

User's Manual

Model 701981 250MHz Logic Probe for DL Series

Thank you for purchasing the YOKOGAWA 701981 250 MHz Logic Probe.
To optimize all the functions of the instrument, please read the manual thoroughly before operating it.

Disk No. DL06
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YOKOGAWA
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IM 701981-01E
1st Edition

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.

The following symbols are used on this instrument.

-  To avoid injury, death of personnel or damage to the instrument, the operator must refer to an explanation in the User's Manual or Service Manual.

Make sure to comply with the following safety precautions in order to prevent accidents such as an electric shock which impose serious health risks to the user and damage to the instrument.



WARNING

- Grounding of the measuring instrument**
The protective grounding terminal of the measuring instrument must be connected to ground.
- Connecting the object of measurement**
Make sure to avoid an electric shock when connecting the probe to the object of measurement. Do not remove the probe from the measuring instrument after the object of measurement is connected.
- Do not operate with suspected failures**
If you suspect that there is damage to this probe, have it inspect by a service personnel.
- Nondestructive input voltage range**
Do not apply any voltages exceeding ± 40 V(DC+AC peak) between input and earth.
- Must be grounded**
Before connecting the input terminal of the probe to the object of measurement ensure that the measuring instrument is properly grounded and that the probe's output connector is attached to the input connector of the DL.
- Do not operate without cover**
To avoid electric shock or fire hazard, do not operate this probe with the cover removed.
- Do not operate in wet/damp conditions**
To avoid electric shock, do not operate this probe in wet or damp conditions.
- Do not operate in explosive atmosphere**
To avoid injury or fire hazard, do not operate this probe in an explosive atmosphere.
- Avoid exposed circuitry**
To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.



CAUTION

- Nondestructive input voltage range**
Do not apply any voltages exceeding the Nondestructive input voltage range to the probe.
- Connecting the Probe to the Circuit under Test**
Always use the accessory probe tip when connecting to the circuit under test.
- Connecting the Probe to the DL**
Always turn OFF the DL's power switch when connecting or disconnecting the logic probe.
- Grounding**
The logic probe's ground connects internally with the DL's ground.
- Clean the Instrument Properly**
Use a soft cloth to clean the dirt. Prevent damage to the probe. Avoid immersing the probe. Avoid using abrasive cleaners. Avoid using chemicals contains benzene or similar solvents.

The following symbols are used in this manual.



Affixed to the instrument. Indicates danger to personnel or instrument and the operator must refer to the User's Manual. The symbol is used in the User's Manual to indicate the reference.

WARNING

Describes precautions that should be observed to prevent serious injury or death to the user.

CAUTION

Describes precautions that should be observed to prevent minor or moderate injury, or damage to the instrument.

Note

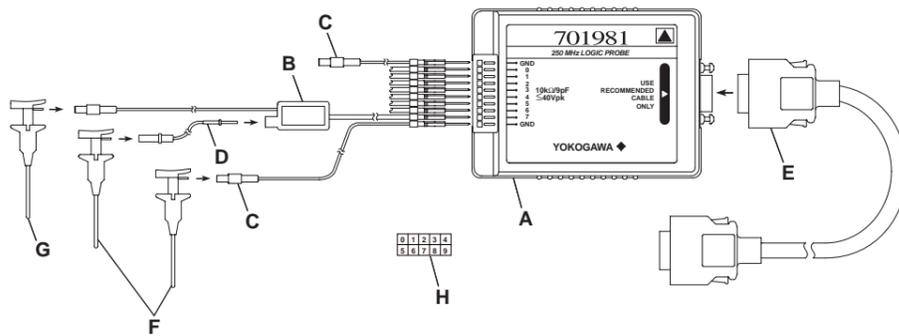
Provides important information for the proper operation of the instrument.

1. Description

The model 701981 250 MHz Logic Probe has a maximum toggle frequency of 250 MHz and accepts up to 8 bits of input.

2. Appearance

As shown in the following illustration, the probe consists of a main body and standard accessories.



A Logic Probe

Standard Assesories

Name	Qty	Part No.
B Probe tip	8	B9852VM
C Earth lead (for main unit)	2	B9852VU
D Earth lead (for terminal)	8	B9852VV
E Cable	1	B9852VN
F Pincher tip (black)	10	B9852VX
G Pincher tip (red)	8	B9852VY
H Pincher number stickers	1	

Optional Assesories

Name	Part No.
IC clip	B9852ES

3. Specifications

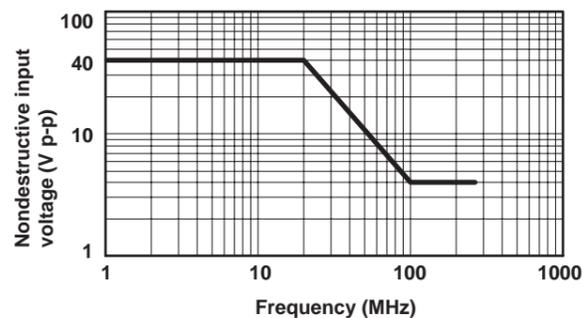
Inputs	8
Nondestructive input voltage range	± 40 V (DC+AC peak) or 28 Vrms^{*2}
Threshold level	± 10 V at 0.1 V resolution
Threshold level accuracy*1	$\pm (100 \text{ mV} + 3\% \text{ of setting})$
Input voltage range	± 10 V
Input impedance (typical value)	10 k Ω /9 pF
Minimum input voltage*1	500 mVp-p
Maximum toggle frequency*1	250 MHz or more
Minimum pulse width	2 ns
Hysteresis voltage (typical value)	50 mV
External dimensions	85.7 mm \times 64.2 mm \times 20 mm(excluding cable and accessory)

*1 Reference operation conditions:

Ambient temperature $23 \pm 2^\circ\text{C}$; Ambient humidity $55 \pm 10\%$; 30 minutes after the power supply is applied.

*2 For the relation between frequency and input voltage derating see the graph below.

Derating by Frequency

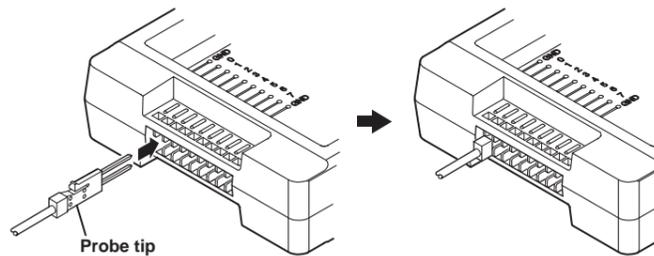


4. How to Use the Probe

- Turn OFF the DL's power switch.
- Connect the cable to the logic probe.
- Connect the probe tips and earth leads to the logic probe.
- Connect the logic probe cable to the probe connector on the DL, then turn ON the DL's power switch.
- Use earth lead B9852VU or B9852VV to connect the ground of the circuit under test. To observe high speed signals, connect from the probe tip ground using earth lead B9852VV.
- Connect the probe input to the circuit under test.

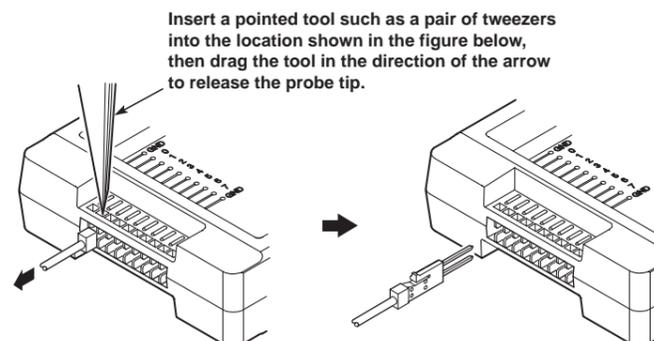
Connecting the Probe Tip

Connect the earth leads (for main unit) in the same manner.



Removing the Probe Tip

Remove the earth leads (for main unit) in the same manner.



Note

Accurate measurement may not be possible near objects with strong electric fields (like cordless equipment) or strong magnetic fields (like transistors or large current circuits).