p>1.1.6 Roller shutter actuator</p> <p>1.1.7 Door drives</p> <p><b>1.2 Assemblies</b></p> <p>1.2.1 Subracks</p> <p>1.2.2 Filter</p> <p>1.2.3 Interfaces</p> <p>1.2.4 Modems</p> <p>1.2.5 Opto electronics</p> <p><b>1.3 Small transformers</b></p> <p>1.3.1 Voltage converter</p> <p>1.3.2 Power converter</p> <p>1.3.3 Power supply for information and communication systems</p> <p>1.3.4 Current converter</p> <p>1.3.5 Transformers</p> <p>1.3.6 Inverter</p>	<p>2.4.7 Tool holder and storage systems</p> <p><b>2.5 Tools</b></p> <p>2.5.1 Extractor devices</p> <p>2.5.2 Electric tools</p> <p>2.5.3 Torches</p> <p>2.5.4 Hand tools</p> <p>2.5.5 Cable pulling systems</p> <p>2.5.6 Cable storage systems</p> <p>2.5.7 Marking and labelling equipment as well as systems</p> <p>2.5.8 Bonding technology</p> <p>2.5.9 Hole punch tool</p> <p>2.5.10 Brazing systems</p> <p>2.5.11 Machines for cable processing</p> <p>2.5.12 Workshop equipment</p> <p>2.5.13 Tools for cable processing and routing</p> <p>2.5.14 Central vacuum extraction systems</p>	<p><b>4 Electric building installations and system technology</b></p> <p><b>4.1 Building system technology</b></p> <p>4.1.1 Bus capable installation systems</p> <p>4.1.2 KNX / EIB</p> <p>4.1.3 Modular cabling systems</p> <p>4.1.4 Smart Home</p> <p>4.1.5 Room control systems / light management system</p> <p>4.1.6 System engineering</p> <p><b>4.2 Home communication</b></p> <p>4.2.1 Letterbox systems</p> <p>4.2.2 Electric door opener</p> <p>4.2.3 Intercom systems</p> <p>4.2.4 House signal devices</p> <p>4.2.5 Home telephones</p> <p>4.2.6 Door intercoms</p> <p>4.2.7 Door locking and door surveillance systems</p> <p>4.2.8 Video systems</p> <p><b>4.3 Installation switch and connector systems</b></p> <p>4.3.1 Motion and presence detectors and sensors</p> <p>4.3.2 Pressure regulator</p> <p>4.3.3 Remote switch</p> <p>4.3.4 Infrared switchgear</p> <p>4.3.5 Combinations</p> <p>4.3.6 Portable socket-outlets</p> <p>4.3.7 Switch and socket systems</p> <p>4.3.8 Float switch</p> <p>4.3.9 Connector</p> <p>4.3.10 Sockets</p> <p>4.3.11 Plug-and-socket devices</p> <p><b>4.4 Cables and lines</b></p> <p>4.4.1 Data lines</p> <p>4.4.2 Power supply chains and systems</p> <p>4.4.3 Power supply systems</p> <p>4.4.4 High-current technology</p> <p>4.4.5 Insulating material</p> <p>4.4.6 Insulated lines</p> <p>4.4.7 Cables</p> <p>4.4.8 Cable glands</p> <p>4.4.9 Cable protection hoses and tubes</p> <p>4.4.10 Cable glands</p> <p>4.4.11 Coaxial cable</p> <p>4.4.12 Assembly aids for wiring harness production</p> <p>4.4.13 Lines and moving systems</p> <p>4.4.14 Fibre optic cable and accessories</p> <p>4.4.15 Special lines</p> <p>4.4.16 Splicing technology</p> <p>4.4.17 Control lines</p> <p>4.4.18 Power supply and portable consumers</p> <p>4.4.19 Heat-shrink products</p>
<p><b>2 Operation, storage and assembly equipment</b></p> <p><b>2.1 Professional clothing, personal protective equipment</b></p> <p>2.1.1 First aid equipment</p> <p>2.1.2 Passive arc flash protection</p> <p>2.1.3 Safety harnesses</p> <p>2.1.4 Safety shoes</p> <p>2.1.5 Safety drive handle for NH fuses</p> <p>2.1.6 Protective goggles, breathing mask, hearing protection</p> <p>2.1.7 Protective clothing</p> <p><b>2.2 Office equipment</b></p> <p><b>2.3 Constructive and organisation protective equipment</b></p> <p>2.3.1 Barriers</p> <p>2.3.2 Work platforms</p> <p>2.3.3 Scaffolding</p> <p>2.3.4 Ladders and steps</p> <p>2.3.5 Fixtures for earthing and short-circuiting</p> <p>2.3.6 Warning signs and panels</p> <p><b>2.4 Storage and transport systems</b></p> <p>2.4.1 Vehicle equipment</p> <p>2.4.2 Forklift trucks</p> <p>2.4.3 Laboratory equipment</p> <p>2.4.4 Storage systems</p> <p>2.4.5 Service and assembly vehicles</p> <p>2.4.6 Transport equipment and systems</p>	<p><b>3 Services</b></p> <p><b>3.1 Education and further training</b></p> <p>3.1.1 Educational institution</p> <p>3.1.2 Technical training systems</p> <p><b>3.2 Authorities, institutions</b></p> <p><b>3.3 Consultation, services</b></p> <p>3.3.1 Consulting engineers for electrical engineering</p> <p>3.3.2 Consulting engineers for communication and data technology</p> <p>3.3.3 EMC consultant</p> <p>3.3.4 Electric magnets</p> <p>3.3.5 Energy consultant</p> <p>3.3.6 Product and system identifier</p> <p>3.3.7 Test and calibration services</p> <p>3.3.8 Technology transfer</p> <p>3.3.9 Management consultancy</p> <p><b>3.4 EDP</b></p> <p>3.4.1 Electronic drawing programmes CAD/CAE</p> <p>3.4.2 Administration software</p> <p>3.4.3 Technical software</p> <p><b>3.5 Energy distribution companies, energy trade</b></p> <p><b>3.6 Disposal, electrical and electronic scrap recycling</b></p> <p><b>3.7 Associations</b></p> <p><b>3.8 Publishers</b></p> <p>3.8.1 Technical literature, trade journals</p> <p><b>3.9 Insurance companies</b></p>	

## 4.5 Duct and routing systems

- 4.5.1 Fire protection technology
- 4.5.2 Installation units for installation systems
- 4.5.3 Electric routing systems
- 4.5.4 Installation ducts
- 4.5.5 Cable channels, trays, racks, troughs
- 4.5.6 Line, cable bushings, bulkheading
- 4.5.7 Pipes, hoses
- 4.5.8 Bulkhead material
- 4.5.9 Underfloor installation systems
- 4.5.10 Underfloor channels
- 4.5.11 Connection, branching, switch sockets and boxes
- 4.5.12 Wiring devices
- 4.5.13 Wiring channels
- 4.5.14 Vertical installation systems
- 4.5.15 Wall and ceiling channels

## 4.6 Protective switchgear and DIN rail-mounted devices, fuses

- 4.6.1 Fire protection switch / AFDD
- 4.6.2 Limit switch
- 4.6.3 Fault current circuit breakers
- 4.6.4 Main switch
- 4.6.5 Installation switches
- 4.6.6 Insulation monitored devices
- 4.6.7 Load switches
- 4.6.8 Air circuit-breakers
- 4.6.9 Miniature circuit-breaker
- 4.6.10 Motor protection switch
- 4.6.11 Network activator
- 4.6.12 Emergency Off switch
- 4.6.13 DIN rail-mounted switch
- 4.6.14 Contactors, relays
- 4.6.15 Fuses
- 4.6.16 Remote-control switch
- 4.6.17 Button
- 4.6.18 Separating devices

## 4.7 Routing and connecting material

- 4.7.1 Wire end ferrules
- 4.7.2 Fastening and assembly material
- 4.7.3 Sockets
- 4.7.4 Electric tubes
- 4.7.5 Braided sleeving, edge protection
- 4.7.6 HF shielded cable routing and distribution systems
- 4.7.7 Insulating material
- 4.7.8 Cable tie systems with accessory parts and processing tools
- 4.7.9 Cable sleeves, cable fittings and accessories
- 4.7.10 Cable lugs
- 4.7.11 Terminals and connectors
- 4.7.12 Cable entries
- 4.7.13 Solder and fluxing agent
- 4.7.14 Press connector

- 4.7.15 Press tools
- 4.7.16 Terminal blocks
- 4.7.17 Spiral straps, heat-shrink hoses
- 4.7.18 Screwed cable glands
- 4.7.19 Strain relief

## 4.8 Distribution systems

- 4.8.1 Special sheet metal construction
- 4.8.2 House connection boxes
- 4.8.3 Insulating material housing
- 4.8.4 Distribution enclosures
- 4.8.5 Mains station
- 4.8.6 Portable distributor
- 4.8.7 Switch cabinets, installation systems and housings
- 4.8.8 Distribution boxes and cabinets
- 4.8.9 Meter cabinets

## 4.9 Time switch

- 4.9.1 Photo-electric switch
- 4.9.2 Radio timers
- 4.9.3 Off-delay timers
- 4.9.4 Clock timer
- 4.9.5 Staircase time switch
- 4.9.6 Outdoor advertisement clocks, electronic calendar clocks

## 5 Electric mobility

### 5.1 Electric vehicles

- 5.1.1 Electric buses and HGV's more than 7.5 tonnes
- 5.1.2 Electric passenger vehicle and small transporter up to 7.5 tonnes
- 5.1.3 Electric two-wheel and three-wheel

### 5.2 Electrical components and electric vehicles

- 5.2.1 Drive controller for electric road vehicles
- 5.2.2 Electric ancillary devices
- 5.2.3 Electric drive components
- 5.2.4 On-Board charge technology and DC/DC converter

### 5.3 Infrastructure

- 5.3.1 Payment system
- 5.3.2 Charging apps
- 5.3.3 Charging cable
- 5.3.4 Charging stations and facilities up to 22 kW
- 5.3.5 Charging stations and facilities more than 22 kW

## 6 Reception aerials and broadband distribution technology

### 6.1 Aerials

- 6.1.1 Satellite reception aerials
- 6.1.2 Terrestrial reception aerials

## 6.2 Aerial supporting systems

- 6.2.1 Fixing systems
- 6.2.2 Pedestal tubes

## 6.3 Distribution systems

- 6.3.1 Branch
- 6.3.2 Aerial technology
- 6.3.3 House connection distributor
- 6.3.4 Installation material
- 6.3.5 Channel processing
- 6.3.6 Coaxial cable
- 6.3.7 Receiver
- 6.3.8 Amplifier
- 6.3.9 Distributor

## 7 Energy in buildings (special presentation Energie@Gebäude)

### 7.1 Electrical heat

- 7.1.1 Bathroom radiator
- 7.1.2 Direct heating
- 7.1.3 Underfloor heating
- 7.1.4 Infrared heating
- 7.1.5 Thermal storage
- 7.1.6 Thermal storage heater

### 7.2 Electrical hot water preparation

- 7.2.1 Flow heaters
- 7.2.2 Solar collectors / solar thermal energy
- 7.2.3 Storage system

### 7.3 Energy generation

- 7.3.1 Cogeneration of heat and power units
- 7.3.2 Fuel cell
- 7.3.3 Hybrid systems
- 7.3.4 Photovoltaic
- 7.3.5 Solar heating
- 7.3.6 Heat pumps
- 7.3.7 Hydrogen
- 7.3.8 Hydropower plants/Wind turbines

### 7.4 Air conditioning / ventilation

- 7.4.1 Fan, ventilators
- 7.4.2 Room air conditioners
- 7.4.3 Systems for residential ventilation with and without heat recovery

### 7.5 Relevant services

- 7.5.1 Authorities/institutions
- 7.5.2 Digitalisation
- 7.5.3 Energy services
- 7.5.4 Other

### 7.6 Smart Building

- 7.6.1 Bus systems
- 7.6.2 Energy management
- 7.6.3 Heating single-room control

- 7.6.4 Air conditioning and ventilation management
- 7.6.5 Light management (sensors)
- 7.6.6 Control devices/Actuators

## **7.7 Power storage/mobile storage**

- 7.7.1 Bidirectional charging of electrical vehicles
- 7.7.2 Integrated battery systems
- 7.7.3 Power storage in buildings

## **8 Power engineering**

### **8.1 Power supply**

- 8.1.1 Generators
- 8.1.2 Power supply units
- 8.1.3 Mains suppressors
- 8.1.4 Standby generators
- 8.1.5 Safety equipment power supply
- 8.1.6 Voltage stabiliser, regulator
- 8.1.7 UPS systems  
(Power distribution see point 13)

### **8.2 Mains service**

## **9 Hazard alerting, security and surveillance systems**

### **9.1 Hazard alerting systems**

- 9.1.1 Fire alarm systems
- 9.1.2 Burglar alarm systems
- 9.1.3 Panic alarm systems

### **9.2 Safety systems**

- 9.2.1 Gas warning systems
- 9.2.2 House emergency call systems
- 9.2.3 Smoke and heat extraction systems
- 9.2.4 Locking and opening systems
- 9.2.5 Guard control systems

### **9.3 Monitoring systems**

- 9.3.1 Motion detector systems
- 9.3.2 Theft monitoring systems
- 9.3.3 Telecontrol systems
- 9.3.4 Optical and acoustical signal devices, displays
- 9.3.5 Clocks and time service systems
- 9.3.6 Video monitoring systems
- 9.3.7 Access control systems and biometrics

## **10 Information and communication systems**

### **10.1 Devices and systems of telecommunication and information technology**

- 10.1.1 Radio communication
- 10.1.2 Remote data transfer

- 10.1.3 Data communication systems
- 10.1.4 Digital display systems
- 10.1.5 Printer
- 10.1.6 End devices
- 10.1.7 Telecontrol
- 10.1.8 Radio technology
- 10.1.9 Large digit displays
- 10.1.10 Mobile radio systems and devices
- 10.1.11 Multimedia applications
- 10.1.12 Telephone exchange systems
- 10.1.13 Personal computer and accessories
- 10.1.14 Telecommunication systems
- 10.1.15 Kiosks
- 10.1.16 Text displays

### **10.2 Network technology**

- 10.2.1 Adapter cards and cable
- 10.2.2 Active and passive cabling components
- 10.2.3 Electrical acoustic systems (ELA)
- 10.2.4 Industrial networks
- 10.2.5 Communication components
- 10.2.6 LAN software
- 10.2.7 LAN utilities
- 10.2.8 Loudspeaker
- 10.2.9 Microphone
- 10.2.10 Networks and accessories
- 10.2.11 network management
- 10.2.12 Cabinet distribution systems for data and communication technology

## **11 Light and lighting**

### **11.1 Lamps**

- 11.1.1 Discharge lamps
- 11.1.2 LED
- 11.1.3 OLED

### **11.2 Lights**

- 11.2.1 Accent lights
- 11.2.2 Workplace lights
- 11.2.3 Architecture lighting
- 11.2.4 Outdoor luminaires
- 11.2.5 Flashing lights
- 11.2.6 Decorative lamps
- 11.2.7 Explosion protected lamps
- 11.2.8 Lights with increased protection category
- 11.2.9 Lights for special application purposes
- 11.2.10 Optical fibre technology
- 11.2.11 Tube light system
- 11.2.12 Low-voltage lighting system
- 11.2.13 Emergency / safety lighting
- 11.2.14 Shop window lighting
- 11.2.15 Spotlights
- 11.2.16 Street lighting
- 11.2.17 Technical indoor lighting
- 11.2.18 Special portable lighting
- 11.2.19 Living room lighting

### **11.3 Light accessories**

- 11.3.1 Installation material for lamps
- 11.3.2 Light control and regulation
- 11.3.3 List mast
- 11.3.4 Busbar systems
- 11.3.5 Miscellaneous accessories for lamps
- 11.3.6 Ballasts
- 11.3.7 Ignition units for discharge lamps

### **11.4 Light management**

### **11.5 Daylight technology**

## **12 Measuring and test devices, measuring technology**

### **12.1 Measuring devices**

- 12.1.1 Aerial measuring devices
- 12.1.2 Recording measuring devices
- 12.1.3 Operating hours counter
- 12.1.4 Bus systems for measuring technology
- 12.1.5 Integrated measuring devices
- 12.1.6 Electricity meter
- 12.1.7 Measuring devices for basic electric variables
- 12.1.8 Measuring devices for basic non-electric variables
- 12.1.9 Multimeter
- 12.1.10 Mains analysers
- 12.1.11 Oscilloscope
- 12.1.12 Current and energy consumption analysers

### **12.2 Measurement and control technology**

- 12.2.1 Pressure sensor
- 12.2.2 Transducer
- 12.2.3 Process regulation and control systems
- 12.2.4 Recording technology
- 12.2.5 Sensors
- 12.2.6 Temperature controller
- 12.2.7 Thermometer
- 12.2.8 Thermostat
- 12.2.9 Thyristor power controller
- 12.2.10 Visualisation software

### **12.3 Test devices and systems**

- 12.3.1 Rotary indicators
- 12.3.2 Continuity tester
- 12.3.3 High-voltage testers
- 12.3.4 Cable fault location devices
- 12.3.5 Cable test van
- 12.3.6 Cable and line detectors
- 12.3.7 Network testers
- 12.3.8 Measuring and test devices for testing according to DIN VDE 0701 and 702
- 12.3.9 Measuring and test devices according to DIN VDE 0100

- 12.3.10 Measuring and test devices according to German UVV-V3
- 12.3.11 Test devices for medical devices
- 12.3.12 Test panels
- 12.3.13 Voltage testers

## **13 Low-voltage switchgear and systems, industrial controllers**

### **13.1 Command and control switch**

- 13.1.1 Bus systems for automation technology
- 13.1.2 Rotary encoder, angle encoder (incremental and absolute)
- 13.1.3 Pushbutton, indicator lights and signal columns
- 13.1.4 Membrane keyboards
- 13.1.5 Identification systems, inductive
- 13.1.6 Light barriers
- 13.1.7 Proximity switch
- 13.1.8 Cam switch
- 13.1.9 Position switch
- 13.1.10 Sensors, inductive
- 13.1.11 Sensors, capacitive
- 13.1.12 Sensors, magnetic
- 13.1.13 Sensors, optical
- 13.1.14 Sensors, ultrasonic
- 13.1.15 Programmable logic controls

### **13.2 Energy distribution, low and medium-voltage switching systems**

- 13.2.1 Concrete stations
- 13.2.2 Reactive-power compensation
- 13.2.3 Overhead line construction material
- 13.2.4 Encapsulated distributor (insulated, cast, steel)
- 13.2.5 Cable distributor, construction current distributors
- 13.2.6 Maximum monitoring systems
- 13.2.7 Instrument transformers
- 13.2.8 Medium-voltage switchgear, air-insulated
- 13.2.9 Medium-voltage switchgear, gas-insulated
- 13.2.10 Mains, compact, transformer stations
- 13.2.11 Mains monitoring systems
- 13.2.12 Low-voltage switchgear as slide-in module design
- 13.2.13 Low-voltage switchgear with integrated devices

### **13.3 Power electronics**

- 13.3.1 Frequency converters
- 13.3.2 Rectifier
- 13.3.3 Current / voltage converters
- 13.3.4 Transformer

### **13.4 Circuit breaker, motor protection switch, contactors, relays**

- 13.4.1 Bi-stable relay
- 13.4.2 Differential relays
- 13.4.3 Speed monitoring devices
- 13.4.4 Heating circuit breaker
- 13.4.5 Auxiliary contactor
- 13.4.6 Industrial relays
- 13.4.7 Insulation monitored devices
- 13.4.8 Card relays
- 13.4.9 Magnetic overcurrent relays
- 13.4.10 Measuring relays
- 13.4.11 Motor protection
- 13.4.12 Motor starter
- 13.4.13 Multi-function relays
- 13.4.14 Contactor for special applications
- 13.4.15 Safety relay
- 13.4.16 Voltage relays
- 13.4.17 Current relays
- 13.4.18 Thermal overload relays
- 13.4.19 Overcurrent relays
- 13.4.20 Monitoring relay
- 13.4.21 Time relay

### **13.5 Busbars, switch cabinets**

- 13.5.1 Connecting terminals for switch cabinets
- 13.5.2 Busbars
- 13.5.3 Current distribution components

### **13.6 Storage**

- 13.6.1 Chargers and equipment
- 13.6.2 Primary cells (disposable cells, batteries) and PV battery storage
- 13.6.3 Secondary cells (accumulators or rechargeable batteries)

### **13.7 Isolators and load switches**

- 13.7.1 Main switch
- 13.7.2 On-load isolators
- 13.7.3 Low-voltage fuses
- 13.7.4 Switch fuse units
- 13.7.5 Fuse switch disconnecter, switch disconnecter with fuse

## **14 Protection technology / building protection technology**

### **14.1 Earthing, equipotential bonding, lightning protection, over-voltage protection, EMC**

- 14.1.1 Shielding
- 14.1.2 Exterior lightning protection
- 14.1.3 EMC protection technology and accessories
- 14.1.4 Earthing material
- 14.1.5 Explosion protected devices and systems
- 14.1.6 Device protection

- 14.1.7 Internal lightning protection
- 14.1.8 Potential equalization material
- 14.1.9 Material and equipment for protection against electrostatic charge
- 14.1.10 Network protection