Harsh Environment Fiber Optic Connectors

MF 14 and MF 17 Series



■Features

1. 2 Fibers (MF14 series), 4 Fibers (MF17 series), or Optical/Electrical Hybrids are available.
6 fibers (MF22 series) available.

2. Incorrect Insertion Prevention.
Guide key (plug) and key slot (receptacle) are designed for prevent incorrect insertion.

3. Plug, receptacle fully mated condition satisfy IP67 wateroof Performance.

4. For more than 10 years, MF series has been designed and installed in many harsh environmental applications.
Please contact us if you have any requests.
HIROSE will offer excellent solutions to meet your requirements.

■Applications

Outdoor optical transmission systems, LAN, CATV, ATM, Base station, industrial optical/electric lines.

■Product Specifications

Ratings	Operating temperature range	-25°C to +70°C	Storage temperature range	-25°C to +70°C

Item		Test Method	Specifications
Optical characteristics	Insertion Loss	Wavelength 1310nm (LD)	1.0dB max. (Note)
Mechanical characteristics	Durability (cycles, mating/un-mating)	100 times	1) Insertion loss fluctuation after (test) : 0.3dB max. 2) No visible damage, dislocation of clamp or cable.
	Vibration	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, acceleration of 98.1m/s^2, 2 hours in each of the 2 axis.	
	Shock	Acceleration of 981 m/s^2, 6 ms duration, sine half-wave waveform, 3 cycles in each of the 2 axis.	
Environmental characteristics	Humidity (Temperature/ humidity- cycles)	-10°C to 65°C, humidity: 90% to 96% 10 cycles	1) Insertion loss fluctuation after test: 0.3dB max. 2) No visible damage, dislocation of clamp or cable.
	Change of temperature	-40°C to +75°C 42 cycles	
	Dry heat	960 hours at 85°C	
	Cold	960 hours at -40°C	
	Salt Mist	1000 hours in a 5% concentration of salt mist	No visible corrosion.
	Waterproof	Inside air pressure 4.90kPa for one minute	No air bubble leakege, IP67

Note: Insertion loss herein means only connection loss.

■Materials

Part	Material
Plug and Receptacle Housing	Aluminum alloy
Ferrule case	Synthetic resin
Strain relief	Zinc alloy
Protective cap and clamp	Brass
Rubber boot and O-rings	Synthetic rubber
Screws, springs, and steel wire	Stainless steel
Washer	Brass
Split sleeve	Zirconia or Copper alloy

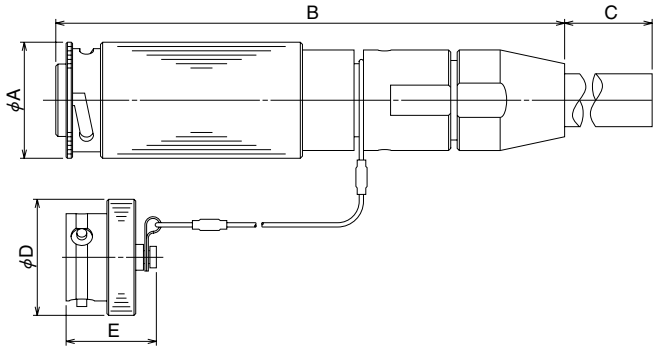
■Important Notice

1. Please ask HIROSE when you assemble the MF connectors for special cables. Some cables can not be used for the connectors.
2. MF series use SC/PC zirconia ferrules. Please see page 33.

■Bayonet lock

●Plug Housing



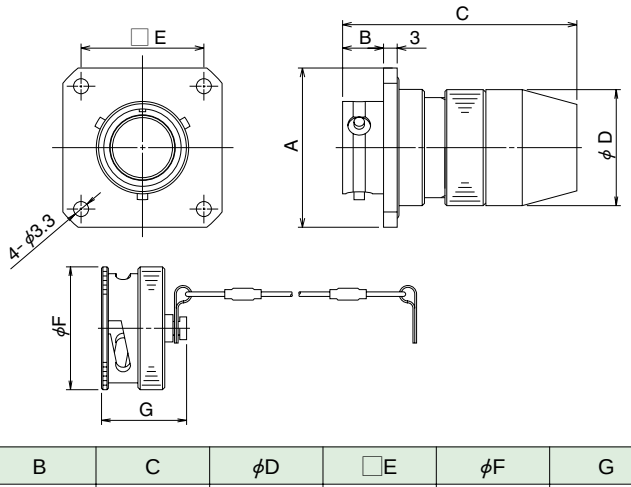


Part Number	Number of Fibers	ϕA	B	C	ϕD	E
MF14B-WP*S01-0200	2	24	84.7	69	24	21
MF17B-WP*S01-0400	4	27	116.5	52	27	21

* indicates cable diameter. 8, 9 and 10mm, diameter cables are appicable.

●Square Flange Receptacle Housing



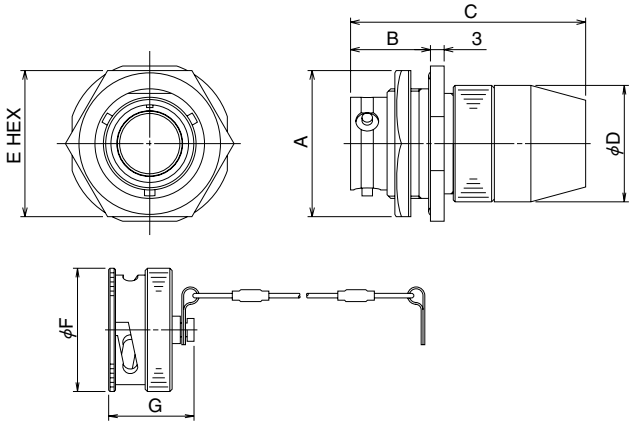


Part Number	Number of Fibers	□A	B	C	ϕD	□E	ϕF	G
MF14B-WRF01-0200	2	30	10	45.5	20.5	23	24	18.7
MF17B-WRF01-0400	4	35	10	51.5	25.5	27	27	18.7

Note: Up to 3 mm cables are applicable.

●Bulk Head Receptacle Housing





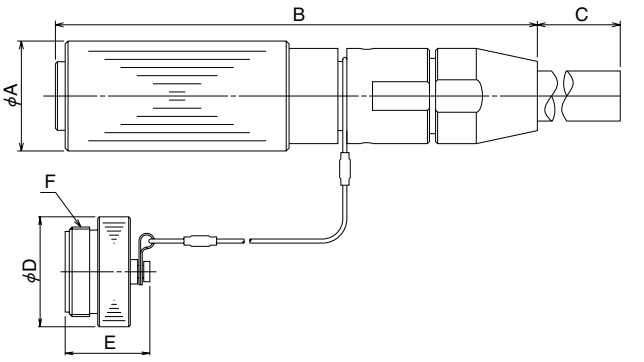
Part Number	Number of Fibers	□A	B	C	ϕD	□E	ϕF	G
MF14B-WRB01-0200	2	30	17.5	45.5	20.5	28	24	18.7
MF17B-WRB01-0400	4	34	17.5	51.5	25.5	32	27	18.7

Note: Up to 3 mm cables are applicable.

■Threaded lock

●Plug housing



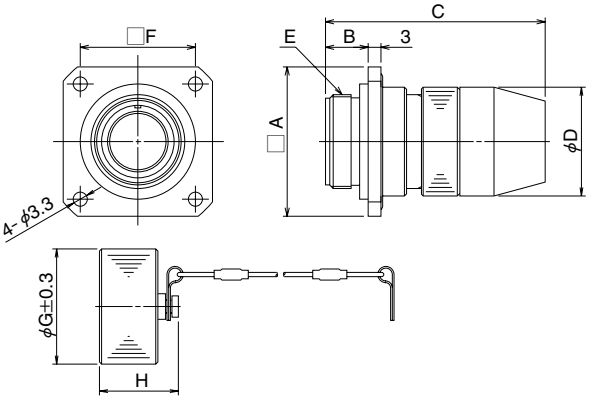


Part Number	Number of Fibers	ϕA	B	C	ϕD	E	F
MF14S-WP*S01-0200	2	24	84.7	69	24	20.8	M20×1
MF17S-WP*S01-0400	4	27	116.5	52	27	20.8	M22×1

*indicates the cable diameter. 8, 9 and 10mm, diameter cables are applicable.

●Square Flange Receptacle Housing



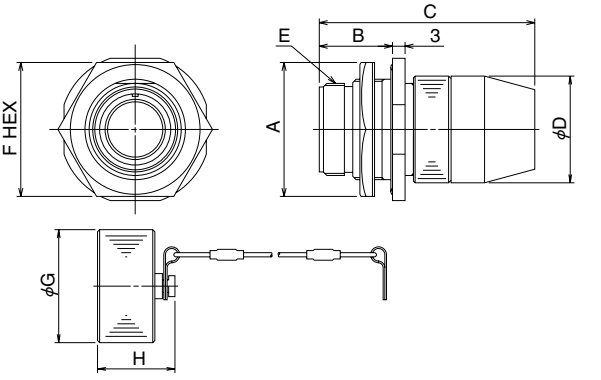


Part Number	Part Number	□A	B	C	ϕD	E	□F	ϕG	H
MF14S-WRF01-0200	2	30	10	45.5	20.5	M20×1	23	24	18.5
MF17S-WRF01-0400	4	35	10	51.5	25.5	M22×1	27	27	18.5

Note: Up to 3 mm cables are applicable.

●Bulk Head Receptacle Housing



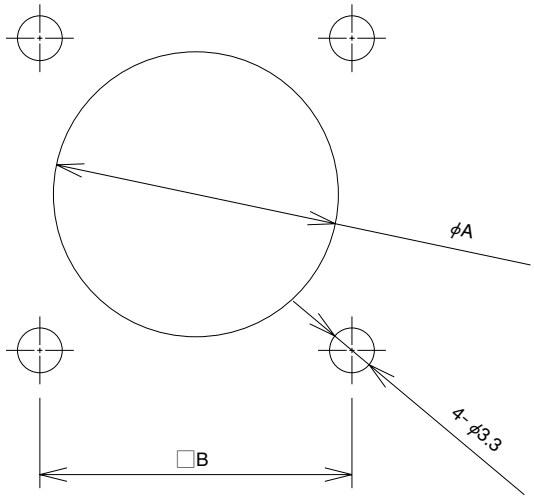


Part Number	Part Number	□A	B	C	ϕD	E	□F	ϕG	H
MF14S-WRB01-0200	2	31	17.5	45.5	20.5	M20×1	30	24	18.5
MF17S-WRB01-0400	4	34	17.5	51.5	25.5	M22×1	32	27	18.5

Note: Up to 3 mm cables are applicable.

◆Panel cut-out

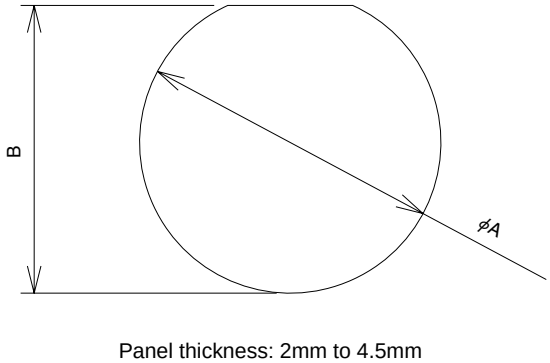
●Square Flange Receptacle



Panel thickness: 2mm to 4.5mm

Part Number	A	B
MF14B-WRF01-0200	21	23
MF14S-WRF01-0200	21	23
MF17B-WRF01-0400	26	27
MF17S-WRF01-0400	26	27

●Bulk Head Receptacle

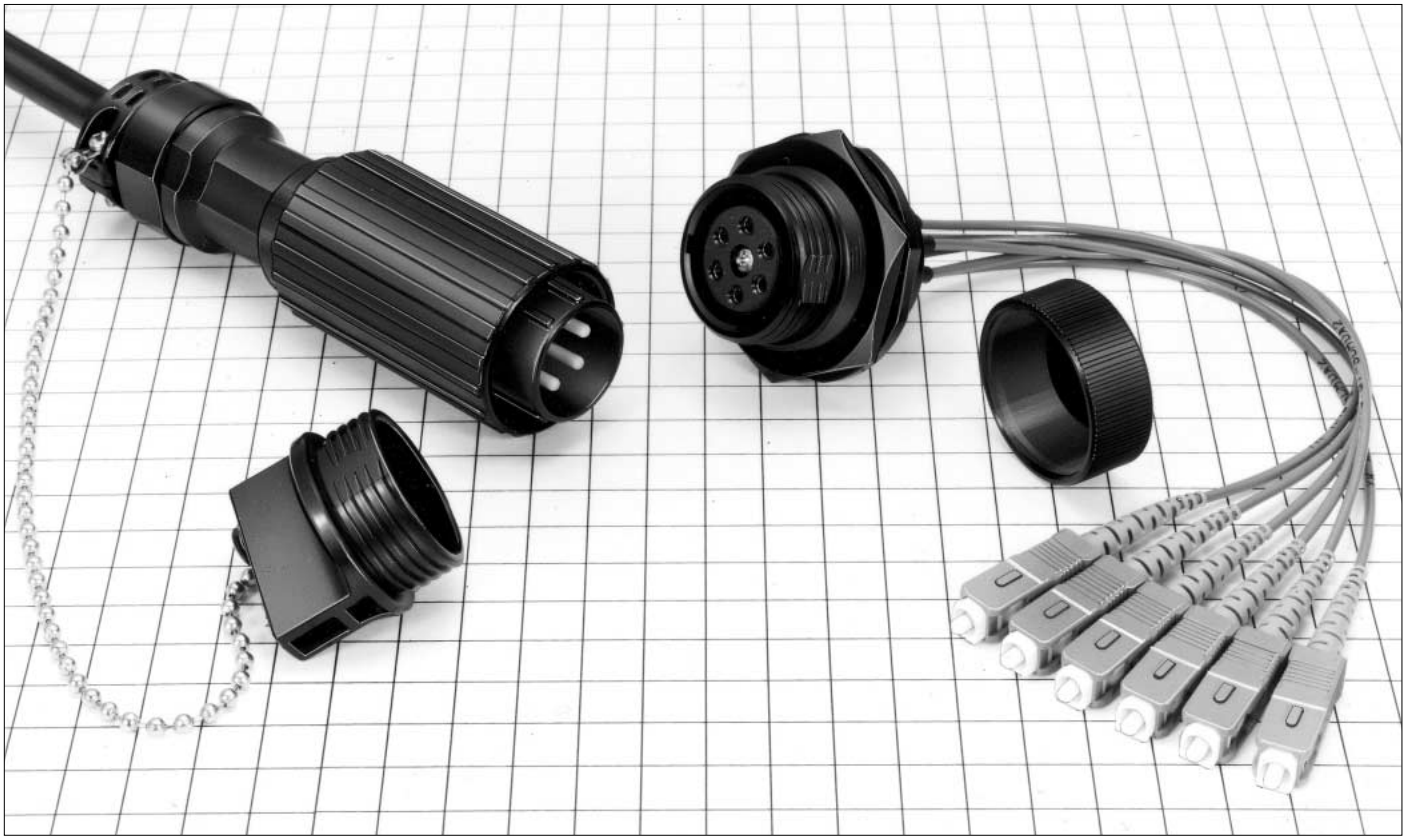


Panel thickness: 2mm to 4.5mm

Part Number	A	B
MF14B-WRB01-0200	22.2	21.2
MF14S-WRB01-0200	24.2	23.2
MF17B-WRB01-0400	24.2	23.2
MF17S-WRB01-0400	24.2	23.2

Harsh Environment Fiber Optic Connector

MF22 Series



■Features

1. 6 Fibers or Optical /Electric Hybrids are available

2 fibers (MF14), 4fibers (MF17) available.
Please contact us if you have any requests.
HIROSE will offer excellent solutions to meet your requirements.

2. Incorrect Insertion Prevention

Five guide keys positioned at specific angles assure that the connector will mate only with the corresponding assembly.

3. Plug, receptacle fully mated condition satisfy IP67 waterproof performance.

4. Harsh environment applications

The connector's outer surfaces are covered with heat baked hard coating and all internal connections are protected by seals.

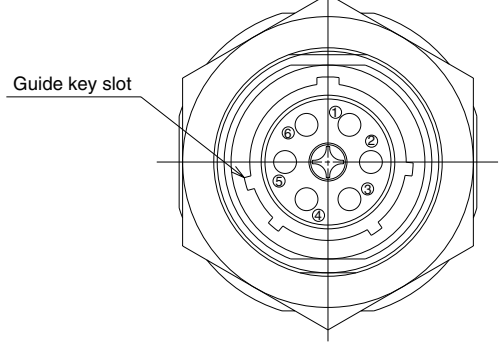
5. Cable Termination

The connector will terminate with a majority of cables having outside diameter from 7mm to 12mm.
Please contact Hirose for other applicable cable.

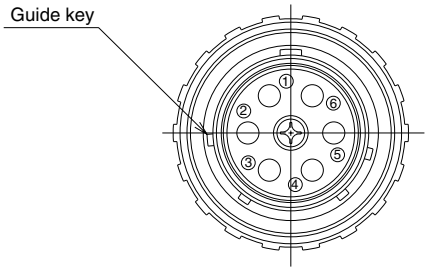
■Applications

Outdoor optical transmission systems, LAN, CATV, ATM, and other applications requiring environmentally protected optical or electrical connections.

Receptacles



Plugs



■Product Specifications

Ratings	Operating temperature range	-40°C to +75°C	Storage temperature range	-40°C to +85°C

Item		Test Method	Specifications
Optical characteristics	Insertion Loss	Wavelength 850nm (LD)	0.7dB max. (Note)
Mechanical characteristics	Durability (cycles, mating/un-mating)	500 times	1) Insertion loss fluctuation (after test): 0.3dB max. 2) No visible damage, dislocation of clamp or cable.
	Vibration	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, acceleration of 98.1m/s^2, 2 hours in each of the 2 axis.	
	Shock	Acceleration of 981 m/s^2, 6 ms duration, sine half-wave waveform, 3 cycles in each of the 2 axis.	
Environmental characteristics	Humidity (Temperature/ humidity- cycles)	-10°C to 65°C, humidity: 90% to 96% 10 cycles	1) Insertion loss fluctuation after test: 0.3dB max. 2) No visible damage, dislocation of clamp or cable.
	Change of temperatice	-40°C → +75°C 42 cycles	
	Dry heat	336 hours at 85°C	
	Cold	240 hours at -40°C	
	Salt mist	1000 hours in a 5% concentration of salt mist	No visible corrosion.
	Waterproof	Inside air pressure 4.90kPa for one minute	No air bubble leakege, IP67

Note: Insertion loss herein means only connection loss.

■Materials

Part	Material
Plug and Receptacle Housing	Aluminum alloy
Ferrule case	Synthetic resin
Strain relief components	Zinc alloy
Protective cap and clamp	Synthetic resin
Rubber boot and O-rings	Synthetic rubber
Screws, springs, and ball chain	Stainless steel
Washer	Brass
Split sleeve	Zirconia or Copper alloy

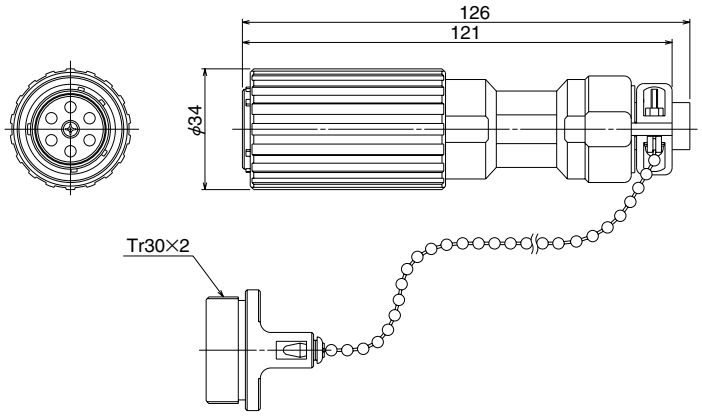
■Important Notice

1. Please ask HIROSE when you assemble the MF connectors for special cables. Some cables can not be used for the connectors.
2. MF series use SC/PC zirconia ferrules. Please see page 33.

■Threaded lock

●Plug housing



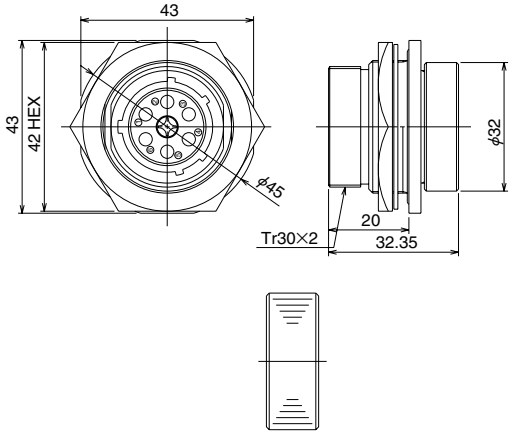


Part Number	Number of Fibers
MF22S-WDP*S01-0600	6

*indicates cable diameter.

●Bulk head receptacle housing

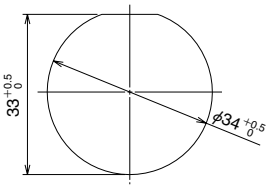




Part Number	Number of Fibers
MF22S-WDRB01-0600	6

Note: Up to 3 mm cables are applicable.

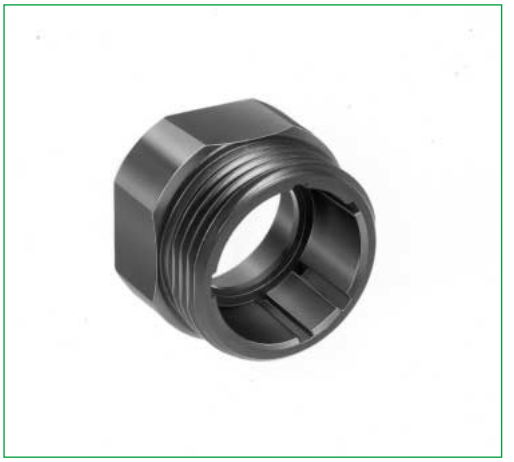
◆Panel cut-out



Panel thickness: 1mm to 4mm

■Tools

●Plug assembly tool



Part Number	CL No.
MF22S-T2	709-0065-0

●Crimp tool for receptacle assembly



Part Number	CL No.
HSC-T3	704-0287-0