

[To the press] [June 1, 2021]

Hirose Electric has Developed a Waterproof Circular Plastic Connector with 20A High Current and Compact Size.

- Power Hybrid Connector Ideal for Electric Bicycle (E-Bike) Battery Connection -

Hirose Electric has developed a waterproof circular plastic connector with 36mm total length and 14.9mm mounted height, which has a high current capacity of 20A relative to its compact size.

● Miniaturization and Enhanced Connector Workability Required as Demand for E-Bikes Increases

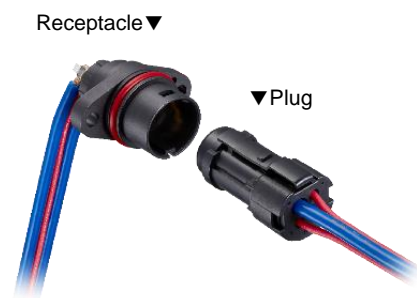
The demand for electric bicycles (E-Bikes) has been increasing year by year, especially in Europe, due to health and environmental concerns, the desire to avoid traffic congestion, and more recently, an increase in the number of people refraining from public transportation use due to COVID-19. On the other hand, the size and weight of the E-Bike assist unit needs to be reduced in order to enhance usability, resulting in a need for the connectors used in the battery to assist unit connection to be lighter and more compact as well. In addition, there is a growing need to reduce the number of manufacturing man-hours, which requires a reduction of connector assembly steps. Connectors must also be robust enough to withstand vibration during riding and waterproof for outdoor use.

● Unique Cable Assembly Design Enables both Miniaturization and Reduction of Assembly Time

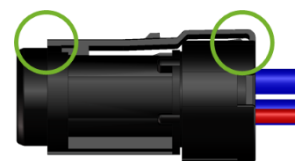
In order to solve such issues, BH12 was developed to be compact and easy to operate with the 20A high current capacity required to supply power to E-Bikes. The right angle connection of the power supply contact on the receptacle side enables a compact size of 36mm total length and 14.9mm mounted height (when mated). In addition, the crimp contact on the plug side can be inserted into the case from the side for easy assembly, contributing to reduced E-Bike assembly time. The lock supporting both ends of the plug prevents cable entanglement during assembly and transportation, keeps the lock free from deformation or damage, and makes the product withstand vibration during riding due to the secure connection. With IPX6 and IPX7 waterproof performance, it can be used in outdoor environments with exposure to water including rain.

Small, Waterproof and Power Hybrid Connector Supporting 20A: The BH12 Series

1. High current capacity and 14 AWG compatibility with compact size
 - 3pos.: Power 20A x 2pos., Signal 1A x 1pos.
 - 4pos.: Power 20A x 2pos., Signal 1A x 2pos.
2. Both front mount and rear mount type are available
3. IPX6 and IPX7 waterproof
4. Easy cable assembly
5. Design prevents lock damage
6. Light weight



The power terminal, which uses a thick cable that is difficult to route, is connected at a right angle to reduce the total length.



Lock design on both ends of the plug prevents cable entanglement, lock deformation and damage during assembly and transportation.

● Future Developments

The newly developed BH12 meets the demanding performance requirements for the internal connection of E-Bike assist units. Listed below are the available pin count variations.

- No. of Pos.: 3 and 4pos.

This product can also be used for power supply to various robotics, electric wheelchairs and micro-mobility.

● Corporate Profile and Related Information

- Corporate Profile https://www.hirose.com/corporate/en/about/corporate_data/
- Feature Page <https://www.hirose.com/product/pr/BH12/>
- Product Image https://prd-4s-public.s3.ap-northeast-1.amazonaws.com/sys-master/public/h10/h57/9024455245854/BH12%28shadow%29_rgb.png