GM.2000

Product Overview

- The cable fault locator uses the principles of vibration pickup and electromagnetic induction to determine the specific location of the cable fault point.
- A high-voltage pulse generator is used to cause flash over discharge at the fault point. Physical phenomena such as vibration waves, sound waves, and electromagnetic waves generated by the flash over discharge at the fault point are picked up by a special probe of the pointing instrument, amplified, processed, displayed, and output by the cable fault pointing instrument.
- The precise location of the fault point is determined by the tester's hearing and vision. That is, the task of accurately locating the cable fault point "directly above the cable and within the range of rough measurement" is completed.
- This fixed-point instrument is suitable for low-resistance, short-circuit, open-circuit and disconnection faults of power cables, high-frequency coaxial cables, street light cables, and buried wires made of various materials with different cross-sections and media, as well as high-resistance leakage and high-resistance flash over fault.

Operating Methods:

1. Acoustic-magnetic synchronization method:
Acoustic-magnetic synchronization method is a very accurate and unique method for precise fault location. Its principle is based on the traditional acoustic point determination method and adds the detection and application of electromagnetic signals.
When the high-voltage generator performs impact discharge on the faulty cable, the sound generated by the discharge at the fault point is transmitted to the ground. The sound signal is picked up by a highly sensitive probe. After amplification, a "pop" sound can be heard by listening with headphones. The built-in probe of the probe receives the magnetic field signal in real time and uses the principle that the propagation speed of the magnetic field is much higher than the propagation speed of sound to determine the distance of the fault point by detecting the time difference between the electromagnetic signal and the sound signal. Keep moving the sensor position to find the point with the smallest acoustic-magnetic time difference, then the exact location of the fault point will be below it.
Traditional acoustic measurement legal point instruments generally only use earphones to monitor or are supplemented by the swing of the meter pointer to identify the discharge sound at the fault point. Since the discharge sound disappears in a blink of an eye and is not much different from the ambient noise, it often brings great difficulties to operators who are not very experienced. The acoustic-magnetic synchronization method effectively avoids the above problems of the traditional acoustic measurement method.

2. Pure sound method:
The pure sound method consists of an acoustic vibration sensor, a signal amplifier, a filter circuit, a sampling unit, a processor, a display unit, a power amplifier unit, headphones, etc. The pure sound method is mainly used to measure high resistance and flashover faults. Its main principle is to use a high-voltage source to apply impulse voltage to the fault cable to cause discharge breakdown at the fault point, and then use the sound generated during the discharge to accurately locate the fault. The acoustic vibration sensor converts the acoustic signal into an electrical signal, which is amplified and filtered by a signal amplifier and filter circuit. Finally, it is restored to sound through headphones, or the intensity of the sound is displayed. The place with the greatest sound intensity is the fault point.

3. Pure magnetic method:
The pure magnetic method can determine the cable path and the precise location of the cable fault point. Its main principle is to use a high-voltage source to apply impulse voltage to the faulty cable, use an induction coil to pick up the pulse signal, and judge whether it deviates from the cable through the characteristics of the pulse signal. When the characteristics of the picked-up pulse signals deviate, it is determined as a fault point.

4. A-frame method:
If a ground fault occurs in a buried cable, we can use the potential difference method to find the fault point. The method is to add a test voltage between the test point of the faulty cable and the ground, then a distributed electric field concentric with the entry point will be formed around the entry point of the cable. There is no potential difference between any points with the same radius in this electric field, but there is a potential difference between any two points with different radii (points A and B in the figure), and when the distance between the two points is fixed, the distance between the two points is The closer the object is, the stronger the potential difference is. Using this feature, we can move points A and B gradually closer to the center point. When the fault point is exactly between points A and B, the potential difference becomes zero. If it continues to move beyond the fault point, the polarity of the potential difference will be reversed, so that the grounding point can be accurately determined by moving back and forth

Key Features:

1. 5-inch touch-high brightness LCD ensures visibility under sunlight.
2. It has 4 test modes: standard, enhanced, noise reduction, and customized.
3. It has four positioning functions: acoustic-magnetic synchronization, pure acoustic, pure magnetic, and step voltage.
4. It has background noise reduction technology and can choose from a variety of filtering methods.
5. Equipped with BNR and mute functions.
6. It has path deviation indication.
7. Equipped with multi-layer physical isolation signal sensors.
8. Waterproof grade IP65.
9. Built-in large-capacity lithium battery, long standby time, equipped with fast charger.
10. Small and lightweight, easy to operate, and simple human-machine interface.

Technical Specification:

Filter parameters	All-pass: 100Hz~1600Hz.
	Low pass: 100Hz~300Hz.
	Qualcomm: 160Hz~1600Hz.
	Bandpass: 200Hz~600Hz.
Channel gain:	8 levels adjustable.
Magnetic channel gain:	8 levels adjustable.
Step voltage gain:	8 levels adjustable.
Output gain:	16 levels (0~112db)
Output impedance:	350Ω
Acoustomagnetic positioning accuracy:	less than 0.2m.
Step voltage positioning accuracy:	less than 0.5m.
Path identification accuracy:	less than 0.5m.
It has BNR background noise reduction and mute noise reduction functions.	
Display control method:	5-inch high-brightness touch screen control.
Power supply:	4*18650 standard lithium batteries.
Standby time:	more than 18 hours.
Volume:	428L×350W×230H
Weight:	1,5kg (Instrument), Probe variable dependent on accessories
Ambient temperature:	-25~65ºC; Relative humidity: ≤90%

Standard Accessories:

Name	Qty.	Photo	Name	Qty.	Photo
Cable fault locator	1		Probe (Including connecting rod, probe, three claws)	1	
7 core signal line	1				
Charger	1				
Headphones	1				
A frame connection cable	1		A frame	1	
Ground pin	2