

Ultrasonic type discharge detector SE-15FD




Operation and Safety Notices Instruction Manual

Thank you very much for the purchase of the ultrasonic type discharge detector. For safety operation, read this instruction manual carefully and use this item correctly.

Keep this manual always on hand while using this product. Should you lose this manual, please contact us. This measurement instrument is a device that detects and displays ultrasonic noise generated by discharge phenomena due to insulation deterioration and pollution of electrical facilities exposed to high potentials.

Safety Instructions


This instruction manual uses safety alert symbols to ensure safe operation by users. The instructions with these symbols alert you to important notices to prevent potential hazards or damages to you or other people. The instructions with the warning symbols are used to alert you to the following hazards. Please understand them well before reading the main text of this manual. We are not liable for any damages caused by equipment failure, data damage due to erroneous operation, or loss of measurement opportunity, or incidental damages.

Warning		Operating this product incorrectly without following the messages with this "Warning" symbol could result in death or serious injury.
Caution		Operating this product incorrectly without following the messages with this "Caution" symbol could cause personal injury and property damage. Depending on situations, it may result in serious results.
Prohibition		If this display is ignored and the product is handled improperly, the original performance of this product may not be exhibited, this product may stop functioning, or the function may not be available.



Warning

1. When exploring degradation targets for high voltage electrical equipment such as transmission and distribution lines and electric railways, be sure to use at a sufficient distance. It may cause electric shock accident.
2. Do not look at the laser irradiating port directly or aim at other person's eye. It can cause eye damage or injure health.

 **Caution**

1. Never use the product with water on the surface and do not allow rainwater to enter into the product if use in the outdoor field. This is not waterproof structure. It may cause malfunction.
2. Avoid using or storing in direct sunlight, dust, high - temperature and humidity places. It may cause a malfunction.
3. Do not use batteries other than our specified. It may cause a malfunction.
4. Do not touch the Laser light output port and ultrasonic sensor detection port. Do not allow hard or sharp objects to come into contact with the Laser light output port and ultrasonic sensor detection port and DO not allow foreign matter to enter to this part. It may cause a malfunction.

 **Prohibition**

1. Do not drop this instrument, also do not give a strong shock. It may cause a malfunction.
2. Do not wipe with benzine, thinner, alcohol, etc. If it is very dirty, wipe it off with a cloth dampened with a light neutral detergent, and then wipe it well with a soft cloth.
3. When installing the battery to this instrument, pay attention to the polarity and install it correctly. It may cause a malfunction.
4. Remove the battery when storing the product for long periods of time.

Conditions	Cause	Solution
Level display does not appear	Battery is dead	Replace the battery
	Battery is inserted incorrectly	Reinsert the batteries correctly
No laser light	The Laser light output port is dirty	Wipe off the Laser light output port stains with a cotton swab or the like.
Level display is blinking	Battery is consumed	Replace the battery

Description of discharge detector

This instrument is a hand held device that captures ultrasonic waves generated by the discharge phenomenon and detects these discharge points from a isolation distance by targeting with laser light. It cannot be used to detect air leaks.

Benefit

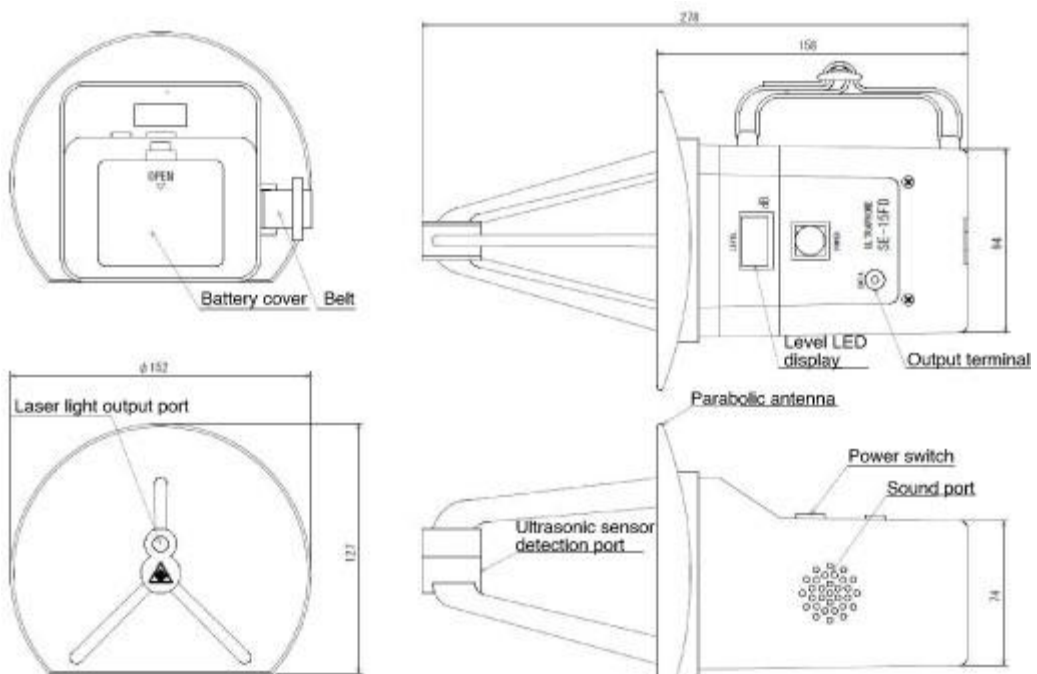
- 1, From the discharge sound detected by the 40kHz ultrasonic sensor, SE-15FD captures the discharge sound synchronized with the commercial frequency, the effect of ambient noise is reduced to 1/30 compared to SE-15.
- 2, Due to its excellent directivity by laser light, it is possible to easily detect the discharge points.
- 3, The sound pressure level is displayed numerically for easy management.

4, SE-15FD has a data output terminal, you can connect it to a data logger equipped with a stereo mini plug and available to import the data to your computer.

The Specification of discharge detector

Reception frequency	40kHz±1kHz
Reception sensitivity	30dB~70dB(When the distance between the detection point of failure and the instrument is 2.0m)
Display resolution	1dB
Data output	30mV~70mV
Measurable distance	10m(Distance between the detection point of failure and the instrument)
Reception level display	7-Segment LED display
Power supply	AA batteries x 4ea
Range of operating temperature	10°C ~40°C, less than RH85% (w/o condensation)
Range of storage temperature	10°C ~50°C, less than RH85% (w/o condensation)
Size	215* ϕ 66mm
Weight	Approx. 700g (excluding the battery and carry case)
Accessories	Carrying case, Instruction manual, AA batteries x 4ea, stereo mini plug

Outer dimension



Usage of discharge detector

1. Preparation for use

- (1) The power supply for this unit uses AA batteries x 4ea. Removes the battery cover on the back and inserts all AAA batteries according to the battery polarity indication.
- (2) The battery voltage check is normal if the POWER switch is pressed and the level LED is lit. If the level LED blinks, replace it with a new battery. If the level LED blinks during detection, replace it with a new battery.
- (3) When you press the POWER switch, you will hear a small noise sound from the speaker and be indicated noisy level on the LED display.
- (4) When the power switch is pressed, the laser light is emitted from the laser light output port. When the switch is released, the laser light turns off.

2. How to detect discharge

(1) Detection of discharge location:

The power can be kept on by pressing and holding the POWER switch. When released, it returns to the "Stop" state. However, when the POWER switch is turned off, the level immediately before turning off is kept for about 2 seconds. To detect the discharge location, find the location displayed at the maximum value. The location displayed at the maximum value and the location indicated by the light spot of the laser light is the location of the discharge.

(2) Sound pressure detection of fault location:

The sound pressure level is adjusting to the level value when the distance between the fault location and the instrument is 2m.

(3) Detectable distance:

Please use in the distance between this instrument and the object to be measured within the range of 1m to 10m.

[About distance correction]

The displayed value of this instrument is based on the time when the distance between the fault location and the instrument is 2m, but if the distance is changed depending on the location, make the following corrections as a guide.

Distance(m)	1	2	3	4	5	6	7	8	9	10
Correction(dB)	-7	0	+5	+9	+13	+16	+19	+21	+23	+25

[Connecting to a data logger]

- (1) Connect the included stereo mini plug to the data logger. Is the positive for left channel(chip) and negative for ground(sleep).
- (2) Connect the stereo mini plug to the output terminal of SE-15FD.
- (3) The dB value can be recorded directly in the data logger by reading 1 mV as 1 dB for the data output signal(E.g.55mV=55dB).