

AQ2200 Series Optical Power Meters

AQ2200-211 Sensor Module
 AQ2200-201 Interface Module
 AQ2200-231 Optical Sensor Head
 AQ2200-241 Optical Sensor Head



Optical Power Meters for Improved Measurement Throughput

- High Accuracy and linearity
- High-speed sampling: 10,000 points per second
- Low polarization dependence: 0.005 dBp-p or less (AQ2200-211)
- Low noise: 0.2 pW or less (AQ2200-211)
- Configure the desired measurement system by combining AQ2200 Series modules with Yokogawa optical communications measuring instruments

Please note the following when purchasing
 AQ2200 Series optical power meters.

* The AQ2201 or AQ2202 frame controller must also be purchased in order to use an AQ2200 optical power meter.

* See the AQ2201/AQ2202 catalog for details on the specifications of the AQ2201 or AQ2202 frame controller in which your AQ2200 optical power meter is to be installed.

Bulletin AQ2200-211E

Sensor Module Interface Module Optical Sensor Head

AQ2200-211
AQ2200-201
AQ2200-231/AQ2200-241

High-Sensitivity Long-Wavelength Sensor
AQ2200-211

Large-Diameter Long-Wavelength Sensor
AQ2200-231

Large-Diameter Short-Wavelength Sensor
AQ2200-241

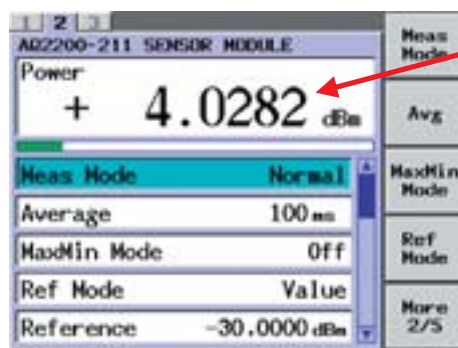
The rapid deployment of FTTx in recent years has increased the demand for low-priced optical components available in large volumes. This has increased the need for improved production throughput. AQ2200 Series optical sensors help improve throughput significantly by enabling high-speed measurements, low-polarization-dependence measurements, and multi-function data processing.

Optical Power Meter



Features

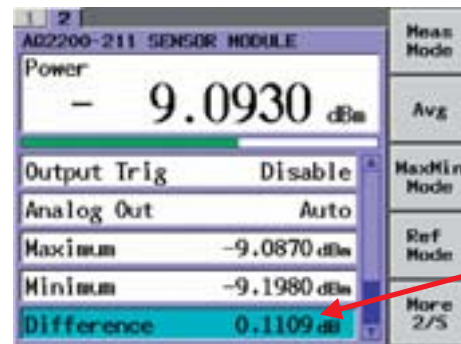
High-resolution display of measurement results



Measurement results are shown to the fourth digit after the decimal point.

Accurately measure polarization dependence loss (PDL)

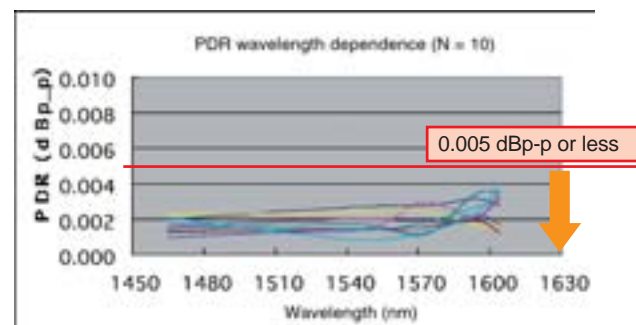
The polarization dependence of the sensor modules is maintained at 0.005 dBp-p or less, enabling accurate measurements of polarization dependence loss.



Check polarization dependence loss at a glance.

Evaluate power fluctuation in multi-channel optical signals

Data can be acquired at intervals as short as 100 μ s with all installed sensors synchronized. In addition, the large-capacity memory holds up to 20,000 data points per channel. These features make it possible to evaluate power fluctuation in numerous optical signals (up to nine sensors). Obtained data can be saved to a Compact Flash (CF) card.

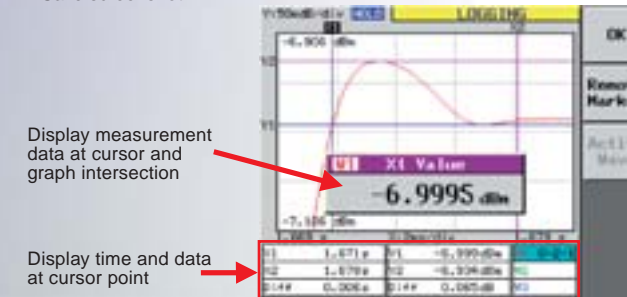


A variety of optical power fluctuation waveform evaluation functions

A variety of waveform evaluation functions are included. These functions make it possible to display and record waveforms directly, whereas in the past a device such as an O/E converter or oscilloscope was required.

Included Functions

- Real time waveform display
- Enlarge or reduce displayed waveform
- Calculate data between cursors
- Display measurement value at cursor position
- Save screenshot



Display measurement data at cursor and graph intersection

Display time and data at cursor point

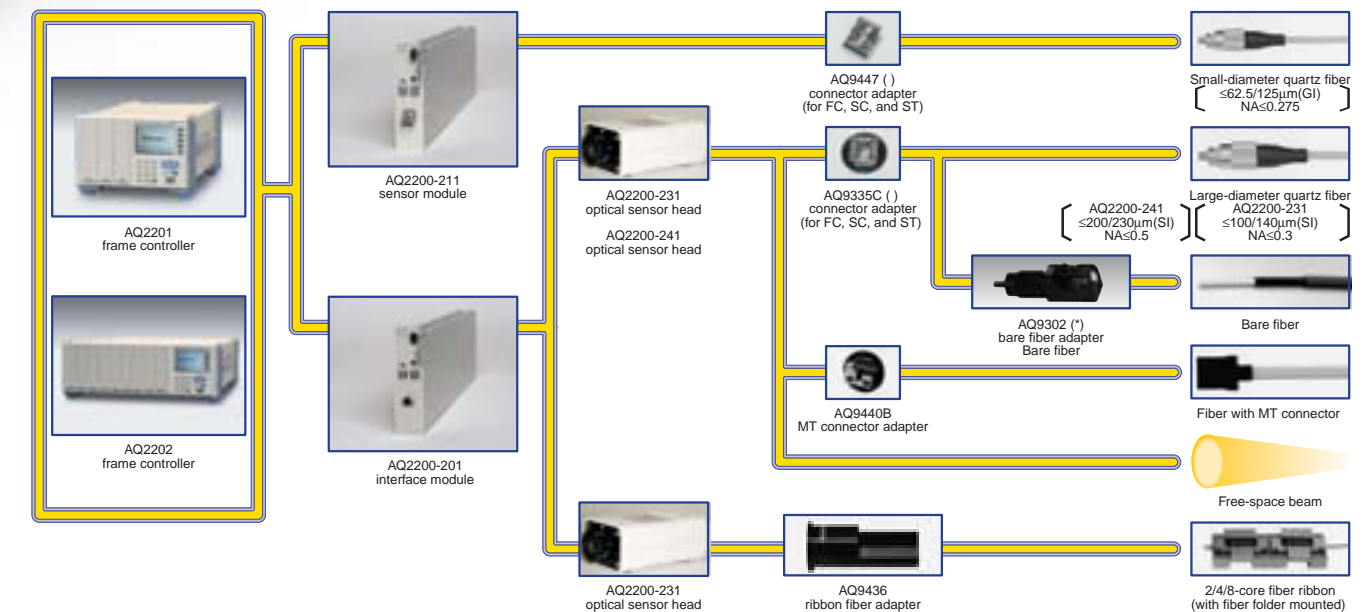


Save screenshots in bitmap format on a CF card.

Obtain long-term stability measurement results without using a PC

The stability function can be used to obtain stability data over a 24-hour period, and to save the obtained data to a CF card. This function eliminates the need to write a data acquisition program operating through the GP-IB interface.

Example Configuration



Specifications

AQ2200-211 sensor module

Item	Product specifications
Detector type	InGaAs
Wavelength range	700–1700 nm
Power range	CW light: -110 to +10 dBm Chop light: 110 to +7 dBm
Applicable fiber type	$\leq 62.5/125 \mu\text{m}$ (GI), NA ≤ 0.275
Uncertainty under reference conditions	$\pm 2\%$
Total uncertainty	$\pm 3.5\% \pm 0.5 \text{ pW}$
Polarization dependence	0.005 dBp-p or less
Linearity	$\pm 0.015 \text{ dB} \pm 0.2 \text{ pW}$
Noise level	0.2 pW or less
Averaging time (minimum)	100 μs
Optical connector	AQ9447 connector adapter

AQ2200-231 optical sensor head

Item	Product specifications
Detector type	InGaAs $\phi 5 \text{ mm}$
Wavelength range	800–1700 nm
Power range	CW light: -90 to +10 dBm Chop light: -90 to +7 dBm
Applicable fiber type	$\leq 100/140 \mu\text{m}$ (SI), NA ≤ 0.3
Uncertainty under reference conditions	$\pm 2\%$
Total uncertainty	$\pm 3.5\% \pm 50 \text{ pW}$
Polarization dependence	0.025 dBp-p or less
Linearity	$\pm 0.015 \text{ dB} \pm 50 \text{ pW}$
Noise level	50 pW or less
Averaging time (minimum)	100 μs
Optical connector	AQ9335C connector adapter

AQ2200-241 optical sensor head

Item	Product specifications
Detector type	Si $\square 10 \text{ mm}$
Wavelength range	400–1100 nm
Power range	CW light: -90 to +10 dBm Chop light: -90 to +7 dBm
Applicable fiber type	$\leq 200/230 \mu\text{m}$ (SI), NA ≤ 0.5
Uncertainty under reference conditions	$\pm 2.5\%$
Total uncertainty	$\pm 5\% \pm 50 \text{ pW}$
Polarization dependence	—
Linearity	$\pm 0.05 \text{ dB} \pm 50 \text{ pW}$
Noise level	50 pW or less
Averaging time (minimum)	100 μs
Optical connector	AQ9335C connector adapter

Sensor Module Interface Module Optical Sensor Head

AQ2200-211 AQ2200-201 AQ2200-231/AQ2200-241

Models

Product name: AQ2200-211 sensor module

Model: 810518908/□
 □ Connector adapter
 FCC:
 AQ9447 (FC) connector adapter (with light shield cap)
 SCC:
 AQ9447 (SC) connector adapter (with light shield cap)
 STC:
 AQ9447 (ST) connector adapter (with light shield cap)

Product name: AQ2200-231 optical sensor head

Model: 810518906/□
 □ Connector adapter
 FCC:
 AQ9335C (FC) connector adapter (with light shield cap)
 SCC:
 AQ9335C (SC) connector adapter (with light shield cap)
 STC:
 AQ9335C (ST) connector adapter (with light shield cap)

Product name: AQ2200-241 optical sensor head

Model: 810518907/□
 □ Connector adapter
 FCC:
 AQ9335C (FC) connector adapter (with light shield cap)
 SCC:
 AQ9335C (SC) connector adapter (with light shield cap)
 STC:
 AQ9335C (ST) connector adapter (with light shield cap)

Product name: AQ2200-201 interface module

Model: 810518905

Accessories

Product name: AQ9447* connector adapter

Model: 810804602-□
 □ Connector
 FCC: FC connector
 SCC: SC connector
 STC: ST connector

Product name: AQ9335C (FC) connector adapter

Model: 810518909

Product name: Light shield cap (FC)

Model: 810518912

Product name: AQ9335C (SC) connector adapter

Model: 810518910

Product name: Light shield cap (SC)

Model: 810518913

Product name: AQ9335C (ST) connector adapter

Model: 810518911

Product name: Light shield cap (ST)

Model: 810518914

Product name: AQ9436 ribbon fiber adapter

Model: 81057917

Product name: AQ9302 (*) bare fiber adapter

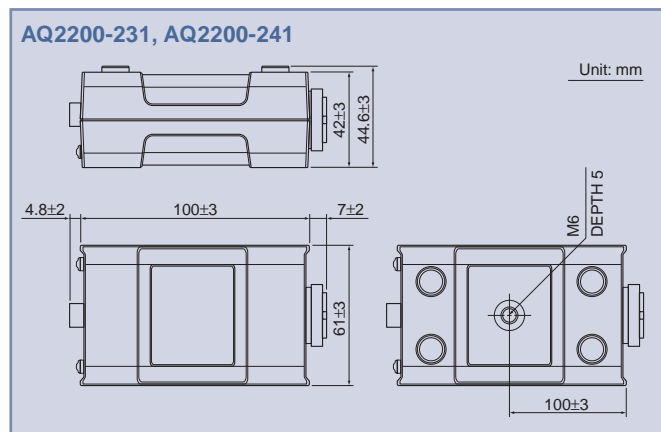
Model: 819705500-0125

Product name: AQ9440 * MT connector

Model: 810517921-B

Note: When you order the AQ9335(*) connector adapter, it will be required a light shield cap

External Dimensions



Related Products

Related Products

AQ2201 frame controller

Model: 810518900-□
 □ Power cord
 D: UL3P
 F: VDE Standard (CEE-C7)
 G: SAA Standard (SAA-3P)
 Q: BS Standard (BS546 3P)
 H: BS Standard (BS 2P)

Slots: 3
 Display: Color LCD, 320 × 240 dots
 Interfaces: GP-IB, Ethernet, USB



AQ2202 frame controller

Model: 810518920-□
 □ Power cord
 D: UL3P
 F: VDE Standard (CEE-C7)
 G: SAA Standard (SAA-3P)
 Q: BS Standard (BS546 3P)
 H: BS Standard (BS 2P)

Slots: 9
 Display: Color LCD, 320 × 240 dots
 Interfaces: GP-IB, Ethernet, USB



Note



Pursuant to the Foreign Exchange and Foreign Trade Control Law, Japanese government approval may be required to export this product from Japan.
 The information presented in this bulletin is subject to change without notice due to performance and quality improvements.

YOKOGAWA

YOKOGAWA ELECTRIC CORPORATION

Communication & Measurement Business Headquarters /Phone: (81)-422-52-6768, Fax: (81)-422-52-6624

E-mail: tm@csv.yokogawa.co.jp

YOKOGAWA CORPORATION OF AMERICA

Phone: (1)-301-916-0409, Fax: (1)-301-916-1498

YOKOGAWA EUROPE B.V.

Phone: (31)-33-4641858, Fax: (31)-33-4641859

YOKOGAWA ENGINEERING ASIA PTE. LTD.

Phone: (65)-62419933, Fax: (65)-62412606

Subject to change without notice.

[Ed : 01/b] Copyright ©2005

Printed in Japan, 501(KP)

MS-14E