

Anritsu

Optical Handy Power Meter

ML9002A



Now, an accurate, multifunctional Optical Power Meter with a wide measurement level, comparable to more expensive instruments, has been developed.

The ML9002A is a compact handy optical power meter with a measurement level as wide as other more expensive instruments. Seven optical sensors are available for different wavelengths, measurement levels, and optical input types. Each can be calibrated for three common wavelengths so absolute optical power can be read directly. Each optical sensor can either be incorporated directly in the mainframe or connected using a connecting cord. The ML9002A can be used to check optical disks, optical printers and optical communications systems and can back-up on-site operations as a powerful multifunctional measuring instrument for maintenance.

Features

● Accurate optical power measurement

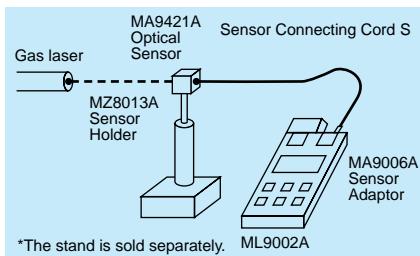
The power of a narrow beam can be accurately measured even when an adaptor is changed because anti-reflection optical sensor is used.

● Long-distance measurement with wide measurement level range

An unprecedented wide measurement level has been achieved in this handy optical power meter. Optical power of -70 to +3 dBm (MA9621A) in the 1.3 μm band and -70 to +10 dBm (MA9423A) in the 0.85 μm band can be measured.

Applications

● Beam travelling through free space



The optical sensors can be used remotely from the mainframe with the MA9006A Sensor Adaptor, MZ8013A Sensor Holder and Sensor Connecting Cord S.

● Direct absolute power readings for three wavelengths

Each optical sensor is calibrated at three wavelengths (0.633/0.78/0.85 μm , 0.66/0.78/0.85 μm for short wavelengths, and 0.85/1.3/1.55 μm for long wavelengths). The absolute power is indicated automatically just by switching to the measured wavelength.

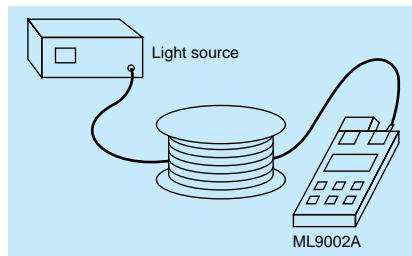
● Flexible measurements

Two types of connections, a plug-in system (sensor incorporated into mainframe), or a cord system (sensor connected using connecting cord), are possible so that measurement capabilities are flexible.

● Compatible with various connectors

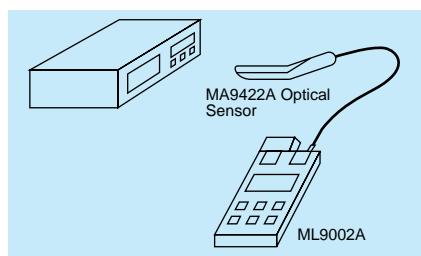
The ML9002A can be quickly connected to FC, ST, DIN, HMS-10/A, and SC connectors just by replacing the connector adaptor.

● Optical fiber maintenance

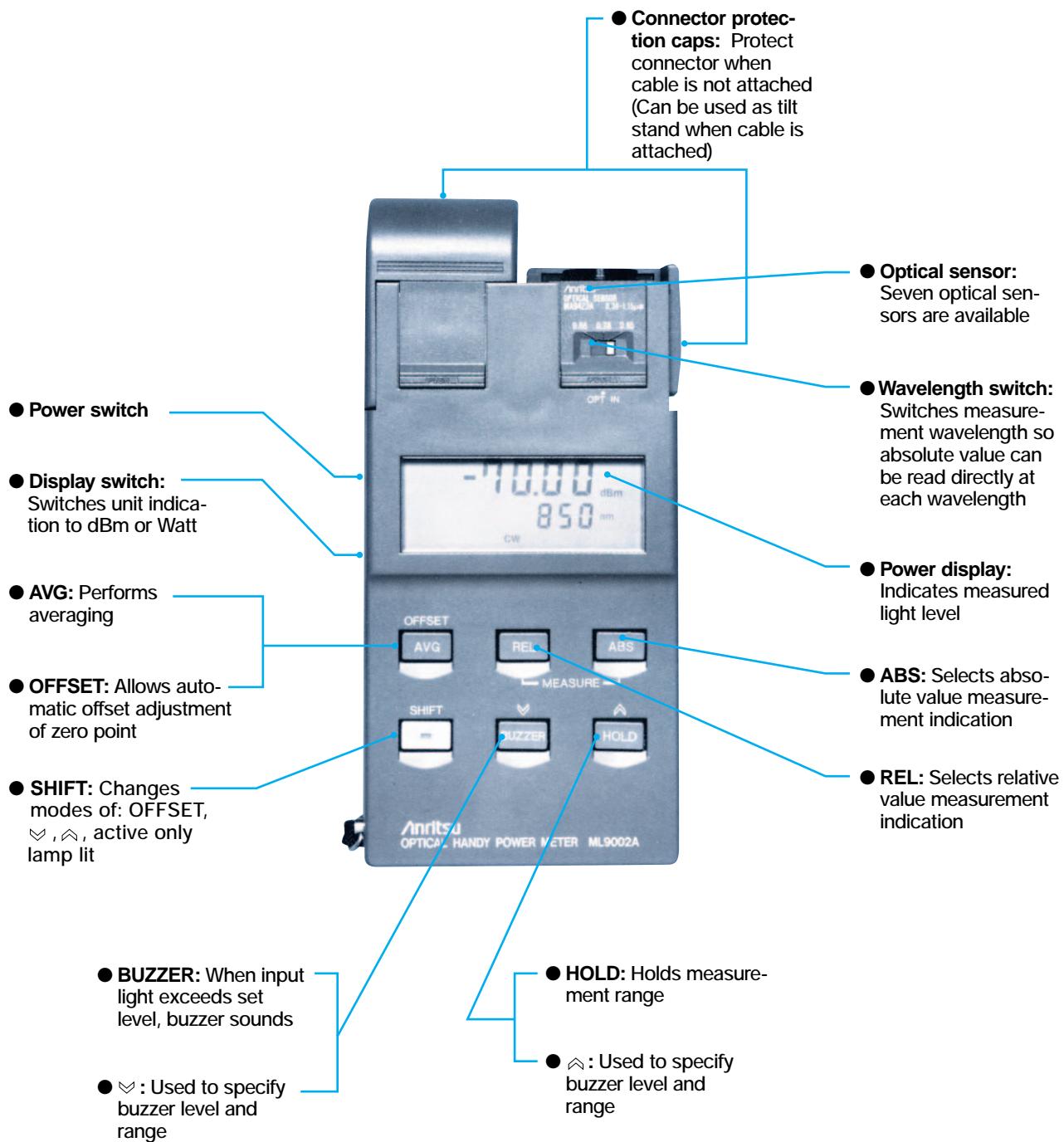


Since each sensor can be housed in the mainframe, the unit is easy to handle and is suitable for maintaining optical fibers, etc.

● Thin sensor



The MA9422A Optical Sensor is only 3 mm thick at the tip so it can measure power in confined places.

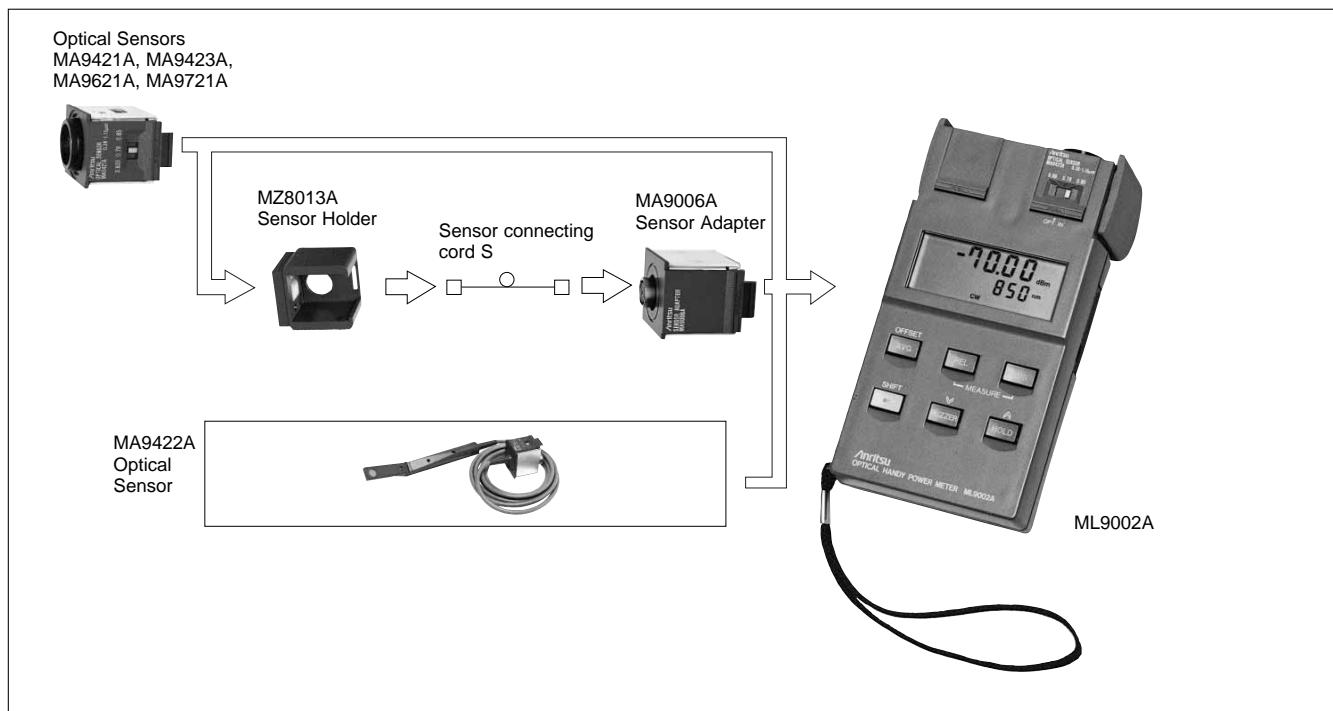


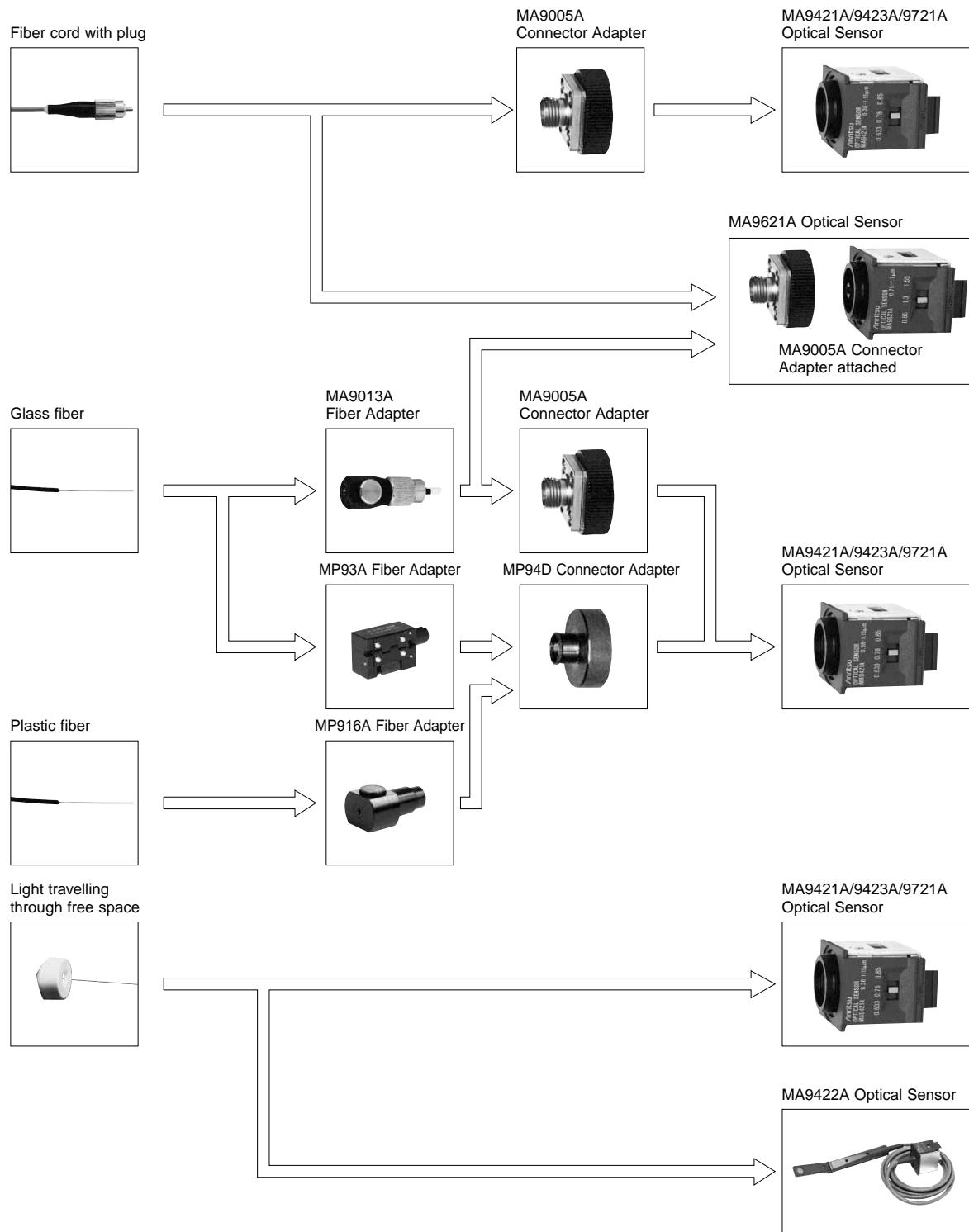
Specifications

Main frame	Unit display	W, W(REL), dBm, and dB(REL), selectable, 4 digits			
	Recorder output	1 V/full-scale, 0.316 V/–5 dB			
	Averaging	ON/OFF settings			
	Range hold	Range settings			
	Buzzer	1 dB sound threshold level setting			
	Auto power off	After 5 minutes non-use (with internal Ni-Cd battery)			
	Dimensions and mass	90 (W) x 196 (H) x 38 (D) mm, ≤700 g			
Sensors	Model	MA9421A	MA9422A	MA9423A	MA9621A
	Wavelength	0.38 to 1.15 μm			0.75 to 1.7 μm
	Element	Si photodiode			InGaAs photodiode
	Active area diameter	9.5 mm	9 mm	9.5 mm	1 mm
	Input	Direct			FC connector adapter ^{*1}
	Measurement range (dBm)	–60 to +20 (at 0.85 μm)	–50 to +20 (at 0.85 μm)	–70 to +10 (at 0.85 μm)	–70 to +3 (at 1.3 μm)
	Dimensions and mass	30 (W) x 30 (H) x 37 (D) mm, ≤100 g	15 (W) x 16 (H) x 140 (D) mm, ≤200 g	30 (W) x 30 (H) x 37 (D) mm, ≤100 g	
Overall	Measurement accuracy	±5% (–10 dBm, CW mode)			±5% (–10 dBm, CW mode) ^{*2}
	Calibration wavelength	0.633/0.78/0.85 μm		0.66/0.78/0.85 μm	0.85/1.3/1.55 μm
	Measurement resolution	W/W(REL): 0.1 to 1%, dBm/dB(REL): 0.01 dB			
	Operating hours	20 hr or more, floating operation possible (on internal Ni-Cd battery)			
	Temperature range	Operating: 0° to +50°C, Storage: –30° to +50°C, Recharging: +10° to +45°C			
	EMC	EN61326: 1997/A2: 2001 (Class A), EN61000-3-2: 2000 (Class A), EN61326: 1997/A2: 2001 (Annex A)			
	LVD	EN61010-1: 2001 (Pollution degree 2)			

*1: Used for NA ≤0.29, core diameter fiber ≤62.5 μm

*2: For 1.55 μm wavelength, it is specified at 23° ±5°C





Ordering Information

Model/Order No.	Name	Remarks
ML9002A	Main frame Optical Handy Power Meter	
MA9421A MA9422A MA9423A MA9621A MA9721A	Optical sensors Optical Sensor Optical Sensor Optical Sensor Optical Sensor (MA9005A Connector Adapter attached) Optical Sensor	0.38 to 1.15 mm, -60 to +20 dBm 0.38 to 1.15 mm, -50 to +20 dBm (Thin sensor) 0.38 to 1.15 mm, -70 to +10 dBm 0.75 to 1.7 mm, -70 to +3 dBm 0.75 to 1.8 mm, -40 to +10 dBm
Z0178	Standard accessories AC adapter: 1 pc Power cord: 1 pc Blank panel: 1 pc ML9002A instruction manual: 1 copy Auto-power-off override plug: 1 pc	
B0232 W0400CE J0477		
MA9005A* MA9006A MP93A MP94D MA9013A MZ8013A J0056B J0200B J0436 J0438 Z0179 Z0182 B0234	Optional accessories Connector Adapter Sensor Adapter Fiber Adapter Connector Adapter Fiber Adapter Sensor Holder FC-FC-2M-SM, 2 m FC-FC-2M-GI, 2 m Sensor connecting cord S Recorder output cord Carrying case (with shoulder strap) Soft case Battery box	For optical sensor For sensor connecting cord S/T ≤150 µm clad dia., 0.8 to 1.0 mm jacket dia. For MP93A and MP916A 125 mm clad dia., 0.25 to 1 mm jacket dia. For fixing MA9421A/9423A/9621A/9721A FC optical fiber cord, SM fiber FC optical fiber cord, GI fiber For ML9002A sensors

*: Choose from the options listed in the following table when ordering non-FC optical connector.

Optical Connector Options Table

Model		Connector option number								
		32	33	37	38	39	40	41	42	43
	MU* ¹	LC* ¹	FC	ST	DIN47256	SC	TOCP172* ²	HFS-13/A (GI)* ²	HMS-10/A (SM)* ¹	
Optical power sensors	MA9421A	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MA9422A	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MA9423A	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MA9621A	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MA9721A	✓	✓	✓	✓	✓	✓	✓	✓	✓

*1: Ferrule type; PC *2: Ferrule type; Flat

No marking: Ferrule type; Flat and PC.



Specifications are subject to change without notice.

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