

P6701A
P6703A
P6711

P6713
P6721
P6751

Optical to Electrical Converters

The P6700 Series products, provide calibrated optical to electrical conversion in a compact and convenient package for use at commonly used optical communications wavelengths and modulation bandwidths.

P6701A

- 450 to 1050 nm
- DC to 700 MHz
- Si PIN

P6703A

- 1000 to 1700 nm
- DC to 1 GHz
- InGaAs PIN

P6711

- 450 to 1050 nm
- DC to 250 MHz
- High Gain
- Si PIN

P6713

- 1100 to 1700 nm
- DC to 300 MHz
- High Gain
- InGaAs PIN

P6721

- 450 to 1050 nm
- DC to 50 MHz
- Large Area Detector (3 mm)
- Si PIN

P6751

SPATIAL INPUT HEAD

- 500 to 1500 nm
- Tuneable



P6701A, P6703A, P6711, P6713 and Optical to Electrical Converters and P6751 Spatial Input Head.

Product Description

The Tektronix P6701A/P6703A/P6711/P6713 are optical probes that allow the user to receive optical signals and convert them to electrical signals for convenient analysis on Tektronix oscilloscopes equipped with the TEKPROBE™ Interface or any other oscilloscope when used in conjunction with the Tektronix 1103 TEKPROBE™ Interface Power Supply.

Use of the 11000 Series oscilloscope's TEKPROBE™ Interface allows the oscilloscope to supply power to the P6700 Series probes, automatically determine and display the proper scale factor (in microwatts of optical power) and set the input termination to the required 50 Ω .

The P6700 Series provides a calibrated means of analog analysis of optical signals in the wavelength range 450 to 1050 nm (P6701A/P6711) and 1100 to 1700 nm (P6703A/P6713). Thus the functions of an optical power meter and the high-speed analog waveform analysis capability of an oscilloscope are combined in one instrument. The user has the capability of acquiring, displaying and analyzing mixed analog and digital, optical and electrical signals simultaneously.

The P6701A and P6703A have an added DC stable circuit from decreased offset drift ($\leq 1 \mu\text{W}$). This improves the performance for extinction ratio measurements and absolute optical power levels. The P6711 and P6713 have increased gain and lower noise, thus have improved the sensitivity of the converters and are excellent choices for LED measurements.



P6721

The P6721 is a high gain optical to electrical converter for use with plastic fiber and larger diameter glass fiber. For the laser disk service, automotive optical communication and others, the P6721 is a link to waveform test and measurement tools. The P6721 uses Tektronix probe power or the 1101A Power Supply.

The P6751 Spatial Input Head is a tuneable lens system for sampling optical energy from any collimated source and delivering it via a fiber optic cable to the P6700 Series Optical to Electrical Converter. The P6751 is easily mounted using standard optical bench fixtures. This spatial input head can be adjusted (500 to 1500 nm) by the user to optimize the amount of optical energy delivered to the P6700 Series. The P6751 has a standard SMA fiber optic cable connector. The P6751 is intended for use with 100/140 μm diameter multimode fiber.

Also available are a series of fiber optic jumper cables for interfacing the P6700 Series and P6751 with other industry standard optical fiber connectors.

To order, contact your local sales office (listed on the inside back cover) or call the National Marketing Center at 1-800-426-2200, Ext. 99.

Optical to Electrical Converters

| | |
|---------------|--------------|
| P6701A | P6713 |
| P6703A | P6721 |
| P6711 | P6751 |

TYPICAL APPLICATIONS

Applications range from measuring the transient optical properties of lasers, LEDs, electro-optic modulators, flashlamps, etc., to the development, manufacturing, and maintenance of fiber optic control networks, local area networks (LANs), fiber based systems based on the FDDI and SONET standard, optical disk devices, and high-speed fiber optic communications systems. As an example, eight probes

of the P6700 Series type coupled with two 11A34 Amplifier Plug-ins and an 11000 Series oscilloscope can be configured as an 8-channel optical oscilloscope.

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Characteristics

| | P6701A | P6703A | P6711 | P6713 | P6721 |
|--------------------------------|---------------------|----------------------|---------------------|----------------------|----------------------|
| Wavelength Response | 500 to 950 nm | 1100 to 1700 nm | 500 to 950 nm | 1100 to 1700 nm | 400 to 1000 nm |
| Bandwidth | DC to 850 MHz | DC to 1 GHz | DC to 250 MHz | DC to 300 MHz | DC to 50 MHz |
| Rise time | ≤700 ps | ≤500 ps | ≤2 ns | ≤1.6 ns | ≤10 ns |
| Conversion Gain | 1 V/mW at 850 nm | 1 V/mW at 1300 nm | 5 V/mW at 850 nm | 5 V/mW at 1300 nm | 10 V/mW at 660 nm |
| Max Input Optical Power | 1 mW | 1 mW | 200 μW | 200 μW | 0.3 mW |
| Noise Equivalent Power | ≤1 μW(rms) | ≤1 μW(rms) | ≤250 nW(rms) | ≤200 nW (rms) | ≤200 nW(rms) |
| Max. Input Fiber Core Diameter | 200 μm | 100 μm | 200 μm | 100 μm | 1000 μm |

Note: For further technical information on these above products request the following product literature:

- For P6701A, P6711, P6703A, P6713 – #3TW-7914 (Data Sheet).
- For P6721 – #3TW-8309-0 (Data Sheet).
- For P6751 – #3TW-7304-1 (Data Sheet/Application Note).

ORDERING INFORMATION

P6701A
Optical-to-Electrical Converter.....NC

Includes: Option specified fiber optic input connector, carrying case (016-0156-03), and Instruction Manual (070-8237-00).

- Opt. 01 – FC input connector+\$2,625
- Opt. 02 – ST* input connector+\$2,625
- Opt. 03 – DIN 47256 input connector+\$2,625
- Opt. 04 – SMA input connector+\$2,625
- Opt. 05 – SC input connector+\$2,625

P6703A
Optical-to-Electrical Converter.....NC

Includes: Option specified fiber optic input connector, carrying case (016-0156-03), and Instruction Manual (070-8237-00).

- Opt. 01 – FC input connector+\$3,605
- Opt. 02 – ST* input connector+\$3,605
- Opt. 03 – DIN 47256 connector+\$3,605
- Opt. 04 – SMA input connector+\$3,605
- Opt. 05 – SC input connector+\$3,605

P6711
Optical-to-Electrical Converter.....NC

Includes: Option specified fiber optic input connector, carrying case (016-0156-03), and Instruction Manual (070-8237-00).

- Opt. 01 – FC input connector+\$2,100
- Opt. 02 – ST* input connector+\$2,100
- Opt. 03 – DIN 47256 connector+\$2,100
- Opt. 04 – SMA input connector+\$2,100
- Opt. 05 – SC input connector+\$2,100

P6713
Optical-to-Electrical Converter.....NC

Includes: Option specified fiber optic input connector, carrying case (016-0156-03), and Instruction Manual (070-8237-00).

- Opt. 01 – FC input connector+\$2,500
- Opt. 02 – ST* input connector+\$2,500
- Opt. 03 – DIN 47256 connector+\$2,500
- Opt. 04 – SMA input connector+\$2,500
- Opt. 05 – SC input connector+\$2,500

P6721
Optical to Electrical Converter\$1,450

Includes: Standard TOSLINK fiber optic input Connector, and Instruction Manual (070-7842-00).

P6751
Spatial Input Head\$445

Includes: Adjustment tool and instruction sheet.

OPTIONAL ACCESSORIES
TEKPROBE Power Supply – Order 1103\$495

Fiber Optic Cables – Single Mode and Multimode

The following fiber optic cable assemblies are intended to provide high quality interconnections between fiber optic test equipment having the same or different optical connector types. Each cable assembly consists of a single jacketed fiber connectorized on both ends with male connectors. Cables with different type connectors on each end are for interconnecting two instruments having dissimilar female connectors. The type of connector installed on each end of the fibers are indicated below.

Single Mode

Fiber Optic Cables – 2 meter length, 8/125 μm core/cladding diameter, including in-line connector adapter.

- FC/PC to Diamond 3.5 connectors. Order 174-1385-00\$605
- FC/PC to ST* connectors. Order 174-1386-00\$770
- FC/PC to FC/PC connectors. Order 174-1387-00\$440
- FC/PC to Biconic connectors. Order 174-1388-00\$550
- FC/PC to Diamond 2.5 connectors. Order 174-1497-00\$580

Multimode

Fiber Optic Cables – 2 meter length, 62.5/125 μm core/cladding diameter.

- FC/PC to FC/PC connectors. Order 174-2322-00\$175
- FC/PC to Biconic connectors. Order 174-2323-00\$250
- FC/PC to SMA connectors. Order 174-2324-00\$175

Fiber Optic Cables – 2 meter length, 100/140 μm core/cladding diameter.

- SMA to ST* connectors. Order 174-0876-00\$320
- SMA to Diamond 3.5 connectors. Order 174-0877-00\$350
- SMA to FC connectors. Order 174-0878-00\$370
- SMA to SMA connectors. Order 174-0879-00\$370
- SMA to Biconic connectors. Order 174-0880-00\$260
- SMA to Diamond 2.5 connectors. Order 174-1303-00\$300

*ST is a registered trademark of AT&T

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