



ERNI CONNECTOR SOLUTIONS FOR AUTOMOTIVE

We put the future on the road.



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ERNI connectors for headlight systems.

SAFETY IN A NEW LIGHT.

Today's lighting systems make an enormous contribution to road safety: Vehicles featuring LED technology turn night into day without dazzling other road users. They detect the lighting and weather conditions, adapting to these as part of a fully automated process.

With new functions being added all the time, you could say that the development of light technology is progressing at the speed of light. ERNI components have no trouble keeping pace with these changes: The connector systems, which have been tested in accordance with automotive standards, guarantee perfect function of the assemblies whatever the weather and road conditions are. Strong vibrations are effortlessly absorbed by the interlock and the robust SMD soldering points. The high temperatures generated by the cramped conditions in headlights do not pose a problem. ERNI makes a particularly good impression in this context thanks to its flexible miniaturized wire-to-board solutions. Further advantages include the straightforward connection of the connectors and the resulting secure mating in the production process.

1 MiniBridge Koshiri

This ensures that nothing can go wrong, even when the connection is positioned at an angle: the special housing design prevents damage to the contacts at all times. Featuring a compact design and high temperature resistance from -55°C to $+150^{\circ}\text{C}$, these connectors are ideal for use in LED modules.

2 MaxiBridge

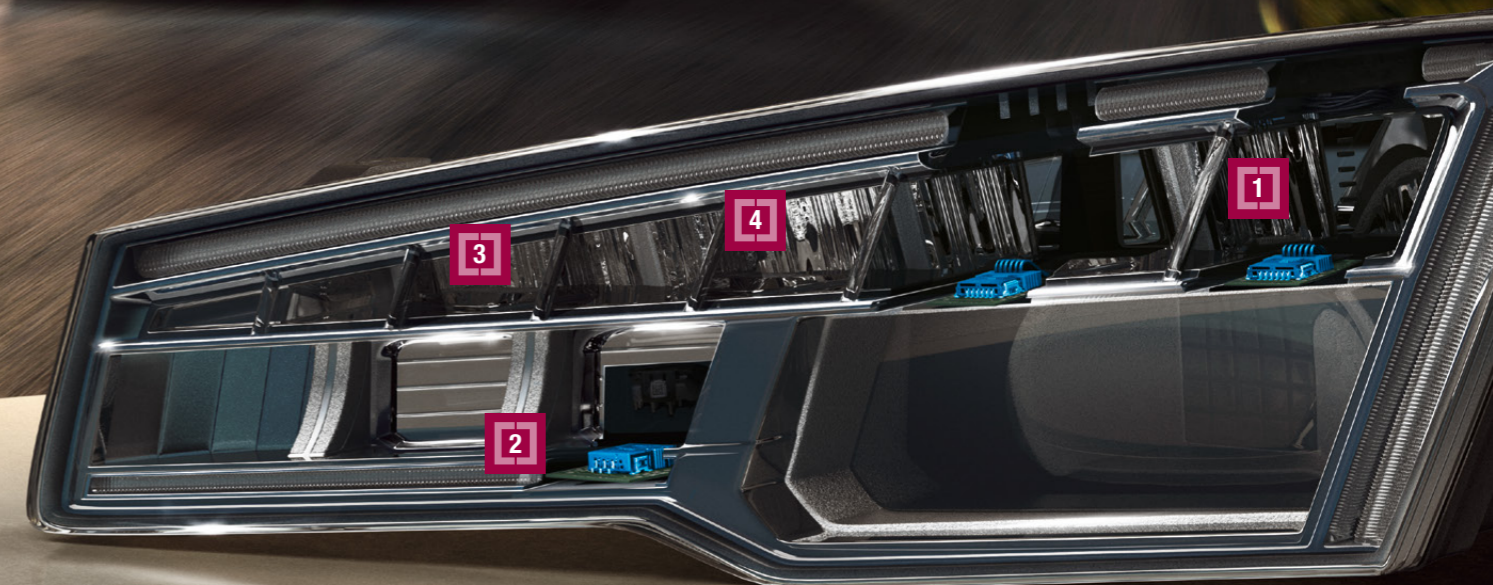
Unshakable safety: this double-locked solution is highly resistant to shocks and vibrations. It ensures a very high level of reliability, as the high retention force of the latching on the housing (totaling 93 N) makes it all but impossible for the connector to be unintentionally detached.

3 MicroBridge

Doubly secure: available in the IDC version and crimp version, these connectors feature twofold strain relief and thus support two different processing methods. The optional CPA function can be reliably used even in the course of processing so as to ensure perfect connection.

4 iBridge Ultra

Better safe than sorry: this connector is well established on the market, featuring an optimized automotive version in accordance with the specifications of the LV214 standard and USCAR.



ERNI connectors for battery management systems and power electronics.

HIGH PERFORMANCE COUPLED WITH A STRONG SENSE OF RESPONSIBILITY.

It has become clear that there is no way around electrically powered vehicles in the medium-term, with other options now ultimately acting as short-term solutions. A number of European countries are already seriously considering the possibility of ending the approval of all new vehicles featuring combustion engines within the next few years. The range is a significant issue – but rather than being a problem, it will be the solution.

However, this will require the introduction of drive systems that are lighter, more compact, and more powerful. Battery management systems and power electronics will be key factors in this regard. And when it comes to ensuring the on-board power supply, controlling the flow of energy, and transferring high currents, the technically sophisticated ERNI connectors are an essential part of this development. Particularly in terms of miniaturization, straightforward processing, connector security, and reliability, they have long been meeting standards that have not yet even been drawn up.

1 MaxiBridge

Forward-looking solution with design freedom: this cable connector, which features a single-row or double-row design and is also available with various pin counts and cable cross sections, is the solution for a wide range of applications. In addition, higher clearance and creepage distances can be achieved by means of selective placement.

2 MiniBridge Koshiri

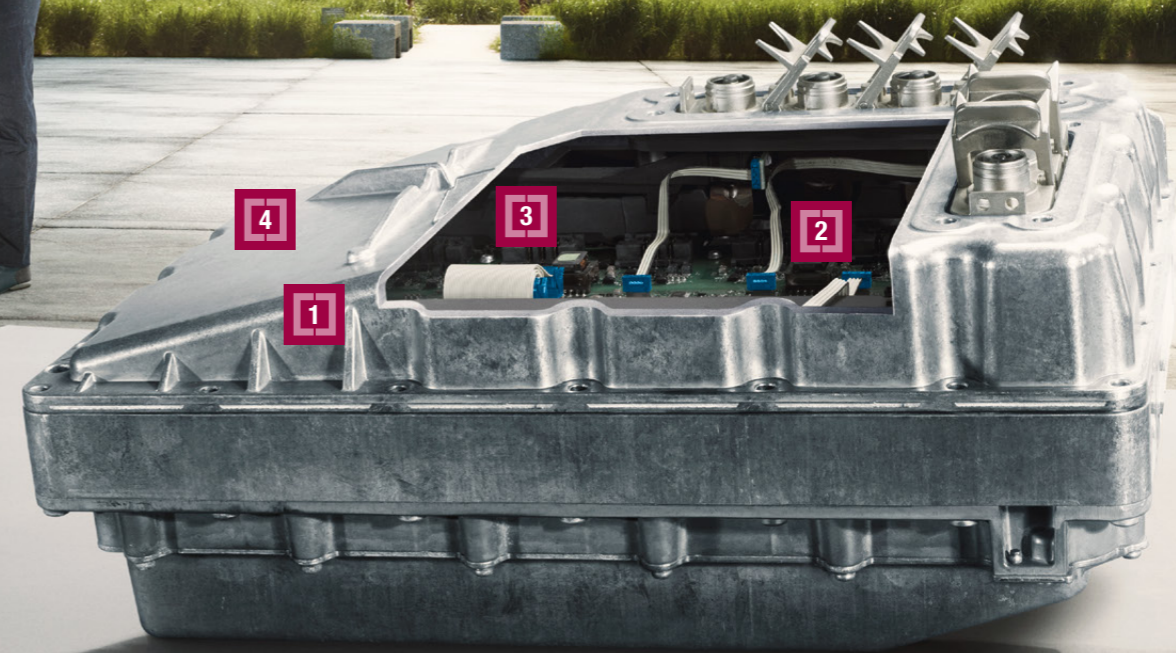
Risk-free operation: as there is no chance of incorrect connection, there is no waste and no need for reworking. The high shock resistance of 30 g in 6 ms and the vibration resistance of 10–1,000 Hz at 27 m/s² also prevent the risk of failure, thereby saving both time and costs.

3 SMC Cable to Board

An extremely robust solution that is wired for flexibility: this connector is available in 12- to 80-pin variants, enabling flexible layout design both on the circuit board itself and between the individual circuit boards. The interlock also prevents unintentional release and ensures a high level of reliability when subject to increased loads.

4 PowerElements

Outstanding resilience: these connectors feature a high current carrying capacity of up to 200 A in the SMD design, ensuring a reliable connection without any undesired short circuits during the journey – even under the most challenging conditions.



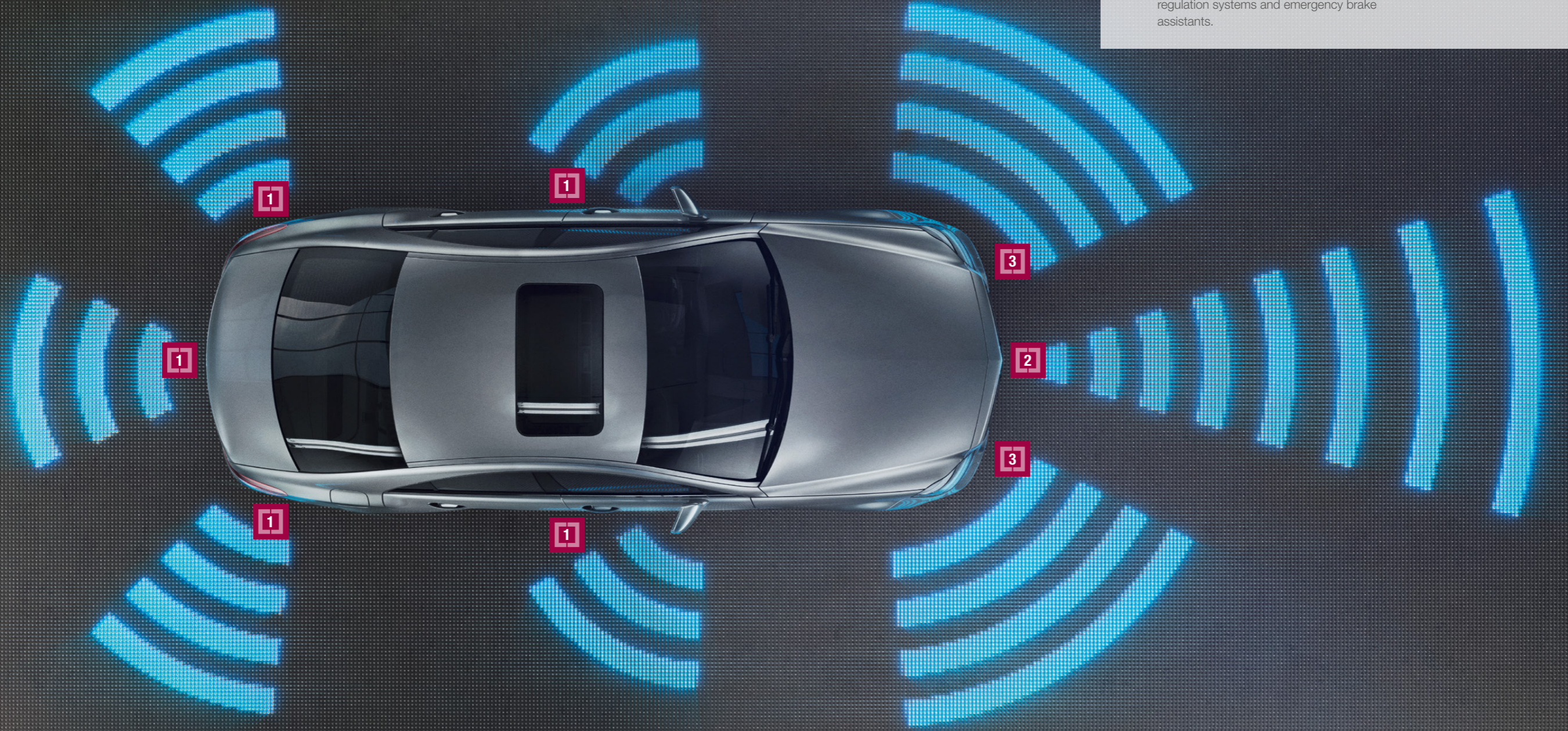
ERNI connector solutions for assistance systems.

■ EVEN DRIVING ASSISTANTS NEED ASSISTANTS.

With a wide range of driving assistants now available, cars are becoming ever more intelligent. Theoretically everything is possible these days. In practice, too. We have seen the vision of autonomous driving suddenly become a reality. Anyone wishing to keep up with the rapid pace of development must always remain one step ahead – or ideally two.

It ultimately comes down to thousandths of a second in which data must be recorded and processed. The perfect interplay of the various systems can be ensured only by means of reliable networking. This represents another area in which ERNI connectors can be deployed, with examples including the installation of connectors in a range of different front and rear camera solutions or in passenger exit assistants.

<p>1 MaxiBridge Rugged reliability: this highly robust cable connector featuring a double-sided interlock is intended for high vibration loads, such as in the case of rear-view cameras, park assist sensors, and passenger exit assistants.</p>	<p>3 MiniBridge Koshiri Big responsibility in the smallest of spaces: single-row cable connector system for space-saving connectors between circuit boards and decentralized function units in applications such as headlight range control.</p>
<p>2 SMC Trouble-free reliability: extremely dependable connector system with two-sided contact. Ideally suited to use in distance regulation systems and emergency brake assistants.</p>	



ERNI connector solutions for safety systems.

SIT BACK AND RELAX. SAFETY ALWAYS COMES ALONG FOR THE RIDE.

A wide variety of assistance systems now contribute to ensuring greater peace of mind with each kilometer that passes – for drivers and passengers alike. ERNI is playing an increasingly important role in this development, providing components that guarantee maximum reliability in a number of active and passive safety systems. Examples include MiniBridge connectors, which are used in electronically-controlled steering systems, or the SMC, which ensures intact signal transmission in complex systems such as rear precrash assistants.

1 MiniBridge Koshiri

Saving space without limiting options: featuring a current carrying capacity of up to 8 A per contact, the 1.27 mm miniature connectors can be used to accommodate high pin counts within a small area. This increases the number of potential functions, making it ideal for applications in tight spaces.

2 MaxiBridge

For the most challenging applications: the double locking of the contacts, which generates pull-out strengths of up to 75 N, ensures a very high level of reliability – the most important factor of all in terms of safety-related systems.

3 SMC

Available with various different pin counts, this connector system can be deployed in a wide range of applications. In the 80-pin variant, a multitude of signals can be transmitted at a speed of up to 3 Gbit/s per contact. This solution is ideal for use in complex systems such as blind-spot assistants.



ERNI connector solutions for automotive.

■ A CONNECTION THAT LASTS. SOLID AND RELIABLE.



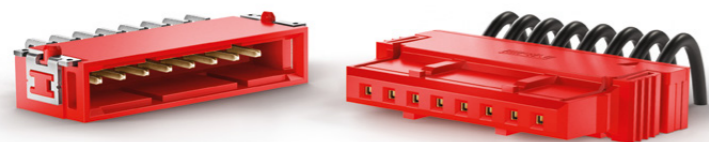
MicroBridge

- 1.27 mm pitch
- Up to 8 A current carrying capacity
- Available in single-row or double-row design
- With IDC and crimp contacts
- Temperature resistant from -55°C to $+150^{\circ}\text{C}$
- Planned design criteria: LV214 and USCAR



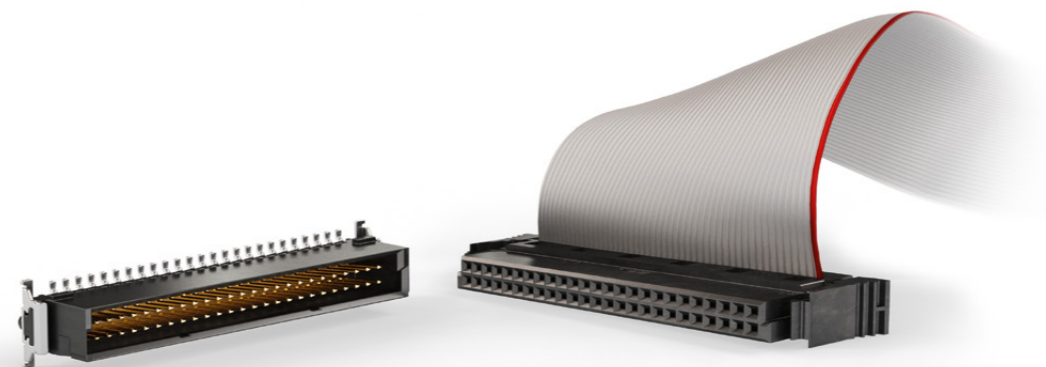
MiniBridge Koshiri

- 1.27 mm pitch
- Miniaturized connector system with high connection reliability
- Up to 8 A current carrying capacity per contact
- Temperature resistant from -55°C to $+150^{\circ}\text{C}$
- Fulfills the applicable specifications in LV214



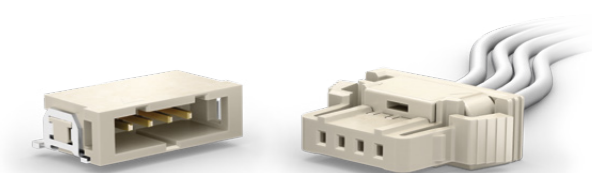
MaxiBridge

- 2.54 mm pitch
- Up to 12 A current carrying capacity per contact
- Robust interlocking option and encoding
- Diverse range from 2 to 20 contacts, available with different colors and encodings
- Temperature resistant from -55°C to $+150^{\circ}\text{C}$
- Fulfills the applicable specifications in LV214



SMC

- 1.27 mm pitch
- Up to 1.7 A current carrying capacity per contact
- Data rate up to 3 Gbit/s
- 12 to 80 contacts, maximum connection reliability
- Highly flexible and very reliable
- Temperature resistant from -55°C to $+125^{\circ}\text{C}$



iBridge Ultra

- 2 mm pitch
- 5 A current carrying capacity per contact
- Available in single-row or double-row design
- Temperature resistant from -55°C to $+125^{\circ}\text{C}$
- Planned design criteria: LV214 and USCAR



PowerElements

- Up to 200 A current carrying capacity per PowerElement
- Highly shock- and vibration-resistant connection
- Suitable for fully automated placement
- Optimum processing capacity via gentle press-in or SMT soldering



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