

A6902A

Two Independently Isolated Channels

High Voltage/High CMRR

UL Certified to 3000 V/Channel (6000 V Maximum Channel Differential)

VDE Certified to 1500 V/Channel (3000 V Maximum Channel Differential)

Dc to 20 MHz Bandwidth

A dual-channel, optical- and transformer-coupled voltage isolator, the A6902A allows safely grounded test instruments to make floating measurements at high sensitivity levels in the presence of large common-mode signals.

The A6902A acts as a buffer between the test instrument and the system under test and extends the range of the test instrument to VDE to 1500 V (dc plus peak ac) with the larger industrial probe and to 500 V (dc plus peak ac) with the smaller signal probe. Both probes are quickly interchangeable at the cable connectors. The two pairs of probes and output cables are stored in removable side pouches for availability and convenience.

Designed for use with any dual-channel oscilloscope, the A6902A permits simultaneous observation of two signals at two different points in the same circuit; or signals in two different circuits without respect to common lead voltages.

The two channels can also be combined to function as an input to a differential amplifier.

Separate, calibrated controls for volts per division on each channel provide for precise floating measurements. The all-plastic case and external controls protect the user during control settings and other operations. Other than probe tip connections, the user is never in close proximity to hazardous voltages.

CHARACTERISTICS

ELECTRICAL CHARACTERISTICS

Deflection Factor — Probe Tip Sensitivity: 20 mV/div to 200 V/div in 1-2.5 sequence with oscilloscope set to 10 mV/div. Accuracy: $\pm 5\%$ of indicated V/div switch setting.

Maximum Working Voltage

Large Probe (UL) is 3000 V, VDE is 1500 V — Probe Center Tip to Earth Ground; UL is 3000 V, VDE is 1500 V (dc + peak ac). Probe Center Tip to Probe Common: UL is 3000 V, VDE is 1500 V (dc + peak ac) to 900 kHz; See Figure 1 for voltage derating above 900 kHz; Probe Common to Earth Ground: UL is 3000 V, VDE is 1500 V (dc + peak ac) to 420 kHz; See Figure 2 for voltage derating above 420 kHz.

Small Probe (500 V) — Probe Center Tip to Earth Ground: 500 V (dc + peak ac); Probe Center Tip to Probe Common: 500 V (dc + peak ac) to 3 MHz; See Figure 2 for voltage derating above 3 MHz; Probe Common to Earth Ground: 500 V (dc + peak ac) to 6 MHz; See Figure 2 for voltage derating above 6 MHz.

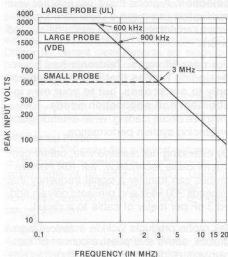


Figure 1. Maximum working voltage between probe input and probe common (all temperatures).

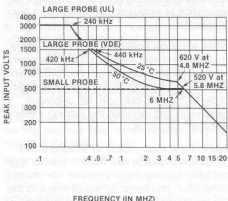


Figure 2. Maximum working voltage between probe common and earth ground.

Frequency Response — Bandwidth: Dc coupled (to -3 dB points) is ≥ 20 MHz; Ac coupled (to lower -3 dB point) is ≤ 5 Hz.

Transient Response — Rise time: 17.5 ns (calculated from bw).

Maximum Input dV/dt — 100 V/ns.

Input Impedance — Resistance: 10 M Ω $\pm 3\%$; Capacitance: ≤ 19 pF with either probe.

Output Impedance — 50 Ω $\pm 5\%$.

Output Drive — 250 mV p-p typical.

Common-Mode Capacitance — 200 pF from probe common to earth ground.

Maximum Common to Ground Slew Rate — 50 V/ μ s.

Tangential Noise — 2.0 mV; Dc Drift With Temperature: ≤ 1 mV/ $^{\circ}$ C (0.1 div/ $^{\circ}$ C) at output; Range of Output Dc Level: At least ± 5 div from center screen.

Channel Isolation — Maximum Voltage: Using two 1500 V probes is 3000 V (dc + peak ac). Using two 500 V probes is 1000 V (dc + peak ac).

Delay — 42 ns ± 3 ns from probe input to instrument input; CH1, CH2 delay difference is ≤ 4 ns.

Common Lead Signal Feedthrough — ~ 106 dB from probe input to output BNC to 500 Hz; See Figure 3 for derating above 500 Hz.

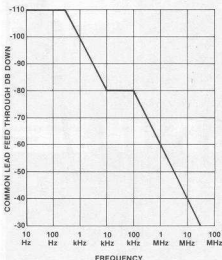


Figure 3. Common-lead feedthrough characteristics.

POWER SOURCE CHARACTERISTICS

Line Voltage Ranges — Low: 90 V to 132 V; High: 180 V to 250 V.

Line Frequency Range — 48 Hz to 440 Hz.

Maximum Power Consumption — 17 W at 115 V, 60 Hz.

ENVIRONMENTAL CHARACTERISTICS

Temperature — Operating: 0 $^{\circ}$ C to $+50^{\circ}$ C; Nonoperating: -55° C to $+75^{\circ}$ C.

Altitude — Operating: To 4600 m (15,000 ft); Nonoperating: To 15,000 m (50,000 ft).

Humidity (Operating and Nonoperating) — Five cycles (120 hr total) with equipment tested nonoperating to MIL-STD-810C Method 507.1, at 90% to 95% relative humidity and 30 $^{\circ}$ C to 60 $^{\circ}$ C.

PHYSICAL CHARACTERISTICS

Dimensions	mm	in.
Height	136	5.4
Width	394	15.5
Depth	344	13.5
Weight	kg	lb
Net w/Accessories	6.2	13.7
Shipping	8.0	17.7

INCLUDED ACCESSORIES

Two 3000 V (VDE is 1500 V) isolation probes (010-0409-01); two 500 V isolation probes (010-0411-10); 0.15 A5B 250 V fuse (159-0054-00); 0.1 A5B 250 V fuse (159-0048-00)—Europe); right angle power cord (161-0117-00); two 2 m, 50 Ω output cables (012-0204-00); operator's manual, service manual.

ORDERING INFORMATION

A6902A Isolator

INTERNATIONAL POWER CORD AND PLUG OPTIONS

Option A1 — Universal Euro 220 V/16 A, 50 Hz

Option A2 — UK 240 V/13 A, 50 Hz

Option A3 — Australian 240 V/10 A, 50 Hz

Option A4 — North American 240 V/15 A, 60 Hz

Option A5 — Switzerland 220 V/10 A, 50 Hz

To order, call your local Tektronix Field Office, or call Tek's National Marketing Center, toll free: 1-800-426-2200, Ext 99. In Oregon call collect: (503) 627-9000, Ext 99.