

# Solutions for the logistic industry

**Charging connectors for AGV & AMR**

EN



## LOGISTICS

# We enable strong connections



With Stäubli, you can rely on a competent partner, whose know-how will always help you find an optimal solution, even for the most demanding applications. As long-standing collaborative partner in the logistics industry, we are always thinking a

few steps ahead when developing reliable connectors for future-proof charging solutions. We strive to outperform even the most ambitious targets with tailored solutions to suit your specific requirements.



### Stäubli Group

Swiss origins with over 130 years' experience



### Global expertise

6000 employees in 28 countries



### MULTILAM

Extremely durable and reliable electrical contact



# Improving processes by deploying AGVs in modern logistics environments

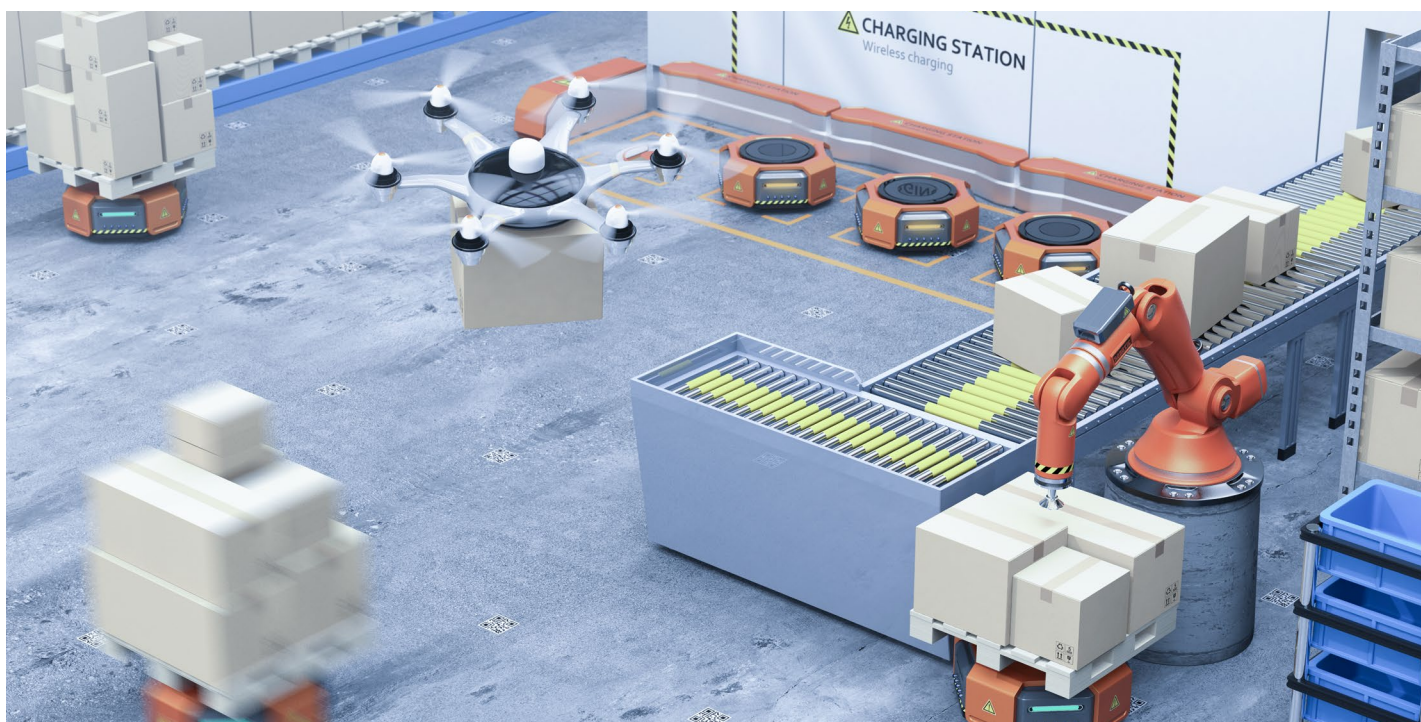
Autonomous guided vehicles (AGV) and autonomous mobile robots (AMR) play an important role in streamlining modern logistics processes while having almost constant productivity and improving safety of staff. With our comprehensive expertise and a portfolio specifically for the logistics sector, our connectors meet the most demanding requirements and deliver high performance at minimal downtime.

Uninterrupted operation is the key for on-time delivery. Stäubli Electrical Connectors understands the needs of AGV and AMR manufacturers to deliver efficiency, safety

and durability – even under the toughest conditions.

Distinguished by compact design, unparalleled modularity and high current carrying capacity, we ensure permanent electrical contact thanks to our patented MULTILAM contact technology. Furthermore, external certifications and extensive quality testing underscore our commitment to provide ideal connector solutions.

Moreover, our solutions enable more streamlined manufacturing processes and strongly reduced maintenance.



## AGV/AMR CHARGING SYSTEMS

# Connections that work. Reliability you can count on.

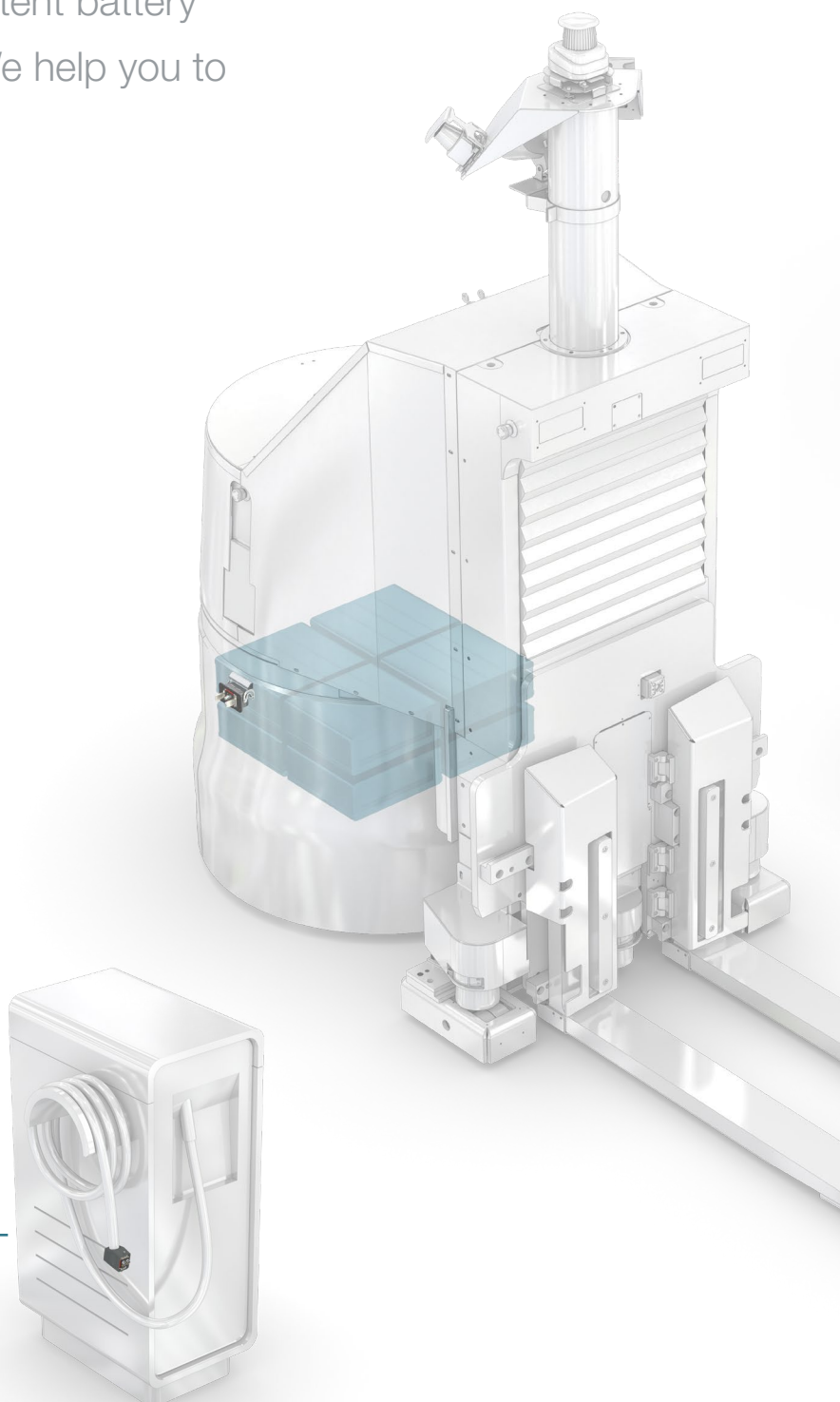
Mobile robots and AGVs often run 24h a day, maintaining reliability and a consistent battery charge is therefore a challenge. We help you to keep going.

Mobile robots and AGVs can operate 24 hours a day. The choice of the right charging system and interconnections is crucial to ensure the best possible performance and ideal charging times. Ensuring efficient battery charging is critical to optimizing battery life, which helps reduce the frequency of battery replacement, saving both time and money. Stäubli offers reliable high-current solutions for different use cases.

Overall high current-carrying capacity and reliability over thousands of mating cycles are paramount to the high performance, uninterrupted operation of AGVs and mobile robots.

## Manual charging

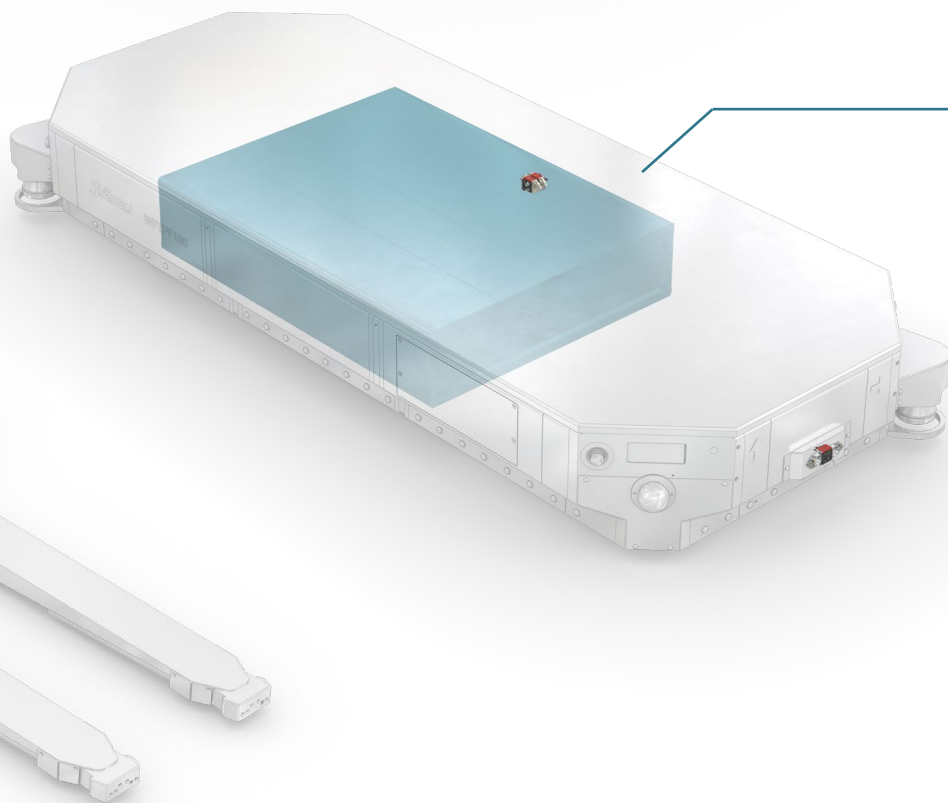
When charging manually, the charging connector must be plugged in by hand during stops.





#### **Automatic/autonomous charging**

Depending on the charging strategy, the vehicle automatically docks at the charging station. CombiTac align 4 offers up to 4 mm and  $\pm 4^\circ$  misalignment compensation, effectively eliminating tolerance constraints with autonomous docking.



#### **Battery swapping**

The battery is exchanged once it reaches a defined battery level.

## SOLUTIONS FOR BATTERY APPLICATIONS

# CombiTac – high-performance modular connector for your charging needs

Where constant productivity is key, CombiTac ensures uninterrupted operation without failures, making sure your logistics environment is up to speed.

AGV's and AMR are subject to highest dependability. With the CombiTac range, Stäubli offers a modular connector system that is designed to meet your needs and delivers highest reliability to your application. The modular and customizable approach enables the use of various connections (current, data, fluid, air and more) within one single connector in order to deliver maximum

connection performance within small space. With its high mating cycles, CombiTac guarantees a long-life of performance even under the most demanding mechanical and environmental conditions.



**High current carrying capacity in small dimensions**



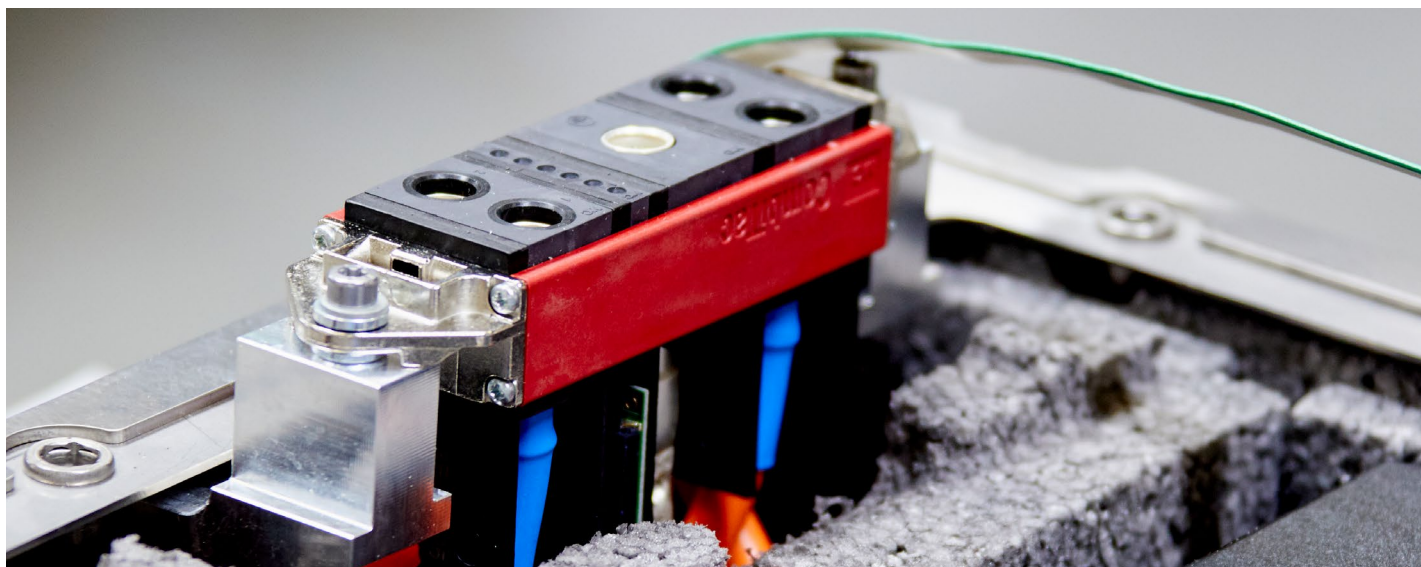
**Safe, reliable**



**Customizable to your exact needs**

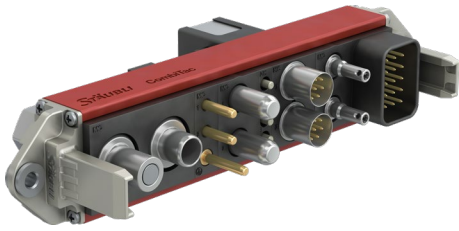


**MULTILAM contact technology**





# CombiTac uniq

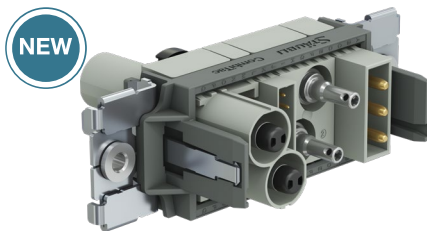


100 % customizable  
Highest performance  
100,000 mating cycles

Modular connectors for power, signal, data, pneumatic and fluid connections up to 100,000 mating cycles. Offers the highest possible performance and can be customized to meet exact technical and dimensional specifications.

- High current >300 A
- 100'000 mating cycles
- 100% Customizable
- Temperature up to 90°C
- **No limitation in size** (for panel mount)
- Broad portfolio including fluid modules

# CombiTac direct



Click & connect  
Most assembly-effective  
10,000 mating cycles

The latest generation of modular connectors for power, signal, data and pneumatic connections up to 10,000 mating cycles. The new user-friendly, tool-free click-and-connect system allows you to assemble your modular connector system in the most time-saving way.

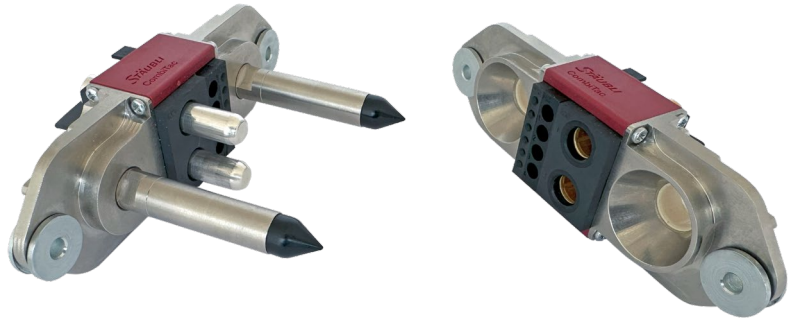
- High current >350A
- **High volume applications** (standard components)
- 10'000 mating cycles
- Temperature up to 125°C
- Price advantage for modules with more signal contacts
- **4 sizes** available
- Portfolio mostly electrical. Pneumatic couplers included.

# Ultimate solution for the most demanding AGV/AMR applications

## CombiTac align 4

Stäubli's CombiTac align 4 high misalignment solution compensates for radial and angular misalignment during connection processes. With the conic shape of the female shape, the pins on the male side are guided. These guiding pins include insulation caps to prevent unintentional contact with live parts on the socket side.

- Covers radial and angular misalignment up to 4 mm and  $\pm 4^\circ$  respectively



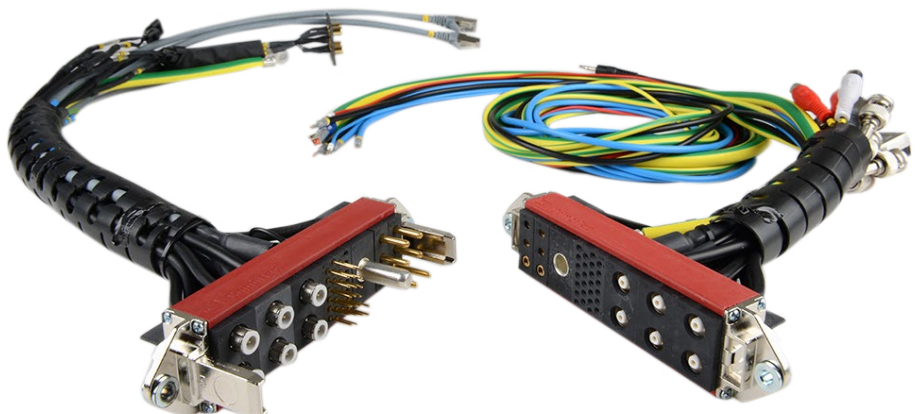
## High-current modules

Our special high-current modules offer the possibility of connecting currents of up to 600 A / 1000 V.

## Cable assembly and harnessing

Upon request, we offer you complete solutions including cable assembly which significantly reduce assembly costs and simplify logistics. Cables of your choice are assembled on your CombiTac at our factory and tested before delivery.

- Complete solution provider
- 100 % tested solution
- State-of-the-art production facilities







## INDUSTRY 4.0

# Future proof

In the era of Industry 4.0, efficient logistics and automated warehouse operations depend heavily on the timely and accurate exchange of information. By ensuring reliable data transmission, connectors enable the seamless integration of various automation technologies, including autonomous mobile robots (AMRs), automated guided vehicles (AGVs), robotic arms, sorting machines, and inventory management systems. This minimizes downtime, enhances operational efficiency, and ultimately boosts productivity. Staubli has revolutionized the way industries connect in the digital age with its cutting-edge CombiTac connector. This

exceptional solution enables seamless connectivity in the industrial landscape while providing superior electromagnetic interference (EMI) protection and exceptional data performance.

Our CombiTac modules have been designed for very reliable data transmission. They offer data performance for Cat5 Ethernet IEEE 802.3, Profibus, Profinet, Interbus, CAN-BUS, USB2.0, Cat6A (10Gbit) with M12. In addition, the mated pair provides 360° shielding and offers excellent EMI protection.

### Data ethernet:

- CAT 5, CAT6A, Profibus, Profinet, Interbus, CAN-Bus
- Crimp, RJ45, M12 (screw)

### Data video, audio, RF:

- Various RG cables including (RG59, RG58, RG316 (188, 174)
- Crimp and SMA (screw)

 Read more

**SIMPLY CONFIGURE IT YOURSELF**

# CombiTac Configurator

Configure your CombiTac now easily and conveniently with our online configurator.

Our convenient online configurator gives you all the choices you need.



Discover more



## Easy and fast

with dimensions and transparency view



## Extra services

including spare parts and more



## Simple

add features, modify configurations



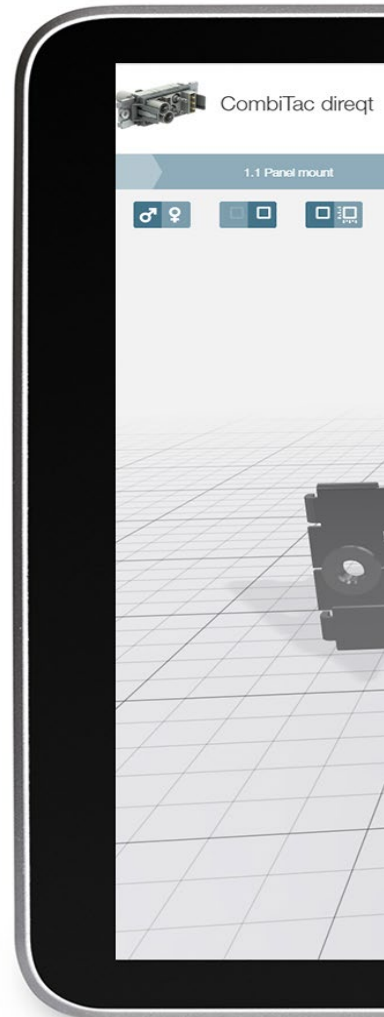
## Integration in your models

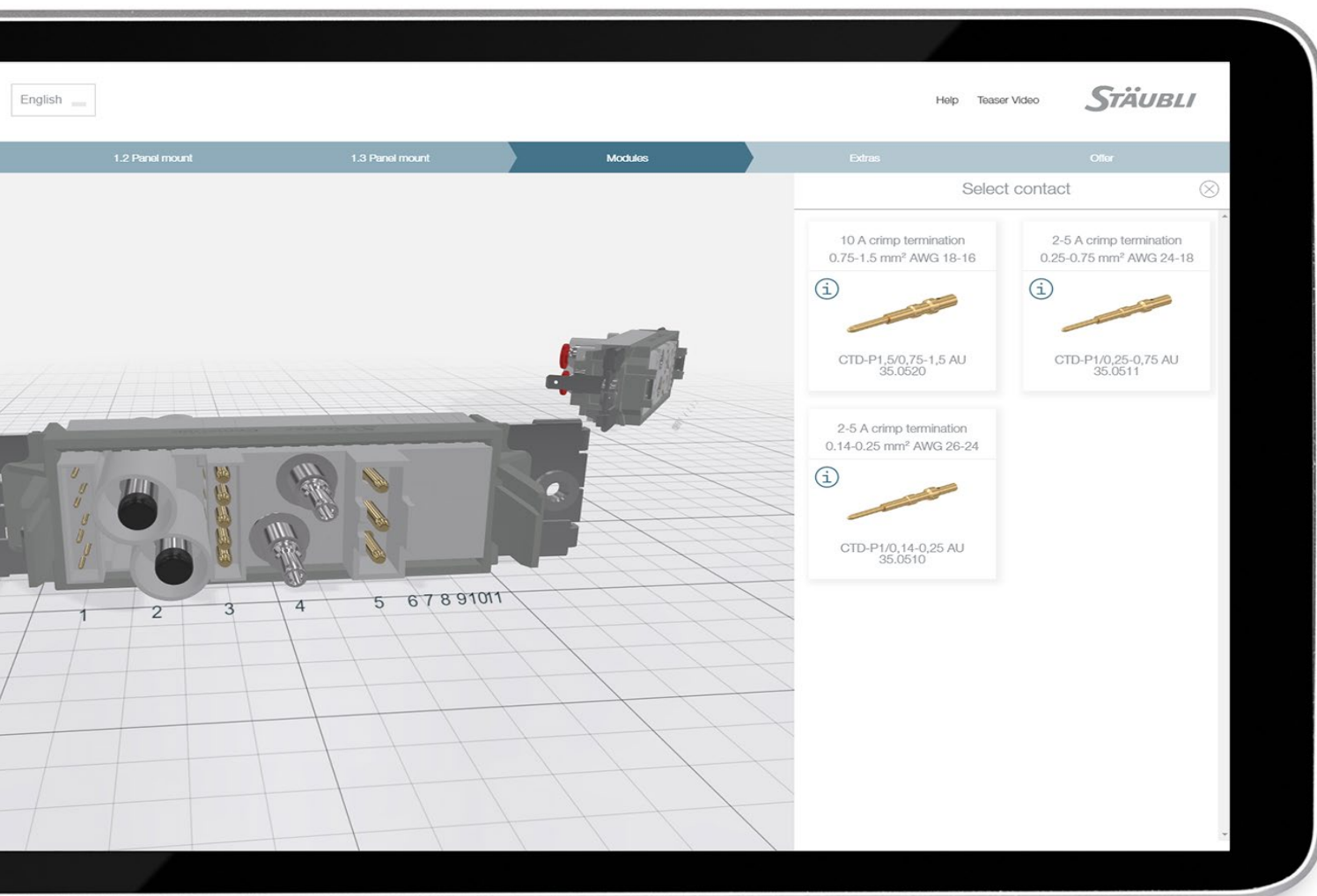
STEP-files available



## 3D

animated rotation









● Stäubli Units    ○ Representatives/Agents

# Global presence of the Stäubli Group

[www.staubli.com](http://www.staubli.com)