

Safety Precautions

Please heed the following warnings when handling the probe. Yokogawa bears no responsibility for, nor implies any warranty against damages occurring as a result of failure to take these precautions. Please read the user's manual of the measuring instrument and fully understand the specifications and handling procedures of that instrument before using the probe.

- **The following safety symbols and words are used in this manual.**



This symbol warns against danger to personnel and instruments, and indicates that the user should refer to the relevant instructions in the user's manual.

WARNING Calls attention to actions or conditions that could cause serious injury or death to the user, and precautions that can be taken to prevent such occurrences.

CAUTION Calls attentions to actions or conditions that could cause light injury to the user or damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.

- **The following precautions must be taken to prevent electric shock and other potentially fatal accidents and damage to instruments.**



WARNING

- **Ground the Measuring Instrument**

Always connect the main instrument's protective grounding.

- **Connect the Probe's Earth Wire**

Connect the earth wire (ground potential) to ground.

- **Take Care When Connecting to the Item under Test**

Take care to avoid electric shock when connecting the probe to the item under test. Also, never disconnect the probe from the measuring instrument while the probe is connected to the circuit under test.

- **Never Use the Probe If You Suspect It Is Damaged**

If you suspect the probe might be damaged, please consult with your Yokogawa dealer or representative.

- **Maintain Nondestructive Input Voltages**

Do not apply a voltage exceeding the nondestructive input voltage between input and ground.

- **Check the Grounding**

Before connecting the probe input terminal to the item under test, check that the measuring instrument is properly grounded, that the probe output connector is connected to the BNC connector of the instrument, and that the earth lead is correctly connected to ground.

- **Do Not Use the Probe in Humid Locations**

To avoid electric shock, never use the probe in areas of high humidity.

- **Do Not Use the Probe Near Flammable Gases**

To avoid injury and fire, do not use the probe near flammable or explosive gasses or vapors.

- **Avoid Exposed Circuits**

To prevent injury, remove all jewelry such as rings and wristwatches. When the power is ON, do not touch any exposed connectors or components.

- **Handle the Probe Safely**

Do not touch the probe input terminal with your hands. Also, never touch the probe with wet hands.



CAUTION

- **Maximum Input Voltage**

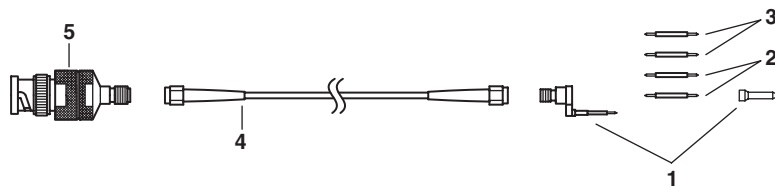
Do not apply a voltage exceeding the maximum voltage to the probe's input terminal.

Overview

The model 701974 PBL5000 5 GHz Low Capacitance Probe is a low input capacitance passive probe (attenuation ratios of 1/10 or 1/20) for use with oscilloscopes having an input impedance of 50 Ω . The attenuation ratio can be changed by replacing the resistor on the probe tip.

Components

As shown in the figure below, the probe consists of the probe itself, and standard accessories.



| | | |
|---|----------------------------------|---------|
| 1 | Probe head | – |
| 2 | 450 Ω resistors (2 pcs) | B8099FE |
| 3 | 950 Ω resistors (2 pcs) | B8099FF |
| 4 | Probe cable | – |
| 5 | SMA(J)-BNC(P) conversion adapter | – |

Specifications

| Item | Specifications |
|-----------------------------------|---|
| Standard Operating Environment | Temperature: 23°C \pm 5°C Humidity: 55% \pm 10% RH (no condensation) |
| System Requirements | Temperature: 5°C to 40°C Humidity: 20% to 80% RH (no condensation) |
| Storage Environment | Temperature: –20°C to 60°C Humidity: 20% to 80% RH (no condensation) |
| Total length of probe | Approximately 1.1 m |
| Connector type | SMA |
| Input resistor ^{*1} | Within \pm 2% of 450 Ω Within \pm 2% of 950 Ω |
| Input capacitance | 450 Ω : 0.25 pF (Typical ^{*2}) 950 Ω : 0.4 pF (Typical ^{*2}) |
| Attenuation ratio ^{*3} | Within \pm 3.5% of 10:1 Within \pm 3.5% of 20:1 |
| Frequency bandwidth ^{*4} | DC to 5 GHz (–3 dB or more) |
| Rise time ^{*4} | 70 ps or less (Typical ^{*2}) |
| Maximum input voltage | 20 Vrms, 40 VACpeak |
| Nondestructive input voltage | 20 Vrms, 40 VACpeak |

*1: When no load is present. Standard operating environment.

*2: Typical value represents a typical or average value. It is not strictly guaranteed.

*3: In combination with an oscilloscope having an input resistance of 50 Ω . Standard operating environment.

*4: When the distance between probe tip and ground is 9 mm. Standard operating environment.

Operating Procedure

The resistors are extremely easy to bend. Always use the resistor cover on the probe tip.

Connect the probe to an oscilloscope having an input impedance of 50 Ω . When connecting instruments with a BNC connector input, use the accessory SMA(J)-BNC(P) adapter.

Use a soft cloth to wipe away dirt, and be careful not to damage the probe. Also, never dip the instrument in liquid, nor use any detergents or abrasives. Do not use any volatile solvents such as benzene.

Note

- Calibration of this instrument is not guaranteed. No test certificate is available.
- Bringing the probe near transformers, circuits with large currents, wireless devices, or other objects emitting.