

Audio-signaling and Light Emitting Type Voltage Detector
DAH-6DJ

Operation and Safety Notices
Instruction Manual





Thank you very much for the purchase of the audio-signaling and light emitting type AC/DC voltage detector. For safety operation, read this instruction manual carefully and use this item correctly.

Keep this manual always on hand while using this product. Should you lose this manual, please contact us.

Safety Instructions

This instruction manual uses safety alert symbols to ensure safe operation by users. The instructions with these symbols alert you to important notices to prevent potential hazards or damages to you or other people.

The instructions with the warning symbols are used to alert you to the following hazards. Please understand them well before reading the main text of this manual.

Warning		Operating this product incorrectly without following the messages with this "Warning" symbol could result in death or serious injury.
Caution		Operating this product incorrectly without following the messages with this "Caution" symbol could cause incorrect voltage detection. Depending on situations, it may result in serious results. Be sure to confirm these messages.
Prohibition		This indicates that the operations with this symbol are "Prohibition" that must be strictly avoided.
Compulsory		This indicates that the operations with this symbol are "Compulsory" that must be followed without failure.



Warning

- ⊘ 1. Never use this product if any crack, break or chip is found on the detecting part or pipe.
- ⚠ 2. Ensure the operation of this product with the known power supply, etc. before using it.
- ⊘ 3. When detecting voltage, be sure to hold the grip and never hold any parts other than the grip. If your hand runs off the grip, you may suffer an electrical shock.
- ⚠ 4. Be sure to wear PPE (e.g. high-voltage insulated rubber gloves, rubber boots) when detecting middle voltage in a constricted state.
- ⚠ 5. When detecting voltage, be sure to grip the grip firmly.
- ⊘ 6. This voltage detector is for low~middle voltage. Do not use on special high voltage circuits exceeding AC7kV.
- ⊘ 7. Though this voltage detector has splash-proof construction, please refrain from using this product in heavy rain or dipping it into water. Never use the product with water on the surface and/or inside of the telescopic pipe. Once the telescopic pipe has been wet, dry it thoroughly before use.
- ⊘ 8. Do not use this product in the way not specified in this manual.



Caution

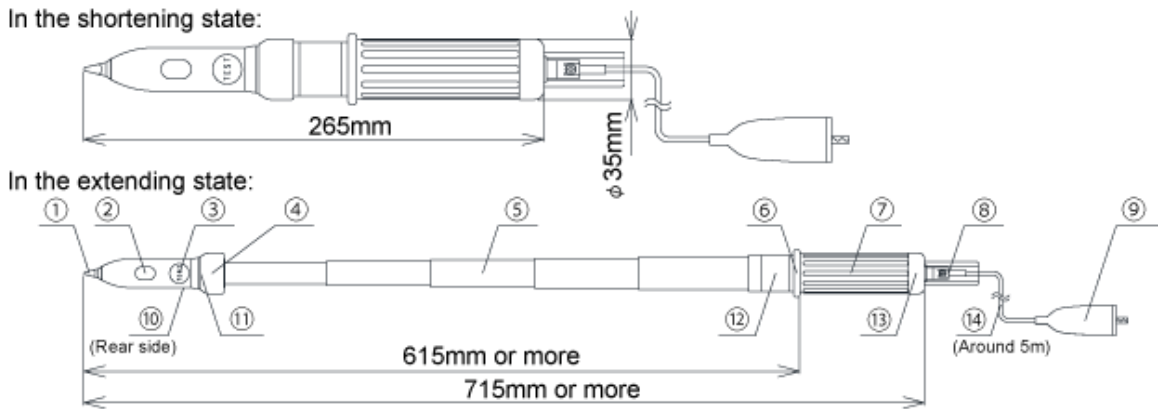
- ⊘ 1. As the operating temperature range is $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$, less than RH85%, do not use this product in the temperature and humidity beyond this range.
- ⊘ 2. Do not disassemble, modify or repair this product by yourself.
- ⊘ 3. Do not leave this product in the places of high temperature like those receiving direct sunlight in the car.
- ⚠ 4. Do not expose this product to heavy shock or vibration.
- ⚠ 5. Fasten battery chamber firmly after battery replacement.
- ⊘ 6. Do not use this product if the main body case or the surface or inner surface of the telescopic pipe is covered with water droplets or water film due to condensation or rain.
- ⚠ 7. Do not use this product when the surface of this voltage detector is dirty. Use this product after cleaning if it is dirty.
- ⊘ 8. Do not clean this product with organic solvent like thinner, benzene, etc.
- ⚠ 9. Replace a weak battery. It may cause leakage, etc. that can result in the product failure.
- ⊘ 10. Equip the product with a battery before using, if the product is a new one.

Description of Voltage Detector

This voltage detector is intended for use for AC80V~7kV and DC50V~7kV electrical circuit. Use its shortened telescopic pipe when detecting low voltage, extend the telescopic pipe for detection of middle voltage. It shall indicate the result of voltage detection in sound and light.

The Specification of Voltage Detector

T y p e	DAH-6DJ
Range of operating voltage	AC80V~7kV DC50V~7kV
Voltage at the operation start-up (Voltage to earth)	AC Bare wire:80V or less (Intermittent sound and flashing) Bare wire:400V or less (Continuous sound and flashing) Covered wire:1kV or less (Intermittent sound and flashing) DC(N/A to use to covered wire) Bare wire:50V or less (Intermittent sound and flashing) Bare wire:400V or less (Continuous sound and flashing) AC: without grounding probe. DC: with grounding probe. Only allowed to be used in a extended state. Do not be used when shrunken.
Operating frequency	50Hz/ 60Hz (Both)
Representation level	Sound: 50dB or more (at the distance of 1m from sound port) Light: to be visible at the luminance of 8,000lx (from 1m away).
Dielectric strength	AC20kV for 1 minute (between detection element and grip) in the extended state. AC14kV for 1 minute (between detection element and grounding probe) in the extended state.
Leakage of electric current	0.5mA or less, at dielectric strength test
Battery to be used	The coin-type battery, CR1632(3V)×1 pc
Range of operating temperature	-10°C ~40°C, less than RH85%
Weight	Approx. 360g (including the battery)
Grounding probe	Total length:5m(including the probe terminal and clip)



- ①Detection element ②Light-emitting part ③Test button ④Rubber protection part ⑤telescopic pipe
 ⑥Handguard ⑦Rubber grip ⑧Grounding probe terminal ⑨Grounding probe clip ⑩Sound port
 ⑪Battery compartment ⑫Caution/rated panel ⑬Probe insertion port(Cap) ⑭Grounding probe wire

Outer dimension

Usage of Voltage Detector

1. Check before voltage detection

- ⊘ (1) Ensure that the appearance and structure are normal (no crack, break or chip is found in the detecting part or the pipe). Never use this product if something abnormal is found.
- ❗ In addition, if the surface of detecting part or the pipe is dirty, wipe out the dirt with clean dry cloth before using.
- ❗ (2) Push the test button to ensure that sound signaling and light emitting operations continue to work. If they don't work or they work weakly, replace the battery with a new one.
- ❗ (3) Measure the resistance value between the main unit and the grounding probe by using the insulation resistance meter, etc., and confirm that it is approximately 100MΩ(Disconnection check).
- ❗ (4) Ensure the operation of this product with the known power supply, etc.
- ⊘ Never use this product without confirmation of sound-signaling and light-emitting.

2. How to detect voltage

- ❗ 2-1 For AC voltage detection (Remove the grounding probe before use)
- (1) With the voltage detector fully extended, hold the grip firmly so that it does not protrude beyond the handguard, and make sure that the detection element is in contact with the part to be detected.

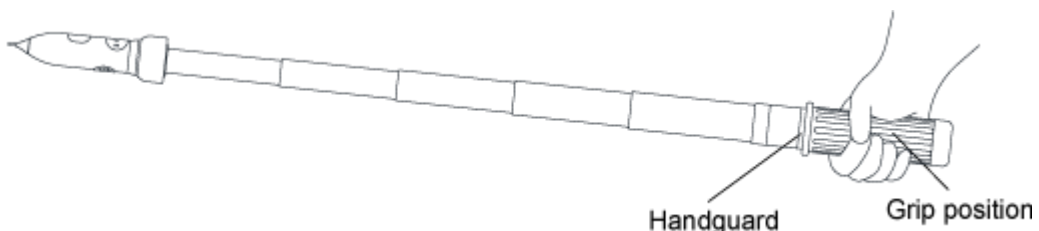


Figure1 - AC voltage detection

- ❗ (2) See figure-A, for detection on insulated coated conductors. Touching insulated coated conductors, as per figure-B, operation startup voltage will become higher. It does NOT detect voltage correctly.

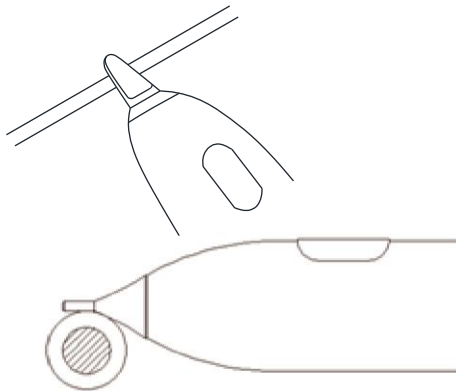


Figure A - Correct touching way

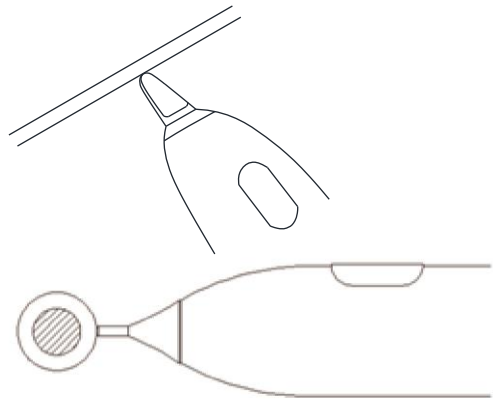


Figure B - Incorrect touching way

If a correct voltage detection work is performed as shown in Figure A, there will be intermittent **⚠** sound and flash on the insulated wire of the middle voltage circuit. Furthermore depending on the touched location with detection target (positional relationship between the live part and the main unit, etc.), it will be continuous sound and flash.

Note: Both actions detected live parts.

2-2 For DC voltage detection (Attached the grounding probe before use)

(1) As shown in Figure C, insert the grounding probe terminal all the way into the plug socket on the voltage detector body, and tighten it by turning it about one and a half turns. After tightening, pull the grounding probe terminal lightly to make sure it does not come off. Correct voltage detection cannot be performed unless the grounding probe terminal is firmly connected.

When removing the ground wire, turn the ground plug about one and a half turns as shown in Figure D, loosen it, and then pull it out.

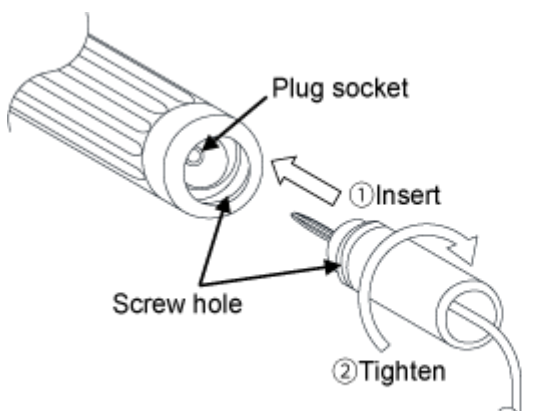


Figure C - Installation of the grounding probe

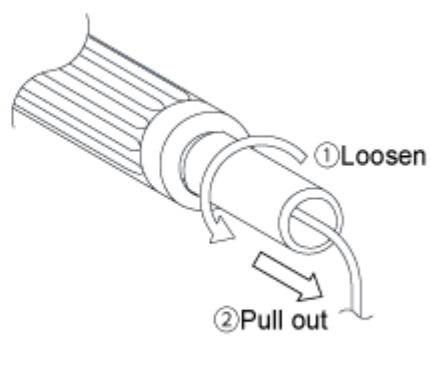


Figure D - Removal of the grounding probe

❗ (2) Make sure to ground the grounding probe clip first and touch the detection element on the main unit to the part to be detected.

❗ (3) After completing the voltage detection work, first remove the detector from the live part, then remove the ground probe clip from the ground.

Note: DC voltage detection can detect both positive and negative polarity, but cannot detect voltage on insulation covered wire.

❗ (4) When replacing the grounding probe, be sure to tighten the screw firmly and pull the ground probe lightly to make sure it does not come off easily.

2-3 For AC/DC common

(1) If the detection target is under live line condition when detection element will be touched this

❗ live part, this detector will emit sound and flashing.

(2) After voltage detection, wipe off dirt and dust from the surface of the telescopic pipe immediately. In the state, pasted dirt, dust, etc. on the pipe, may cause deterioration of the telescopic pipe accelerated.

❗ (3) Shorten step by step each section of the telescopic pipe by turning.

⊘ DO NOT violently handle, such as pushing the detection element to wall or ground sides.

3. How to replace the battery.

(1) Hold the rubber protection part and turn the body (only when without its operation).

(2) Remove the battery case from the main body case.

❗ At this time, pull the battery case too hard as it may break the inside lead wires, remove it slowly.

❗ (3) Ensure correct polarity direction and replace the battery (please see inside battery compartment).

(4) Insert the battery case slowly and the inside lead wires are not pinched.

❗ (5) Close the body case by turning tightly.

❗ (6) Make sure that the battery is installed correctly. Press the test button to check it operates intermittent sound and flashing.

See below Figure 2 for steps (2) to (4).

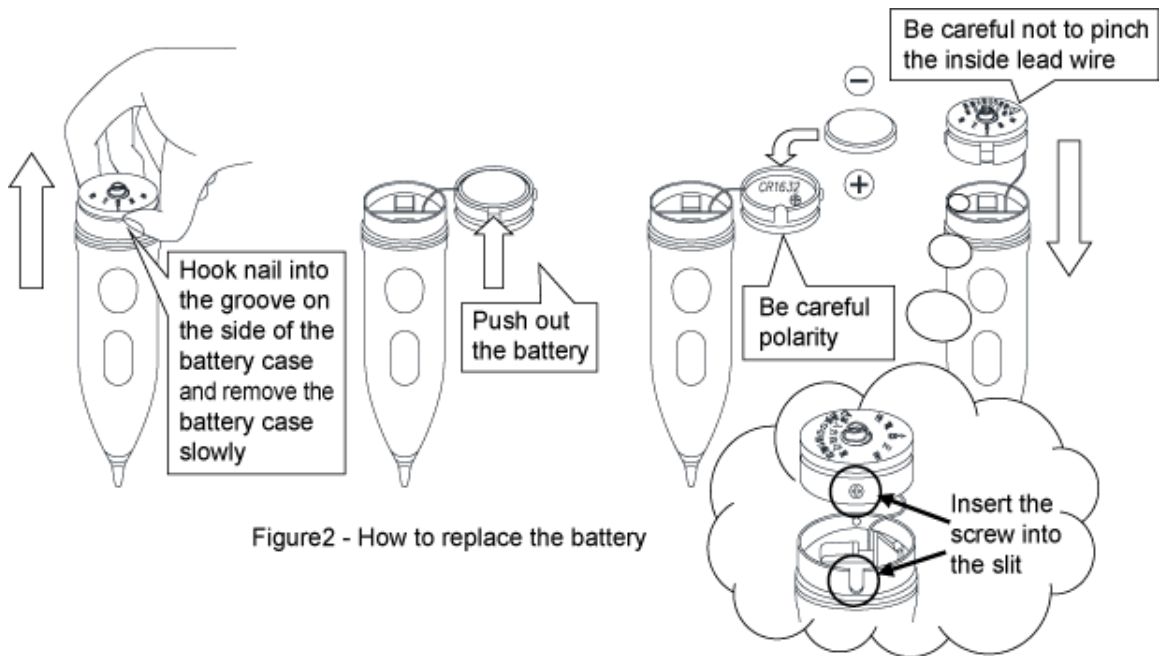


Figure2 - How to replace the battery

4. Caution at voltage detection


- ⚠ (1) Occasionally, when checking off-voltage conductors, it may react to induced voltages when a target conductor crosses or runs together with energized other conductors.
- ⚠ (2) It may react to induced voltages, when a user or the item is under induction voltage, and touching its detection element to the earth.
- ⚠ (3) Operation startup voltage may vary depending influence from surrounding environment voltage, how to hold the grip or how to touch its detection element to the target conductor.
- ⚠ (4) It may react to induced voltages when detecting voltage of metal pipes, metal cases, etc. which are isolated from the earth.
It may not react in low-voltage non-grounding circuits.
- ⚠ (5) During AC voltage detection, if the detector and the main body case (internal circuit) enter a part where the potential is the same, the product may stop operating.
- ⚠ (6) When performing AC voltage detection, it is possible to connect the ground probe to perform voltage detection, but the operating start voltage will be lower than when the ground probe is not connected.

5. Repair, maintenance and management

- ❗ (1) Keep the product in a dry place away from direct sunlight.
- ❗ (2) Never use the product with water on the surface and/or inside of the telescopic pipe. Once the telescopic pipe has been wet, dry it thoroughly before use.
- ❗ (3) When disposing of the product, treat it as an industrial waste.

- ❗ (4) Dispose of used batteries properly in accordance with local regulations.
- ❗ (5) Remove the battery when storing the product for long periods of time.
- ❗ (6) We recommend a withstand voltage test of more than 10kV between, once every six months for safe use (Periodic self-check).

(Note) The specifications of this voltage detector are subject to change without prior notice, for further improvement of the product.

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