



GENERAL CATALOGUE Vol.4-1

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HASEGAWA

GENERAL CATALOGUE Vol.4-1



Voltage Detector

Phase Tester

Voltage Detector Checker

Device for Voltage Detection
& Hot Line Proximity Alarm

Railway Products

Measuring Instrument

Grounding Hook

Disconnecter Hook Stick

Discharge Stick

HASEGAWA ELECTRIC CO., LTD.

<https://www.hasegawa-elec.co.jp/en>

A NEW CHALLENGE AS PIONEER

Rising to New Challenges as a Pioneer

HASEGAWA ground-fault relays, voltage detectors, phase testers, and measuring instruments are essential to protect the safety of human lives and our society.

In this age of electronics, one that continues to progress in complexity, the importance of these products are increasing at an alarming rate.

From extra-high voltage to low-voltage products and AC to DC products used in a variety of scenes from power companies, railway companies, and FA factories for manufacturing companies to various households, our company's products play a key role in creating safe electrical environments.

We contribute to "safe electricity" by providing high-level technical skills and wholehearted devotion. We make full use of our sensing technology to make greater leaps in our development.

Since its founding in 1925, our company has strived to develop and produce products that are key to creating safe electrical environments through products such as ground-fault relays, voltage detectors, and phase testers.

As a result, we have been able to establish ourselves as the top manufacturer in the voltage detector field, and through our original research and technology in both AC and DC relays, we have developed one-of-a-kind products and have received high praise. This is simply a result of our thorough application of "worksite principles", and it is precisely because our entire company takes a position of wholeheartedly responding to the demands of our customers under the motto of "the truth is in the worksite" that we have been able to grow as a total-solutions consulting company for "electrical safety".

Additionally, in recent years we have been grabbing attention in the overseas market and not just in Japan. Notably, in Southeast Asia, the HASEGAWA brand is recognized as proof of safety and reliability. We take pride in being able to contribute to our

customers, which include many infrastructure-related enterprises that support people's lives, such as power, gas, sewer, railroad, and communication companies, and in the future, we would like to make full use of our sensing technology to make great leaps in our development. We at Hasegawa believe that it is our social duty to create "a society free of electrical accidents", and it is our intention to continue this duty with untiring efforts. It is our hope that you will continue to support and guide us in our endeavors from now and into the future.



PRESIDENT

吉田 洋二郎
Yojiro Yoshida

We are in constant pursuit of technological innovation in order to create a society of comfortable and safe electronics.

Society ever marches forward, and globally, changes are occurring at such an intensely rapid rate that even the words "IT" and "digital" are becoming obsolete in the world of electronics. HASEGAWA is able to respond to the changes of these times while continuing to be the top manufacturer of voltage detectors and relay-related products now and into the future.

To achieve this, we are resolved to never feel satisfied with our current knowledge and technology, and we are engaged in research and development with the aim of creating technology for the next generation and beyond.

The first step of creating ideas for the future starts from our "worksite". We begin by accurately understanding product usage and the demands of our customers. Following this, we continue to listen to our customers and implement their opinions through our processes of development and design, production, quality control, and sales...

Through this constant, cyclical workflow, HASEGAWA aims for greater heights and is working to make "a society free of electrical accidents" a reality.



At HASEGAWA, our work never stops. Through a never-ending cycle of activity, we respond to the demands of the next generation.

We walk in step with our customers and provide support through a 24-hour full-support system. We support our customers through reliable consulting.

Development

We develop our products after giving our full attention to the opinions of our customers and thoroughly analyzing what is being demanded by the market and the times.

Design

We work with the ideas of the product being developed and proceed with design that considers a variety of applications. We also take universal design into account and pursue ease of use.

Production

We take the needs of our customers and when products will be used into account to realize a production system that is able to quickly get products on the market.

Quality

We implement strict product testing and checks that reflect the reliability of the HASEGAWA brand to deliver products with confidence.

Sales

Not only do we sell products, we also regularly make proposals that can contribute to the work of our customers.

Client

Company Overview

Founded: July 1925
Established: September 20, 1971
Capital: 41.6 million yen
(authorized capital: 64 million yen)
Representatives: Chairman: Osamu Yoshida
President: Yojiro Yoshida

[Locations]

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[Business Contents]

Voltage detectors: Low voltage detectors, high voltage detectors, extra-high voltage detectors, DC voltage detectors, and other auxiliary devices for voltage detection

Phase testers: Low voltage phase testers, high voltage phase testers, extra-high voltage phase testers

Relays: Bus relays, ground-fault directional relays, ground-fault overvoltage relays, high voltage ground-fault relays, short-circuit relays, DC ground-fault relays, etc.

Current transformers: Zero-phase current transformers

Grounding transformers: Low voltage grounding transformers, high voltage grounding transformers

Measuring instrument-related: Leakage monitors, ω C measuring instruments, etc.

Grounding tools: Grounding hook sticks, discharge sticks

LED-related: Working lights, helmet lights, etc.

Other: Consulting related to ground-fault relay systems, measuring systems, etc.
Research, design, and production for co-development with customers

[Major Clients]

Various power companies and related enterprises, various electrical safety associations, various electric construction firms, various companies related to Japan Railways and private railways, NTT, electronic material trading firms, etc.

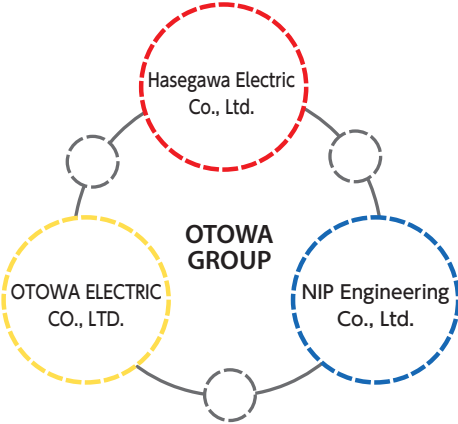
[Banks]

MUFG Bank, Amagasaki Ekimae Branch
Resona Bank, Dojima Branch
Sumitomo Mitsui Bank, Umeda Branch



We work with our group company to aid in providing stable electrical power.

We work with our group company to contribute to the stability and safety of electrical power supply with a focus on relays, voltage detectors, and other devices that are essential for the protection and maintenance of devices related to electrical power and industrial equipment as well as solar power generation.



OTOWA ELECTRIC CO., LTD.

Provides total solutions for lightning-related products, including lightning-resistant elements, the first SPDs for direct lightning hits in Japan, SPDs for power sources, and lightning-resistant transformers.

NIP Engineering Co., Ltd.

Provides total solutions for anti-lightning measures, including the manufacture, sales, design, construction, and lightning-damage solutions consultation for lightning arrester equipment (lightning rods), as well as the maintenance of solar power generation systems

Ceraon Co., Ltd.

Manufactures and sells ceramic devices

Meneon Co., Ltd.

Performs electrical work as well as maintenance and management for electrical facilities

Geological Assessment Tech Co., Ltd.

Geological survey and water quality survey, grounding design, grounding resistance reduction work and consulting, planning, design, and consultation of external and internal lightning protection measures

Otowa Korea Co., Ltd.

Sells various lightning arrestors as well as other electronic machinery and devices.

Our Company's Journey

[Company History]

- 1925 Founded in Osaka as the Hasegawa Toshihiko Trading Company Imports and sells relays, fuses, and voltage detectors
- 1942 Moves to Higashi Yodogawa, Osaka. Begins development and manufacture of bus relays and other ground-fault protection relays as well as voltage detectors
- 1949 Reorganizes as Hasegawa Electric Co., Ltd. (Hasegawa Denki)
- 1971 Changes trade name to Hasegawa Electric Co., Ltd. (Hasegawa Denki Kogyo) Kametaro Yoshida becomes President and Representative Director
- 1975 Begins sale of the "HS-7 audible, light-emitting voltage detector"
- 1986 Osamu Yoshida becomes President and Representative Director
- 1995 Issues "The Great Hanshin Earthquake for Our Company"
- 1996 Begins sale of the "HT-610 α low voltage detector"
- 1997 Begins sale of the "RRG-1 ω C measurement type ground fault protection relay"
- 1999 The HT-600 series of low voltage detectors achieves 1 million units in sales
- 2001 Receives ISO 9001 certification
- 2003 Receives ISO 14001 certification
- 2008 Main factory moves to Shioe, Amagasaki City
- 2011 Issues the technical periodical "Understanding ω C Ry"
- 2013 Establishes Sendai Sales Office
- 2014 Tatsuo Matsuoka becomes President and Representative Director
- 2015 First appearance at the Korea Expo (actively participates in international exhibitions after this)
- 2017 Head office and factory moves to new building
- 2018 Yojiro Yoshida becomes President and Representative Director

[Awards Received]

- 1981 "HS Series" wins award at the Japan Electrical Construction and Materials Fair
- 1983 "HP Series" wins award at the Japan Electrical Construction and Materials Fair
- 1986 "HT-600 voltage detector" selected for the Good Design Award G Mark
- 1988 "HSS-6 voltage detector" wins award at the Japan Electrical Construction and Materials Fair
- 1989 "HT-610 voltage detector" selected for the Good Design Award G Mark
- 1990 "HPI-A6 phase tester" wins award at the Japan Electrical Construction and Materials Fair
- 1993 "HX-6 hot line proximity alarm" wins award at the Japan Electrical Construction and Materials Fair
- 1993 "HST Series voltage detector" selected for the Good Design Award G Mark
- 1994 "VG-UI2T instant ground-fault directional relay" wins award at the Japan Electrical Construction and Materials Fair
- 1995 "Research and development of wireless voltage detectors and phase testers" wins the Shibusawa Award
- 1996 "Development of ω C measurement type ground fault protection relay equipment" wins Ohm Technology Award
- 1996 "HT-610 α voltage detector" wins Good Design Award Commissioner's Special Prize for Products of Small and Medium Enterprises
- 1999 "Development of lead-less voltage detectors" wins the Shibusawa Award
- 1999 "RRG-1B relay" wins award at the Japan Electrical Construction and Materials Fair
- 2000 "Lead-less phase tester" wins award at the Japan Electrical Construction and Materials Fair
- 2001 "Development of extendable voltage detectors" wins the Shibusawa Award
- 2003 "HSE-7T voltage detector for high voltage" wins award at the Japan Electrical Construction and Materials Fair
- 2005 "RRG-3 ω C measurement type ground fault protection relay" wins the Shibusawa Award
- 2007 Selected as one of the Small and Medium Enterprise Agency's "300 Small and Medium Enterprises Engaged in Spirited Manufacturing"
- 2007 "HT-610 α voltage detector" wins Good Design/Long Life Design Award
- 2010 Recognized as a leading technology enterprise in the Southern Hanshin area
- 2013 "Development of contactless AC voltage detectors" wins Railway Electrical Engineering Award
- 2013 "HXR contactless AC voltage detector" wins award at the Japan Electrical Construction and Materials Fair
- 2014 Presented with a "Certificate of Excellence in Declaration as a Corporation" by the Amagasaki Tax Office



Shibusawa Awards



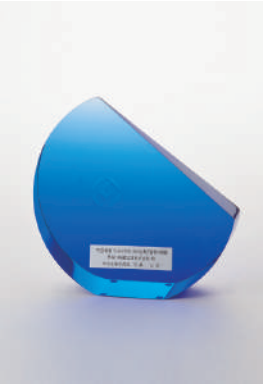
Various awards from the Japan Electrical Construction Association



The Small and Medium Enterprise Agency's 300 Small and Medium Enterprises Engaged in Spirited Manufacturing



Ohm Technology Award



Good Design Commissioner's Special Prize for Products of Small and Medium Enterprises

High voltage

Voltage detector P.24 to 29
Phase tester P.31 to 32
Portable live part detector P.35
Grounding hook P.50 to 57
Disconnecter hook stick P.58

For electric substation equipment

Extra-High Voltage Detecting System (VOLTECT) P.47 to 48

Hydroelectric power plant

high voltage substation

154kV~187kV

Wind force power generation system

Primary substation

275kV~500kV

Nuclear power plant

Thermal electric power plant

Medium voltage

For photovoltaic power generation system (DC)

Voltage detector P.19 to 20, 23

66kV~77kV

Substation for electric power distribution

6.6kV~36kV

Factories

6.6kV~36kV

Electricity distribution lines

Buildings

Voltage detector P.21 to 29, 35
Phase tester P.31 to 32
Portable live part alarm P.35
Hot line proximity alarm P.37 to 39

Grounding hook P.50 to 57
Disconnecter hook stick P.58
Discharge stick P.59 to 60

For railways (conventional railroad lines, bullet train, monorail)

Voltage detector P.41 to 45
Grounding hook P.46

Medium voltage hot line proximity
alarm P.45

For receiving plant equipment

Extra-High Voltage Detecting System
(VOLTECT) P.47 to 48

Low voltage

Voltage detector P.17 to 20
Phase tester P.30

100~440V

Shopping street

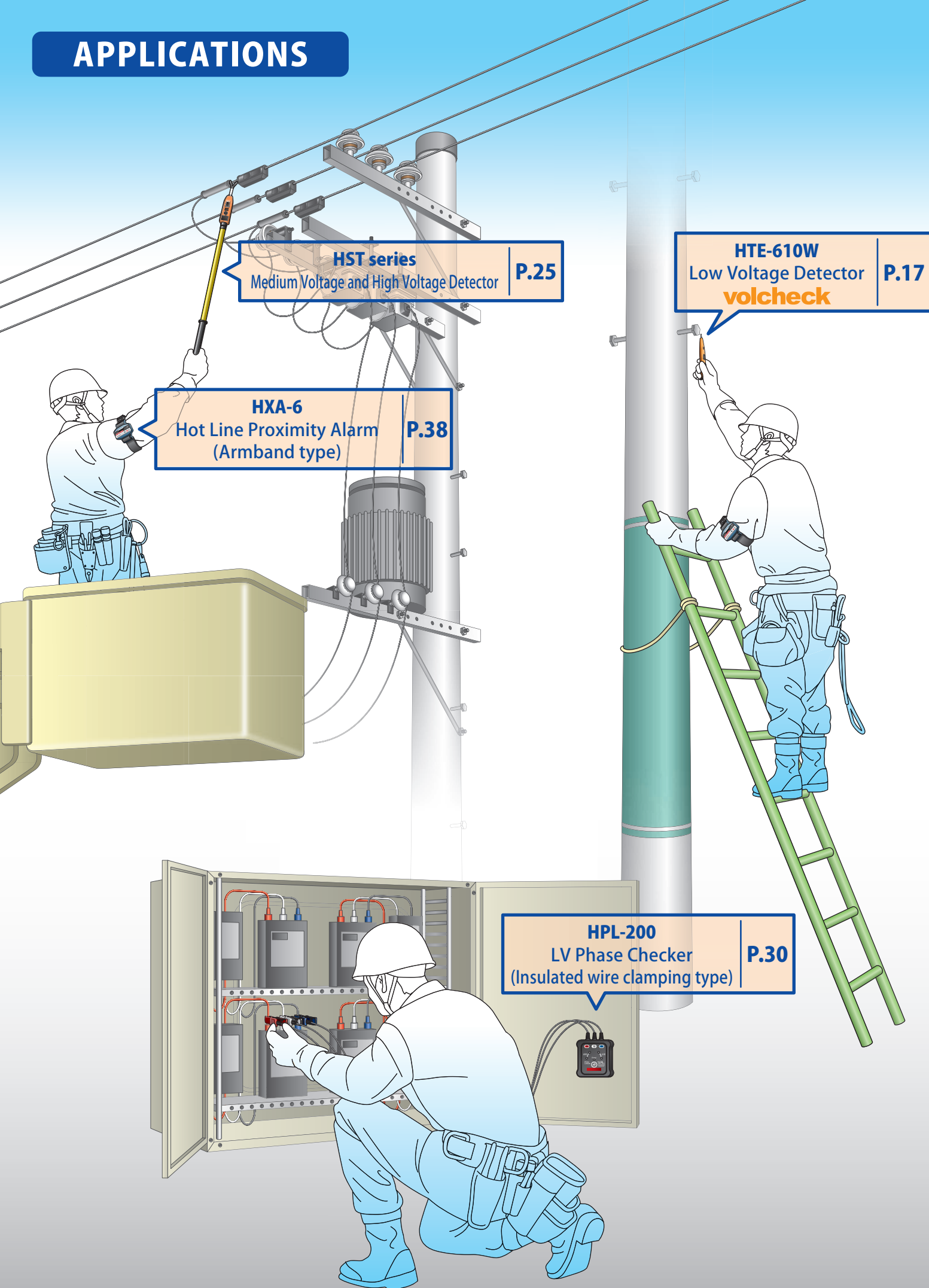
Residences

Common

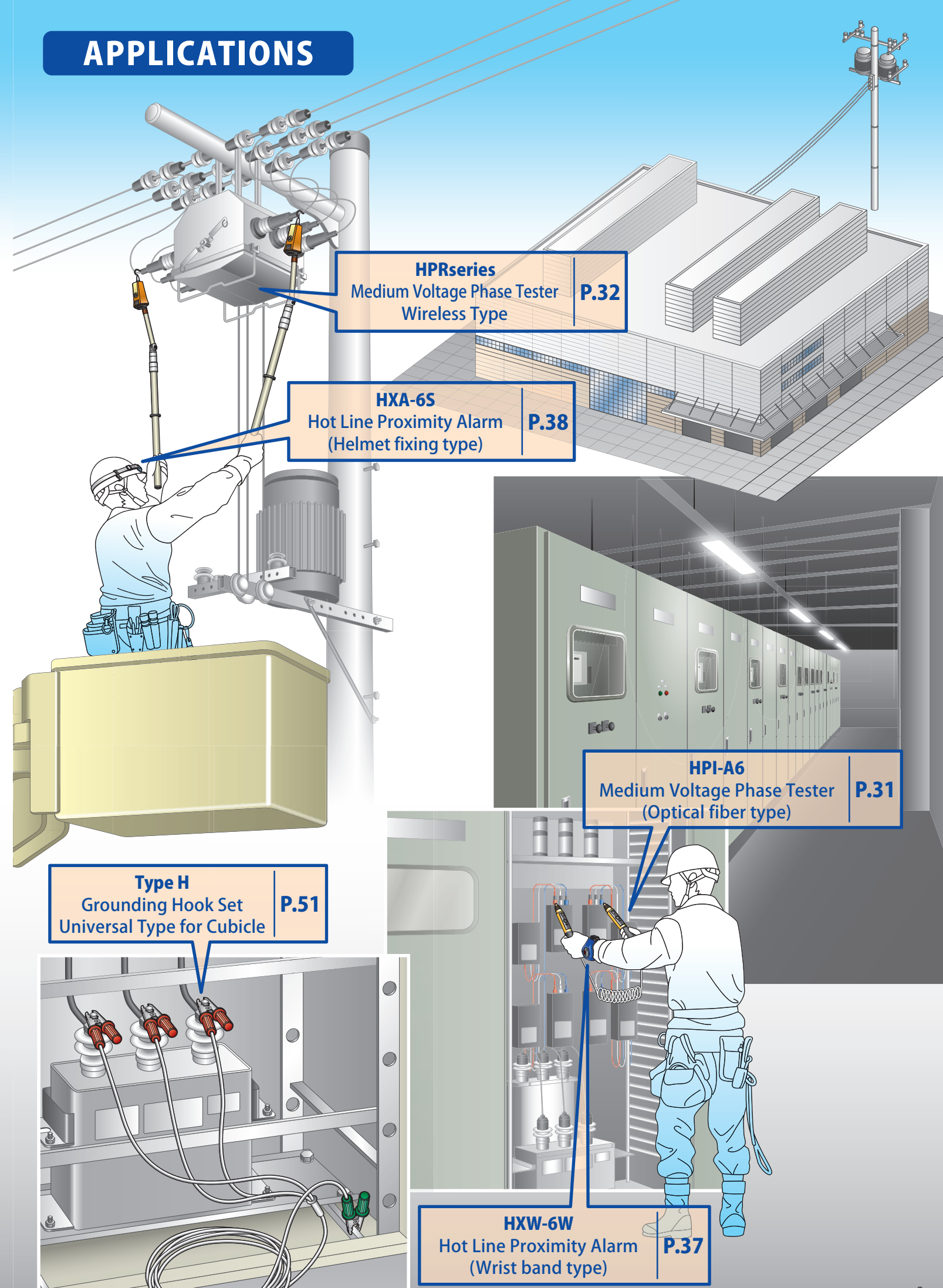
Voltage detector checker
P.34 to 35



APPLICATIONS

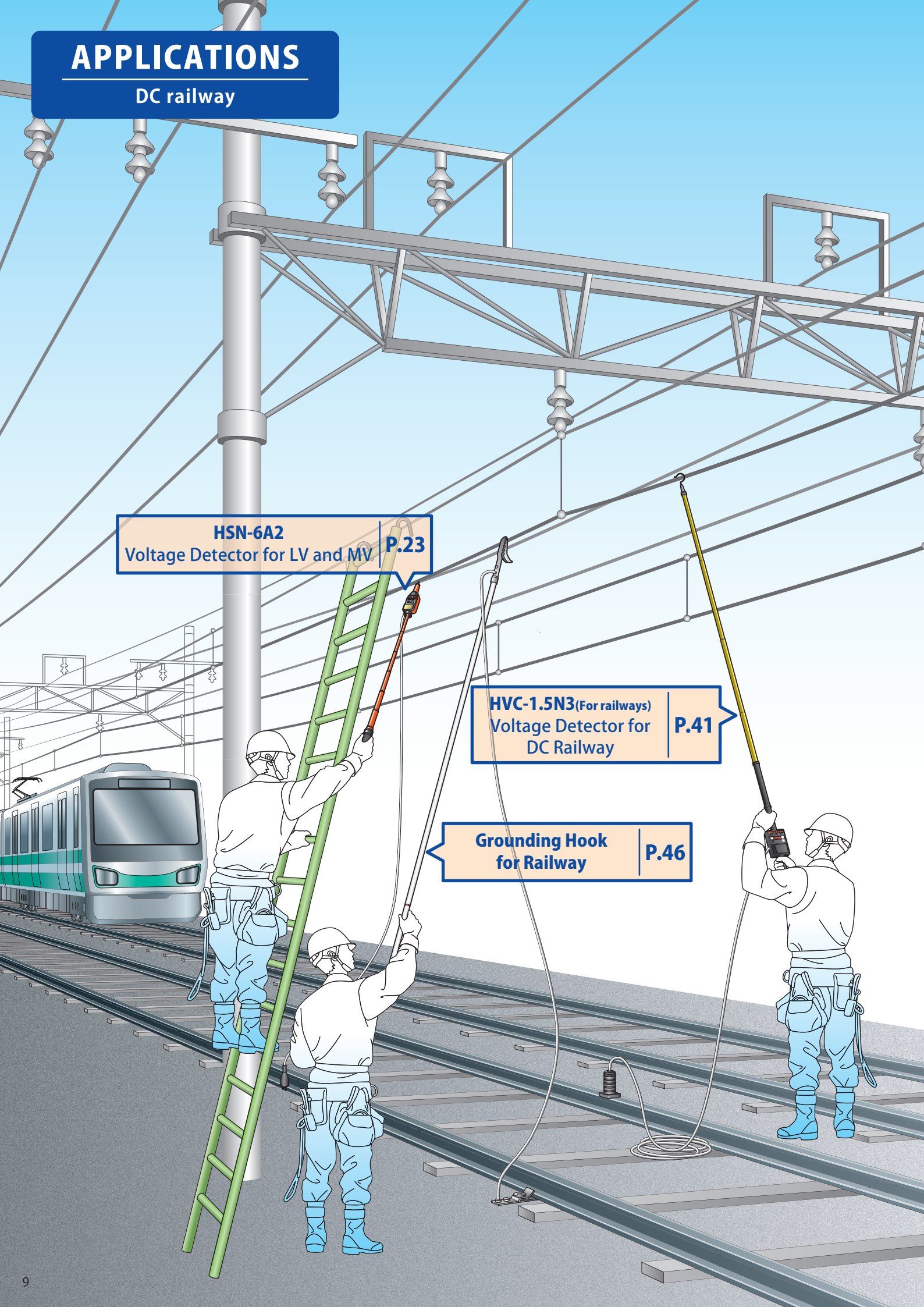


APPLICATIONS



APPLICATIONS

DC railway



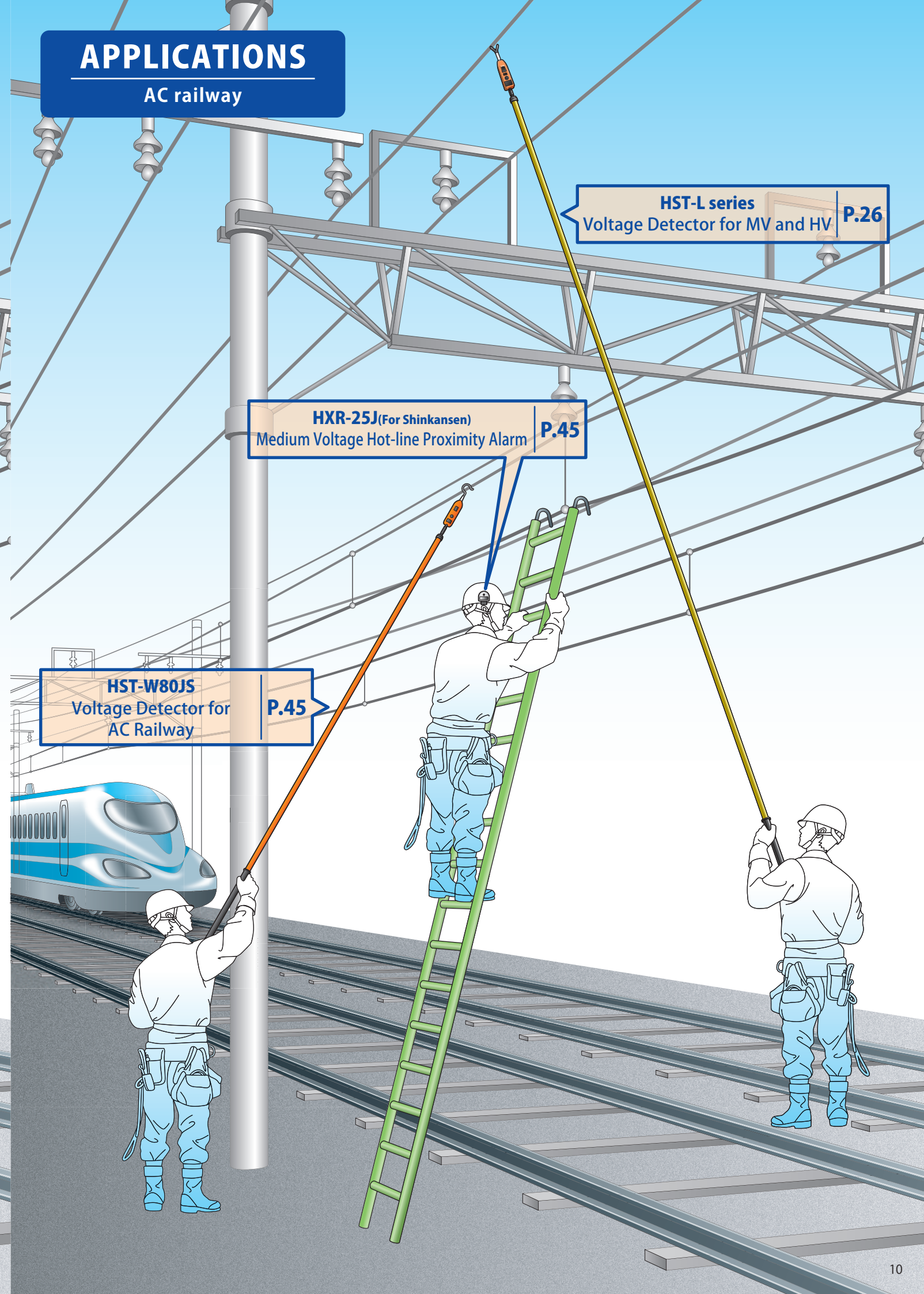
HSN-6A2
Voltage Detector for LV and MV | **P.23**

HVC-1.5N3(For railways)
Voltage Detector for DC Railway | **P.41**

Grounding Hook
for Railway | **P.46**

APPLICATIONS

AC railway



HST-L series
Voltage Detector for MV and HV | **P.26**

HXR-25J(For Shinkansen)
Medium Voltage Hot-line Proximity Alarm | **P.45**

HST-W80JS
Voltage Detector for AC Railway | **P.45**

General Catalog of
Voltage Detectors

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Railway Products (except for voltage detector, grounding hook)	41~46
Measuring Instrument	47~48
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Discharge Stick	59~60
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Confirming dead-line work	67~68
Product warranty, maintenance	69~70

①

HTE-610W

②

Low Voltage Detector

③

AC 50~1000V

④

Low Voltage Detector Standard Model

■Features

- Highly convenient
 - Voltage detection through covering (sheath)
 - Sensitivity adjustment
- Designed with user safety and security in mind
 - Conductive rubber provides a high level of safety
 - CAT III 1000V

■Dimensions: HTE-610W

■Specifications

Model	HTE-610W
Working voltage range	AC50V~1000V 50/60Hz
Insulation resistance	Between contact tip and clip (grip): 100MΩ minimum with a 500V megger
Dielectric strength	Ditto: 2000V-1 minute
Leakage current	Ditto: 100 μA maximum
Impulse withstand	Ditto: 8000V-10 cycles of positive / negative (IEC61010-1 CAT III 1000V equivalent)
Lighting (HTE-610WL only)	The light is switched "ON" or "OFF" by pushing the test button. The light is turned off automatically about 30 seconds after the light is turned on. (Automatic power off) ※The voltage detector operator regardless of the light turned ON or OFF.
Operation starting voltage (Voltage to ground)	Maximum sensitivity: AC40V maximum Minimum sensitivity: Not operation at AC100V Operation at AC200V Ex-Factory: AC40V±10V (when the contact tip is in contact with an internal standard insulated cable (600V-IV2mm²))
Operation status display	Light: Intermittent red light visible in 8000lx ambient Sound: Intermittent sound of 50dB minimum in 30cm distance
Operating temperature range	0°C~+40°C
Weight	22g (including batteries)
Battery	2 alkaline button cells LR44 (1.5V)
Battery life	New battery : In continuous operation 10 hours : In storage 1.5 years

①Product type

②Product name

③Working voltage range

④Marking

Audio signaling and light emitting
Action is notified by sound and light.

AC DC
The product is usable for both AC and DC.

Telescopic type
The operating rod is telescopic.

CE
This marking is for products for the EU market, conforming relevant standard.

Contact tip - Conductive rubber
Conductive rubber tip prevents accident of short circuit

Voltage detection over insulation
Voltage can be detected over the insulation sheath. (Not possible for shielded cables.)

Waterproof equivalent to IPX4 and so on
Protection against splashes

RoHS
The marking is to confirm satisfaction of the RoHS regulation.

Contact tip - made of Conductive resin
Short circuit prevention. Conductivity is easy to be maintained.

Voltage detection over the insulation *AC only
Voltage detection over the insulation not possible for DC

Waterproof
Water-resistant structure for rain and water drops

IEC
In Conformity to IEC

Contact tip - Replaceable
Detector tips are sold

only for bare wire
Can be used for bare conductor only. Can not be used for insulated conductor.

Battery-less
No battery is used for operation.

Auxiliary device for voltage detection
The product is not a voltage detector, but is used to assist voltage detection work.

Sensitivity adjustment
Sensitivity can be adjusted by turning the volume knob.

LED lighting
LED lamp is equipped to light the target location of voltage detection.

⑤Battery life -----The battery supplied with product is for testing, this battery life shall not be applied.

Voltage Detector

- Voltage Detector P.17
- Phase Tester P.30
- Voltage Detector Checker P.33
- Device for Voltage Detection & Hot Line Proximity Alarm P.35

Voltage Detectors as per working voltages

■ For Low Voltage to Medium Voltage

Model	Feature	Voltage							Listed page
		0V 50V100V	600V	1000V	7000V 11,400V	20000V	25000V	30000V	
HTE-610W		AC50~1000V							17
HTE-610WL	With LED lighting	AC50~1000V							17
HTE-700D/DL		AC50~600V							19
		DC12~750V							
HT-670	Voltage discrimination function of 100 V-200 V (* When option is used)	AC50~600V							19
		DC50~600V							
HSF-11		AC80~11,400V							21
HSE-7G		AC60~7,000V							21
HSS-25B1	Telescopic type	AC 80 ~ 25,000V							22
HSS-36B1	Telescopic type	AC80~36,000V							22
HSN-6A2	Telescopic type	AC80~7,000V				~AC10.5kV*	* Applied only at withstand voltage test		23
		DC50~7,000V				~DC21kV*			
HST-1.5N		AC600~7,000V							23
		DC600~7,000V							

■ For Medium Voltage to High Voltage

Model	Feature	Voltage							Listed page
		3kV	6kV	22kV	66kV	154kV	275kV	500kV	
HST-20N		AC3kV~25kV							24
		DC3kV~25kV							
HST-30W	Telescopic type	AC3kV~42kV							25
HST-30L	Telescopic type	AC3kV~34.5kV							26
HST-70L	Telescopic type			AC20kV~80.5kV					26
HST-W80L	Telescopic type			AC20kV~80.5kV					26
HSR-500	Telescopic type						AC250kV~550kV		27
HSR-90N			AC6kV~90kV						27
			DC6kV~90kV						
HWB-35	Non-contact type		AC6kV~35kV						28
HWB-138	Non-contact type				AC66kV~138kV				28
HWB-550	Non-contact type						AC210kV~550kV		28
WM-22	Pinwheel type / Telescopic type		AC6kV~22kV						28
WM-33	Pinwheel type / Telescopic type		AC6kV~33kV						28
WM-77A/B/C	Pinwheel type / Telescopic type		AC11kV~77kV						28
WM-154A/B	Pinwheel type / Telescopic type		AC11kV~154kV						28
WM-275	Pinwheel type / Telescopic type			AC33kV~275kV					28
HWA-33X	IEC61243-1			AC11kV~33kV					29
HWA-33P	Universal joint type	AC1kV~35kV							29

■ For Railway (for trolley wire)

Model	Feature	Voltage					Listed page
		0V	300V	600V	7000V	20000V	
HVC-1.5N3	Digital display Function for checking earth wire disconnection			DC750~2000V	* Measurement range is 0 to 1999 V		41
HVC-750N3	Digital display Function for checking earth wire disconnection		DC300~2000V	* Measurement range is 0 to 999 V			42
HVC-1.5N3S	Digital display Function for checking earth wire disconnection			DC750~2000V	* Measurement range is 0 to 1999 V		43
HVC-1.5N3M	Digital display Function for checking earth wire disconnection		DC300~2000V	* Measurement range is 0 to 1999 V			43
HSR-1.5NJ				AC6600V			44
			DC600~7000V				
HSR-1.5NR	Residual electric charge checking function Standby display function			AC6600V			44
			DC1000~7000V				

Model	Feature	Voltage							Listed page
		3kV	6kV	22kV	66kV	154kV	275kV	500kV	
HST-W80JS	Telescopic type/ Standby display function			AC20kV~80.5kV					45

Index etc.

Voltage Detector

Phase Tester

Voltage Detector Checker

Device for Voltage Detection & Hot Line Proximity Alarm

Railway Products

Measuring Instrument

Grounding Hook

Disconnector Hook Stick

Discharge Stick

Information Materials

Section Table for Detectors

For Low Voltage

Model	For AC Low Voltage Detector	For AC Low Voltage Detector	For AC & DC Low Votage Detector	For AC & DC Low Votage Detector	For AC & DC Low Votage Detector
	HTE-610W	HTE-610WL	HTE-700D	HTE-700DL	HT-670
Working voltage range	AC50V~1000V	AC50V~1000V	AC50V~600V DC12V~750V *bare wire only (AC/DC)	AC50V~600V DC12V~750V *bare wire only (AC/DC)	AC50V~600V DC50V~600V
AC	●	●	●	●	●
DC	—	—	●	●	●
Sensitivity adjustment	●	●	—	—	●
Electricity detection over coated wire (AC)	●*	●*	—	—	●*
function of LED light	—	●	—	●	—
Waterproof	—	—	●	●	—
Voltage Discrimination Function	—	—	—	—	● With insulated wire
Battery	2 alkaline button cells LR44(1.5V) ◦ Standard model	2 alkaline button cells LR44(1.5V) ◦ With LED	AAA battery (R03/LR03 1.5V) × 1pce ◦ AC/DC type (only for bare wire)	AAA battery (R03/LR03 1.5V) × 1pce ◦ With LED	LR44(1.5V) × 2pcs ◦ Switchable sensitivity (AC only)

※Cables with a shield, conductive shielding layer, cannot be detected.

For Medium/Low Voltage

Model	For AC Voltage Detector for Medium/Low Voltage	For AC Voltage Detector for Medium/Low Voltage	For AC Voltage Detector for Medium/Low Voltage	For AC Telescopic Type of Voltage Detector for Medium/Low Voltage	For AC & DC Telescopic Type of Voltage Detector for Medium/Low Voltaget	For AC & DC Medium Voltage Detector
	HSF-11	HSE-7G	HSS-25B1	HSS-36B1	HSN-6A2	HST-1.5N
Working voltage range	AC80~11.4kV	AC60V~7000V	AC80~25000 V	AC80~36000 V	AC80 to 7000 V (at withstand voltage test of 10.5 kV) DC50 to 7000 V (at withstand voltage test of 21 kV)	AC600V~7000V DC600V~7000V
AC	●	●	●	●	●	●
DC	—	—	—	—	●	●
Telescopic type	—	—	●	●	●	—
Battery	R03(1.5V) × 2pcs	LR44(1.5V) × 2pcs	LR44(1.5V) × 2pcs	LR44(1.5V) × 2pcs	LR44(1.5V) × 2pcs	LR44(1.5V) × 2pcs
Accessory	Storage case ◦ Easy to handle and carry	Storage case ◦ Recommended for telecom workers	Storage case ◦ Easy to handle and carry	Storage case (option) ◦ Wide range type	Bag for housing grounding wire (3m) ◦ AC/DC type	Bag for housing grounding wire (7m) ◦ Robust and lightweight FRP for insulating stick

※Cables with a shield, conductive shielding layer, cannot be detected.

For Medium/High Voltage

Model	For AC & DC Medium Voltage Detector	For AC Medium Voltage & High Voltage Detector	For AC Medium Voltage & High Voltage Detector	For AC Medium Voltage & High Voltage Detector	For AC & DC Medium Voltage & High Voltage Detector	For AC High Voltage Detector	For AC Pinwheel Type Voltage Detector	For AC Non-contact Voltage Detector	For AC Medium Voltage Detector	For AC Medium Voltage Detector
	HST-20N	HST-V series	HST series	HST-L series	HSR-90N	HSR-500	WM series	HWB series	HWA-33X	HWA-33P
Working voltage range	AC3kV~25kV DC3kV~25kV	HST-35V AC 6kV~ 35kV HST-138V AC 66kV~138kV HST-550V AC210kV~550kV	HST-30 AC 3kV~ 34.5kV HST-30W AC 3kV~ 42kV HST-70 AC 20kV~ 80.5kV HST-170 AC 60kV~195.5kV HST-250 AC150kV~287.5kV	HST-30L AC 3kV~34.5kV HST-70L AC20kV~80.5kV HST-W80L AC20kV~80.5kV	AC6k~90kV DC6k~90kV	AC250k~550kV	WM-22 AC 6kV~ 22kV WM-33 AC 6kV~ 33kV WM-77 AC11kV~ 77kV WM-154 AC11kV~154kV WM-275 AC33kV~275kV	HWB-35 AC 6kV~ 35kV HWB-138 AC 66kV~138kV HWB-550 AC210kV~550kV	AC 11kV~33kV	AC 1kV~35kV
AC	●	●	●	●	●	●	●	●	●	●
DC	●	—	—	—	●	—	—	—	—	—
Accessory	Bag for housing grounding wire (7 m)	Bag for housing	Bag for housing	Bag for housing	Bag for housing grounding wire (7 m)	Bag for housing	Bag for housing	—	Trunk case	Trunk case
Waterproof	●	●	●	●	●	●	●	●	●	●
Telescopic type	—	—	●	●	—	●	●	—	—	—
Battery	LR44(1.5V) × 2 pcs ◦ AC/DC type	LR44(1.5V) × 2pcs ◦ Universal joint type	LR44(1.5V) × 2pcs ◦ Lightweight & outstanding in operability	LR44(1.5V) × 2pcs ◦ Long insulating stick type	2 AAA batteries ◦ Wide range type for AC/DC	2 AAA batteries ◦ Voltage detector for 500kV transmission lines	Battery-less ◦ Battery-less voltage detector operating with energy	R03 (1.5V) × 2pcs ◦ Non contct type, universal joint	AAA alkaline batteries (LR03 1.5 V): 2 pieces * Use of rechargeable batteries not allowed ◦ IEC61243-1	AAA alkaline batteries (LR03 1.5 V): 2 pieces * Use of rechargeable batteries not allowed ◦ Detector with 4 voltage indication

※Cables with a shield, conductive shielding layer, cannot be detected.

HTE-610W

Low Voltage Detector

volcheck

AC 50~1000V



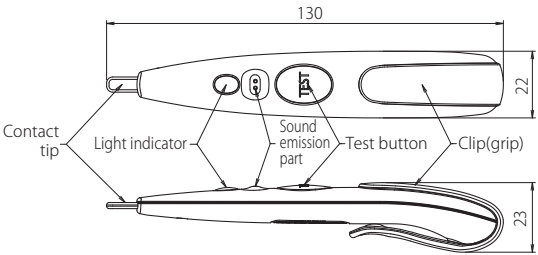
■Features

- 1.Highly convenient
- Voltage detection through covering(sheath)

•Sensitivity adjustment
- 2.Designed with user safety and security in mind
- Conductive rubber provides a high level of safety

•CAT III 1000V

■Dimensions: HTE-610W



Low Voltage Detector Standard Model



■Specifications

Model	HTE-610W
Working voltage range	AC50V~1000V 50/60Hz
Insulation resistance	Between contact tip and clip(grip): 100MΩ minimum with a 500V megger
Dielectric strength	Ditto:2000V-1 minute
Leakage current	Ditto:100 μA maximum
Impulse withstand	Ditto:8000V-10 cycles of positive / negative (IEC61010-1 CAT III 1000V equivalent)
Lighting (HTE-610WL only)	The light is switched "ON"or"OFF"by pushing the test button. The light is turned off automatically about 30 seconds after the light is turned on. (Automatic power off) ※The voltage detector operator regardless of the light turned ON or OFF.
Operation starting voltage (Voltage to ground)	Maximum sensitivity: AC40V maximum Minimum sensitivity: Not operation at AC100V Operation at AC200V Ex-Factory: AC40V±10V (when the contact tip is in contact with an internal standard insulated cable (600V-IV2mm²)
Operation status display	Light: Intermittent red light visible in 8000lx ambient Sound: Intermittent sound of 50dB minimum in 30cm distance
Operating temperature range	0℃~+40℃
Wight	22g(including batteries)
Battery	2 alkaline button cells LR44(1.5V)
Battery life	New battery : In continuous operation 10 hours : In storage 1.5 years

HTE-610WL

Low Voltage Detector

volcheck

AC 50~1000V



■Features

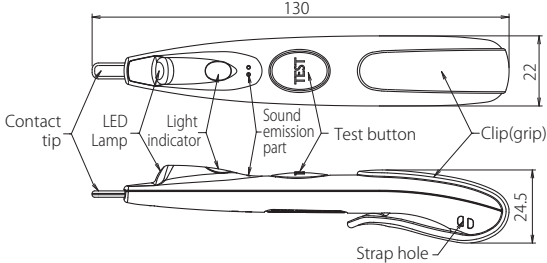
- 1.Highly convenient
- Voltage detection through covering(sheath)

•Sensitivity adjustment
- 2.Designed with user safety and security in mind
- Conductive rubber provides a high level of safety

•CAT III 1000V
- 3.Led light type with more functions
- Built in LED light with auto power-off function

•The LED light also serves as a battery lever checker

■Dimensions: HTE-610WL



Low Voltage Detector Standard Model



■Specifications

Model	HTE-610WL
Working voltage range	AC50V~1000V 50/60Hz
Insulation resistance	Between contact tip and clip(grip): 100MΩ minimum with a 500V megger
Dielectric strength	Ditto:2000V-1 minute
Leakage current	Ditto:100 μA maximum
Impulse withstand	Ditto:8000V-10 cycles of positive / negative (IEC61010-1 CAT III 1000V equivalent)
Lighting (HTE-610WL only)	The light is switched "ON"or"OFF"by pushing the test button. The light is turned off automatically about 30 seconds after the light is turned on. (Automatic power off) ※The voltage detector operator regardless of the light turned ON or OFF.
Operation starting voltage (Voltage to ground)	Maximum sensitivity: AC40V maximum Minimum sensitivity: Not operation at AC100V Operation at AC200V Ex-Factory: AC40V±10V (when the contact tip is in contact with an internal standard insulated cable (600V-IV2mm²)
Operation status display	Light: Intermittent red light visible in 8000lx ambient Sound: Intermittent sound of 50dB minimum in 30cm distance
Operating temperature range	0℃~+40℃
Wight	22g(including batteries)
Battery	2 alkaline button cells LR44(1.5V)
Battery life	New battery: In continuous operation 10 hours (with LED Lamp OFF) 5 hours (with LED Lamp ON) : In storage 1.5years

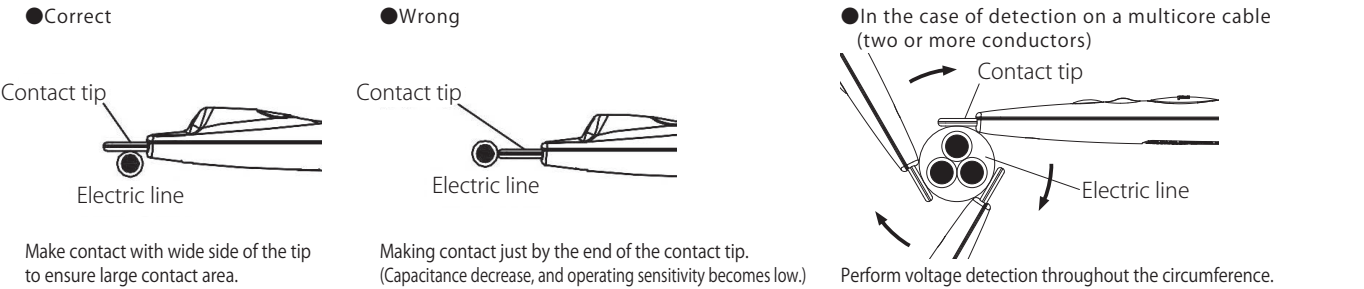
How to use the LV voltage detector for AC

■Perform voltage detection while holding the grip firmly.

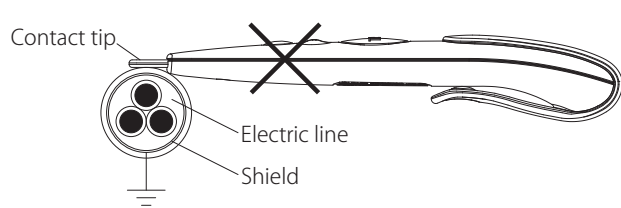
The contact area with the hand affects the sensitivity of the low voltage detector. So, appropriate sensitivity cannot be obtained unless it is held firmly.



■How to make contact with the detector



■Voltage detection for shielded cables is not possible.



The voltage detector does not work because of the electrical shielding layer which is grounded.

■Sensitivity adjustment (for HTE-610W, HTE-610WL, HT-670) * Adjustment is made by the volume knob after detaching the clip.

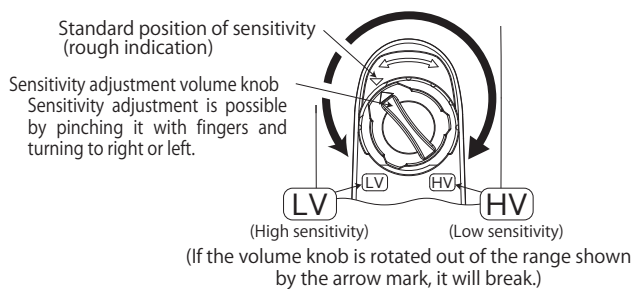
The products are adjusted to the standard sensitivity at shipment (as default). However, sensitivity adjustment can be made when it is required for some reasons such as: When the detection is not possible over the outer surface of the insulated cable; When it is required to reduce the influence of induced voltage of the area etc.

When the volume knob is turned to the LV side (left turn), sensitivity increases (detect lower voltage), and when turned to the HV side (right turn), sensitivity decreases (detect higher voltage).

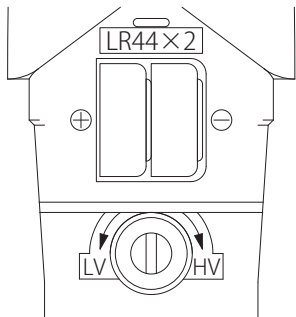
* The volume knob can be turned only about half a rotation. Overturning may cause damage.

* Pay attention to excessively high or low sensitivity. If it is excessively high, there is a risk that an correct judgment would not be possible, because the product responds to too small voltage and static electricity etc.

■HTE-610W/610WL



■HT-670



HTE-700D/DL

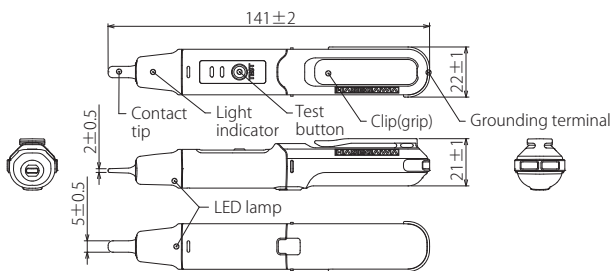
Low Votage Detector

AC 50~600V
DC 12~750V



- Features
- Waterproof equivalent to IPX4

■ Dimensions



The New release equipped waterproof as a successor of HT-680 Series



■ Specifications

Model		HTE-700D	HTE-700DL
Working voltage range	AC	50~600V	
	DC	12~750V	
Frequency		50/60Hz	
Operation starting voltage (Voltage to ground)		AC15V±5V DC6V±3V Hold to grounding terminal by bare hands or connect a grounding wire to the ground (company standard). AC 80V or less grounding wire is necessary to detect DC.	
function of LED light		—	○
Operation status indication	Light	Continuous light emission in red : Verifiable at 8000Lx	
	Sound	Continuous sound : 50dB or more (10cm apart)	
Operation temperature range		-10℃~+40℃	
Waterproof		equivalent to IPX4	
Battery		AAA battery (R03/LR03 1.5V) × 1pce (Can not use rechargeable battery)	
Battery life (with new battery)		about 10hr (under continuously operating state without LED)	
Weight		about 1.5years (in unused state) about 25g (except battery)	

HT-670

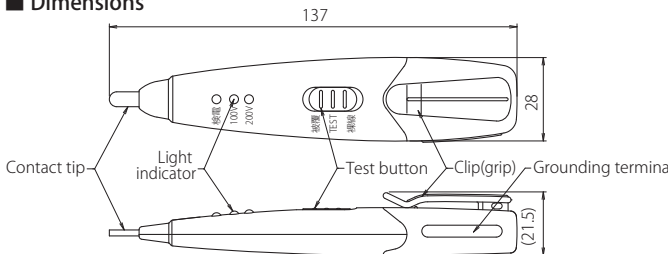
Low Voltage Detector

AC 50~600V
DC 50~600V



- Features
- Sensitivity switch-over by slider switch depending on the detection (bare conductor/insulated conductor)
- Option Lead wire/DF01027
- Optional lead wire can be used for
 - Voltage discrimination function (discrimination of 100 V, 200 V)
 - Prevents unnecessary detection due to reverse induction voltage (Lead wire should be contacted to grounded metal)

■ Dimensions



Switchable sensitivity (AC only)



■ Specifications

Model			Without lead wire	With lead wire	
Working voltage range		AC	50~600V		
		DC			
Frequency			50/60Hz		
Operation starting voltage (Voltage to ground)	Coated wire (sheathed wire)	AC	40 V with insulated wire (IV. 2 mm ²) (intermittent operation)		
		DC	—		
	Bare wire	AC	30 ± 15 V (continuous operation)		
		DC			
	(At connection of lead wire)	AC	—	100 V LED light	30 V ± 20 V (continuous operation)
		DC		200 V LED light	140 V ± 30 V (continuous operation)
Battery			LR44(1.5V) × 2 pcs		
Battery life			About one year with normal use		
Weight			26g (except lead wire)		

* Without the casing

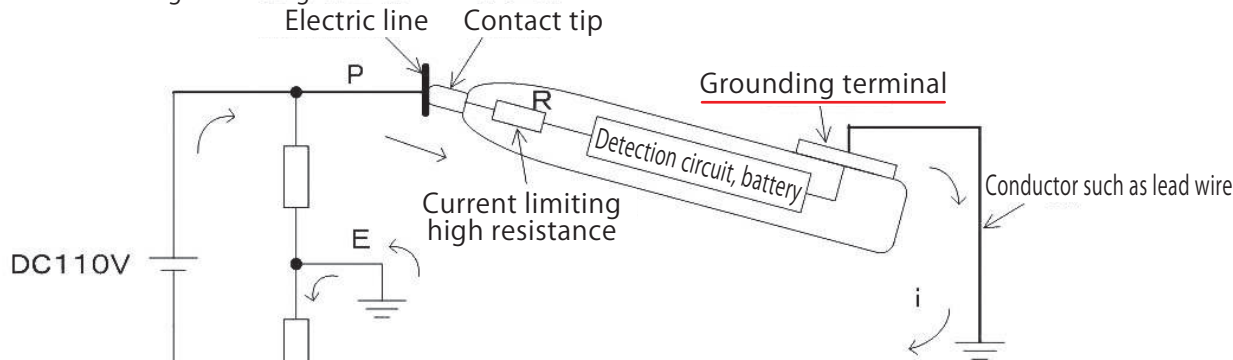
How to use the LV Voltage Detector for DC

(For AC, refer to P.16.)

■ Key points of DC voltage detection

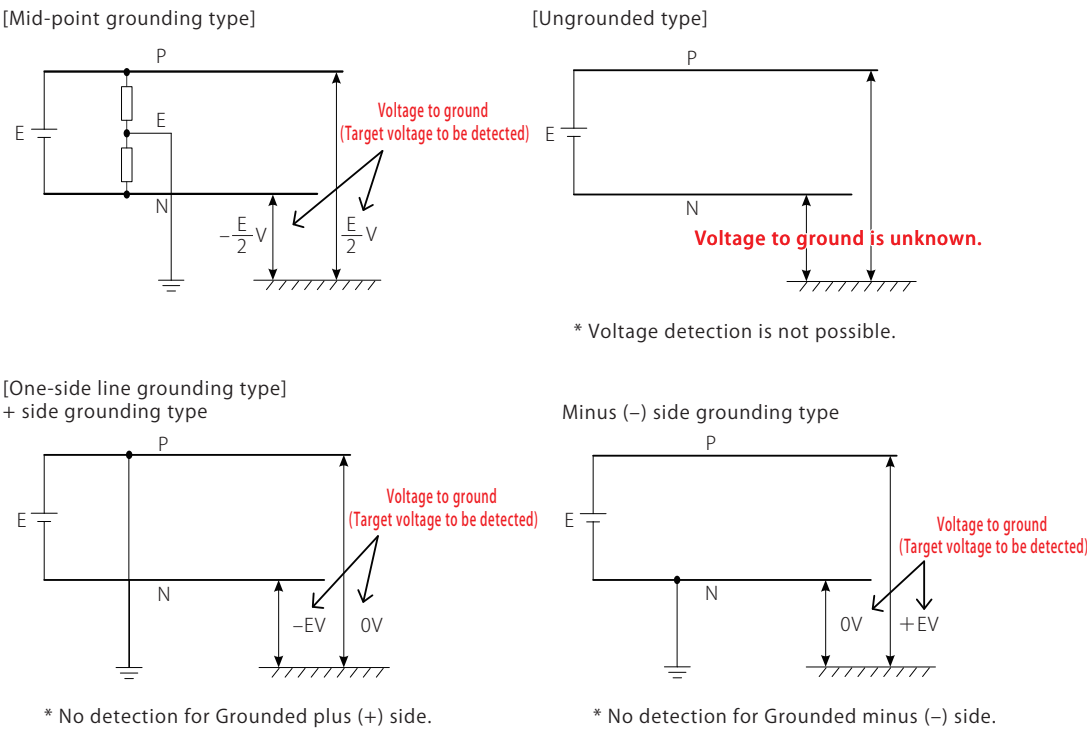
When carrying out voltage detection with a DC circuit, the current does not flow through the capacitance, unlike the case of an AC circuit. Therefore, DC voltage detection becomes possible when the DC current flow through the detector by contacting the detector to an exposed charged conductor (*①), connecting the earth terminal to the ground (*②) and therefore creating a closed circuit (*③).

- ① Voltage detection is not possible over the insulation. (Direct touch of contact tip to an exposed live part is necessary.)
- ② It is necessary to connect the Grounding terminal to earth with lead wire (option of HT-670) and/or with the free hand not holding the voltage detector.



The contact tip must contact to the exposed live part, and the grounding terminal need to be connected to the ground. As a closed circuit is formed, a minute direct current flows.

- ③ Since the detected voltage between the live part and ground is depending on the condition of connection from grounding terminal to earth, it is necessary to understand about the circuit formed for detection. (cf. Voltage detection for un-earthed circuit is not possible.)
- * When HT-670 lead wire is used, the line-to-line voltage can be checked. (Pay sufficient attention to the handling of lead wires. There is a risk of electric shock and/or short-circuit if misused.)



HSF-11

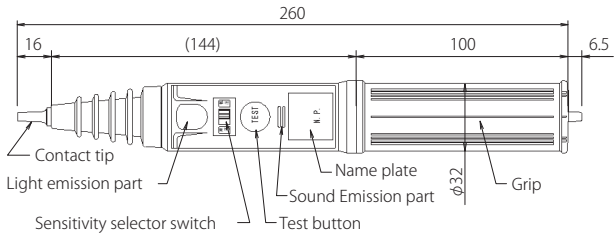
Medium Voltage & Low Voltage Detector

AC 80~11.4kV



- Features
- Extremely small and light weighted, so easy to handle and carry.
 - Voltage detection can be done by both light and sound, so no misconception happens.
 - Testing system is equipped to Voltage Detector itself.
 - By inner electric circuit, consumption is saved when not used.

■ Dimensions



Standard Model for 11.4kV



■ Accessory



Storage case

■ Specifications

Working voltage range		AC80~11.4kV
Operation starting voltage (Voltage to ground)	Low voltage	Exposed live part 65 ± 15V (in contact with live part)
	High voltage	Exposed live part 2000 ± 200V (in contact with live part)
Electric line		For Bare wire only
Frequency		Both 50Hz and 60Hz
Dielectric strength		20kV for 1minutes between the contact tip and the grip
Leakage current		0.1mA or less on dielectric strength
Operation status display	Light emission	Verifiable at 8000 Lx of brightness(Red LED)
	Sound emission	50 dB or more (2m apart)
Operating temperature range		− 10℃~+ 40℃
Waterproof		Equivalent to IPX3 (No harmful water entering inside)
Battery		R03(1.5V) 2pcs
Battery life		About 6 hr. under continuously operating state (with new battery)
Weight		About 150 g

HSE-7G

For communication

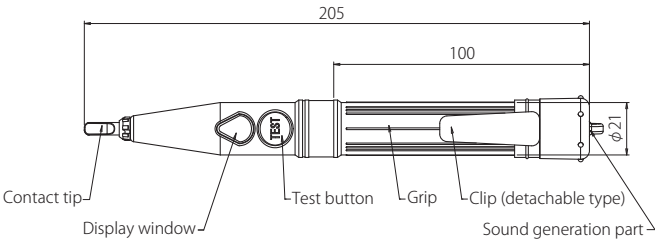
Medium Voltage & Low Voltage Detector

AC 60~7000V



- Features
- Working voltage range from AC 60V as per Telecom standard in Japan
 - Successor of HSC-7G (certified product as per NTT spec.)

■ Dimensions



Recommended for Telecom workers on the pole



■ Accessory



Storage case

■ Option



Contact tip for replacement (UH05004)

■ Specifications

Working voltage range		AC60V~7000 V
Operation starting voltage (Voltage to ground)	Low voltage	Exposed live part 60 V (in contact with live part)
	High voltage	Exposed live part 400 V (in contact with live part)
Frequency		50/60Hz
Dielectric strength		20 kV for 1 min between contact tip and grip
Leakage current		0.5 mA or less at dielectric strength test
Battery		LR44(1.5V) × 2 pcs
Battery life		3 hr. in continuously operating state; about 2 years in unused state
Operating temperature range		− 10℃~+ 40℃
Weight		About 55 g

HSS-25B1

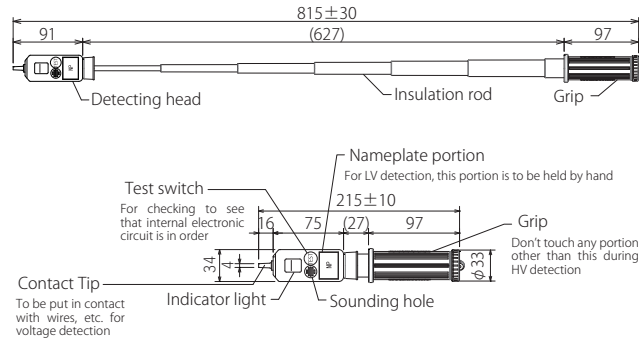
Medium Voltage & Low Voltage Detector

AC 80~25000V



- Features
- Voltage detection from a remote place is possible by extending it
 - * Low voltage cannot be detected on stick extension mode.

■ Dimensions



Telescopic type, Standard model for Medium Voltage

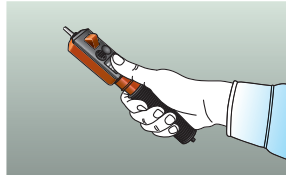


■ Accessory



Storage case

■ Detecting at low voltage



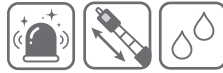
■ Specifications

Working voltage range		AC80~25000 V
Operation starting voltage (Voltage to ground)	Low voltage	Bare wire : AC 80V or below (Detect holding nameplate portion)
	High voltage	Bare wire (φ3mm) : AC 250V ± 50V OC wire (φ5mm) : AC 1000V ± 200V (Detect holding the grip)
Frequency		50/60Hz
Dielectric strength		Between contact tip and grip: Extended state 50 kVAC, 1 min
Leakage current		Between contact tip and name plate portion: 4 kVAC, 1 min 0.1 mA or less at dielectric strength test
Battery		LR44(1.5V) × 2 pcs
Battery life		8 hr. in continuously operating state; about 1.5 years in unused state
Operating temperature range		− 10℃~+ 50℃
Weight		About 140 g

HSS-36B1

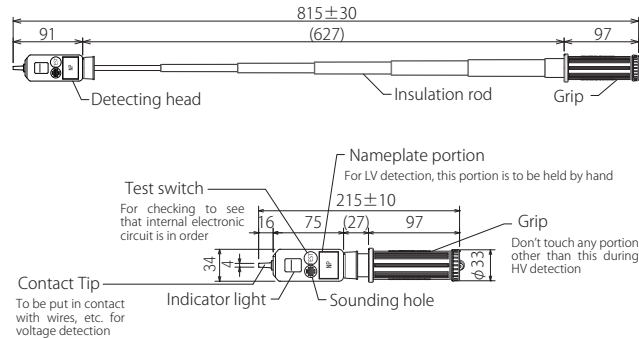
Medium Voltage & Low Voltage Detector

AC 80~36000V



- Features
- Voltage detection from a remote place is possible by extending it
 - * Low voltage cannot be detected on stick extension mode.

■ Dimensions



New release with expanded voltage range

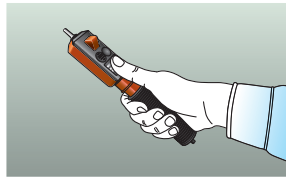


■ Option



Storage case

■ Detecting at low voltage



■ Specifications

Working voltage range		AC80~36000 V
Operation starting voltage (Voltage to ground)	Low voltage	Bare wire : AC 80V or below (Detect holding nameplate portion)
	High voltage	Bare wire (φ3mm) : AC 250V ± 50V OC wire (φ5mm) : AC 1000V ± 200V (Detect holding the grip)
Frequency		50/60Hz
Dielectric strength		Between contact tip and grip: Extended state 72 kVAC, 1 min
Leakage current		Between contact tip and name plate portion: 4 kVAC, 1 min 0.1 mA or less at dielectric strength test
Battery		LR44(1.5V) × 2 pcs
Battery life		8 hr. in continuously operating state; about 1.5 years in unused state
Operating temperature range		− 10℃~+ 50℃
Weight		About 140 g

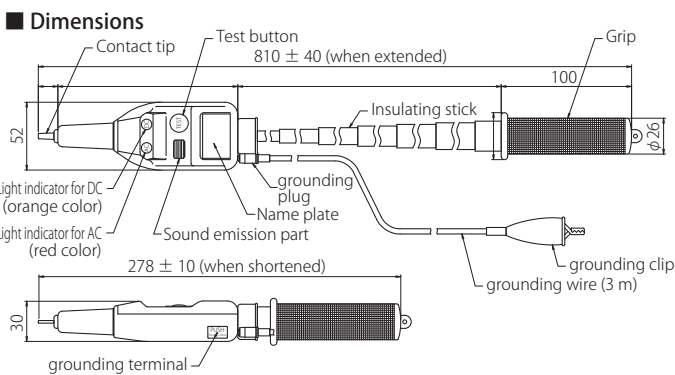
HSN-6A2

Medium Voltage & Low Voltage Detector

- AC 80 to 7000 V (at withstand voltage test of 10.5 kV)
- DC 50 to 7000 V (at withstand voltage test of 21 kV)



- Features
- It can be used for withstand voltage tests with high-voltage equipment. It can be used up to 10.5 kVAC, 21 kVDC, only for application of withstand voltage test.
 - Discriminate AC and DC
 - Checking residual electric charge, and discharging it. (Refer to P.66.)

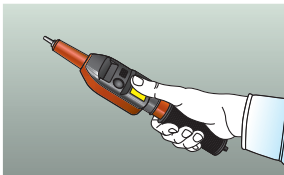


■ Accessory



Storage case

■ Detecting at low voltage



■ Specifications

Working voltage range	Without grounding wire	AC	80 V to 600 V (Voltage detection by touching the name plate with a hand)
	With grounding wire	AC	3 kV to 7 kV (With extended insulating stick)
		DC	80 V to 7000 V (Usable up to 10.5 kV for withstand voltage test)
		DC	50 V to 7000 V (Usable up to 21 kV for withstand voltage test)
Frequency			50/60Hz
Dielectric strength & Leakage current	Between contact tip and name plate		4 kVAC, 1 min, 0.5 or less
	Between contact tip and grip		(Insulating stick: Shortened) 20 kVAC, 1min, 0.5 or less
			(Insulating stick: Extended) 50 kVAC, 1min, 0.5 or less
	Between contact tip and grounding clip		21 kVDC, 1 min, 0.5 or less
		Between core of the grounding plug and outside the covering	21 kVDC, 1 min
Battery			LR44(1.5V) × 2 pcs
Operating temperature range			−10℃~+50℃
Weight			About 290 g

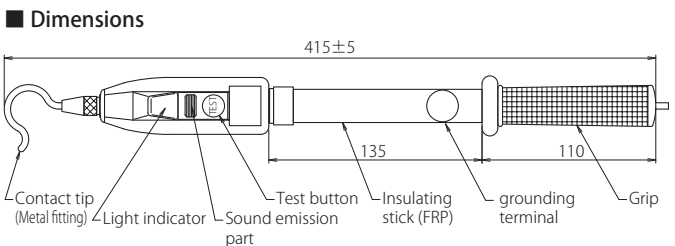
HST-1.5N

Medium Voltage Detector

- AC 600~7000V
- DC 600~7000V



- Features
- With 7-m grounding wire



■ Accessory



Bag for housing



grounding wire (7 m)

■ Specifications

Working voltage range	AC	600V~7000V
	DC	
Frequency		50/60Hz
Dielectric strength		Between contact tip and grounding terminal 14000 VAC, 5 min
Leakage current		1 mA or less at dielectric strength test
Battery		LR44(1.5V) × 2 pcs
Battery life		4 hr. under continuously operating state
Operating temperature range		−10℃~+40℃
Weight		About 340 g (main body only)

HST-20N

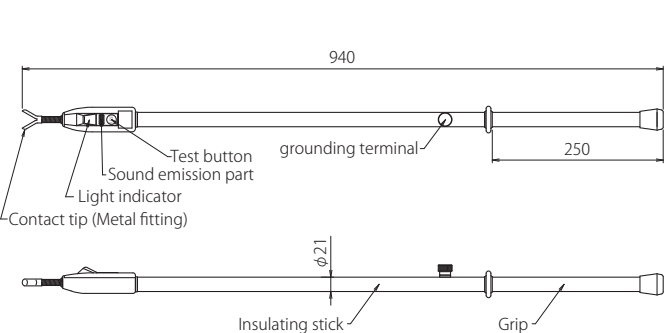
Medium Voltage Detector

- AC 3k~25kV
- DC 3k~25kV



- Features
- New model with reduced weight of HS-20N

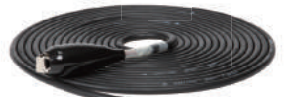
■ Dimensions



■ Accessory



Bag for housing



grounding wire (7 m)

■ Specifications

Working voltage range	AC	3kV~25kV
	DC	
Operation starting voltage (Voltage to ground)	AC	1000V ± 20%
	DC	
	Insulated wire	
Frequency		50/60Hz
Dielectric strength		Between contact tip and grounding terminal, AC 50kV, 1 min
Leakage current		0.5 mA or less at dielectric strength test
Battery		LR44(1.5V) × 2 pcs
Battery life		About 4 hr. in a continuously operating state
Operating temperature range		−10℃ ~ +40℃
Weight		About 610 g (main body only)

HST-V series

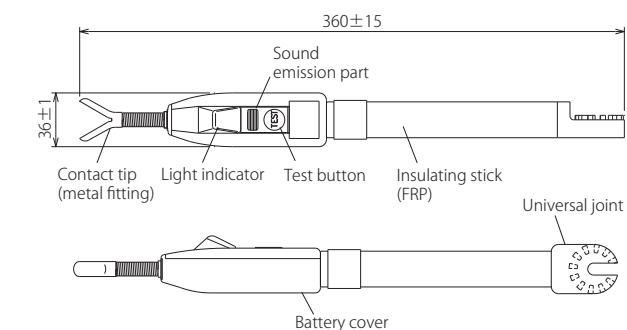
HST-35V/HST-138V/HST-550V
Medium Voltage & High Voltage Detector

- AC HST-35V 6kV~ 35kV
- HST-138V 66kV~138kV
- HST-550V 210kV~550kV

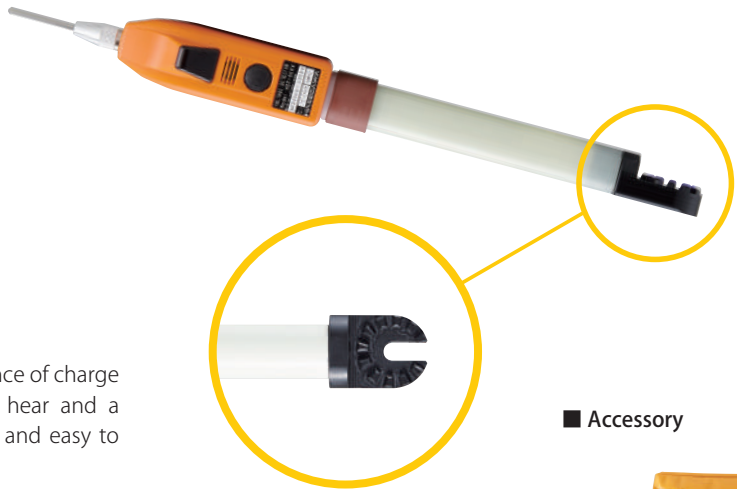


- Features
- This product is for AC current, and it indicates the presence of charge in circuits with an electronic buzzer that is easy to hear and a high-luminance light emitting diode. It is light-weight and easy to handle.

■ Dimensions



Universal Joint Type



■ Accessory



Bag for housing

■ Specifications

Model		HST-35V	HST-138V	HST-550V
Working voltage range		6kV~35kV	66kV~138kV	210kV~550kV
Indication	Sound	Intermittent sound 70dB or more		
	Light			
		Verifiable at 8,000Lx of brightness (Red LED)		
Frequency		50/60Hz		
Water proof		Equivalent to IPX3		
Operating temperature range		−10℃~+50℃		
Battery		LR44 (1.5V) × 2pcs.		
Accessory		Bag for housing		
Weight		About 220 g		

HST series

HST-30/HST-30W/HST-70/HST-170/HST-250

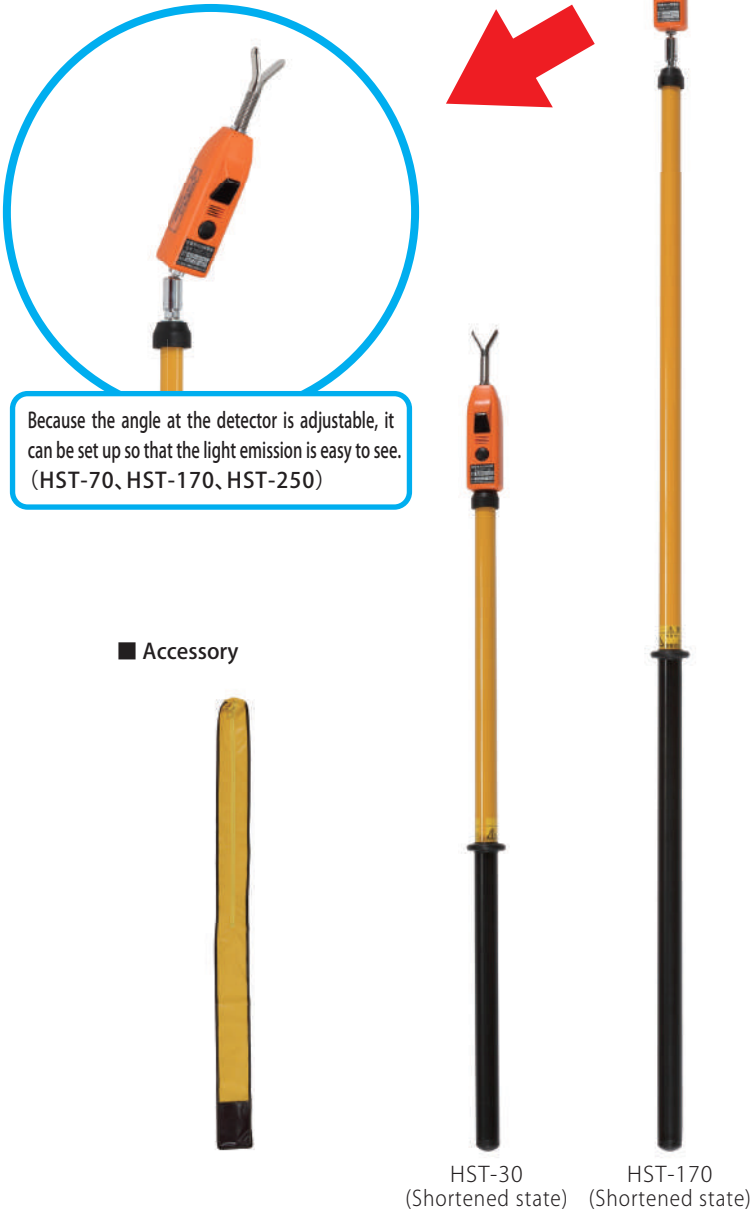
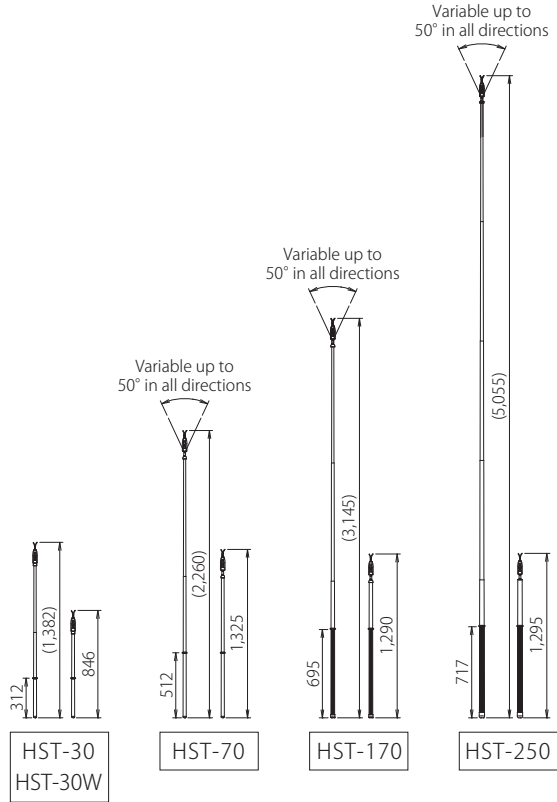
Medium Voltage & High Voltage Detector

AC	HST-30	3kV~	34.5kV
	HST-30W	3kV~	42kV
	HST-70	20kV~	80.5kV
	HST-170	60kV~	195.5kV
	HST-250	150kV~	287.5kV



- Features
- FRP is used for the insulating stick. It is lightweight and outstanding in operability.
 - Tip metal fitting consists of a shock-absorbing spring.

■ Dimensions



Because the angle at the detector is adjustable, it can be set up so that the light emission is easy to see. (HST-70, HST-170, HST-250)

■ Accessory



■ Operating rod can be changed to a longer one. (* Changing to a shorter one is not possible from the viewpoint of safety.)

Model	Standard product	Model after changing the operating rod		
		Changed to operating rod of HST-70 (2,260 mm)	Changed to operating rod of HST-170 (3,145 mm)	Changed to operating rod of HST-250 (5,055 mm)
HST-30		HST-30G	HST-30H	HST-30J
HST-70		—	HST-70H	HST-70J
HST-170		*	—	HST-170J

■ Specifications

Model		HST-30	HST-30W	HST-70	HST-170	HST-250
Working voltage range	AC	3kV~34.5kV	3kV~42kV	20kV~80.5kV	60kV~195.5kV	150kV~287.5kV
Operation starting voltage (Voltage to ground)	Bare wire	500V±20%	AC 500 ± 100 V (bare wire)	3kV±20%	10kV±20%	20kV±20%
	φ5mm-OC wire	3 kV or less	—	—	—	—
Frequency		50/60Hz				
Dielectric strength		Contact tip – Grip 70 kVAC, 1 min	On insulating rod AC 75kV/300mm for 1minute. (2 places)	Insulating stick 75 kVAC/300 mm, 1 min (following positions except for the electrode and joint portions)		
				3 locations	6 locations	8 locations
Battery		LR44(1.5V) × 2 pcs				
Operating temperature range		-10℃~+50℃				
Weight		About 340 g		About 530 g	About 600 g	About 1030 g

HST-L series

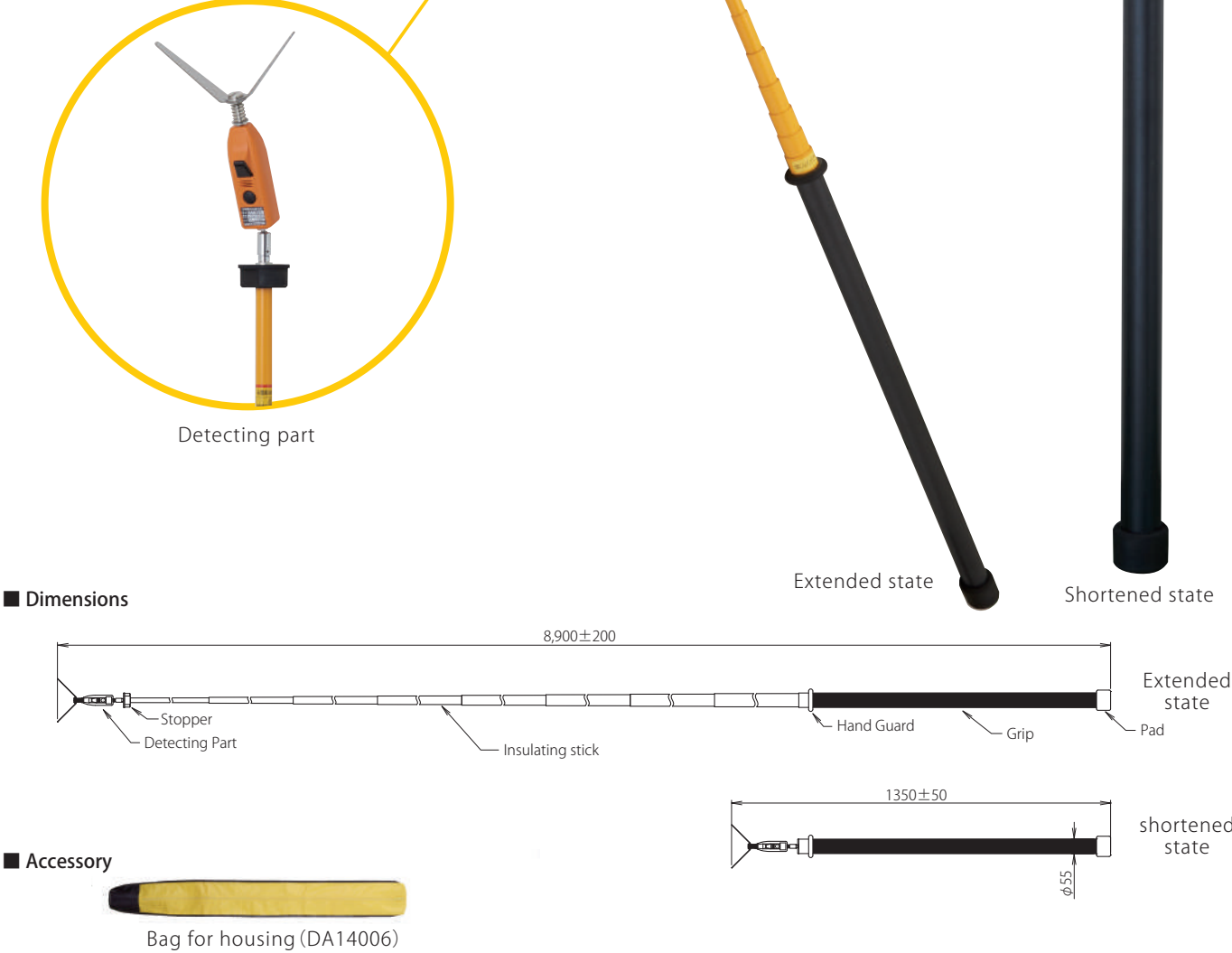
HST-30L/HST-70L/HST-W80L

Medium Voltage & High Voltage Detector

AC	HST-30L	3kV~	34.5kV
	HST-70L	20kV~	80.5kV
	HST-W80L	20kV~	80.5kV



- Features
- FRP is used for the insulating stick. It is lightweight and outstanding in operability.
 - Tip metal fitting consists of a shock-absorbing spring.



■ Dimensions

■ Accessory

■ Specifications

Type		HST-30L	HST-70L	HST-W80L
Working voltage range	AC	3kV~34.5kV	20kV~80.5kV	20kV~80.5kV
Operation starting voltage	AC	500V±100V	3,000V±600V	5,000V±1,000V
Frequency		50/60Hz		
Dielectric strength	on insulating stick AC 75kv/300mm for 1minute. (insulating stick excluding contact tip and joint)			
	1 place		3 places	3 places
Leakage current	0.1mA or less during dielectric strength test (1 place)			
Battery	LR44(1.5V) × 2 pcs			
Life of the battery	About 4 hr. under continuously operating state			
Operating temperature range	-10℃~+50℃			
Weight	About 3kg		About 3kg	About 3kg

HWA-33X

Medium Voltage Detector

AC 11kV~33kV



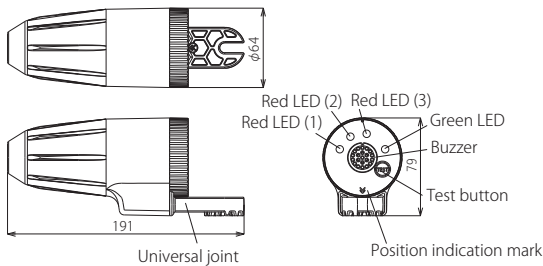
■ Features

This product emits light and sounds in **three stages** depending on **the distance** to the object.

■ Dimensions

191 mm × 79 mm × φ64 mm

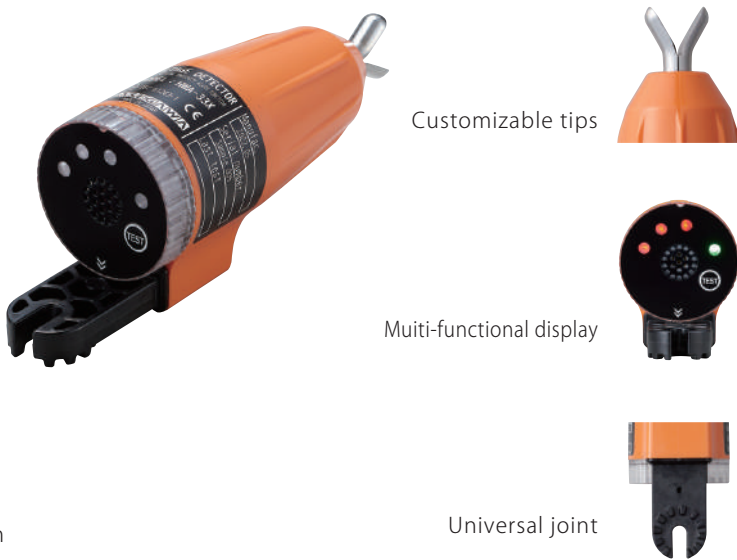
*Length of the Y-shaped contact tip (metal fitting): 27 mm



■ Specifications

Applicable voltage	11 kV to 33 kV AC (With proximity alarm function)
Frequency	50/60 Hz
Battery	AAA alkaline batteries (LR03 1.5 V): 2 pieces * Use of rechargeable batteries not allowed
Sound volume	70dB or more
Weight	About 350 g (excluding the contact tip)
Accessory	Trunk case

* HXA-33X includes the main unit and storage bag. The insulating stick is not included.



HWA-33P

Medium Voltage Detector

AC 1kV~35kV



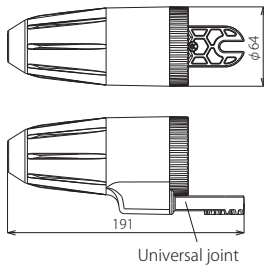
■ Features

This product emits light and sounds in **four stages** depending on **the voltage** of the object.

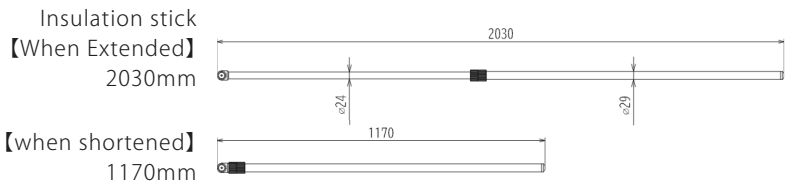
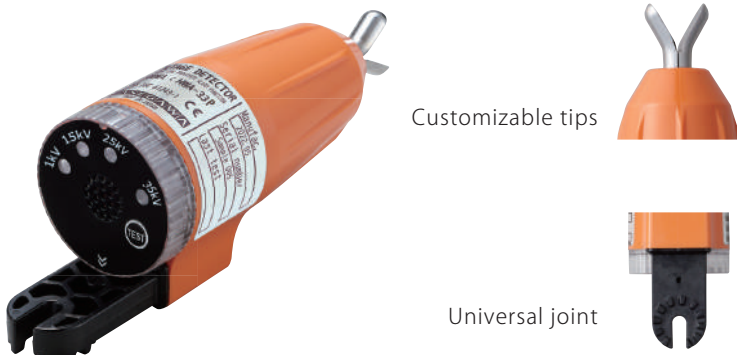
■ Dimensions

191 mm × 79 mm × φ64 mm

*Length of the Y-shaped contact tip (metal fitting): 27 mm



Detector with 4 voltage indication



■ Specifications

Applicable voltage	1 kV to 35 kV AC (4-step detection 1kV-15kV-25kV-35kV)
Frequency	50/60 Hz
Battery	AAA alkaline batteries (LR03 1.5 V): 2 pieces * Use of rechargeable batteries not allowed
Sound volume	70dB or more
Weight	About 1.2kg (Including insulating stick)
Accessory	Trunk case

* HXA-33P includes the main unit, storage bag and insulating stick.

HPL-200W

Low Voltage Phase Checker
Insulated Wire Clamping Type

AC 70~1000V (Three-Phase)

■ Features

- Non-contact type: Phase rotation and in-phase/different phase can be checked from above insulated cables
- Electric line size: Wide range from 2 mm² - 100 mm² (Finished external diameter φ2.8 mm - 22 mm)
- The magnet attached on the rear of the product makes hands-free checking possible

■ Specifications

Working voltage range	3-phase 70~1000V AC (Sinusoidal wave, continuous)
Dielectric resistance	100 MΩ or more, using 500 V megger (Between clip and case)
Dielectric strength	AC 2,000 V, one minute (Between clip and case)
Leakage current	During dielectric strength testing, 100 μA or less
Power supply display	Red LED × 1 (Automatic power OFF approx. 5 minutes)
Sound volume	50 dB or more (50 cm apart)
Battery	LR03(1.5V) × 2 Continuous use approx. 15 hours
Electric line	IV, DV, OW 2 mm ² to 100 mm ² (Finished external diameter φ2.8 mm to 22 mm)
Weight	About 190 g (including batteries)

■ Indications

Charge indication	LED color	Charged state (Voltage to ground of 80 V or higher)	Power cut state, or
		R (Yellow), S (Yellow), T (Yellow)	* 1, 2
	LED indication	Lighting	—

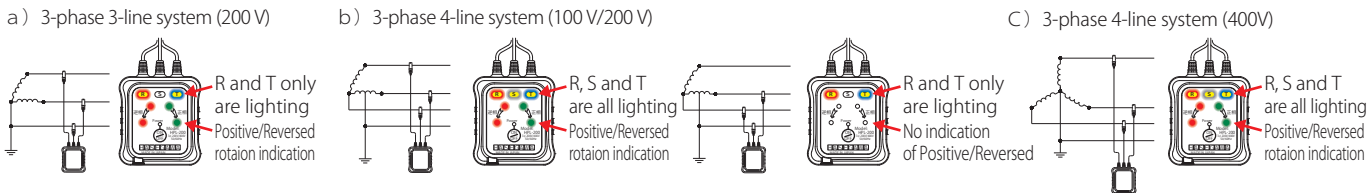
* 1 If voltage to ground is 80 V or lower * 2 If ground phase or open-phase

Phase rotation indication	LED Flashing/Color	Positive rotation	Reversed rotation
		Green	Red
	Buzzer sound	—	Intermittent sound

In-phase and different phase indication (Charge indication)	LED color	In-phase	Different phase
		R (Yellow), S (Yellow), T (Yellow)	Flashing
	LED indication	Flashing	Lighting

* Display of two clips used, light off when unused

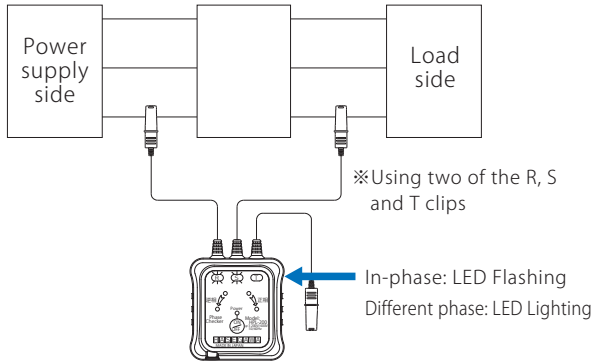
■ Example indications



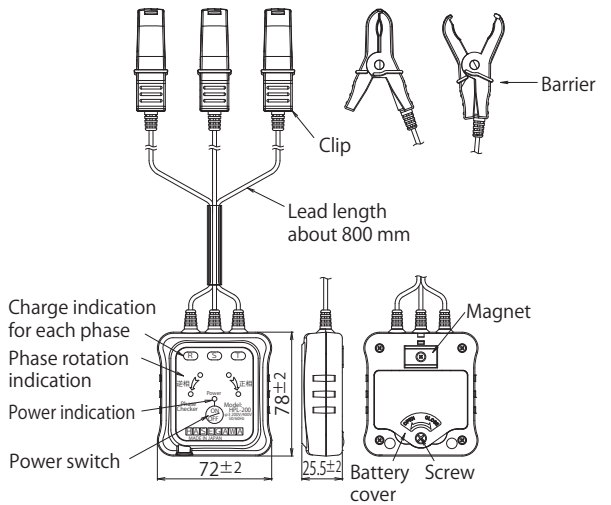
This one unit can be used for both in-phase and different phase checks



■ Connection method for in-phase and different phase checks
Electric meter replacement work without power cut
(Phase test before in-phase attachment of bypass cable)



■ Dimensions



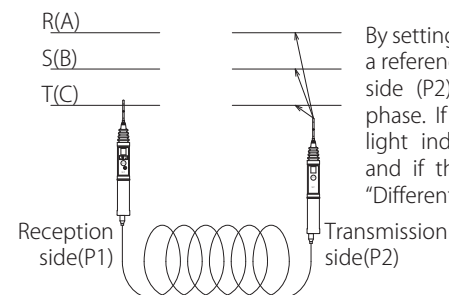
HPI-A6/S6/S20W

Medium Voltage & High Voltage Phase Tester, Optical Fiber Type

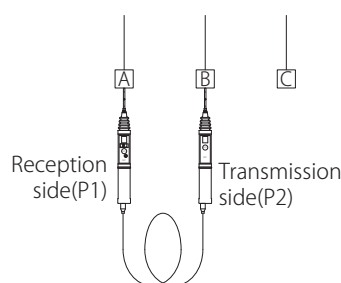
HPI-A6 AC 3kV~7kV
HPI-S6 AC 6.6kV
HPI-S20W AC 22~42kV

■Features

- Multi-functional phase tester: Voltage Detection by single detector use, Phase detection / phase sequence check with pair detector use
- Measurement is possible on the insulated wire sheath.
Testing operation is possible through voltage detection terminals or on the wire insulation. * Cannot be used on the shielded cable.
- In-phase/different phase, and phase sequence are indicated by sound and light indications.

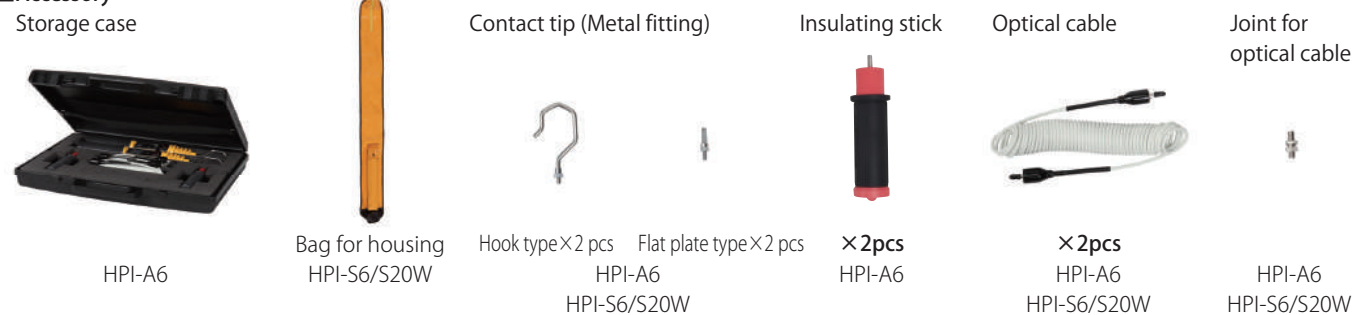


By setting the reception side (P1) as a reference, check the transmission side (P2) corresponding to each phase. If there are no sound and light indications, it is "In-phase," and if there are indications, it is "Different phase."

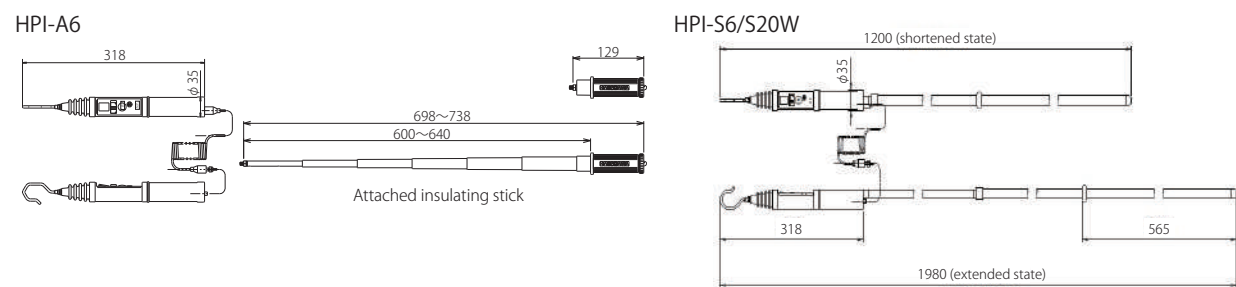


When detectors contact two out of three phases, and if there are no sound and light indications at the reception side (P1), this indicates "positive rotation," and if there are, this indicates "inverse rotation."

■Accessory



■Dimensions



■Specifications

Model		HPI-A6	HPI-S6	HPI-S20W
Working voltage range		AC 3kV~7kV	AC 6.6kV	AC 22kV-42kV
Target		For cubicles	For overhead lines	
Frequency		50/60Hz		
Insulation resistance		2000MΩ or more		
Operating temperature range		-10℃~+40℃		
Indication of operation	Light	It shall be able to confirm luminance of 8,000 lux.		
Phase test function	Sound	50 dB or more at a distance of 1 m from the sound-generating part (intermittent sound generation)		
Phase sequence function		Detection of in-phase or different phase of 120°		
Phase sequence function		Detection of advance or delay of 120°		
Possible distance of phase test		Distance between transmitter and receiver, with standard optical cable: 6 m (3m×2)		
Battery		It can be used at up to 30 m with the optional optical cable.		
Battery		R1(1.5V), each 2 pcs		

■Option

Optical fiber cable



10m (DF01066-1)
20m (DF01066-2)
30m (DF01066-3)

* Use extended with a joint is not possible.

HPR Series

High Voltage Phase Tester
Wireless Type

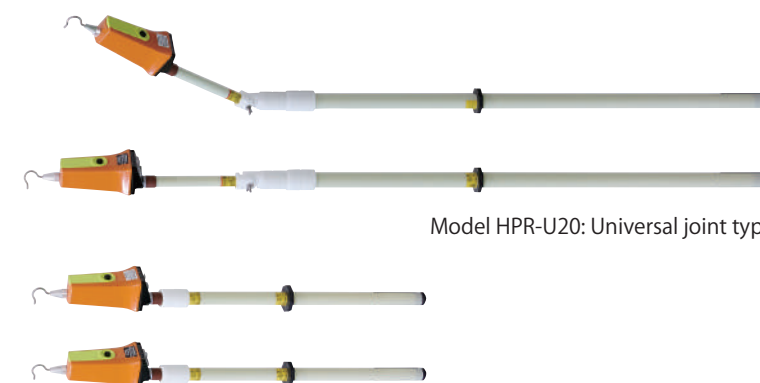
AC 20kV~42kV

■Features

- When used alone, it becomes a power detection function, and when used in combination, it becomes a phase detection and phase

*Universal joint type

Easy-to-use with Wireless Pair Renewed with phase sequence function



Model HPR-U20: Universal joint type





Model HPR-S20: Straight type



■Specifications



Model	HPR-S20	HPR-U20
Construction	Straight type	Universal joint type (for both horizontal and vertical arrangements)
Working voltage range	AC 20kV~42kV	
Frequency	50/60 Hz	
Phase test function	Phase test	Determines whether the phase of P2 is in phase with or different from P1 by 120°
	Phase sequence	Determines whether the phase of P2 is advanced or retarded from P1
Distance for phase test	Distance between P1 and P2: 5 m or less	
Overall length	In a stretched state In a shrunken state	1,245 mm 870 mm
Operation status display	Light Sound	Visible at a luminance of 8,000 lx 50 dB or greater at a distance of 3 m
Batteries to use	Two AAA batteries for P1 and P2 each (LR03 or R03)	
Operating temperature range	-10 to +40℃	
Water resistance	Waterproof structure (IPX4 or equivalent)	
Weight	Approx. 900 g × 2	Approx. 2,200 g × 2
Accessories	Bag case	Trunk case





Dielectric strength	30 cm intervals between creeping surface and creeping surface of insulating stick. (2 locations) *Except for the antenna portion	AC 75 kV for 1 min	HPR-S20, HPR-U20
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■Operation display

Combination test		Press test button of P1 and P2 and check the operation	
P1 : combination test		P2 : combination test	
			
No sound emission center LED (yellow) lit		Light emission (red)	

In-phase	
P1 does not emit sound and LED (center) is lit → Electric lines of P1 and P2 are in phase	
P1:	P2:
	
P1: No sound or light emission (center)	P2: Light emission (red)

Out of phase	
P1 <u>emits</u> sound and light → Electric lines of P1 and P2 are <u>out of phase</u>	
P1:	P2:
	
P1: Sound and light emission (green or red)	P2: Light emission (red)

Phase sequence	
P1:	P2:
	
P1: Sound and light emission (green)	P2: Light emission (red)
P1:	P2:
	
P1: Sound and light emission (red)	P2: Light emission (red)

HLA-1A

Voltage Detector Checker

Handy Type with Built-in Battery



- Features
- Easy to use at the site
 - Checking low/high voltage is possible.
 - Compact size and lightweight make it convenient to carry

■Specifications

Output voltage	H terminal ----- 400 VAC ±20% L terminal ----- 100 VAC ±20%
Output frequency	55Hz ±10Hz
Short-circuit current	0.5 mA or less
Operating temperature range	－10℃～＋50℃
Battery	LR03(1.5V) × 4 pcs Battery life ----- Total operating time: About 1 hr.
Dimensions	65mm×120mm×40mm
Weight	430g

HLA-N2

DC voltage Detector Checker

Handy Type with Built-in Battery



- Features
- Exclusive use for DC high voltage detector (Optimum for HS-1.5NR & HS-1.5NJ voltage detectors)

■Specifications

Output voltage	DC1000V ±400V
Load resistance	50 MΩ or more
Short-circuit current	0.5 mA or less
Operating temperature range	－10℃～＋50℃
Battery	LR03(1.5V) × 4 pcs
Dimensions	72mm×114mm×45mm
Weight	280g

HLA-2G

Voltage Detector Checker

Handy Type with Built-in Battery



- Features
- Ideal for checking voltage detectors for communication use

■Specifications

Output voltage	H terminal ----- 1,200 VAC ±20% L terminal ----- 70 VAC ±20%
Output frequency	55Hz ±10%
Short-circuit current	0.5 mA or less
Operating temperature range	0℃～＋50℃
Battery	6R61 or 6F22(9V) × 2 pcs Battery life ----- Total operating time: About 2 hr.
Dimensions	80mm×150mm×50mm
Weight	700g

HLA-3

Voltage Detector Checker

Handy Type with Built-in Battery



- Features
- Recommend for CL-1-06
 - Handy type with built-in battery

■仕様

Output voltage	4,000 V AC ±15%
Output lump	Red LED (If the battery is low, turn off the lamp)
Output frequency	55 Hz ±10 Hz
External dimensions	100mm×200mm×70mm
Short-circuit current	0.5 mA or lower
Weight	About 1,200g (battery not included)
Operating temperature range	0℃ to +50℃
Built-in battery	9V (6LR61 or 6LF22) x 2 pcs Life of the battery: cumulative operating hours of approx. 2 hours *6F22 batteries are not usable.

■Corresponding table of detector checkers

MODEL		HLA-1A	HLA-2G	HLA-N2	HLA-3
HTE-610W/WL		○	○		
HTE-700D/DL	AC	○	○		
	DC				
HT-670	AC	○	○		
	DC				
HSF-11		○	○		○
HSE-7G		○	○		○
HSS-25B1		○	○		○
HSG-6		○	○		○
HSN-6A2	AC	○	○		○
	DC			○	
HST-1.5N	AC		○		○
	DC			○	
HST-30W					○
HST-20N	AC				○
HST-30/30L	DC				
					○
HST-30/30L					○
HST-70/70L/W80L					○
HST-170					○
HST-250					
HSR-90N	AC				○
	DC				
HSR-500					

HXG-1

Portable Live Part Detector

AC 3.3kV ~ 77kV



[Attention]

This device is not a voltage detector.

Determine whether the Substation Facilities are charged



Accessory

Storage case

Specifications

Working voltage range	3.3 kV to 77 kV
Frequency	50/60Hz
Dielectric strength	Between contact tip and grip: Extended state 20 kVAC, 1 min
Detection performance	Operation Voltage-Distance: 3.3kV - 0.2m * Operation Voltage-Distance are theoretical value.
Operation status display	Light Sound
Battery	LR44(1.5V) × 2 pcs
Operating temperature range	-10°C ~ +40°C
Weight	85g

Voltage & distance to be separated, and detectable distance

Voltage (kV)	3.3	6.6	11	22	33	66	77
Detectable distance (m)	0.2	0.5	1.0	1.7	2.2	2.9	3.0

Operation distance is varied depending on the actual surrounding environment.

Please confirm operation distance in actual use environment before using.

HXC-3K

Portable Live Part Detector

AC 3.3kV ~ 77kV



[Attention]

This device is not a voltage detector.

Features

- Compact size and lightweight make it convenient to carry

Determine whether the Substation Facilities are charged



Specifications

Working voltage range	3.3 kV to 77 kV (Non-contact type for 11 kV or higher)
Frequency	50/60Hz
Dielectric strength	Between tip part and grip of detector 20 kVAC, 1 min (Leakage current: 1 mA or less)
Detection performance	Operation starting voltage: 400 V ± 20% Detectable distance: 5 cm at 3.3 kV, 10 cm at 6.6 kV
Operation status display	Light Sound
Dimensions	155mm
Battery	LR44(1.5V) × 2 pcs
Operating temperature range	-20°C ~ +40°C
Weight	35g

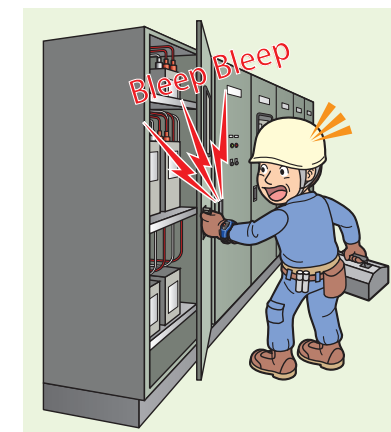
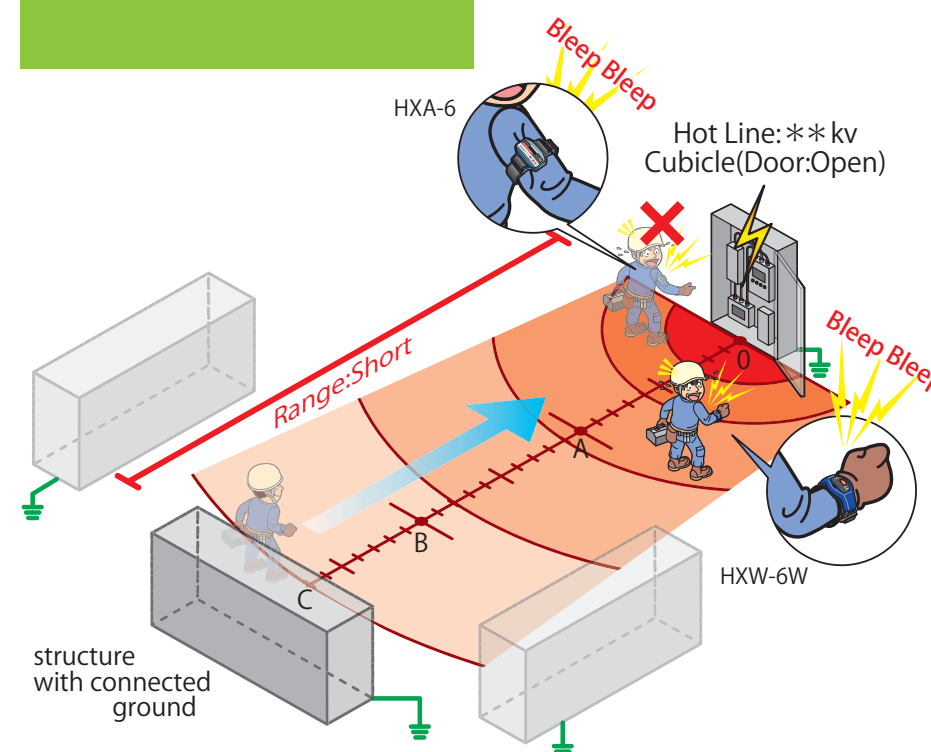
* Without the casing

Voltage & distance to be separated, and detectable distance

Voltage (kV)	3.3	6.6	11	22	33	77
Necessary distance to be separated (cm)	—	—	15	25	35	76
Detectable distance (cm)	5	10	33	90	120	230

Hot Line Proximity Alarm

Auxiliary voltage detection device that gives alarm sounding at a distance when approach to a live line.



Hot Line Proximity Alarm

What is a Hot line proximity alarm?

- It is a product that generates an alarm when it detects a voltage at a distance to prevent accident of electric shock. Unintended access due to human errors such as preconception or misconception can be prevented.
- This product cannot be used as a voltage detector.

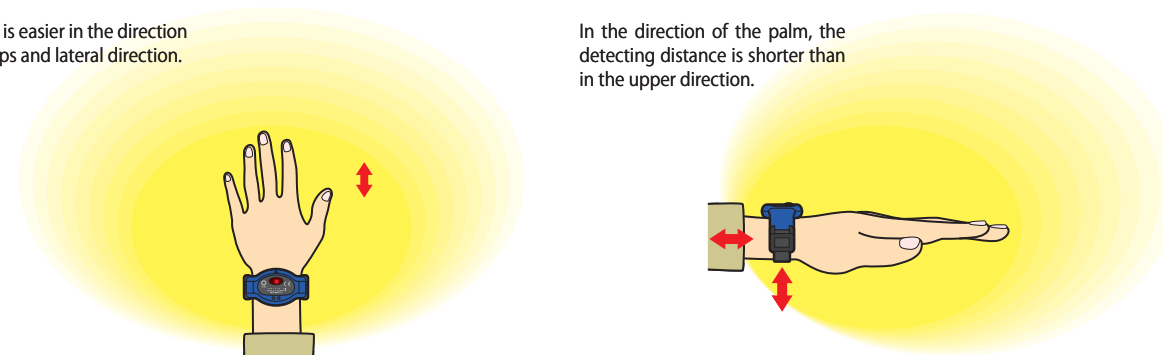
Precautions before purchasing the Hot line proximity alarm

- Please use proper model according to the applications, because detection sensitivity has been adjusted for cubicle works and overhead line works respectively assuming the general site conditions.
- The specification "○V-○cm" of this product is a distance under the "standard condition" set in the factory. At actual sites, the operation distance may become shorter, depending on environment, wiring conditions, etc. (*1) (*1) e.g.: When a grounded structure exists nearby, etc.
- The sensitivity of this product is directional. Sensitivity is reduced at the back of the product (in the case of HXW-6W, direction of the palm).

Image of operating distance

Detection is easier in the direction of fingertips and lateral direction.

In the direction of the palm, the detecting distance is shorter than in the upper direction.



HXW-6WL

WRIST ALARM

AC 400V to 22kV



Applicable from low voltage to high voltage



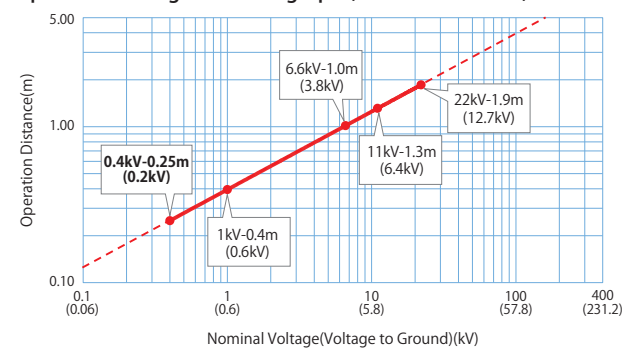
* Rubber band is attached to the product.

Option



Silicone band

Operation Voltage Distance graph (Theoretical value)



Specifications

Model	HXW-6WL
Working Voltage range	400V to 22kV
Standard distance for operation	25cm against 400V (230V to ground) * Under Hasegawa's standard conditions.
Frequency	Both 50Hz and 60Hz
Sound volume	65dB or more (60cm apart)
Battery	Coin type Lithium battery (CR1620) 1 piece
Operating temperature range	-10°C ~ +40°C
Dimensions	(W) 77mm × (D) 40mm × (T) 14mm
Weight	About 35g

Operation Voltage Distance Table (Theoretical value)

Normal Voltage	Operation Distance
0.4kV	0.25m
1kV	0.4m
6.6kV	1.0m
11kV	1.3m
22kV	1.9m

Operation Voltage-Distance Table and graph are theoretical value.

Operation distance is varied depending on the actual surrounding environment.

Please confirm operation distance in actual use environment before using.

* When used with overhead distribution lines, the operating distance will be longer.

* HXW-6WL is the customized model which is specialized in detecting low voltage.

It may begin to operate at longer distance than necessary when using in the field of Mid-High voltage.

If it may begin to operate at longer distance than necessary, consider using the original model.

HXW-6W

(Both 50Hz and 60Hz)

WRIST ALARM

AC 1kV to 42kV



Exclusively for cubicle works



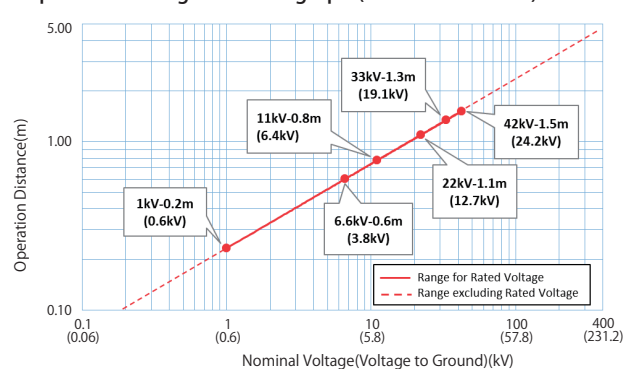
* Rubber band is attached to the product.

Option



Silicone band

Operation Voltage Distance graph (Theoretical value)



Specifications

Model	HXW-6W
Working Voltage range	1kV to 42kV
Alarm starting distance (Under standard condition)	60cm against 6.6kV (3.8kV to ground)
Frequency	Both 50Hz and 60Hz
Sound volume	65dB or more (60cm apart)
Battery	CR1620 (3V) × 1 pcs
Battery life (with new battery)	Continuously operating state: About 15 hr. Unused state: About 10 months
Operating temperature range	-10°C ~ +40°C

Operation Voltage Distance Table (Theoretical value)

Normal Voltage	Operation Distance
6.6kV	0.6m
11kV	0.8m
22kV	1.1m
33kV	1.3m

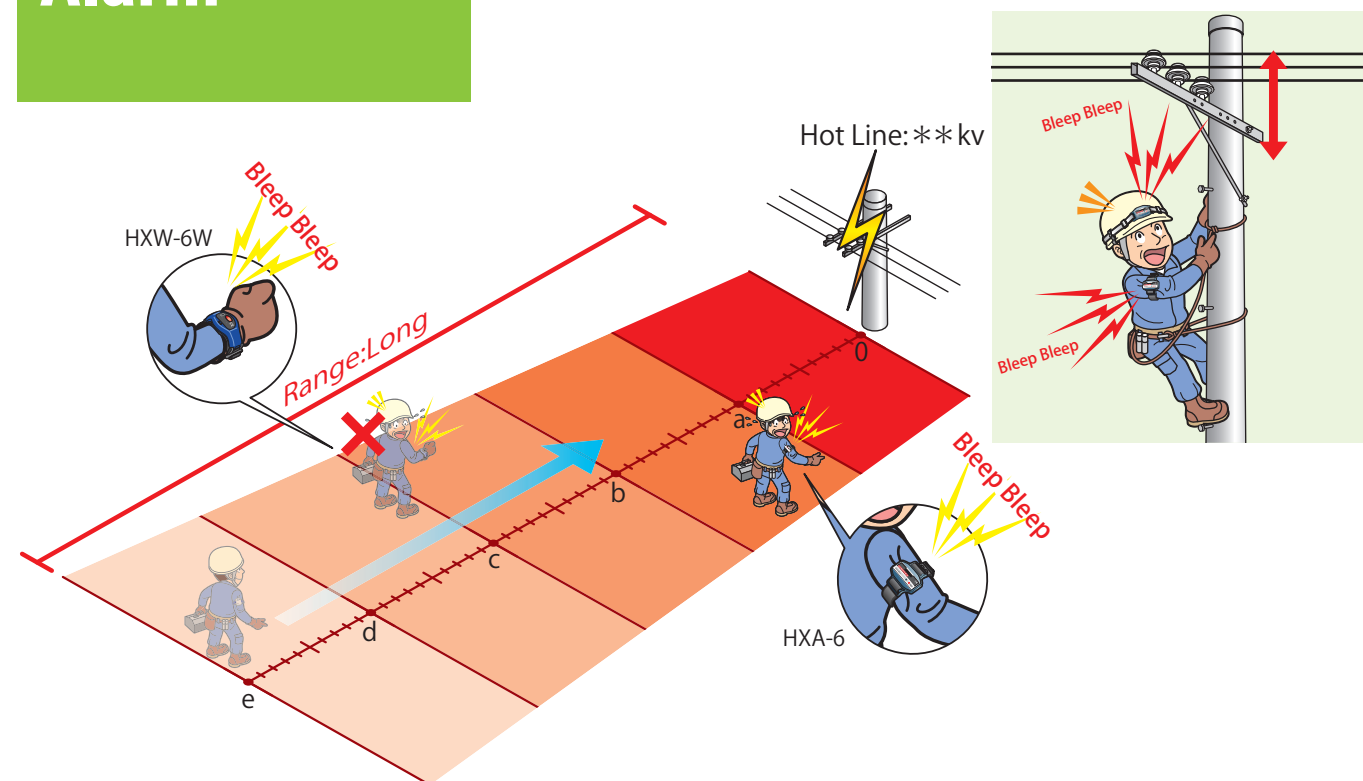
Operation Voltage-distance table and graph are theoretical value.

Operation distance is varied depending on the actual surrounding environment.

Please confirm operation distance in actual use environment before using.

Hot Line Proximity Alarm

Auxiliary voltage detection device that gives alarm sounding at a distance when approach to a live line.



HXA-6 HXA-6S

AC 6.6kV to 33kV



Hot line proximity detector exclusively for overhead line works

【Attention】

This is not suitable for cubicle works.

Specifications

Model	HXA-6	HXA-6S
Location of use	Exclusive for work with overhead lines	
Alarm starting distance (Under standard condition)	80cm	110cm
Frequency	Either 50 Hz or 60 Hz, whichever is designated	
Sound volume	65dB or more (1m apart)	
Battery	JIS CR2032(3V) × 1 pcs	
Battery life (with new battery)	Continuously operating state: About 15 hr.	Unused state: About 10 months
Operating temperature range	-10°C ~ +40°C	

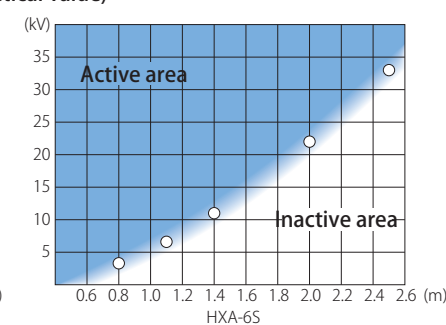
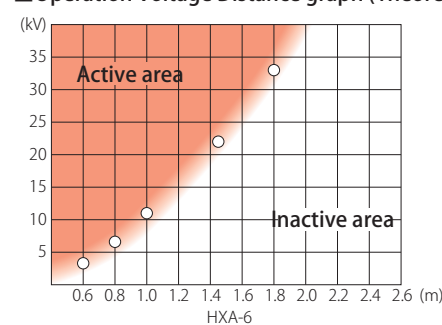
HXA-6 (Upper arm fitting type)



HXA-6S (Helmet fitting type)



Operation Voltage Distance graph (Theoretical value)



Operation Voltage Distance Table (Theoretical value)

Normal Voltage	Operation Distance	
	HX-6	HX-6S
6.6kV	0.8m	1.1m
11kV	1.0m	1.4m
22kV	1.5m	2.0m
33kV	1.8m	2.5m

Operation Voltage-distance table and graph are theoretical value.

Operation distance is varied depending on the actual surrounding environment.

Please confirm operation distance in actual use environment before using.

HXA-30
HXA-30S

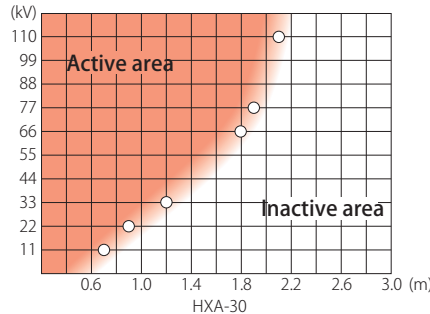
AC 11kV to 66kV



HXA-30 (Upper arm fitting type) HXA-30S (Helmet fitting type)



■ Operation Voltage Distance graph (Theoretical value)



Hot line proximity detector exclusively
for overhead line works

* Please designate the frequency (50 Hz or 60 Hz).

[Attention]
This is not suitable
for cubicle works.

■ Specifications

Model	HXA-30	HXA-30S
Standard operation start distance	11 kV (Voltage to ground: 6.4 kV) - 70 cm (under normal conditions)	11 kV (Voltage to ground: 6.4 kV) - 100 cm (under normal conditions)
Frequency	50 Hz / 60 Hz	
Sound volume	65 dB or more	
Battery for use	JIS CR2032 (3V) x 1	
Allowable temperature range	-10°C to +40°C (with no surface or internal condensation)	
Weight	About 45 g (body only)	
External dimensions	(W) 78 × (D) 82 × (T) 25	(W) 94 × (D) 48 × (T) 27.5
Accessories	Fixing band	Fixing band, Holder (2pcs)

■ Operation Voltage Distance Table
(Theoretical value)

Normal Voltage	Operation Distance	
	HXA-30	HXA-30S
11kV	0.7m	1.0m
22kV	0.9m	1.4m
33kV	1.2m	1.7m

Operation Voltage-distance table and graph are theoretical value.
Operation distance is varied depending on the actual surrounding environment.
Please confirm operation distance in actual use environment before using.

HXA-70
HXA-70S

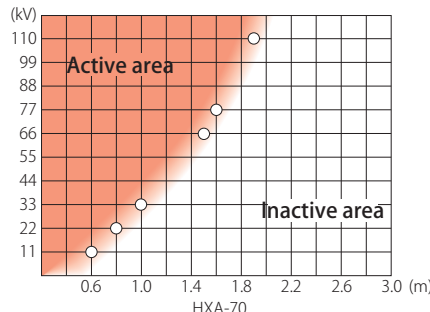
AC 66kV to 110kV



HXA-70 (Upper arm fitting type) HXA-70S (Helmet fitting type)



■ Operation Voltage Distance graph (Theoretical value)



Hot line proximity detector exclusively
for overhead line works

* Please designate the frequency (50 Hz or 60 Hz).

[Attention]
This is not suitable
for cubicle works.

■ Specifications

Model	HXA-70	HXA-70S
Standard operation start distance	66 kV (Voltage to ground: 38 kV) - 150 cm (under normal conditions)	66 kV (Voltage to ground: 38 kV) - 150 cm (under normal conditions)
Frequency	50 Hz / 60 Hz	
Sound volume	65 dB or more	
Battery for use	JIS CR2032 (3V) x 1	
Allowable temperature range	-10°C to +40°C (with no surface or internal condensation)	
Weight	About 45 g (body only)	
External dimensions	(W) 78 × (D) 82 × (T) 25	(W) 94 × (D) 48 × (T) 27.5
Accessories	Fixing band	Fixing band, Holder (2pcs)

■ Operation Voltage Distance Table
(Theoretical value)

Normal Voltage	Operation Distance	
	HXA-70	HXA-70S
66kV	1.5m	2.1m
77kV	1.6m	2.2m
110kV	1.9m	2.7m

Operation Voltage-distance table and graph are theoretical value.
Operation distance is varied depending on the actual surrounding environment.
Please confirm operation distance in actual use environment before using.

Railway Products

- Railway Products P.41
- Measuring Instrument P.47

HVC-1.5N3

Voltage Detector for DC Overhead Contact Wire

DC 750V~2000V



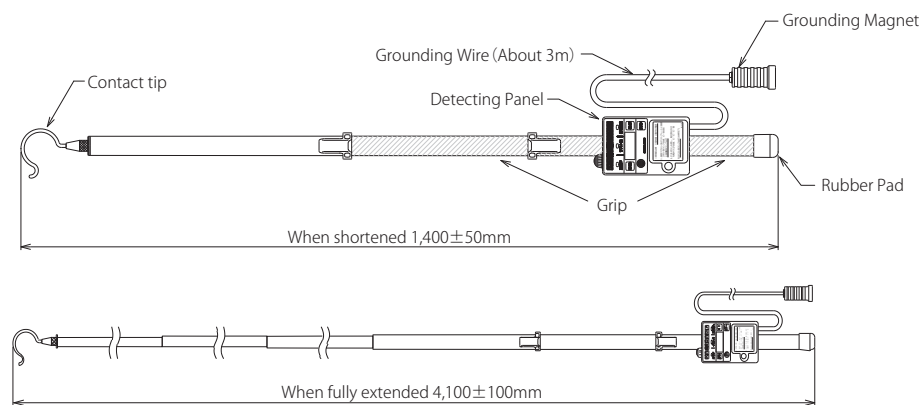
■ Features

- Light weight body [About half weight compared with previous product.]
- Promote the checking before detect the voltage.
- Memolize the setting of volume control.
- Simplified the checking before detect the voltage.
- Adopt a strong Grounding magnet.
- Large Indication.

Voltage Detector for DC 1500V Contact Wires, Visualization of decreasing Residual Voltage



■ Dimensions



■ Specifications

Working voltage range		DC 750V~2000V (Bare conductors) * Voltage detection of negative potential is not possible.
Operation starting voltage (Voltage to ground)		DC750V±50V
Display	Operation display (charging)	Red LED and buzzer
	Check of earth wire (Earth wire is OK)	Green LED
	Voltage display	Range: 0 VDC to 1999 VDC Resolution: 1 V, Accuracy within ±5%±5V Each time when the sound volume push-button switch is pressed, the cycle of High → Medium → Low → High ----- is repeated. Sound volume at a distance of 1 m High: 75 dB or more Medium: 55 to 70 dB, Low: 50 dB or less
Volume adjustment for buzzer sound		
Output voltage at test		DC1000V±200V
Dielectric strength		Contact tip (Metal fitting) – Grounded part 4 kVAC, 1 min
Leakage current		1 mA or less at dielectric strength test
Battery		R6 or LR6(1.5V) × 4 pcs
Operating temperature range		0°C~+50°C
Weight		About 2.3kg

■ Accessory



Bag for housing

HVC-750N3

Voltage Detector for DC Third Rail

DC 300V~2000V



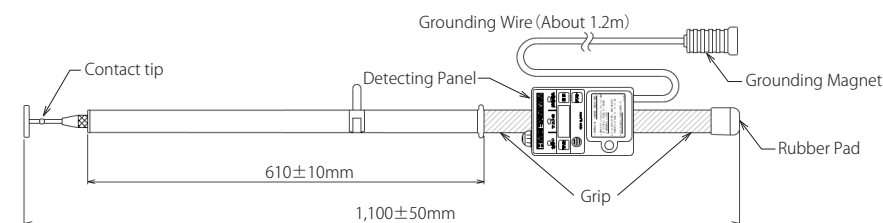
■ Features

- Promote the checking before detect the voltage.
- Memolize the setting of volume control.
- Simplified the checking before detect the voltage.
- Adopt a strong Grounding magnet.

Voltage Detector for DC 750V Contact Wires, Visualization of decreasing Residual Voltage



■ Dimensions



■ Specifications

Working voltage range		DC300V~2000V (Bare conductors) * Voltage detection of negative potential is not possible.
Operation starting voltage (Voltage to ground)		DC300V±20V
Display	Operation display (charging)	Red LED and buzzer
	Check of earth wire (Earth wire is OK)	Green LED
	Voltage display	Range: 0 VDC to 1999 VDC Resolution: 1 V, Accuracy within ±5%±5V Each time when the sound volume push-button switch is pressed, the cycle of High → Medium → Low → High ----- is repeated. Sound volume at a distance of 1 m High: 75 dB or more Medium: 55 to 70 dB, Low: 50 dB or less
Volume adjustment for buzzer sound		
Output voltage at test		DC500V±100V
Dielectric strength		Contact tip (Metal fitting) – Grounded part 4 kVAC, 1 min
Leakage current		1 mA or less at dielectric strength test
Battery		R6 or LR6(1.5V) × 4 pcs
Operating temperature range		0°C~+50°C
Weight		About 1.4kg

■ Accessory



Bag for housing

HVC-1.5N3S

Voltage Detector for DC Substation

DC 750V~2000V

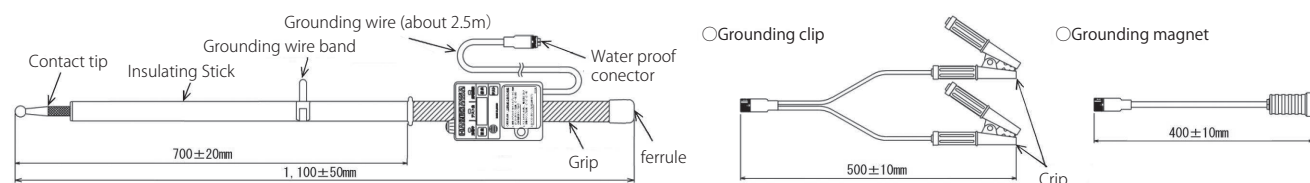


HVC-1.5N3S
The plate is attached to grounding clip inspection before use



It can be grounded in various place;etc cubicle
Please use two clips at the same time.

■ Dimensions



Voltage detector for DC 1500V substation



■ Option



HVC-1.5N3S
Grounding magnet (UH20004)



HVC-1.5N3S
Grounding clip (UH20003)

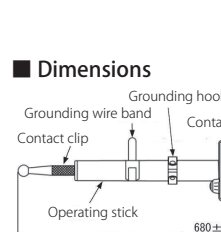


HVC-1.5N3S
The plate is attached to grounding clip inspection before use (DH18007)

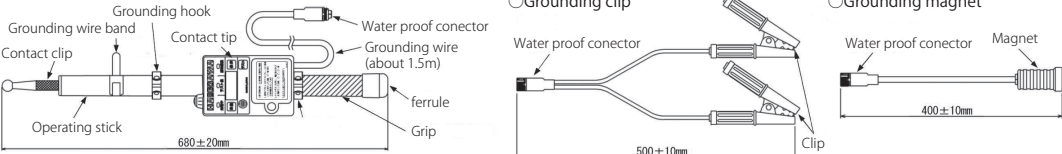
HVC-1.5N3M

Voltage Detector for Monorail

DC 300V~2000V



■ Dimensions



■ Specifications

Model	HVC-1.5N3S	HVC-1.5N3M
Working voltage	DC750V~2000V	DC300V~2000V
	Max DC2,000V (in contact with bare wire) *Voltage detection of negative potential is not possible.	
Operation strating voltage (Voltage to ground)	DC750V±50V	DC300V±20V
Insulation resistance	contact tip-grounding clip 10MΩ±10%(with 1,000Vmega measuring instrument)	
Dielectric strength	contact tip-grounding magnet AC4,000V,1 min	
Leakage current	1 mA or less at dielectric strenght test	
Operating temperature range	0℃~+50℃	
Volume adjustment for buzzer sound	Sound volume at a distance of 1m	
	High:75dB Miidium:60dB or more 75dB or less Low:60dB or less	
Output voltage at test	DC1,000V±200V	DC500V±100V
Battery	R6 or LR6(1.5V) x 4 pcs	
Structure	Dustproof,Waterproof(Equivalent toIP44)	
Weight	About 1.8kg(with grounding clip)	About 1.6kg(with grounding clip)

■ Option



HVC-1.5N3M
Grounding magnet (UH20004)



HVC-1.5N3M
Grounding clip (UH20003)



HVC-1.5N3M
The plate is attached to grounding clip inspection before use (DH18007)

HSR-1.5NJ HSR-1.5NR

Medium Voltage Detector

AC 6600V

DC HSR-1.5NJ:600~7000V
HSR-1.5NR:1000~7000V



■ Features

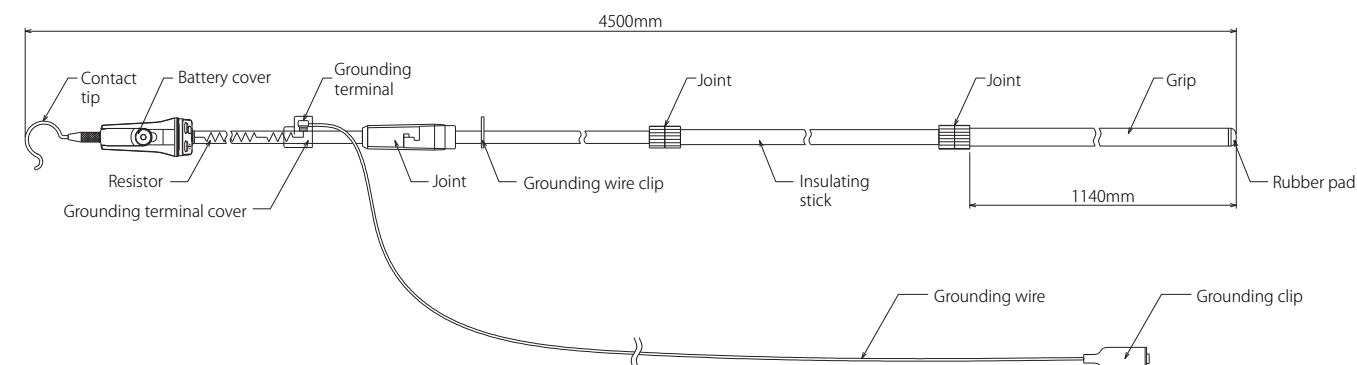
- Grounding wire options : Clip Type (HSR-1.5NJ) and Magnet Type (HSR-1.5NR)
- Discharging state of residual charge after power outage can be distinguished (HSR - 1.5 NR)

Operation display (HSR-1.5NR)

Voltage		Green LED		Red LED and buzzer	
DC	AC	Lighting	Flashing	Lighting	Sound generation
After test and after voltage detection (not charged)		○	—	—	—
Approx. 350 to Approx. 750 V	Approx. 1,000 to Approx. 2,000 V	—	○	—	—
Approx. 750 V or more	Approx. 2,000 V or more	—	—	○	○

- When the green LED is flashing, a residual electric charge within the range of working voltages is being discharged.
 - A stand-by display function is provided. When the test button is pressed, the green LED lights for about 30 sec. (Voltage detection is possible, even if the green LED is turned off.)
- : Operation
— : No operation

■ Dimensions



■ Accessory



Common bag for HSR-1.5NJ/NR



Clip-type grounding wire (7 m)
for HSR-1.5NJ



Magnet-type grounding wire (7 m)
for HSR-1.5NR

■ Specifications

Specifications		HSR-1.5NJ		HSR-1.5NJ1		HSR-1.5NR	
Working voltage range	AC	6600V					
	DC	600~7000V		1000~7000V			
Operation starting voltage (Voltage to ground)	AC	2000V±20%					
	DC	400V±20%		800V±100V		750±100 V (Red LED)	
						350±80 V (Green LED flashes.)	
Frequency		50/60Hz					
Grounding system		Clip				Magnet	
Indication of operation	Light	It can be confirmed in the luminance of 8,000 lux.					
	Sound	Intermittent sound				Continuous sound	
Battery		2 AAA batteries					
Accessory		Clip type grounding wire (7 m)				Magnet type grounding wire (7 m)	
Weight		Bag for housing					
Dielectric strength		About 3.2 kg					
		Between contact tip (metal fitting) and grounding terminal: 14,000 VAC, 1 min					

HST-W80JS

Voltage Detector for
AC Overhead Contact Wire

AC 20kV~80.5kV



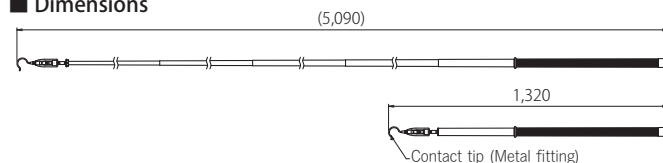
■ Features

- Standby display function is provided.
After pressing the test button, the green LED lights up even after voltage detection.
* The green LED automatically turns off in 1 to 2 min.
Voltage detection is possible even after turning off (in case there is no problem with battery level)



Charged indication (Red LED lit) Uncharged indication (Green LED lit)

■ Dimensions



Voltage Detector for AC Overhead Contact wires of normal Railways and Shinkansen



■ Accessory



Bag for housing

■ Specifications

Working voltage range	AC20kV~80.5kV
Operation starting voltage (Voltage to ground)	5 kV ± 20% (bare wire)
Frequency	50Hz/60Hz
Indication of operation	Light It can be confirmed in the luminance of 8,000 lux.
	Sound 50 dB or more at a distance of 2 m
Dielectric strength	Insulating stick, AC 75 kV/300mm x 1 min. (6 locations on the insulating stick, except for electrode and joints)
Leakage current	100 μA or less at dielectric strength test/1 location
Battery	LR44(1.5V) × 2 pcs
Battery life	About 4 hr. continuous operation
Operating temperature range	-10°C to +50°C (However, there shall be no dew condensation inside.)
Weight	About 1 kg

* HST-W80JS-Y1 (spec. with Y-type Contact tip (Metal fitting) also exists.

HXR-20J (For normal railways) HXR-25J (For high speed rail)

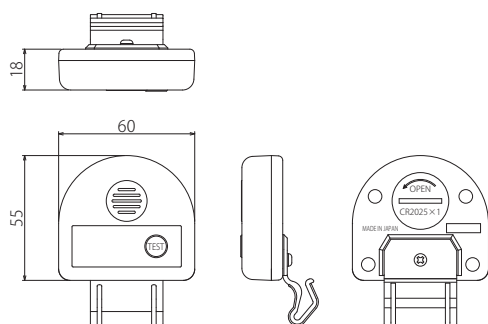
Medium Voltage Hot-line Proximity Alarm

AC HXR-20J 20kV
HXR-25J 25kV

■ Features

- Alarm is generated at a distance of about 2 m from the energized overhead contact lines, normal railways (AC 20kV) and High Speed Railway(AC 25kV).
- It has directionality to identify overhead contact lines in a charged state.
- It is compact, lightweight, and can be fitted to a helmet with a one-touch operation

■ Dimensions (common to Model HXR-20J & Model HXR-25J)

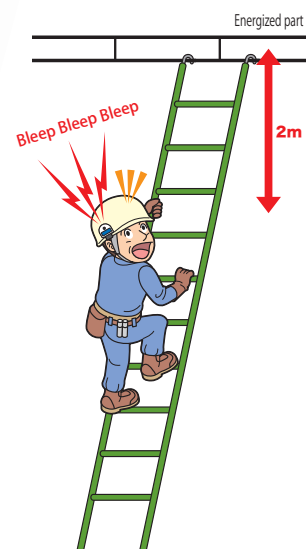


■ Specifications

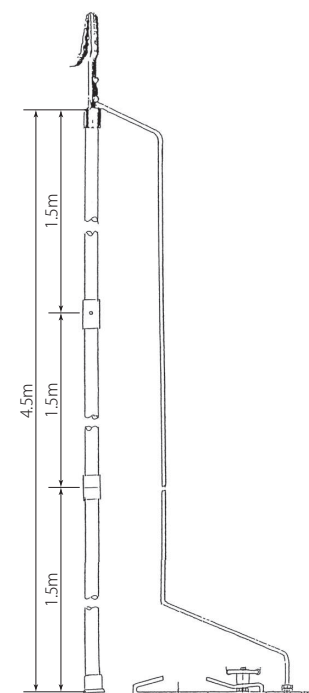
Operating sensitivity (Electric field intensity)	HXR-20J : AC20kV HXR-25J : AC25kV
Standard operation starting distance	About 2 m (It differs depending on the environment.)
Sound volume	80dB/10cm or more
Frequency	50/60 Hz
Operating temperature range	-10°C ~ +40°C
Battery	CR2025(3V) x 1 pcs
Battery life	About two years in unused state
Dimensions	60mm × 55mm × 18mm
Weight	About 40g

Non-contact Detection of Charging State of AC Overhead Contact Lines

Jointly developed with JR EAST (East Japan Railway Company)



Grounding Hook for Railways



Custom production is possible with combination of tip metal fitting, length of operating rod, length and size of earth wire, and grounding metal fitting.

■ Tip metal fitting

External appearance	Model name	Range of use (mm)	Dimension	Weight
	SA106-A Insertion type	φ10~25		630g
	SA106-C Slanted insertion type	φ10~25		720g
	SA106-S Compact insertion type	φ4~10		400g

■ Operating stick

Type	Length	Length	Type	Length	Number of connections
Type 5	0.5m	Single rod	Type 35	3.5m	Connection of 2 rods (1.5 m + 2.0 m)
Type 10	1.0m		Type 40	4.0m	Connection of 2 rods (2.0 m + 2.0 m)
Type 15	1.5m		Type 45-A	4.5m	Connection of 2 rods (2.0 m + 2.5 m)
Type 20	2.0m		Type 45-B	4.5m	Connection of 3 rods (1.5 m + 1.5 m + 1.5 m)
Type 25	2.5m		Type 50	5.0m	Connection of 2 rods (2.5 m + 2.5 m)
Type 30	3.0m		Type 60-A	6.0m	Connection of 2 rods (3.0 m + 3.0 m)
			Type 60-B	6.0m	Connection of 3 rods (2.0 m + 2.0 m + 2.0 m)

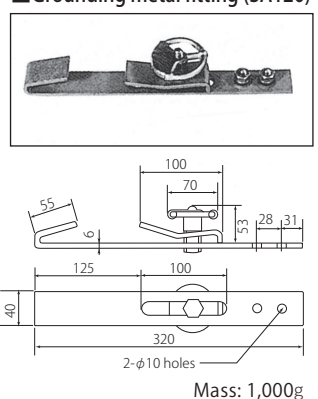
■ grounding wire

Cross-sectional area	38mm ²	60mm ²	100mm ²
Wire configuration	19/38/0.26	19/60/0.26	37/51/0.26
Mass	455g/m	680g/m	1120g/m
Finished outside diameter	12.9mm	15.2mm	19.0mm

■ Standard model

Type	Tip metal fitting	Grounding wire	Operating rod	Grounding metal fitting	Bag for housing
SA106A Type 45-A	SA106A	60mm ² × 7m	4.5 m, connection of 2 rods (2.0 m + 2.5 m)	SA120	Sold separately
SA106A Type 45-B	SA106A	60mm ² × 7m	4.5 m, connection of 3 rods (1.5 m + 1.5 m + 1.5 m)	SA120	Sold separately

■ Grounding metal fitting (SA120)



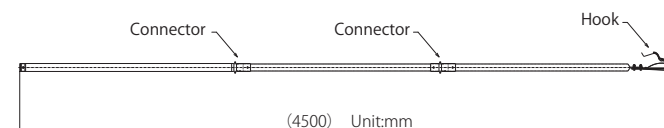
Type R

DC 1500V

■ Features

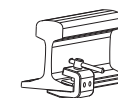
- No sagging of the ground wire because the operating rod and conductor are integrated.
- Grounding hardware can be securely fastened without passing under the rail.

■ Dimensions

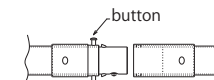


Grounding hook for DC train lines

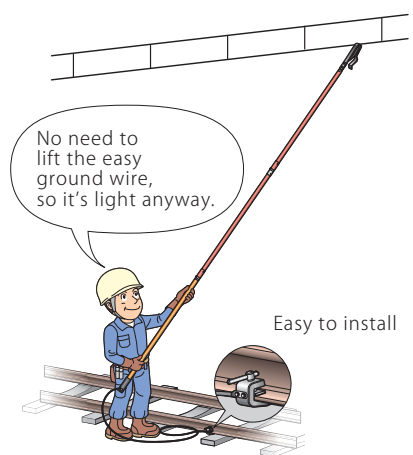
■ Grounding metal fitting



■ Connection



■ Metal head fitting



Easy to install

■ Specifications

Type	R
Target voltage range	Less than DC1500V
Grounding wire	transparent coated vinyl wire 60mm ² —3m
Energizing performance	4000A AC/Within 0.2 seconds
Hook attachable range	A:φ60, B:φ15~φ25(unit:mm)
Grounding bracket attachable range	15~25(unit:mm)
Dielectric strength	Surface of FPR-Between ground wire connection 5400VAC-for 1minute
Weight	About 10.2kg

VOLTECT

Extra-High Voltage
Detecting System

AC 3.3kV~550kV

* This apparatus is produced and sold by our company, having inherited inheriting technologies of former Million Electric Mfg. Co. Ltd.

■Features

- Economical as it can be simply installed without using PT, PD.
- Easy installation and maintenance.

Protector

- HG7-P1B
(for single phase)
- HG7-P2B
(for two-phase)

Earth wire
3.5 mm² shielded wire (sold separately)

Controller

- HG7-SM○○
 - HG7-DM○○
- * Refer to the following Rating table.

Voltage Meter

- DVF-11M

3.5 mm² shielded wire
(sold separately)

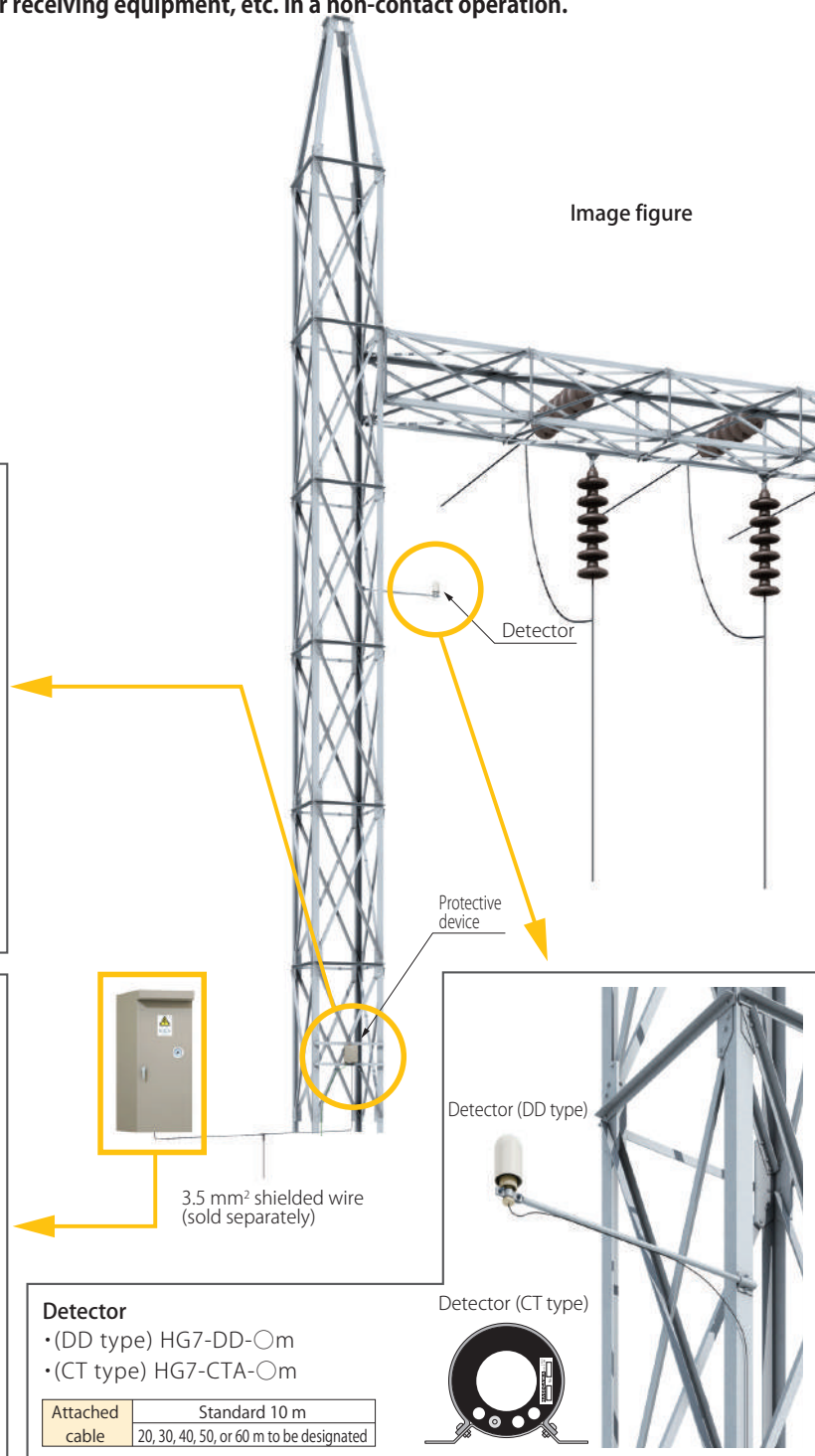
■Rating table

Indicating type of the measuring instrument		Voltage switching indication		Indication proportional to voltage
Type of Controller (*1)	Single-phase detection	SM1AH(high sensitivity)	SM1A(standard sensitivity)	DM1A
	Two-phase detection	SM2AH(high sensitivity)	SM2A(standard sensitivity)	DM2A
Line voltage (50/60 Hz)		3.3~550 kV		
Contact	Operating time at charging/power failure	0.5 sec or less (However, ratio of operating point setting: 70 % or less)		
	Configuration	1c (for single phase), 1c × 2 (for two-phase)		
	Switching capacity/100 VDC	Resistance load: 0.5 A, Induction load: 0.1 A		
Meter	Max. allowable circuit voltage	180V, DC, 140V, AC		
	Output	0~1mA, DC		
	Internal resistance	Less than 5 kΩ		About 1.5kΩ
Operation indication lamp		Charging: Red light, Power failure: Green light, No power: Extinguished (milky white)		
Power supply voltage		Standard: 110 V, DC (Others: 24 V, 220 V)		
Power supply current		75 mA (for single phase), 100 mA (for two-phase)		
Withstand voltage, insulation resistance (*2)		2 kV, AC-1 min; 10 MΩ or more/500 V, DC		
Impulse withstand voltage		±7 kV, 1.2 × 50 μS (between terminals in a lump ~ terminal E & case)		

* 1. DM1A & DM2A in the table are of standard sensitivity. In addition to these, there is the low-sensitivity type SM (L).
* 2. Between terminals in a group and case. However, terminal E could be included in the terminal group or excluded during the test.

This indication and warning apparatus detects the presence or absence of a charged state of special high voltage substations, electric power transmission lines, power receiving equipment, etc. in a non-contact operation.

Image figure



Detector

- (DD type) HG7-DD-○m
- (CT type) HG7-CTA-○m

Attached cable	Standard 10 m
	20, 30, 40, 50, or 60 m to be designated

Detector (CT type)



■How to decide the specification

Installation site of detector	Outdoors		Indoor		Inside the cubicle	
	Nominal line voltage	Control equipment	Detector	Control equipment	Detector	Control equipment
	3.3kV	—	—	H	CT	H
	6.6kV	—	—	H, ST	CT	H, ST
	11kV	H	—	H	—	—
	22kV	H, ST	—	H, ST	—	—
	33kV	ST	—	ST	—	—
	40~160kV	—	—	—	—	—
	161kV~550kV	Low sensitivity (L)	—	Low sensitivity (L)	—	—

* As for H, use high sensitivity (H) of the type SM.

* As for ST, use standard sensitivity of type SM or type DM.

VOLTECT SPECIFICATION TABLE

VOLTECT SPECIFICATION TABLE

Note: When your receipt of client order or when your offering quotation to the client, please write its q'ty and check ☐ in for your confirmation.

Date:

Order: <input type="checkbox"/>	Quotation: <input type="checkbox"/>	Delivery date:	
Customer' name and address:		Delivery place:	
Tel/Fax:		Tel/Fax:	
The person in charge(Name & Sec.)		Installation place name & address:	
Tel/Fax:			

Normal line voltage _____ kV	Detector insalltion place:	Outdoor <input type="checkbox"/>	Indoor <input type="checkbox"/>
		In board <input type="checkbox"/>	
		Internal GIS sensor equipped <input type="checkbox"/>	

※Check instruction manual P.12 (Notice for Interval Distance Table), and please select the sensitivity of the controller.

In case changing a installed Voltect,please write its controller' manufacturing number and so on for avoiding its mis-specification and for its confirmation:

Installed controller type:HG7- M A	Manufacturing No.
Q'ty set	Made by: date and year

Controller:	Type	Controller Sensitivity	Q'ty	Operation power	Color	Special specification
Single	HG7-SM1A	Standard	set	(Standard) 110V.DC <input type="checkbox"/> (75~143V)	(Standard) 5Y7/1(Glossy) <input type="checkbox"/> (Non standard)	English name plate <input type="checkbox"/> Converter in side <input type="checkbox"/>
	HG7-SM1AH	High	set	(Non standard) 24V.DC <input type="checkbox"/> (21~32V)	7.5BG6/1.5(Glossy) <input type="checkbox"/> N7(Glossy) <input type="checkbox"/>	Others: <input type="checkbox"/>
	HG7-SM1AL	Low	set	Below,built-in converter	Others <input type="checkbox"/>	
	HG7-DM1A	Standard	set	110V.DC <input type="checkbox"/> (90~170V)		
Two phase	HG7-SM2A	Standard	set	220V.DC <input type="checkbox"/> (110~250V)		
	HG7-SM2AH	High	set	110V.AC <input type="checkbox"/> (85V~132V)		
	HG7-SM2AL	Low	set			
	HG7-DM2A	Standard	set			

Protector:	Type	Q'ty	Color	Special specification
Single	HG7-P1B	set	(Standard)5Y7/1(Glossy) <input type="checkbox"/> (Non standard) N7(Glossy) <input type="checkbox"/>	English name plate <input type="checkbox"/> Others: <input type="checkbox"/>
Two phase	HG7-P2B	set	7.5BG6/1.5 (Semi Glossy) <input type="checkbox"/> Others: <input type="checkbox"/>	

Detector:	Type	Q'ty	Lenghts of shield cable	Color(Only for DD Type)
	HG7-DD-	m	Write in Type'lined m. (Standard) 10m	(Standard)N7(Glossy) <input type="checkbox"/> (Non standard) 5Y7/1 (Glossy) <input type="checkbox"/>
	HG7-CTA-	m	Example :HG7-DD-10m	Others <input type="checkbox"/>

Wide range AC Voltmeter	Type	Scale	Q'ty	Cover color
	DVF-11M	It's different depending on the line voltage, so please refer to a wide angle meter specification (VHG07-S-001).	set	(Standard) N1.5 <input type="checkbox"/> (Non standard)7.5BG4/1.5 <input type="checkbox"/>

Shield Cable	Type	Conductor'section area	Conductor'inner core	Length	Piece
	CVV-SB	3.5mm2	1c	m	pc.

Grounding Hook

- Grounding Hook P.51
- Disconnecter Hook Stick P.58
- Discharge Stick P.59

Type H

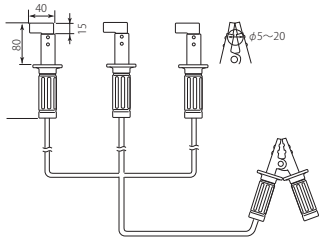
Universal Type for Cubicle

With Bag for housing

■Features

- The clip is L-shaped
- It's easily install and hard to detach.
- Soft and clear coated grounding wire.

■Dimensions



Standard model for Cubicle and high voltage receiving equipment.



■Accessory



Bag for housing

■Specifications

Type	Tip metal fitting	Grounding wire	Grounding metal fitting	Hammer-in type grounding bar	Bag for housing	Weight
H	Clip	22mm ² ×1.2m×3 wires 8mm ² ×5 m×1 wire	Clip	None	Portable type 300×360×110	About 3.5kg

Type HA-W

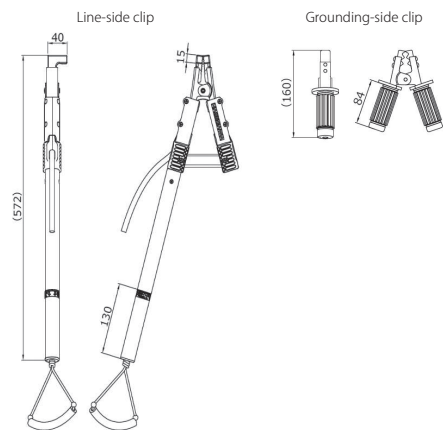
Universal Type for Cubicle

With Bag for housing

Check the QR code for details.



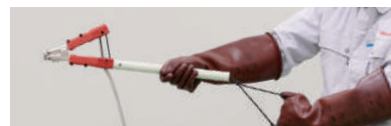
■Dimensions



Improved model from type H.



When you pull the rope, clip is opened.



When you push the rope, clip is closed.



■Accessory



Bag for housing

■Specifications

Type	Tip metal fitting	Overall length	Grounding wire	Grounding metal fitting	Hammer-in type grounding bar	Bag for housing	Weight
HA	Clip	572mm	22mm ² ×1.2m×3 wires 8mm ² ×5 m×1 wire	Clip	None	Portable type 400×600×100	About 4.5kg

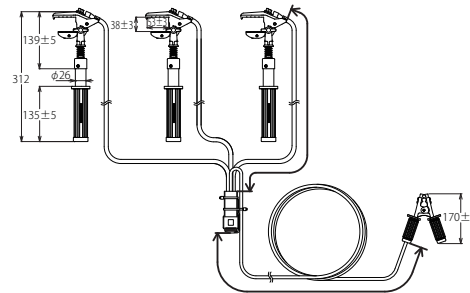
Type HC

Universal Type for Cubicle

For 6.6 kV (narrow space type) with bag for housing



■Dimensions



■Accessory

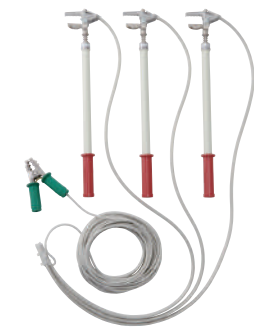


Bag for housing

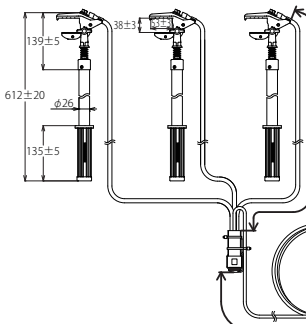
Type HF

Universal Type for Cubicle

For 6.6 to 22 kV with bag for housing



■Dimensions



■Accessory



Bag for housing

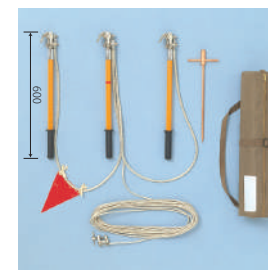


Hammer-in type grounding bar

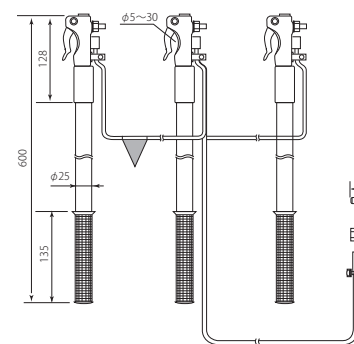
Type S

For Round Bus Bar

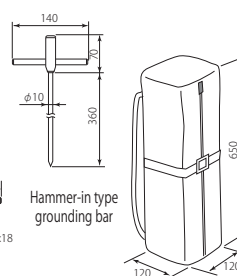
For 6.6 to 22 kV with carrying case



■Dimensions



■Accessory



Bag for housing

■Specifications

Type	Tip metal fitting	Length of insulating stick	Grounding wire	Grounding metal fitting	Hammer-in type grounding bar	Bag for housing	Weight
HC	Wide angle adjustable type	Epoxy pipe (φ 26×38mm) with rubber grip	14mm ² ×1m×3 wires 8mm ² ×7m×1 wire	Clip	None	Portable type 300×360×110	About 3.4kg
HF	Wide angle adjustable type	Epoxy pipe (φ 26×338mm) with rubber grip	22mm ² ×1.5m×3 wires 8mm ² ×15m×1 wire	Clip	φ 10 steel bar	Portable type 400×600×100	About 5.6kg
S	MA122—A	Neo pipe (φ 25×337mm) with rubber grip	22mm ² ×1.5m×2 wires (with red triangular flag) 8mm ² ×15m×1 wire	SA107-B	φ 10 steel bar	Portable type 650×120□	5.0kg

Type S is made by Sunasaki Seisakusho.

Grounding Hook

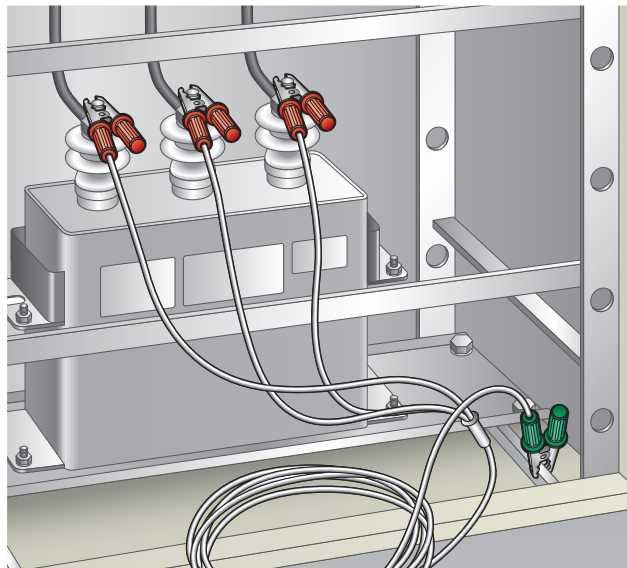
A wide variety of lineup according to the application

■When ordering, please determine the followings.

1. Type of tip metal fitting
2. Type of insulating stick (supplementary connecting type, telescopic type)
3. Length and diameter of insulating stick
4. Cross-sectional area and length of earth wire
5. Type of grounding metal fitting
6. Working voltage

[Attention]

- Three-phase/one set (three-unit set) is the standard (except for railways).
- The bag for housing is sold separately (except for partial products).
- The products are manufactured to order, so there may be cases when they are non-returnable.



■How to connect operating rod (As a standard, a rod of 3 m or less consists of a single rod.)

Figures inside () indicate outside diameter of the rod.

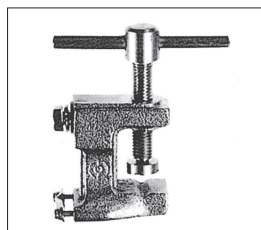
Length of operating rod	Earth wire of 38 mm ² or less is used.		
		In the case of using a strong type tip metal fitting	In the case of using earth wire of 60 mm ² or more
3.5m (connection of 2 rods)	1.5m (31φ) + 2.0m (34φ)	1.5m (31φ) + 2.0m (34φ)	1.5m (31φ) + 2.0m (34φ)
4.0m (connection of 2 rods)	2.0m (31φ) + 2.0m (34φ)	2.0m (31φ) + 2.0m (34φ)	2.0m (31φ) + 2.0m (34φ)
4.5m (connection of 2 rods)	2.5m (31φ) + 2.0m (34φ)	2.5m (31φ) + 2.0m (34φ)	2.5m (34φ) + 2.0m (39φ)
5.0m (connection of 2 rods)	2.5m (31φ) + 2.5m (34φ)	2.5m (31φ) + 2.5m (34φ)	2.5m (34φ) + 2.5m (39φ)
6.0m (connection of 2 rods)	3.0m (34φ) + 3.0m (39φ)	3.0m (34φ) + 3.0m (39φ)	3.0m (34φ) + 3.0m (39φ)
6.0m (connection of 3 rods)	2m (34φ) + 2m (39φ) + 2m (39φ)	2m (34φ) + 2m (39φ) + 2m (39φ)	2m (34φ) + 2m (39φ) + 2m (39φ)
Kind of joint	uses an insulating joint, and others use a metallic joint.		

■Type of grounding wire (transparent vinyl covered electric wire)

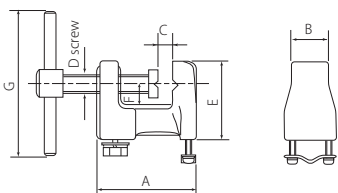
Cross-sectional area	8mm ²	14mm ²	22mm ²	38mm ²	60mm ²	100mm ²
Wire configuration	7/22/0.26	7/38/0.26	7/7/40/0.12	19/38/0.26	19/60/0.26	37/51/0.26
Weight	105g/m	180g/m	265g/m	455g/m	680g/m	1120g/m
Finished outside diameter	6.6mm	8.4mm	10.1mm	12.9mm	15.2mm	19.0mm

■Grounding metal fitting

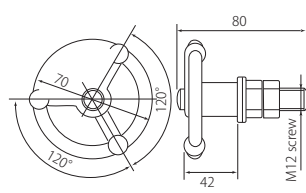
Grounding metal fitting (SA107-B,C,D)



* The photo shows SA107-C.



Valve type grounding handle (SA110)



Model	Mounting method	Applicable wire	A	B	C	D	E	F	G	Weight
SA107-B	Screw tightening method	8mm ² ~ 14mm ²	51	18	18	10	39	13	65	280g
SA107-C	Screw tightening method	22mm ² ~ 38mm ²	66	24	27	12	53	14	95	570g
SA107-D	Screw tightening method	60mm ² ~ 100mm ²	90	30	38	12	75	23	95	1080g
SA110	Stud bolt type	M12 stud	Valve type grounding handle							320g

Grounding Hook Component

Table 1

●When ordering the earth hook, please determine the following.

1. Type of tip metal fitting
2. Type of insulating stick (supplementary connecting type, telescopic type)
3. Length and diameter of insulating stick
4. Cross-sectional area and length of earth wire
5. Type of grounding metal fitting
6. Working voltage

Attention

- Three-phase/one set is a standard. (Used with AC)
- The bag for housing is sold separately.
- The products are manufactured to order, so there may be cases when they are non-returnable. Please note this when placing an order.

■Fixed type tip metal fitting (The operating rod and tip metal fitting are fixed.)

External appearance	Model name	Range of use (mm)	Dimensions	Weight	Remarks
	MA121-A Large size	φ8 to 40		710g	For round bus bar
	MA121-AS Special large size	φ30 to 80		800g	For round bus bar
	MA121-AG Strong large size	φ20 to 52, L=195 φ40 to 80, L=195 φ70 to 150, L=225 φ100 to 180, L=225		1200g 1920g	For round bus bar (Earth wire: 60 mm ² or more)
	MA121-C Slanted large size	φ8 to 40		930g	For round bus bar
	MA111-A Universal type	φ8 to 40 Thickness of bus bar within 12 Width within 75		930g	For dual use of round and flat bus bars
	MA111-AG Strong universal type	φ20 to 52 Thickness of bus bar within 20 Width within 100		1600g	For dual use of round and flat bus bars (Earth wire: 60 mm ² or more)
	MA111-C Slanted universal type	φ8 to 40 Thickness of bus bar within 12 Width within 75		1060g	For dual use of round and flat bus bars
	MA122-A Medium size	φ5 to 25		370g	For round bus bar
	MA114-A Horizontal & slanted copper band type	Thickness within 25 Width within 100		1000g	For flat bus bar
	MA114-AG Strong horizontal & slanted copper band type	Thickness within 30 Width within 100		2250g	For flat bus bar (Earth wire: 60 mm ² or more)
	MA115-A Cubicle type	φ5 to 25 Thickness of bus bar within 30 Width no limit		500g	For dual use of round and flat bus bars
	MA115-AG Strong cubicle type	φ8 to 25 Thickness of bus bar within 35 Width no limit		1050g	For dual use of round and flat bus bars (Earth wire: 60 mm ² or more)
	MA115-AN Cubicle type for narrow spaces	φ5 to 25 Thickness of bus bar within 30 Width within 50		480g	For dual use of round and flat bus bars
	MA115-AH Cubicle type with claw	φ5 to 25 Thickness of bus bar within 30 Width within 50		530g	For dual use of round and flat bus bars

Grounding Hook Component

Table 2


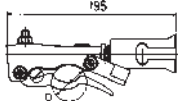

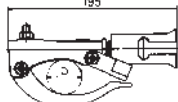
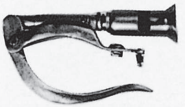
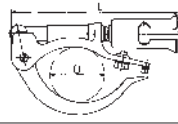

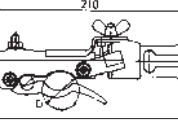
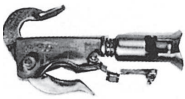
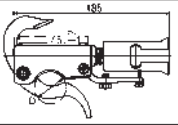
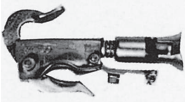
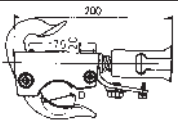

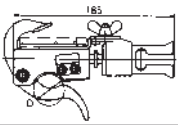
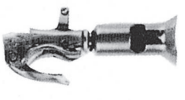
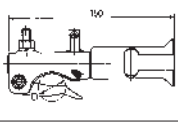

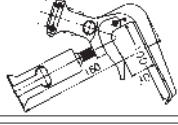

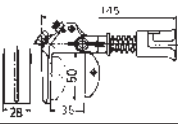

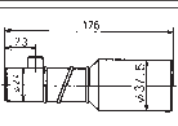

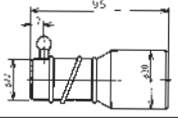
●When ordering the earth hook, please determine the following.

- 1.Type of tip metal fitting
- 2.Type of insulating stick (supplementary connecting type, telescopic type)
- 3.Length and diameter of insulating stick
- 4.Cross-sectional area and length of earth wire
- 5.Type of grounding metal fitting
- 6.Working voltage

Attention

- Three-phase/one set is a standard. (Used with AC)
- The bag for housing is sold separately.
- The products are manufactured to order, so there may be cases when they are non-returnable. Please note this when placing an order.

■Detachable type tip metal fitting (The operating rod and tip metal fitting are detachable.)

External appearance	Model name	Range of use (mm)	Dimensions	Weight	Remarks
	MA121-B Large size	φ8 to 40		760g	For round bus bar Closed stocks (set items) of the type ZB, type YB have a groove width of 5.5 mm.
	MA121-BS Special large size	φ30 to 80		860g	For round bus bar
	MA121-BG Strong large size	φ20 to 52, L=200 φ40 to 80, L=200 φ70 to 150, L=200 φ100 to 180, L=230		1250g 1950g	For round bus bar (Earth wire: 60 mm ² or more)
	MA121-D Large slanted type	φ8 to 40		930g	For round bus bar
	MA111-B Universal type	φ8 to 40 Thickness of bus bar within 12 Width within 75		980g	For dual use of round and flat bus bars
	MA111-BG Strong universal type	φ20 to 52 Thickness of bus bar within 20 Width within 100		1680g	For dual use of round and flat bus bars (Earth wire: 60 mm ² or more)
	MA111-D Universal slanted type	φ8 to 40 Thickness of bus bar within 12 Width within 75		930g	For dual use of round and flat bus bars
	MA122-B Medium size	φ5 to 25		420g	For round bus bar
	MA114-B Horizontal & slanted copper band type	Thickness within 25 Width within 100		1010g	For flat bus bar
	MA115-B Cubicle type	φ5 to 25 Thickness of bus bar within 30 Width no limit		520g	For dual use of round and flat bus bars
	MA105 Tip metal fitting for operating rod			170g	To be used for all detachable models of the types MA115-B, ZB, and YB, except for closed stocks
	MA105-S Tip metal fitting for operating rod			70g	To be used for closed stocks of the types MA115-B, ZB, and YB

Fixed Type

●When ordering the earth hook, please determine the following.

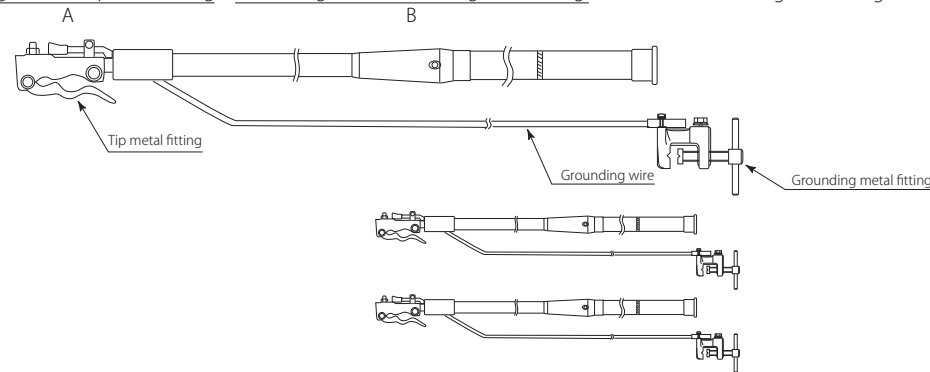
- 1.Type of tip metal fitting
- 2.Type of insulating stick (supplementary connecting type, telescopic type)
- 3.Length and diameter of insulating stick
- 4.Cross-sectional area and length of earth wire
- 5.Type of grounding metal fitting
- 6.Working voltage

Attention

- Three-phase/one set is a standard. (Used with AC)
- The bag for housing is sold separately.
- The products are manufactured to order, so there may be cases when they are non-returnable. Please note this when placing an order.

$$(\text{Closed stock}) = (\text{Operating rod with tip metal fitting} + \text{Grounding wire} + \text{Grounding metal fitting}) \times 3$$

(The bag for housing is sold separately.)



A	Model of tip metal fitting	B	Breakdown of class			Grounding wire	Grounding metal fitting	Applicable voltage
			Class	Length, kind of operating rod				
Large fixed type MA121-A (MA121-C)		Type 5	Neo pipe	0.5m	Single rod	22mm ² ×3m	SA107C	6.6kV
		Type 10	〃	1.0m	〃	〃	〃	〃
		Type 15	〃	1.5m	〃	22mm ² ×4m	〃	22kV
		Type 20	〃	2.0m	〃	〃	〃	〃
		Type 25	〃	2.5m	〃	22mm ² ×5m	〃	77kV
		Type 30	〃	3.0m	〃	〃	〃	〃
		Type 35	〃	3.5m (1.5+2)	Connecting type	22mm ² ×6m	〃	〃
		Type 40	〃	4.0m (2+2)	〃	〃	〃	154kV
		Type 45	〃	4.5m (2.5+2)	〃	22mm ² ×7m	〃	〃
		Type 50	〃	5.0m (2.5+2.5)	〃	〃	〃	〃
Universal fixed type MA111-A (MA111-C)		Type 60	〃	6.0m (3+3)	〃	〃	〃	275kV
		Type 60	〃	6.0m (2×3)	〃	〃	〃	〃
		Type 5	〃	0.5m	Single rod	14mm ² ×3m	SA107B	6.6kV
		Type 10	〃	1.0m	〃	〃	〃	〃
Medium-sized fixed type MA122-A Fixed type for cubicle MA115-A		Type 15	〃	1.5m	〃	14mm ² ×4m	〃	22kV
		Type 20	〃	2.0m	〃	〃	〃	〃

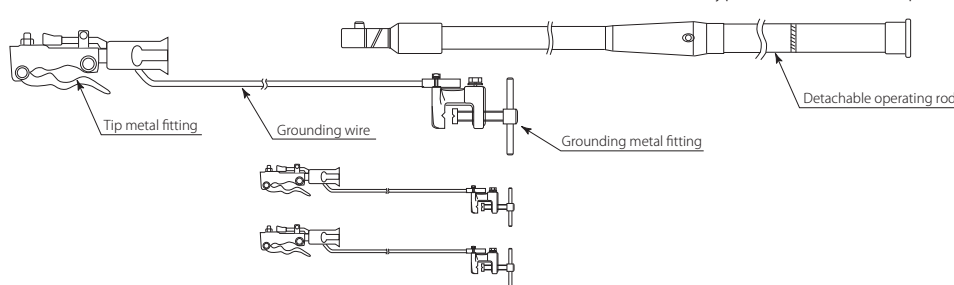
(Regarding the Type 60 described above, please determine either connection with two rods or three rods.)

Detachable Type

$$(\text{Closed stock}) = (\text{Detachable tip metal fitting} + \text{Grounding wire} + \text{Grounding metal fitting}) \times 3 + (\text{Detachable operating rod}) \times 1$$

(The bag for housing is sold separately.)

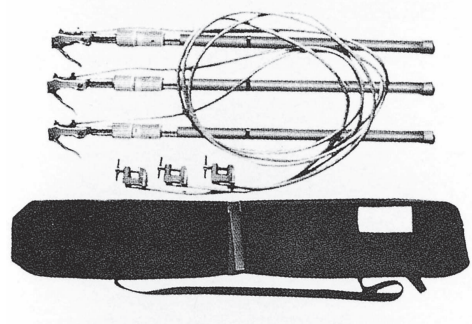
*The f detachable type is not suitable for operation at 4 m or more.



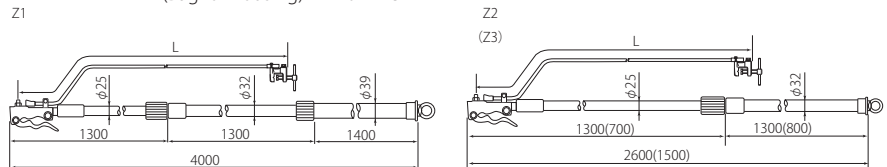
A	Model of tip metal fitting	B	Class	Breakdown of class			Grounding wire	Grounding metal fitting	Applicable voltage
				Length, kind of operating rod					
Large detachable type MA121-B (MA121-D)		Type 5	Neo pipe	0.5m	Single rod	22mm ² ×3m	SA107C	6.6kV	
		Type 10	〃	1.0m	〃	〃	〃	〃	
		Type 15	〃	1.5m	〃	22mm ² ×4m	〃	22kV	
		Type 20	〃	2.0m	〃	〃	〃	〃	
		Type 25	〃	2.5m	〃	22mm ² ×5m	〃	77kV	
Universal detachable type MA111-B (MA111-D)		Type 30	〃	3.0m	〃	〃	〃	〃	
		Type 35	〃	3.5m (1.5+2)	Connecting type	22mm ² ×6m	〃	〃	
		Type 40	〃	4.0m (2+2)	〃	〃	〃	154kV	

Operating Rod of Compressed Tightening-Type Telescopic Model for Power Transmission Line

Type Z



(Closed stock) = (Operating rod with tip metal fitting + Grounding wire + Grounding metal fitting) × 3 + (Bag for housing) × 1 or × 3

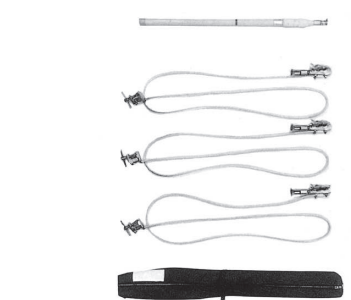


■Grounding metal fitting SA107-C Insulating stick: Epoxy pipe

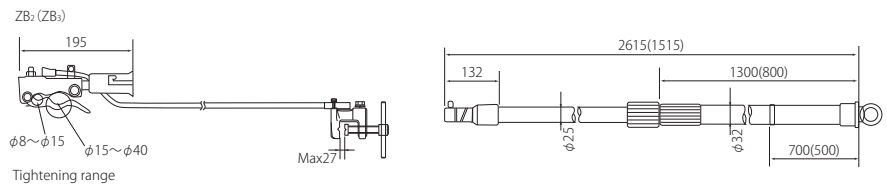
Type	Applicable voltage	Tip metal fitting	Grounding wire	Length at extended state	At storage	No. of corrections	Bag for housing	Weight of contents & bag
Z1	275kV	MA121-A	22mm ² ×5m	4.0m	1.8m	3	Capacity of 1 phase portion	15.5kg
Z2	154kV	〃	22mm ² ×4m	2.6m	1.5m	2	Capacity of 3-phase portion	11.0kg
Z3	77kV	〃	22mm ² ×3m	1.5m	1.1m	2	〃	8.8kg

Operating Rod of Compressed Tightening-Type Telescopic Model for Power Transmission Line

Type ZB



(Closed stock) = (Detachable tip metal fitting + Grounding wire + Grounding metal fitting) × 3 + (Operating rod) × 1 + (Bag for housing) × 1

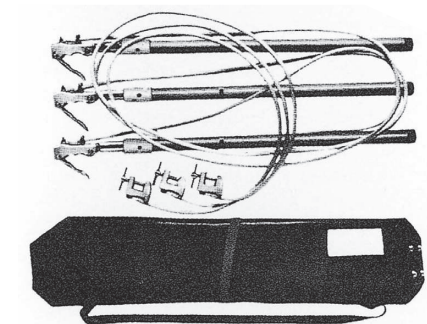


■Grounding metal fitting SA107-C Insulating stick: Epoxy pipe

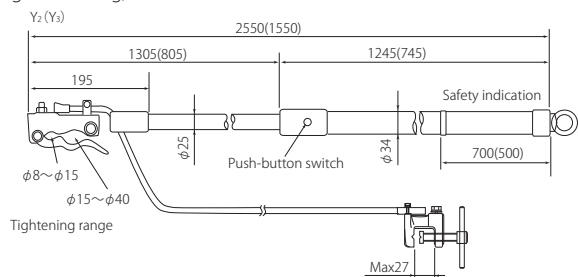
Type	Applicable voltage	Tip metal fitting	Grounding wire	Length at extended state	At storage	No. of corrections	Bag for housing	Weight of contents & bag
ZB2	154kV	MA121-B (Groove: 5.5 mm)	22mm ² ×4m	2.6m	1.4m	2	Capacity of 3-phase portion for 1800 × 1200	9.3kg
ZB3	77kV	〃	22mm ² ×3m	1.5m	0.9m	2	Capacity of 3-phase portion for 1200 × 1200	7.8kg

Operating Rod of Button Type Telescopic Model

Type Y



(Closed stock) = (Operating rod with tip metal fitting + Grounding wire + Grounding metal fitting) × 3 + (Bag for housing) × 1

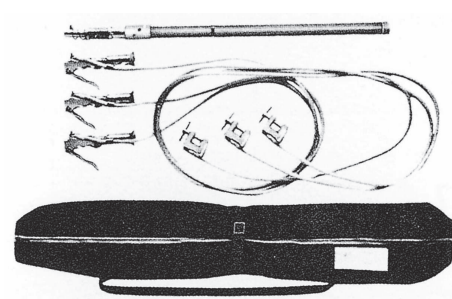


■Grounding metal fitting SA107-C Insulating stick: Neo pipe

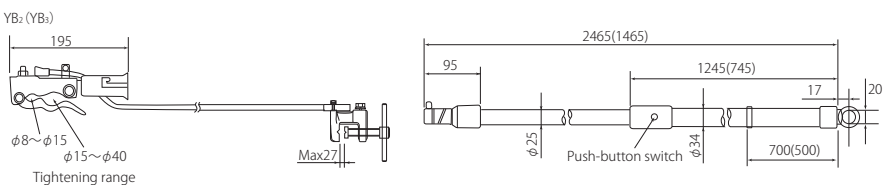
Type	Applicable voltage	Tip metal fitting	Grounding wire	Length at extended state	At storage	No. of corrections	Bag for housing	Weight of contents & bag
Y2	154kV	MA121-A	22mm ² ×4m	2.5m	1.4m	2	Capacity of 3-phase portion	11.5kg
Y3	77kV	〃	22mm ² ×3m	1.5m	0.9m	2	〃	9.0kg

Operating Rod of Button Type Telescopic Model

Type YB



(Closed stock) = (Detachable tip metal fitting + Grounding wire + Grounding metal fitting) × 3 + (Operating rod) × 1 + (Bag for housing) × 1



■Grounding metal fitting SA107-C Insulating stick: Neo pipe

Type	Applicable voltage	Tip metal fitting	Grounding wire	Length at extended state	At storage	No. of corrections	Bag for housing	Weight of contents & bag
YB2	154kV	MA121-B	22mm ² ×4m	2.4m	1.4m	2	Capacity of 3-phase portion	9.6kg
YB3	77kV	〃	22mm ² ×3m	1.4m	0.9m	2	〃	8.1kg

HSH-K6

Disconnecter Hook Stick with Voltage Detector

AC 6.6kV

■Features

- Work safety and efficiency are improved by combining the voltage-detecting function to the medium voltage cutout operating rod.

■Specifications

Model	HSH-K6
Working voltage range	AC 6.6kV
Operation starting voltage (Voltage to ground)	1300V±20% (continuous indications of sound & light) (with insulated wire)
Dielectric strength	Ditto: AC 50kV – 1 min
Leakage current	1 mA or less at dielectric strength test
Indication of operation	Light
	Sound

Operating temperature range	– 10°C ~ +40°C
Structure	Waterproof (Water shall not ingress.)
Tensile performance	200kgf, 1 min
Battery	6R61 or 6F22(9V) × 1 pcs
Dimensions	About 470mm
Weight	About 390g

* Without the casing

SA109□-□

Hook Stick for D/S (Disconnecting Switch)

AC 10kV~110kV

■Features

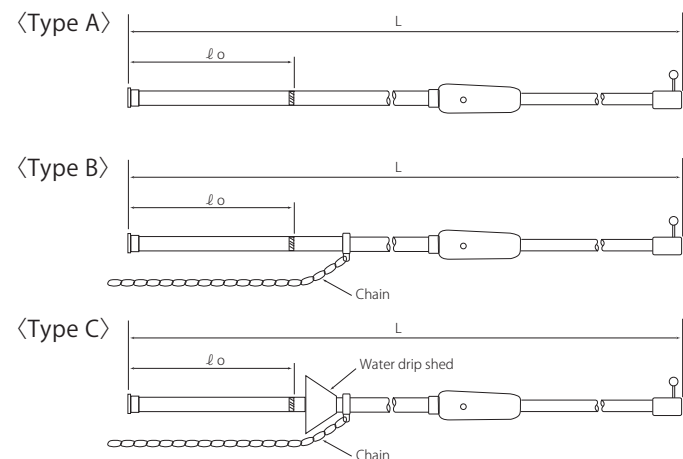
- There are lineups with or without the water drip shed (for outdoor use) as well as chain.

■Specifications

Model (SA109)	Indoor	A-1	A-1.5	A-2	A-3	A2-4	A2-5	A2-6	A3-6
	Outdoors	B-1	B-1.5	B-2	B-3	B2-4	B2-5	B2-6	B3-6
Applicable voltage		AC 10kV	AC 20kV	AC 30kV	AC 40kV	AC 70kV		AC 110kV	
Rod dia. & connecting method	φ 31	1.0m	1.5m	2.0m	3.0m	4.0m (connection of 2 rods)	5.0m (connection of 2 rods)	6.0m (connection of 2 rods)	6.0m (connection of 3 rods)
	φ 34	—	—	—	—	2.0m	2.5m	3.0m	2.0m
	φ 39	—	—	—	—	—	—	3.0m	2.0m+2.0m
Length of grip (ℓ o)		0.3m	0.5m	0.5m	0.7m	0.7m	1.0m	1.0m	1.0m
Tip metal fitting for Disconnecter hook rod		SA108-B			SA108-C		SA108-E		

		Chain	Water drip shed
Type A	Indoor	None	None
Type B	〃	Exist	None
Type C	Outdoors	Exist	Exist

Enhance Work Safety and Efficiency



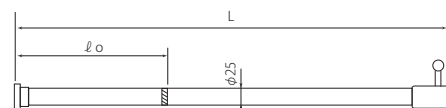
D□

Hook Stick for D/S in Cubicle

AC 6.6kV~30kV

■Specifications

Class	D1	D2	D3	D4
Length (L)	0.5m	1.0m	1.5m	2.0m
Length of grip (ℓ o)	0.3m	0.3m	0.5m	0.5m
Applicable voltage	6.6kV	10kV	20kV	30kV



HRD-27S Residual Electric Charge Discharging Stick

- Voltage detection functions
- Built-in resistance

DC 27kV (Maximum discharge voltage)



■ Features

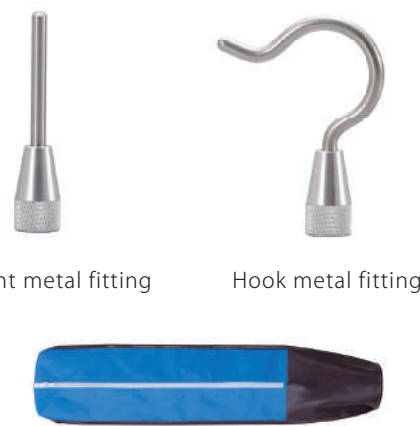
- Allows for residual electric charge to be discharged safely and easily
- When discharging, allows for visual and auditory confirmation of discharge status through an audio and light emitting display at the center of the detector
- The metal fitting can be switched according to application (2 types)

This device is not a voltage detector. Use a voltage detector on the circuit to confirm that the power is not running before using this device.

■ Detector



■ Accessory

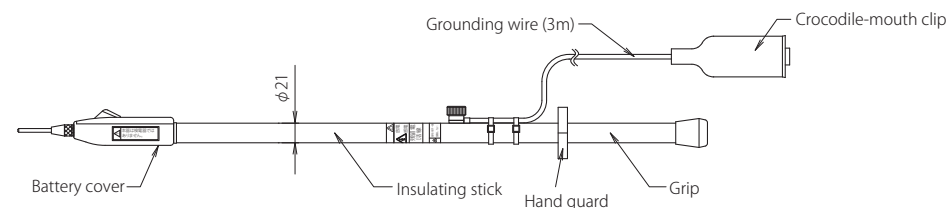
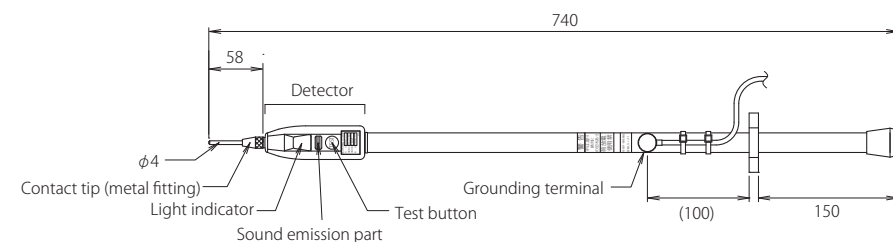


Straight metal fitting

Hook metal fitting

Bag for housing (DA16003)

■ Dimensions



■ Specifications

Discharge voltage	DC27kV (Max)
Discharge capacity	1 μ F (Max)
Discharge time	5 seconds or less (DC27 kV, 50 V or less at 1 μ F)
Discharge resistance	600k Ω
Operation stop voltage	DC40V \pm 20%
Indication (Light/sound)	Light: It shall be able to confirm in the luminance of 8,000 lux Sound: 50 dB or more at a distance of 2 m
Battery	LR44 alkaline button cell (1.5 V) x2 pcs.
Battery life	Approx. 4 hours of continuous operation
Operating temperature range	-10°C ~ +40°C
Weight	About 800 g
Accessories	Bag for housing , contact tip (hook metal fitting), each 1 pc.

Uses sound and light to visualize the complete discharge of accumulated charge



HRD-27 Residual Electric Charge Discharging Stick

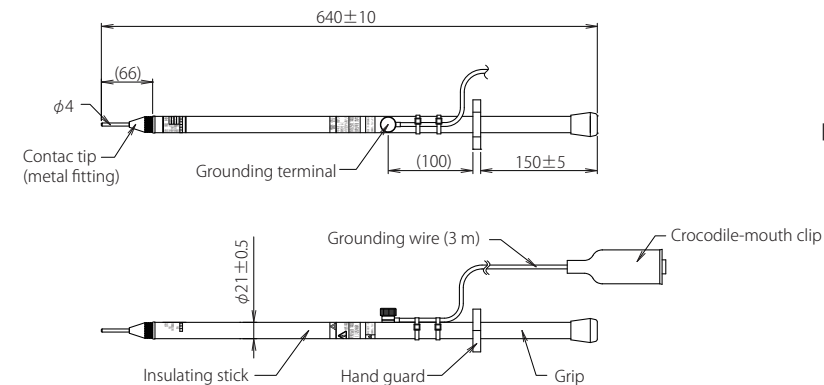
- Built-in resistance

DC 27kV (Maximum discharge voltage)

■ Features

- Allows for residual electric charge to be discharged safely and easily
- The metal fitting can be switched according to application (2 types)

■ Dimensions



■ Accessory



Straight metal fitting

Hook metal fitting



Bag for housing (DA16003)

■ Specifications

Discharge voltage	DC27kV (Max)
Discharge capacity	1 μ F (Max)
Discharge time	5 seconds or less (DC27 kV, 50 V or less at 1 μ F)
Discharge resistance	600k Ω
Operating temperature range	-10°C ~ +40°C
Weight	About 660 g
Accessory	Bag for housing , contact tip (hook metal fitting) , each 1 pc.

Order-made Residual Electric Charge Discharging Stick

- No built-in resistance

*Select from the following specifications

(1)Length of insulation stick

☐0.5m ☐1.0m ☐1.5m ☐2.0m

(2)Cross-sectional area of grounding wire

☐8mm² ☐14mm²

(3)Length of grounding wire

☐2m ☐3m ☐4m ☐5m ☐6m
☐7m ☐8m ☐9m ☐10m

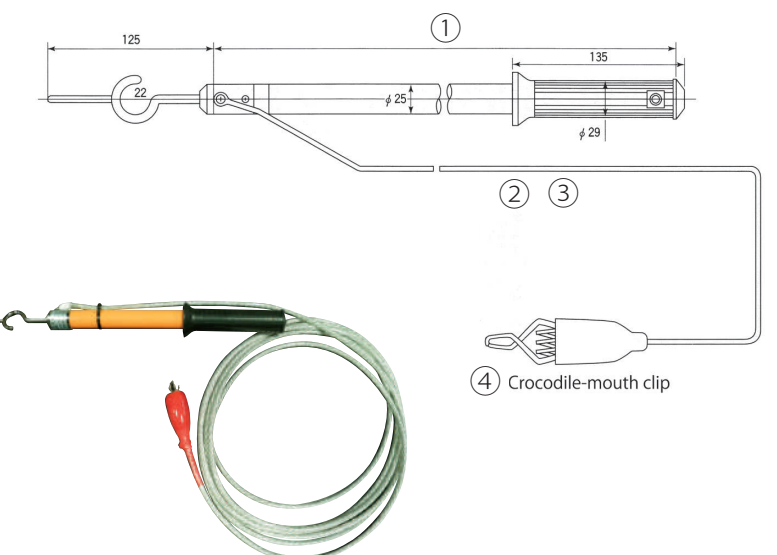
(4)Grounding metal fitting type *For the Dimensions, refer to P32.

☐Crocodile-mouth clip
☐Vise type (SA107-B)

Built-in resistance type



Simple Discharge stick with no built-in Internal Resistance



Technical Data

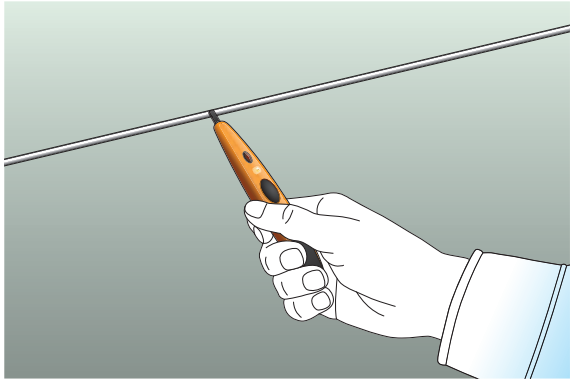
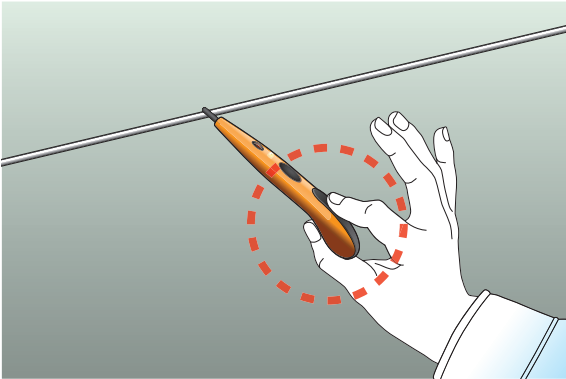
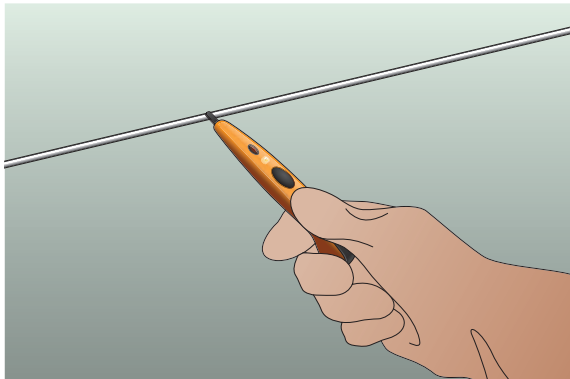
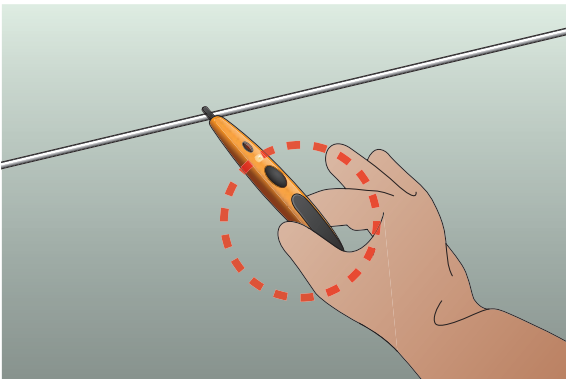


■ Information Materials P.63

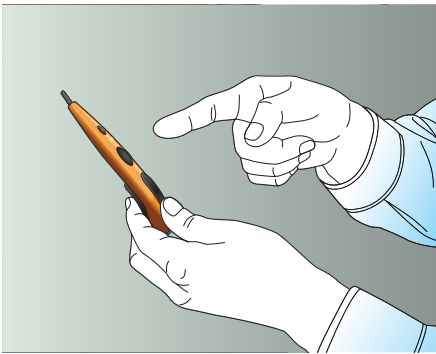
Low Voltage Use (For AC)

The contact area with the hand affects the sensitivity of the voltage detector. So, appropriate sensitivity cannot be obtained unless it is held firmly. Also, it is not possible to use rubber gloves for high voltages or gloves made from thick fabric.

Holding the voltage detector correctly

○ Good	✗ Bad
	
	
●Hold the grip firmly.	●It is not possible to detect the voltage correctly if the grip is held with the tips of the fingers.

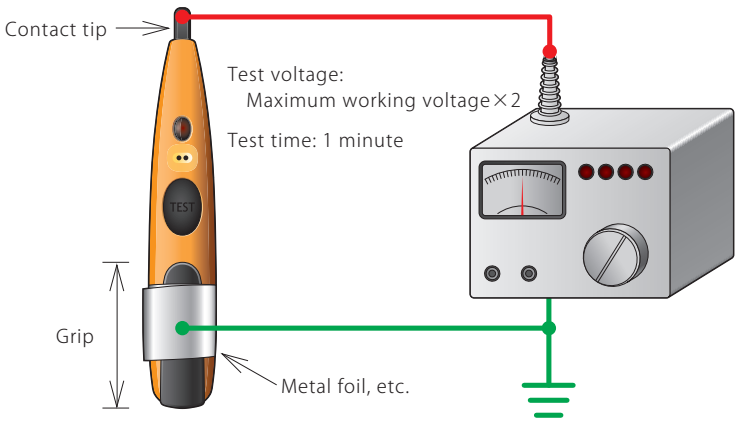
Visual inspection



Visual inspection items

- Press the test button for about five seconds and check that there is no change in the lamp or the sound.
- Check that there are no problems such as damage, dirt, scratches or cracks.

Withstand voltage testing

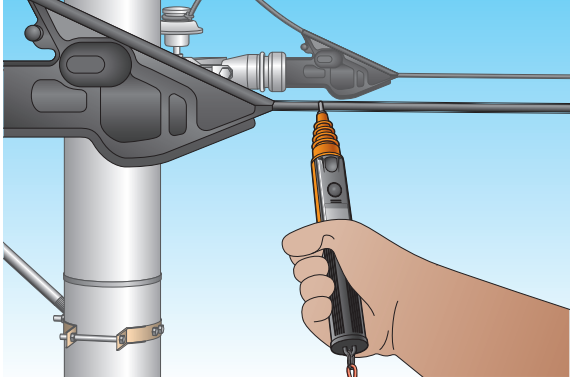
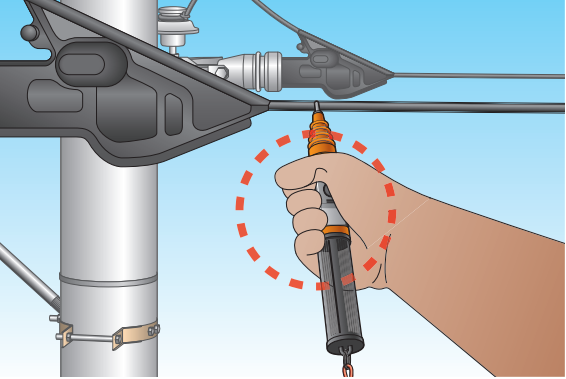

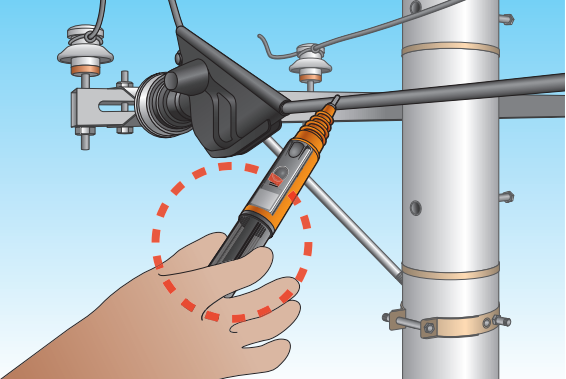


- Apply a voltage between the contact tip and the grip (at a position near the contact tip).

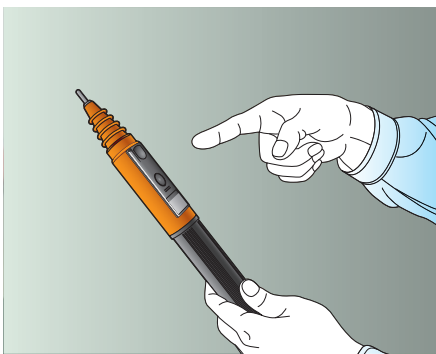
Medium and Low Voltage Use (For AC)

The contact area with the hand affects the sensitivity of the voltage detector. So, appropriate sensitivity cannot be obtained unless it is held firmly.

Holding the voltage detector correctly

○ Good	✗ Bad
	
	
●Hold the grip firmly.	●Never hold a part other than the grip when detecting voltages. This is extremely dangerous. ●It is not possible to detect the voltage correctly if the grip is held with the tips of the fingers.

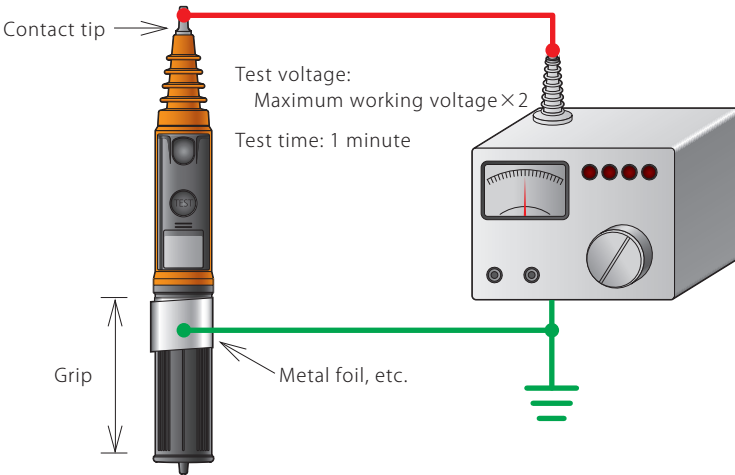
Visual inspection



Visual inspection items

- Press the test button for about five seconds and check that there is no change in the lamp or the sound.
- Check that there are no problems such as damage, dirt, scratches or cracks.

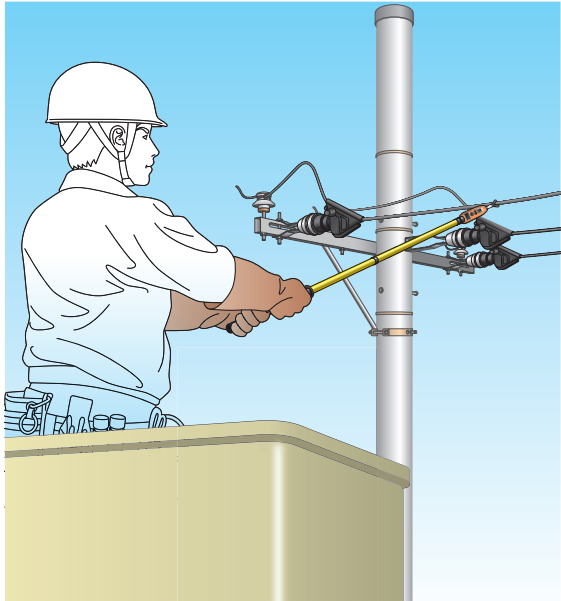
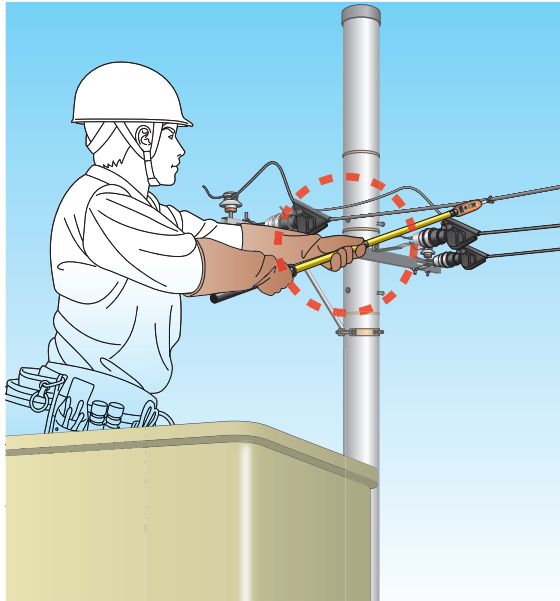


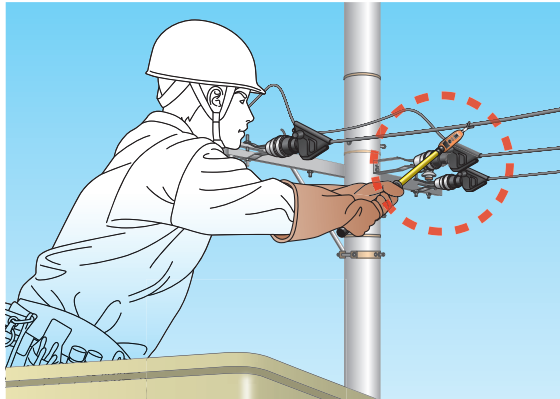
Withstand voltage testing



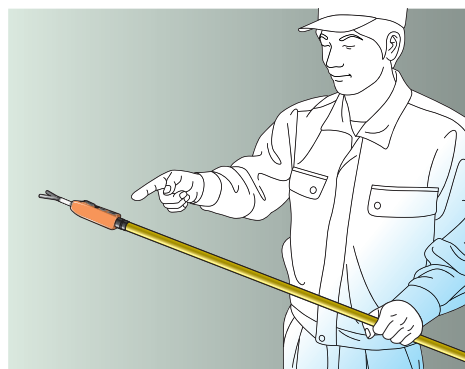
- Apply a voltage between the contact tip and the grip (at a position near the contact tip).

Medium Voltage & High Voltage Detector Use

Holding the voltage detector correctly

Good	Bad
	
<p>■ During storage</p>  <p>■ During use</p>  <p>Extend as far as possible</p>	
<ul style="list-style-type: none"> ● Hold the grip firmly. ● Telescopic type voltage detectors should be extended as far as possible for use. 	<ul style="list-style-type: none"> ● Never hold a part other than the grip when detecting voltages. ● Do not use a telescopic type voltage detector to detect voltages in its shortened state.

Visual inspection



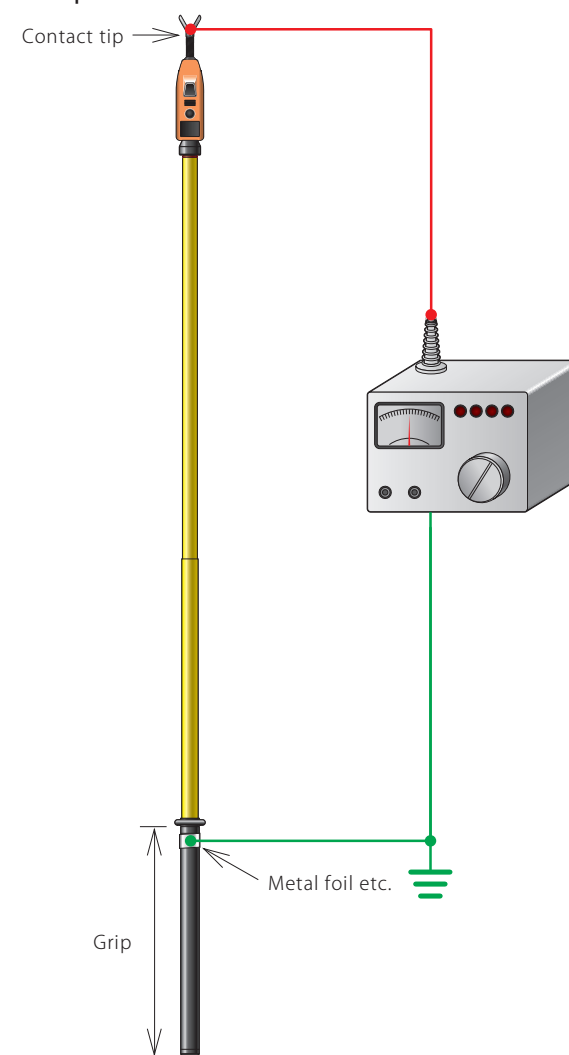
Visual inspection items

- Press the test button for about five seconds and check that there is no change in the lamp or the sound.
- Check that there are no problems such as damage, dirt, scratches or cracks.

Withstand voltage testing

- When test voltage is applied in batches
Test voltage is applied between the detector and the grip

Example:HST-30



Test voltage: Maximum working voltage × 2

Test time: 1 minute

Working voltage range: 3kV ~ 34.5kV

34.5kV (Maximum working voltage) × 2 = 69kV (Test voltage)

*We apply a test voltage of 70 kV

Hasegawa Electric has defined the withstand voltage testing methods by quoting the regulations and others listed below.

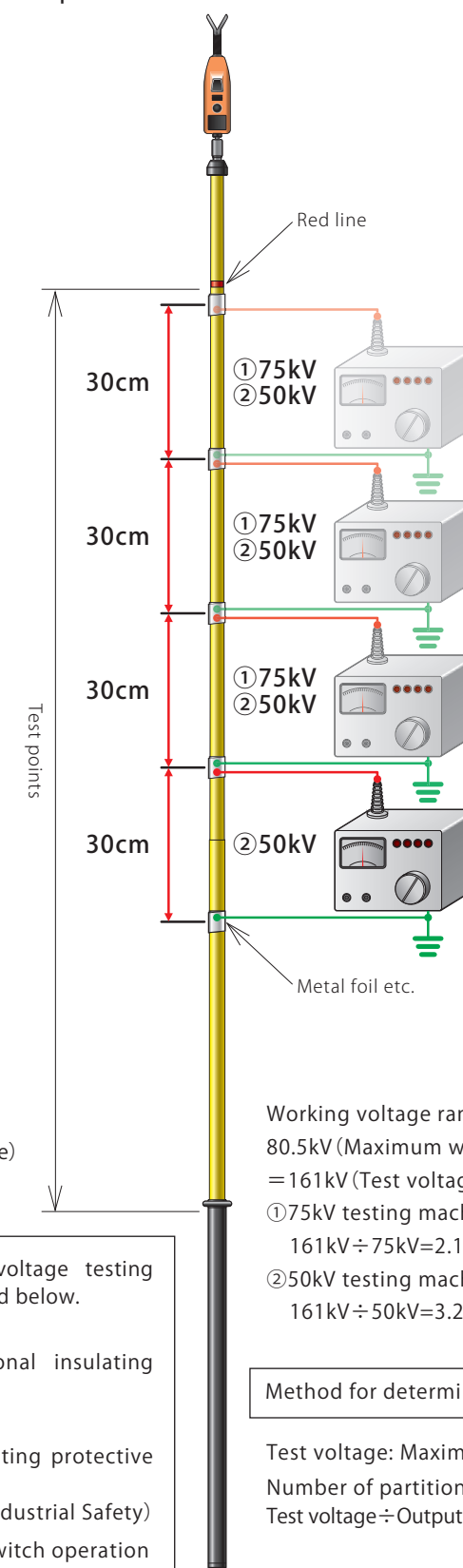
- March 28, 1961 LSB Notification No. 247
"Regulations on the performance of personal insulating protective equipment"
(Ministry of Health, Labour and Welfare)
- 4th Edition Test standards for personal insulating protective equipment, etc.
(Issued by: The Expert Group of Expertise on Industrial Safety)
- JIS C 4510-1991 Hook bars for disconnecting switch operation

*Unauthorized copying and reproduction is prohibited

- When test voltage is applied in installments

The test area is divided into 30 cm lengths and test voltage is applied to each section

Example:HST-70



Working voltage range: 20kV ~ 80.5kV

80.5kV (Maximum working voltage) × 2

= 161kV (Test voltage)

① 75kV testing machine

161kV ÷ 75kV = 2.15 = trisection (Round up)

② 50kV testing machine

161kV ÷ 50kV = 3.22 = quartering (Round up)

Method for determining the number of sections

Test voltage: Maximum working voltage × 2

Number of partitions:

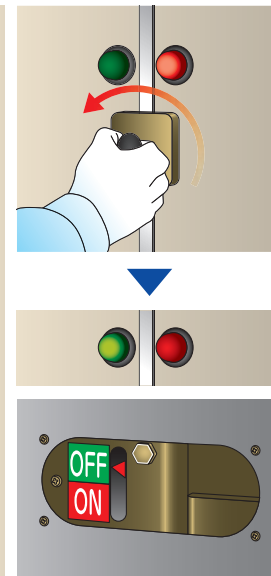
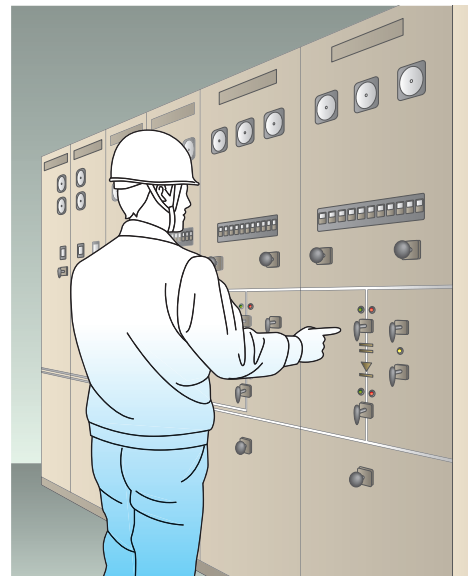
Test voltage ÷ Output voltage of the test instrument

*The "Split-application test" cannot be performed for voltage detectors(HST-20N,HSR-90N) with resistance in the insulating rod.

Confirming Dead-line Work

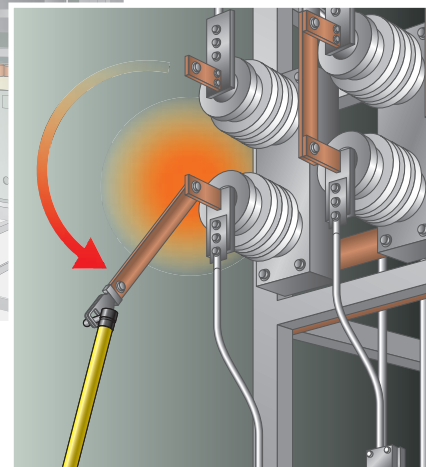
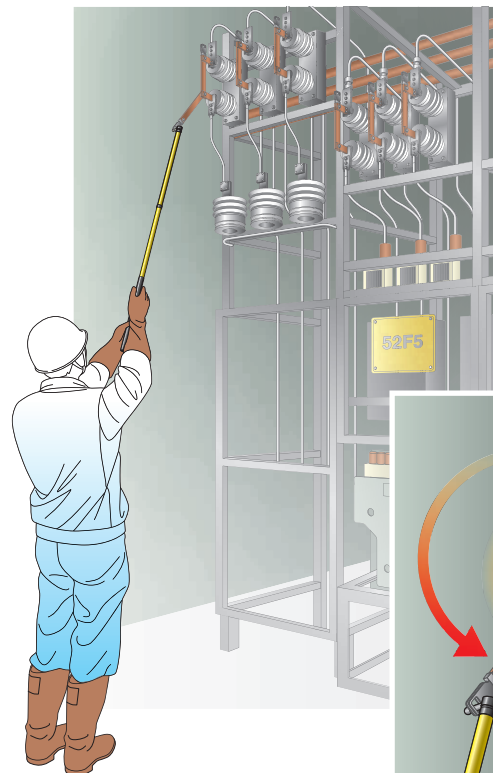
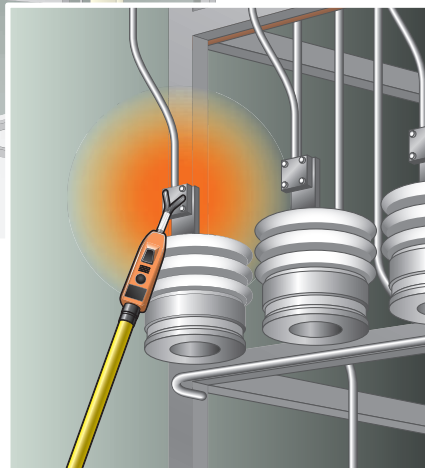
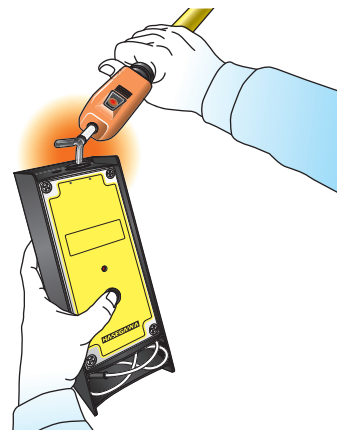
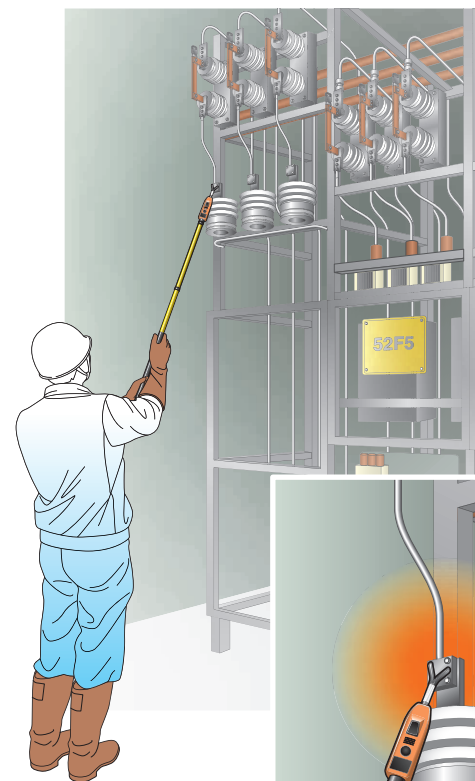
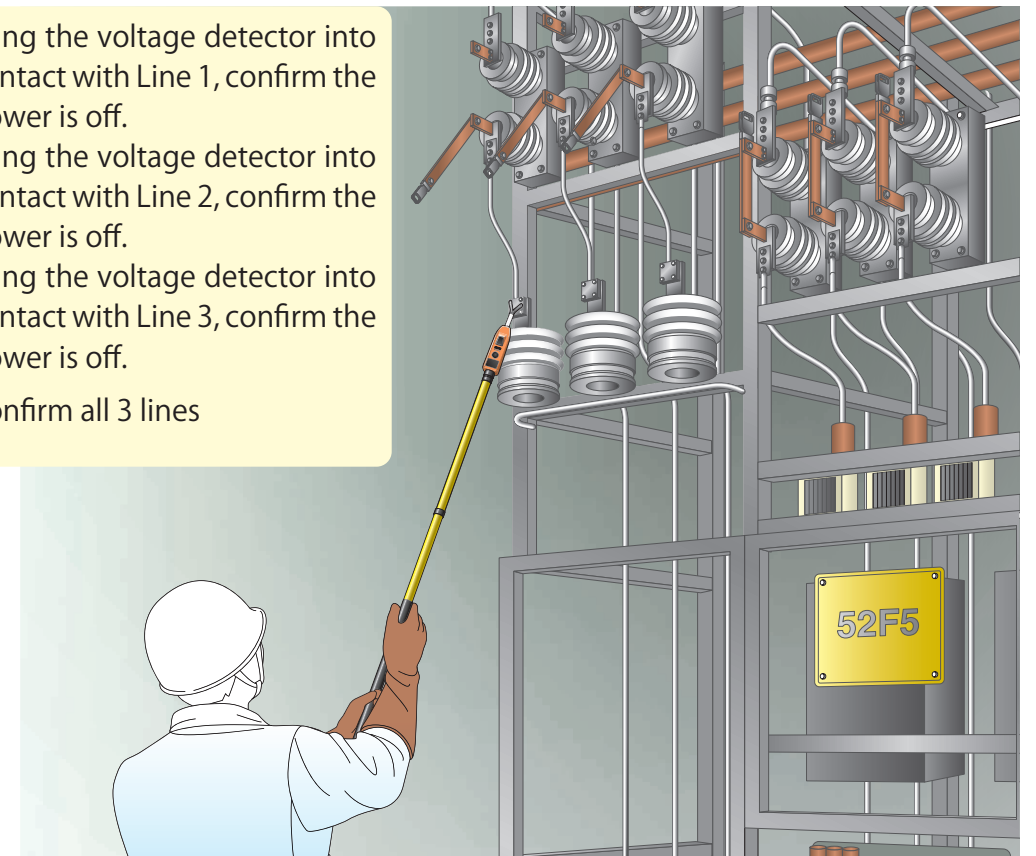


- ① Visual inspection of appearance and structure
Battery check by pushing the test button



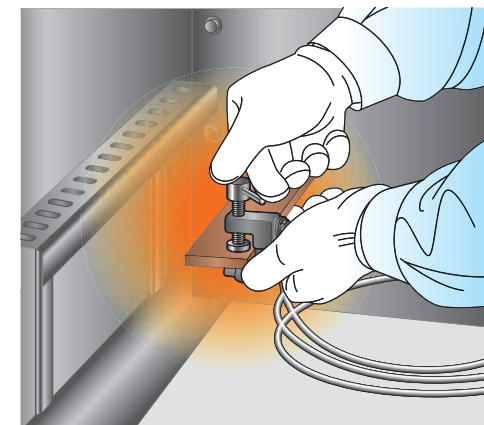
- ③ Turn off the Circuit Breaker
Turn off the disconnecter switch

- ④ Bring the voltage detector into contact with Line 1, confirm the power is off.
Bring the voltage detector into contact with Line 2, confirm the power is off.
Bring the voltage detector into contact with Line 3, confirm the power is off.
* Confirm all 3 lines

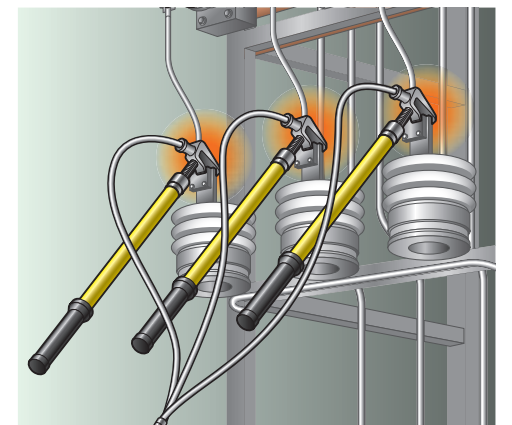


- ② Confirm normal operation of voltage detector contacting any charged conductor already known

- ⑤ Visual check of grounding hook set.
Appearance and construction check



- ⑥ Connect the grounding device to earth terminal



- ⑦ Connect the contact clamp to Line 1
Connect the contact clamp to Line 2
Connect the contact clamp to Line 3
* Connect all 3 lines

■Warranty period

- Product warranty period is one year after purchase. If any failure, trouble, etc. is caused during normal use in the course of the warranty period, we will repair or replace it free of charge.

■Scope of warrantee

- If disassembly, modification, etc. is performed by customers, the product becomes outside the scope of warranty.
- Consumable parts such as batteries attached to products, etc. are outside the scope of warranty. Furthermore, because attached batteries are provided for the purpose of confirming operation, early replacement is recommended.

■Repair

- If the product malfunctions, please inquire at a sales office of our company or a sales agent. Requests for repair will be received through sales agents.
- When an estimate before repair is needed, please request it when asking for the repair. When declining repair after submission of the “estimate before repair,” the cost of diagnosis will be requested.
- Warranty period after repair is six months. Scope of warranty is limited to the corresponding portion(s) repaired, and even within that warranty period, any new problem arising is outside the scope of warranty.

[Period for repair]

Materials and components for repair are kept for a minimum of five years after stopping manufacture of a product. However, please note that there are cases in which repair can become impossible before that period has expired.

■Recommended period for replacement

(voltage detector, phase tester, auxiliary device for voltage detection, etc.)

Products can be used for a long period if they are handled with sufficient care. However, it is inevitable that functional deterioration occurs to the strength of components, insulation performance, etc. due to aging, micro-cracks caused by shocks when handling resin parts, etc. For safety, please use the product until the recommended time for replacement under product control. The table to the right summarizes recommended replacement periods.

For a detailed table, please inquire at our company’s homepage (URL is given on the back cover of the catalog) or a sales office.

Product classification	Recommended period for replacement
Low voltage detector	3 to 5 years
High voltage detector	5 to 7 years
High voltage & special high voltage detector	
High voltage & special high voltage detector (Non-extendable type)	5 to 10 years

■Periodic inspection, calibration test

- For high voltage and special high voltage detectors, we recommend periodic inspection at least once a year. For requests, please inquire at a sales office of our company, or a sales agent.
- After the calibration test, we will issue a test report, calibration certificate, and traceability certificate.
- If calibration documents are required when purchasing a new product, please request them when placing an order.

■Consigned testing

Taking advantage of being a leading maker of domestic test equipment and many years of experience, we will execute withstand voltage tests for products even made by other companies.



Voltage detector test equipment



Simulated power pole for electricity distribution line

■ISO management system Acquiring certification of ISO9001, ISO14001

Hasegawa Electric Co., Ltd. has acquired certification of “ISO9001,” which is the international standard of the Quality management system, and certification of “ISO14001,” which is the international standard of the Environment management system.

ISO9001 Registration No.: 0921

ISO14001 Registration No.: E635

