

PicoScope Diagnostics PC Oscilloscope Kit



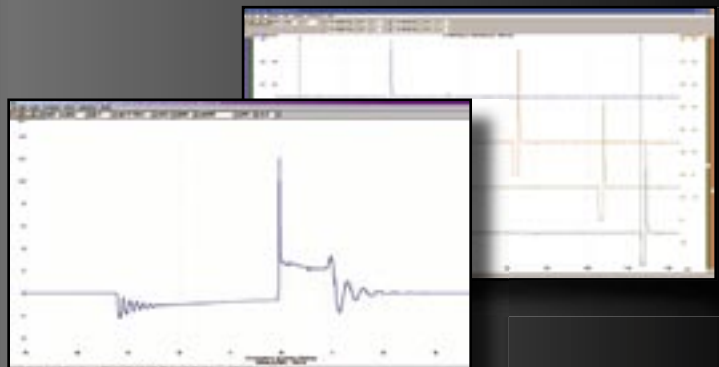
To diagnose faults in the increasing number of sensors, actuators and electronic circuits in today's vehicles, you need more than just a fault code reader. The Pico Technology Automotive Diagnostics Kit, together with the PicoScope Automotive software, allows you to pinpoint faults without relying on fault codes. Available with a two- or four-channel oscilloscope, the kit turns any PC or laptop with a USB port into a powerful automotive diagnostics tool.

- Two and four-channel versions available
- 12-bit resolution
- Deep 512k sample memory
- 20MS/s sample rate
- Connected to and powered by USB 2.0
- Free software upgrades
- Lifetime technical support

The kit can be used either in the workshop or on the road to test and measure virtually all of the electrical and electronic components and circuits found in the modern vehicle, including:

- Ignition (Primary & Secondary)
- Injectors & Fuel Pumps
- Starter & Charging Circuits
- ABS sensors, Crank & Cam Sensors
- Lambda, Airflow, Knock & MAP Sensors
- Glow Plugs / Timer Relays
- Relative Compression Tests
- CAN bus and LIN bus

The kit is suitable for a range of users including OEMs, franchised and non-franchised garages, breakdown and roadside recovery organisations, and mobile diagnostic and repair services. This powerful and flexible automotive diagnostics tool has been designed for ease of use, so is equally suitable for both novice and expert users.



Kit Contents

PicoScope 3423 4-Channel Kit



PicoScope 3423 4-Channel Automotive Kit

Part No.	Price (exc VAT)
PP276	£1225

- PicoScope 3423 Automotive Oscilloscope
- 60A AC/DC Current Clamp
- 600A AC/DC Current Clamp
- Two-Pin Break-Out Lead
- Acupuncture Probe Set
- Insulation-Piercing Probes
- 2 x 20:1 Attenuator
- Dolphin Clip (Black)
- Dolphin Clip (Red)
- 4 x BNC to 4mm Test Leads
- 4 x Secondary Ignition Pickup Leads
- 2 x Small Croc Clip (Red)
- 2 x Small Croc Clip (Black)
- 2 x Multimeter Probes (Red)
- 2 x Multimeter Probes (Black)
- Automotive Software CD
- Carry Case

PicoScope 3223 2-Channel Kit

- PicoScope 3223 Automotive Oscilloscope
- 60A AC/DC Current Clamp
- 600A AC/DC Current Clamp
- Two-Pin Break-Out Lead
- Acupuncture Probe Set
- Insulation-Piercing Probes
- 1 x 20:1 Attenuator
- Dolphin Clip (Black)
- Dolphin Clip (Red)
- 2 x BNC to 4mm Test Leads
- 2 x Secondary Ignition Pickup Leads
- 1 x Small Croc Clip (Black)
- 1 x Small Croc Clip (Red)
- 1 x Multimeter Probes (Red)
- 1 x Multimeter Probes (Black)
- Automotive Software CD
- Carry Case



PicoScope 3223 2-Channel Automotive Kit

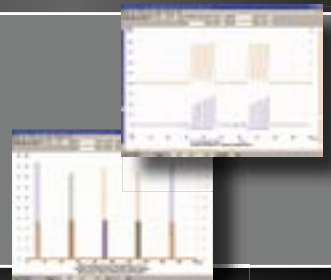
Part No.	Price (exc VAT)
PP280	£825

You can order each component in the kit separately, should you require any extra or replacement parts. Please visit our dedicated automotive website for more information:
www.picoauto.com

We have a network of distributors worldwide, details of which can be found at:
www.picotech.com/distribl.html

PicoScope Software

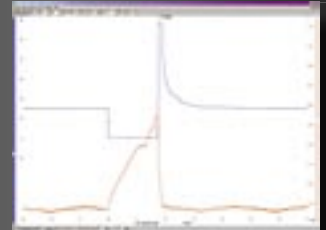
Supplied with all Pico Technology Diagnostics Kits, the PicoScope Automotive software is a powerful tool for capturing and viewing waveforms from almost any electrical or electronic system in today's motor vehicles. There are over 60 pre-loaded tests and reference waveforms available in the Pico Automotive menu. Each one launches a detailed help topic, and automatically sets up the oscilloscope and the software ready to acquire the waveform.



Example Waveforms

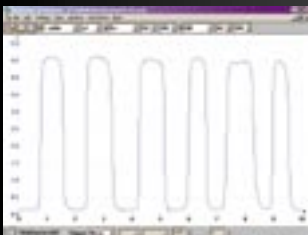
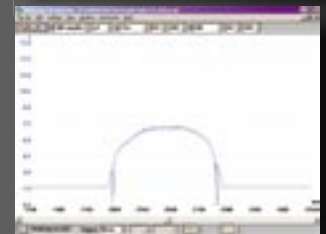
Injector Voltage and Current

The trace shows injector voltage (blue) and current (red). The dip in the current waveform occurs when the solenoid (pintle) opens and the fuel begins to flow. This test is ideal for identifying slow or sticking injectors without having to remove them from the engine.



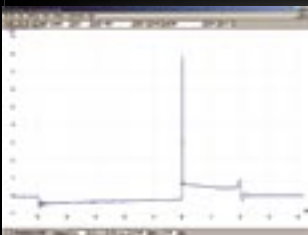
Air Flow Meter (air vane type)

This is a mechanical air flow meter in which a wiper moves across a carbon track. In this case the track has been worn away, leading to sudden drops in the waveform to zero volts. The fault will cause flat spots or hesitation during acceleration. The only solution is to replace the air flow meter.



Oxygen Sensor / Lambda Sensor

The waveform shows a titania-type sensor. When its output is high, indicating that the mixture is rich, the control unit adjusts the mixture until the sensor's output goes low, indicating that the mixture is lean. Oxygen sensors that are slow to respond require cleaning or replacement.

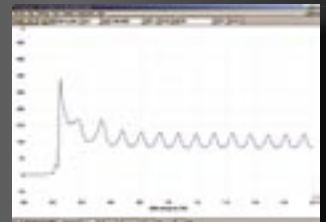


Secondary Ignition

The high resolution of the PicoScope Automotive Oscilloscope gives a detailed secondary ignition waveform. From this waveform you can measure the firing voltage, the burn time and the burn voltage. The coil oscillations are also clearly visible.

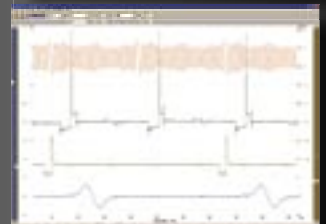
Relative Compression Test

You can analyse relative compression by monitoring the starter motor current during cranking. The initial peak of current is required to overcome initial friction and inertia to rotate the engine. You can compare the compressions with each other by observing the current required to push each cylinder up on its compression stroke.



Cam, Crank, Secondary Voltage and Injector

This trace shows four waveforms captured simultaneously: a camshaft sensor on channel A, a crankshaft sensor on channel B, a secondary ignition voltage on channel C and an injector voltage on channel D. These were captured from a 4-cylinder engine with a DIS wasted spark ignition system.



Free software upgrades are available to download from our website at:
www.picotech.com

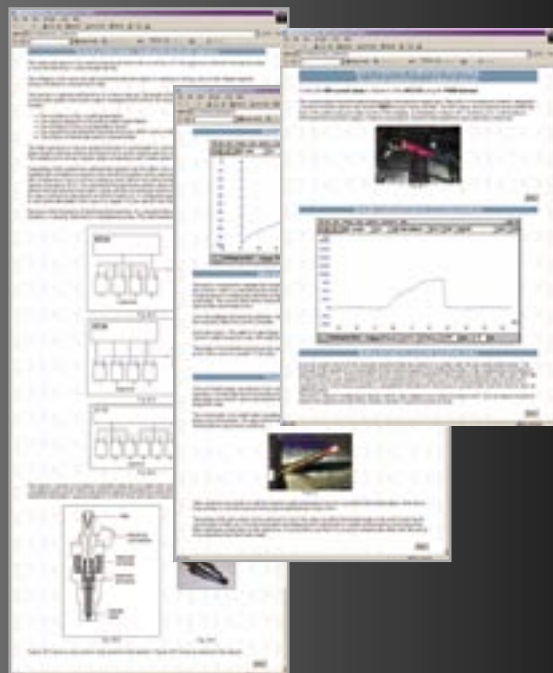
Automotive Support

Built-in Technical Library

- Each Automotive Kit includes the full version of PicoScope Automotive with access to over 60 topics and waveforms.
- Try before you buy: simply download the demo version of the software at: www.picotech.com/demo.html

Automotive Technical Experts

- Our team of technical experts are on hand to assist you with your purchase and answer any technical queries you may have.



Automotive Training Courses

- Pico Technology run a number of diagnostic training courses. Focusing on engine management diagnostics, the courses will show you how to get the best from the PicoScope software and Diagnostics Kit.



Online

- The Pico Technology website features a support forum where members can post questions and share comments on Pico products.
- Our website also contains a series of Automotive tutorials and application notes, designed to expand your knowledge of automotive diagnostics.

Vehicle Manufacturers / OEMs

For vehicle manufacturers, we can customise the PicoScope Automotive software to provide waveforms and data specific to particular makes and models of vehicles. For further information please call us on the telephone number below.

Commercial Vehicle Four-Channel Kit

Designed specifically for the testing of vans, trucks and other commercial vehicles, the Commercial Vehicle Diagnostics Kit is used by a host of leading vehicle manufacturers. The kit includes a 2000A current clamp, ideal for measuring the extremely high currents drawn by the starter motors of commercial vehicles. For further details please visit: www.picoauto.com

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