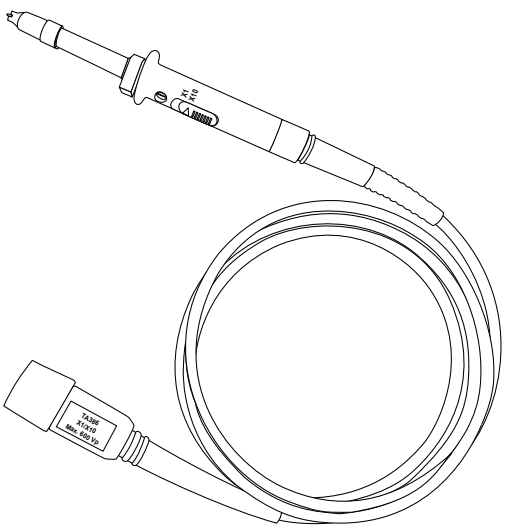
EN: This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

pico®
Technology

TA375 100 MHz oscilloscope probe
TA386 200 MHz oscilloscope probe

User's Guide



Introduction

This passive high-impedance oscilloscope probe is suitable for most oscilloscopes with a 1 MΩ input impedance. The probe incorporates a two-position slide switch in the head that selects attenuation of 1:1 or 10:1.

Sales and support

Pico Technology
Colmworth Business Park
St Neots
PE19 8YP
United Kingdom

Made in People's Republic of China.

Warranty

Pico Technology Ltd. ("Pico") warrants this oscilloscope accessory for normal use and operation within specifications for a period of two years from date of shipment and will repair or replace any defective product which was not damaged by negligence, misuse, improper installation, accident or unauthorized repair or modification by the buyer. This warranty is applicable only to defects due to material or workmanship. Pico disclaims any other implied warranties of merchantability or fitness for a particular purpose. Pico will not be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of use or data, interruption of business and the like), even if Pico has been advised of the possibility of such damages arising from any defect or error in this manual or product.

Disposal



Your help and efforts are required to protect and keep our environment clean. Therefore either return this product at the end of life to the manufacturer or ensure WEEE compliant collection and treatment yourself.

Safety

To prevent possible electrical shock, fire, personal injury, or damage to the product, carefully read this safety information before attempting to install or use the product. In addition, follow all generally accepted safety practices and procedures for working with and near electricity.

The product has been designed and tested in accordance with the IEC 61010-031 standard and left the factory in a safe condition.

The following safety descriptions are found throughout this guide:

A **WARNING** identifies conditions or practices that could result in injury or death.

A **CAUTION** identifies conditions or practices that could result in damage to the product or equipment to which it is connected.

Symbols

These safety and electrical symbols may appear on the product or in this guide:

Symbol	Description	
⎓	Direct current	
⏚	Earth (ground) terminal	Terminal can be used to make a measurement ground connection. The terminal is NOT a safety or protective earth.
	Possibility of electric shock	
	Caution	Appearance on the product indicates a need to read these safety and operation instructions.
	Do not dispose of this product as unsorted municipal waste.	



WARNING

To prevent injury or death only qualified personnel should use this product, only as instructed and with only accessories supplied or recommended. Protection provided by the product may be impaired if used in a manner not specified in this guide.

Maximum input ranges

The table and frequency derating plot below indicate the full-scale measurement range and overvoltage protection range for these probes. The full-scale measurement ranges are the maximum voltages that can be accurately measured by the probe. The overvoltage protection ranges are the maximum voltages that will not damage the probe.



WARNING

To prevent electric shock, do not connect the probe to voltages exceeding the levels below and do take all necessary safety precautions when working on equipment where hazardous live voltages may be present.

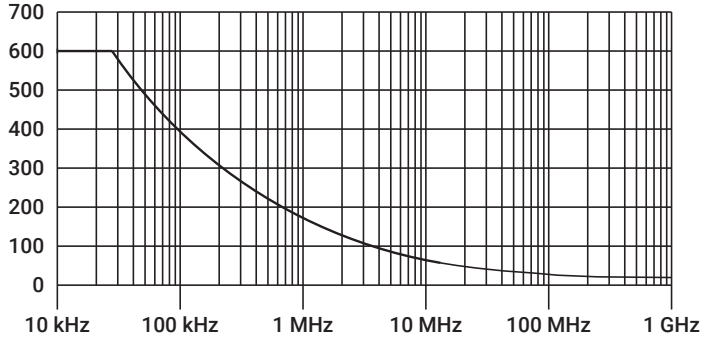
Attenuation switch position	Full-scale measurement range (for safe operation)	Overvoltage protection (voltage that will not damage)
X10	600 V DC + peak AC	600 V DC + peak AC
X1	42.4 V DC + peak AC	200 V DC + peak AC



WARNING

To avoid overloading the probe, note that its maximum input voltage rating decreases as the frequency of the applied signal increases.

Voltage v frequency rating curve



WARNING

This probe does not carry a measurement category rating. To prevent electric shock, do not connect to a mains (line) voltage or a derived voltage that can carry the overvoltage transients that may be present.

Measurement categories are defined in IEC 61010-031 as follows:

No Measurement Category (not in CAT II, III or IV)	
Definition	For measurements performed on circuits not directly connected to a mains supply.

Grounding

WARNING

Never connect the ground input to, or allow it to touch, any electrical potential other than ground. To prevent personal injury or death, use a voltmeter to check that there is no significant AC or DC voltage between the probe ground and the point to which you intend to connect it.

CAUTION

Applying a voltage to the ground input is likely to cause permanent damage to the probe or other connected equipment.

It is good practice to connect the probe output to the measurement instrument and the ground lead to earth ground before connecting the probe to the circuit under test. Disconnect the probe input and the probe ground lead from the circuit under test before disconnecting the probe from the measurement instrument.

Environment

WARNING

To prevent injury or death, do not use near explosive gas or vapor.

CAUTION

To prevent damage to the probe, do not use in wet or damp conditions and always use and store your probe in appropriate environments.

	Storage	Operating
Temperature	–20 °C to +60 °C	0 °C to +50 °C
Max. humidity (non-condensing)	0 % to 90 %RH	0 % to 80 %RH
Max. altitude	15 000 m	2000 m
Pollution degree	2 (As defined in IEC 61010-031. Non-conductive pollution with occasional temporary conductivity due to condensation.)	

Care of the product

The probe contains no user-serviceable parts. Repair, servicing and calibration require specialized test equipment and must only be performed by Pico or an approved service provider. There may be a charge for these services unless covered by the Pico two-year warranty.

WARNING

To prevent injury or death, do not use the product if it appears to be damaged in any way, and stop use immediately if you are concerned by any abnormal behavior.

CAUTION

To prevent damage when cleaning the exterior of the probe, use a soft cloth moistened with either distilled water or isopropyl alcohol. Before use allow the probe to dry completely. Do not allow liquids to enter the probe casings and ensure that the probe is completely dry before use.

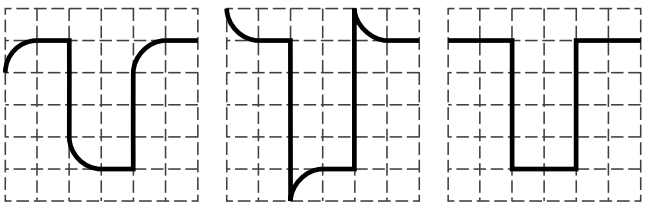
Take care to avoid mechanical stress or tight bends on the coaxial cable connecting the probe head to its interface box or BNC connector. Mishandling could degrade performance and measurement accuracy. Avoid mechanical shock to the probe in general to guarantee accurate performance and protection.

To avoid injury from the sharp tip, handle with care.

Frequency compensation

Before taking any measurements using the probe, first check its compensation and adjust it to match the channel inputs.

Connect the probe to a 2 V pk-pk, 1 kHz square wave source. Most PicoScope oscilloscopes have a signal generator output marked GEN or AWG, which you can configure to generate such a signal. Set the switch on the probe to the X10 position. Adjust the trimmer until you see a flat-top square wave on the display:



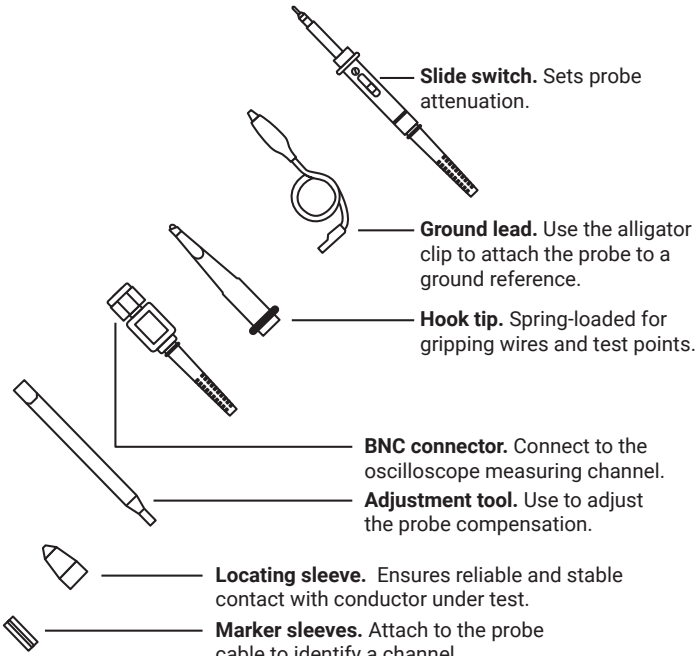
Accessories and features

The probe is provided with several accessories designed to make probing and measurement simpler. Please take a moment to familiarize yourself with these accessories and their uses.

Accessories included	TA375	TA386
Retractable hook tip	1	1
Ground lead	1	1
Adjustment tool	1	1
Tip insulating sleeve	1	1
Cable marker	2	8

Optional accessories

Order code	Description
TA384	Replacement rigid probe tips for TA375 and TA386, pack of 5
TA385	Replacement spring probe tips for TA375 and TA386, pack of 5



*** WARNING.** To avoid injury and equipment damage, use for ground connections only.
WARNING. All accessories are safety-tested. Replace only with Pico accessories.

Specifications

Probe characteristics	TA375		TA386	
Slide switch position	X1	X10	X1	X10
Attenuation ratio	1:1	10:1	1:1	10:1
Bandwidth	10 MHz	100 MHz	10 MHz	200 MHz
Rise time (calculated)	35 ns	3.5 ns	35 ns	1.75 ns
Input resistance	1 MΩ*	10 MΩ ± 2%	1 MΩ*	10 MΩ ± 2%
Input capacitance	57 pF + C_S**	15 pF	57 pF + C_S**	15 pF
Max. working voltage	42.4 V pk	600 V pk-pk	42.4 V pk	600 V pk-pk
Compensation as shipped		15 pF		15 pF
Compensation range		10 to 35 pF		10 to 35 pF
Total length	1.2 m nominal			
Weight	About 55 g			

* equal to input resistance of oscilloscope

** scope capacitance

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