# PicoScope®

pico® Technology

## Automotive Diagnostic Oscilloscope

### The vehicle system analyzer in a box

### ALL NEW PICOSCOPE AUTOMOTIVE OSCILLOSCOPES

When you buy a PicoScope Automotive Oscilloscope you get industry-leading performance that is both affordable and easy to use. With the introduction of the PicoScope 4225 and 4425, performance has been upgraded – but the price remains the same!

Pico automotive oscilloscopes are used by more than twenty of the world's leading vehicle manufacturers, and in thousands of workshops to save time and money by making it easier and quicker to diagnose faults.

PicoScope 4225 and 4425 are the most advanced automotive PicoScopes ever, handling hybrid, electric, diesel and petrol vehicles, and can be purchased separately or as part of a kit.

### FASTER SAMPLING

The PicoScope 4000 Series can capture up to 400 million samples per second, making them fast enough to handle CAN and even FlexRay signals. You can be sure that you will always be ready for next-generation vehicles and challenges not yet encountered. Performance and intermittent problems are revealed in great detail, and stored for later analysis.

### MORE MEMORY

The PicoScope 4225 and 4425 have eight times the memory of our previous scopes. This ensures that you can capture even more information without sacrificing sampling rates - making it easier to reveal complex intermittent faults and rare events.

### HIGH INPUT RANGE

The high ±200 V input range of the PicoScope 4225 and 4425 reduces the need for external attenuators to a minimum, and differential probes are available to handle very high voltages to 1400 V and beyond.

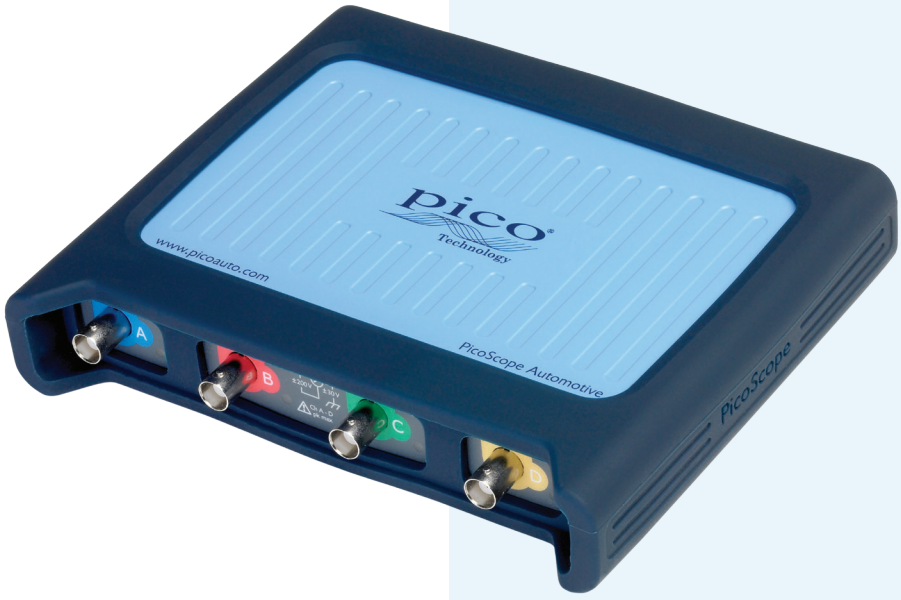
### FLOATING INPUTS

The inputs on the PicoScope 4225 and 4425 have their own ground reference separate from USB. Each input is independent (common mode voltage up to ±30 V), increasing the flexibility and allowing you to directly measure signals such as hybrid vehicle resolver circuits.

### CONNECTDETECT™

This handy feature detects when you have made a good connection in those difficult-to-reach places, displaying the connection status on your big screen and on the front of the unit.

- 2 or 4 channels
- Up to 400 MS/s real–time sample rate
- 20 MHz bandwidth
- 250,000,000 sample memory
- ±200 V input range
- Floating inputs
- ConnectDetect™ for reliable connections
- No external power supply required
- USB 3.0 connection for faster screen updates
- Protected against overloads and short circuits
- CAN bus and FlexRay compatible
- Use with any vehicle
- Easy to use
- Includes PicoScope Automotive software
- Free software updates
- 24 month warranty
- Free technical support

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# TECHNICAL SPECIFICATIONS OF THE PICOSCOPE 4425 & 4225 DIAGNOSTIC OSCILLOSCOPES

| | PicoScope 4225 | PicoScope 4425 |
|---|---|---|
| Channels | 2 | 4 |
| Vertical resolution | 12 bits (16 bits in enhanced resolution mode) | |
| DC accuracy | ±1% of full scale (2% on 50mV range) | |
| Sensitivity | 10 mV/div to 40 V/div | |
| Input ranges (full scale) | ±50 mV to ±200 V in 12 ranges | |
| Input impedance | 1 MΩ in parallel with 24 pF | |
| Input type | Floating single-ended BNC connector | |
| Input coupling | Software selectable AC/DC | |
| Input overvoltage protection | ±250 V (DC + AC peak) | |
| Buffer memory | 250 M samples shared between active channels | |
| Waveform buffer | Up to 10,000 waveforms | |
| Timebase ranges | 5 ns/div to 5000 s/div | |
| Bandwidth | 20 MHz (10 MHz on ±50 mV range) | |
| Maximum sampling rate (single shot) | | |
| 1 channel in use | 400 MS/s | |
| 2 channels in use | 200 MS/s | |
| 3 or 4 channels in use | 100 MS/s | |
| **TRIGGERS** | | |
| Source | Any input channel | |
| Basic triggers | Auto, repeat, single, none | |
| Advanced triggers | Rising edge, falling edge, edge with hysteresis, pulse width, runt pulse, dropout, windowed, logic | |
| Maximum pre-trigger delay | Up to 100% of capture length | |
| Maximum post-trigger delay | Up to 4 billion samples | |
| **SPECTRUM ANALYZER** | | |
| Frequency range | DC to 20 MHz | |
| Display modes | Magnitude, peak hold, average | |
| **ENVIRONMENTAL** | | |
| Operating temperature range | 0 °C to 40 °C (15 °C to 30 °C for quoted accuracy) | |
| Operating humidity range | 5% to 80% RH, non-condensing | |
| Storage temperature range | -20 to +60°C | |
| Storage humidity range | 5 to 95% RH, non-condensing | |
| **PHYSICAL CHARACTERISTICS** | | |
| Dimensions | 190 x 160 x 40 mm (approx 7.5 x 6.3 x 1.6 in) | |
| Weight | <900 g (approx 2 lb) | |
| **GENERAL** | | |
| Additional accessories (supplied) | USB 3.0 cable, user manuals, software CD-ROM | |
| PC interface | USB 3.0 (USB 2.0 compatible) | |
| Power requirements | Powered from USB port | |
| Compliance | FCC (EMC), CE (EMC and LVD), RoHS compliant | |
| Warranty | 2 years | |
| **PRICE** | | |
| Scope only price | 2 Ch £499 $823 €604. | 4 Ch £799 $1318 €967 |
| Kits are also available | | |

* All prices exclude VAT. Prices are correct at the time of publication. Please contact Pico Technology for the latest prices before ordering.

## WHAT DOES IT ALL MEAN?

The main specifications explained.

### VERTICAL RESOLUTION

The number of dots in the waveform from top to bottom. "12 bits" means 4,096 dots, which is more detail than you can see on the screen all at once. PicoScope stores the extra detail for when you zoom in.

### BUFFER MEMORY

The number of dots in the waveform from left to right. If you don't have enough memory then the waveform won't show all the detail in the signal. PicoScope has more than enough memory, so you can zoom in thousands of times and still see a clear display and spot intermittent glitches.

### WAVEFORM BUFFER

A memory that collects your most recent waveforms. If a waveform disappears off the screen, you can look back through the waveform buffer to find it.

### TRIGGER

This ensures that the scope captures the waveform at the right time and keeps it in a stable position on the screen. PicoScope can set up the trigger automatically, but if you want you can select special trigger modes to catch unusual waveforms that you might otherwise miss.

### BANDWIDTH

For faster signals, more bandwidth gives a more faithful reproduction of the signal shape on the screen. PicoScope has enough bandwidth to display CAN bus and FlexRay signals accurately.

### SAMPLING RATE

Like bandwidth, this is more important for fast signals. A high sampling rate ensures that you catch the high-frequency details of the signal.


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