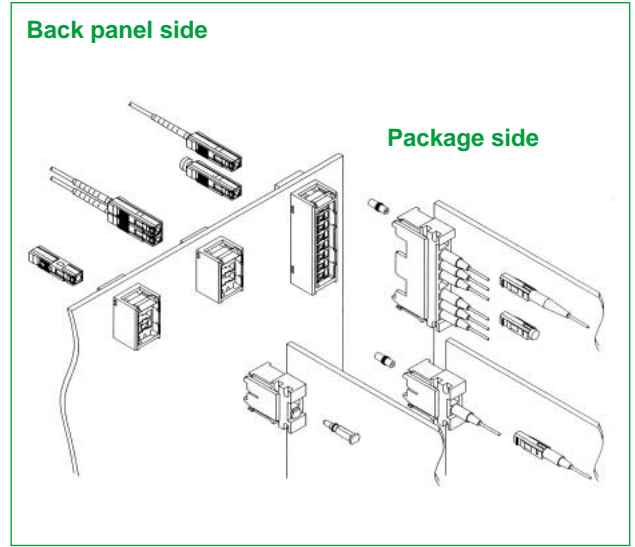
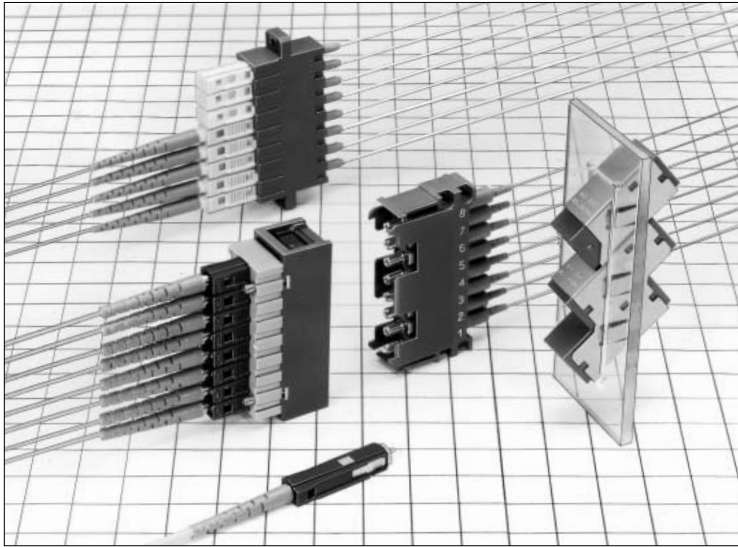


# MU Type Fiber Optic Connectors

## HMU Series



### ■ Features

#### 1. JIS, IEC standard compliant and intermateability test certified.

Comply with JIS C 5983 (F14 type fiber optic connectors) and IEC 61754-6.  
 MU intermate test by NTT certified connector.

#### 2. Flame resistant

Satisfies flammability rating UL94V-0

#### 3. Backplane

MU Backplane connector has a self-holding mechanism which does not transfer any force on the back panel when both side of connector assemblies are fully connected. Back panel side connectors can be removed or inserted even both sides are mated.

#### 4. Wide Variety of adapter type

Type	Number of Fiber connections				
	Single	Duplex	4 way	8 way	16 way
Board Mounting	○	○	—	○	—
Snap-in Panel Mounting & Screw Panel Mounting	○	○	○	○	○

#### 5. Simplified plugs and Receptacles

Extremely small size (only 13.75mm Plug length). MU simplified plug is designed for equipments inside connection.

### ■ Applications

Optical terminal equipment, optical relay racks, test equipment, telecommunication equipment and other systems requiring Small Form Factor optical connections.

Please contact us if you have any requests. Hirose will offer excellent solutions to meet your requirements.

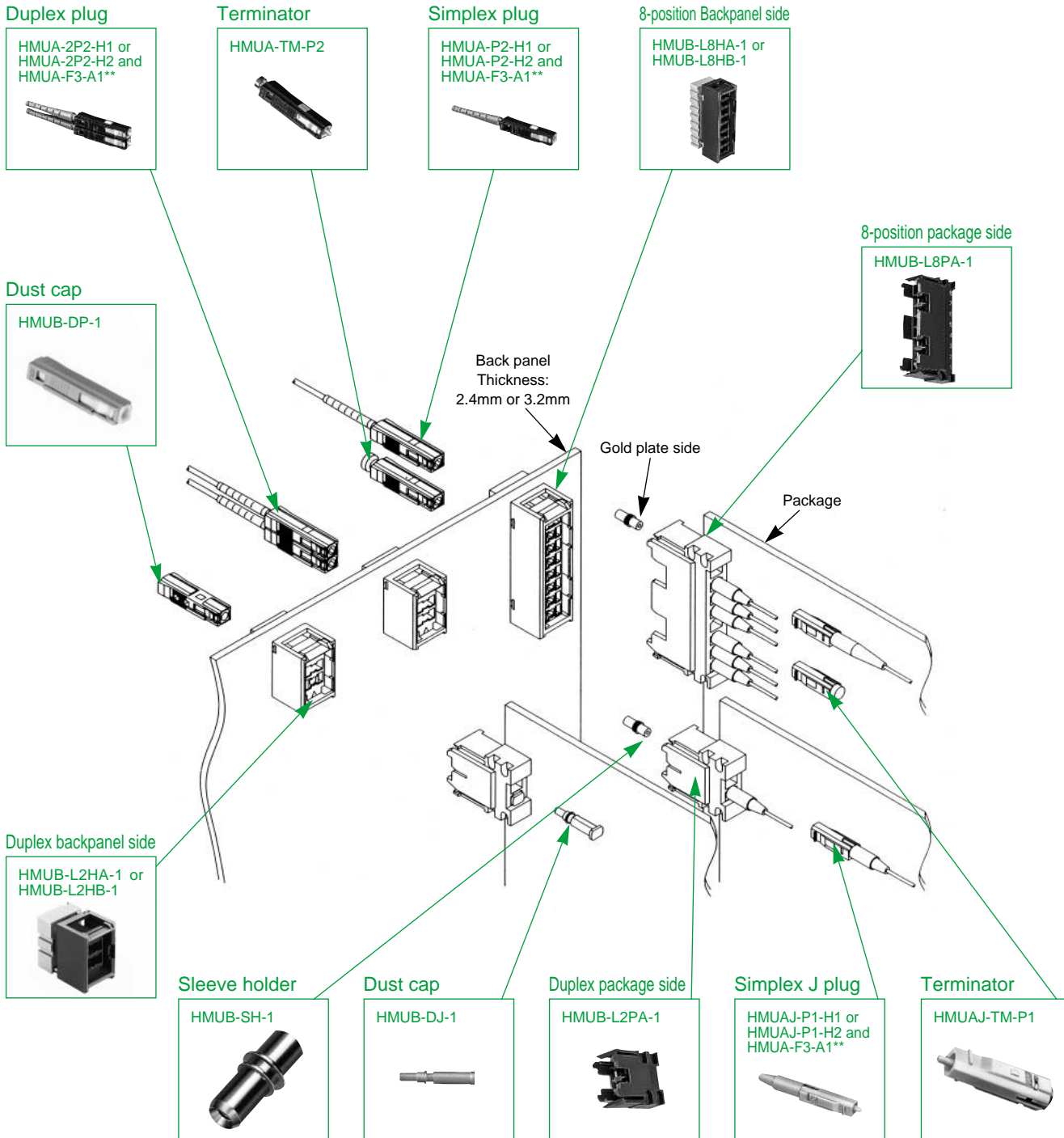
## Product Specifications

Ratings		Operating temperature range	-25°C to +70°C	Storage temperature range	-25°C to +70°C	
Item		Test Method (IEC 61300/JIS C 5961)		Specifications		
Optical Characteristics	Insertion Loss	SM	Wavelength 1310nm (LD)	0.5dB max. (AdPC)		
		MM(GI)	Wavelength 1310nm (LED)	0.3dB max. (AdPC)		
Optical Characteristics	Return Loss	SM	Wavelength 1310nm (LD)	40dB min. (AdPC)		
		MM(GI)				
Mechanical Characteristics	Engagement and Separation forces		Measured with corresponding connector.	Simplex plug Engagement force: 20 N max. Separation force: 20 N max. Duplex plug Engagement force: 30 N max. Separation force: 30 N max.		
	Ferrule with drawal force		Extract zirconia gauge 1.249 ±0.0005 mm diameter from split sleeve.	Copper alloy split sleeve	1N to 3N	
	Cable retention (Straight pull)		70N tensile loads for one minute.	Zirconia split sleeve	1N to 2.5N	
	Durability (cycles, mating/unmating)		200 times (Backplane) 500 times (Plug)	1) Insertion loss fluctuation after test: 0.2dB max. 2) No visible damage, dislocation of clamp or cable.  1) Insertion loss fluctuation after test: 0.2dB max. 2) No visible damage, cracks or part dislocation.		
	Vibration		Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 axis.			
	Shock		Acceleration of 981 m/s <sup>2</sup> , 6 ms duration, sin half-wave waveform, 10 cycles in each of the 3 axis.			
Humidity (Temperature/ humidity- cycles)		-10°C to 65°C, humidity: 90% to 96% 10 cycles				
Environmental Characteristics	Change of Temperature		-25°C to +70°C	100 cycles		
	Dry heat		960 hours at 85°C			
	Cold		960 hours at -25°C			
	Salt mist		48 hours in a 5% concentration of salt mist			
			No significant corrosion.			

## Materials

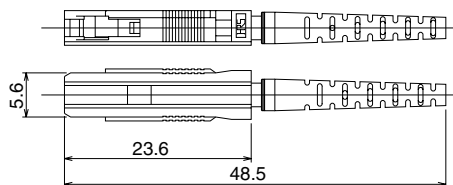
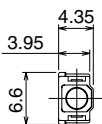
Part	Material
Simplex plug housing	Synthetic resin
Spring	Steel
Ferrule	Zirconia
Simplex adapter housing	Synthetic resin
Adapter metal fittings	Stainless steel or copper alloy (Nickel plating)
Simplified receptacle housing	Synthetic resin
Simplified plug	Zirconia
Backplane connector housing	Synthetic resin
Split sleeve	Zirconia or copper alloy
Dust cap	Synthetic resin

## Function diagram



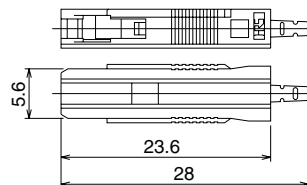
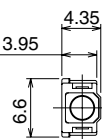
## ■ Plug Housings

### ● Simplex Plug Housing for 2mm cable



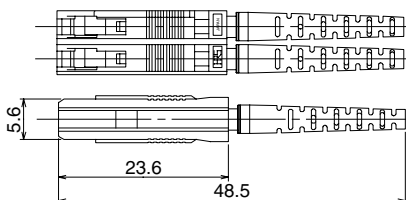
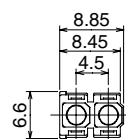
Part Number	CL No.	Boot color
HMUA-P2-H1(07)	710-0047-9-07	Blue
HMUA-P2-H2(07)	710-0001-8-07	Light purple

### ● Simplex Plug Housing for 0.9mm fiber



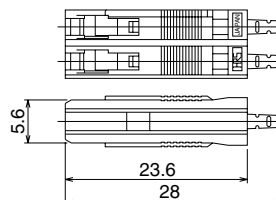
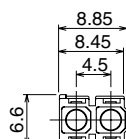
Part Number	CL No.	Boot color
HMUA-P0.9-H1(01)	710-0158-0-01	Blue
HMUA-P0.9-H2(01)	710-0159-2-01	Light purple

### ● Duplex Plug Housing for 2mm cable



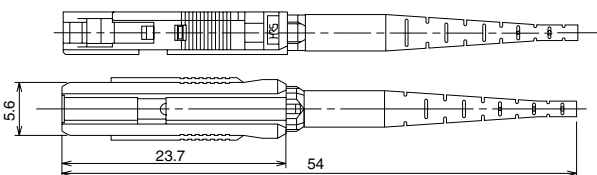
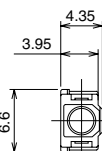
Part Number	CL No.	Boot color
HMUA-2P2-H1(07)	710-0048-1-07	Blue
HMUA-2P2-H2(07)	710-0002-0-07	Light purple

### ● Duplex Plug Housing for 0.9mm fiber



Part Number	CL No.	Boot color
HMUA-2P0.9-H1(01)	710-0162-7-01	Blue
HMUA-2P0.9-H2(01)	710-0163-0-01	Light purple

### ● Simplex Plug Housing for 1.1mm Cable

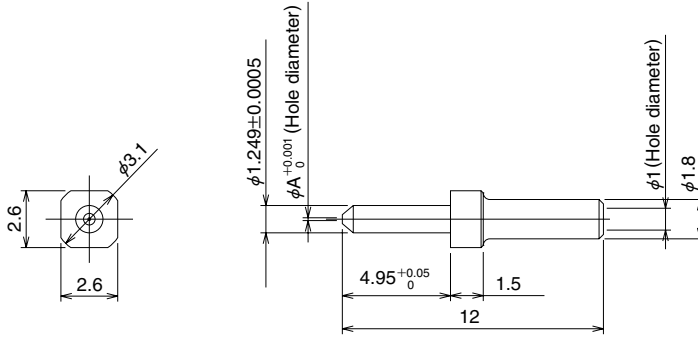
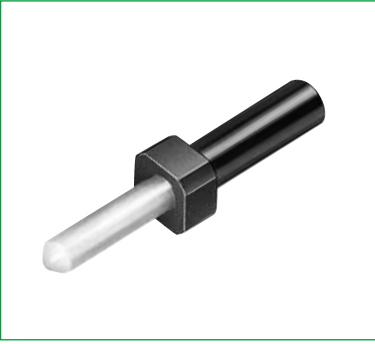


Part Number	CL No.	Boot color
HMUA-P1.1-H2	710-0133-9	Light purple

Note: Ferrules, HMUA-F3A2-A12\*(10) should be needed for this plug. (see page 9) Certain assemble tools are also needed. Please contact sales representative for the details.

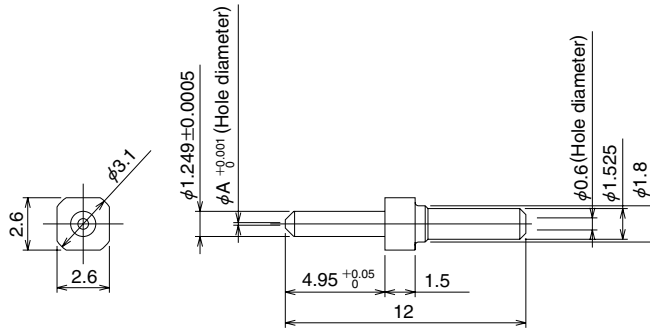
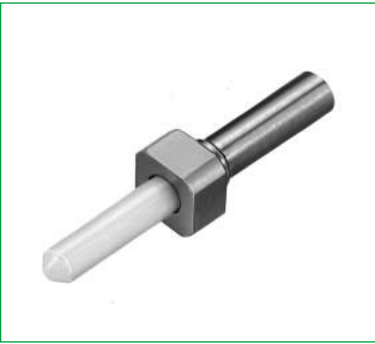
## Ferrules

### For MU plugs



Part Number	CL No.	A dimension	Applicable Fiber cable
HMUA-F3-A125(10)	710-0024-3-10	0.125	SM,MM
HMUA-F3-A1255(10)	710-0121-0-10	0.1255	
HMUA-F3-A126(10)	710-0025-6-10	0.126	

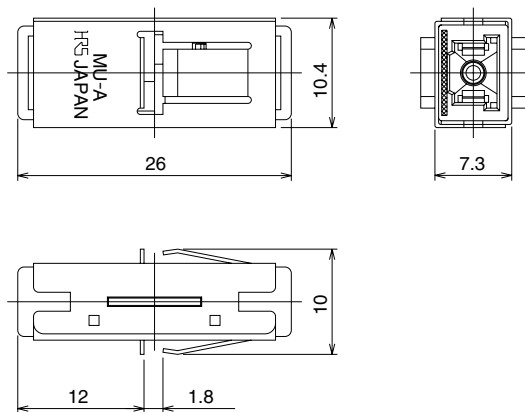
### For HMUA-P1. 1-H\* plug



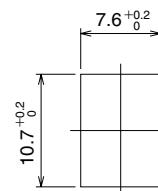
Part Number	CL No.	A dimension	Applicable Fiber cable
HMUA-F3A2-A125(10)	710-0138-2-10	0.125	SM,MM
HMUA-F3A2-A1255(10)	710-0142-0-10	0.1255	
HMUA-F3A2-A126(10)	710-0139-5-10	0.126	

## Adapters

### Simplex Adapter / Snap-in Panel Mounting



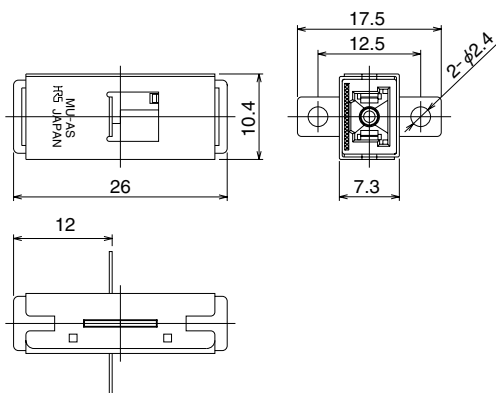
#### Panel Cutout



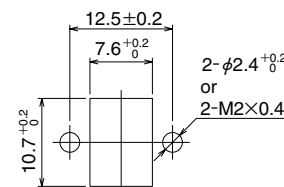
Panel thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-A-3	710-0103-8	Zirconia

### Simplex Adapter / Screw Panel Mounting

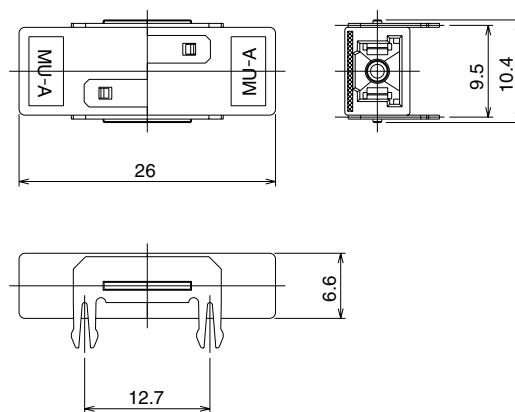


#### Panel Cutout

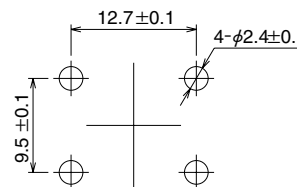


Part Number	CL No.	Split sleeve
HMUA-AS-3	710-0104-0	Zirconia

### Simplex Adapter / Board Mounting



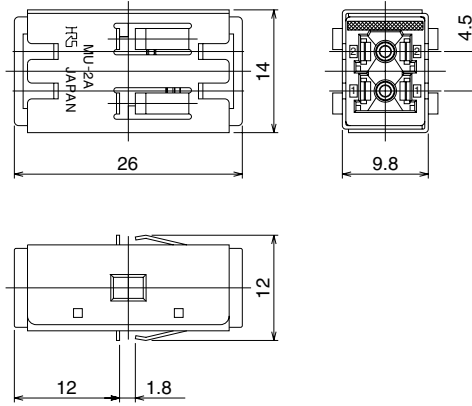
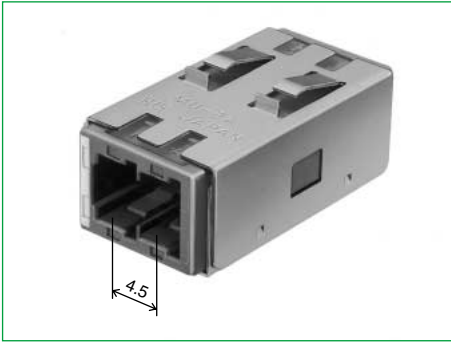
#### Board Mounting Pattern



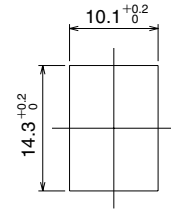
Board thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-AH-3	710-0105-3	Zirconia

●Duplex adapter / Snap-in Panel Mounting  
 4.5mm Type



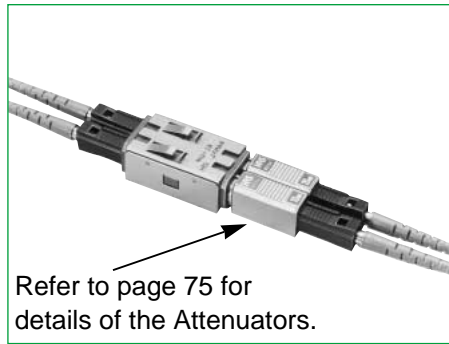
◆Panel Cutout



Panel thickness:1.6mm

Part Number	CL No.	Split sleeve
HMUA-2A-4	710-0187-8	Zirconia

●Duplex Adapter / Snap-in Panel Mounting  
 6.25mm Type



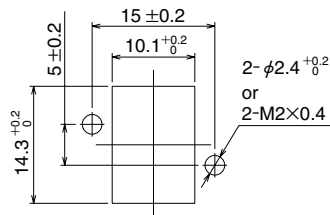
Part Number	CL No.	Split sleeve
HMUA-2AK-1	710-0196-9	Zirconia

Note:The outer dimension is the same as the above "HMUA-2A-4".

●Duplex Adapter / Screw Panel Mounting



◆Panel Cutout

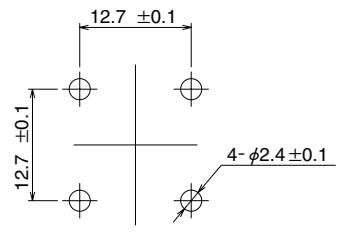


Part Number	CL No.	Split sleeve
HMUA-2AS-4	710-0188-0	Zirconia

●Duplex Adapter / Board Mounting



◆Board Mounting Pattern



Board thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-2AH-4	710-0189-3	Zirconia

MU

SC

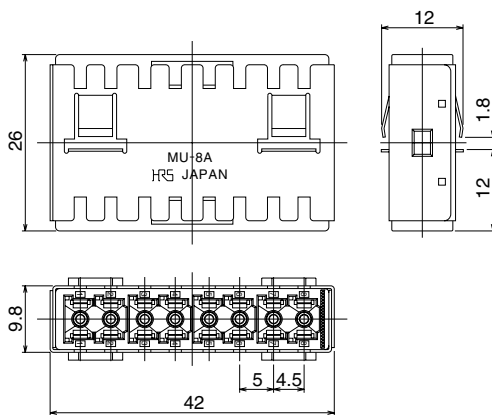
FC

Harsh  
Environment

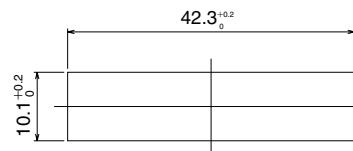
Attenuators

Terminators

### ●8-Position Adapter / Snap-in Panel Mounting



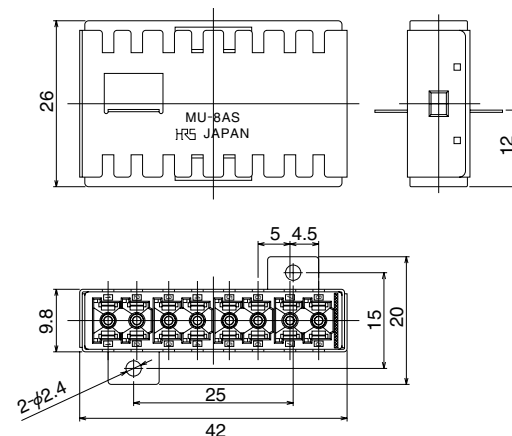
#### ◆Panel Cutout



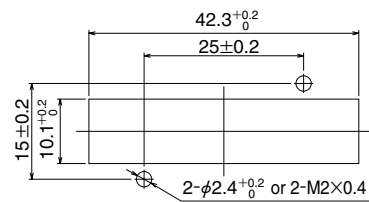
Panel thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-8A-3	710-0174-6	Zirconia

### ●8-Position Adapter / Screw Panel Mounting

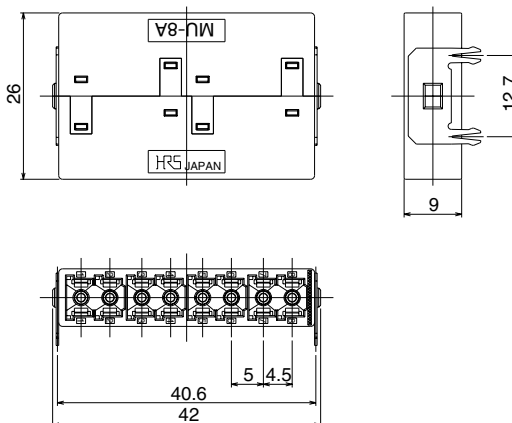


#### ◆Panel Cutout

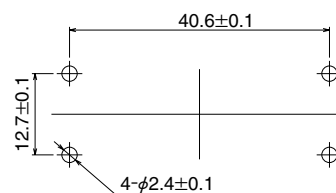


Part Number	CL No.	Split sleeve
HMUA-8AS-3	710-0175-9	Zirconia

### ●8-Position Adapter / Board Mounting



#### ◆Board Mounting Pattern



Board thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-8AH-3	710-0176-1	Zirconia

MU

SC

FC

Harsh Environment

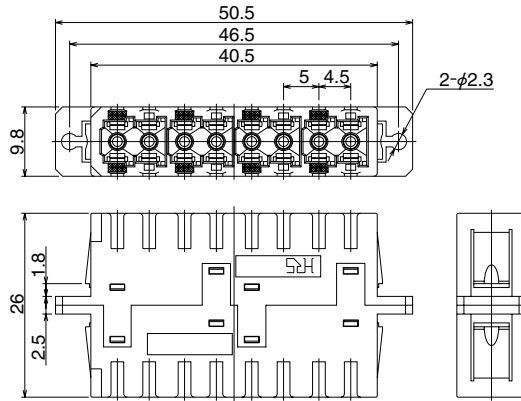
Attenuators

Terminators

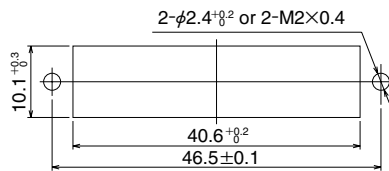


## ■ Cost effective adapters

### ● 8-Position Adapter / Screw Panel Mounting



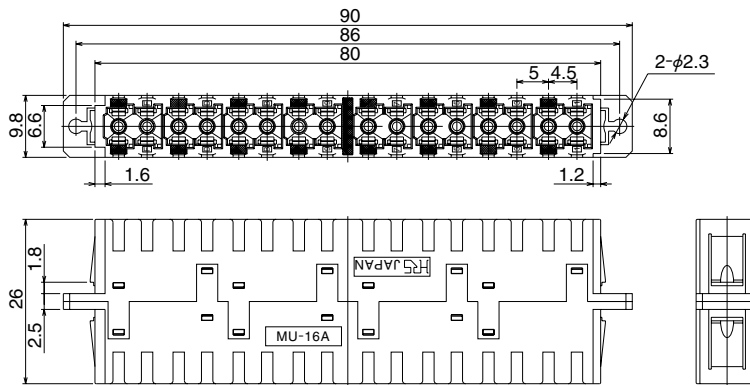
#### ◆ Panel Cutout



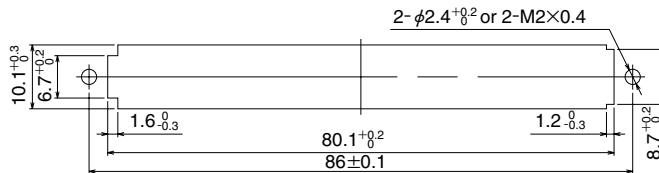
Panel thickness: 1.6mm

Part Number	CL No.	Split sleeve
HMUA-8A-2	710-0155-1	Zirconia
HMUA-8A-B2	710-0119-8	Copper alloy

### ● 16-Position Adapter / Screw Panel Mounting



#### ◆ Panel Cutout

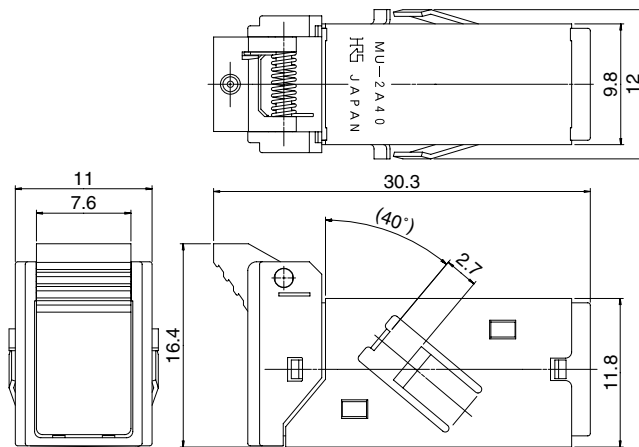


Panel thickness: 1.6mm

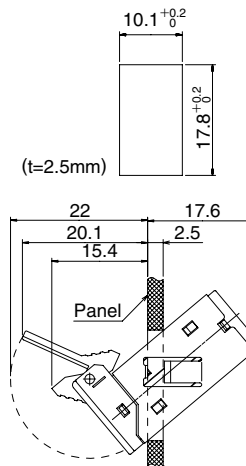
Part Number	CL No.	Split sleeve
HMUA-16A-2	710-0143-2	Zirconia
HMUA-16A-B2	710-0113-1	Copper alloy

## ■Angled Adapters

### ●Duplex Angled Adapter with Shutter / Snap-in Panel Mounting

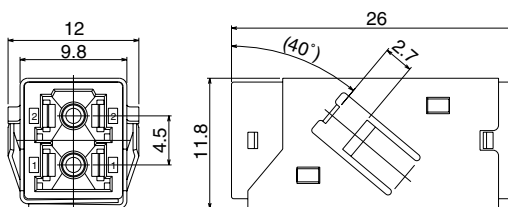


### ◆Panel Cutout

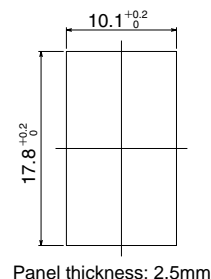


Part Number	CL No.	Split sleeve	Mounting Angle
HMUA-2A-40-4-S1	710-0194-3	Zirconia	40°

### ●Duplex Angled Adapter / Snap-in Panel Mounting

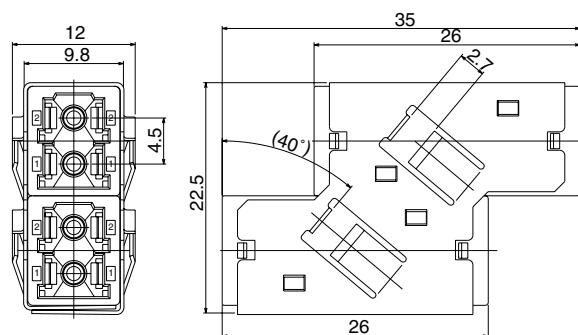


### ◆Panel Cutout

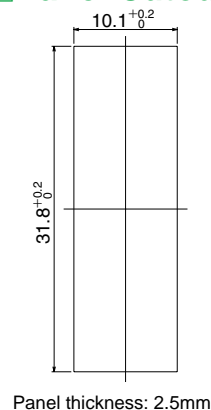


Part Number	CL No.	Split sleeve	Mounting Angle
HMUA-2A-40-4	710-0177-4	Zirconia	40°

### ●4-Position Angled Adapter / Snap-in Panel Mounting



### ◆Panel Cutout

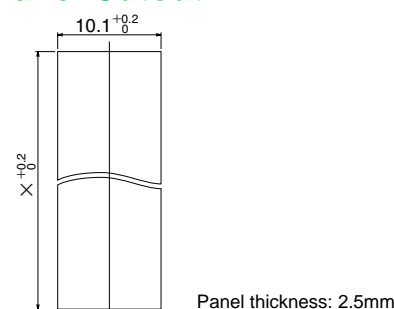


Part Number	CL No.	Split sleeve	Mounting Angle
HMUA-4A-40-4	710-0178-7	Zirconia	40°

### Panel Cutout dimensions

Fiber Position	Panel cutout:Xmm
6(Duplex+4 position)	47.4
8(4 position×2)	61.4
10(Duplex+4 position×2)	77.1
12(4 position×3)	91
14(Duplex+4 position×3)	106.7
16(4 position×4)	120.7
18(Duplex+4 position×4)	136.3
20(4 position×5)	150.3

### ◆Panel Cutout



MU

SC

FC

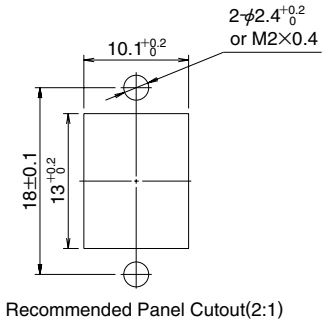
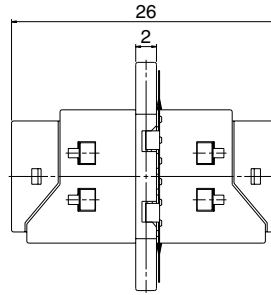
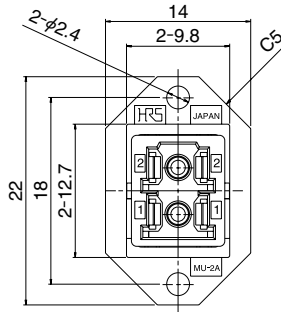
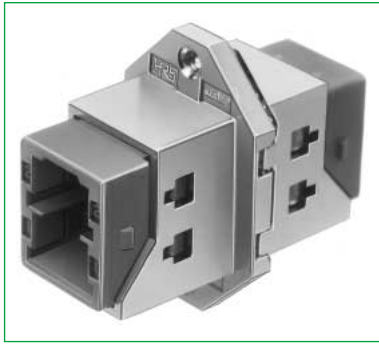
Harsh Environment

Attenuators

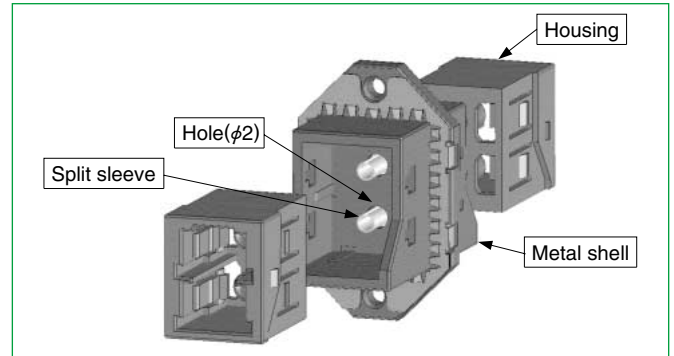
Terminators

## Enhanced Shielding Adapter

### Duplex shielding Adapter / Screw Panel Mounting



Part Number	CL No.	Split sleeve
HMUA-2AS-6	710-0209-9	Zirconia



### Shielding Effectiveness Example

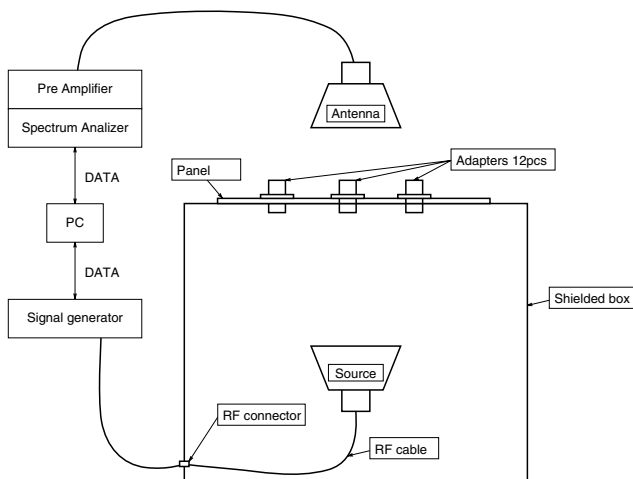
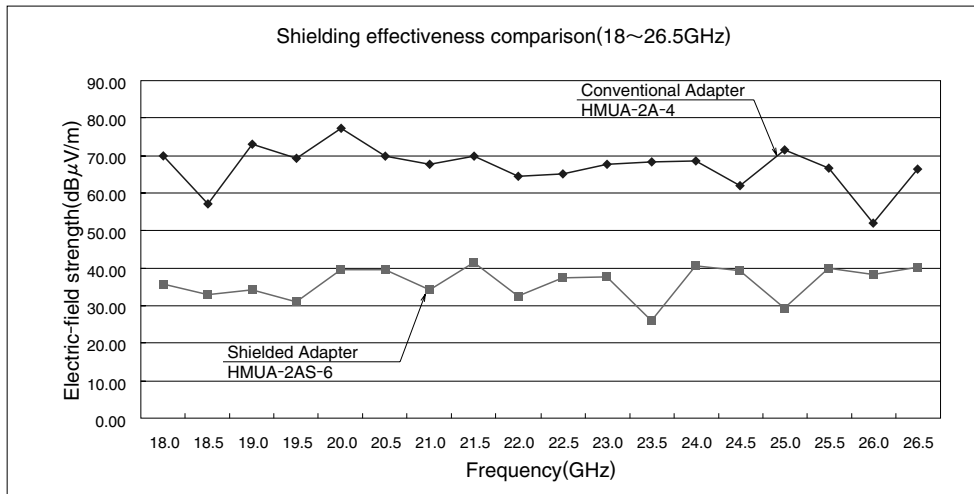


Fig.1 Measurement system

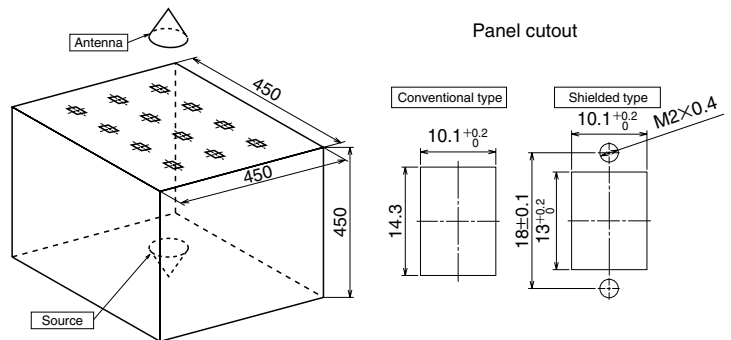
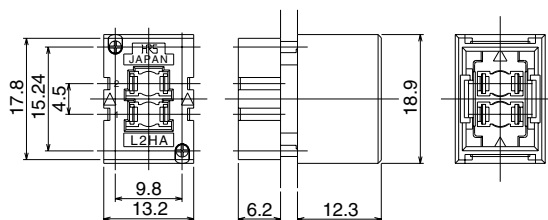


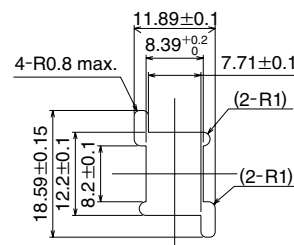
Fig.2 Shielded box

## ■ Backpanel side Connector Housings

### ● Duplex Backpanel side Connector Housing



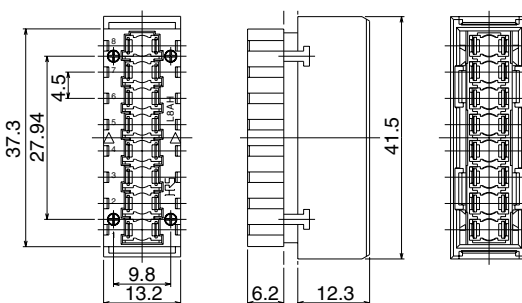
### ◆ Panel Cutout



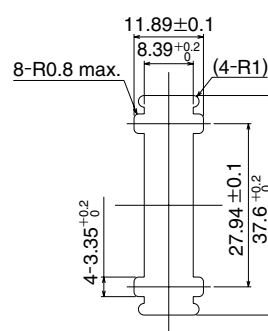
Part Number	CL No.	Panel thickness
HMUB-L2HA-1	710-0017-8	2.4mm
HMUB-L2HB-1	710-0018-0	3.2mm

Note: Screw fastening torque: 0.03Nm

### ● 8-Position Backpanel side Connector Housing



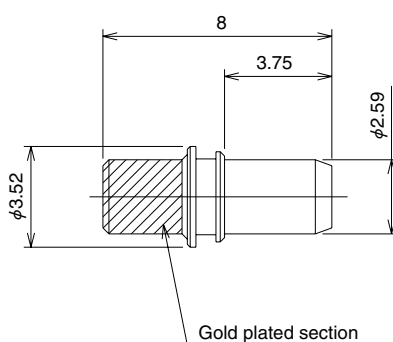
### ◆ Panel Cutout



Part Number	CL No.	Panel thickness
HMUB-L8HA-1	710-0019-3	2.4mm
HMUB-L8HB-1	710-0020-2	3.2mm

Note: Screw fastening torque: 0.03Nm

## ■ Sleeve Holder



Part Number	CL No.	Split sleeve
HMUB-SH-1	710-0021-5	Zirconia

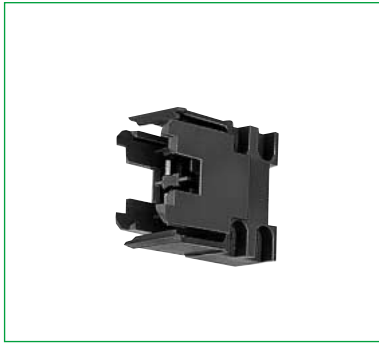
Note: This Sleeve Holder should be used for duplex and 8-position package side connector housing and J Plug Housing connector plug.

Insert the Sleeve Holder using dedicated tool #HMUB-TS-1.

The gold plated section of the Sleeve Holder should be inserted into the package side connector housing.

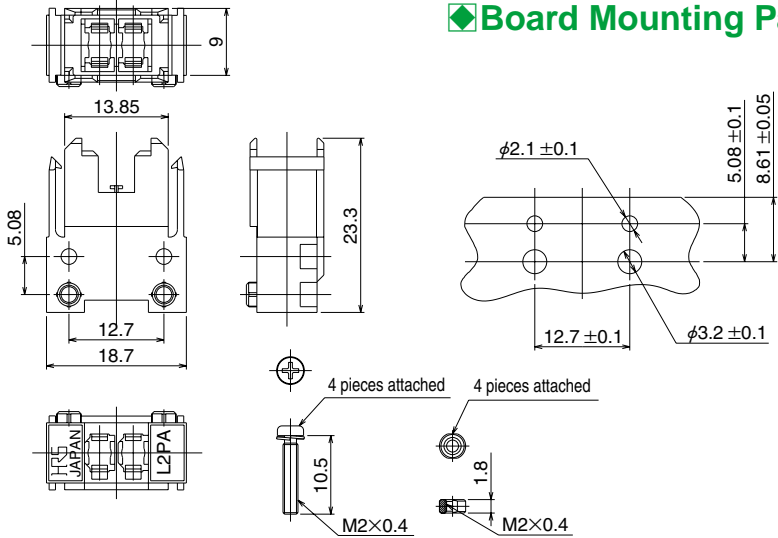
## ■ Package side Connector Housings

### ● Duplex Package side Connector Housing



Part Number	CL No.
HMUB-L2PA-1	710-0015-2

Note : Screw fastening torque : 0.15Nm



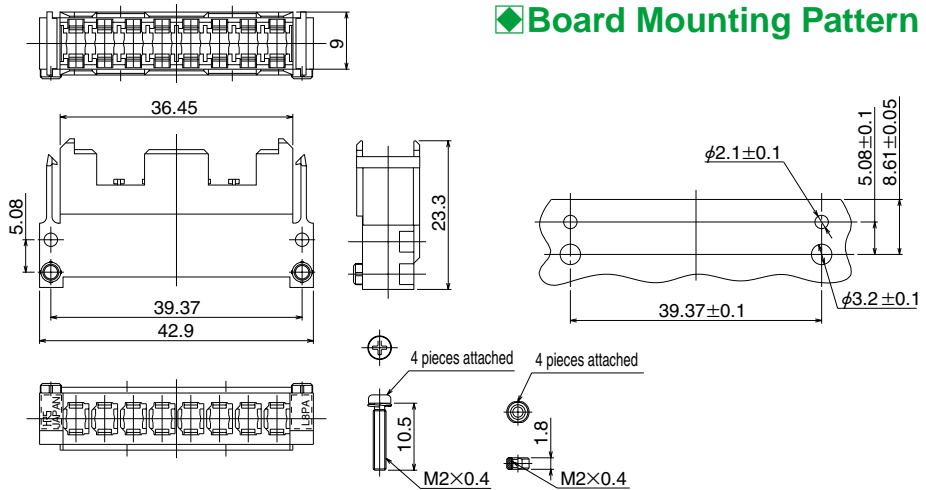
### ◆ Board Mounting Pattern

### ● 8-Position Package side Connector Housing



Part Number	CL No.
HMUB-L8PA-1	710-0016-5

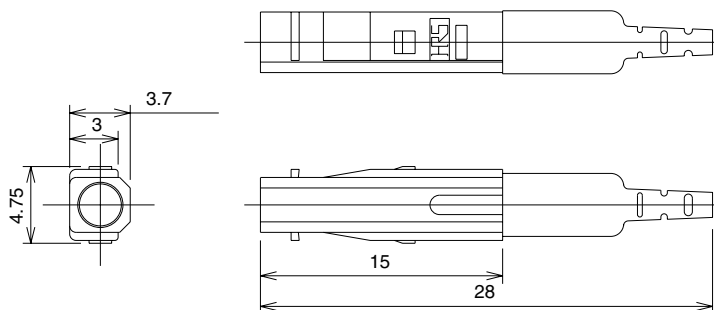
Note : Screw fastening torque : 0.15Nm



### ◆ Board Mounting Pattern

## ■ J Plug Housing

### ● Simplex J Plug Housing for 0.9mm fiber



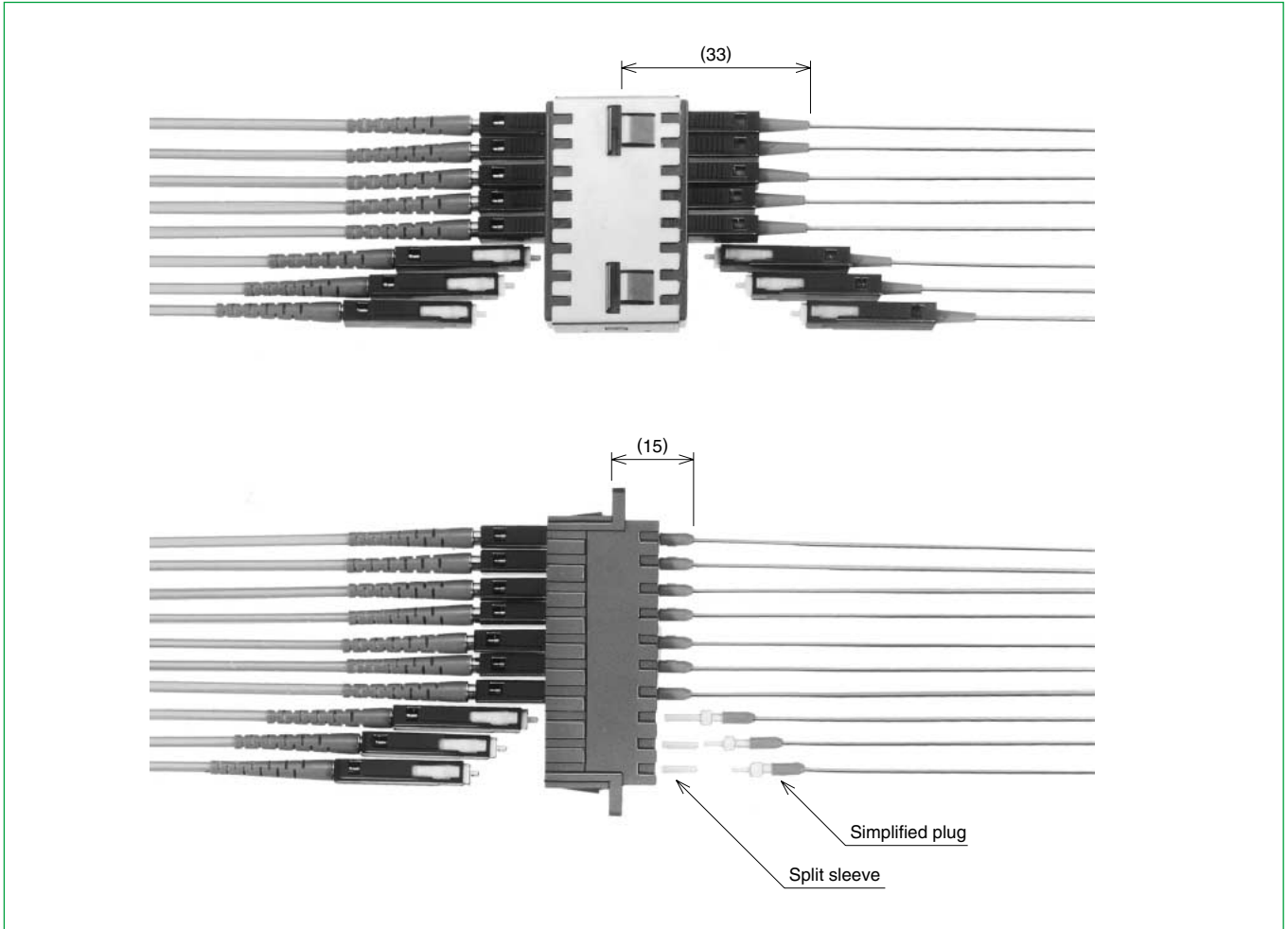
Part Number	CL No.	Boot color
HMUAJ-P0.9-H1(01)	710-0160-1-01	Blue
HMUAJ-P0.9-H2(01)	710-0161-4-01	Light purple

## Simplified Receptacles & Plug

### ■ Features

- Space saving

#### Installation image



MU

SC

FC

Harsh  
Environment

Attenuators

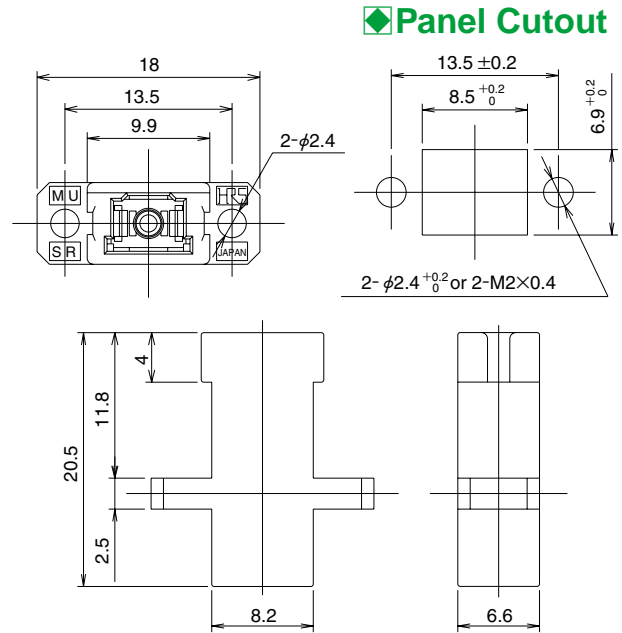
Terminators

## ■ Simplified Receptacles

### ● Simplex Simplified Receptacle / Screw Panel Mounting



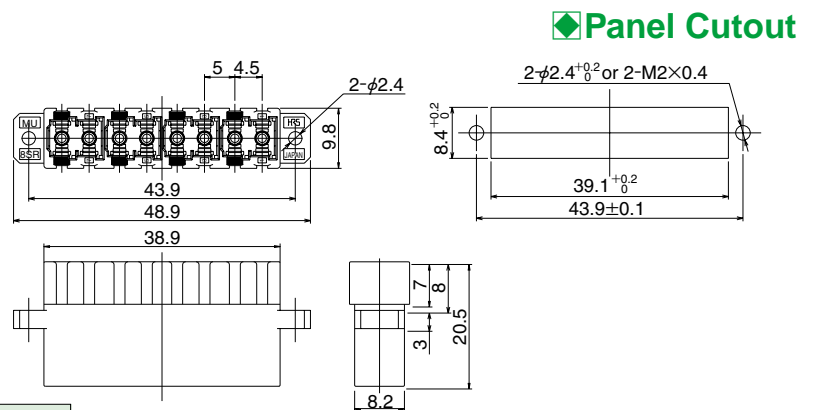
Part Number	CL No.	Split sleeve
HMUA-SR-1	710-0094-9	Zirconia
HMUA-SR-B1	710-0182-4	Copper alloy



### ● 8-position Simplified Receptacle / Screw Panel Mounting



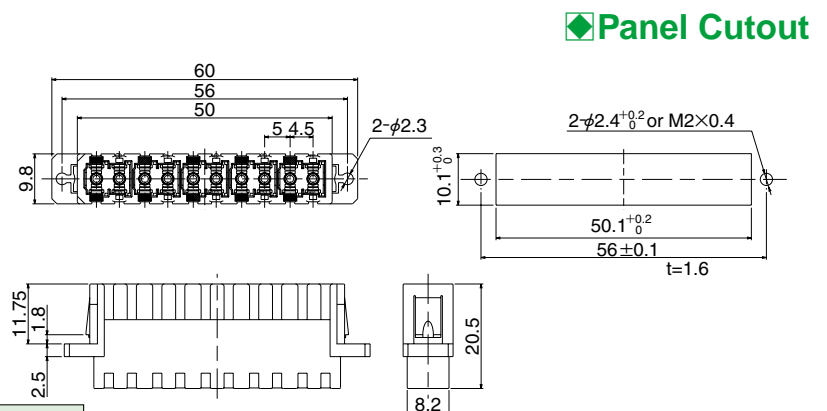
Part Number	CL No.	Split sleeve
HMUA-8SR-2	710-0172-0	Zirconia
HMUA-8SR-B2	710-0146-0	Copper alloy



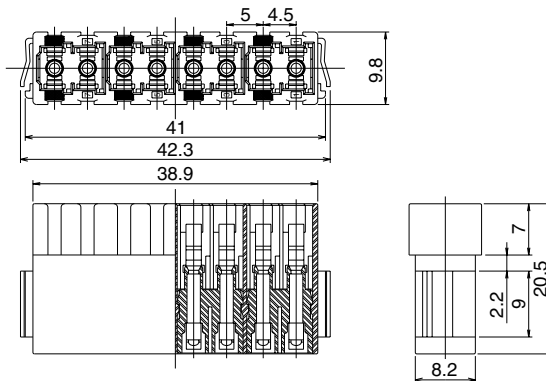
### ● 10-position Simplified Receptacle / Screw Panel Mounting



Part Number	CL No.	Split sleeve
HMUA-10SR-4	710-0193-0	Zirconia
HMUA-10SR-B4	710-0201-7	Copper alloy

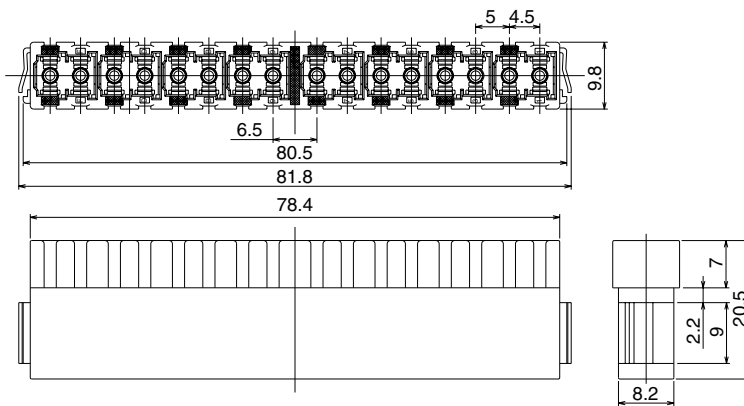
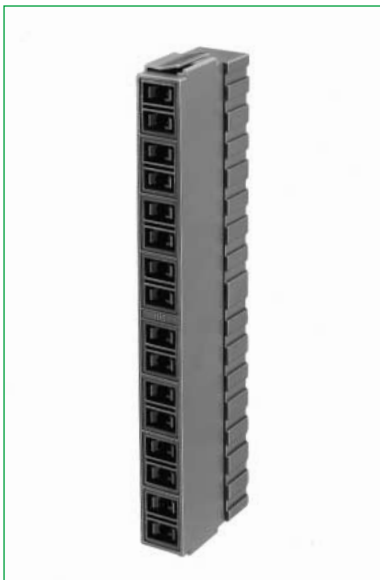


### ●8-position Simplified Receptacle - for extremely high density applications



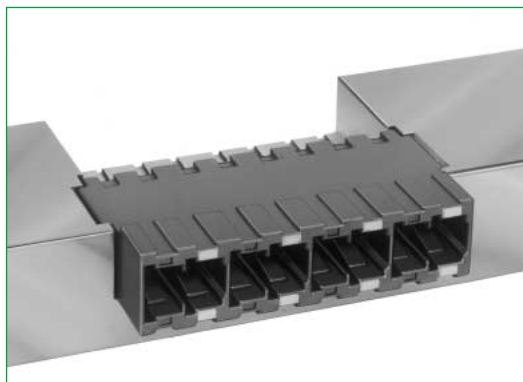
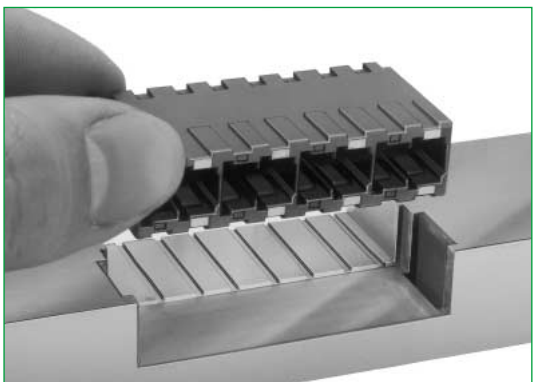
Part Number	CL No.	Split sleeve
HMUA-8SR-3	710-0168-3	Zirconia
HMUA-8SR-B3	710-0117-2	Copper alloy

### ●16-Position Simplified Receptacle - for extremely high density applications



Part Number	CL No.	Split sleeve
HMUA-16SR-5	710-0173-3	Zirconia
HMUA-16SR-B5	710-0122-2	Copper alloy

### ◆Mounting Example

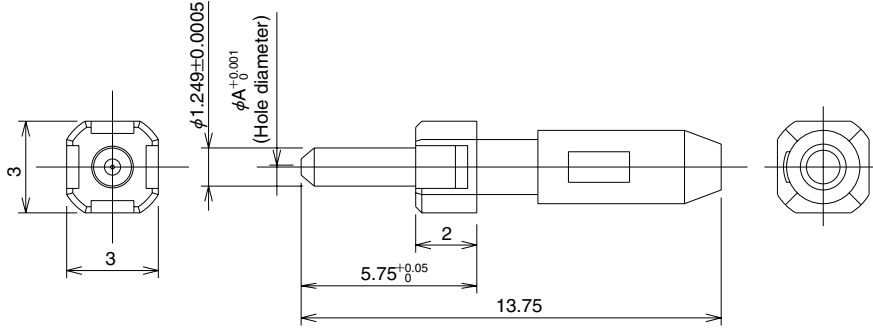


MU  
SC  
FC  
Harsh Environment  
Attenuators  
Terminators



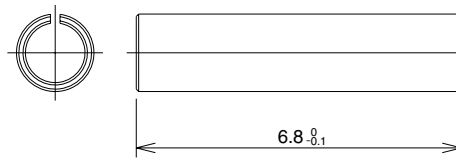
## Simplified Plug

● Simplex simplified Plug for 0.9mm fiber



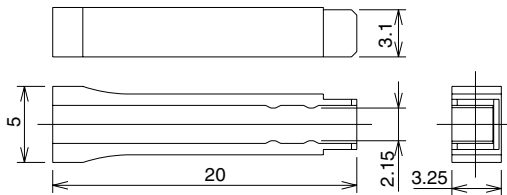
Part Number	CL No.	A dimension	Ferrule	Applicable Fiber cable
HMUA-FK-A125(04)	710-0099-2-04	0.125	Zirconia	SM, MM
HMUA-FK-A1255(04)	710-0107-9-04	0.1255		
HMUA-FK-A126(04)	710-0100-0-04	0.126		

## Split Sleeve



Part Number	CL No.	Split sleeve
HMUA-D(01)	710-0147-3-01	Zirconia
HMUA-SLIT-SLEEVE(01)	710-0130-0-01	Copper alloy

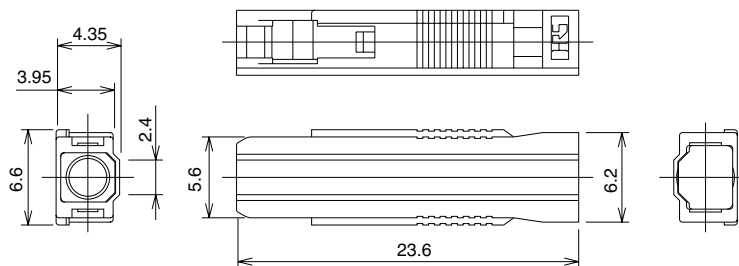
## Extraction Tool for Simplified Plug



Part Number	CL No.
HMUA-FK-T3	710-0148-6

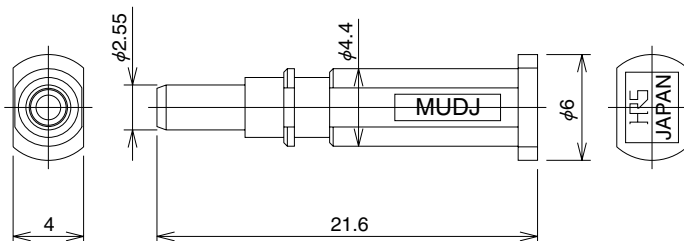
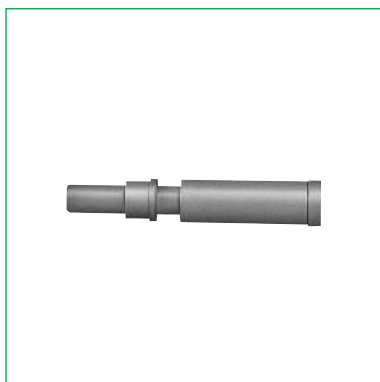
## Dust Caps

### Dust Cap for Backpanel side connector housings



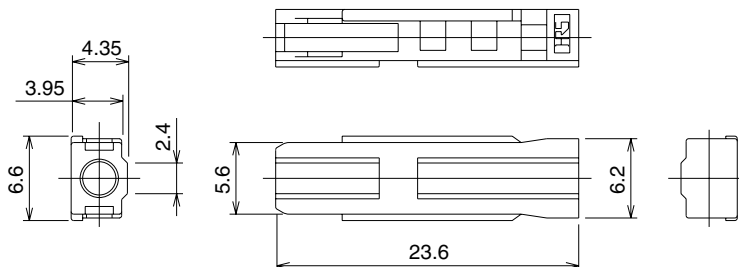
Part Number	CL No.	Applicable connector
HMUB-DP-1	710-0135-4	Back panel side housing

### Dust Cap for Package side connector housings



Part Number	CL No.	Applicable connector housing
HMUB-DJ-1	710-0060-7	HMUB-L2PA-1
		HMUB-L8PA-1

### Dust Cap for Adapters



Part Number	CL No.	Applicable connector
HMUA-DP-2	710-0131-3	Adapter, simplified receptacle

MU

SC

FC

Harsh Environment

Attenuators

Terminators

## ■Tools

### ●Insertion / Extraction Tool for Plug



Part Number	CL No.	Color of Tip	Remarks
HMUA-TP-1	710-0074-1	Blue	For Conventional Adapters
HMUB-TP-1	710-0075-4	Brown	For MU Backplane system

### ●Insertion / Extraction Tool for Plug Cost effective type



Part Number	CL No.
HMU/HEMD-1P	—

### ●Extraction Tool for J Plug



Part Number	CL No.
HMUB-TJ-1	710-0076-7

### ●Insertion / Extraction Tool for Sleeve Holder



Part Number	CL No.
HMUB-TS-1	710-0077-0

### ●Crimp Tools



Part Number	CL No.	Applicable plug housing
HT402/HMUA-P2-H2	902-6040-4	HMUA-P2-H2,H1
		HMUA-2P2-H2,H1

### ●Stop Ring Insertion Tool



Part Number	CL No.	Applicable connector
HMUA.J/PR-MD	902-6019-8	MU plug housings except HMUA-P1.1-H2

MU

SC

FC

Harsh  
Environment

Attenuators

Terminators