

# HIOKI

## NON-CONTACT AC VOLTAGE PROBE SP3000

NEW



## 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.

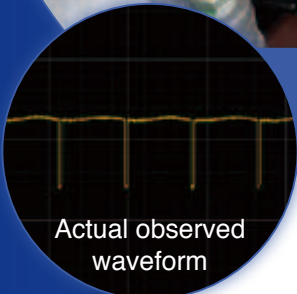
[www.valuetronics.com](http://www.valuetronics.com)

# 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



O<sub>2</sub> sensor



A/F sensor



Cam angle sensor



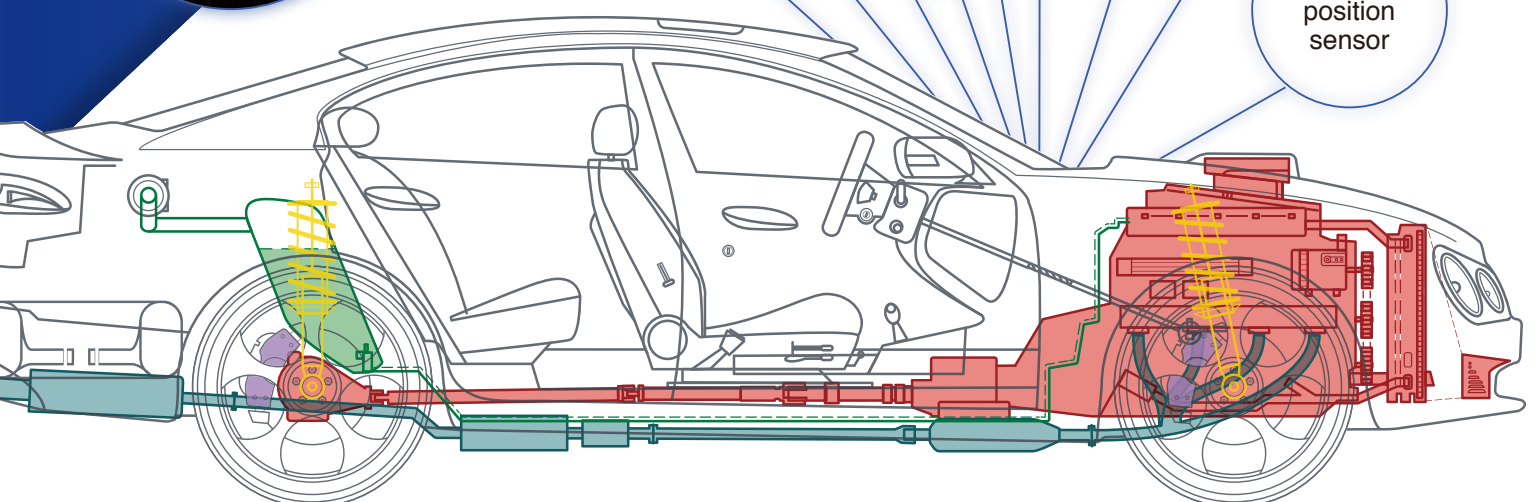
Ignition coil

Knock sensor

Wheel speed sensor

LIN

Crank position sensor



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

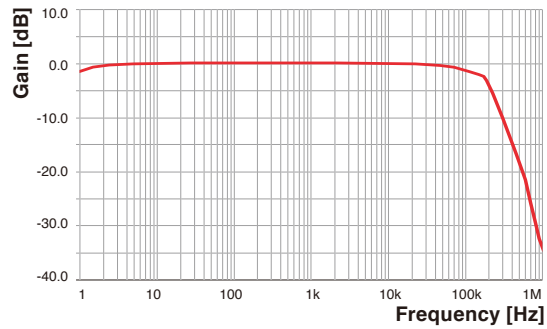
10 Hz to 100 kHz frequency band

5 Vrms 14 Vp-p rated measurement voltage

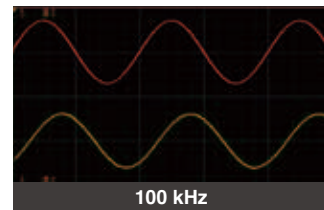
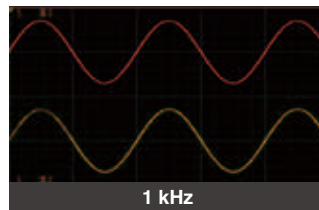
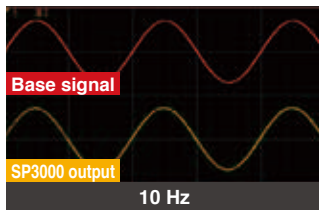
\*Cannot be used to measure DC signals from batteries, etc.  
\*Cannot be used to measure uninsulated conductors.

## Excellent Characteristics

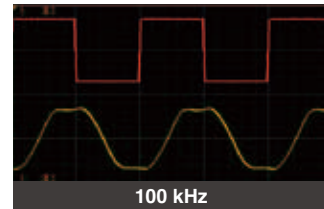
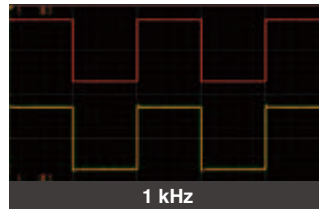
Delivers stable frequency characteristics across a broad band so that you can observe everything from mechanical response signals to communications signals.



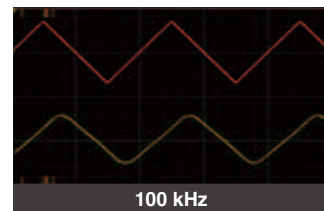
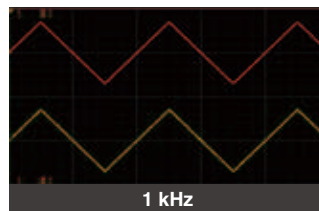
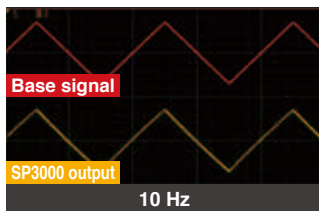
### Sine wave



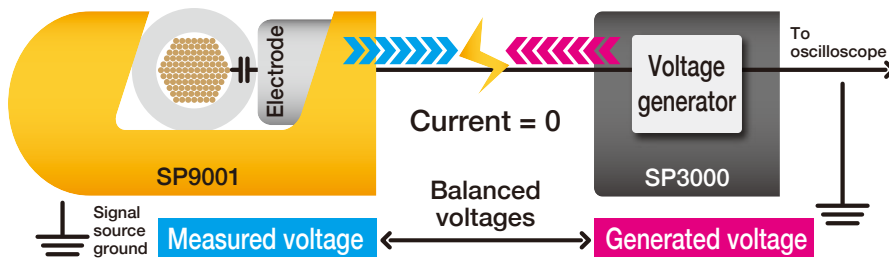
### Rectangular wave



### 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, Post-adjustment 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) x 13.9 mm (0.55 in) (H) x 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) x 25 mm (0.98 in) (H) x 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 AC Adapter Z1013
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

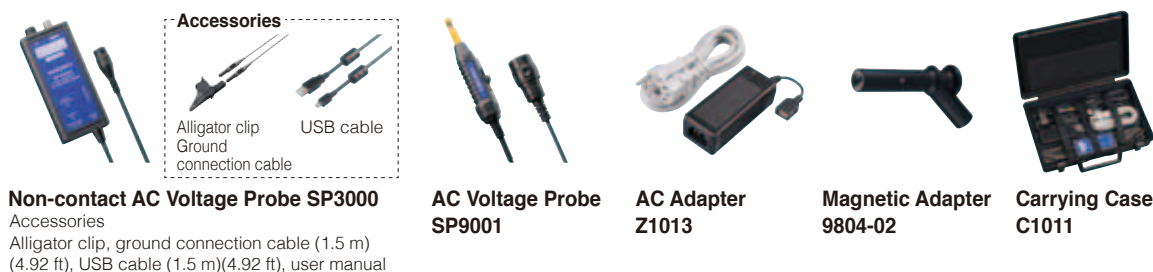
### NON-CONTACT AC VOLTAGE PROBE (package) Model No. (Order Code) : SP3000-01



#### 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



**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**

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