

HIOKI

NON-CONTACT AC VOLTAGE PROBE SP3000



Capture Voltage Signals from Outside the Wire Cover

The world's first non-contact probe transforms
the conventional approach to electric equipment maintenance.



Measure signals from electric equipment on vehicles,
capture LIN and other communications signals, carry out benchmark testing, etc.

Do you have trouble capturing signals from electric equipment and communication lines because of these issues?

- The miniaturization of devices and use of waterproof connectors makes it impossible to establish contact with metal terminals
- Connectors can't be removed because it will reduce the ability to reproduce the phenomena
- Need to avoid tearing the wire insulation so as to prevent risk of damage to the sensor due to static electricity



Injector

O₂ sensor



A/F sensor



Cam angle sensor



Ignition coil

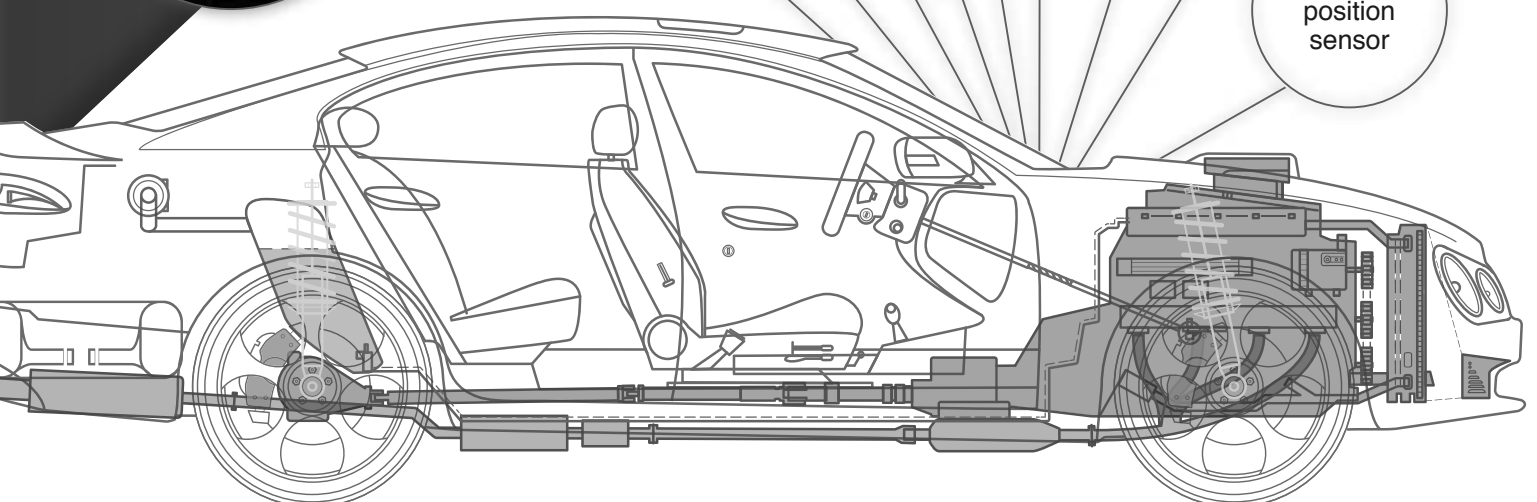
Knock sensor

Wheel speed sensor

LIN

Crank position sensor

Actual observed waveform



Dramatically reduce work time by using the SP3000 with an oscilloscope to observe waveforms

Visualize signals from electric equipment simply by applying the probe to the wire's insulation



Measure insulated wires with outside diameters ranging from 1 mm to 2.5 mm

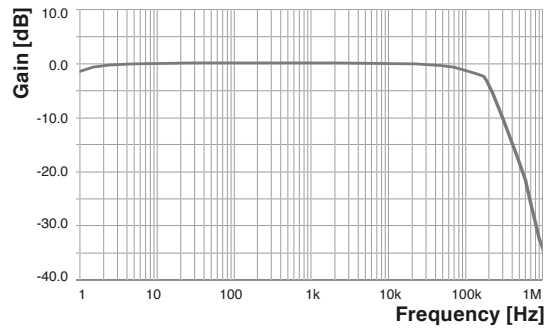
10 Hz to 100 kHz frequency band

5 Vrms 14 Vp-p rated measurement voltage

*Cannot be used to measure DC signals from batteries, etc.
*Cannot be used to measure uninsulated conductors.

Excellent Characteristics

Delivers stable frequency characteristics across a broad band so that you can observe everything from mechanical response signals to communications signals.



Sine wave

--	--	--

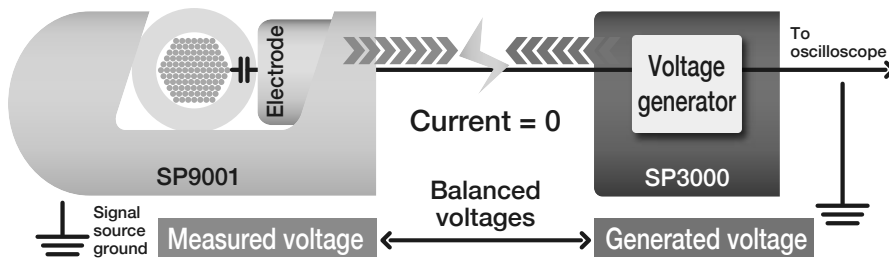
Rectangular wave

--	--	--

Triangular wave

--	--	--

Measurement principle



The hook on the tip of the probe contains an electrode for establishing capacitive coupling with the cable being measured, causing a minuscule current to flow if there is a potential difference between the cable and the electrode. By detecting this minuscule current and generating a voltage so as to eliminate it, the SP3000 can accurately observe a variety of waveforms.

Specifications (Accuracy guaranteed for 1 year)

AC VOLTAGE PROBE SP9001

Measurable wire type	Insulated wire
Outside diameter of measurable wires	1.0 mm to 2.5 mm (0.039 in to 0.098 in)
Measurement method	Capacitive-coupled current cancellation (not suitable for use with bare conductors)
Probe service life	10,000 open / close cycles
Maximum input voltage	RMS : 30 Vrms or less Peak : 42.4 Vpeak or less
Dimensions and mass	15.0 mm (0.59 in) (W) × 13.9 mm (0.55 in) (H) × 77.4 mm (3.05 in) (D) mm, 52 g (1.83 oz) (including cable)
Cable length	1.0 m (3.28 ft)
Operating temperature and humidity range	Temperature: -10°C to 50°C (probe tip, -10°C to 80°C) Humidity: 80% RH from -10°C to 40°C (non-condensing) 60% RH from 40°C to 80°C (non-condensing)
Storage temperature and humidity range	-20°C to 60°C, 80% RH (non-condensing)
Standard compliance	Safety: EN 61010

Output rate	1 V/V
Rising time	4.5 μs or less
Frequency band	10 Hz to 100 kHz (-3 dB)
Voltage measurement precision	±2.5% rdg. ±1% f.s. (0.5 Vrms to 5 Vrms)
Effects of wire under measurement	±5% rdg.
Temperature coefficient	Add 0.1% rdg. per °C within operating temperature range (at temperatures other than 23°C ±5°C)
Output noise	100 mV rms (reference value)
Dimensions and mass	120 mm (4.72 in) (W) × 25 mm (0.98 in) (H) × 55 mm (2.16 in) (D), 160 g (5.64 oz) (including cable)
Cable length	1.5 m (4.92 ft)
Operating temperature and humidity range	Temperature: -10°C to 50°C Humidity: 80% RH from -10°C to 40°C (non-condensing) 60% RH from 40°C to 50°C (non-condensing)
Storage temperature and humidity range	-20°C to 60°C, 80% RH (non-condensing)
Standard compliance	Safety: EN 61010 EMC: EN 61326
Power supply	USB bus power 5 V DC, 2.6 A Rated supply voltage: 100 V to 240 V AC (50 Hz/60 Hz) Anticipated transient overvoltage: 2500 V
Maximum rated power	When operating on USB bus power: 1.5 VA When using AC Adapter Z1013: 7.5 VA (including AC adapter)

NON-CONTACT AC VOLTAGE PROBE SP3000

Probe signal input terminal	BNC
Ground input terminal	Banana input
Output terminal	Insulated BNC
Rated measurement voltage	5 V rms (14.14 Vp-p)
Maximum input voltage	RMS: 30 Vrms or less Peak: 42.4 Vpeak or less

NON-CONTACT AC VOLTAGE PROBE (package) Model No. (Order Code) : SP3000-01

Waveform output BNC
To oscilloscope

Z1013, etc.
To USB receptacle with bus power

Package contents

- AC VOLTAGE PROBE SP9001
- NON-CONTACT AC VOLTAGE PROBE SP3000
- Alligator clip
- Ground connection cable (1.5 m)(4.92 ft)
- USB cable (1.5 m)(4.92 ft)
- User manual

Options

Accessories

- Alligator clip
- Ground connection cable
- USB cable

Non-contact AC Voltage Probe SP3000
Accessories
Alligator clip, ground connection cable (1.5 m) (4.92 ft), USB cable (1.5 m)(4.92 ft), user manual

AC Voltage Probe SP9001

AC Adapter Z1013

Magnetic Adapter 9804-02

Carrying Case C1011

Note: Company names and product names appearing in this catalog are trademarks or registered trademarks of various companies.

HIOKI

HIOKI E. E. CORPORATION

DISTRIBUTED BY

HEADQUARTERS
81 Koizumi,
Ueda, Nagano 386-1192 Japan
<https://www.hioki.com/>

