**STÄUBLI**

# Connecting element
# ClipLam

## Slide-inline | Industrial Connectors

EN

## STÄUBLI ELECTRICAL CONNECTORS

# Long-term solutions – Expert connections



**Stäubli Electrical Connectors is a leading international manufacturer of high-quality electrical contacts and connector systems and solutions for industrial applications. We are part of the Stäubli mechatronics group, the technology leader in connection solutions, robotics and textile machinery.**

Stäubli develops, produces, sells and services products for markets with the highest productivity and safety standards. As recognized specialists, our focus is always on solutions and customers. Many new developments got their start here and are now becoming established as worldwide standards.

Our customers depend on our expertise and our active support, even when dealing with unusual challenges. With Stäubli, you're entering into a long-term partnership built on reliability, dedication, and exceptional quality in both products and services.

### Pioneering contact technology for increased efficiency

The entire Stäubli Electrical Connectors product range meets market expectations for high performance, the highest number of mating cycles, and long-lasting reliability for safe, durable operation. Our proven **MULTILAM technology** is ideal for all types of connections in industrial applications. Customers in the **power transmission and distribution** sector rely on our consistent, loss-free transmission performance in all voltage ranges. The **automotive industry** depends on our high-efficiency connections for spot-welding applications in production lines. Harsh conditions in the **transportation sector** require high vibration resistance, maximum reliability, and compact design. These attributes are vitally important for railway and e-mobility applications. The safety and reliability of our products are essential for **test and measurement technology.**

In the growing field of **alternative energy,** our products have been setting standards since the 1990s. About half of the solar energy generated worldwide is transmitted through safe, long-lasting, high-performance Stäubli connectors.

## UNLIMITED POSSIBILITIES FOR CONTACT SOLUTIONS

# MULTILAM Technology



**MULTILAM are specially formed and resilient contact elements. All Stäubli Electrical Connectors products benefit from the unique and outstanding performance of the MULTILAM Technology.**

Thanks to their constant spring pressure, MULTILAM louvers ensure continuous contact with the contact surface, resulting in a constantly low contact resistance.

MULTILAM Technology allows to find solutions for connectors within the severest constraints and in certain products for up to 1 million mating cycles.

This makes the MULTILAM Technology the best choice for applications with demanding requirements:

- Reliable and longlife operation due to constantly high performance
- Safe operation under highest environmental demands on temperature, vibration and shock
- Suitable for data and signal contacts as well as high-current connectors
- Automated solutions with a high number of mating cycles
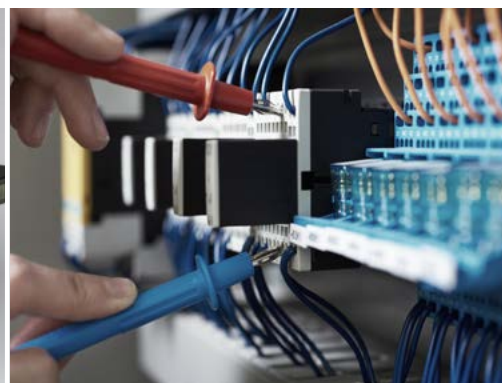
# Principle of the ClipLam CL-T

This system has been designed to create a pull-out electrical connection between two systems of double-pole insulated busbars. It is made up of MULTILAM contact element strips, mounted in a plastic frame of variable sizes.

It is a very simple matter to attach the ClipLam by means of two clips to busbars of varying thicknesses (between 2 and 5 mm) that have been silver-plated beforehand. The electrical contact is established by the MULTILAM which form independent lines of current.

The large number of these parallel lines leads to a noticeable reduction in the resistance and the inductance of the electrical connection in comparison with a bolted connection.
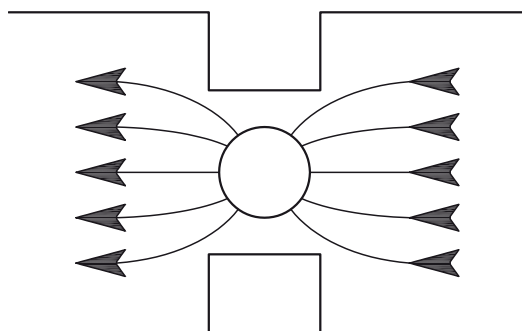
Conventional solution (bolted)
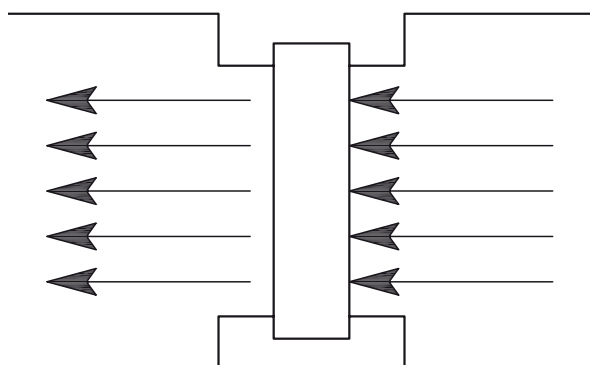
ClipLam solution with MULTILAM

## Electrical

- Low contact resistance
- Straightening of current lines
- Reduced leakage inductance: 25% less than the leakage inductance with a screw system

## Mechanical

- Self-cleaning of contact when mating
- High resistance to vibration and shocks

## Installation

- Easy to install: no drilling or special cutting needed
- Fast mounting and assembly: no screws needed
- Saving of space in bottom of bay
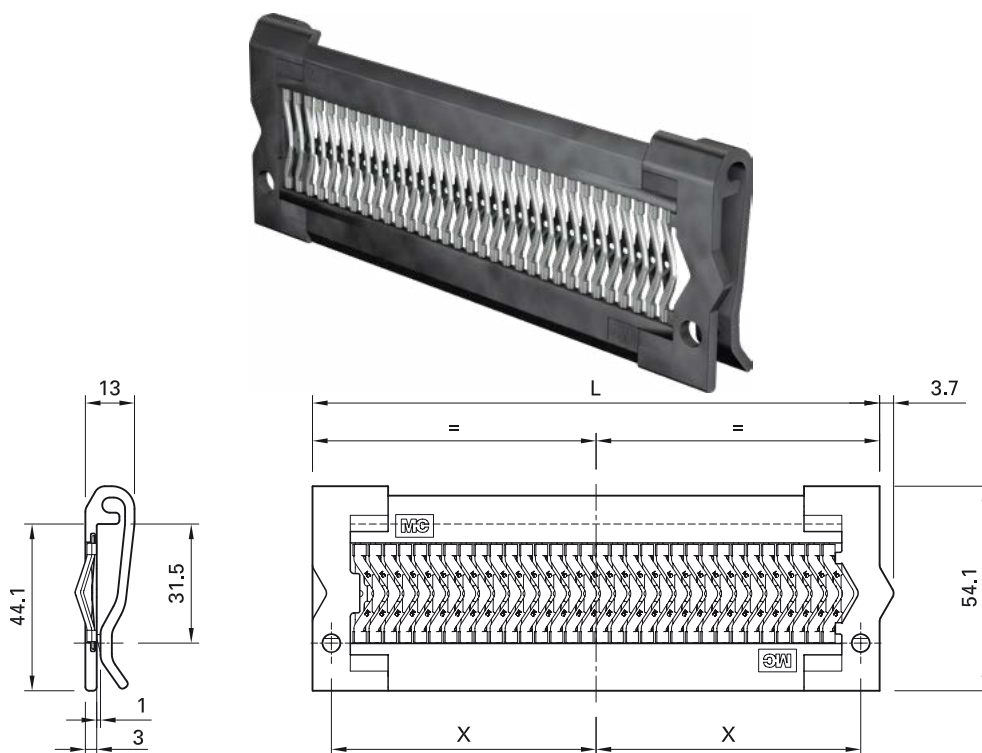- No wiring inversion risks

## Economic

- Lower raw material consumption (copper)
- Reduces installation and maintenance costs
- Reduced material costs (copper) due to an optimum distribution of the current



## RoHS ready

Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment

| General data | | Dimensions (mm) | | Mechanical and electrical data[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Order No. | Type | L | X | Rated current | Contact resistance | Short-circuit current (1s) | Short-circuit current (3s) | Rated peak withstand current | Contact force max. | Sliding force (μr 0.35) |
| | | L | X | A | $R_k$ μΩ | $I_K$ kA | $I_K$ kA | $I_p$ kA | $F_k$ N | $F_g$ N |
| 19.9000-54 | CL-08T-54 | 54 | 22 | 400 | 50 | 7.2 | 5.6 | 20 | 90 | 8-16 |
| 19.9000-70 | CL-12T-70 | 70 | 30 | 600 | 33 | 10.8 | 8.4 | 30 | 130 | 12-24 |
| 19.9000-86 | CL-16T-86 | 86 | 38 | 800 | 25 | 14.4 | 11.2 | 40 | 180 | 16-32 |
| 19.9000-102 | CL-20T-102 | 102 | 46 | 1000 | 20 | 18.0 | 14.0 | 50 | 220 | 20-40 |
| 19.9000-118 | CL-24T-118 | 118 | 54 | 1200 | 17 | 21.6 | 16.8 | 60 | 260 | 24-48 |
| 19.9000-134 | CL-28T-134 | 134 | 62 | 1400 | 14 | 25.2 | 19.6 | 70 | 310 | 28-56 |
| 19.9000-150 | CL-32T-150 | 150 | 70 | 1600 | 13 | 28.8 | 22.4 | 80 | 350 | 32-64 |

[1] The rated values are specific to the contact and apply only to silver-plated copper bars. The customer is responsible for thermal dimensioning with regard to selecting bars of the appropriate thickness, and for mechanical dimensioning with regard to maintaining the spacing of the bars provided with ClipLams within the tolerances recommended by Stäubli. Operating temperature max. 120°C

Direction of connection

L min

45 min

31.5

X   X

Ø5
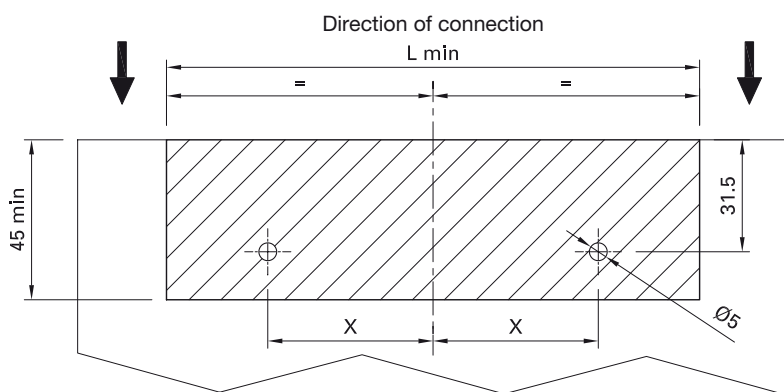
Silver plated area occupied by ClipLam on busbar

## Tolerance

| B \ A | ±0.1 mm | ±0.2 mm | ±0.3 mm | ±0.4 mm |
|---|---|---|---|---|
| ±0.1 mm | B = A +7.7 mm / J = ±0.55 mm | B = A +7.6 mm / J = ±0.50 mm | B = A +7.5 mm / J = ±0.45 mm | B = A +7.4 mm / J = ±0.40 mm |
| ±0.2 mm | B = A +7.6 mm / J = ±0.50 mm | B = A +7.5 mm / J = ±0.45 mm | B = A +7.4 mm / J = ±0.40 mm | B = A +7.3 mm / J = ±0.35 mm |
| ±0.3 mm | B = A +7.5 mm / J = ±0.45 mm | B = A +7.4 mm / J = ±0.40 mm | B = A +7.3 mm / J = ±0.35 mm | B = A +7.2 mm / J = ±0.30 mm |
| ±0.4 mm | B = A +7.4 mm / J = ±0.40 mm | B = A +7.3 mm / J = ±0.35 mm | B = A +7.2 mm / J = ±0.30 mm | B = A +7.1 mm / J = ±0.25 mm |

J = max. axial displacement depends on the busbar tolerances



30°   2   A



B



min. 45

J

Fk max.

2 - 5
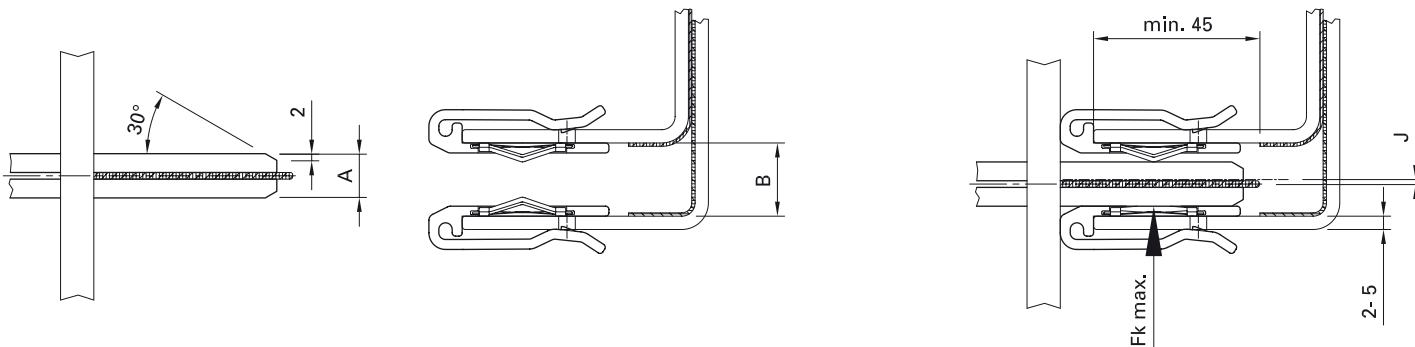
● Stäubli Units    ○ Representatives / Agents

# Global presence
# of the Stäubli Group

**www.staubli.com**

STÄUBLI