

IA1 Series Instrumentation Attenuators

Description

The IA1 Series Instrumentation Attenuators are compact precision attenuators for use in test instruments and equipment assemblies. They are particularly suitable for panel mounting.

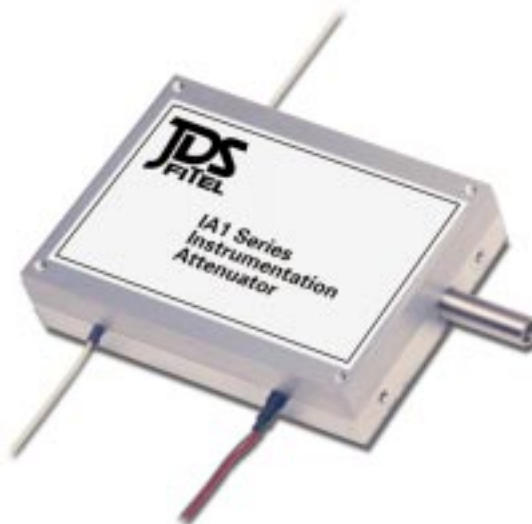
The outstanding optical performance features of the IA1 attenuators are high repeatability, precision setting, wide dynamic range of attenuation, and a coupled potentiometer for calibration and feedback. The attenuators are available in both single-mode and multimode fiber versions, and optical performance is optimized for the long (1200 to 1625 nm) or short (750 to 850 nm) wavelength ranges.

Two attenuating elements are offered: a graded neutral density filter or a linear absorbing glass prism.

The packaging of the IA1 attenuators facilitates incorporation into instrumentation or rack-mounted equipment. The attenuation is adjusted by turning a shaft, which allows adjustment from 0 to 60 dB. User calibration of the attenuation setting is accomplished with the built-in potentiometer, which is precisely linked to the mechanical movement and accessed through electrical outputs. The size and mechanical mounting of the packages permit simple mounting in standard 3U or larger cassettes for modular equipment assemblies.

The IA1 Series attenuators are available with an analog option with high return loss and low spectral ripple for CATV AM systems. Attenuators with this option have extra-smooth wavelength response to avoid causing distortion, and they also have >60 dB return loss.

In addition, the IA1 Series attenuators are available with an optional built-in beam-blocking switch, which provides rapid attenuation change from any attenuation setting to infinite attenuation and protects devices placed at the output from harmful optical damage.



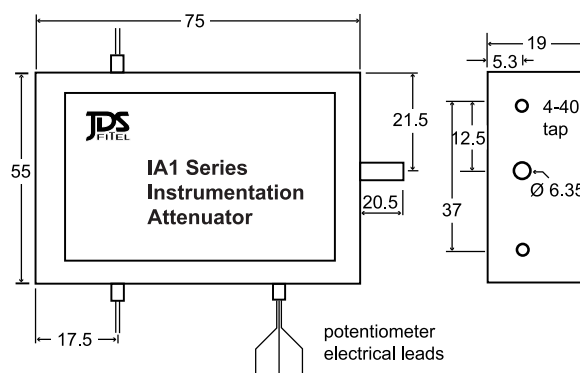
Key Features

- Return loss to >60 dB
- Continuously adjustable to 60 dB
- Single-mode or multimode
- Fits standard 3U cassette
- Neutral density filter or linear absorbing glass prism

Applications

- Test instrumentation
- Modular equipment assemblies
- Power control in network trials

Dimensions (mm)



Specifications

Parameter ¹		Neutral Density Filter	Linear Glass Prism
Wavelength ranges		1200 to 1625 or 750 to 850 nm	1200 to 1625 nm
Attenuation range		≥60 dB	
Attenuation	repeatability ²	±0.02 dB typical, ±0.1 dB maximum	
Insertion loss ^{3,4}	SM	≤1.5 dB	≤2.0 dB
	MM, 50/125	≤1.5 dB	≤2.2 dB
	MM, other	≤1.5 dB	≤2.9 dB
Return loss ³	SM	>45 dB	>45 dB
	SM, analog	N/A	>60 dB
	MM, 50/125	>35 dB	>35 dB
	MM, other	>30 dB	>30 dB
Maximum optical input power		200 mW	
Polarization dependent loss		0.10 dB typical, ≤0.25 dB maximum	0.03 dB typical, ≤0.1 dB maximum
Wavelength dependence ⁵ (1200 to 1610 nm)		12% maximum	10% maximum
Potentiometer resistance		10 kΩ nominal	
Potentiometer linearity ⁶		±1%	
Beam block option	isolation	>100 dB	
	speed	>50 ms	
Shaft rotation	wide range	≥9 turns for 60 dB range ≥3° for 0.1 dB typical 5° for 0.1 dB	≥12 turns for 65 dB range 5.1 dB/rev @1310 nm 4.75 dB/rev @1550 nm
Buffer diameter		900 μm	
Dimensions (WxHxD)		75 x 19 x 55 mm	
Operating temperature		-10 to 50 °C	
Storage temperature		-40 to 70 °C	
Humidity		≤95% from -40 to 40 °C, decreasing 3% per °C from 40 to 70 °C	

1. Measured at room temperature with an 830 or 1300 nm source laser (as appropriate).

2. Using built-in potentiometer.

3. Not including connectors, if installed.

4. Over 1200 to 1610 nm insertion loss is typically highest at wavelength extremes.

5. Percentage change in attenuation measured in dB.

6. Over operating wavelength range.

Ordering Information

Indicate your application requirements by selecting one option from each configuration table. Please print the corresponding codes in the available boxes to form your part number. For more information on this or other products and their availability, please contact your local JDS FITELE sales representative or JDS FITELE directly by phone at (613)727-1303, by fax at (613)727-8284, or via e-mail at sales@jdsfitel.com.

Sample: IA17D+10K0FP1.5

IA1 +1 .

Code	Fiber Type (μm)
1	50/125
2	62.5/125
4	100/140
7	9/125

Code	Attenuating Element
0	Neutral density filter
5	Linear glass prism

Code	Return Loss (>)
K	Low (45 dB)
A	Analog (60 dB)

Code	Connector Type
NC	No connector
FP	FC/HPC
FA	FC/APC
SC	SC/HPC
SU	SC/APC
SP	ST/HPC

Code	Length
0.1	0.1 meters
...	...
...	...
...	...
1.5	1.5 meters (standard)
...	...
...	...
...	...
9.9	9.9 meters

Code	Wavelength Range (nm)
A	750 to 850 (neutral density filter only)
D	1200 to 1625

Code	Beam Block
0	Without
1	With

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