

ENVIRONMENTALLY FRIENDLY COMPRESSOR FOR FUEL CELL SYSTEMS

Initial Situation

Our client is one of the largest manufacturers of systems and components in the aviation and transport sector in Europe. One of their scopes of activity is the development of environmentally friendly compressor units that are used to drive fuel cell systems, emitting only heat and water. An integrated electric compressor had to be developed for the operation of passenger shuttle buses with fuel cell systems, which are used at two important airports in China. In the future, this compressor will also be used in SUVs and commercial vehicles.

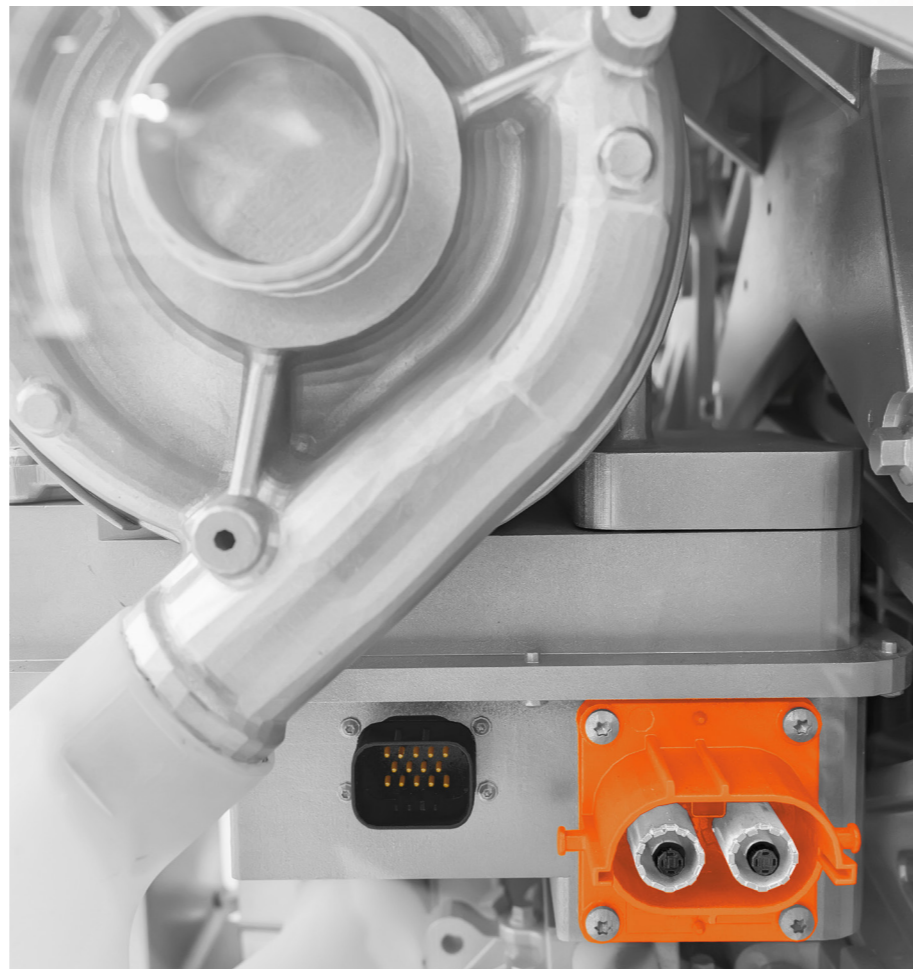


Requirements

Inside the compressor, a connection had to be made between a sensor and a printed circuit board. The connection proved to be a major challenge, as the cable had to pass through a component where temperatures of up to 150 °C can occur over a period of five minutes. The situation was further complicated by the fact that the installation space was extremely compact and only limited space was available for the connector used. Other important factors included high vibration performance and a fast response time from the connector supplier when clarifying technical questions.

Our Solution

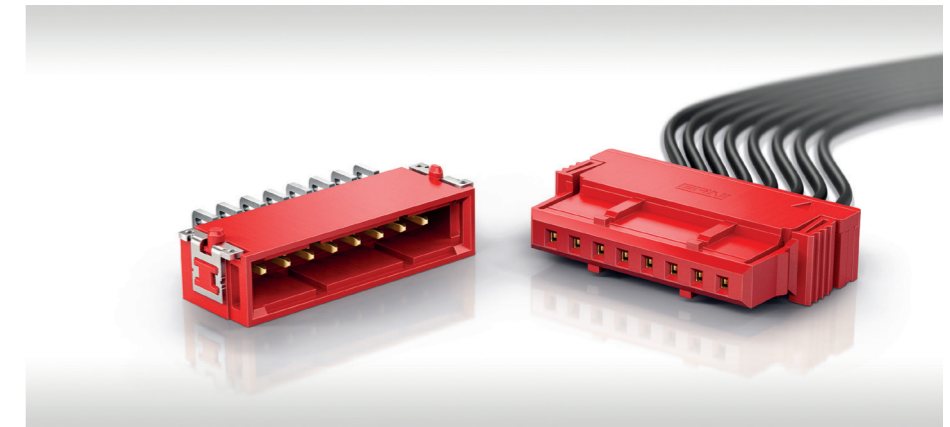
With its temperature resistance up to 150 °C, the MaxiBridge from ERNI is the ideal solution for implementing the cable connection in the compressor. Its excellent thermal characteristics ensure that power transmission is not impaired over the required period of time. This ensures the error-free function of the sensor. The compact design of the 2-pin female connector of 15 x 11.54 mm on a 2.54 mm pitch makes it possible to implement the cable connection to the sensor in the smallest space. This contributed to the space-saving implementation of the compressor. The MaxiBridge fully meets the requirements for vibration performance at up to 1,000 Hz. All



requested documents such as test reports as well as samples were delivered immediately to clarify any technical questions. This meant that the development could be implemented within the specified time frame.

Additional Features of the MaxiBridge

- Up to 12 A current-carrying capacity per contact
- Robust design for mechanical reliability
- Interlocking on both sides – can be released without tools
- Round and oval positioning pin for precise positioning on the printed circuit board
- Single-row and dual-row version in four color codings each



For additional information, please visit <https://www.erni.com/en/maxibridge>

At ERNI, we support our clients through their entire developmental journey – from the prototype design to their finished product. Our many years of experience and vast knowledge in the automotive industry give us a competitive edge over other manufacturers. It is no coincidence that our clients hold ERNI in high regard as an innovative leader and supplier of high-quality electronic connectors worldwide.

Contact us at info@erni.com and find out how ERNI can help you.