[To the press]【July 15, 2021】

Hirose Electric has successfully developed a wire-to-board connector that, in addition to meeting automotive quality standards including 125°C heat resistance and high vibration resistance, prevents electric shock to workers and shorts caused by dust adhesion.
- A Connector that Prevents Electric Shock and is Ideal for Internal Car Battery Connection -

HIROSE ELECTRIC has released the wire-to-board connector “ZH05” Series, which in addition to 125℃ heat resistance and high vibration resistance, prevents short circuit due to dust adhesion and electric shock to workers.

● Safety Requirements as Battery Production Increases

A wire-to-board connector with rod-shaped, protruding male contacts on the board-side is typically used to connect the live parts that monitor the on-board battery voltage, etc. However, in the case of conventional connectors, there is a short circuit hazard due to dust sticking between adjacent contacts and a risk of electric shock when an worker touches a contact during insertion and removal work.
The worldwide shift to hybrid cars and EVs (electric vehicle) has led to an increase in the number of batteries produced, resulting in an increased risk requiring urgent safety measures.

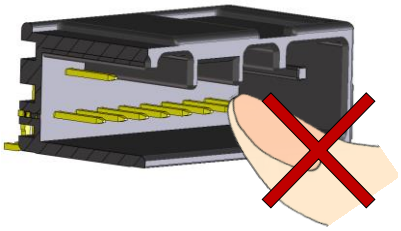
● Innovative Design Ensures High Safety

In order to meet such demands, ZH05 was developed to fulfill both goals of in-vehicle quality and electric shock prevention. A box-shaped female contact is used for the board-side connector. By physically surrounding the contact with resin to insulate, Hirose has achieved an innovative electric shock prevention design. Even if dust enters the contact, short circuiting does not occur. Furthermore, this design prevents workers touching the contacts. In addition, by adopting a unique double-layered spring design for the female contact, heat resistance and vibration resistance suitable for internal automotive connections has been secured, resulting in a highly reliable connector. We also sought to create a compact product in order to ensure greater battery capacity.

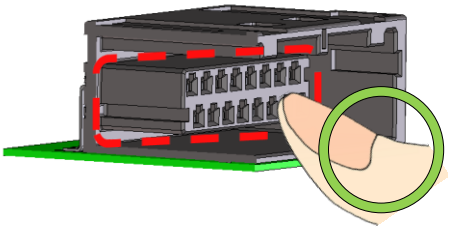
Wire-to-Board Connector for Electric Shock Prevention : ZH05

1. Electric shock prevention design in which female contacts on the board side connector are surrounded with resin
2. 125℃ heat resistance and unique double-layered spring design ensure vibration resistance and high contact reliability
3. 0.5mm tab, narrow width with 2.0mm pitch, space-saving. Contributes to maximizing battery capacity.

Conventional Wire-to Board Connector (Board Side)
Risk of electric shock from touching the male contacts.



ZH05 Series (Board Side)
Surrounding the female contacts with resin eliminates the risk of electric shock because the contacts cannot be touched.



Future Developments

The newly developed ZH05 is designed to meet the current requirements for internal battery connections in EVs and hybrid cars. Hirose released a 16pos. variation in July 2021, and plans to develop the below pin count variations in order to meet the diversifying needs for battery interconnections.

・No. of Pos.: 12, 20, 24pos.

The reliable design satisfies in-vehicle quality requirements and can also be used for industrial storage batteries that are exposed to harsh environments.

Corporate Profile and Related Information

■Company Overview https://www.hirose.com/corporate/en/about/corporate_data/

■Featured Page https://www.hirose.com/product/pr/ZH05/

■Product Image https://prd-4s-public.s3.ap-northeast-1.amazonaws.com/sys-master/public/hef/h88/8983157407774/ZH05_image_dl.jpg