TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

RCI-700T

All In One Integrated Cable Fault Tester

User Guide

Address:DongLi Distr Tianjin City, China **Tel:** +86-22-84943756

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Table of Contents

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Introduction

The RCI-700T Integrated Power Cable Fault Tester is an intelligent power cable fault tester.
It has integrated functions as:

- Fault locating
- Pin-pointing
- Basic route tracing

RCI-700T includes two main devices and the accessories

The function of the two devices:

- RCI-700TM Integrated Power Cable Fault Tester
  - Low voltage impulse fault distance testing
  - Impulse current fault distance testing
  - Audio magnetic synchronous pin-pointing
  - Route tracing
- RCI-700TT Route Tracing Signal Generator
  - Transmit signal for route tracing

Compared with the traditional single functional device, the RCI-700T is portable with small size and low weight. It is an upgrade device in locating area.

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Design Features

Salient function:

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.

3.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

4.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
- 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.

Address:DongLi Distr Tianjin City, China **Tel:** +86-22-84943756

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Tech. Specifications

Fault distance locating	
Distance measurement mode	Low voltage impulse
	Impulse current
Sampling frequency	100MHz
Resolution Ratio	Low voltage impulse:1m
	Impulse current:4m
Voltage of low voltage impulse	30V
Distance measurement range	30km
Blind zone	2m
Magnetic sound synchronization pin-pointing:	
Audio signal transmission band	Mid-frequency 400Hz ,bandwidth 200Hz.
Gain of signal channel	80dB
Accuracy of pin-pointing	0.1m
Route tracing:	
(M)Receiving frequency	1kHz
(M)Gain	80dB
Generator for route tracing:	
(T)Transmitting frequency	1kHz
(T)Transmitting power	⩾3.5W
Output	Open circuit voltage⩾100Vp-p
	Short circuit voltage ⩾300mA
	Auto matching according the actual loading
	Auto short circuit protection
Power supply:	
Battery	built-in Li-ion battery pack, nominal voltage
	7.4V,Capacity 3000mAH
Power consumption	RCI-700TM 400mA ,RCI-700TT 500mA
Charger	Input AC100-240V, 50/60Hz; output 8.4V, DC 1A
Charge time	<4 hours
Display	
Main unit 1200M	320*240 LCD
Generator	Meter
Other	
Volume	270*220*80mm M/T
Weight	1.5kg M/T
Working condition	
Tem.	-10℃-40℃
Humidity	5-90%RH
Elevation	<4500m

Address:DongLi Distr Tianjin City, China **Tel:** +86-22-84943756

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Basic operation

1. Basic steps:

- Fault judgment
- Fault distance testing
- Route tracing
- Pin-pointing

2. Fault judgment and test method chosen

- When cable fault appeared, first determine the fault character as below:
  - ➢ Test the phase to phase and phase-earth insulation resistance of one end of the cable by megger. If the result is zero, please use the multimeter to test the resistance.
  - ➢ If the insulation resistance is very high but insulation is normal, please check whether open circuit fault exist. Here user can make three phases short circuit to the earth and test on the other end to distinguish.
  - ➢ Fault character distinguish and test method form

No	Fault	Fault form	Distance test method	Pin-pointing method
1	Low resistance	Megger:0 Multimeter:＜ 200Ω	Low voltage impulse	Audio-frequency(optional) Audio magnetic synchronous
2	Open circuit	Conductor disconnection		Audio magnetic synchronous
3	High resistance	Megger:>0 Or: Megger:0 Multimeter:≥ 200Ω	Impulse current	
4	Breakdown	Megger:insulation normal Withstand voltage test:no		

Remark:

a) The gray part in the form means that, for these functions, extra matched high voltage generator is needed.

b) Audio-frequency method to pinpoint the low resistance is optional. This need the matched CD-1200T route tracing signal generator.

TIANJIN GREWIN TECHNOLOGY CO.,LTD.
Web:www.grewin-tech.com WhatsApp:+86-13072088960
Email:salesmanager@grewin-tech.com

Device introduction

1. Main unit and accessories

- RCI-700TM Integrated power cable fault tester
  - Function and accessories:
    Low voltage impulse distance testing accessories: Low voltage impulse test line
    Impulse current distance testing accessories: Impulse current coupler
    Audio magnetic synchronous pin-pointing accessories: Pin-pointing sensor, earphone
    Route tracing accessories: route sensor, earphone

- RCI-700TT route tracing signal generator
  - Signal generator for route tracing. Accessories: output line, earth stake

- Charger for RCI-700TT/M

2. RCI-700TM Integrated power cable fault tester

- Structure:

Fig.1 RCI-700TM

- Front panel fig.

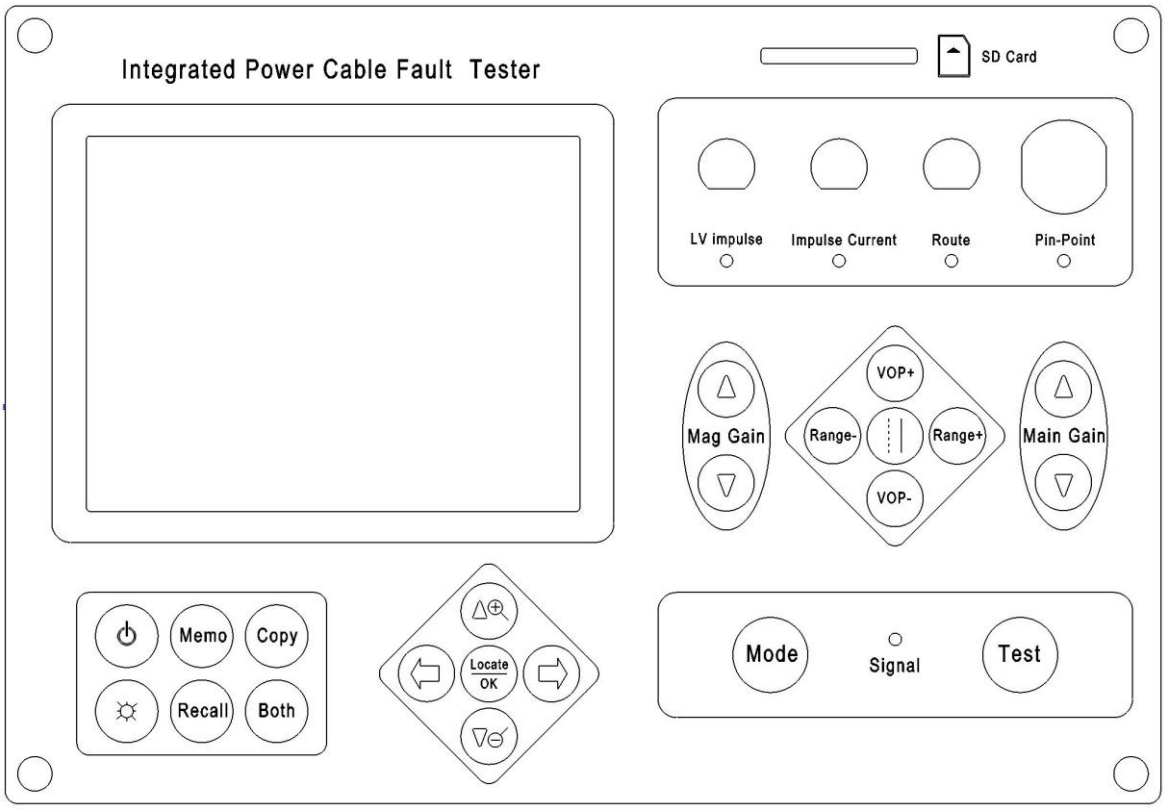

Fig.2 RCI-700TM front panel

- Function introduction:
- Press 2 sec. to turn on/off device
- Press to open/close the backlight
- Memo: Save current waveform
- Recall: recall the history waveform from the SD card
- Copy: Copy current waveform for comparing
- Both: Compare the current waveform with the copy waveform
- ⇦ ⇨ Move the cursor
- Locate/OK: Locate: auto cursor moving and fault locating
  OK: Confirm when some operation
- When normal test, waveform zoom out/in
  When recall the saved waveforms, press to choose waveform
- Mag. gain+/- :Adjust the synchronous magnetic signal gain under the pin-pointing mode
- Range+/-:change the current test range
- Cursor switch: switch the solid cursor and the dotted cursor
- VOP+/-:Adjust the cable pulse velocity
- Main gain+/-: Adjust the gain of distance testing, audio gain of pinpointing and the gain of route signal.
- Mode: Choose working mode
- Indicator light on the right corner: indicate the different working modes including low voltage impulse ,impulse current, route tracing and pin-pointing.

- Test: Under the low voltage mode, press for one testing. Under the impulse current mode, press one time to waiting for triggering. Invalid under the pin-pointing/route tracing modes.
- Signal indicator light: Under the low voltage mode, flash when test. Flash one time when triggering under the impulse current mode. Same as under the pin-pointing mode. Invalid when route tracing mode.

- Interface:
- Low voltage interface: connect with the low voltage impulse testing line
- Impulse current interface: connect with the impulse current coupler
- Route tracing interface: connect with the route sensor
- Pin-pointing interface: connect with the pin-pointing sensor
- SD card: insert a SD card when need to save the waveforms. Press again to popup
- Earphone: on the side of the main unit, to connect earphone for audio monitoring
- Charge port: on the side of the main unit, to connect the charger for build-in battery

3.RCI-700TT route tracing signal generator

- Structure:

Fig.3 RCI-700TT

- Front panel fig.

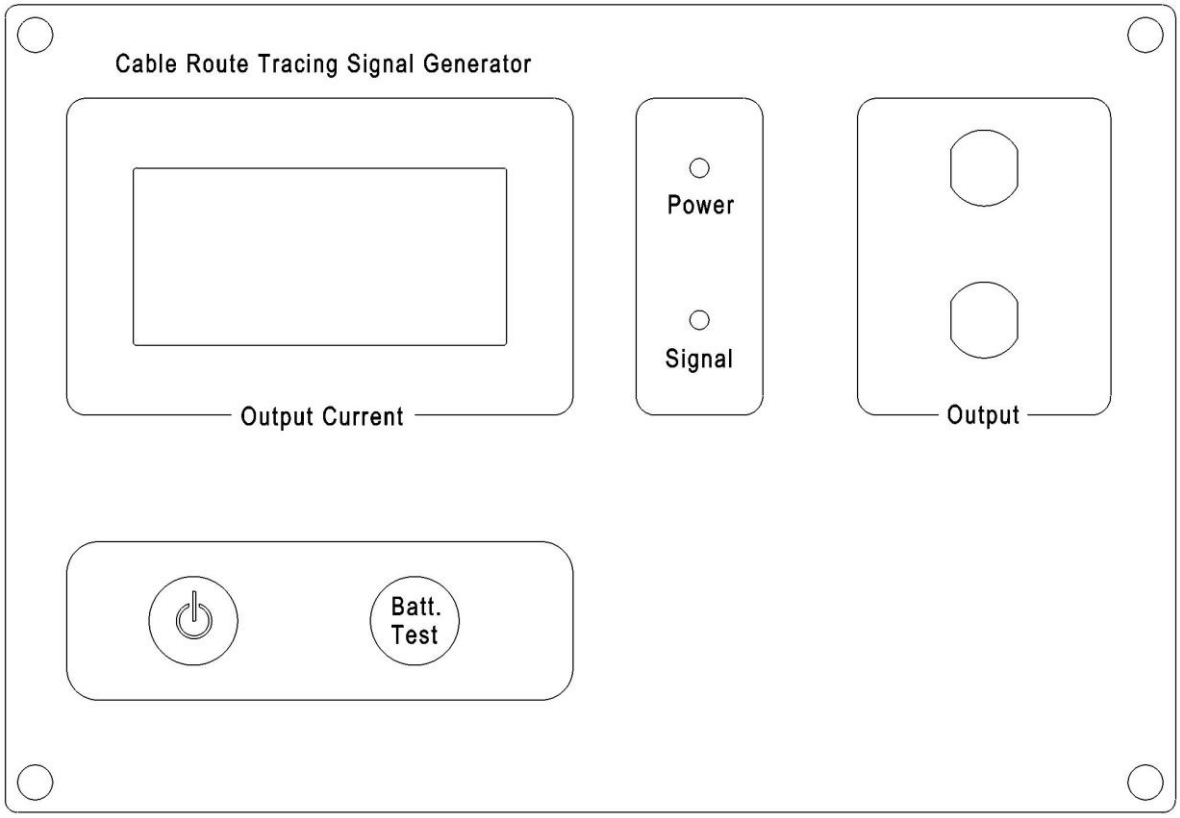

Fig.4 RCI-700TT front panel

- Function introduction:
  - Meter: display the output current, the full amplitude is 500mA

Press batt. test to display the battery power level. Pointer in green area means normal while yellow means battery under voltage, but still could work for about one hour.If the pointer can't reach the yellow area, it means too low battery and need to charge.

  - Press for 2 sec. to turn on/off the device
  - Batt.test: Press to test the battery level. Workable both device open or close
  - Power indicator: indicate the battery level. Bright when normal, shine when low voltage and off when too low battery.
  - Signal indicator: display the signal output condition
  - Charge port: on the side of the generator to connect the charger of built-in battery