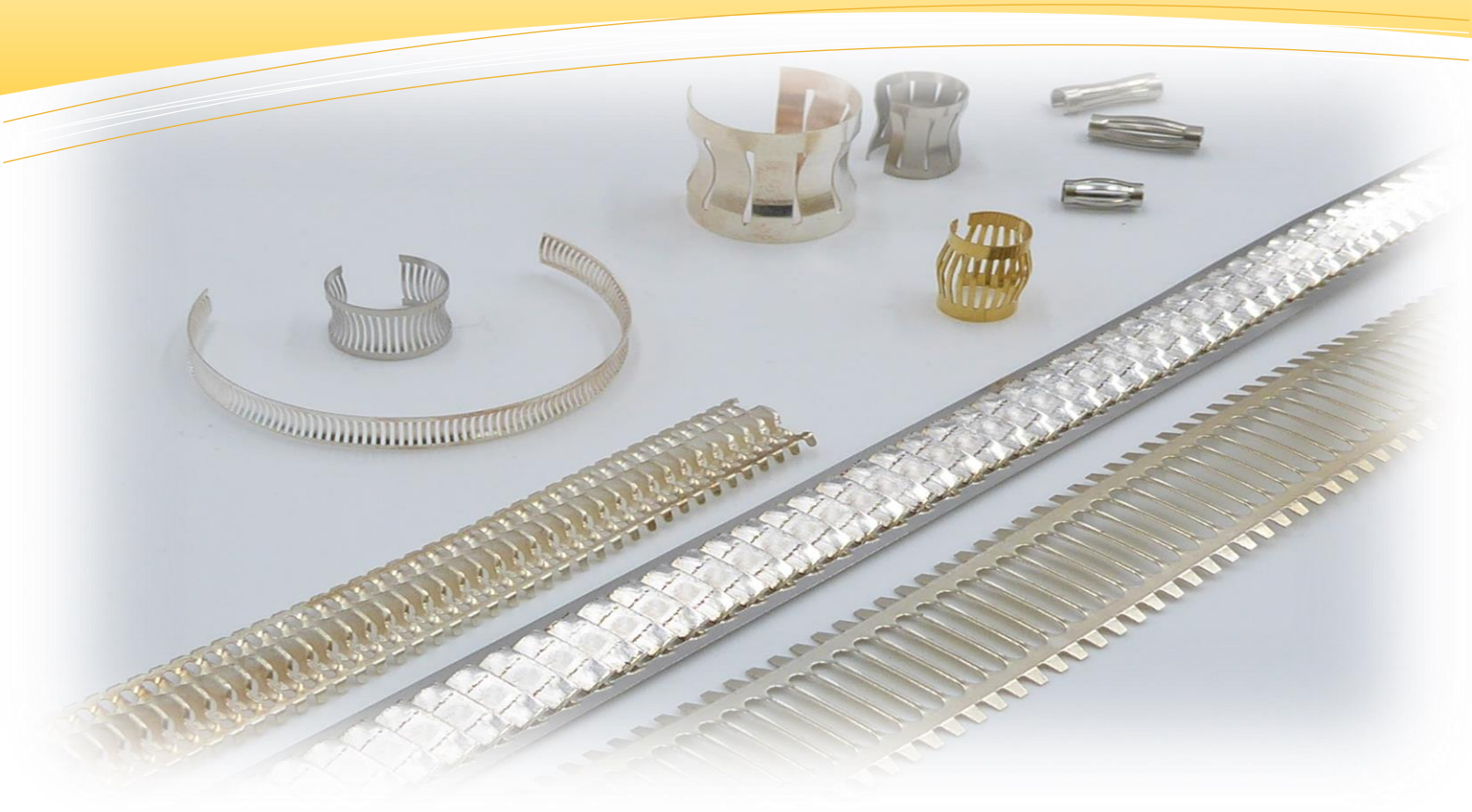
ACA Atlas Contacte GmbH



Data sheet Hochstromkontaktband 12 mm



DQS-zertifiziert nach
DIN EN ISO 9001
NR. 68040-01

Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de

ACA Atlas Contacte GmbH



Product description:

The ACA 12 mm high-current contact band is an innovative solution for demanding high-current contacts. It is characterised by its special structure consisting of two material components, which enables effective transmission of high currents with minimal contact forces. This leads to a significant reduction in wear, even under dynamic conditions, while maintaining a very high current carrying capacity. The high current-carrying capacity and low contact resistance result from the principle of multiple contact points.

Application:

The contact band is ideal for applications that require high currents and at the same time demand a long service life and reliability. It is ideal for:

- Electric vehicles
- Industrial applications (e.g. drive technology, robots)
- Energy transmission systems
- Charging infrastructure
- High-performance battery systems
- Contacting in galvanic systems
- Industrial connectors

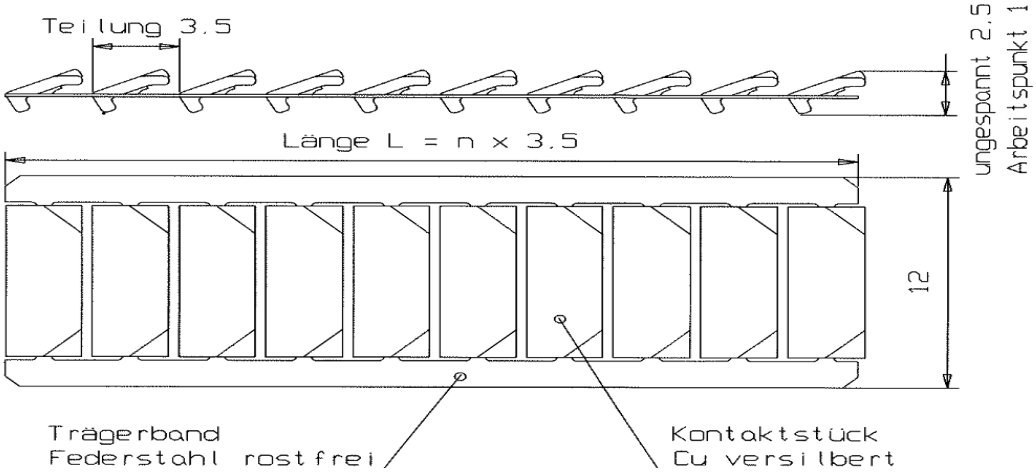
Advantages:

- Low contact forces: Reduces wear and extends service life.
- High current transmission: Reliable performance at high currents.
- Flexibility: Ideal for dynamic applications and moving parts.
- Robustness: High resistance to mechanical stress and environmental influences.
- Temperature range -40 °C to +150 °C
- High short-circuit current resistance
- Customised adaptations possible

Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de

Structure:

The ACA high-current contact band 12 mm consists of a stainless spring steel carrier strip with riveted contact pieces made of silver-plated copper. Dimensions as per sketch.





Front view



Rear view

Picture right:
Current paths in the contacted condition





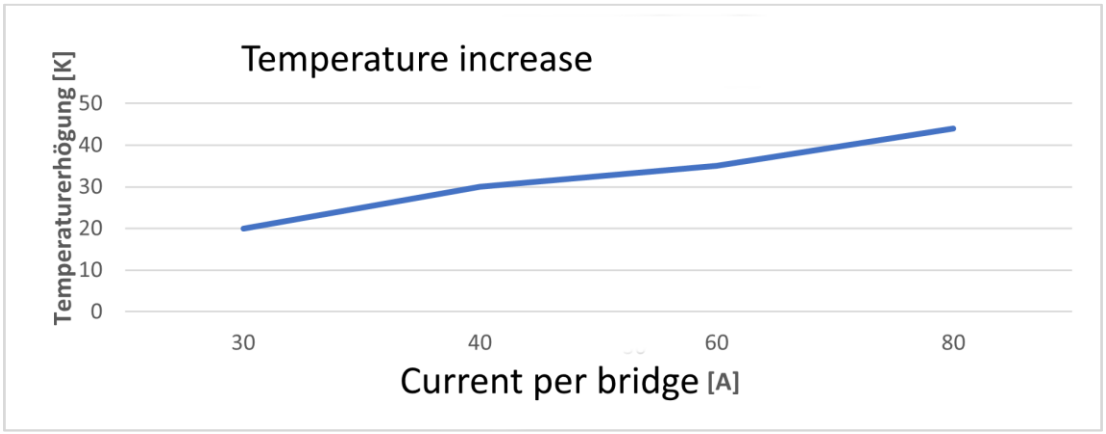
DQS-zertifiziert nach
DIN EN ISO 9001
NR. 68040-01

Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de

Electrical characteristics:

Current carrying capacity

The expected temperature increase of your application can be taken from the diagram. Depending on the operating temperature and the maximum permissible temperature of your application, you can determine the maximum current to be transmitted per bridge.



The permissible continuous current of your application is calculated as follows;

$\mathbf{I_{max} = n \times I_{Bridge}}$ n=Number of bridges in your application.

Note: The current carrying capacity was determined under ideal conditions. Silver-plated copper mating contacts. Sufficiently large conductors must be connected in accordance with the technical regulations. If silver-plated brass mating contacts are used, the values must be multiplied by a factor of 0,6.

Electrical resistance:

The electrical resistance R_{Bridge} is 0,50 mΩ per bridge. Due to the parallel connection of the individual contact bridges, the total resistance of the contact arrangement is calculated as follows

$\mathbf{R_{Ges} = R_{Bridge} / n}$ n=Number of bridges in your application.

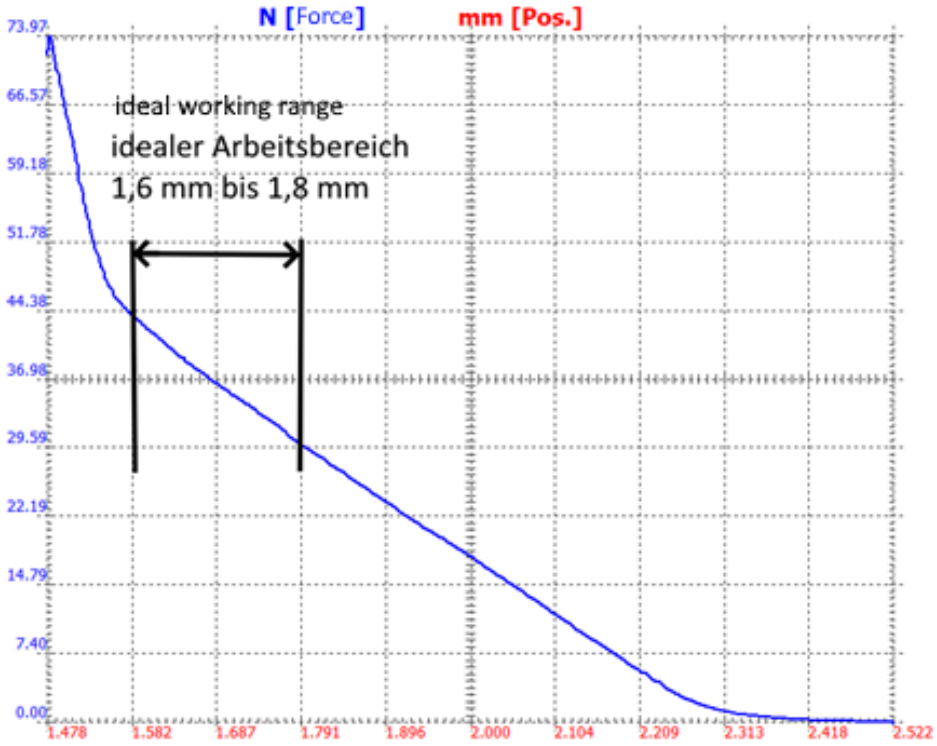
Note: The value 0,50 mΩ per bridge applies to mating contacts made of silver-plated copper. When using silver-plated brass contacts, 0,70 mΩ per bridge applies.

Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de

Mechanical characteristic values:

Contact normal force:

The normal contact force per bridge can be seen in the following diagram (measured values for 10 bridges). At maximum compression to 1.5 mm, the contact force is approx. 6 N per bridge.



Contact normal force of 10 bridges (loading and unloading)

The ideal working range is between 1.6 mm and 1.8 mm tensioned belt height. Depending on the required contact force or geometric conditions, the working range can be extended to 1.5 mm to 2.0 mm.

A friction coefficient of 0.4 - 0.6 can be used as an approximation for the sliding force. Deviations are possible depending on the surface properties of the contact partners.

To improve the tribological conditions and reduce the sliding forces, the high-current contact strip can be lubricated with a suitable contact lubricant.



Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de

Delivery form, assembly and installation:

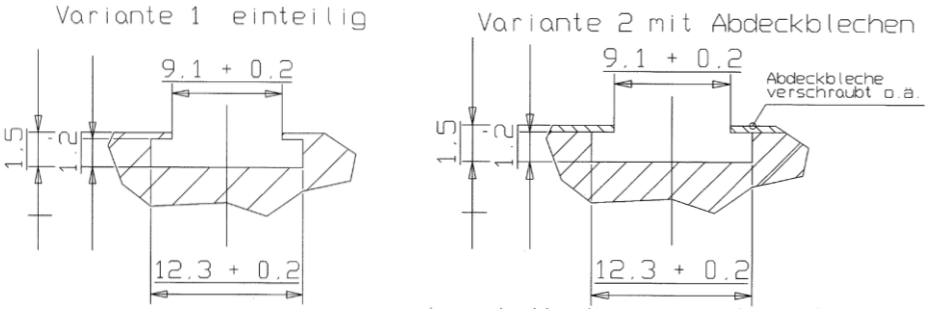
The high-current contact strip can be supplied as a cut-to-length strip in the required length or by the metre.

When used in round contacts, the high-current contact strip is preferably mounted in the socket. It is inserted into a machined groove and held there under its own pre-tension. The groove has a radial depth of 1.6 mm and is 12.3 mm wide. Additional fastenings may be required for large diameters.



ACA high-current contact strip 12 mm with parallel arrangement as round contact.
Strip inserted in turned grooves. Holds under its own pre-tension

When used in flat contacts, the tape can be fastened in a dovetail groove. Depending on the customer application, many other fastening solutions are possible.



ACA Atlas Contacte GmbH

30 Years Experiece

Atlas Contacte GmbH
Wallbacher Straße 5
D-79664 Wehr
info@atlas-contacte.de