CombiTac Overview
CombiTacline | Industrial Connectors
CombiTac Modular Connector System

As a solution provider, Stäubli offers customers worldwide A-Z support in designing their own 100% customized CombiTac connector system, adapted to exact technical and dimensional specifications, and supplied with or without cable preassembly.

CombiTac modular connectors allow you to combine various contact types such as power, signal, data, thermocouple, coaxial, fiber-optic, pneumatic, and hydraulic connections in a single compact frame or housing. CombiTac is the expert choice for applications that require all-in-one space-saving modular connectors that reach high voltage and current levels, and high mating cycle contacts that guarantee long life performance under the most demanding mechanical and environmental conditions. Applications include various machines in the automotive manufacturing industry, robots, laboratory test equipment and test benches, automatic production line equipment, railway battery connector systems, and many more industrial applications.

Key Features

MULTILAM Technology
- Highly efficient electrical contact
- High-rated current and short circuit carrying capacity
- Minimum contact heating
- High resistance to oils, shock, and vibrations

Adaptable and expandable
- Size adapted to meet exact customer cutout specifications
- Quick and easy reconfiguration of module positions
- Easy removal and replacement of parts
**Space-saving solutions**
- All required contacts in one single connector
- High-density configurations
- Double-row housings available

**Misalignment absorption**
- through float-mounted end pieces

**Durable components**
- Up to 100,000 mating cycles
- Misalignment absorption through float mounting
- Added pin protection through protective walls
- High quality compressed air and non-spill liquid connectors

**Connection status monitoring**
- Last Mate First Break contacts

**Signal contacts**
- Ø 0.6 mm

**Signal contacts**
- Ø 1.5 mm

**Fiber optics**
- Non-spill

**Fluid**
- Non-spill

**Data**
- 10 Gbit

**Compressed air**
- up to 15 bar

**High power**
- up to 300 A

**High voltage**
- up to 5 kV

**Solutions provider**
- 100% customizable connector system
- A-Z support from concept to installation
- Supply of 3D step files and real-life samples
- Single-source supplier for all parts, including cable assembly
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
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
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
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

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

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

As a solutions provider, we offer our customers comprehensive support from concept 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
<table>
<thead>
<tr>
<th>Type of module</th>
<th>Nom. Ø contact</th>
<th>Conductor cross-section</th>
<th>Rated current</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>mm² / AWG / A</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signal</strong></td>
<td>0.6 – 1.5</td>
<td>0.14 – 1.5 / 26 – 16</td>
<td>1.4 – 20</td>
<td>100,000 – 300,000</td>
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<tr>
<td><strong>Monitoring</strong></td>
<td>0.5 – 1.5</td>
<td>20 – 16</td>
<td></td>
<td>100,000</td>
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<tr>
<td><strong>Power</strong></td>
<td>3 – 12</td>
<td>2.50 – 95 / 14 – 3/0</td>
<td>22 – 300</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>High voltage 5 kV</strong></td>
<td>3</td>
<td>2.5</td>
<td>14</td>
<td>100,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of module</th>
<th>Data transmission</th>
<th>Termination type</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data</strong></td>
<td>CAT6A Ethernet, Profibus, Profinet, Interbus, CAN-BUS</td>
<td>Crimp, RJ45, M12, Coaxial (Crimp and SMA)</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Fiber optics</strong></td>
<td>Glass, plastic monomode, multimode</td>
<td>Glass &lt; 0.5 dB at 1310 nm Plastic &lt; 3 dB at 650 nm</td>
<td>500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of module</th>
<th>Types</th>
<th>Termination type</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thermocoupling</strong></td>
<td>E, J, K, N, T</td>
<td>Crimp</td>
<td>100,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of module</th>
<th>Types</th>
<th>Max. working pressure</th>
<th>Industrial vacuum up to</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>bar / torr</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pneumatic coupling</strong></td>
<td></td>
<td>Compressed air</td>
<td>15 / 10</td>
<td>100,000</td>
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<tr>
<td><strong>Fluid coupling</strong></td>
<td></td>
<td>Coolants</td>
<td>15 / 10</td>
<td>100,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing types</th>
<th>Types</th>
<th>Sizes</th>
<th>Locking</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aluminum DIN</strong></td>
<td>IP65, IP68/69K</td>
<td>6</td>
<td>Single or double handle Central locking screw</td>
<td>5,000</td>
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<tr>
<td><strong>Plastic DIN</strong></td>
<td>IP65</td>
<td>4</td>
<td>Single or double handle</td>
<td>5,000</td>
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</tbody>
</table>
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
Global presence of the Stäubli Group

www.staubli.com