



Thank you for purchasing the YOKOGAWA 700978 100:1 Probe.  
 To optimize all the functions of the instrument, please read this manual thoroughly before operating it.

Disk No. DL14  
 5th Edition : May 2006 (YK)  
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IM 700978-01E  
 5th Edition

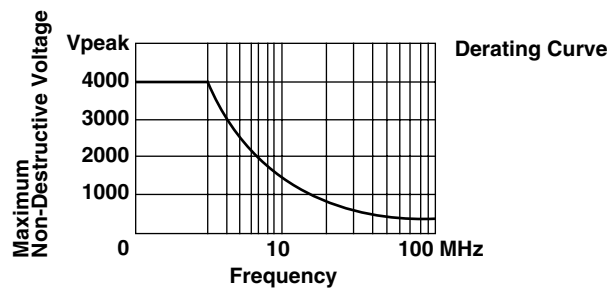
## 1. Introduction

Model 700978(100:1 probe) is a passive high voltage probe intended for use with oscilloscopes having a bandwidth up to 100 MHz.  
 Each probe has been adjusted during manufacturing to match an oscilloscope having a bandwidth of 100 MHz and input capacitance of 20pF. The probe can however be adjusted to match other combinations of input capacitance and bandwidths, any further adjustment only being necessary if the probe is then transferred to a different type of oscilloscope.

### Specifications

Item	Specifications	Conditions
Probe length	1.2m	
Connector type	BNC	
Input resistance	50MΩ ±2%	In conjunction with an oscilloscope with input impedance of 1MΩ ±1%. When input voltage is less than 100V.
Input capacitance	4pF	In conjunction with an oscilloscope with input impedance of 1MΩ ±1%. When input voltage is less than 100V.
Attenuation ratio	1/100 ±3%	Excluding the characteristics of the oscilloscope.
Voltage coefficient of attenuation ratio (Typical*)	±3ppm/V	
Bandwidth	100MHz	Subject to change by type of used oscilloscope.
Max input voltage (DC+ACpeak)	4000V	Frequency of the AC needs to be less than 1MHz. See the below figure.

\* : Typical values represent typical or average values. It is not strictly guaranteed.



• CE Marking Requirement  
 This product is in conformity with the following provision of EC directive.  
 EMC directive(89/336/EEC)

Safety class:conforms to IEC 1010-2-031

## 2. Safety Precautions

Make sure to comply with the safety precautions mentioned hereafter when handling the probe.  
 YOKOGAWA ELECTRIC Co. assumes no responsibility for any consequences resulting from failure to comply with these safety precautions.  
 Also, read the User's Manual of the measuring instrument thoroughly so that you are fully aware of its specifications and handling, before starting to use the probe.

### • General definitions of safety symbols used on the instrument and in the manuals

to avoid injury, death, or damage to the instrument, the operator must refer to the explanation in the manual.

indicates danger of high voltage. Never touch this area. This safety symbol is provided in areas where a voltage of 1000V or higher is output.

**WARNING** A WARNING sign denotes a hazard. It calls attention to a procedure, practice or condition, which, if not correctly performed, adhered to, or maintained, could result in injury or death.

**CAUTION** A CAUTION sign denotes a hazard. It calls attention to a procedure, practice or condition, which, if not correctly performed, adhered to, or maintained, could result in damage to, or destruction of part of the product.

100:1 probe must only be used by personnel who are trained, experienced, or otherwise qualified to recognize hazardous situations and who are trained in the safety precautions that are necessary to avoid possible injury when using such a device.

### WARNING

- Remember that voltages may appear unexpectedly in defective equipment.
- Remember the derating Curve (limit of the maximum voltage that may be applied at a specific frequency).
- For your own safety inspect the probe before each use. Hands, shoes, floor and workbench must be dry.
- The probe body should be kept clean and free of any conductive contamination.
- Make sure to connect the protective grounding of the measuring instrument.
- Make sure to connect the earth cable of the probe to the ground (grounding potential).
- When using the 100:1 probe for measurements of high voltages, be extra careful for electrical shocks.
- Turn the high voltage source off before connecting or disconnecting the probe.
- Do not touch or hold the probe when making measurements.
- Do not use over 70°C.

The Cat.I indication shows that the probe is of location category 1 (overvoltage category 1). This means that it has a circuit which limits the peak level of transient overvoltages.

## 3. Operation

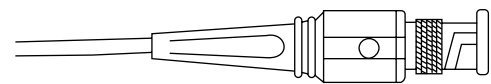
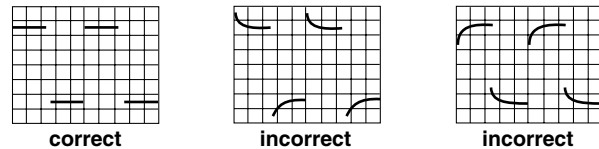
- Whenever possible, turn the high voltage source off before making any connections
- Connect the probe to the input terminals of your oscilloscope.
- Connect the probe common lead (alligator clip) to a proper earth ground or reliable chassis ground.

### CAUTION

- The ground connection must always be made before the probe tip comes into contact with the high voltage.

## 4. Probe Adjustment

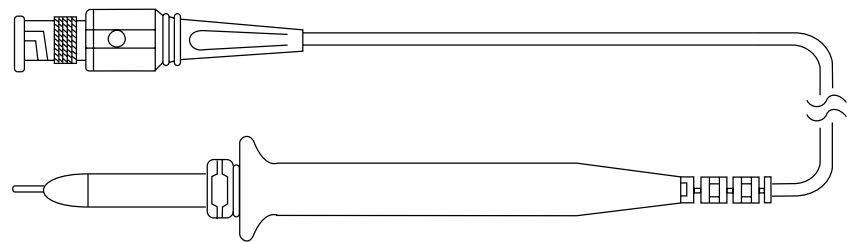
- 1 kHz low-frequency compensation
- Connect the probe to the input terminal of an oscilloscope.
- Connect the probe tip to a 1kHz square signal.
- Adjust compensation trimmer in terminating for optimum square wave response.



Adjusting Low-Frequency Compensation

## 5. Package Contents

- 100:1 Probe



- 100:1 Probe Accessories (Model 700979)

