

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Teledyne / LeCroy PP066* at our website: ***Click HERE***

Operator's Manual

PP066
Passive Probe

LeCroy

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com



PP066 Passive Probe

Instruction Manual

REVISION B– November 2001

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

LeCroy Corporation
700 Chestnut Ridge Road
Chestnut Ridge, NY 10977-6499
Tel: (845) 578-6020, Fax: (845) 578-5985

Internet: www.lecroy.com

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 its warranty period to the Customer Service Department or an authorized service center. However, this will be done only if the product is determined by LeCroy's examination to be defective due to workmanship or materials, and the defect is not caused by misuse, neglect, accident, abnormal conditions of operation, or damage resulting from 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.

Copyright 2001, LeCroy Corporation. All rights reserved. Contents of this publication may not reproduced in any form without permission of LeCroy Corporation.

LeCroy, SMART Trigger and ProBus are registered trademarks of LeCroy Corporation. All other marks are the property of their respective owners.

PP066-OM-E Rev B 1101

ISO 9001 Registered KPMG Quality Registrar
The Quality Advantage

CE

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Table of Contents

Safety Information **1**
Operating Environment 1
Safety Symbols 1
Usage 1

Overview **2**
Description 2
Standard Accessories 2

Operation **3**
Handling the probe 3
Connecting the Probe to the Test Instrument 3
Connecting the Probe to the Test Circuit 3
Replacing Attenuating Resistor 3
Oscilloscope Attenuation Setting 4

Care and Maintenance **5**
Service Strategy 5
Returning a Probe 5
Returning a Probe to a Different Country 6

Specifications **7**
Nominal Characteristics 7
Typical characteristics 7
Environmental Characteristics 7
Physical Characteristics 7
Operating Conditions 7
Compliances and Certifications 8
Certifications: CE 8

Replaceable parts **9**

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Safety Information

To avoid personal injury and to prevent damage to the probe or any products connected to it, review the following safety precautions. To avoid potential hazards, use the probe only as specified.

OPERATING ENVIRONMENT

Before using the probe, ensure that its operating environment will be maintained within these parameters:

Operation	Indoor
Temperature	0 to 45 °C or 32 to 113 °F
Humidity	≤80% RH (non-condensing)

SAFETY SYMBOLS

Whenever the following symbols appear in the manual, they alert the user to an aspect of safety

	Refer to accompanying documents (for safety related information)
CAUTION	Calls attention to a procedure, practice or condition that could possibly cause damage to equipment.
WARNING	Calls attention to a procedure, practice or condition that could possibly cause bodily injury or death.

USAGE

The probe is intended to be used only with instruments that are connected to earth ground through the input BNC connector. Connect the grounding terminal of the probe to the ground potential of a device to be measured

 WARNING

The probe tips are sharp, misuse can result in injury. Use with care. The use of probe and/or the instrument it is connected to in a manner other than specified may impair the safety mechanisms

 CAUTION

To guarantee accurate performance characteristics, mechanical shock should be avoided, as well as damage to the cable through excessive bending. The probe case is not sealed and should never be immersed in any fluid. Do nor exceed the maximum specified signal input voltage levels (See Specifications).

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Overview

DESCRIPTION

The PP066 is a ÷10 high frequency probe using a special 50 Ω cable with a SMA connector for high speed transmission line type measurements. Input resistance is 500 Ω. It is designed to be used with very high bandwidth oscilloscopes.

A ÷20 attenuation probe resistors is included to increase the input resistance to 1 kΩ.

A SMA to BNC adapter has been provided to connect the probe to an oscilloscope with BNC input connector for measurements at lower frequencies.

Note

The PP066 probe needs to be terminated into 50 Ω for proper attenuation and high speed performance.

The spring loaded, hinged ground pin contributes to contact stability in addition to making it easier to reach into dense circuitry.

The probe is designed to be used with any oscilloscope having a 50 Ω input resistance.

Key Features

- Small size
- High bandwidth
- Very low input capacitance

STANDARD ACCESSORIES

The PP066 is shipped with the following standard accessories:

- ÷20 Probe Resistor
- SMA to BNC Adapter
- Plastic Nose Housing
- Instruction Manual

For part numbers refer to Replaceable Parts section.

###

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Operation

HANDLING THE PROBE

Exercise care when handling and storing the probe. Always handle the probe by the probe body. Avoid putting excessive strain or exposing the probe cable to sharp bends.

CONNECTING THE PROBE TO THE TEST INSTRUMENT

The PP066 probe has been designed for use with LeCroy's Wavemaster™ or WavePro™ high frequency oscilloscopes. Connecting the probe to any oscilloscope using the SMA to BNC adapter will make the total of the measuring system equal to the bandwidth of the oscilloscope.

Note

For proper operation with the WavePro or any other high frequency oscilloscope, the input of the oscilloscope needs to be set to 50 Ω

CONNECTING THE PROBE TO THE TEST CIRCUIT

To maintain the high performance capability of the probe in measurement applications, care must be exercised in connecting the probe to the test circuit. Increasing the parasitic capacitance or inductance in the input paths may deteriorate the performance by introducing a "ring" or slowing the rise time of fast signals. To obtain the highest performance, keep the body of the probe perpendicular to the circuit under test.

REPLACING ATTENUATING RESISTOR

The attenuation of the probe can be changed from ÷10 to ÷20 or visa versa by changing the resistor inside the probe body.

To change or replace the resistor: (See note on page 4)

1. Remove the nose housing by rotating it counter clockwise and pulling it away from the probe body taking care not to bend or twist the resistor inside the housing.
2. Pull resistor straight out of the probe body without twisting or bending the resistor.
3. Insert a different resistor by gently inserting one end of the resistor into the probe body.
4. Install the nose housing by carefully sliding it over the resistor and screwing it onto the probe body.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Note

The 450Ω(÷10) resistor is directional. The dotted end of the resistor needs to placed towards the probe side. The 950Ω (÷20) resistor is not directional.

Note

Two different Nose Housing have been supplied to indicate the probe's attenuation; a black one to indicate a 450 Ωresistor for ÷10 attenuation and a blue housing to indicate a 950 Ωresistor for ÷20 attenuation.

OSCILLOSCOPE ATTENUATION SETTING

Because the PP066 probe with its SMA connector is not supplied with ProBus encoding, you'll have to set the system's attenuation manually.

After replacing the resistor to obtain the desired attenuation, set the system attenuation by pressing one of the buttons next to **Probe Atten** in the user interface till the desired attenuation is highlighted.

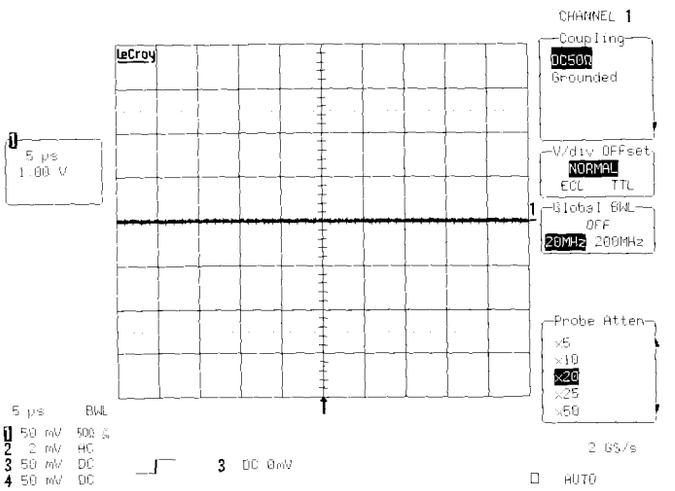


Fig. 1. System Attenuation setting

In addition, when using an oscilloscope capable of different input resistances, set the resistance to 50 Ω by pressing one of the buttons next to **Coupling** in the user interface till 50 Ω is highlighted.

###

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Care and Maintenance

The exterior of the probe and cable should only be cleaned using a soft cloth moistened with water or isopropyl alcohol

The use of abrasive agents, strong detergents, or other solvents may damage the probe.

Assure that the input receptacles are free of debris before inserting connection accessories.

All repair and maintenance should be referred to qualified service personnel.

Do not use the probe if any part is damaged.

Note

The probe case is not sealed and should never be immersed in any fluid.

SERVICE STRATEGY

Defective probes must be returned to a LeCroy service facility for diagnosis and exchange. A defective probe under warranty will be repaired or replaced with a factory refurbished probe. A probe that is not under warranty can be exchanged for a factory refurbished probe. A modest fee is charged for this service. A defective probe must be returned in order to receive credit for the probe core.

RETURNING A PROBE

Contact your local LeCroy sales representative to find out where to return the product. All returned products should be identified by model number. Provide your name and contact number and if possible describe the defect or failure. In case of products returned to the factory, a Return Authorization Number (RAN) should be used. The RAN can be established by contacting your nearest LeCroy Sales office, LeCroy representative, or the North America Customer Care Center.

Return shipment should be prepaid. LeCroy cannot accept COD or Collect Return shipments. We recommend air-freighting. It is important that the RAN be clearly shown on the outside of the shipping package for prompt redirection to the appropriate department.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

The procedure for returning a probe is as follows:

1. Contact your local LeCroy sales or service representative to obtain a Return Authorization Number.
2. Remove all accessories from the probe. Do not include the manual.
3. Pack the probe in its case, surrounded by the original packing material (or equivalent) and box.
4. Label the case with a tag containing:
   - The RAN
   - Name and address of the owner
   - Probe model
   - Description of failure
5. Package the probe case in a cardboard shipping box with adequate padding to avoid damage in transit.
6. Mark the outside of the box with the shipping address given to you by the LeCroy representative; be sure to add the following:
   - ATTN: <RAN assigned by the LeCroy representative>
   - FRAGILE
7. Insure the item for the replacement cost of the probe.
8. Ship the package to the appropriate address.

RETURNING A PROBE TO A DIFFERENT COUNTRY

In order to avoid customs duties on your probe, when this probe is returned for service, please use the following procedure.

In addition to the items mentioned above in 'Returning a Probe', you'll need to mark shipments returned for service as a 'Return of US goods for warranty repair/recalibration'. If there is a cost involved in the service, put the cost of the service in the value column and the original value of the product at time of purchase in the body of the invoice marked 'For insurance purposes only'. Be very specific as to the reason for shipment.

Duties may have to be paid on the value of the service.

####

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Specifications

NOMINAL CHARACTERISTICS

Nominal characteristics describe parameters and attributes which are guaranteed by design, but do not have associated tolerances.

Input Dynamic range	±15 Vrms
Attenuation	÷10 and ÷20 ±1% plus 50 Ω termination tolerance
Input Resistance	
÷10	500 Ω ±1 %, + 50 Ω termination tolerance
÷20	1 kΩ ±1 %, + 50 Ω termination tolerance

TYPICAL CHARACTERISTICS

Typical characteristics describe parameters which do not have guaranteed performance, however are representative of the average performance from a sample of several probes.

Bandwidth	DC to 7.5 GHz
Rise Time	47 psec
Input Capacitance	0.25 pF

ENVIRONMENTAL CHARACTERISTICS

Temperature	
Operating	0 to 45° C (32° F to 104° F) at 80% relative humidity.
Maximum Relative Humidity	80% at 31° C max.
Usage	Indoor
Altitude	3000 m (9850 feet)

PHYSICAL CHARACTERISTICS

Weight	26.5 g (0.94 oz.)
Cable Length	1.0 m ±20 mm

OPERATING CONDITIONS

Temperature	0 to 45 °C (32 to 104 °F)

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Humidity	≤80% max RH (non-condensing)
Altitude	≤3000 m (9850 feet)
Usage	Indoor

COMPLIANCES AND CERTIFICATIONS

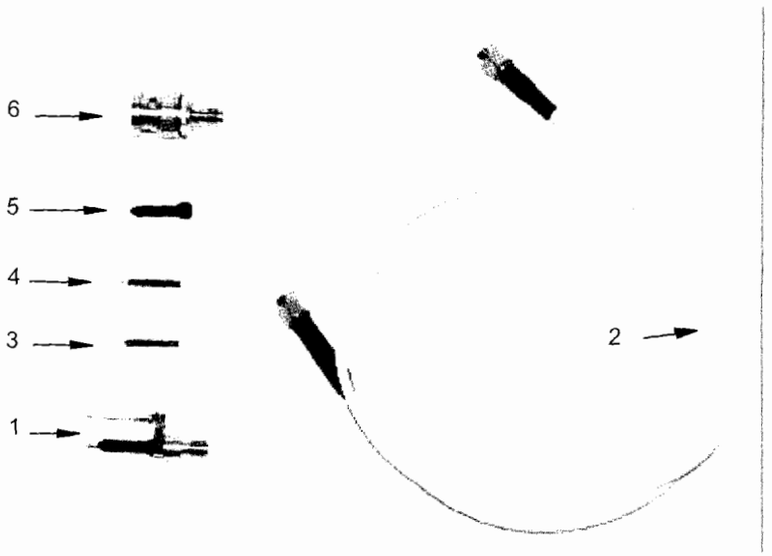
Certifications: CE

The probe meets the Low Voltage Directive 73/23/EEC for product safety.

###

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Replaceable parts



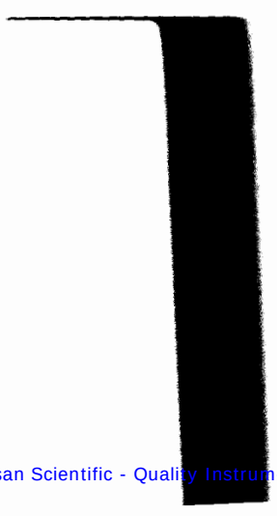
Replaceable Parts List

Item Number	Item	LeCroy Part Number	Qty
1	Probe Body *	PACC-PB001	1
2	Probe Cable	PACC-CB001	1
3	÷10 Resistor	PACC-X1001	1
4	÷20 Resistor	PACC-X2001	1
5	Plastic Nose Housing, Black	PACC-NH001	1
	Plastic Nose Housing, Blue	PACC-NH002	1
6	SMA to BNC Adapter	PACC-AD001	1

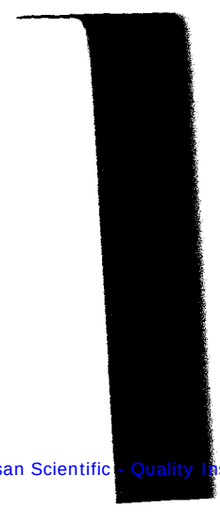
* Probe Body is supplied with a ÷10 resistor and a black Plastic Nose Housing.

Note

The 450 Ω (÷10) resistor is directional. The dotted end of the resistor needs to be placed towards the probe side. The 950 Ω (÷20) resistor is not directional.



Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com



Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP