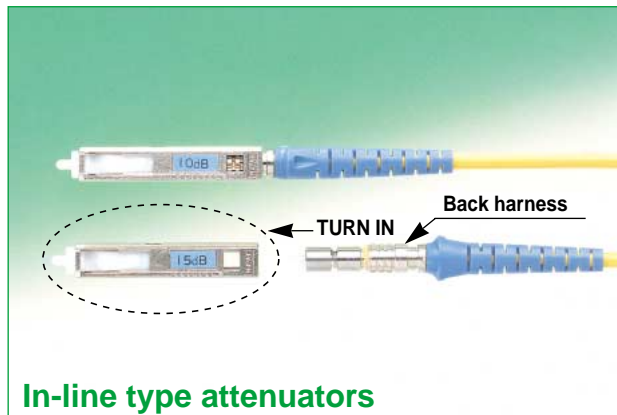
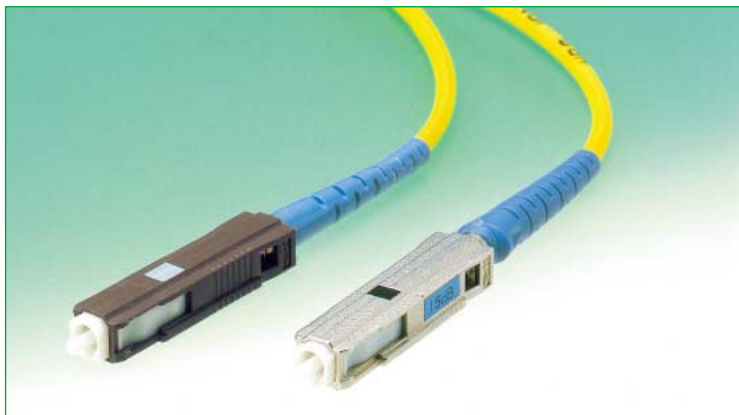


NEW

MU In-Line Type Attenuators



In-line type attenuators

■ Features

1. Reduced Cost and Smaller Package

Hirose's unique design combines a plug and an attenuator into the same package size of a standard MU plug. In contrast, a conventional attenuator adds not only a distance of 15.5mm to the system but also adds the cost of a separate component.

2. Easy to Change Attenuation Level

Change the attenuation level by exchanging the attenuation element with a simple push-twist motion. (see pg.4) Ten levels of attenuation are currently available: 0, 1, 2, 3, 4, 5, 6, 10, 15, and 20 dB.

3. Ganged Mounting Is Possible

The In-Line design of these attenuators, allows for gang mounting using the 4.5mm pitch MU multiple adapters.

4. Bend Resistance Characteristics Remain Excellent

■ Applications

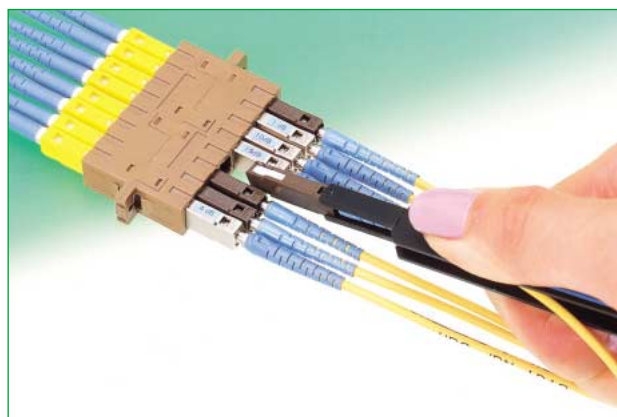
This product is intended for power level adjustment of optical transmission trunk lines.



Easy to change attenuation level



Ganged mounting is possible



■Product Specifications

Rating	Operation temperature range	-25°C to +70°C	Storage temperature range	-25°C to +70°C
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Item		Test Method (JIS C 5961)	Specification
Optical Performance	Return loss	Wavelength 1310 nm, 1550 nm	40 dB min. (AdPC)
	Attenuation		See the attenuation table on the next page.
Mechanical Performance	Insertion force and Withdrawal force	Measure the insertion and withdrawal forces between mutual connectors in the direction of the axis.	Insertion force 12.5 N max. Withdrawal force 12.5 N max.
	Adaptor split sleeve holding force	Zirconia gauge of 1.249 mm diameter ±0.0005 mm	Zirconia 1 N to 1.5 N
	Repetitive operation	500 cycles of connector insertion and withdrawal, 50 cycles of attenuation element insertion and withdrawal	①The specifications of the attenuation must be satisfied after the test. ②There must be no damage, cracks, or parts looseness.
	Vibration	Vibration range of 10 to 55 Hz in 3 directions for 2 hours each	
	Shock	Acceleration of 981 m/s ² In direction of 3 axes, 3 times each (18 times in total)	
Humidity resistance (Temperature and humidity cycle)	Temperature -10°C to +65°C Humidity 90% to 96% 10 cycles		
Environmental Performance	Temperature cycle	Temperature -25°C to +70°C for 100 cycles	①The specifications of the attenuation must be satisfied after the test. ②There must be no damage, cracks, or parts looseness.
	Heat resistance	Exposure of 500 hours at temperature of +85°C	
	Cold resistance	Exposure of 500 hours at temperature of -25°C	
	Salt spray	Exposed to a 5% concentration of salt fog for 48 hours	

■Material

Part	Material
Body	Zinc alloy
Ferrule	Zirconia
Split sleeve	Zirconia

■Ordering information

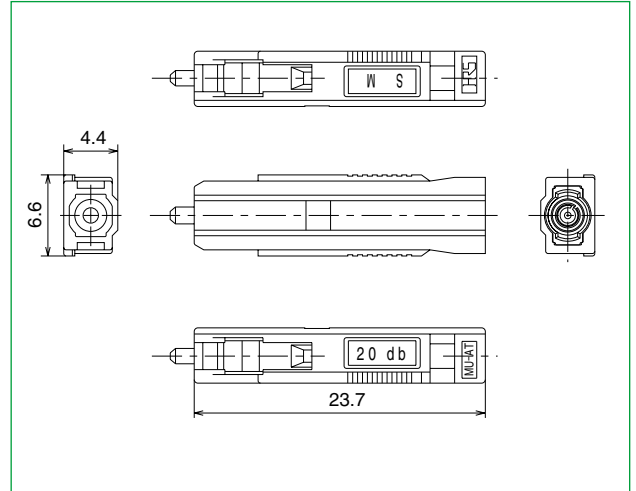
Please use the below part numbering scheme as a guide but order using the part numbers listed on Page 3

HMU - PAT - FH - K 1 01

①
②
③
④
⑤
⑥

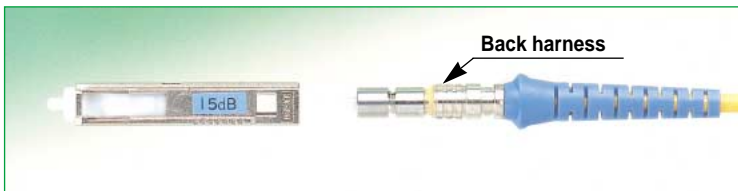
①	Series name	: JIS C 5983 (F14) compliant
②	Indicates a plug type attenuator	
③	Indicates the attenuation element	
④	Polishing type	K:AdPC
⑤	Applicable optical fiber	1:SM
⑥	Attenuation	00 :0 dB (Through) 01 to N : Attenuation (dB)

In-Line Type Attenuators



Attenuation	Specification	Part No.	CL No.
0dB	0.5 dB max.	HMU-PAT-FH-K100	CL827-0001-8
1dB	Nominal value ± 0.5 dB	HMU-PAT-FH-K101	CL827-0002-0
2dB		HMU-PAT-FH-K102	CL827-0003-3
3dB	Nominal value ± 0.8 dB	HMU-PAT-FH-K103	CL827-0004-6
4dB		HMU-PAT-FH-K104	CL827-0005-9
5dB		HMU-PAT-FH-K105	CL827-0006-1
6dB		HMU-PAT-FH-K106	CL827-0007-4
10dB	Nominal value ± 1.2 dB	HMU-PAT-FH-K110	CL827-0008-7
15dB	Nominal value $\pm 10\%$ dB	HMU-PAT-FH-K115	CL827-0009-0
20dB		HMU-PAT-FH-K120	CL827-0010-9

Back Harness (2 mm diameter optical cable Type)



Back Harness (2 mm diameter optical cable)

The back harness is assembled by Hirose.

Please contact your Hirose sales representative for details concerning your harness needs, including cable length and mating connector requirements.

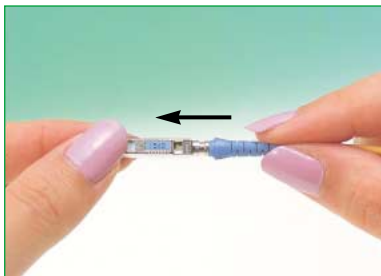


◆ Procedure for Changing the Attenuator Element

Insertion Procedure



- 1 Align the triangle mark of the hood on the back harness with the black indexing mark on the attenuator.



- 2 Insert the back harness into the attenuator.

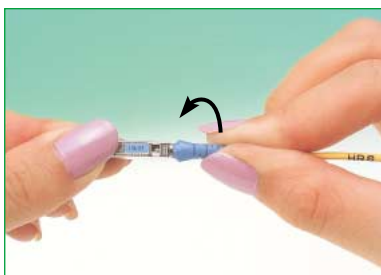


- 3 Turn right the back harness to engage connection lock. After turning, the triangle mark of the hood will be aligned with the attenuation label.

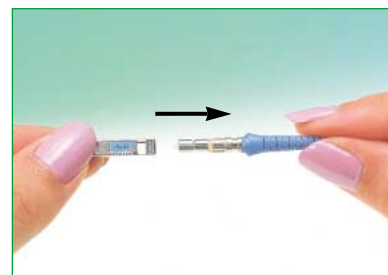
Withdrawal Procedure



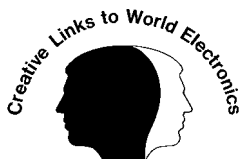
- 1 Press the back harness toward the attenuator.



- 2 Turn right the back harness and release the lock.



- 3 Disconnect the back harness by pulling it away from the attenuator.



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