

CombiTac Overview

Industrial Machinery & Equipment | Modular connectors

EN



THE WORLD OF COMBITAC

Plug into more possibilities

Experience combined with quality and modularity leads to cost-efficient, and durable connection solutions. The modular connector system CombiTac can be easily configured online and adapted to meet the most

demanding requirements. Reliability when you need it. Flexibility, if you want it: The world of CombiTac's modular connector system meets your needs.

CombiTac direct



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

The latest generation of modular connectors for power, signal, 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.

CombiTac uniq



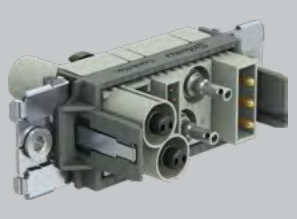

100 % customizable
Highest performance
100,000 mating cycles

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.

Short overview – products and features

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	✓	✓
Light housing		✓
Housing PE module		✓
Rated current	✓ up to 350 A	✓ up to 300 A, 430 A on request
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	10,000	100,000
Temperature range (°C)	-40 to +125	-40 to +90
Carrier material	PA	PA, EPTR, PEEK
Railway fire & smoke compliance	✓	✓
Vibrations & 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		✓

¹⁾ Depending on contact type

CombiTac direct – plug into simplicity

CombiTac direct, the latest generation of connectors for manual and automatic connecting with 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 simplest

and most time-saving way. The outstanding quality and long service life of CombiTac help you to achieve high productivity and lower maintenance cost with maximum operator safety.

- Signal, power and pneumatic
- Housing and panel mount versions
- Click-and-connect system
- Tool-free assembly
- High safety features
- Guaranteed 10,000 mating cycles

Modular system

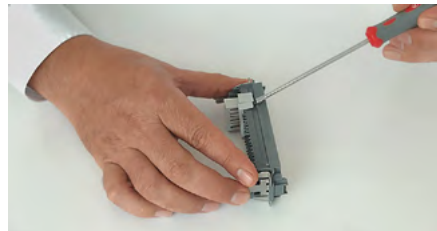
Each CombiTac connector includes individually configured contact modules placed in a single frame for panel mount or housing applications.



Easy handling

Click-and-connect system for tool-free assembly of your modular connector system. Tool free insertion of carriers and contacts. Fast disassembly by use of a standard screwdriver.

More flexibility and simplicity.



Types of contacts

CombiTac contact types include power up to 350 A, signals, and leakage-free pneumatic couplings (15 bar).



CombiTac uniq – plug into customization

CombiTac connectors are the expert choice for applications that require all-in-one space saving modular connectors. These connectors must reach high voltage and current levels, and include high mating cycle contacts guaranteeing long-life performance

under the most demanding mechanical and environmental conditions.

- 100% customizable
- All-in-one space-saving modular connectors
- Guaranteed long-life performance for most demanding mechanical and environmental conditions
- 100,000 mating cycles
- High power up to 300 A
- Power, signal, data, thermocouple, coaxial, fiber optic, fluid, and pneumatic

Modular system

Each CombiTac uniq connector includes individual contact modules which are configured in a single adjustable size frame or housing.



100% customizable

100% customizable modular connectors, with A-Z design support worldwide and delivered with or without cable pre-assembly.

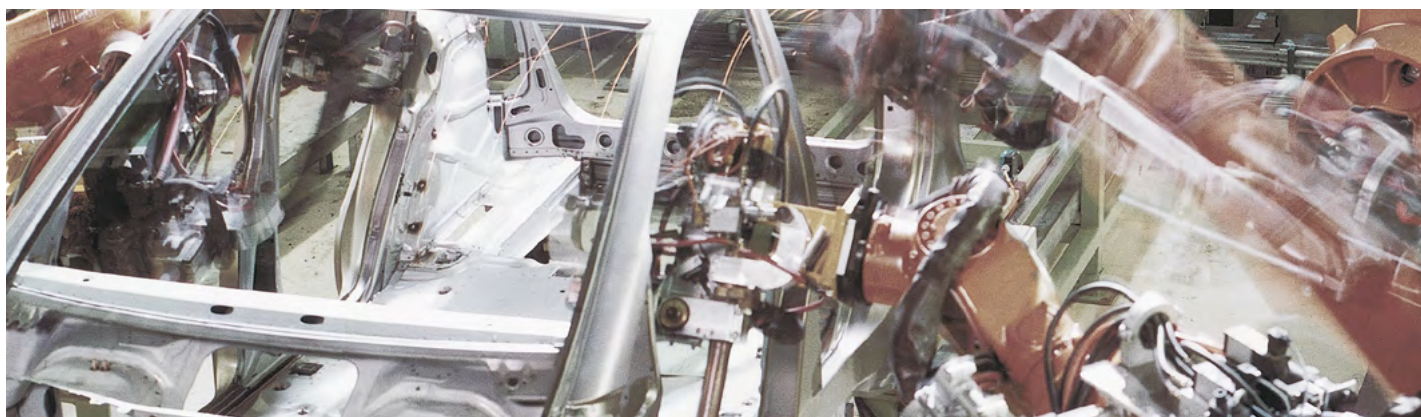


Types of contacts

CombiTac contact types include power up to 300 A and 5 kV, high density signals, 10 Gbit Ethernet and coaxial, fiberoptic, thermocoupling, leakage-free fluid, and pneumatic (15 bar).



Automotive applications



The growing need for optimum efficiency and productivity of automotive manufacturing processes makes CombiTac the perfect solution for applications that require robust and durable connectors that guarantee a

constant and stable connection under the most demanding conditions. CombiTac connectors are used with automotive manufacturing machinery and automotive test and measurement equipment,

ensuring a reliable and safe connection for the transmission of power, signals, and data through a single modular connector.

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
- High number of mating cycles (up to 100,000)
- Float mounting for easy automatic insertion



Testing equipment

A reliable connection between test rig and automotive electronic devices under test that guarantees a quick and safe connecting and disconnecting process.

- All-in-one space-saving solution
- Power up to 300 A, 5 kV
- CombiTac in IP65 DIN housing



Machinery applications



As large machines become more powerful, and with modularity in manufacturing resulting in the increased use of exchangeable parts, there is a need for connectors that will guarantee a fast changeover of

parts and provide the necessary power, data, and signals.

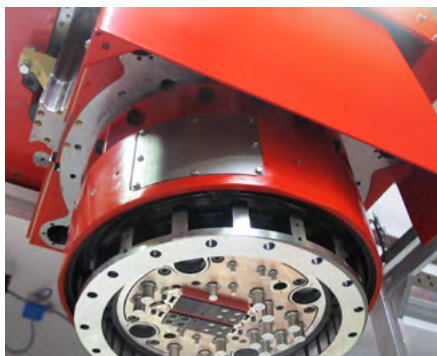
CombiTac connectors are used with tool changers, automatic presses, packaging and sealing machines, power and control

supplies, and welding machines, all of which require robust and durable connectors for a constant and stable connection when exposed to high levels of vibration and high mating forces.

Milling machines

CombiTac can be used as the main connection between the main machine and the spindle head body of multipurpose milling machines.

- A high-quality solution for high-performance applications
- Resistance to shock and vibrations
- Up to 100,000 mating cycles



Robot machines

A versatile solution for connection between a controller and a moving robot used for the cleaning and inspection of ventilation ducts.

- Compact and reliable solution
- Stable and safe connection in moving applications
- CombiTac in IP65 DIN housing for protection against dirt/dust



Electrical and electronic equipment applications



CombiTac connectors are used with electrical and electronic equipment such as testing and electronic equipment in development, manufacturing and production facilities, test adapters and test cabinets, as

well as electrical and electronic equipment in various industrial applications. CombiTac modular connectors can reach high power levels of up to 300 A / 5 kV, and include all the necessary signal and data

contacts in a single space-saving modular connector system for rack and panel mounting, or within an appropriate housing.

Media interfaces

CombiTac can be used to connect various media interfaces that require error-free transmission.

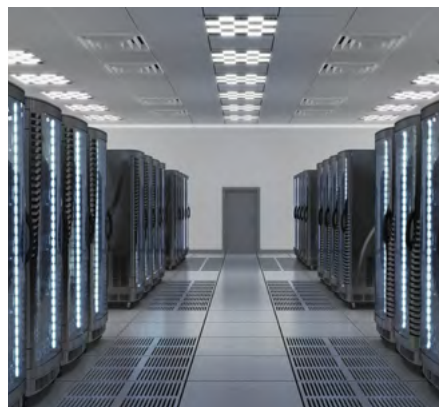
- Reliable lasting connection
- Panel-mounted solution with float mounting for misalignment absorption
- Complete solution including cable assembly



Power supplies and switch equipment

Rack-mounted solutions for connecting power rack modules to power supplies and switch equipment.

- Guaranteed uninterrupted power transfer
- Very strong components for heavy equipment applications
- Small pins protected by protective walls



Rail applications



In railway applications, CombiTac is specially adapted to meet railway industry standard requirements and suitable for use in railway rolling stock applications.

These include modular connectors for power supply battery charging stations, connections to power converters, ventilation groups, air-conditioning, lighting, and signal systems.

Battery packs

CombiTac connectors are used in railway rolling stock battery pack applications.

- Meets the requirements of the EN 45545-2 and EN 50124-1 railway standards
- High resistance to shock, vibrations, and high temperatures
- IP2X contact protection

For more information, please refer to our "Connectors for Battery Packs CT-HE" brochure.



Power converters, ventilation groups, air-conditioning, lighting, and signal systems

In an appropriate housing, CombiTac can be used for various railway applications.

- Reliable, safe, and stable connection
- DIN housings with top or side cable entry
- Size adapted to meet exact customer dimensional specifications



Aerospace, transportation and logistics



CombiTac is used in several aerospace, transportation and logistics testing and embedded equipment applications such as aircraft engine test benches, multimedia equipment, and power distribution units.

CombiTac is a very reliable interface for rugged applications including power distribution architectures or rack/blind mate connections for power electronics modules (PEM) such as converters.

Battery packs

CombiTac can be used with the on-board battery systems.

- All-in-one solution for space-restricted applications
- High-density configurations
- Fast and safe connecting and disconnecting process
- Ideal for environments with high shock and vibration levels



Power distribution

CombiTac is a solution for connections between the main power distribution and the on-board LRU equipment (converters, rectifiers, etc.).

- Designed to meet next-generation aircraft electrical requirements
- High resistance to vibration, shock, and high temperatures



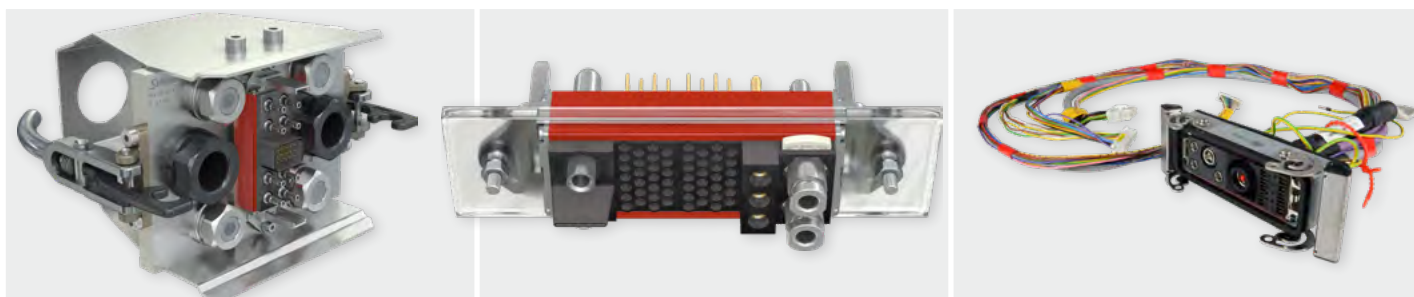
Customized applications

CombiTac modular connectors are 100 % customizable and designed to meet your exact design specifications.

As a solutions provider, we offer our customers comprehensive support from con-

cept to installation. From day one, our expert CombiTac team will offer you the necessary consultation and support worldwide, and work together with you and our team of expert engineers to design your own personalized CombiTac.

We provide 3D step files and real models of your future CombiTac solution, and make all necessary adaptations to ensure your final product perfectly matches your design expectations.



CombiTac connectors combined in Stäubli MCS plates

- CombiTac integrated in Stäubli coupling systems
- A space- and cost-saving solution
- Adapted to meet exact size specifications

CombiTac size adapted to match exact customer size specifications

- Ideal for replacement of non-CombiTac connectors
- No need for customer product redesign (dimensional/cutout changes)
- CombiTac designed and adapted according to exact size specifications

Supply of complete solutions including cable assembly

- Stäubli designs according to exact customer specifications
- Cable assembly carried out by Stäubli experts
- Delivery of complete solution through a single supplier

CombiTac Configurator

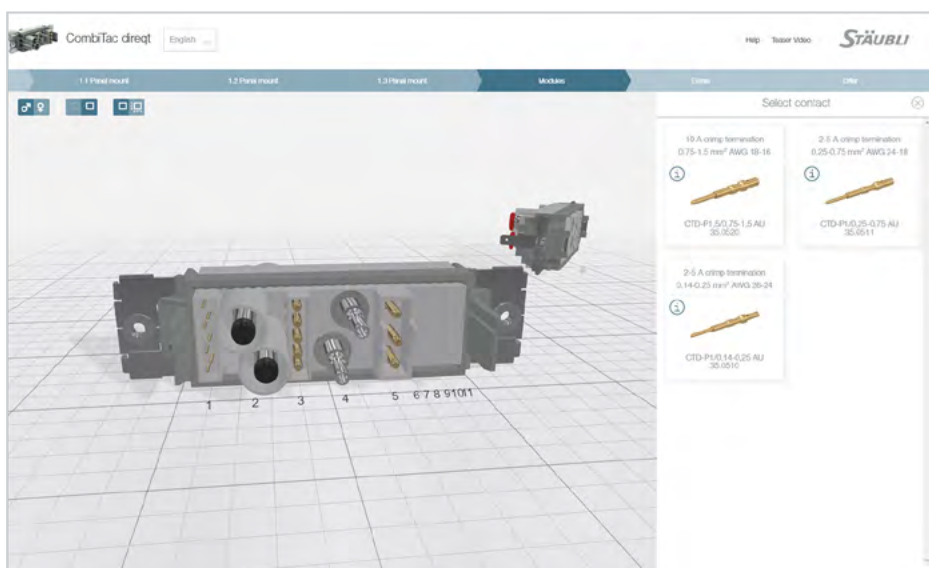
The CombiTac Configurator is a web application that enables you to put together your personalized CombiTac configuration

step by step on various end devices. It also allows you to receive a quotation for your selected CombiTac modular connector.







CombiTac Configurator


<https://configurator.combitac.com>





CombiTac direct modules

Type of module		Nom. Ø contact	Conductor cross-section		Rated current	Mating cycles
		mm	mm ²	AWG	A	
Signal		1 – 1.5	0.14 – 1.5	26 – 16	5 – 14	10,000
Monitoring (Last Mate First Break)			0.14 – 0.75	26 – 18		10,000
Power		3 – 10	2.5 – 95	14 – 3/0	31 – 350	10,000

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

Type of module		Coupling type	Max. working pressure	Industrial vacuum up to	Mating cycles
			bar	torr	
Pneumatic coupling		Compressed air	15	10	10,000


Housing types		Degree of protection	Sizes	Color	Mating cycles
Aluminum DIN		IP65/67, IP68/69K	6	white, gray	10,000
Plastic DIN		IP65	4	gray	5,000



CombiTac uniq modules

Type of module		Nom. Ø contact	Conductor cross-section		Rated current	Mating cycles
		mm	mm ²	AWG	A	
Signal		0.6 – 1.5	0.14 – 1.5	26 – 16	1.4 – 20	100,000 – 300,000
Monitoring (Last Mate First Break)			0.5 – 1.5	20 – 16		100,000
Power		3 – 12	2.50 – 95	14 – 3/0	22 – 300	100,000
High voltage 2.5 – 5 kV		1.5 – 3	0.5 – 4	20 – 12	32	100,000

Type of module		Data transmission	Termination type	Mating cycles
Data		CAT6A Ethernet, Profibus, Profinet, Interbus, CAN-BUS	Crimp, RJ45, M12, Coaxial (Crimp and SMA)	100,000
Fiber optics		Glass, plastic monomode, multimode	Glass < 0.5 dB at 1310 nm Plastic < 3 dB at 650 nm	100,000

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

Type of module		Coupling type	Max. working pressure	Industrial vacuum up to	Mating cycles
			bar	torr	
Pneumatic coupling		Compressed air	15	10	100,000
Fluid coupling		Coolants	15	10	100,000

Housing types		Degree of protection	Sizes	Color	Mating cycles
Aluminum DIN		IP65/67, IP68/69K	6	white, gray	10,000
Plastic DIN		IP65	4	gray	5,000



● Stäubli Units ○ Representatives/Agents

Global presence of the Stäubli Group

www.staubli.com