

Power transmission and distribution

Connectors | Advanced connection solutions

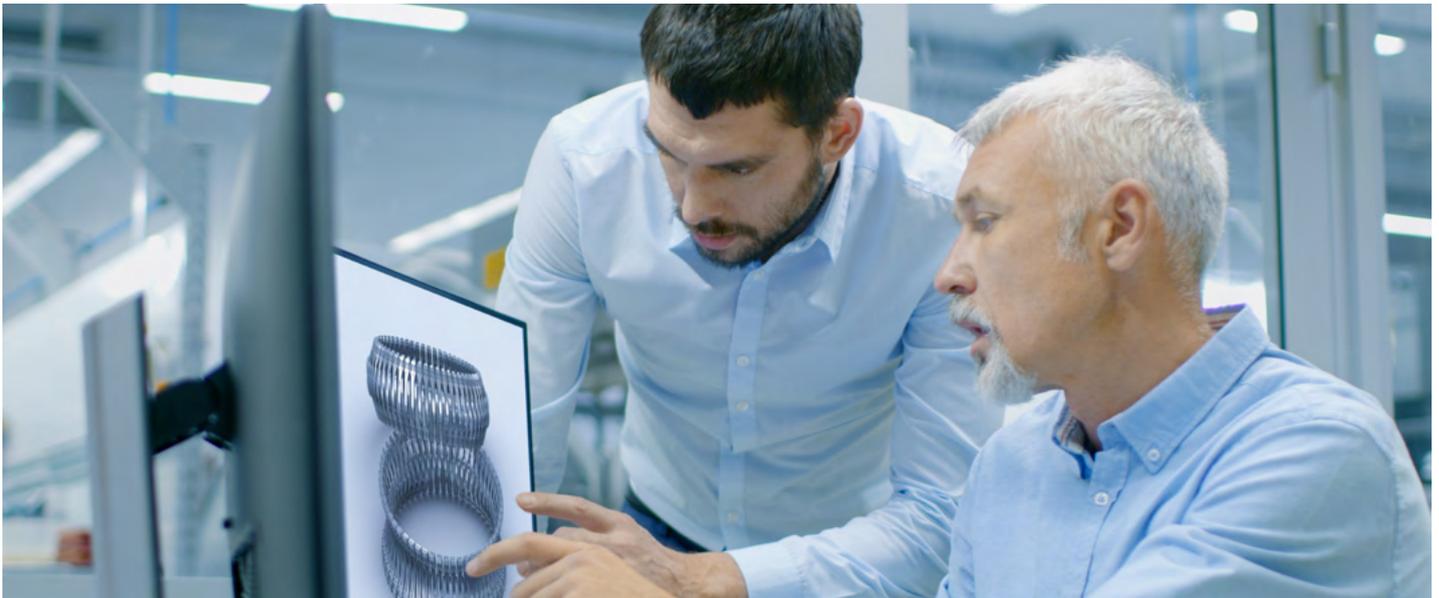
EN





A PARTNER WITH VISION

An international group for all industry sectors



Stäubli, a market-leading company, strives for innovation to provide answers to current and future challenges for advanced connection solutions.

Stäubli develops and implements tailored customer solutions at the highest level, taking account of specific market trends in the relevant industry sector. This is the strategy of the world's leading manufacturer of connection solutions for all types of energy circuits.

From miniature electrical connectors to high-performance connectors, hybrid multicoupling systems for all energy sources or powerful and minimal-loss contact el-

ements: Our solutions increase reliability, efficiency and performance, and are user-friendly, thus increasing productivity as well as user safety.

Experience for your advantage

With many years of industry experience and comprehensive expertise, in addition to tailored solutions we also offer a wide-ranging portfolio of standard products for different industrial sectors. Our global service network enables us to provide our customers with quick and suitable solutions.

Our teams have specialist knowledge in a variety of markets combined with interdisciplinary knowledge in research and devel-

opment, application technology, test processes, quality assurance and supply chain management. With optimal support in every phase of your project, you can gain added value on an international level.



50
Countries



5500
Employees worldwide



14
Production sites

CUSTOMIZED INNOVATIVE SOLUTIONS

Our technology for your vision

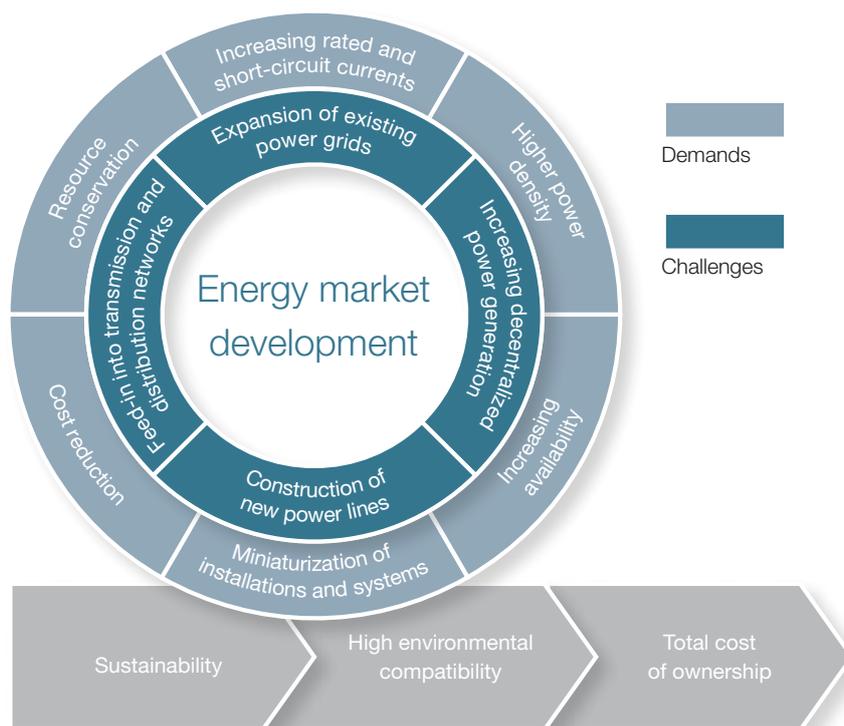


Sustainable performance

The global economy is subject to constant change. Rapid growth in cities around the world, progressive digitization, as well as energy transformation, e-mobility and challenges related to climate change are crucial key words. The increasing demand for energy and the associated expansion of alternative energies as well as an uninterrupted power supply necessitate reliable, user-friendly and high-performance solutions in electrical power transmission and distribution.

Expertise in Power Engineering

With its high-performance products and innovative solutions, Stäubli successfully contributes to the construction and design of sustainable energy supplies.



OUR EXPERTISE FOR YOUR PERFORMANCE

Advanced technology

Stäubli offers technologically leading solutions. With a passion for innovation, we focus on maximum product efficiency and user safety. Each Stäubli assembly is designed and manufactured with carefully coordinated, high-quality components.

We draw on inspiration, strong research drive and technical expertise to constantly work on the future-oriented, flexible connection solutions that we manufacture in our own factories. Our significant industrial experience allows us to supply customers in various market segments with proven products across the board.

Quality and innovation

Reliability, maximum operational safety and longevity are trademarks of Stäubli solutions. The unique MULTILAM technology is both the basis for and guarantee of performance: Since 1962, this sophisticated development has been the core element of all Stäubli electrical connectors. It enables the highly efficient transmission of energy, signals and data with minimum contact resistance and an outstanding service life.

With our connectors and innovative solutions, we not only want to meet the changing market demands, but set new standards.

Unmatched technology

The Stäubli MULTILAM are specially formed and resistant contact elements. Thanks to their constant contact force, MULTILAM louvers ensure continuous contact with contact surfaces. This results in consistently low contact resistance and excellent contact quality with a long service life.

The MULTILAM technology ensures maximum efficiency even under the toughest conditions and is especially recommended for applications with more demanding requirements. Certain products in the connector line can reach up to 1 million mating cycles.

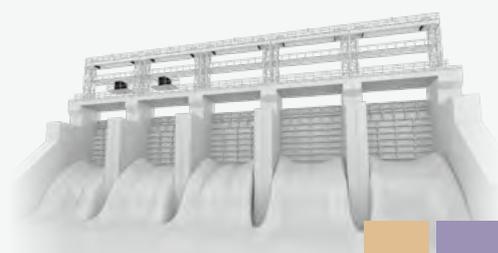
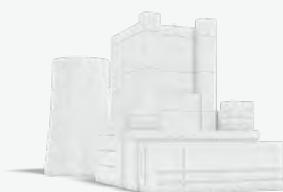


UNLIMITED APPLICATIONS

High-performance contact solutions for a reliable current flow

Typical areas of application and product examples

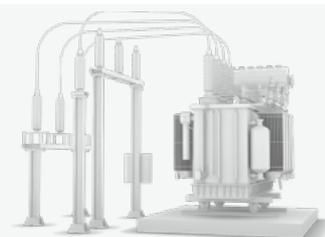
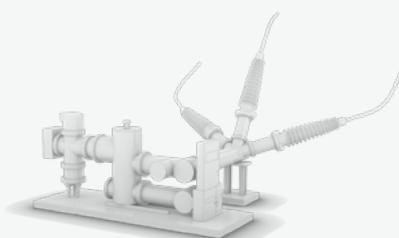
Energy production



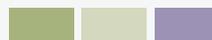
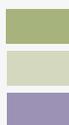
Power transmission



Energy distribution and transformation

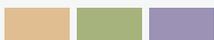


Energy use
Mobile emergency power supply
Energy storage

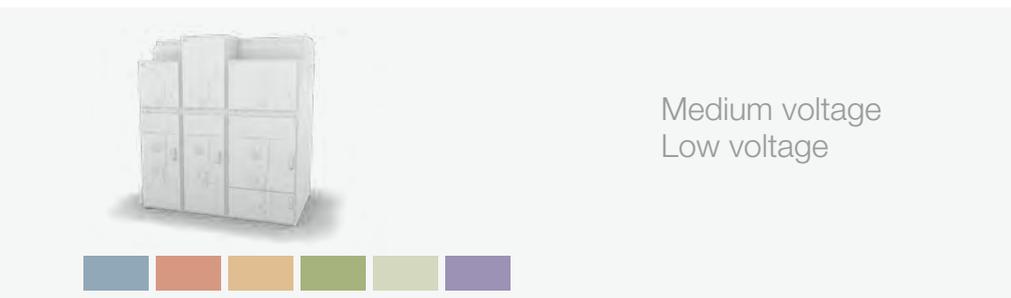




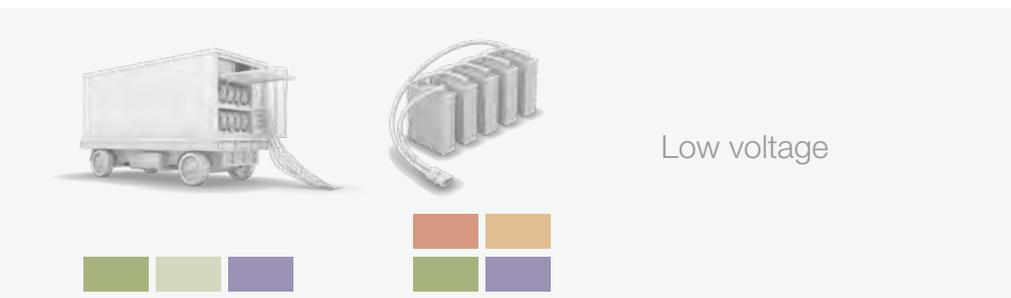
Medium voltage
Low voltage



High voltage
Extra-high voltage



Medium voltage
Low voltage



Low voltage



- 
Connectors,
single-pole, uninsulated

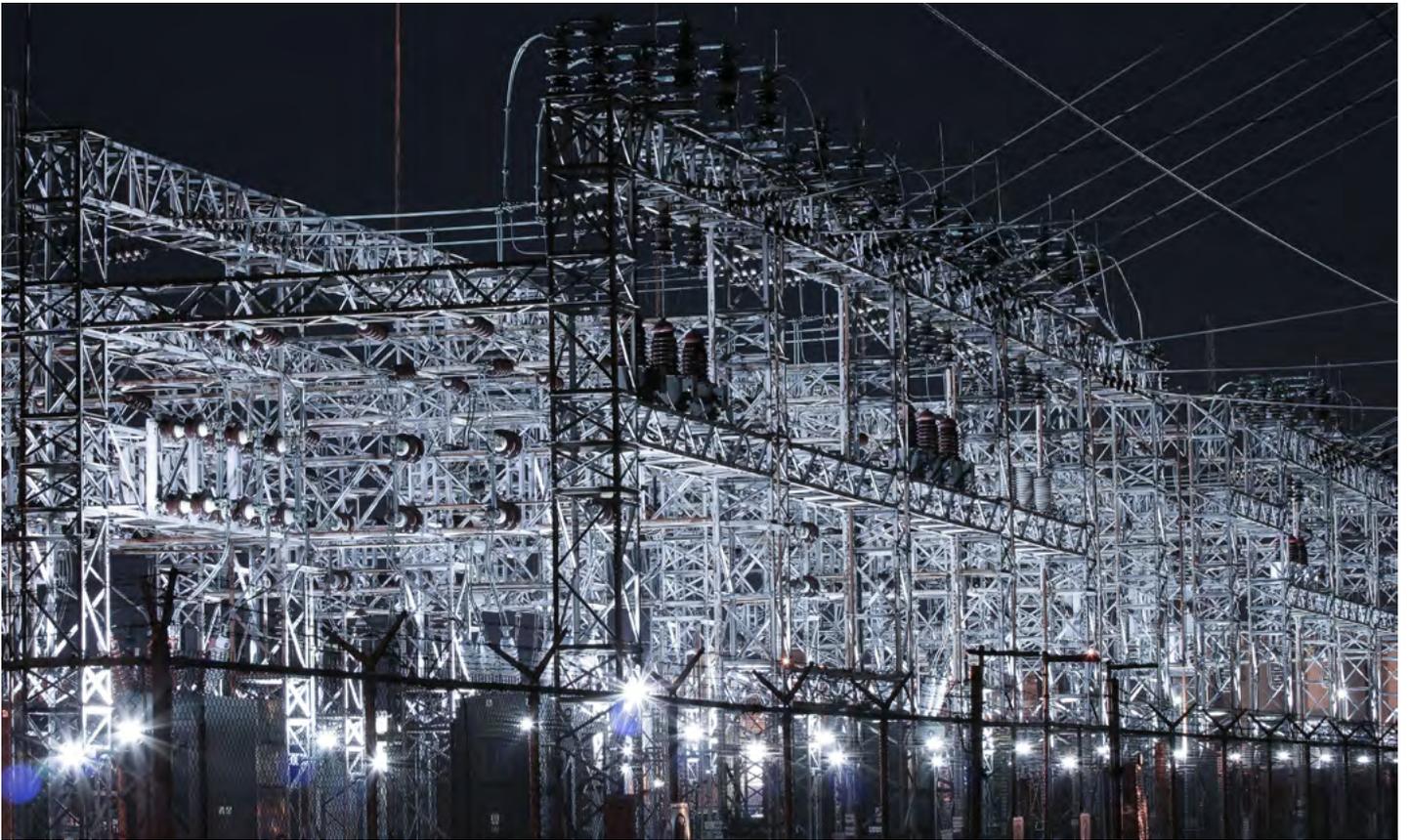
- 
Fork plugs

- 
Customer-specific
solutions

- 
Connectors,
single-pole, insulated

- 
Rapid connection
systems

- 
Test and measurement
technology

IN PRACTICE

MULTILAM in use

High voltage direct current transmission

For worldwide electrification, AC transmission was originally implemented as it could be increased for long distances and stepped down again for distribution.

Today, high-voltage DC transmission is becoming more widespread thanks to power transmission with minimal losses and increasingly stronger power electronics. The power modules used can become damaged due to extremely high current and voltage spikes and must be replaced. However, if they are connected via screw connectors, service is cumbersome, risky and costly.

Round and, above all, fork plugs from Stäubli are optimally suited to replace screw connectors: They easily withstand high short-circuit currents and the associated forces and, due to the well-thought-out design, guarantee the necessary flexibility for tolerance compensation. This minimizes downtime, increases safety and at the same time ensures high system availability.



Switchgear

MULTILAM have always been used very successfully in all areas of medium- and high-voltage switchgears, which are exposed to extreme loads. In disconnecting and earthing switches, in circuit breakers or in busbar connections, the highest short-circuit currents must be carried and 10,000 or more switching cycles must be withstood. Especially in switchgears, it is important to keep warming to a minimum due to losses at contact points.

Due to the very high electric performance and the low resistances, MULTILAM ensures low warming and simultaneously high power density.

Its high electrical, mechanical and thermal performance make it the optimal contact element.

The excellent properties of the two-component MULTILAM are the guarantee for functional reliability throughout the entire service life of a switchgear. The MULTILAM flexo ML-CUX enables not only higher performance and additional flexibility, but also significant cost reductions.



Transformers

In the transmission of electrical energy from production to use, the voltage is partially stepped up to over 1 million volts and gradually stepped down to low voltage. Different feedthroughs and cable terminations are used to connect the transmission lines to the power and distribution transformers.

Here, quasi at the voltage source, extremely high short-circuit currents and mechanical

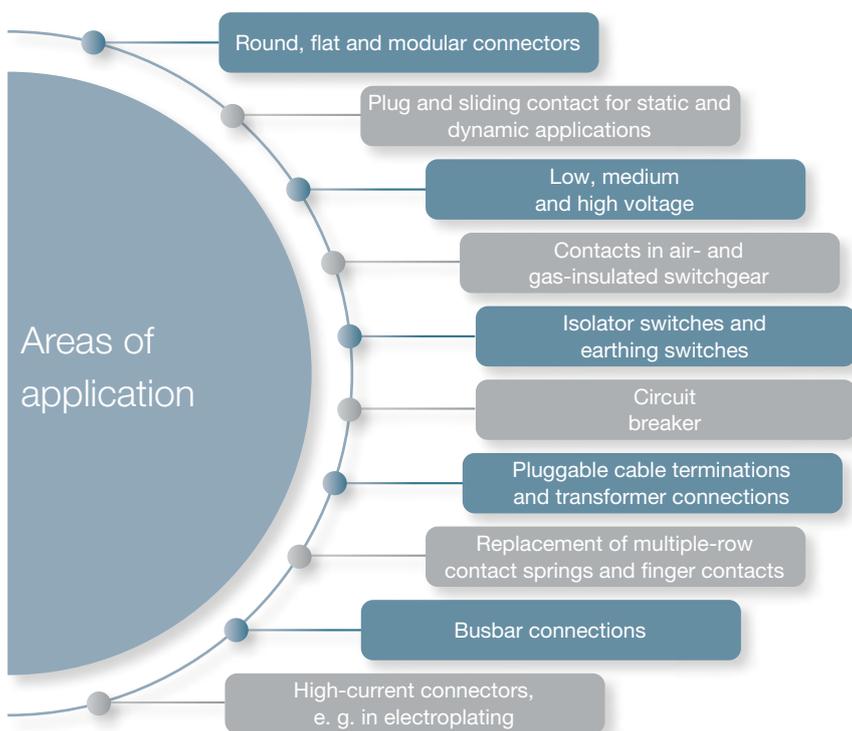
forces occur at the contact points. Furthermore, the conductors move due to thermal expansion. Thanks to MULTILAM technology, our connectors can optimally meet these high demands.

Customer-specific solutions such as measuring adapters are designed for regularly checking the transformers' state of aging, thus allowing long-lasting high transmission reliability.



FROM EXPERIENCE

The perfect choice



Experts in high-current solutions

Connection solutions in power transmission and distribution are subject to the highest demands: In large systems, electrical contacts ensure proven power transmission over many decades.

Reliability is in the detail

Electrical plug connectors and contact elements may be the smallest components, but their importance is much greater. We believe using the highest quality materials is important, as is our in-depth expertise in manufacturing technology, and the test procedures we perform go beyond the requirements. **MULTILAM technology is the best choice for use in this field with its proven reliability and stable properties.**

Benefits for use

Due to its unique characteristics, the MULTILAM technology is especially suitable for this demanding market and convinces thanks to the following key properties:



Excellent current-carrying capacity



Minimal transition resistance



Minimum contact heating

TOP PERFORMANCE

Excellent performance characteristics for higher productivity

Score points with innovation

The MULTILAM flexo ML-CUX is the newest product innovation within the MULTILAM portfolio. It sets new standards for high-power contact elements. It is a two-component MULTILAM for demanding contact solutions, especially in power engineering.

Convincing properties

Its unique patented design combines optimized electrical and mechanical properties. This results in an excellent power/short-circuit current load capacity combined with high flexibility.

Switchgear manufacturers benefit from the large working area, which enables a high degree of tolerance compensation. This offers

key advantages in the use and manufacture of contact solutions: With ML-CUX, you can create compact solutions with high-power density. The special construction allows a simple use of MULTILAM in a straight, cost-effective groove, even with larger contact diameters.

The two-component design

The high performance values of this special MULTILAM result from the separation of electrical and mechanical functions: Both can be optimized independently, thus maximizing performance. Providing ultimate performance during service life without making any concessions. The ML-CUX guarantees high quality with compact dimensions. Only safe (beryllium-free) materials are used in its manufacture.

Efficient technology

The ML-CUX guarantees long-lasting, reliable and low-loss energy transfer and effectively contributes to decreasing the total cost of ownership (TCO).

Stäubli Electrical Connectors produces product innovations in its own factories. This not only provides flexibility for meeting customer needs, but also short delivery times.

Newest innovation:
MULTILAM flexo ML-CUX



High performance across a wide temperature range



Suitable for few or many mating cycles



High impact, shock and vibration resistance



Excellent longevity and consistently high performance values

PORTFOLIO EXCERPT

The MULTILAM Family

MULTILAM flexo –

Two-component torsion spring with “stretchable” design

The **MULTILAM flexo ML-CUX** is a high-power contact element through and through: adaptable, flexible and economical

Typical markets: Power engineering

For example, it can be used in high-power contacts, insertion and sliding contacts or as a high-performance compact alternative to multiple or large contact solutions.

- Very high rated currents and short-circuit currents
- High degree of tolerance compensation
- Simple installation in a straight, cost-effective groove
- Material and cost reductions thanks to high performance
- **Be Free**  beryllium-free



MULTILAM fusio –

Two-component torsion spring

Bundled power: These MULTILAM types combine optimized electrical, mechanical and thermal properties.

Typical markets: Power engineering, railway technology, customer-specific solutions

Can be used in high-power contact, slide, rotating and flat contacts.

- High rated currents and short-circuit currents
- Excellent electrical and thermal properties
- High number of mating cycles
- Suitable for flat contact and fork plugs
- **Be Free**  beryllium-free



MULTILAM torsio – Single-component torsion spring

The all-rounder with excellent value for money: versatile, high-performance and extremely reliable.

Typical markets: Power engineering, utility, aeronautics

For example, it can be used in high-power contacts, slide and rotating contacts, fork plugs and flat contacts.

- Very good electrical and thermal properties
- Suitable for very high frequencies up to the GHz range
- Different tape thicknesses for press-in sockets or high mating cycles
- Suitable for flat contact and fork plugs
- High vibration and shock resistance



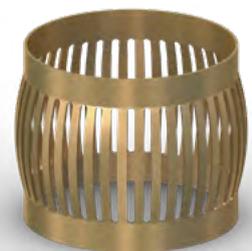
MULTILAM lineo – Single-component leaf spring

These MULTILAM types are perfectly suited to low currents and smaller diameters.

Typical markets: Test and measurement technology, electronics and communications, industry, automation, photovoltaic, alternative energies

Can be used in products such as miniature connectors and plugs, measurement leads and test probes and in modular connectors (e.g. combiTac).

- Suitable for very high mating cycles, up to 1.5 million.
- Suitable for very high frequencies, up to the GHz range
- Very small insertion and sliding forces
- High resistance in aggressive atmospheres
- Constant low contact resistance



FOR MOBILE USE

Utility Solutions

Mobile emergency power supply in the low-voltage range

An uninterrupted power supply is paramount to many areas of public life, in a wide variety of production and service companies and for safety-related functions. Power suppliers therefore deploy emergency power systems and provide mobile power generators.

For the end customer, reliability, performance and high-power availability are most important, which is why the power supplier can seamlessly maintain the power supply even during planned maintenance measures. In the event of unexpected power outages, such as technical defects, lightning or natural disasters, time is critical and a vital factor.

The MULTILAM contact technology is used with a specialized range of products. This ensures a high level of occupational safety and user-friendliness, but also the required



high performance and reliability. Isolated, robust and long-lasting plug and play connectors replace common cable lugs, allowing easy and secure connectivity to generators or battery storage devices. Flexible rapid connection systems with flat bar clamp enable fast and secure connections with busbars, power rails, switchgears and distribution cabinets in buildings and transformer stations.



WIDE RANGE

Products with MULTILAM

Round, flat and modular connectors

Stäubli offers different product lines that are all based on MULTILAM contact technology. Modular connectors are the perfect connection solutions for a variety of applications with round, flat or free configuration. They are used in the energy industry, in switchgears, busbar connections, production facilities, engineering, aeronautics, the railway industry and many more.

- Single/multi-pole and modular connectors; uninsulated and insulated
- Very high contact quality
- Optimal for very high mating cycles
- Contact from 0.6 to 600 mm and larger
- High vibration and impact resistance
- Suitable for use in a wide range of environmental conditions

Connector solutions and accessories for Test & Measurement

Our test accessories are used for a wide variety of measurement tasks. From low to medium voltage, from DC to high-frequency measurement technology. It is used in production lines, test benches, electronics laboratories and educational institutions, in service technology, but also in network analysis/monitoring devices.

- A wide range of standard and tailored solutions
- Highest quality and safety standards
- Very low contact resistance
- High number of mating cycles (measurement cycles)
- Constant, very high contact quality meaning no measurement errors





● Stäubli Units ○ Representatives/Agents

Global presence of the Stäubli Group

www.staubli.com