

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.



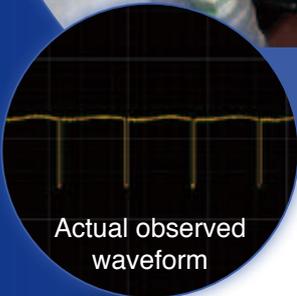
Measure signals from electric equipment on vehicles, capture LIN and other communications signals, carry out benchmark testing, etc.

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



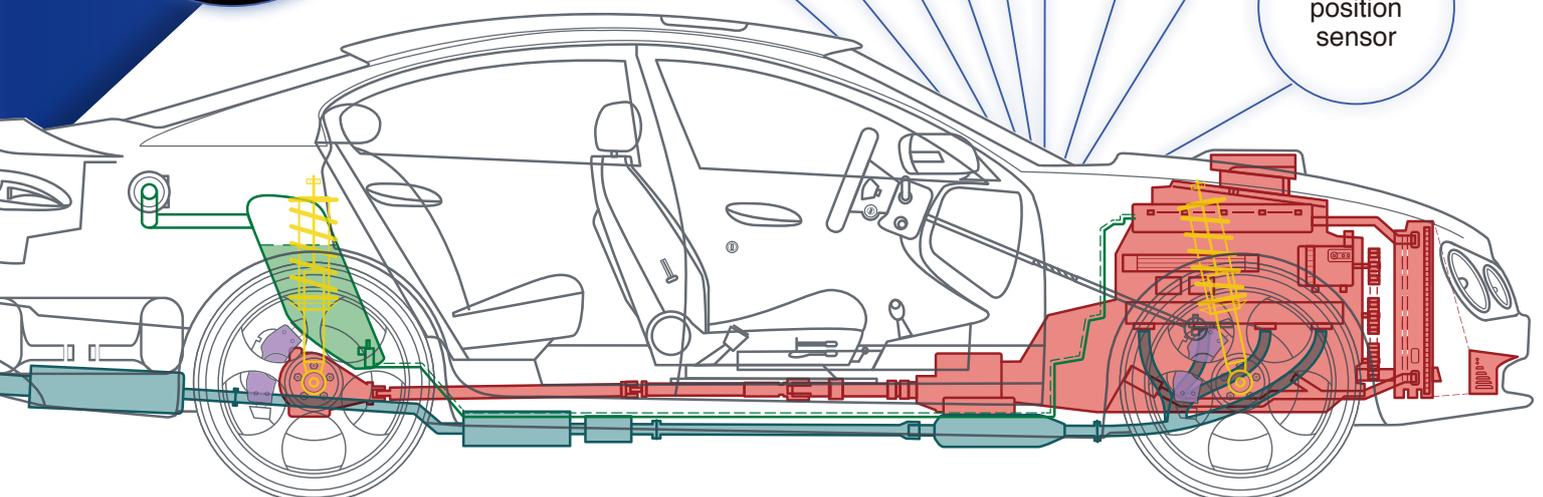
Ignition coil

Knock sensor

Wheel speed sensor

LIN

Crank position sensor



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

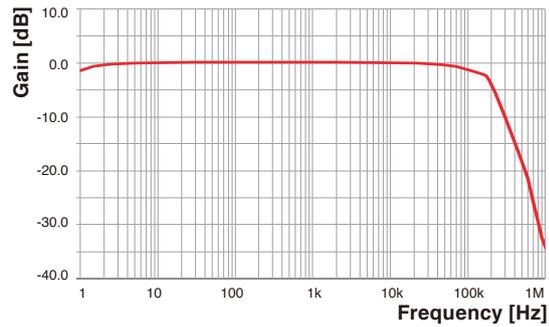
10 Hz to 100 kHz frequency band

5 Vrms 14 Vp-p rated measurement voltage

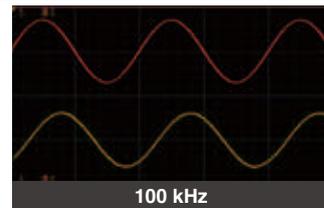
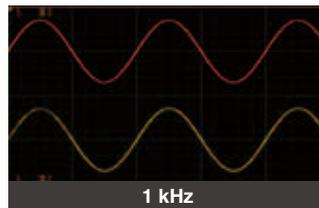
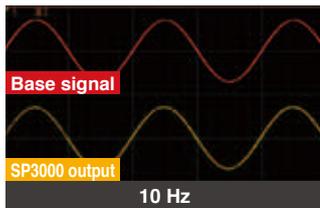
*Cannot be used to measure DC signals from batteries, etc.
*Cannot be used to measure uninsulated conductors.

Excellent Characteristics

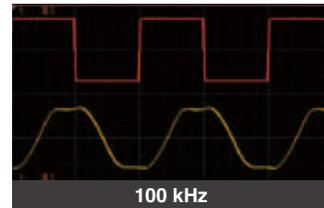
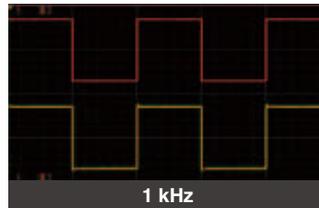
Delivers stable frequency characteristics across a broad band so that you can observe everything from mechanical response signals to communications signals.



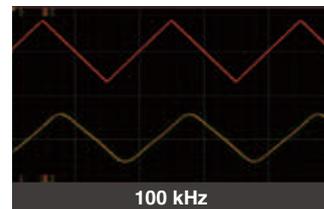
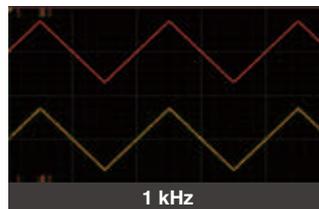
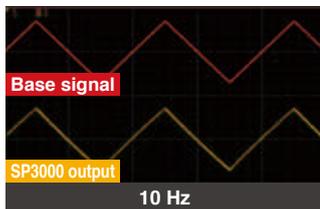
Sine wave



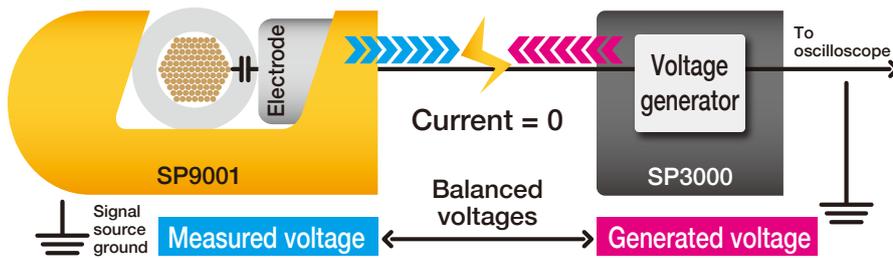
Rectangular wave



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) × 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 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

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|-----------------------------|--------------------------------------------------|
| 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

| | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------|----------------------------------------|-----------------------------------|---------------------------------------------------|
| <p>Accessories Alligator clip Ground connection cable USB cable</p> | <p>AC Voltage Probe SP9001</p> | <p>AC Adapter Z1013</p> | <p>Magnetic Adapter 9804-02</p> | <p>Carrying Case C1011</p> | <p>Protective Cap For SP9001 probe tip</p> |
| <p>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</p> | | | | | |

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

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