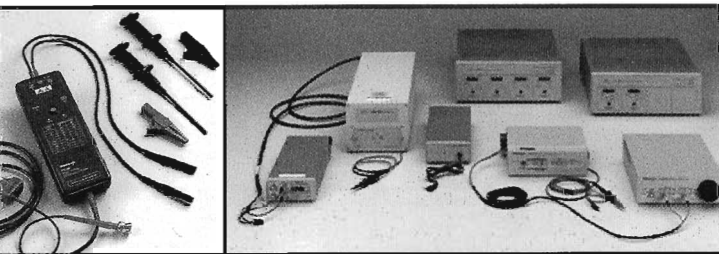


Tektronix

Floating Measurements Solutions Selection Guide



A6905S

FIBER OPTIC ISOLATION SYSTEM

A6906S

FIBER OPTIC ISOLATION SYSTEM

A6907

VOLTAGE ISOLATOR

A6909

VOLTAGE ISOLATOR

P5200

HIGH VOLTAGE DIFFERENTIAL PROBE

Scan by Zenith

ISOLATORS

Advantages

Benefit

Fiber Optic

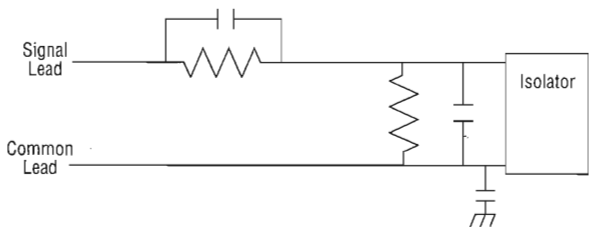
Increases physical distance between the device under test and the measurement equipment.

Galvanic Isolation

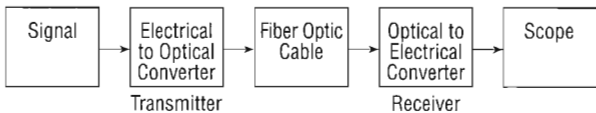
No leakage path to ground.

Measures differential signals with large common mode voltages (limited only by the probe used in front of the isolator).

Probe Architecture:



System Diagram:



DIFFERENTIAL PROBES

Advantages

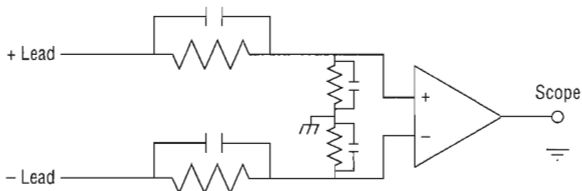
Benefit

Balanced Impedance Inputs

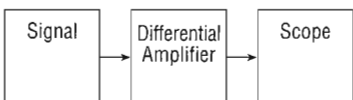
Good CMMR.

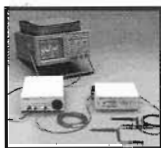
You can switch leads without affecting measurements or the device under test.

Probe Architecture:

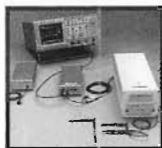


System Diagram:





A6905S
Fiber Optic
Isolation System



A6906S
Fiber Optic
Isolation System



A6907
Voltage Isolator



A6909
Voltage Isolator



P5200
High Voltage
Differential Probe

KEY SPECIFICATIONS

Bandwidth	15 MHz	100 MHz	60 MHz	60 MHz	25 MHz
Risetime	25 ns	3.5 ns	5.8 ns	5.8 ns	14 ns
Max Differential Voltage (DC + Peak AC)	850 V	850 V	850 V	850 V	1300 V
Max Com Mode Voltage (DC + Peak AC)	± 850 V	± 850 V	± 850 V	± 850 V	± 1000 V
CMRR @ 60 Hz	100 dB	120 dB	105 dB	105 dB	80 dB
@ 1 MHz	50 dB	60 dB	60 dB	60 dB	50 dB (@ 100 kHz)
@ 10 MHz	30 dB	40 dB	50 dB	50 dB	—
Accuracy	± 3%	± 3%	± 3%	± 3%	± 3%
Input R (between leads)	10 MΩ	10 MΩ	10 MΩ	10 MΩ	8 MΩ
Input C (between leads)	2.9 pF	2.9 pF	4.5 pF	4.5 pF	3.5 pF
Propagation Delay	80 ns *1	50 ns *1	29 ns *1	29 ns *1	20 ns
Common to Chassis C	*2	*2	80 pF	80 pF	7 pF *3
Output Driving Impedance	50 Ω	50 Ω/75 Ω	50 Ω	50 Ω	1 MΩ
Weight	1.42 kg *4 2.32 kg *5	7.8 kg *4 1.7 kg *5	6.4 kg	6.4 kg	.315 kg
Dimensions (H×W×D cm)	7×21×19 *4 7.5×20.5×29 *5	13.9×17×47.5 *4 5.6×12×30 *5	12.0×32.7×45.0	12.0×32.7×45.0	3.2×6.6×18.5

CUSTOMER REQUESTED FEATURES

Safety Certification (UL1244, IEC1010, CSA801)	Yes	Yes	Yes	Yes	Yes
GPIB	No	Yes	Yes	Optional	No
Channels	1	1	4	2	1
Separation Distance	3, 15, 50, or 100 m	3, 10, 20, 100, or 200 m	—	—	—
Self-calibration	No	Yes	Yes	Yes	N/A
Isolation Method	Fiber Optic	Fiber Optic	Optical/Transformer	Optical/Transformer	None
Battery Operation/Recharge Time	10 hr	12 hr	N/A	N/A	N/A

*1 Does not include BNC cable. Standard BNC cable is 43" and adds 5.4 ns to the delay.

*2 Capacitance to ground varies with transmitter proximity to grounded surface.

*3 True differential. Same C to ground in either input.

*4 Transmitter.

*5 Receiver.

ORDERING INFORMATION

A6905S Single Channel, 15 MHz Fiber Optic Isolation System

Includes: 50 Ω terminator (011-0049-01), 43-inch, 50 Ω cable (012-0057-01), two rechargeable battery packs (118-9020-00), A6905S Instruction Manual (070-8773-00), 100X floating voltage probe (010-0565-00), industrial lead set (012-1392-00)

Instrument Options

- Opt 01 Substitute 15 m fiber optic cable
- Opt 02 Substitute 100 m fiber optic cable

Recommended Accessories

- 50 m Fiber Optic Cable (174-3096-00)

A6906S Single Channel, 100 MHz Fiber Optic Isolation System

Includes: 100X floating voltage probe (010-0568-00) with industrial lead set (012-1392-00), 50 Ω terminator (011-0049-01), 43-inch, 50 Ω BNC cable (012-0057-01), one rechargeable battery pack (118-9020-00), A6906S Instruction Manual (070-8900-00)

Instrument Options

- Opt 01 Substitute 20 m fiber optic cable
- Opt 02 Substitute 100 m fiber optic cable
- Opt 03 Substitute 200 m fiber optic cable
- Opt 04 Substitute 10 m fiber optic cable

Recommended Accessories

- GPIB Cable (012-0991-00)
- 75 Ω BNC Cable (012-0074-00)
- 75 Ω Terminator (011-0055-01)
- Additional Battery Pack (650-3022-00)
- Index Matching Oil (252-0408-00)
- Optical Fiber Cleaning Set (200 each) (016-1208-00)

A6907 4-Channel Voltage Isolator

A6909 2-Channel Voltage Isolator

Includes: Either four or two probes with 50 Ω BNC cables, GPIB interface (A6907), AC power cable, fuse (2.5 A, 250 V), Instruction Manual (070-9094-01)

Instrument Options

- Opt 10 Add GPIB Interface to A6909

Recommended Accessories

- Industrial Lead Set (012-1392-00)
- 50 Ω BNC Termination (011-0049-01)
- 1 m GPIB Cable (012-0991-01)
- AC Current Probe A620

P5200 High Voltage Differential Probe

Includes: One red and one black 7/8-inch plunger clamp, one red and one black crocodile clip, 9 V DC wall transformer (119-3306-00), Instruction Manual (070-9018-00)



P5200 HIGH VOLTAGE DIFFERENTIAL PROBE

Motor Control Design

Motor control designers need to make multiple floating measurements simultaneously. Previously, the typical solution was to float the scope. This method was affordable, but dangerous. It was also inaccurate and limited to one channel at a time. The new P5200 High Voltage Differential Probe will allow motor control designers to accurately and safely make measurements on multiple phases of their drive simultaneously.

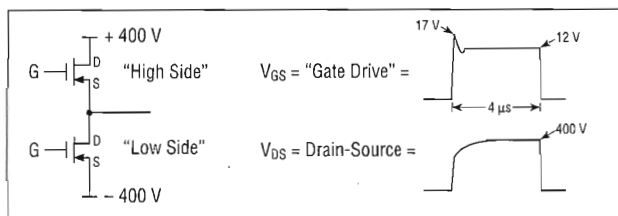
Accurate measurements of voltage waveforms have become more critical with the introduction of Insulated Gate Bipolar Transistors (IGBTs.) Snubber networks must be carefully designed to prevent switching transients from exceeding the IGBT breakdown voltage, which is typically 1200 V. The P5200's voltage rating and low capacitive loading enable it to characterize IGBT operation more accurately and more safely than floating the scope can.

The P5200 includes accessories which are both rated for high voltage and designed to attach to awkwardly placed components and bus bars. This allows for convenient hands-free probing without custom adapters or fixtures.



A6907/09 VOLTAGE ISOLATORS

Power Supply Design



Simplified typical circuit

In this example, the lack of a ground makes measurements difficult. Even with a floating scope, measurements on the high side transistor are very difficult and dangerous. With the A6907/09 Voltage Isolators, however, the power supply design engineer can safely, accurately, and easily make measurements on both transistors. The A6907/09 Voltage Isolators offer high bandwidth for accurate measurement of today's high speed power supplies.

Optical isolation offers the advantage of complete Galvanic isolation of the device under test from ground. This means added safety for the user and greater protection for the test equipment and device under test.

The A6907/09 Voltage Isolators used with an AM 503S AC/DC Current Probe Amplifier System is an excellent power measurement system that will allow power supply engineers to completely characterize their designs.

For further information, or to
find the authorized Tektronix
sales office nearest you, call:

(800) 426-2200

(USA Only)

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3/95 WSS 10M 51W-10457-0



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