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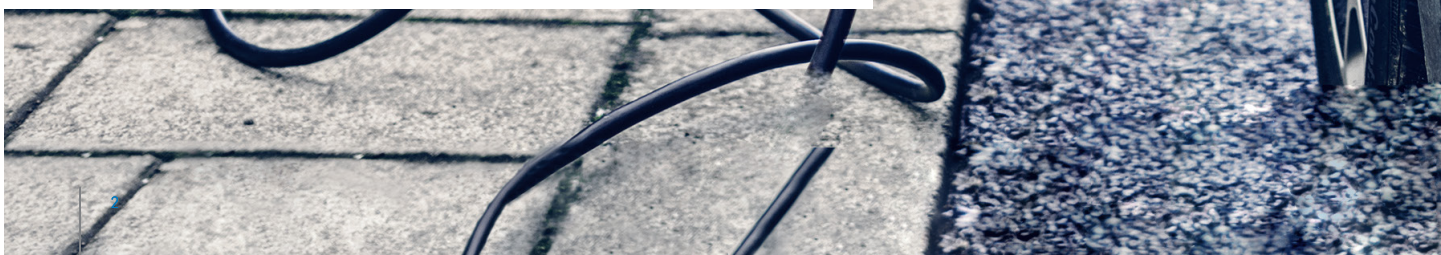
## E-Mobility

Smart solutions for E-mobility sector





« Fastening solutions for e-mobility applications. Bossard is your expert one-stop shop. »



## SMART SOLUTIONS FOR THE E-MOBILITY SECTOR

# Better connected

We are the experts for all fastening technologies in e-mobility applications.

The E-mobility sector is characterized by a rising demand for reliability, speed and punctuality. Electric vehicles are changing transportation today and in the future. Innovative new market players are challenging established industries and taking their place in times when customers are increasingly focused on a sustainable carbon footprint and social responsibility. We understand these challenges and provide connecting elements that meet the highest safety and quality standards, helping our customers to increase their efficiency and productivity.



### One-stop shop

- Fasteners for E-mobility
- Fasteners for mechanical purposes



### Engineered parts

- In-house engineering know-how
- International network of specialized partner companies



### Optimal delivery conditions

- We are present with more than 70 subsidiaries worldwide
- Short response and delivery times
- E-Shop for all catalog products



### Own testing laboratories

- ISO/IEC 17025-accredited test laboratories in 10 countries around the world.
- Comprehensive mechanical, optical, geometric and chemical test methods



### Assembly Technology Expert

- Comprehensive engineering services
- Customer trainings for fastening solutions



### Smart Factory Logistics

- B- and C-part management
- IoT ready
- Smart, lean and reliable

## SMART SOLUTIONS FOR E-MOBILITY

# Applications

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### Connectors



### Interior

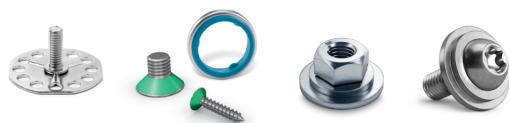


### Exterior





Battery





## E-CHARGER

# Power Management

Good performance of E-Charger depends on energy management. Advanced power management systems can optimize the flow of energy ensuring minimize pressure on the power grid.

Fasteners should have the following characteristics:

- High durability
- Vibration-resistant
- Resistant to extreme temperatures



## INTERIOR

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### CPC - LIQUID COOLING QUICK DISCONNECTS / CONNECTORS

- They ensure system reliability and ease of maintenance with features like quick disconnect fittings.
- Tailored to meet specific needs, they offer benefits such as reduced weight and smaller size.
- Combining with phase change materials and heat pipes, they provide superior thermal management.
- They enhance safety by effectively controlling thermal runaway, particularly in battery systems.



### CLIPS AND GROMMETS

Designed for quick and safe installations

- No screwing, drilling, or welding required
- Grommets prevent wire abrasion from sharp edges
- Reduced hoop stress, resulting in a high strip out torque and pull-out force
- Well nut: vibration resistant, electricly insulated, provide sealing effect



### WIRE, TUBE AND CABLE ROUTING

For cable mounting and protection

- Special cable ties with extra high holding force and vibration resistance
- Multifunctional fastening elements for efficient assembly and high holding forces
- Cable protection specially developed for electric vehicles offer excellent mechanical protection and prevent additional rattling noises even better



## EXTERIOR

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### BLIND RIVET NUTS

Sustainable solution based on controlled deformation

- Blind installation: Very efficient setting with single sided access only
- Easy assembling to poorly prepared or oversized holes
- No deformation of the workpiece
- No surface preparation required
- Special blind rivet nuts are suitable for lightweight honeycomb panels, plastics and many other hard-to-access types of structures
- Low installation cost: no expensive tools or equipment required



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### STRUCTURAL BLIND RIVETS

Strong solution for structural assembly

- Perfect for high-tensile applications
- One fastener for up to four rivets
- One-sided access
- Big diameter rivet
- Durable and reliable fixation



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### CLINCHING FASTENERS

Easy to install – superior performance

- Extremely stress-resistant even in very thin sheets
- Ideal also for coated surfaces
- No damage or bulging on the back of the component
- No recutting of threads



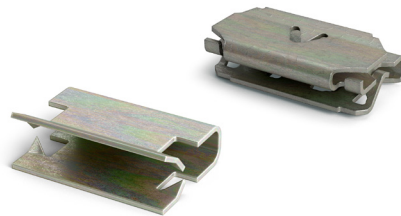


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## METAL TRIM CLIPS AND U-NUTS

For stable yet flexible mounting

- No screwing, drilling, or welding required
- Suitable for high temperature applications
- Several surface treatments available to suit different mounting environments

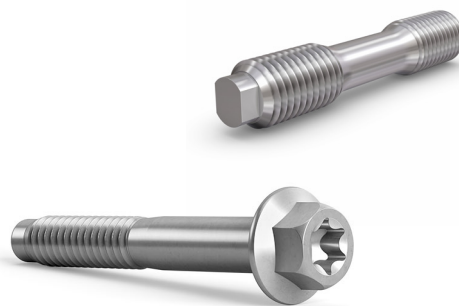


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## STRUCTURAL FASTENERS

Strong solution for structural assembly

- High shear and tensile strengths ensure longer service life of the connection
- Secure fastening even under extreme vibration
- Assembled surface without damage or distortion
- Reduced fastener inventory and simplified stock control



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## CAMLOC QUICK-RELEASE FASTENERS AND LATCHES

- Installation and maintenance are simple and intuitive
- Reducing operational time and costs.
- Protection against unauthorized opening
- Ease of use and security
- Robust construction
- High load capacity
- Large selection of different systems

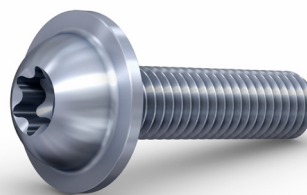


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## MULTIFUNCTIONAL SCREW

Reliability and efficiency

- Fewer single parts for faster processing times
- Reliable and durable fastened joints
- Suitable for feeding in automated assembly



## CONNECTORS

### CABLE GLANDS

Cable glands for safe mobility

- Superior performance on fire resistance
- Available as standard, low smoke or high temperature version depending on requirements
- Product range streamlining thanks to high sealing and clamping areas



### THREADED INSERTS FOR THERMOPLASTIC HOUSINGS

Lightweight inserts with high pull-out strength

- Provide strong thread in thin materials
- Usable for thermoset and thermoplastic materials
- Various installation opportunities





## BATTERY

# Power Management

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Battery stores the electrical energy and is the key to providing a stable and reliable power supply.

Fasteners should have the following characteristics:

- High durability
- Vibration-resistant
- Resistant to extreme temperatures

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## EMBEDDING AND SURFACE BONDING FASTENERS

Reliable mounting in soft and composite materials

- Intelligent fasteners with high torque and tear out strength in soft materials
- Can be surface-mounted with adhesive or completely embedded
- Invisible integration into the application material

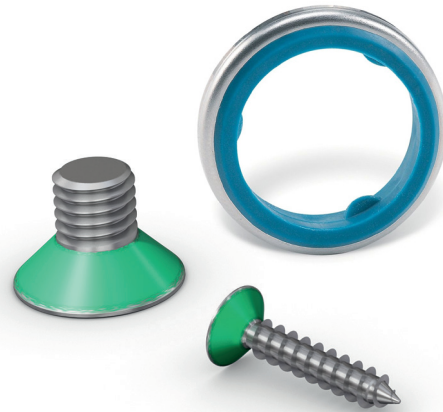


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## SEALING

Additional corrosion protection

- Protects against corrosion, moisture and much more from entering battery components and assemblies
- Applied directly on the fastener, so fewer parts like O-rings, gasket seals and sealants are needed
- Sealing Gaskets can be used as a protective edge on sheet metal and ensures secure sealing of the enclosure



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## NUT/WASHER ASSEMBLIES

Preassembled washer saves time and cost

- Retaining clamp load even with high temperature changes



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## SEMS SCREWS

Screw-bolt/washer combinations for busbar assemblies

- Conical washers prevent loss of clamp load caused by temperature fluctuations that are common in high voltage joints
- Flat washers prevent embedment into soft materials like copper, which are often used in busbar assemblies





OUR CUSTOMERS

Reference

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**ABB**

**3aze**

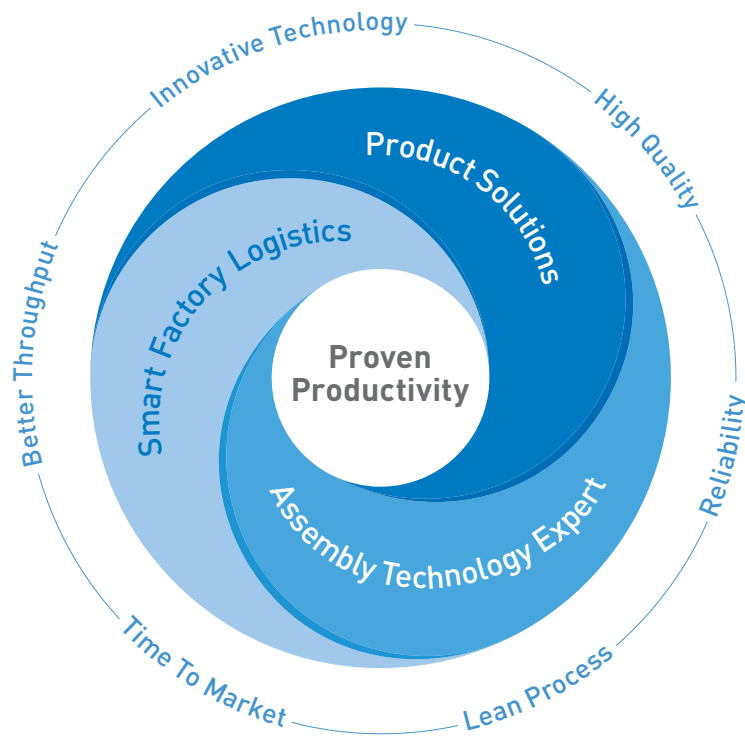
**Enedo** 

**solar**  **edge**

**FIMER**

## PROVEN PRODUCTIVITY – A PROMISE TO OUR CUSTOMERS

# The strategy for success



From years of cooperation with our customers we know what achieves proven and sustainable impact. We have identified what it takes to strengthen the competitiveness of our customers. Therefore we support our customers in three strategic core areas.

Firstly, when finding optimal **Product Solutions**, that is in the evaluation and use of the best fastening part for the particular function intended in our customers' products.

Second, our **Assembly Technology Expert** services deliver the smartest solutions for all possible fastening challenges. Our services cover from the moment our customers developing a new product, to

assembly process optimization as well as fastening technology education for our customers' employees.

And thirdly, optimising our clients' productions in a smart and lean way with **Smart Factory Logistics**, our methodology, with intelligent logistics systems and tailor-made solutions.

Understood as a promise to our customers, "Proven Productivity" contains two elements: Firstly, that it demonstrably works. And secondly, that it sustainably and measurably improves the productivity and competitiveness of our customers.

And this for us is a philosophy which motivates us every day to always be one step ahead.

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