

# Subminiature, Waterproof Duplex Fiber Optic Connectors

MF10B Series

Waterproof | 2 Positions | Bayonet Locking System



## Reliable bayonet lock

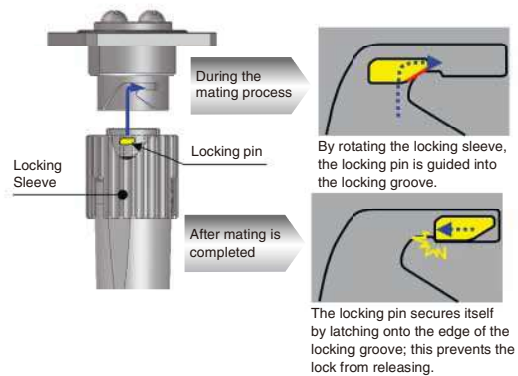


Fig.1

## Features

### 1. Extremely small structure

This miniature twin-core waterproof connector utilizes a  $\phi 1.25$ mm MU ferrule integrated in an internal housing and shell.

### 2. Integrated structure with excellent vibration and shock resistance

The bayonet lock assures that connectors can be mated easily and securely. In addition, the locking system prevents accidental disengagement, resulting in excellent resistance to vibration and shock, conforming to JIS E 4031 type 5 (vibration) and JIS E 4032 type 2 (shock) for railcar parts.

### 3. Compatible with hi-flex cables

For the plug side, a hi-flex optical fiber cable is available for Military Specification applications (external cable diameter  $\phi 5$  or  $\phi 6.5$  mm is the standard specification). This light and flexible cable is also suitable for in-line connection of long-distant transmission in outdoor events.

\*Before using other types of cables, please contact your local Hirose sales representative.

### 4. Easy ferrule access

To access the plug ferrule for cleaning, remove the sleeve from the front of the connector to expose the front of the ferrule end face.

### 5. Multiple mounting options

A four-screw, square flange mount and hexagonal jam nut mount options are available. The four-screw flange type can accept any screw pitch from 18 to 20mm.

## Easy access to the ferrule for cleaning

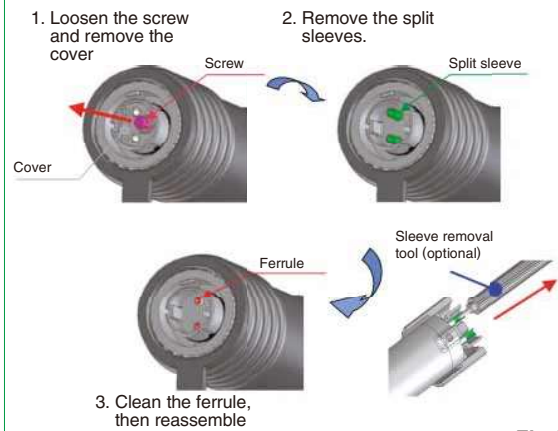


Fig.2

## Panel mounting options

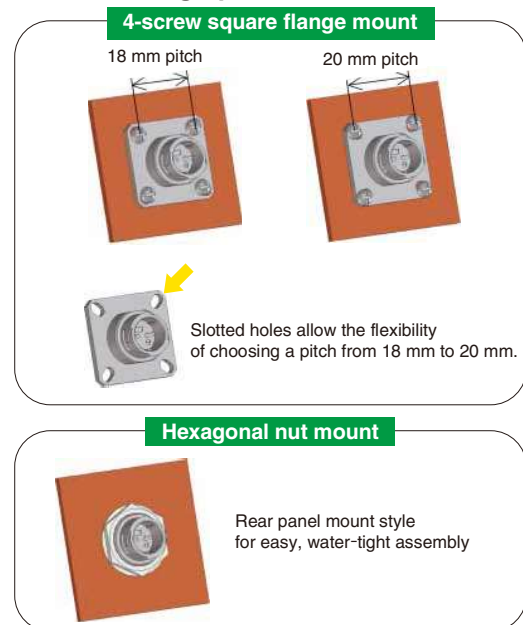


Fig.3

## ■ Product Specifications

|        |                             |                |                           |                                |
|--------|-----------------------------|----------------|---------------------------|--------------------------------|
| Rating | Operating temperature range | -40°C to +85°C | Storage temperature range | -25°C to +75°C<br>(AT PACKING) |
|--------|-----------------------------|----------------|---------------------------|--------------------------------|

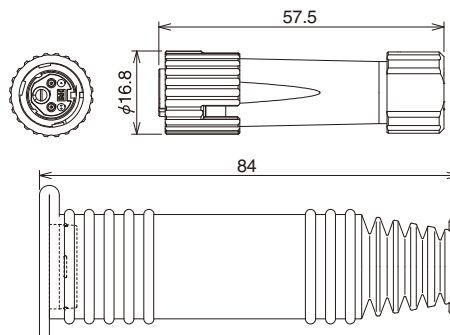
| Item                          |                                       | Testing method  | Specifications  |
|-------------------------------|---------------------------------------|---|---|
| Optical characteristic        | Insertion loss                        | Wavelength : 1310±20nm (LD)   | SM : 1.0 dB max. (Typical : 0.2dB)<br>GI : 0.5 dB max. (Typical 0.1dB max.)                         |
|                               | Durability                            | 5,000 mating cycles   | Insertion loss fluctuation after test : 0.3 dB max.<br>No visible damage or components dislocation. |
| Mechanical characteristics    | Tensile strength (axial)              | Axial tensile force:<br>100 N (φ5mm cable),<br>200 N (φ6.5mm cable),<br>or 400 N (cable with tension member)                        |   |
|                               | Flex resistant                        | Load of 500g, 10,000 times at 90 degrees, right and left direction  |   |
|                               | Vibration                             | Amplitude of 2.3mm, acceleration 14.8G, vertical direction for 4 hours and right and left for 2 hours<br>Based on JIS E 4031 Type 5 |   |
|                               | Shock                                 | Impact of 6 G, duration of 0.025 s ±25%, 4 times<br>Based on JIS E 4032 Type 2  |   |
| Environmental characteristics | Humidity (Temperature/humidity-cycle) | Temperature : -10°C to +65°C<br>Humidity : 90% to 96%,<br>10 cycles (240 hours)   | Insertion loss fluctuation after test : 0.3 dB max.<br>No loose, broken or cracked parts            |
|                               | Temperature cycle                     | -40°C to +75°C, 42 cycles   |   |
|                               | Heat resistance                       | 240 hours at +85°C  |   |
|                               | Cold resistance                       | 240 hours at -40°C  |   |
|                               | Salt mist                             | 5% for 1,000 hours (with the connector hood installed)  | No heavy corrosion ruin the function  |
|                               | Water proof                           | 1 minute at internal air pressure of 4.9 kPa  | No air leakage  |

## ■ Materials / Finish

| Component    | Material         | Finish                                | Remarks |
|--------------|------------------|---------------------------------------|---------|
| Housing      | Zinc die-casting | Nickel plated / Chrome plated (Black) | ————    |
| Stopper      | Synthetic resin  | ————                                  | UL94V-0 |
| Rubber hood  | Synthetic rubber | ————                                  | ————    |
| Spring       | Piano wire       | Zinc plated                           | ————    |
| Split sleeve | Zirconia         | ————                                  | ————    |

## ■ Plug

● Cable without strain relief (Cable diameter: 5 mm, 6.5 mm)



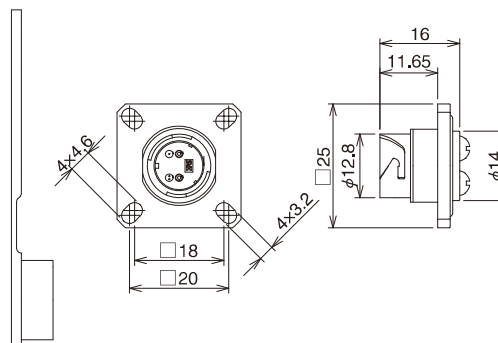
| Part No.                 | HRS No.       | Plating        |
|--------------------------|---------------|----------------|
| MF10B-WP5C01-0200(31)    | 709-1020-8 31 | Nickel         |
| MF10B-WP5CH01-0200(31)   | 709-1015-8 31 | Chrome (black) |
| MF10B-WP6.5C01-0200(31)  | 709-1004-1 31 | Nickel         |
| MF10B-WP6.5CH01-0200(31) | 709-1007-0 31 | Chrome (black) |

● Cable with strain relief (Cable diameter : 7mm)

| Part No.                | HRS No.       | Plating        |
|-------------------------|---------------|----------------|
| MF10B-WPS7CH01-0200(31) | 709-1024-9 31 | Chrome (black) |

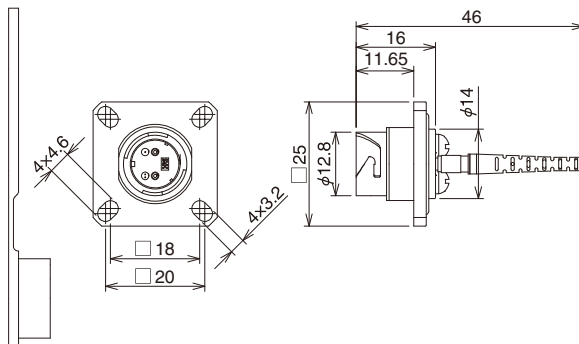
## ■ Receptacle

● φ0.9 fiber, M3 screw type



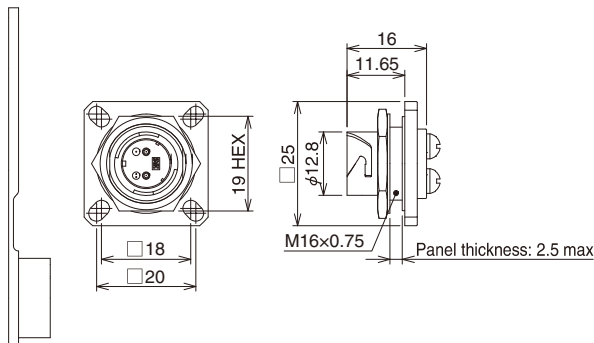
| Part No.              | HRS No.       | Plating        |
|-----------------------|---------------|----------------|
| MF10B-WRF01-0200(31)  | 709-1005-4 31 | Nickel         |
| MF10B-WRFH01-0200(31) | 709-1008-2 31 | Chrome (black) |

●  $\phi 2$ mm cable, M3 screw type



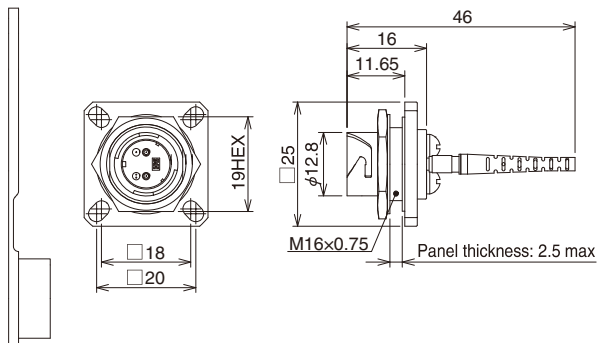
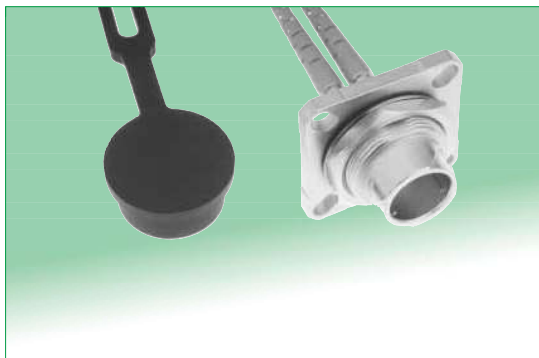
| Part No.              | HRS No.       | Plating        |
|-----------------------|---------------|----------------|
| MF10B-WRFC01-0200(31) | 709-1014-5 31 | Nickel         |
| MF10B-WRFC01-0200(31) | 709-1032-7 31 | Chrome (black) |

●  $\phi 0.9$ mm fiber, hexagon nut type



| Part No.              | HRS No.       | Plating        |
|-----------------------|---------------|----------------|
| MF10B-WRB01-0200(31)  | 709-1010-4 31 | Nickel         |
| MF10B-WRBH01-0200(31) | 709-1025-1 31 | Chrome (black) |

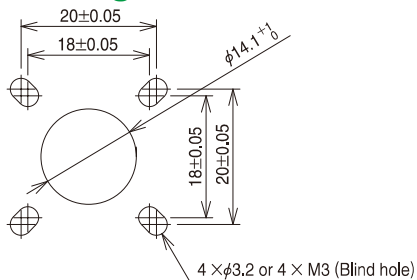
●  $\phi 2$ mm cable, hexagon nut type



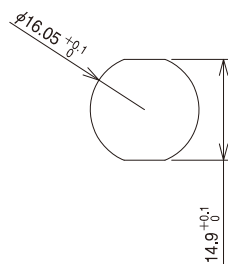
| Part No.              | HRS No.       | Plating        |
|-----------------------|---------------|----------------|
| MF10B-WRBC01-0200(31) | 709-1013-2 31 | Nickel         |
| MF10B-WRBC01-0200(31) | 709-1033-0 31 | Chrome (black) |

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## Panel Mounting Dimensions



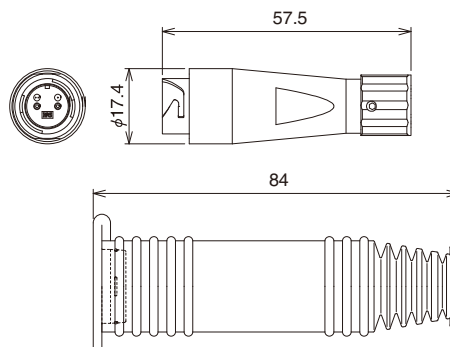
M3 screw type



For hexagon nut type

## In-Line Jack

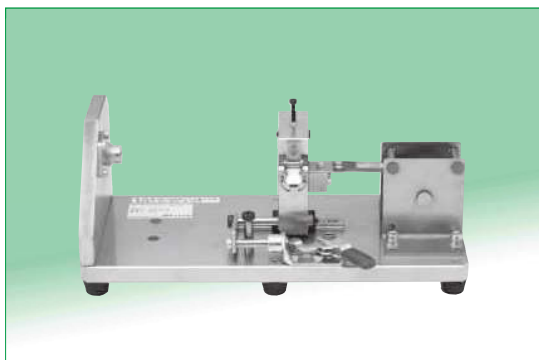
● Cable without strain relief (Cable diameter: 6.5 mm)



| Part No.                 | HRS No.       | Plating        |
|--------------------------|---------------|----------------|
| MF10B-WJ6.5C01-0200(31)  | 709-1011-7 31 | Nickel         |
| MF10B-WJ6.5CH01-0200(31) | 709-1035-5 31 | Chrome (black) |

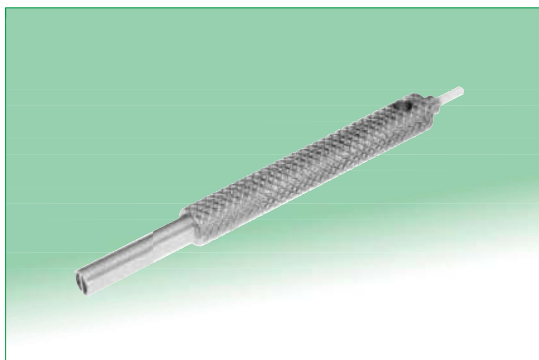
## Tools

● Plug assembly tool



| Part No.               | HRS No.    |
|------------------------|------------|
| MF10B-WP7C01-0200/CVMD | 902-6063-0 |

● Split sleeve removal tool



| Part No. | HRS No.    |
|----------|------------|
| MF10B-T1 | 709-1034-2 |

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE**  
2300 Warrenville Road, Suite 150,  
Downers Grove, IL 60515  
Phone : +1-630-282-6700  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE**  
300 Brickstone Square Suite 201,  
Andover, MA 01810  
Phone : +1-978-662-5255

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE**  
Neumeyerstrasse 22-26, 90411 Nurnberg  
Phone : +49-911 32 68 89 63  
Fax : +49-911 32 68 89 69  
<http://www.hirose.com/eu/>

**UNITED KINGDOM:**

**HIROSE ELECTRIC EUROPE BV (UK BRANCH)**  
4 Newton Court, Kelvin Drive, Knowlhill,  
Milton Keynes, MK5 8NH  
Phone : +44-1908 202050  
Fax : +44-1908 202058  
<http://www.hirose.com/eu/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. SHENZHEN BRANCH**  
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,  
5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008  
Phone : +86-755-8207-0851  
Fax : +86-755-8207-0873  
<http://www.hirose.com/cn/>

**KOREA:**

**HIROSE KOREA CO.,LTD.**  
143, Gongdan 1-daero, Siheung-si,  
Gyeonggi-do, 15084, Korea  
Phone : +82-31-496-7000  
Fax : +82-31-496-7100  
<http://www.hirose.co.kr/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE**  
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma  
Gandhi (MG) Road, Bangalore 560 001, Karnataka, India  
Phone : +91-80-4120 1907  
Fax : +91-80-4120 9908  
<http://www.hirose.com/sg/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE**  
2841 Junction Ave, Suite 200  
San Jose, CA. 95134  
Phone : +1-408-253-9640  
Fax : +1-408-253-9641  
<http://www.hirose.com/us/>

**THE NETHERLANDS:**

**HIROSE ELECTRIC EUROPE B.V.**  
Hogehillweg #8 1101 CC Amsterdam Z-O  
Phone : +31-20-6557460  
Fax : +31-20-6557469  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE**  
Bayernstr. 3, Haus C 30855 Langenhagen, Germany  
Phone : +49-511 97 82 61 30  
Fax : +49-511 97 82 61 35  
<http://www.hirose.com/eu/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)**  
18, Enterprise Center Tower 2, 209# Gong He  
Road, Jing'an District, Shanghai, CHINA 200070  
Phone : +86-21-6391-3355  
Fax : +86-21-6391-3335  
<http://www.hirose.com/cn/>

**HONG KONG:**

**HIROSE ELECTRIC HONGKONG TRADING CO., LTD.**  
Room 1001, West Wing, Tsim Sha Tsui Centre, 66  
Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong  
Phone : +852-2803-5338  
Fax : +852-2591-6560  
<http://www.hirose.com/hk/>

**SINGAPORE:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD.**  
03, Anson Road, #20-01, Springleaf Tower,  
Singapore 079909  
Phone : +65-6324-6113  
Fax : +65-6324-6123  
<http://www.hirose.com/sg/>

**MALAYSIA:**

**PENANG REPRESENTATIVE OFFICE**  
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan  
Lepas Penang, 11950, Malaysia  
Phone : +604-648-5536  
<http://www.hirose.com/sg/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)**  
17197 N. Laurel Park Drive, Suite 253,  
Livonia, MI 48152  
Phone : +1-734-542-9963  
Fax : +1-734-542-9964  
<http://www.hirose.com/us/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH**  
Schoenbergstr. 20, 73760 ostfildern  
Phone : +49-711-456002-1  
Fax : +49-711-456002-299  
<http://www.hirose.com/eu/>

**FRANCE:**

**HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE**  
130 Avenue Joseph Kessel, Bat E, 78960  
Voisins le Bretonneux, France  
Phone : +33-1-85764886  
Fax : +33-1-85764823  
<http://www.hirose.com/eu/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO.,LTD. BEIJING BRANCH**  
A1001, Ocean International Center, Building 56# East 4th  
Ring Middle Road, ChaoYang District, Beijing, 100025  
Phone : +86-10-5165-9332  
Fax : +86-10-5908-1381  
<http://www.hirose.com/cn/>

**TAIWAN:**

**HIROSE ELECTRIC TAIWAN CO., LTD.**  
103 8F, No.87, Zhongzhou Rd., Taipei  
Phone : +886-2-2555-7377  
Fax : +886-2-2555-7355  
<http://www.hirose.com/tw/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE**  
Office NO.552, Regus-Green Boulevard, Level5, Tower C,  
Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India  
Phone : +91-12-660-8018  
Fax : +91-120-4804949  
<http://www.hirose.com/sg/>

**THAILAND:**

**BANGKOK OFFICE (REPRESENTATIVE OFFICE)**  
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn  
Road, Yannawa, Sathorn, Bangkok 10120 Thailand  
Phone : +66-2-686-1255  
Fax : +66-2-686-3433  
<http://www.hirose.com/sg/>

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**HIROSE ELECTRIC CO.,LTD.**

2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN  
TEL: +81-45-620-3526 Fax: +81-45-591-3726  
<http://www.hirose.com>  
<http://www.hirose-connectors.com>