



Electrical Engineering

Smart solutions for the electrical engineering sector



«Fastening solutions for electrical applications from A to Z. Bossard is your one-stop shop.»

SMART SOLUTIONS FOR THE ELECTRICAL ENGINEERING SECTOR

An industry powers ahead

We are the experts for all fastening components in the field of electrical engineering.

Be it fastening elements for electrical cabinets or white goods, conductive fasteners for energy distribution or micro fasteners for circuit boards: You will get it from Bossard. In this brochure we want to show you an exemplary excerpt of the wide range of products we are providing to your industry. But our service continues where the palette of standard products ends: Our engineers will be

pleased to advise you in regards to alternative fastening solutions, innovative developments or specific material requisitions. If the best solution for your application does not yet exist, we will create it for you! Worldwide thousands of satisfied customers trust in the quality of Bossard products and services. They know why.



One-stop shop

- Fasteners for electrical purposes
- Fasteners for mechanical purposes



Professional consulting

- Comprehensive engineering services
- Customer trainings for fastening solutions



Optimal delivery conditions

- We are on the spot with more than 90 subsidiaries worldwide
- Short response and delivery times
- E-Shop for all catalog products



Engineered parts

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



Own test laboratories

- ISO/IEC 17025-accredited test laboratories in 16 countries around the world.
- Comprehensive mechanical, optical, geometric and chemical test methods



Smart Factory Logistics

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

Applications

Cable routing



Electrical connection



Customized solutions/ further possibilities



Suitable tools



Grounding solutions



Access solution



Rivet technology



Direct assembly screws



QUALITY, EASY AND RELIABLE

Electrical cabinets and power distribution

Challenges of fasteners in electrical engineering include saving valuable space and reducing costly manual steps in production.

The following product selection of Bossard combines these requirements and are characterized by:

- One-side installation leads to space-saving design.
- Tolerating different material thickness leads to fewer loose parts and less storage costs.
- Installation could be done on coated surfaces so less manual steps are necessary.

RIVETS

Fast and safe mounting for housings & internal components.

- Watertight fastener
- High pull-through capability with extreme shear performance
- Applicable in fluctuating material thicknesses or irregular hole sizes
- Installed from a single side



SEALING BLIND RIVET NUTS

A threaded element for thin sheet metal.

- Can be set on one side (blind application)
- High pull-out strength thanks to pronounced rivet bead
- Form-fit connection due to plastic forming forming
- Strong threads in thin metal plates
- DPX versions guarantee watertightness (IP67 and IP68)
- Efficient processing with hand, battery or hydraulic-pneumatic setting tools



CLINCHING FASTENER

Fast and clean fastening solution for housing with double-side access.

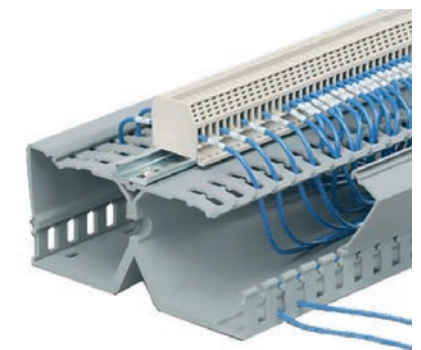
- Extreme load capacity even in metal sheets as thin as 0.5 mm
- Usable on coated surfaces
- No protrusion on backside
- No recutting of threads



WIRING DUCTS

30% space saving combined with less material costs and more flexibility.

- Space optimized arrangement of sensitive cables and use of free space in enclosure corner
- Speeds installation and maintenance with lighter and easily cut materials
- Perfect compatibility to DIN components



VENTING ELEMENTS

Elimination of condensation for electrical enclosures.

- Continuous ventilation and adaption of the inner pressure
- Hydrophobic and oleophobic PES membrane



CABLE ENTRY PLATES/SYSTEMS

Process optimized cable implementation.

- Tool-free entry and connecting technology
- Space-saving
- Fast mounting
- Modular construction, ideal for the introduction of pre-assembled cables



HINGES

Easy solution for quick and low-cost installation.

- No protruding hardware
- Removable hinge pins allow quick door removal for maintenance and service
- Full 180 degrees rotation of the door



LATCHES

Innovative access-control systems for enclosures.

- Multiple cam options satisfy frame configurations with numerous grip dimensions
- Access control with multiple tool-access and keylocking/keycode capabilities
- Drop-in replacement for existing latches with industry-standard panel preparation



BLIND RIVET NUTS

Threaded element for applications in sheet metal with different material thicknesses.

- Easy assembly
- Strong and reliable thread in thin or thick metal plates or thick metal sheets
- Reliability and durability
- Also suitable for repair



EARTHING STUDS

Earthing studs and nuts enable an earthing connection where conventional nuts and screws can be used.

- Unique contact function enables high service life performance
- Variants for installation in aluminium and stainless steel
- Available in various thread sizes



ECOSYN® SEF – RELIABLE CONTACT FITTING

ecosyn® SEF combines a self-locking nut with an integrated clamping disc and a large bearing surface.

- Vibration-resistant and resistant to external loads that reduce the surface pressure of the clamping point
- Retains the preload force even under strong temperature fluctuations
- Available in various thread size



SAFETY ELEMENTS

Vibration resistance and permanent strength of bolted connections.

- Ensure that critical components remain in place and do not fall out
- Cost-effective and easy to install
- Reusable, which increases their flexibility and sustainability



PRESS-FIT SCREWS AND NUTS

Quick and clean connection solution for applications with double-sided access.

- Extreme load-bearing capacity even with sheet metal that are only up to 0.5 mm thick
- No special preparation of the mounting hole required
- No re-cutting of the threads
- High positioning accuracy



COMPRESSION CABLE LUGS

Perfect part for less space applications.

- Small but more thicker flange as normal cable lugs
- Transmission of permissible maximum current is guaranteed



NON-TENSION COMPRESSION JOINTS

Connection for copper and aluminum conductors.

- Precise ending for easy cable insertion
- With crimp markings for correct crimping



GROUNDING CAGE NUTS

Ensure electronic conductivity in casings.

- High thread stripping resistance in thin sheets
- Compensate positioning errors
- Integrated claws that penetrate surfaces for grounding



CABLE GLANDS

Solid and close cable protection with onesided accessibility for limited space.

- Quick and easy installation in applications without special tools
- Adjustable in wall thickness from 1-4 mm
- No inner thread required



WRAP SLEEVING

Slitted and self-closing sleeving facilitate draw-in of a pre-assembled cable.

- Fast mounting
- ROHS and halogen-free material
- Suitable for subsequent installation



CABLE TIE

Remove excess tail by twisting without tool.

- Operating temperature between -40°C and +85°C
- Halogen and silicon free



TOOLS

The right tool for:

- Pressing and crimping technology
- Cable ties
- Riveting technology + rivet nuts
- Press-fit technology



SELF-TAPPING SCREWS

Specially developed screws for thread-forming screw connections in metal or thermoplastics. They have been decades on the market as the benchmark for secure housing screw connections.

- Increased strength of the connection
- High vibration resistance
- Various head designs
- Design support with prediction programme



CLINCHING FASTENERS, RIVETS AND POWER ELEMENTS

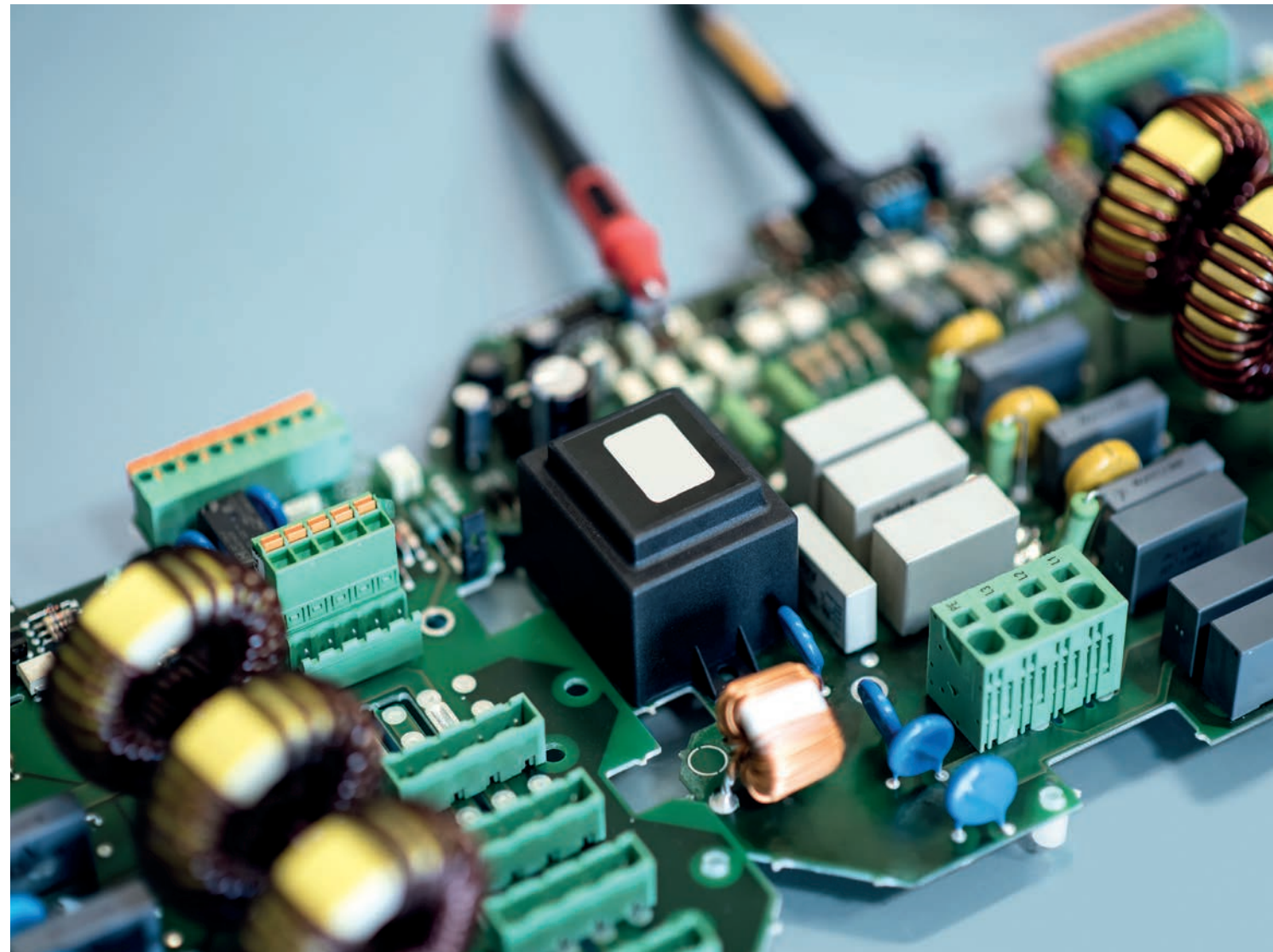
Circuit Board

One of the smallest and most delicate applications in electrical engineering needs small and space saving fasteners.

The following selection of special panel fasteners is characterized by

- Optional automated feeding process
- Close to edge mounting
- Controlled deformation and Surface Mount Technology

Clinching technology



Threaded inserts and stand-offs



Rivet technology



Power elements and connectors



MICROPEM®TACKSERT® PINS

Fast alternative to screws. Building up a connection of two parts without tapping.

- Strong connection due to diagonal knurling
- Low protusion
- Conical tip simplifies mounting
- Vibration resistant



SPEED RIVETS

Used as spacer or to fix plugs and soldering terminals on circuit boards

- High product safety
- Quick reloading
- No mandrel rest to fall off
- Vibration resistant



THREADED INSERTS

Strong thread on composite materials with less shear strength.

- Suitable for thin section materials
- Usable for thermoset and thermoplastic materials
- Several installation methods for moulding in and after moulding



STAND-OFFS

Various types of appropriate stand-offs for an easy panel connection.

- Vibration resistant
- Available with internal and external thread or only internal thread



SURFACE MOUNT NUTS AND STANDOFFS

Irreversible mounting on ultra-thin membrane.

- Available from thread size M1
- Automatic installation with Surface Mount Technology reduces assembly costs
- No voltage on circuit board while installing
- High process reliability



SURFACE MOUNT RIGHT ANGLE FASTENERS

Creates strong right angle attachment points close to edge.

- Applicable from sheet thickness of 1 mm with improved shielding characteristics
- Applicable on slight edge distances
- Tighter design control
- Material savings



CLICK-IN BOLTS

Quick removable connection of PC boards and subassemblies.

- Less handling during assembly
- Less risk of damaging delicate circuitry
- Snap mechanism
- An option to pre-tapped holes



CAPTIVE PANEL SCREWS

Cost saving screw due to soldering assembly.

- Spring action of plastic fingers holds screw in retracted position
- No additional part necessary
- Anti cross-threading feature improves assembly line productivity
- An option to pre-tapped holes



POWER ELEMENTS

For the supply and distribution of high currents (up to 1000 amps) on circuit boards.

- Power elements, fuse holders and relay sockets
- Press-fit or SMD technology
- Innovative PCB design and construction



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WHEN YOU WANT TO BE SURE

The accredited testing laboratory for fastening technology

The correct specification plays an important role in many areas of fastening technology. Bossard meets this challenge with a state of the art testing laboratory.

Tested quality

Whether developing products, projects or processes, you need a proven and independent inspection to ensure that both the legal requirements and high standards expected of you are complied with at every stage.

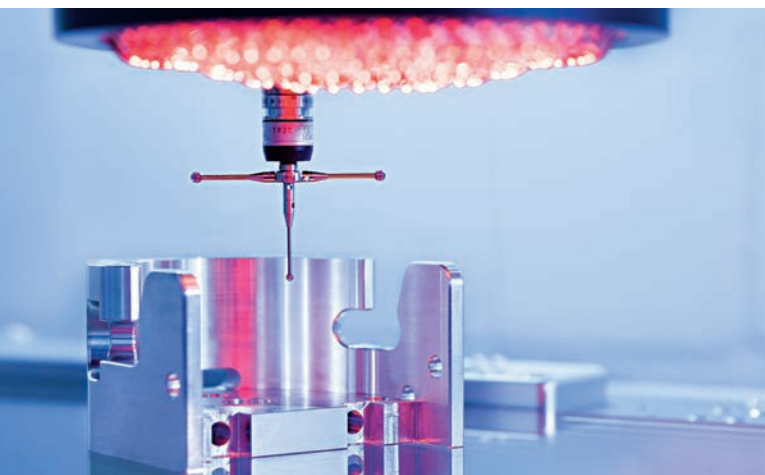
Our comprehensive range of leading test services for fastening technology, which are carried out by qualified and experienced staff, help you in risk reduction and quality assurance as well as the fulfillment of the relevant and statutory requirements for your components and products.

Competent partner

To meet all required quality standards Bossard has ten accredited test laboratories in Europe, America and Asia, ensuring reliable quality assurance and flawless production quality with their cutting-edge measuring and testing equipment. Moreover in product testing we deeply work together with our business partners as one team to offer the best quality to you.

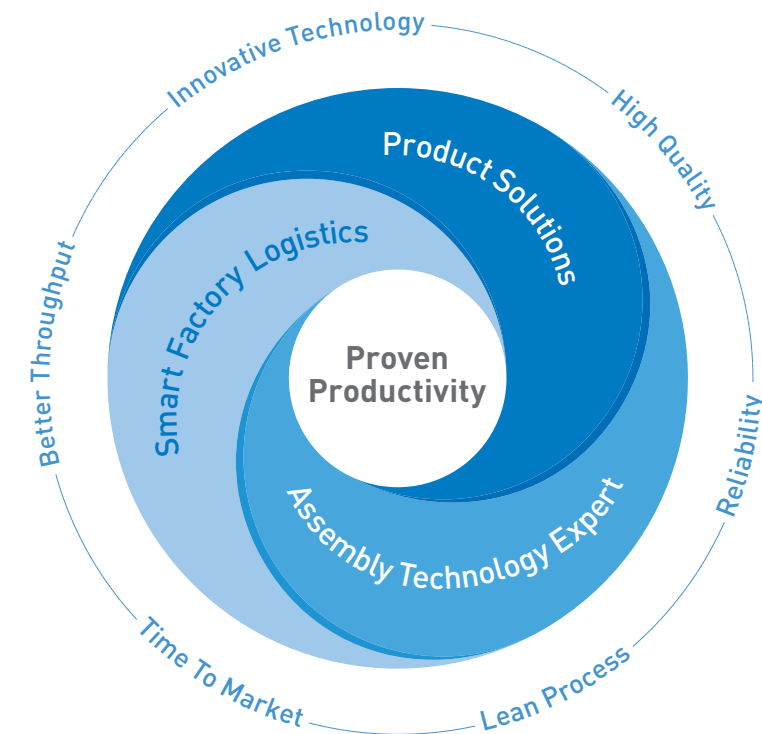
Measurement results of the highest standard

In our quality- and test laboratories we use industry standards and individual customer requirements to go over your products with a fine toothcomb. In combination with ISO/IEC 17025 accreditation we have reliable competence in testing, which are both available to the customer for tests accompanying development, special tests and complete tests. Both nationally and internationally, laboratory accreditation is seen as a recognized and reliable indicator of technical competence. Clear adherence to normative specifications ensures that the measurement results delivered enjoy the highest level of confidence. This is also guaranteed by our competent specialist staff.



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.

