



Pico TA487 IEPE Signal Conditioner User Guide

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**TA487 IEPE Signal Conditioner
Quick Start Guide**



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TA487 IEPE Signal Conditioner

The TA487 is an interface that allows industry-standard IEPE (integrated electronic piezoelectric) sensors to be used with any oscilloscope with BNC inputs. It requires power from a USB port through the USB cable supplied. An IEPE accelerometer (part number TA095) is available from Pico Technology. Other sensors such as microphones and strain gauges are available from other manufacturers. The sensor must be terminated in a BNC(m) connector.

Declaration of conformity

The TA487 IEPE Signal Conditioner conforms to UK, EU and US safety regulations. For details download the relevant Declaration of Conformity from our website.

Pack contents

TA487 IEPE signal conditioner
TA081 Mini-USB cable
DO351 Quick Start Guide

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 European standard publication EN 61010-1:2010+A1:2019, 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
	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 by the manufacturer.



WARNING

This interface sources 4 mA at up to 28 V to IEPE sensors and is not intended to measure external voltages. To avoid electric shock do not attempt to measure or connect voltages directly to either BNC connector.



CAUTION

Applying an external voltage may damage the product or connected equipment.



WARNING

Signals exceeding the voltage limits in the table below are defined as “hazardous live” by EN 61010.

Signal voltage limits of EN 61010:2010+A1:2019		
±60 V DC	30 V AC RMS	± 42.4 V pk max.

To prevent electric shock, take all necessary safety precautions when working on equipment where hazardous live voltages may be present.



WARNING

To prevent electric shock caused by accidental contact between a hazardous live voltage and the TA487 ground input, do not use the TA487 near to hazardous live voltages.



WARNING

To prevent injury or death, do not use the TA487 for measurements on mains installations.



WARNING

To prevent injury or death, do not use the TA487 or an accessory if it appears to be damaged in any way, and stop use immediately if you are concerned by any abnormal operations.



Exceeding the voltage rating of any cable, connector or accessory can cause permanent damage to the oscilloscope and other connected equipment.

Grounding



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 equipment ground and the point to which you intend to connect it.



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

External connections



Take care to avoid mechanical stress or tight bend radii for all connected leads, including all coaxial leads and connectors. Mishandling will cause deformation and will degrade performance and measurement accuracy.



Check the suitability of IEPE sensors to ensure they work within the range of the TA487 and the connected measuring equipment.

Environment

WARNING

To prevent injury or death, do not use in wet or damp conditions or near explosive gas or vapor.

CAUTION

To prevent damage, always store the device in appropriate environments.

For indoor use only.

	Storage	Operating
Temperature	—20 °C to +60 °C	0 °C to +40 °C
Humidity	5 %RH to 80 %RH non-condensing	5 % RH to 80 %RH noncondensing
Max. altitude	15 000 m	2 000 m
Pollution degree	2 As defined in EN 61010:2010+A1:2019. Only non-conductive pollution. Occasionally, however, a temporary conductivity caused by condensation must be accepted.	

Care of the product

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

Inspect the TA487 and all sensors, connectors, cables and accessories before use for signs of damage.



WARNING

To prevent electric shock do not tamper with or disassemble the TA487 or accessories.



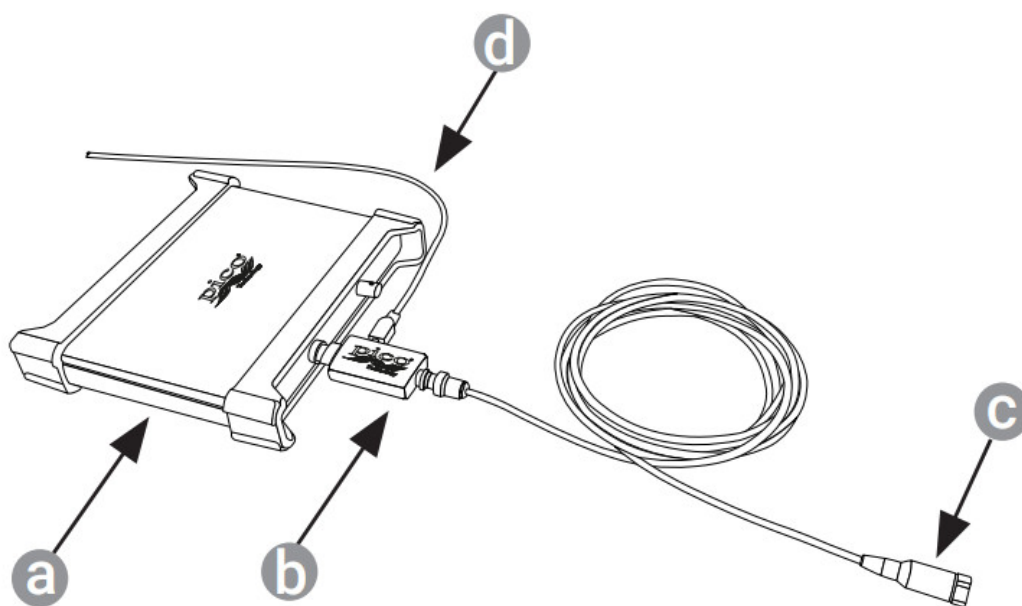
CAUTION

When cleaning the product, use a soft cloth and a solution of mild soap or detergent in water.

Before use, allow it to dry completely. To prevent electric shock, do not allow liquids to enter the casing, as this will compromise the electronics and insulation inside.

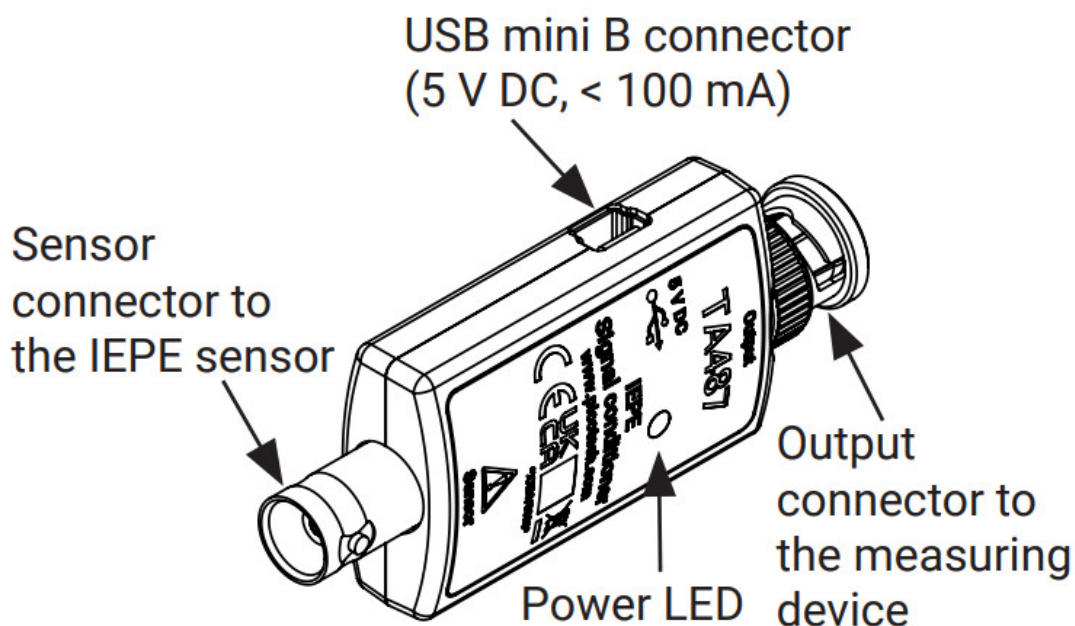
Using the TA487

Connect the TA487 between the IEPE sensor and the oscilloscope as shown below.



- a. PicoScope or other oscilloscope
- b. TA487 IEPE signal conditioner
- c. IEPE sensor
- d. Mini-USB cable (connect to any powered USB port)

Connections



Specifications

Please refer to the TA487 Data Sheet for detailed specifications.

Maintenance

The TA487 has no need for maintenance or adjustment.

Optional accessories

Order code	Description
TA095	IEPE accelerometer 0 to 50 g
TA081	Replacement mini-USB cable

Warranty

Pico Technology warrants this product 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 Technology disclaims any other implied warranties of merchantability or fitness for a particular purpose. Pico Technology 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 Technology has been advised of the possibility of such damages arising from any defect or error in this manual or product.

Disposal



Your cooperation is required to help protect our environment. Therefore either return this product at the end of life to the manufacturer or ensure WEEE-compliant collection and treatment yourself. Do not dispose of as

unsorted municipal waste.

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TA487 IEPE Signal Conditioner, TA487, IEPE Signal Conditioner, Signal Conditioner, Conditioner

References

- pico.asia
- [PC Oscilloscope, Data Logger & RF Products | Pico Technology](#)
- [User Manual](#)

Manuals+.