twilight

INSTRUMENTOS DE MEDICIÓN INDUSTRIAL

Localizador de Tubería y Cable Subterraneo, Zibo Wit WT-PD3000

ZIBO WIT ELECTRIC CO.,LTD

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Better utilization of power

CABLE FAULT LOCATION
PIPE LOCATION

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Cable fault location as such has to be considered as a procedure covering the following steps and not being only one single step:

- Fault Indication
- Disconnecting and grounding
- Fault Analyses and Insulation Test

● Cable Fault Pre-location	These are what our device do
● Precise Cable Fault Location (Pinpointing)	
● Cable Route Tracing	
● Cable Identification	

- Fault Marking and Repair
- Cable Testing and Diagnosis again
- Switch on Power

The faulty cable has to be disconnected and grounded according to the local standard and safety regulation.

Cable Analysis and Insulation Test

Before distance detecting, we should first distinguish the cable fault then it's able to choose the suitable detecting method, steps as below:

Before testing, use the tramegger to measure the phase to ground and phase to phase insulation resistance

Use multimeter to measure more data.

Below form 1 is a reference selection tables

Low resistance / short circuit fault	Megger value ：0 ; AVO meter value：< 200Ω
Open circuit	Conductor disconnection
High resistance fault	Megger value ：0 Or: Megger value ：0 AVO meter value：≥200Ω
Breakdown fault	Megger: insulation normal Withstand voltage test: no

Cable fault pre-locating

It's also named roughly locating.

It's located the cable fault distance in one end of cable. It's also could seen as a prepare work before fault point pinpointing to reduce the work strength and work time.

Device work mode introduction

Low voltage impulse mode	● Cable length testing ● Low resistance fault locating ● Disconnection fault locating ● Wave velocity correction
Impulse current mode	● High resistance fault locating ● Flashover fault ● Workable with HV signal generator
Multiple impulse mode	● High resistance fault locating ● Flashover fault ● More easy to distinguish ● Workable with HV signal generator & single coupler

Device be used

CD-750 POWER CABLE FAULT LOCATOR

1. Low voltage impulse, impulse current and multiple impulse mode.

2. Highlight big LED user-friendly interface

3. Touch operation screen and computer online communication

4. 200MHz high speed sampling

5. PIP copy function

6. Solid hull and easy to carry

Compared with the old CD-730 pre-locator

New CD-650 HV signal generator

CD-630 INTEGRATED HV SIGNAL GENERATOR

1. Integrated design without HV leak

2. HV directly connection with the cable, easy and safe.

3. Zero-position set up, release HV power energy after power off

4. Multiple working methods

5. Continuously variable HV output

CD-715 MULTIPLE IMPULSE COUPLER

1. Latest multiple impulse tech. and impulse balance tech., make the reflected waveform of the fault point obvious and easy to distinguish

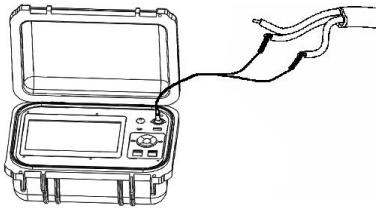
2. Adopt high voltage protection tech. to realize the isolation of measuring circuit and the high voltage surging power

3. Simple wiring and matched with generator of other brands

Device connection diagram

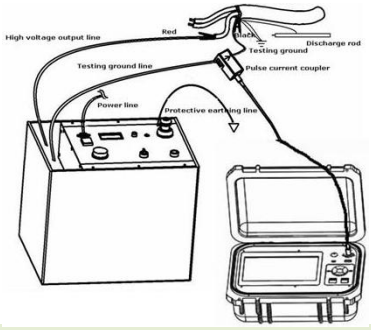
CD-730 Cable Fault Locator

TDR(IVIM) method



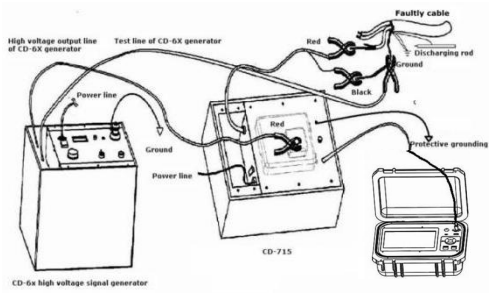
CD-750 Cable fault locator
CD-6X high voltage generator

ICM method



CD-750 Cable Fault Locator
CD-715 signal coupler
CD-6X high voltage generator

MIM method



Cable fault pinpointing

It's also named accurately locating.

Though we do pre-locate as above, there may be locating deviation because the device deviation and tested fault distance deviation.

So we need device CD-830 cable fault pinpointing to find the fault point accurately.

Device work method introduction:

Audio magnetic synchronous method	● Find the fault roughly distance by above method ● Testing by device CD-850 along with the correct cable route ● According the Audio-magnetic delay value to distinguish the distance accurate position. ● There will be a value in the right above corner of screen. Move device and find the minimum value to find the fault point position.
Some points about the Audio-magnetic delay	● The audio-magnetic value is the slope distance between the sensor and the fault point, so please don't think it's the fault distance ● Even the sensor just above the fault, there still has distance, so the value can't be 0 ● Only display audio & magnetic well (refer manual),the testing is successful.

Device introduction

CD-850 POWER CABLE FAULT PINPOINTING LOCATOR

1. Integrated the function of acoustic magnetic synchronization method, the step voltage method(optional)

2. Intelligent pinpointing method to calculate the acoustic magnetic delay value

3. Background noise reduction function

4. Auto muting function to avoid the noise

5. Electronic compass function to display the included angle between cable route direction and sensor. It' s very useful for quick pinpointing

6. acoustic channel filtering parameter adjustable

7. Auto gain adjustment function for easy use, automatic trigger by magnetic field

8. High performance anti-noise headphone

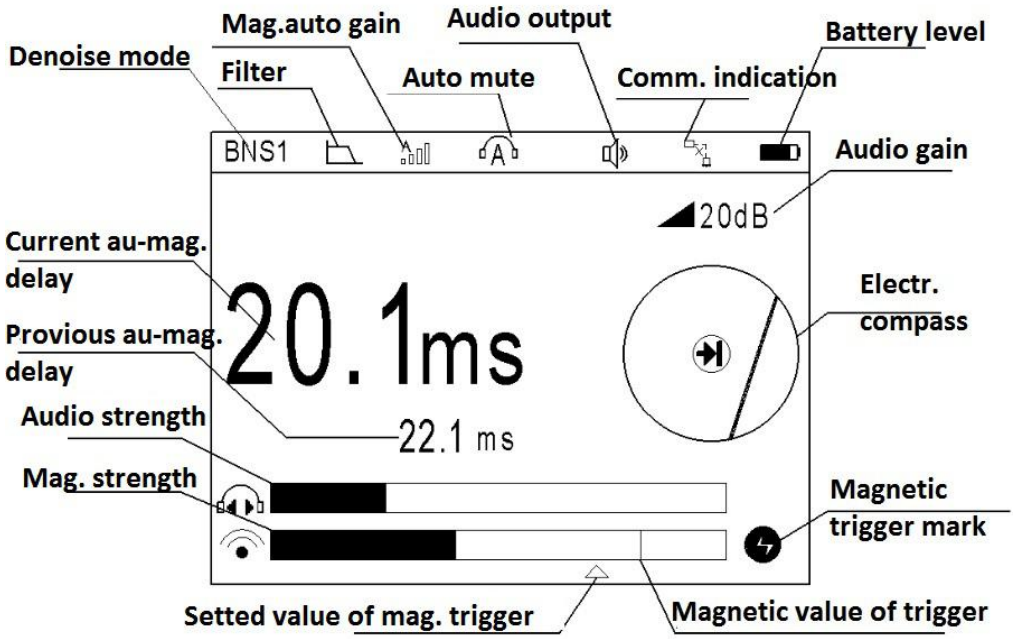
9. Water-proof IP 65 for outdoor application

10. Color LCD to make clear display under the sun

11. Power supply management: power off automatically in 5 min. without action; Power off also when low battery voltage

12. Built-in Li-ion battery

Device work interface reference diagram



4. Cable Fault Integrated Device

We develop two new devices to integrate the pre-locator and pinpointer

CD-1200 POWER CABLE FAULT LOCATOR

All in one design Locating

1.Full-featured:

- Low voltage impulse fault distance testing
- Impulse current fault distance testing
- Audio magnetic synchronous pin-pointing
- Route tracing

2.Fault distance locating:

- Low voltage impulse method: apply to the distance measurement of low resistance fault, short circuit and open circuit fault
- Impulse current method: apply to the distance measurement of high resistance fault, breakdown fault with current coupler for signal sampling.
- Pin-pointing:
- Audio and magnetic synchronously receiving with high anti-interference capability
- Audio and magnetic signal waveform displaying to distinguish the signal and noise easily
- Cursor test audio magnetic delay to display accurate fault point
- Route tracing while pinpointing according the initial polarity of magnetic waveform

3. Route tracing:

- Signal generator:
  - High capacity lithium-ion battery
  - Full-automatic power matching and protection
  - High-power output
- Peak and null method for route tracing
- Signal amplitude display

4.80% method and 45% method for depth detecting

5.Big LCD screen,4.3",320*240

6.SD card storage, easy to import to the computer

7. High capacity lithium-ion battery matched with quick charger

8.Power supply management to reduce the consumption. Auto power off in 15 min. without operation.

9.Auto power off when low battery lever to protect the battery.

10.Integrated design and small size, easy to carry

4.Cable Fault Integrated Device

CD-8000 POWER CABLE FAULT LOCATOR

All in one design Locating

1.Full-featured:

- Low voltage impulse distance testing
- Impulse current distance testing
- Audio magnetic synchronous pin-pointing

2.Fault distance locating:

3.Low voltage impulse method: apply to the distance measurement of low resistance fault, short circuit and open circuit fault

4.Impulse current method: apply to the distance measurement of high resistance fault, breakdown fault with current coupler for signal sampling.

- Pin-pointing:
- Audio and magnetic synchronously receiving with high anti-interference capability
- Audio and magnetic signal waveform displaying to distinguish the signal and noise easily
- Cursor test audio magnetic delay to display accurate fault point
- Route tracing while pinpointing according the initial polarity of magnetic waveform

5. Big LCD screen, user friendly

6. SD card storage, easy to import to the computer

7. Built-in Bluetooth module for computer communication

8. Optional remote service

9. High capacity lithium-ion battery matched with quick charger

10. Power supply management to reduce the consumption. Auto power off in 15 min. if no operation

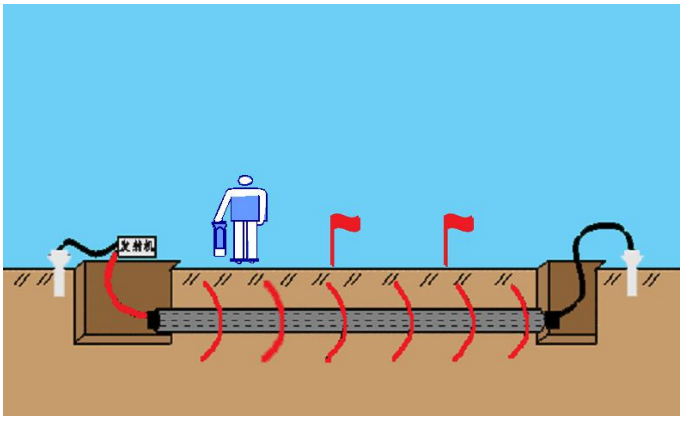
11. Auto power off when low battery lever to protect the battery.

12. Integrated design and small size, easy to carry.

Cable and pipe route tracing

Sometimes, we need know the cable and pipe route. For example, when we do cable fault pinpointing, we need to know the fault route.

And when we want to know the cable/pipe route below ground, but we lose the data about these cable and pipe, we need a device to help to do this.



Device work method introduction:

Metallic pipe & cable route tracing	● Quick tracing using Smart Broad Peak method (Left/Right Indication function,compass) ● Tracing Right/Wrong Indication ● Narrow Peak method ● Null method ● History curve mode
Pipe& cable depth test	● Auto depth & current test ● 80% manual operation test
Cable identification from bunch	● Clamp Smart Identification ● Current Identification by Clamp ● Mini Sensor Identification
Pipe grounding fault pinpointing. Apply to ①Insulation protection layer damage of insulated pipe; ②Grounded fault of non-armor low voltage cable; ③Sheath fault of high voltage cable (especially for UHV single core cable).	● A frame Step Voltage Method pinpointing
Auxiliary function	● Fault Pinpoint for Inter-phase Short-circuit ● Fault Pinpoint for Phase to Armor ● Fault Pinpoint for Break ● Fault Pinpoint for Phase to Ground of Non-armor Cable

Device introduction

PD3000 PIPE&CABLE LOCATOR

1. Apply for the identification or route tracing of all kinds metallic pipe, power off/power on cable.
2. Compass display: to display pipe position directly.
3. Left/right arrow indication: use the left/right arrow to indicate the pipe position when route tracing.
4. Right/wrong indication: real - time test the pipe current direction to indicate tracing result and avoid the nearby lines interference.
5. Real-time depth measure and current measure.
6. History curve display: to display the signal variation directly.
7. Cable Identification: Clamp (optional) identification and sensor identification. Clamp identification can precisely gives accurate result. sensor (optional) identification could be used when the Clamp identification is not applicable.
8. Grounding fault location: Use the A frame (optional) to pinpoint the pipe insulation damaged points against the ground. No need to do zero set and the arrow will point to the fault point direction.
9. Digitization high accuracy sampling and processing,narrow receiving pass band to rise the anti-interference capability and suppress power interference and harmonic interference from nearby running cable and pipe.
10. Multiple locating frequency: active detection and passive detection.
11. Multiple signal output mode: Direct connection output, Clamp Coupling input, Radiation output.
12. Big capacity Li-on batteries series,support auto power off when low battery or long time no operation
13. Solid case and light weight easy to carry

Portable TDR Cable fault locating

We also have portable handheld device.

It is smaller size and easy to use.

Used for

- locating the disconnection fault
- locating the cross fault
- locating insulation fault and so on
- to measure the cable length, wave velocity and distinguish the middle joints and terminals
- locating the high resistance fault (CD-980)

Device model introduction:

CD-950	● TDR(Time Domain Reflectometry)method make it possible ● to measure disconnection fault, cross fault, insulation fault and so on. ● Automatic measurement ● Auto power-off when sleeping and low battery voltage ● Supply by dry batter or recharge battery
CD-960	● Same function as CD-950,only difference is the appearance
CD-970	● TDR(Time Domain Reflectometry)method make it possible to measure disconnection fault, cross fault, insulation fault and so on. ● Automatic measurement ● Signal process function. Gain compensation according the attenuation characteristic of cable. Almost same reflection amplitude for different distance in benefit of fault judgment and extend the effective testing distance. ● Auto power-off when sleeping and low battery voltage
CD-980	● Locating the disconnection fault, cross fault, insulation fault and so on. It can be used to measure the cable length, wave velocity and distinguish the middle joints and terminals. ● Integrates the function of TDR, bridge testing, voltage/resistance/insulation testing

Device introduction

CD-950 TDR CABLE FAULT PINPOINTING LOCATOR

1. Measurement distance 0-8km
2. Resolution ratio: 0-1km,below 1m;2km,below 2m;4-8km,below 8m
3. Impulse range: 30V
4. Impulse width: 80ns-5μs,auto adjustments
5. Wave velocity range: 100-300m/μs
6. Adjustable gain range: 0-80db

6. Portable TDR Locator

CD-960 TDR CABLE FAULT PINPOINTING LOCATOR

1. Measurement distance 0-8km
2. Resolution ratio: 0-1km,below 1m;2km,below 2m;4-8km,below 8m
3. Impulse range: 30V
4. Impulse width: 80ns-5μs,auto adjustments
5. Wave velocity range: 100-300m/μs
6. Adjustable gain range: 0-80db

CD-970 TDR CABLE FAULT PINPOINTING LOCATOR

1. Measurement distance 0-30km
2. Resolution ratio: 0-1km, below 1m;2km,below 2m;4-8km,below 8m
3. Impulse polarity: Unipolar below 2km; Bipolar above 2km
4. Impulse range: 30V for unipolar;±30V for bipolar
5. Impulse width: 80ns-10μs, auto adjustments
6. Wave velocity range: 100-300m/μs
7. Adjustable gain range: 0-80db

CD-950 TDR CABLE FAULT PINPOINTING LOCATOR

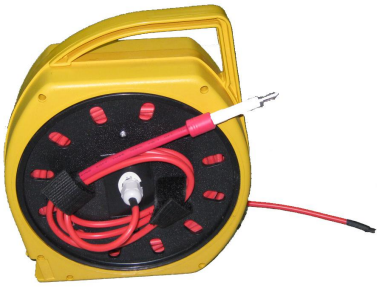
1. TDR (Time Domain Reflectometry)method make it possible to measure disconnection fault, cross fault, insulation fault and so on.
2. Automatic measurement
3. Signal process function. Gain compensation according the attenuation characteristic of cable. Almost same reflection amplitude for different distance in benefit of fault judgment and extend the effective testing distance.
4. Waveform storage and computer communication
5. Bridge testing
6. Voltage(V) testing: AC or DC
7. Resistance (Ω) testing
8. Insulation (MΩ) testing: 100V /250V
9. Auto power-off when sleeping and low battery voltage

XJD-200 Over head line grounding fault locator

Transmitter

Receiver

Sensor



Transmitter patch board

FUNCTION INTRODUCTION:

- Apply to small current neutral grounding distribution power system. It is used to detect the over head line metallic grounding fault, arc grounding fault, resistance grounding fault and so on.
- Workable for broke down line, apply for branch line
- Ultralow frequency signal to avoid capacitor influence. Easy to find the high resistance fault
- Recreate fault by high voltage signal, easy to locate
- Safe transmitter by black and short-circuit function
- High sensitive sensor, open design and easy to hang on the line
- Wireless transmission, safe and reliable
- Flexible power supply. Transmitter is workable by Utility power and electric generator. Sensor and receiver are by dry battery
- Light and easy to carry
- Receiver has large LCD display interface, which can show the current waveform and current value

SPECIFICATION

- Location accuracy:0.2m
- Specification of transmitter:
  *open-circuit voltage: fundamental wave valid 0~2800kV (impulse DC, peak value 8kV,amount to the phase voltage peak value of 10kV cable)
  *short-circuit current: fundamental wave valid 0~35mA(impulse DC, peak value 100mA)
  *output frequency1Hz
- Communication distance between receiver and transmitter: no less than 100m
- Transmitter power: AC 220V,or electric generator (output voltage ≥1500W)

- Transmitter power: Max. 900 W
- Sensor supply power: Three AAA alkaline batteries
- Receiver supply power: Five AA alkaline batteries
- Dimension: transmitter 417mmx234mmx318mm
  Sensor 180mmx100mmx35mm
  Receiver 205mmx100mmx35mm
- Weight: transmitter 16.8kg
  Sensor 0.45kg
  Receiver 0.45kg
- Working condition :

  Temperature -10℃-40℃

  Humidity 5-90%

  Elevation ≤4500m

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