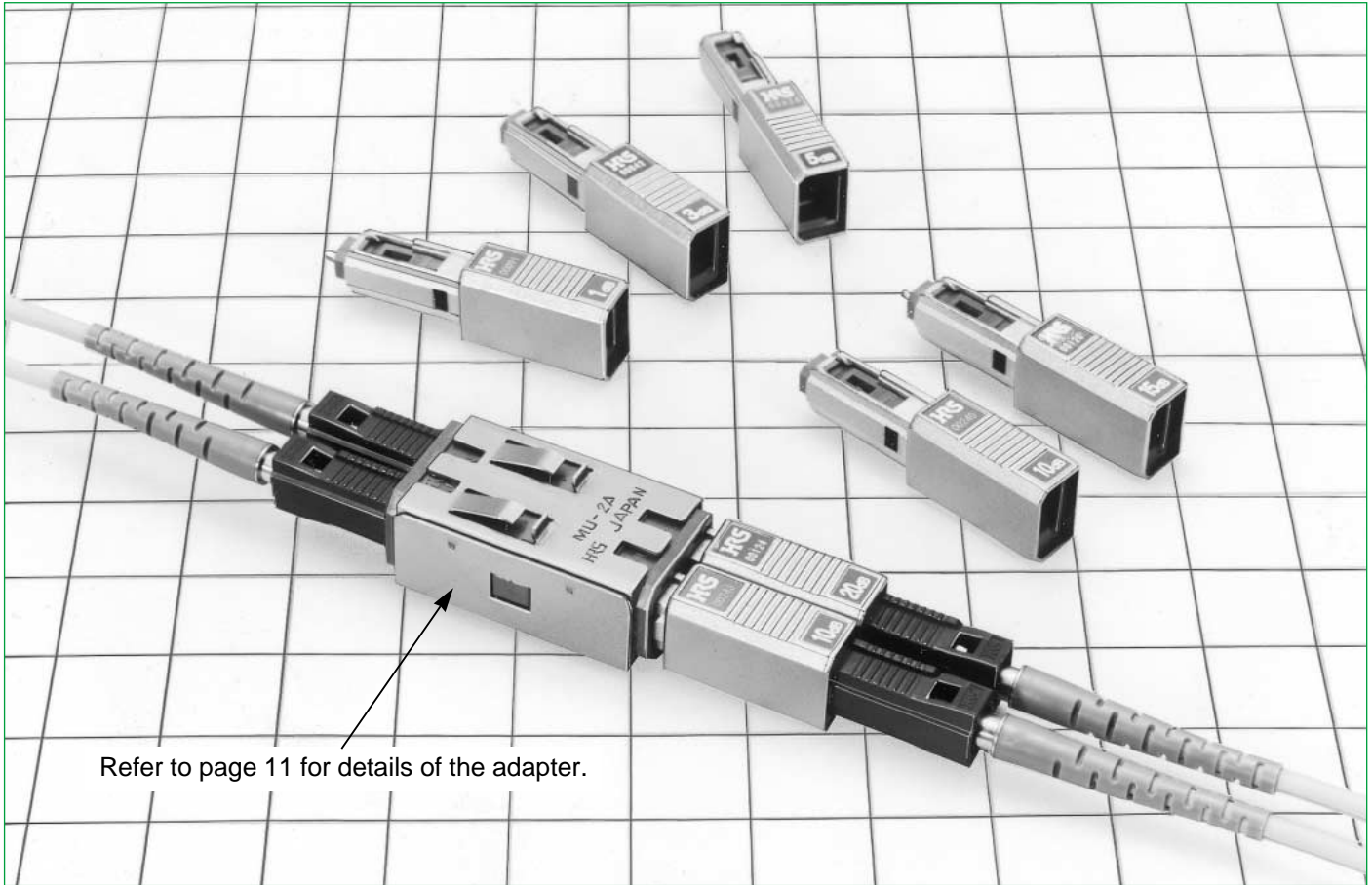


# MU-PJ Type Optical Fixed Attenuators



Refer to page 11 for details of the adapter.

## ■ Features

### 1. User friendly push-pull mechanism

Same push-pull operation mechanism as standard SC fixed attenuator.

### 2. Attenuation guaranteed over a wide bandwidth of $1310 \pm 30$ nm and 1510 to 1620 nm for WDM.

### 3. Attenuation deviation guaranteed over a wide bandwidth of $1310 \pm 30$ nm and 1510 to 1620 nm for WDM.

### 4. Attenuation level : 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20 dB

### 5. Maximum input power : 200mW

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

## ■ Applications

Power level adjustment of optical fiber communication networks.

## Product Specifications

Ratings	Operating temperature range	-25°C to +70°C	Storage temperature range	-40°C to +85°C
	Max. Input Power	200 mW	Fiber type	SM

Item	Test Method	Specifications			
Optical Characteristics	Wavelength : 1510 to 1620nm 1310 ±30nm	Operating temperature			
		-10°C to +60°C			
		-25°C to +75°C			
		0	+0.4dB	0	+0.4dB
		1,2	±0.5dB	1,2	±0.7dB
Attenuation		3,4,5	±0.8dB	3,4,5	±1.0dB
		6,7,8,9,10	±1.0dB	6,7,8,9,10	±1.2dB
		15	±1.5dB	15	±1.7dB
		20	±2.0dB	20	±2.2dB
Attenuation deviation (Wavelength dependence)	Difference between max and min attenuation value at the wavelength range of 1510 to 1620 nm and 1310 ±30nm	0dB : 0.4dB max. 1,2,3,4,5dB : 0.5dB max. 6,7,8,9,10dB : 0.75dB max. 15dB : 1.0dB max. 20dB : 1.5dB max.			
Return Loss	Measurement at a point within wavelength 1310 ±30nm and a point within wavelength 1550 ±30nm	≥40 dB min.			
Power test	Power : 200mW Time : 100 hours Laser : LD (Wavelength : 1470nm)	Attenuation and return loss shall be satisfied before, during and after the test.			
Mechanical Characteristics	Engagement and separation forces	Engagement and separation forces at 50mm/s	Engagement force : ≤ 20 N Separation force : ≤ 20 N		
	Gauge retention force	Zirconia gauge at φ 1.249 ±0.0005 mm	1.0 N to 2.5 N		
	Mating durability	Insertion and extraction number : 500			
	Impact test	5 times in each of three mutually perpendicular axis with the acceleration 981 m/s <sup>2</sup> . (Total : 30 times)	1) Attenuation and return loss shall be satisfied before and after the test. 2) No breakage, crack or looseness on components.		
Vibration	3 hours at an amplitude of 1.5mm with the frequency range 10 to 55 Hz in each of three mutually perpendicular plane	1) Attenuation and return loss shall be satisfied before, during and after the test. 2) No breakage, crack or looseness on components.			
Environmental Characteristics	Composite temperature -humidity cyclic test	Humidity : 90 to 96%, Temperature : -10 to 65°C, Time : 480 hours (20 cycles)			
	Change of temperature	Temperature: -40°C → -40°C to +80°C → +80°C → +80°C to -40°C Time : 60 → 60 → 60 → 60 (Minutes) 100 cycles	1) Attenuation and return loss shall be satisfied before and after the test. 2) No breakage, crack or looseness on components.		
	Dry	Temperature : 85°C, Time : 500 hours			
	Cold	Temperature : -40°C, Time : 500 hours			
	Salt Mist	Salt mist : 5%, Time : 48 hours	No corrosion.		

## Materials

Part	Material
Body	Zinc alloy
Ferrule	Zirconia
Split sleeve	Zirconia

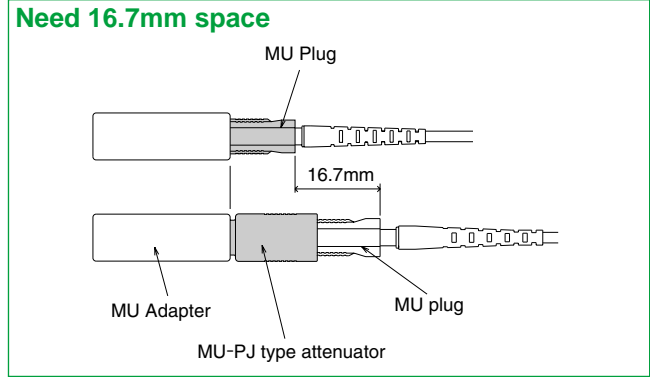
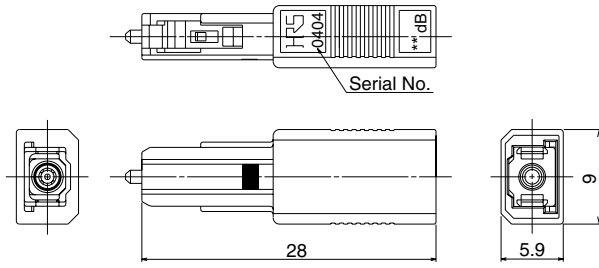
## Ordering Information

**HMU - PJAT 1 K - A \*\* R1**

①      ②      ③ ④      ⑤      ⑥      ⑦

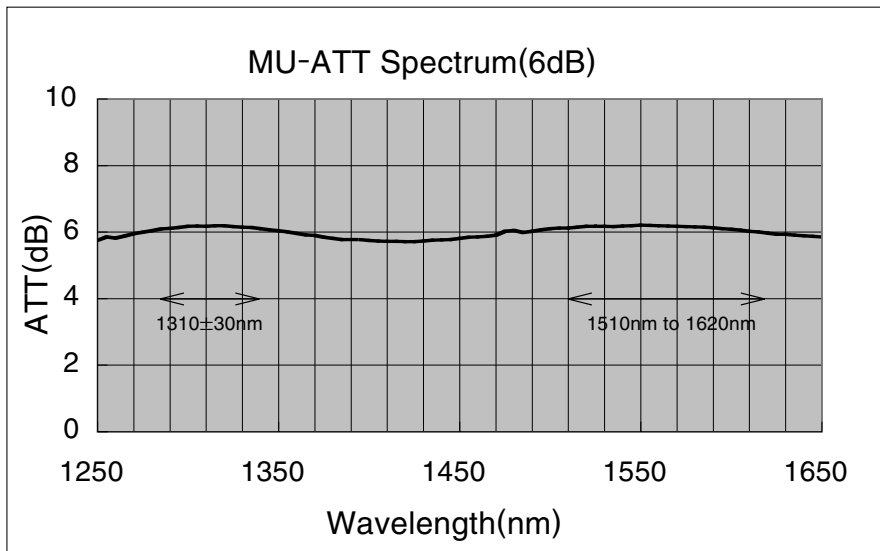
① Series name : HMU	⑤ Optical fiber code A:SM
② PJ type attenuator	⑥ Attenuation: 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 15, 20
③ Specification series	⑦ Bandwidth performance code
④ Polishing code K: AdPC (≥40dB)	

# MU-PJ Type Optical Fixed Attenuators



Part Number	CL No.	Attenuation	Attenuation Tolerance	Attenuation Deviation (Note1)	Return Loss	Wavelength Bandwidth	Split sleeve	Fiber type
HMU-PJAT1K-A00R1	828-0001-4	0dB	+0.4dB	Max 0.4dB	≥40dB	1310±30nm 1510 to 1620nm	Zirconia	SM
HMU-PJAT1K-A01R1	828-0002-7	1dB	±0.5dB	Max 0.5dB				
HMU-PJAT1K-A02R1	828-0003-0	2dB	±0.5dB	Max 0.5dB				
HMU-PJAT1K-A03R1	828-0004-2	3dB	±0.8dB	Max 0.5dB				
HMU-PJAT1K-A04R1	828-0005-5	4dB	±0.8dB	Max 0.5dB				
HMU-PJAT1K-A05R1	828-0006-8	5dB	±0.8dB	Max 0.5dB				
HMU-PJAT1K-A06R1	828-0007-0	6dB	±1.0dB	Max 0.75dB				
HMU-PJAT1K-A07R1	828-0008-3	7dB	±1.0dB	Max 0.75dB				
HMU-PJAT1K-A08R1	828-0009-6	8dB	±1.0dB	Max 0.75dB				
HMU-PJAT1K-A09R1	828-0010-5	9dB	±1.0dB	Max 0.75dB				
HMU-PJAT1K-A10R1	828-0011-8	10dB	±1.0dB	Max 0.75dB				
HMU-PJAT1K-A15R1	828-0016-1	15dB	±1.5dB	Max 1.0dB				
HMU-PJAT1K-A20R1	828-0021-1	20dB	±2.0dB	Max 1.5dB				

Note 1: Attenuation deviation is equal to the attenuation maximum value minus the attenuation minimum value over a wide bandwidth of 1310±30nm and 1510nm to 1620nm.



MU  
SC  
FC  
Harsh Environment  
Attenuators  
Terminators