WaveAce Oscilloscope

Passive Probes

Models:
PP013
PP014
PP015
PP016

Instruction Manual

Revision A – November, 2008

LeCroy

Warranty

LeCroy warrants this oscilloscope accessory for normal use and operation within specification for a period of one year from the date of shipment. Spare parts, replacement parts and repairs are warranted for 90 days.

In exercising its warranty, LeCroy, at its option, will either repair or replace any assembly returned within the warranty period to the Customer Service Department of an authorized service center. However, this will be done only if the product is determined by LeCroy's examination to be defective because of workmanship or materials, and the defect is not caused by misuse, neglect, accident, abnormal conditions of operation; or, damaged by attempted repair or modifications by a non-authorized service facility.

The customer will be responsible for the transportation and insurance charges for the return of products to the service facility. LeCroy will return all products under warranty with transportation charges prepaid.

This warranty replaces all other warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability, fitness, or adequacy for any particular purposes or use. LeCroy shall not be liable for any special, incidental, or consequential damages, whether in contract or otherwise.

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Manufactured under an ISO 9000 Registered Quality Management System

Visit www.lecroy.com to view the certificate.



This electronic product is subject to disposal and recycling regulations that vary by country and region. Many countries prohibit the disposal of waste electronic equipment in standard waste receptacles.

For more information about proper disposal and recycling of your LeCroy product, please visit www.lecroy.com/recycle.

WA-PP-OM-E Rev A
916677-00 Rev A

Introduction

The probes (PP013, PP014, PP015, PP016) described in this manual are passive probes to be used with LeCroy WaveAce oscilloscopes

Safety Information

This symbol appears on the product: 

It refers you to additional information contained in this manual. The corresponding information in the manual is similarly denoted.

To avoid personal injury and to prevent fire or damage to the probe or any products connected to it, review and comply with the following safety precautions.

 **WARNING -- ELECTRIC SHOCK HAZARD**

Do not remove the probe case. Removal of the probe case may expose you to electric shock.

Do not disassemble the probe. Disassembling the probe may expose you to electric shock.

Do not disconnect the probe from the scope during measurement. Disconnecting the probe during measurement may expose you to electric.

Connect the probes grounding terminal to the ground potential of the device under test. Failure to connect to ground potential may expose you to electric shock.

Connect to properly grounded instruments. This probe is to be used only with test instruments having input connectors with the BNC shield (ring) connected to earth ground.

Connect the probe properly: Connect the probe to the measurement instrument before connecting the probe to test circuit. Do not disconnect the probe from the test instrument while the input is connected to the test circuit.

Do not connect the probe ground terminal to any point in the test circuit that is at a potential other than earth ground.

 **Do not apply to the input any potential that exceeds the maximum ratings of the probe.** Refer to specifications.

Do not use in wet or explosive atmospheres.

For indoor use only. This probe is intended for indoor use and should be operated in a clean, dry environment.

Do not use the probe if any part is damaged. All maintenance should be referred to qualified service personnel.

Avoid physical injury. The probe tip is extremely sharp. Use care when handling to prevent injury, including accidental skin puncture.

Use of the probe and/or the test instrument it is connected to in a manner not specified by the manufacturer may impair the protection mechanisms.

Accessories

The following table lists the standard accessory kit which is included with all WaveAce Passive Probes (PP013, PP014, PP015, PP016).

Part	Quantity
Standard Ground Lead	1
Sprung Hook	1
Color Coding Rings (set)	2
Adjustment Tool	1
Ground Attachment	1
Replacement Probe Tip	2
BNC Adaptor	1
IC Test Tip	2

The part number for the Standard Accessory Replacement Kit is PKIT3-5MM-101

Specifications

	PP013		PP014		PP015		PP016
Attenuation	1:1	10:1	1:1	10:1	1:1	10:1	10:1
Bandwidth (MHz)	15	60	15	100	10	200	300
Input R (MΩ)	1	10	1	10	1	10	10
Input C (pF)	46	15	46	15	46	12	12
Compensation Range (pF)	NA	10-50	NA	10-50	NA	10-35	10-35
Maximum Input Voltage	600 V (DC + AC_{peak})						
Cable Length	1.2 m						
Connector Type	BNC						
Temperature (Operating)	5 to 40 °C						
Temperature (Non-Operating)	-20 to 60 °C						
Humidity (Operating)	80% RH (5 to 31 °C)						
Altitude (Operating)	Up to 2000 m (6562 ft)						

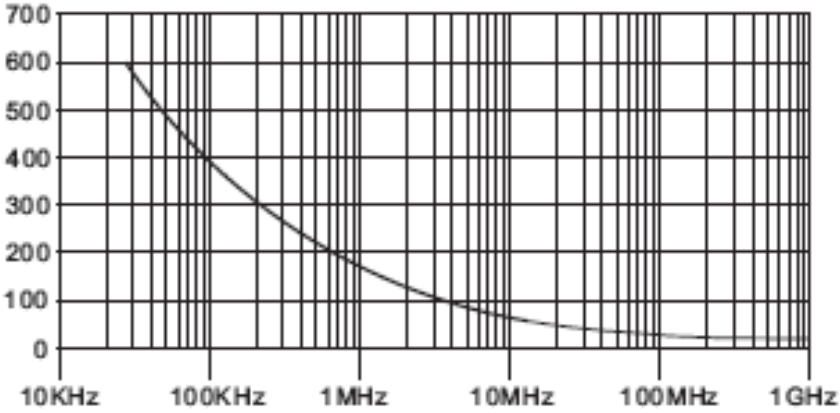
Note: The maximum input voltage derates when frequency response is approximately 30 kHz or higher. See voltage derating curve on the next page.

EC Declaration of Conformity

The PP010 probe meets intent of the European Council Directive 73/23/EEC for product safety per the following standard:

EN 61010-031:2002	Safety requirements for hand-held probe assemblies for electrical test and measurement
	Installation (Overvoltage) Category I (All mains isolated terminals)
	Pollution Degree 2

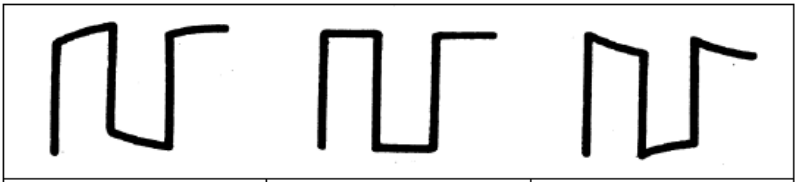
Voltage Derating



Probe Compensation

Proper compensation of the probe is required to assure good amplitude accuracy in the dynamic portions of the waveform being measured. LF compensation matches the probe to differences in oscilloscope input capacitance. The LF compensation should always be checked and adjusted as needed when first connecting a passive probe to the oscilloscope input.

LF compensation is performed by connecting the input of the probe to a low frequency square wave, such as the oscilloscope calibrator signal set to 1 kHz. The compensation is adjusted by rotating the trimmer pot accessible through the small hole in the center of the housing near the BNC connector. Use the tool supplied with the probe for this adjustment. For 10:1/1:1 probes the adjustment should be done with the probe in 10:1 mode.



Over-Compensated	Compensated Correctly	Under-Compensated