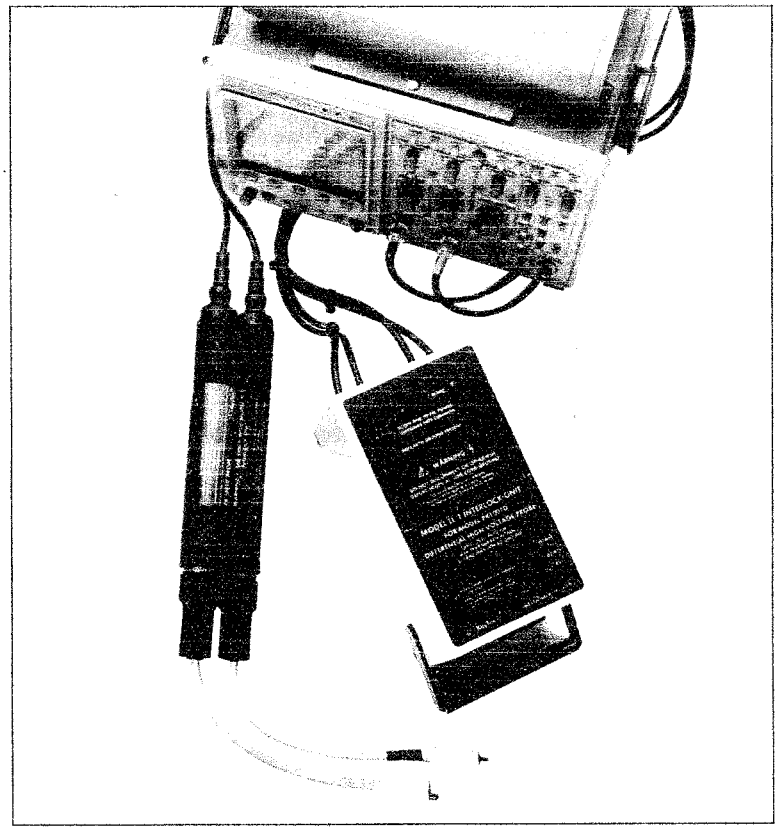
Model PK 1001D – 6kV Differential

SURGE PROBE

The PK1002D is the 10KV version of these probes



FEATURES:

- Compact, lightweight
- Convenient to use – no tip grounding, no compensation adjustments
- Low EMI sensitivity
- Can be used with most oscilloscopes
- Unique interlock system augments operator safety

The differential oscilloscope probes normally used for monitoring high voltage surges and transients are generally large and cumbersome (because they are designed for use to 40 kV), unduly sensitive to noise, and difficult to maintain in close compensation adjustment.

KeyTek's Model PK 1001D is a relatively small, lightweight probe designed to provide accurate transmission of peak surge waves to 6 kV, with fronts from 10 ns to 1.2 μs. Its relatively low input impedance provides low sensitivity to noise.

Quick and convenient to use, the Model PK 1001D requires no ground at the probe tip, and no compensation adjustments. An auxiliary interlock unit ensures a high degree of operator safety during probe use.

For additional information, see Application Note AN-121

DIFFERENTIAL, HIGH-VOLTAGE SURGE AND TRANSIENT PROBE

SPECIFICATIONS

ELECTRICAL

Each Input

Input Resistance	10K ± 2 %
Peak transient voltage, repetitive*	0 to ± 6kV
Transient duration	1 ms max
Rise time	< 10 ns
Overshoot and other anomalies**	< 5% typ.
Maximum steady-state input	277V rms or dc
Transient repetition rate	
maximum with max steady-state input superimposed	10 pulses/minute
maximum with zero steady-state input superimposed	120 pulses/minute

Each Output

Impedance	50 ohms ± 1%
Attenuation	200:1 ± 3%
Compensation Adjustments	none
Recommended Oscilloscope	Tektronix 7000 series with 7A13 input preamplifier; i.e., good high-frequency common-mode rejection. In any case, requires pre-amp with A and B inputs, and A-B display capability.

PHYSICAL

Probe body (including both inputs)	
Size	3cm x 5.5cm x 25cm long
Construction	Fully insulated
High-voltage leads	20cm
Ground connections at a high-voltage end of probe	none
High-voltage connections	Hooded clips
Cables	
Length	2 meters
Construction	Two, double-braided RG 55 coax, constrained to run side by side
Interlock Unit (located at oscilloscope – typically on scope cart)	20cm x 11cm x 10cm high
Connectors (for oscilloscope)	Two BNC, on 1m cables from Isolator Box to scope A and B input connectors.

Safety

The Interlock Unit opens connections between the high-voltage probes, and the pins and shells of the BNC coax connectors intended for scope connection, until:

(1) the BNC's are connected to the oscilloscope, and
(2) the oscilloscope is connected, via its power cord, to earth ground.

Panel lights indicate "ready" and "not ready" status.

Power	100/120/220/240 V, 10 W 50-60 Hz

PROBE VOLTAGE RATING

Recommended and fully qualified for monitoring at all loads being surged with any KeyTek surge generator having a nominal maximum output voltage rating of 6 kV, specifically including the Model 587 and the Model 711.

Probe design safety factor takes into account the fact that under certain circumstances, the surge generator output may itself be settable to values higher than its nominal maximum of 6 kV. The safety factor also includes provision for the high frequency oscillations that may further increase effective peak voltage, due to local oscillations at the load when surging some types of equipment.

** Model PK1002D provides up to 10kV, with somewhat longer rise time and anomalies (consult factory).*

*** With twisted probe leads, and with BNC cables and probes dressed several inches away from metal surfaces.*

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May 2, 1989
KPS 287
Printed in U.S.A.