

CombiTac Overview

Modular connector solutions for up to 100,000 mating cycles

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COMBITAC MODULAR CONNECTORS

CombiTac direct

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

Highlights

- Up to 10,000 mating cycles
- Signal, power, pneumatic connections, data and coax
- Up to 350 A
- Pneumatic connections up to 15 bar
- Housing and panel mounting possible
- Click-and-Connect-System
- Tool-free assembly
- High safety



CombiTac uniq



CombiTac uniq connectors are the ideal choice for applications that require modular, space-saving all-in-one solutions. Fully customizable and suitable for up to 100,000 mating cycles, they guarantee a long service life under the most demanding mechanical and environmental conditions.

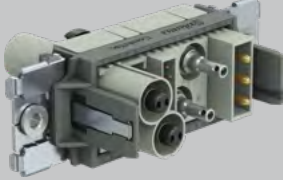
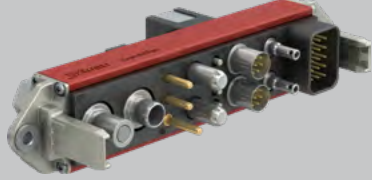
Highlights

- 100 % customizable
- All-in-one space-saving modular connectors
- Guaranteed long-lasting performance, even under the most demanding environmental conditions
- Up to 100,000 mating cycles
- High current over 720 A
- Voltage up to 5 kV
- Connections for fluid and pneumatics up to 15 bar
- Power, signal, data, thermocouple, coaxial and fiber optic

Product Overview

CombiTac direct

CombiTac uniq

		
Sizes Panel mount	4	18 mm to 180 mm (in 2 mm steps)
Housing sizes	6	6
Aluminum housings IP65, IP67, IP68/69K	✓	✓
Plastic housings IP65	✓	✓
Housing PE module		✓
Rated current	✓ up to 350 A	✓ up to 720 A
High Voltage (up to 5 kV)		✓
Signal	✓	✓
Last mate first break (monitoring)	✓	✓
Data/Ethernet	✓ up to 1 Gbit	✓ up to 10 Gbit
Coaxial	✓	✓
Fiberoptic		✓
Thermocoupling		✓
Pneumatic	✓	✓
Fluid		✓
Mating cycles	up to 10,000	up to 100,000
Carrier material	PA	PA, EPTR, PEEK
Railway fire and smoke compliance	✓	✓
Vibrations and shock resistance	✓	✓
Contact termination type	Crimp	Crimp, PCB, screw
Delivery	Assembled (contacts separate)	Assembled (contacts separate)
Requires contact insertion tools		Stäubli tools ¹⁾
Carrier removal tools	Standard flat screwdriver	
Contact removal tools	Standard flat screwdriver	Stäubli tools ¹⁾
Cable assembly	✓	✓
Customization		✓

Further information



¹⁾ Depending on contact type

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 to customize the CombiTac based on your needs.



Easy and fast
with dimensions and
transparency view



Simple
add features,
modify configurations



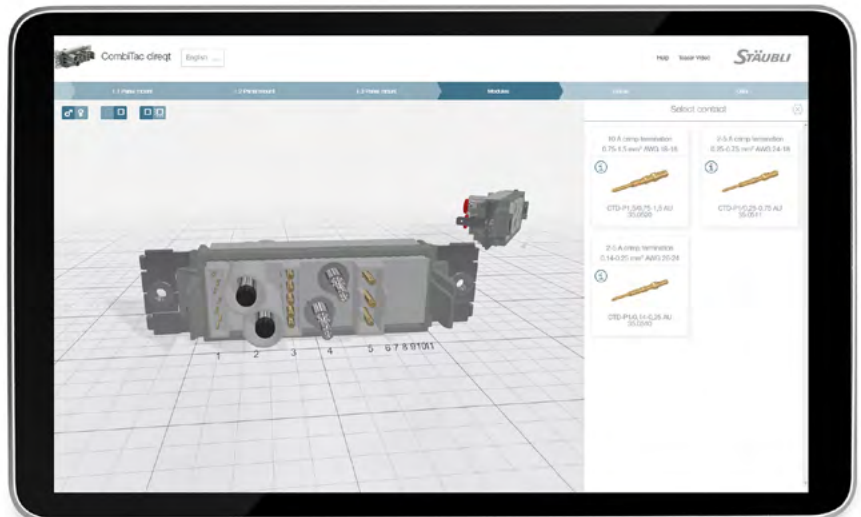
3D
animated rotation



Extra services
including spare parts
and more



**Integration in your
models**
STEP-files available



APPLICATIONS

Industries and applications

Thanks to its modularity and adaptability, CombiTac is suitable for a wide range of applications, such as automated manufacturing, logistics, healthcare, testing and E-Mobility.

Automated manufacturing

CombiTac guarantees secure power transmission for modular production components.

Testing

With CombiTac, up to 100,000 test cycles can be achieved without any problems.

Logistics/AGV/drones

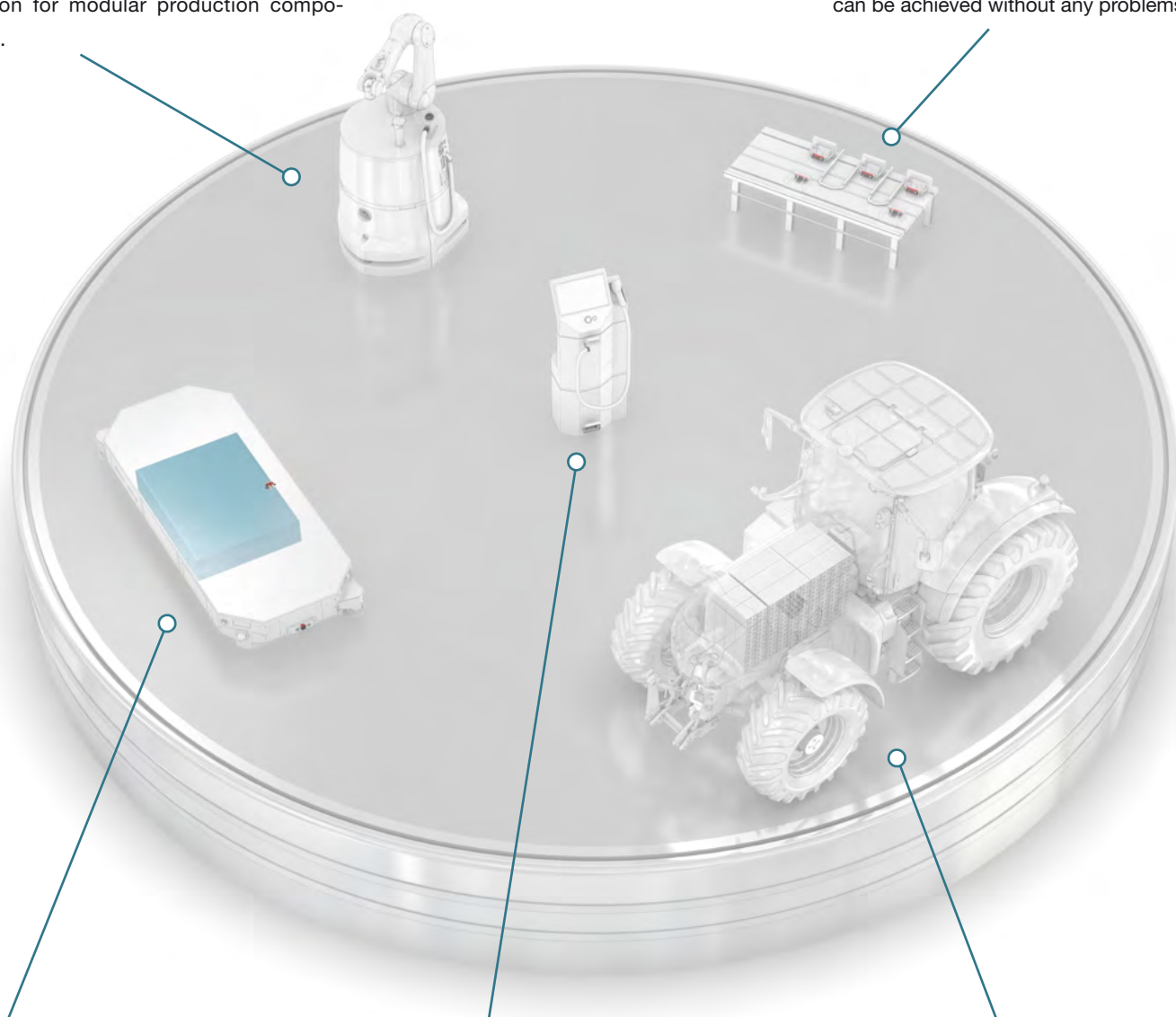
CombiTac is designed for the charging process of autonomous mobility systems.

Healthcare/Life sciences

CombiTac ensures reliable, safe and easy use, making it ideal for the medical industry.

Construction machines/Mining

CombiTac enables reliable power transmission and the connection of equipment.



Logistics/AGV/drones

CombiTac connectors are ideally suited for applications in logistics such as AGV and drones charging. They ensure reliable and efficient power transmission, increase operational reliability and supporting precise docking processes in automated charging

systems. During the connection process, CombiTac compensates for axial and planar misalignments and angular offsets, thus facilitating the docking of autonomous vehicles.



Fields of application:

- Logistics drones
- Indoor/Outdoor AGV (automated guided vehicle)
- AMR (automated mobile robot)
- Forklift truck

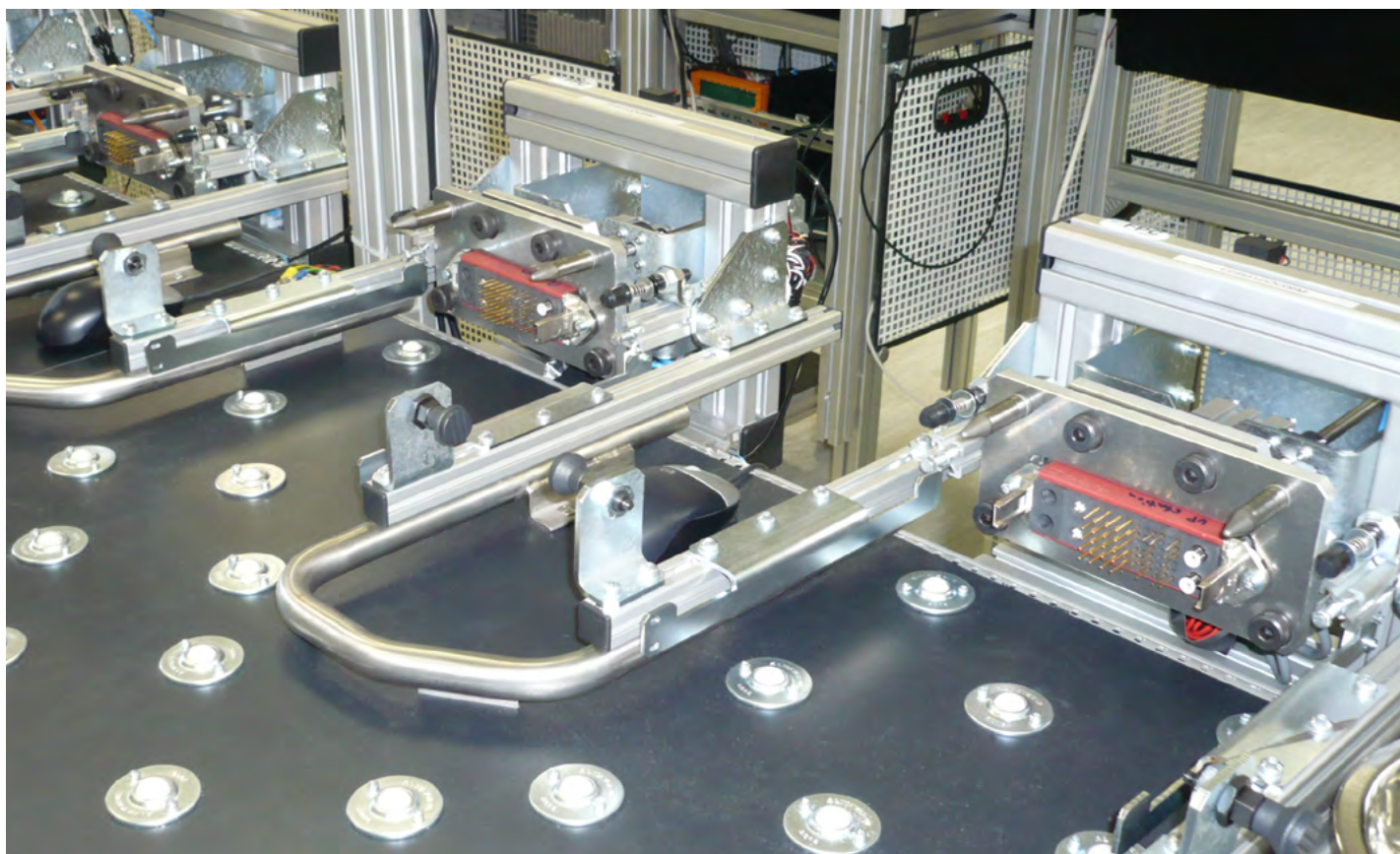
Offering:

- Power
- Data

Testing

Product testing is essential in modern industry, especially for engines, batteries and hydraulic systems. CombiTac's robust workmanship enables a high number of mating cycles, which is particularly important in test stations. With a versatile selection

of contacts, as well as pneumatic and fluid sockets, CombiTac offers a wide range of testing options.



Automatic testing lines

CombiTac ensures that automatic production testing processes run uninterrupted over long periods of time.

- High-end components for error-free test results
- up to 100,000 mating cycles
- Misalignment compensation for easy automatic insertion

Fields of application:

- Automatic components
- Energy storage systems
- EV battery
- OBC (On-Board-Charger)
- MCU (Motor Control Units)
- Motors
- Printed circuit boards
- PV inverters
- Refrigeration systems
- Mobile phones, tablets, computers, game consoles, televisions
- Domestic appliances

Offering:

- Pneumatic
- Power
- Fluid
- Signal
- Data
- Thermocouple
- High voltage
- Plastic- and Glass optical fibre
- Coax

Automated manufacturing

In automated manufacturing, smooth operation is of the essence. Lengthy maintenance and downtime can lead to significant losses and damage. That is why long-lasting connections CombiTac are the ideal solution for these applications.

CombiTacs are used in automation of CNC machines as well as in industrial robots.

CombiTac is shock and vibration resistant, offers up to 100,000 mating cycles and is available in a DIN housing with IP65, IP67 or IP68/69K protection against dust and dirt.



Fields of application:

- CNC machines
- Tool changer
- Lathes
- Robots
- EOAT (End of arm tooling) – welding machines
- Packaging and capping machines
- Automatic presses
- Power and control systems

Offering:

- Power
- Data
- Signal
- Pneumatic
- Fluid

Healthcare/Life sciences

In the healthcare and medical industry, reliable components are essential, including electrical, hybrid and modular connectors. Medical devices require stable connection techniques for effective results. Stäubli offers safe and stable connectors with leak-

proof fluid and pneumatic couplings. With their compact signal and data contacts and a wide range of housings, they serve a diverse range of applications. The easy and safe handling makes the CombiTac the preferred product of many manufacturers.



Fields of application:

- X-ray
- Ultrasound
- CT/MRT
- LASIK operations
- Laser devices
- Laboratory devices
- Hospital devices
- Therapy devices

Offering:

- Power
- Signal
- Data
- Pneumatic
- Fluid

Construction machines/Mining

The construction sector is undergoing a transformation to accelerate the transition to zero-emissions by mid-century. Stäubli provides support to the heavy-duty mobile machine market demand towards electric and hybrid drive systems with a wide range of connectors.

With their robust design our CombiTac connectors guarantee safe and optimal power distribution between battery pack and high-voltage components.

Application scenarios include various connections, such as the battery-motor connection, charging options, and other equipment.

In addition to high power, data, signals, fluids, and media can also be transmitted. Our leakproof fluid couplings provide particularly reliable protection, thus preventing damage and downtime.



Fields of application:

- Excavators
- Dump trucks
- Road Rollers
- Asphalt machine
- Foundation rigs
- Tippers
- Sweepers
- Agricultural machinery
- Forestry machinery
- Cleaning machines

Offering:

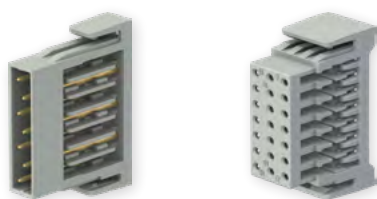
- Power
- Signal
- Data
- Fluid

COMBITAC DIREQT MODULES

CombiTac direct modules



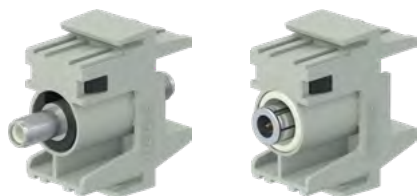
Type of module	Power
Nom. Ø contact	3 mm – 10 mm
Conductor cross-section	2.5 mm ² – 95 mm ² 14 AWG – 3/0 AWG
Rated current	31 A – 350 A
Mating cycles	10,000



Type of module	Signal
Nom. Ø contact	1 mm – 1.5 mm
Conductor cross-section	0.14 mm ² – 1.5 mm ² 26 AWG – 16 AWG
Rated current	5 A – 14 A
Mating cycles	10,000



Type of module	Monitoring
Rated voltage	29.5 V
Conductor cross-section	0.14 mm ² – 0.75 mm ² 26 AWG – 18 AWG
Rated current	100 mA
Mating cycles	10,000



Type of module	Coaxial
Cable types	RG316/U, RG174, RG188, RG58 other 50 Ω RG cable types
Frequency	up to 6 GHz
Rated current	250 mA
Mating cycles	10,000



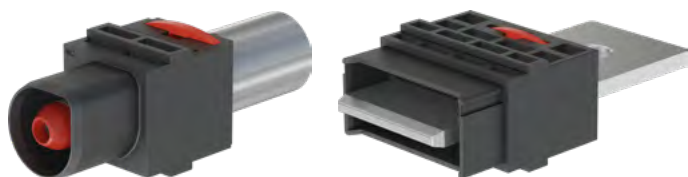
Type of module	Pneumatic
Coupling type	Compressed air
Max. working pressure	15 bar
Min. working pressure	14 mbar
Mating cycles	100,000



Type of module	Data
Data transmission	Ethernet, Profibus, Profinet, Interbus, CAN-BUS
Termination type	Crimp, RJ45, Coaxial
Mating cycles	10,000
Data speed	1 Gbit

COMBITAC UNIQ MODULES

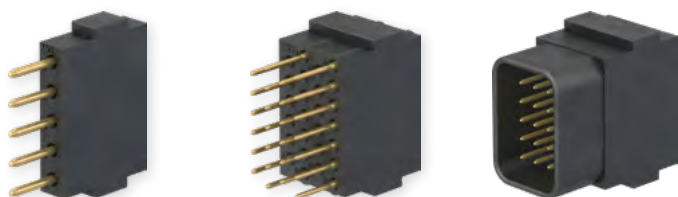
CombiTac uniq modules



Type of module	Power
Nom. Ø contact	3 mm – 12 mm; 5 mm × 42 mm
Conductor cross-section	2,5 mm ² – 240 mm ² 14 AWG – 430 MCM
Rated current	25 A – 720 A
Mating cycles	100,000



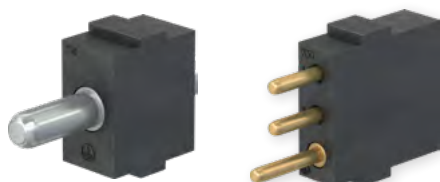
Type of module	High voltage
Nom. Ø contact	1.5 mm – 4 mm
Conductor cross-section	1.5 mm – 3 mm 16 AWG – 12 AWG
Voltage	Up to 5 kV
Mating cycles	100,000



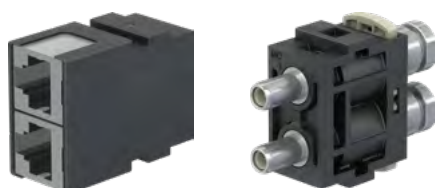
Type of module	Signal
Nom. Ø contact	0.6 mm – 1.5 mm
Conductor cross-section	0.14 mm ² – 1.5 mm ² 26 AWG – 16 AWG
Rated current	1.4 A – 10 A
Mating cycles	100,000



Type of module	Monitoring
Rated voltage	29.5 V
Conductor cross-section	0.5 mm ² – 1.5 mm ² 20 AWG – 16 AWG
Rated current	100 mA
Mating cycles	100,000



Type of module	Earthing
Nom. Ø contact	6 mm – 8 mm
Conductor cross-section	6 mm ² – 35 mm ² 10 AWG – 2 AWG
Rated current	320 A – 1600 A (3s)
Mating cycles	100,000



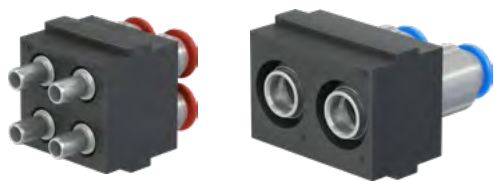
Type of module	Data
Data transmission	CAT6A Ethernet, CAT 5 Ethernet, Profibus, Profinet, Interbus, CAN-BUS, USB 2.0, PoE
Termination type	Crimp, RJ45, M12, Coaxial, (crimp and SMA)
Mating cycles	100,000



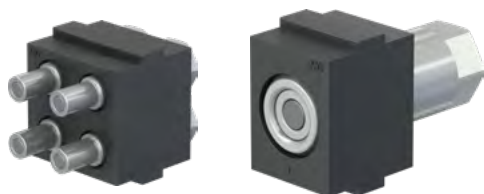
Type of module	Fiber optics
Data transmission	Glass, plastic, multimode
Insertion loss	Glass: typisch 0,5 db at 850/1300 nm Plastic: < 3 db at 650 nm Lens version: < 6 dB at 650 nm
Mating cycles	500 100,000 (lense version)



Type of module	Thermocoupling
Thermocoupling types	E, J, K, N, T
Termination type	Crimp
Mating cycles	100,000



Type of module	Pneumatic coupling
Nom. Ø contact	3 mm – 8 mm
Max. working pressure	15 bar
Min. working pressure	14 mbar
Mating cycles	100,000



Modul-Art	Fluid coupling
Nom. Ø contact	3 mm – 6 mm
Max. working pressure	15 bar
Industrial vacuum	up to 10 torr
Mating cycles	100,000

COMBITAC HOUSING

CombiTac housing



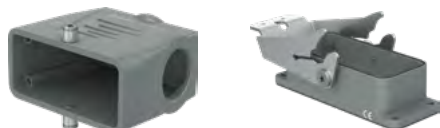
Housing types	IP65/67 Aluminium DIN
Locking	Handle, central screw fitting
Color	White, Gray
Sizes	6
Mating cycles	up to 10,000



Housing types	IP68/69K Aluminium DIN
Locking	Screws
Color	Black
Sizes	4
Mating cycles	up to 10,000



Housing types	IP65 Plastic
Locking	Handle
Color	Gray
Sizes	4
Mating cycles	up to 5000



Housing types	IP65 SSL Aluminium DIN
Locking	Side handle
Color	White, Gray
Sizes	3
Mating cycles	up to 10,000

Cable assembly

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.

- Single source supplier
- 100 % tested solution
- State-of-the-art production facilities





● Stäubli Units ○ Representatives/Agents

Global presence of the Stäubli Group

www.staubli.com