

# MODEL PC-21 (WITH BNC CONNECTOR)

## LOW CAPACITANCE PROBE OPERATING INSTRUCTIONS

### • Specification

	10 : 1	1 : 1 (DIR)
Attenuator:	1/10 ± 1%	—
Input resistance:	10 M ohms ± 1%	1 M ohm ± 1%
Input capacitance:	25 pF or less	90 pF or less
Max. input voltage:	500 Vp-p	
Withstand voltage:	700 V DC, 1 min	
Insulation resistance:	100 M ohms or more, 500 V DC	

TRIO PC-21 is a low capacitance probe designed for use with a oscilloscope. The PC-21 may be switched from 10 : 1 to 1 : 1 or vice versa by disconnecting the tip portion of the probe and reinserting it to the body in the 180 degree opposite direction. See the figure.

In measuring with the PC-21 probe, connect the probe cable to the vertical input of the oscilloscope. Hook up the probe tip to the point of measurement, and the ground clip to the ground line near the point of measurement.

When the probe is positioned for 10 : 1, the voltage across the measurement point is transferred, as attenuated to one tenth of the original value, to the oscilloscope connected. Therefore, it may be necessary to adjust the gain of the vertical amplifier until the displayed waveform is an appropriate amplitude on the scope.

Also when the probe is set to 10 : 1, an amplitude of the displayed waveform must be multiplied by 10 to find the true value of voltage.

Setting the probe to 10 : 1 of attenuation increases the input impedance to 10 M ohms, which makes very negligible the measuring error caused by connecting the PC-21 to the measuring point if the circuit has an impedance as low as 1 M ohm or less.

The input capacitance is 25 pF or less which does not cause any appreciable change of capacitance even when connected to such a delicate circuit as tuning circuit.

When the probe is set to the DIR or 1 : 1 position, the measuring voltage is directly transferred by the probe to the oscilloscope. The displayed amplitude is directly read out as true value.

In the DIR position, the probe has an input impedance of 1 M ohm shunted by approximately 70 pF. This isn't very suited for measurements where input impedance is high or capacitance change must strictly be avoided. Reinserting the probe tip for 10 : 1 position is recommended.

Note that the PC-21 is not applicable to measurement of high voltages. The device is designed for normal voltages below 300 volts or a maximum of 500 volts if measurement surely completes in 5 seconds or less.

When the PC-21 is connected to the oscilloscope with 10 : 1 attenuation, it may be necessary to adjust the probe.

To check for the necessity, feed a 1 kHz or 10 kHz square wave through the probe and observe the display waveform on the scope. If the waveform is distorted, adjust the small trimmer screw in the hole, which is located at the probe body.

