



**8740**  
**2-Wire Universal Cable/Harness Tester**  
**User Manual**

**Version: 1.12**

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# Chapter 1. Precautions

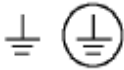
This instrument is not suitable for outdoor use, especially in humid or highly dusty locations. Improper use of this instrument may result in electric shocks. Please read the safety descriptions carefully before using this tester in order to avoid improper or wrong use causing accidents.

## 1.1 Safety Signs

The following safety signs may appear in this manual and on this instrument.



: Note, please read this manual carefully for these contents.



: Protective ground terminal: Please ground this terminal properly before using this tester in order to avoid electrical shock accidents from coming in contact with the case with power leakages.

**CAUTION** : Warning Sign: When the product is used improperly, it may cause improper results to this instrument or other DUT.

**WARNING** : Warning Sign: When the product is used improperly, it may cause injuries or even death.

## 1.2 Do not modify or make internal adjustments to this machine

Without authorization from our company, do not install replacement components or perform any modifications or adjustments to this machine on your own in order to avoid increasing the danger of the machine or causing damages to the machine.

## 1.3 Static Electricity

Do not allow objects with static electricity come in contact with this machine in order to prevent damages to the machine.

## 1.4 Ground

There is a ground terminal inside the power socket of this tester. Please ground this terminal properly in order to prevent electrical shock accidents from occurring when touching the case.

## 1.5 Power

Power cables that comply with the local country specifications must be used, and connectors applicable to IEC320 connectors must be used for the connection of this instrument. Users must ensure that the ground cable is properly grounded. If a fuse is included in the power plug, use fuses that comply with T(Time-lag)1.25 ampere safety regulations, and ensure that it is AC power supply with a voltage between 98V-132V/195V-264V @50/60Hz.

## 1.6 Warm Up

The tester can operate normally once the power is turned on; however, in order to achieve the accuracy within specification, please turn on the machine in advance and let it warm up for 30 minutes before use.

## **1.7 Machine Malfunction**

When the instrument malfunctions, please send the machine back to the original manufacturer to have professionals repair it for you in order to ensure the accuracy and operation safety of the meter.

## **1.8 Test End**

Please switch the machine power off when the machine is not used for an extended amount of time.

## **1.9 Placement and Storage**

The operating temperature and humidity range of this machine is 18 °C - 28 °C, 80% RH; the error in measurement data will be greater if this range is exceeded. The storage temperature and humidity range of this machine is -20 °C - 70 °C, 80% RH. In order to achieve accurate testing and for safety considerations, do not place this machine in environments with direct sunlight exposure, high temperature, high humidity, frequent vibrations, excessive dust, or unstable power grid.

## **1.10 Emergency Handling**

When there is an electric shock or if the DUT or machine catches on fire, please switch off the power and unplug the power cable.

# Chapter 2. General description

## 2.1 Package and Accessories

Standard accessories included in the 8740 series cable tester package should include the following items:

- 1 x 8740 cable tester
- 2 x moving needle type boxed connector
- 1 x automatic pin search probe
- 1 x power cable and power cable connector (3 pin to 2 pin)
- 1 x user manual

## 2.2 Description of Nouns and Symbols Used in This Manual

- [xxxx] represents the name of buttons on the tester; for example [TEST].
- [Sy[xxxx] This represents the buttons displayed on the LCD; y is the SoftKey number (1-6) and xxxx is the button name, for example: S1[PROG].
- {xxxxxxxx} represents the text message displayed on the LCD.
- |xxxx| This represents the switching option name on the LCD; for example |ON|
- <Pxx> This represents related reference page; for example <P21>
- (xxxx) English Description

## 2.3 Basic Operations of the Tester

- Alphanumeric input      Alphanumeric characters need to be inputted when saving files; the design used for this system is EditKey. The first time it is pressed it will be the number; the 2<sup>nd</sup>-4<sup>th</sup> time will be the capital English letter from the left to the right on top of the number buttons respectively; examples are as follows:

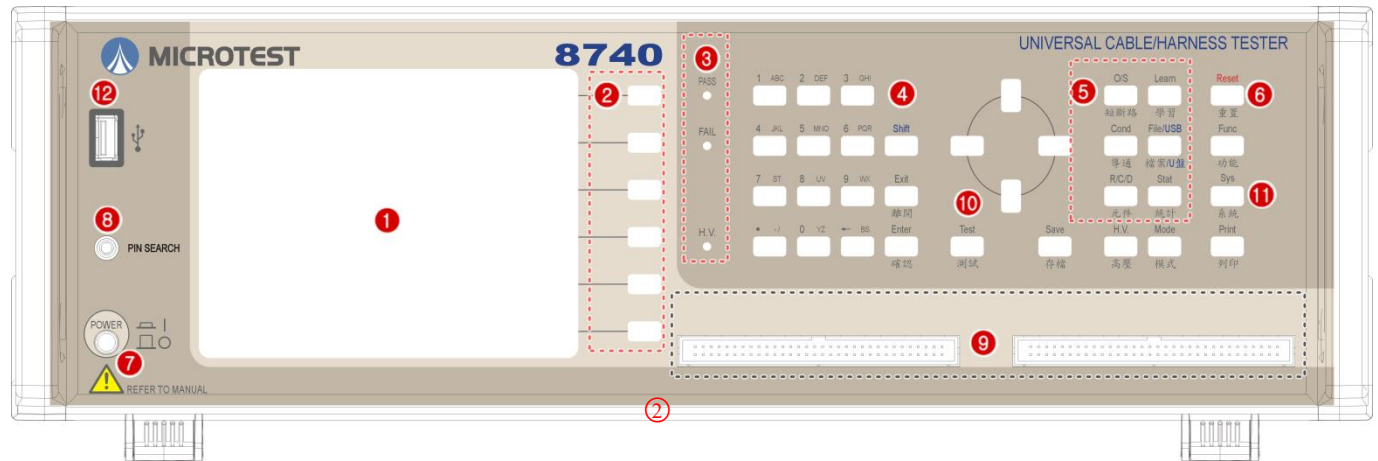
Button name	Number of times pressed	LCD display
1	1	<b>1</b>
→	1	1
1	2	1 <b>A</b>
→	1	1A
1	3	1A <b>B</b>

- Moving      You can use [←][↑][→][↓] to move the cursor.
- Confirm      [Enter] is the general confirm button.
- Test/Exit      [TEST] is the start testing button and [Exit] is the exit button.

## 2.4 Front and Rear Panel Functions

### 2.4.1 Front Panel

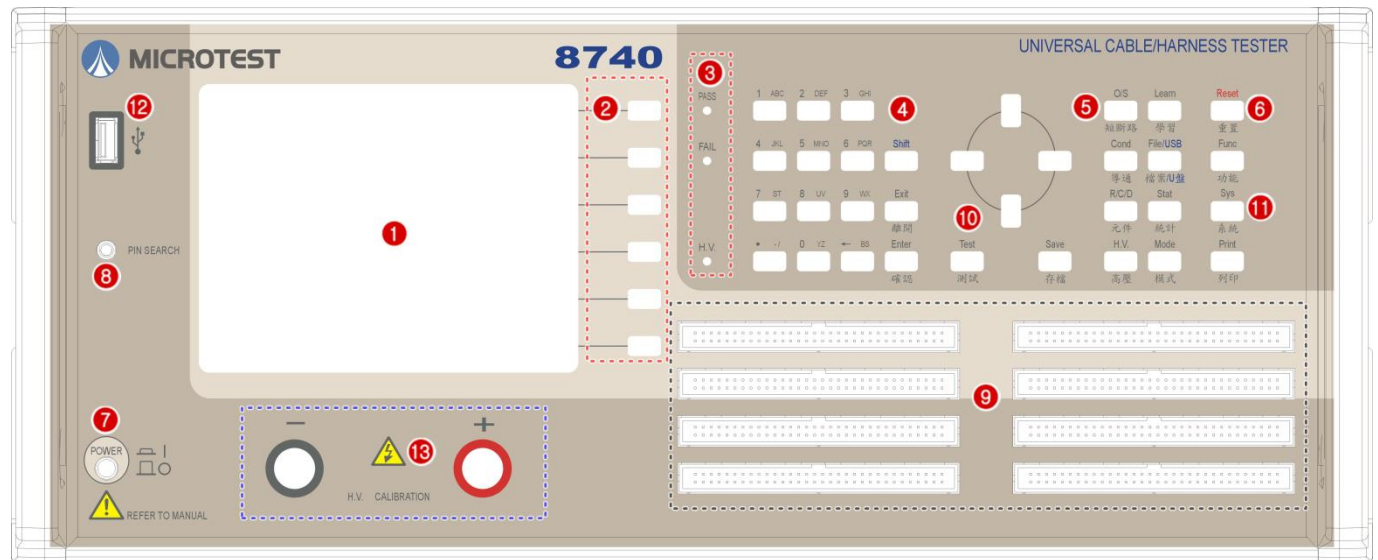
128 and 256 models:



- (1) LCD display
- (2) S1-S6 operation auxiliary buttons (Soft Key)
- (3) PASS & FAIL & HIPOT LED
- (4) Control button (Edit Key) group
- (5) Test shortcut button group
- (6) System reset (Reset) button
- (7) Power switch
- (8) Pin search connector
- (9) 128Pin has 2 slots and 256 Pin has 4 slots
- (10) Test button [TEST]
- (11) System button (Sys Key) group
- (12) USB flash drive



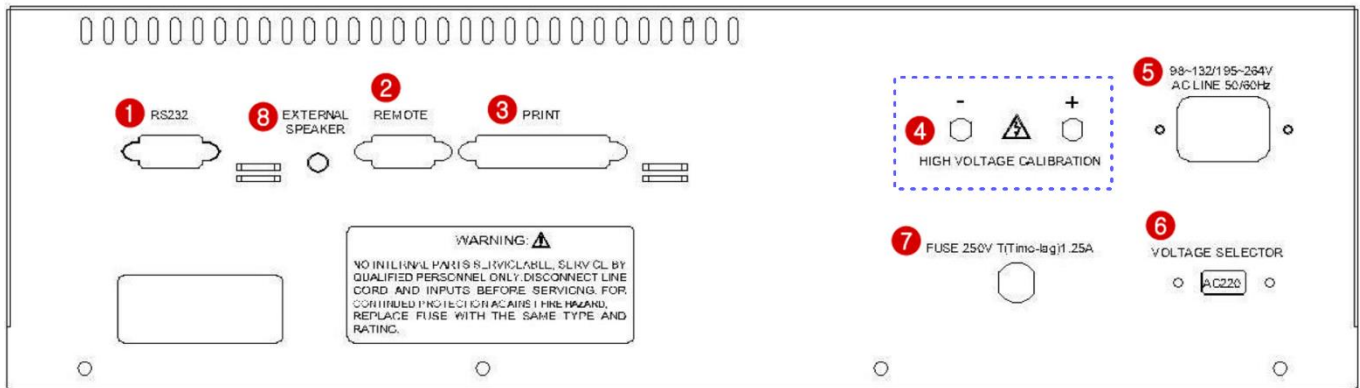
## 512 model:



- (1) LCD display
- (2) S1-S6 operation auxiliary buttons (Soft Key)
- (3) PASS & FAIL & HIPOT LED
- (4) Control button (Edit Key) group
- (5) Test shortcut button group
- (6) System reset (Reset) button
- (7) Power switch
- (8) Pin search connector, 512Pin has 8 slots
- (9) 512Pin has 8 slots
- (10) Test button [TEST]
- (11) System button (Sys Key) group
- (12) USB flash drive
- (13) High voltage correction output connector

## 2.4.2 Rear panel

128 Model:



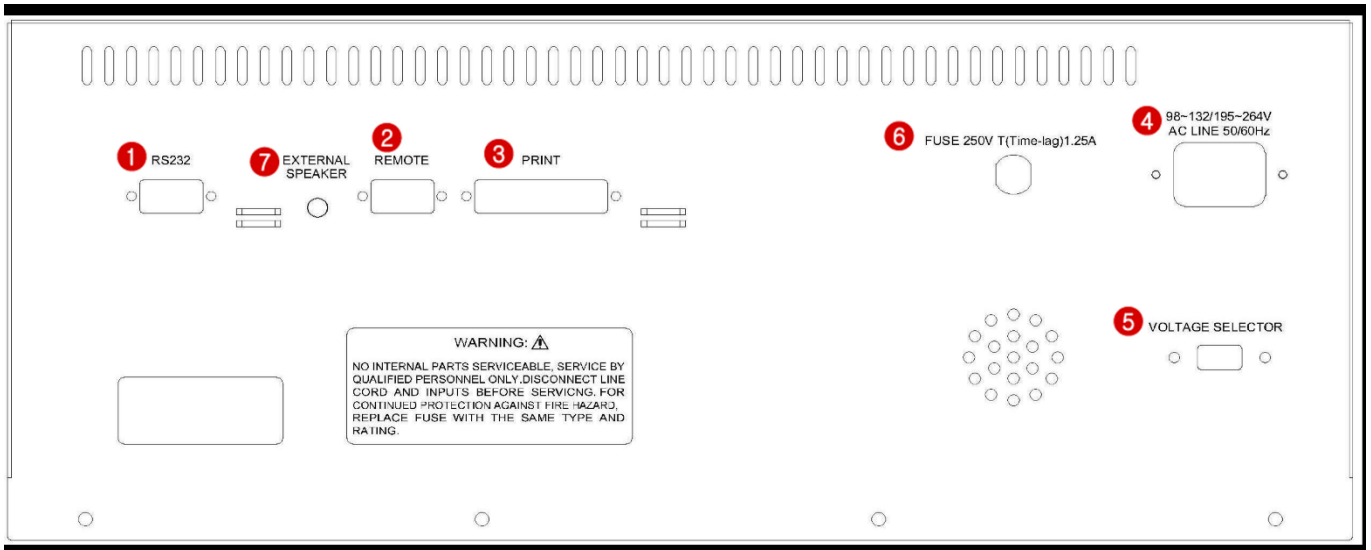
- (1) Serial port (RS-232 Port)
- (2) Remote control port (Remote Port)
- (3) Printer Port
- (4) High voltage correction output connector
- (5) AC power input (230/115 VAC)
- (6) 115/230V switch
- (7) [Fuse Holder 250V/T1.25A](#).
- (8) Audio output socket



### Note:

1. Please confirm whether the AC input voltage setting is the same as the voltage used.
2. The input power must be grounded when using the machine.

## 512 model:



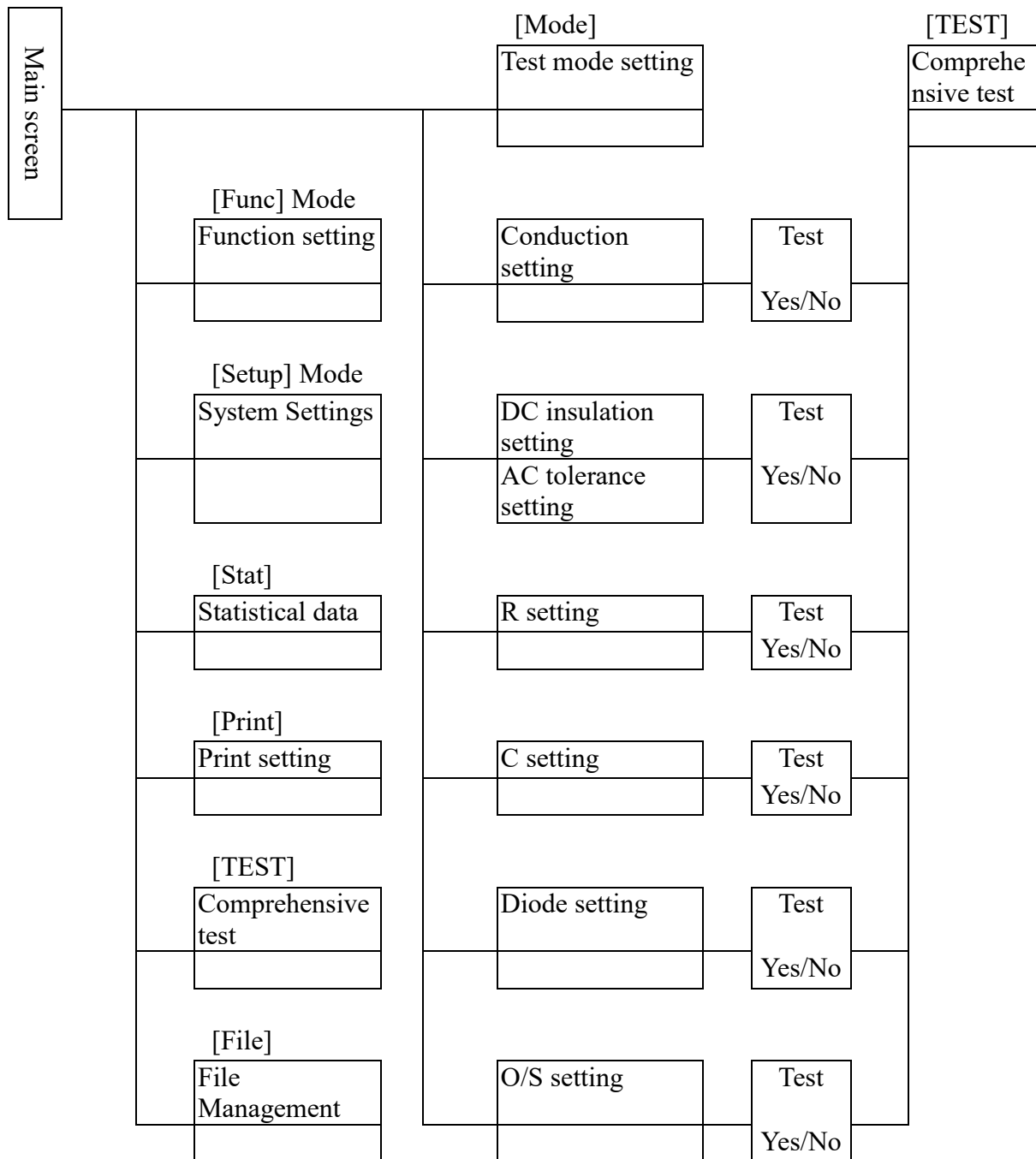
- (1) Serial port (RS-232 Port)
- (2) Remote control port (Remote Port)
- (3) Printer Port
- (4) AC power input (230/115 VAC)
- (5) 115/230V switch
- (6) Fuse holder 250V/T1.25A.
- (7) Audio output socket



### Note:

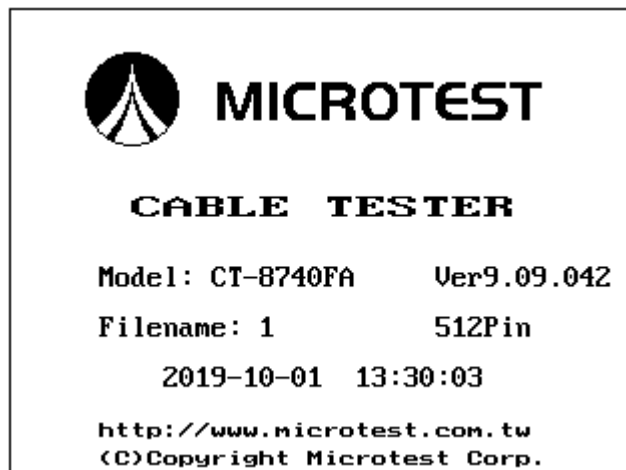
1. Please confirm whether the AC input voltage setting is the same as the voltage used.
2. The input power must be grounded when using the machine.

## 2.5 Function Block Diagram



## 2.6 Installation

- (1) Please confirm the power of the power supply and that the power source connected is AC115V or 230V.
- (2) Connect the connector and test cable according to usage needs.
- (3) Turn on the power; the system will execute the self-test program.
- (4) When the execution of the self-test is completed, it will officially enter the 8740 system; the LCD display will be as follows:



- (5) To end the system, please press the [Power switch] to end.



**Note:**

1. Self-test will be executed after powering on, which will take approximately 60-80 seconds.
2. Under the {READY} status, the operation auxiliary buttons S1-S6 will have the following adjustment functions.

<b>S1</b>	Makes the backlight of the LCD brighter
<b>S2</b>	Makes the backlight of the LCD darker
<b>S3</b>	Increases the volume level
<b>S4</b>	Decreases the volume level
<b>S5</b>	Software version and update date display
<b>S6</b>	Switch between Chinese/English
<b>1</b>	Quickly switches to the short circuit table function (same as [O/S])
<b>2</b>	Quickly switches to the learning function (same as [Learn])
<b>3</b>	Quickly switches to file manager (same as [File])
<b>4</b>	Quickly switches to conductance edit function (same as [Cond])
<b>5</b>	Quickly switches to the component edit function (same as [R/C/D])
<b>6</b>	Quickly Switch to the Statistics Function (Same as [Stat])

## 2.7 Button Instructions

- 【1】** System (Sys Key) button group
- [Func] System function menu
  - [Sys] System setting menu
  - [Print] Print function menu
- 【2】** Test shortcut (Fast Key) button group
- [File] File manager setting
  - [Learn] Short circuit learning
  - [Stat] Display test statistics data
  - [Mode] Test mode setting
  - [O/S] Short circuit table display
  - [Cond] Conductance test edit
  - [Stat] Statistics Function
  - [R] Resistance setting edit
  - [C] Capacitor setting edit
  - [D] Diode setting edit
  - [H.V.] DC insulation/AC tolerance setting edit
- 【3】** Control button (Edit Key) group
- Alphanumeric buttons Used to enter alphanumeric characters, including 0-1, A-Z and  $\cdot$  /
  - [BS] (←) Back space
  - Direction buttons Used to move the cursor; includes [←] [→] [↑] [↓]
    - [PgUp] [PgDn] makes it easier to edit data.
  - [Exit] Makes the system exit the current status and return to the previous status.

**【4】** [Enter] **Confirm button**

**【5】** [TEST] **Start test button**

**【6】** Operation Auxiliary Button (Soft Key) Group

S1-S6 are located to the right of the LCD; they are used for auxiliary operations/settings.

**【7】** [Reset] **System reset button, which works the same as warm start**

**【8】** [Save] **Save file button**

**【9】** [Shift] **Switch button function button**



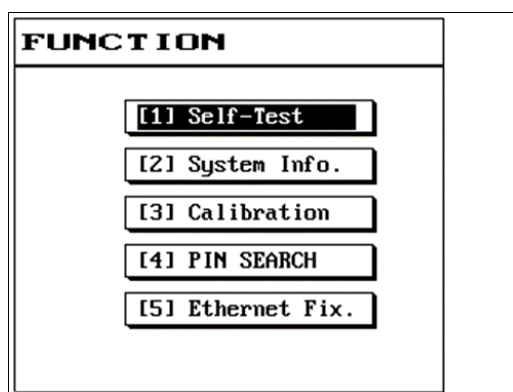
## Chapter 3. Function setting and System setting

The function settings and analysis modes include main system functions [Func], system settings [Setup] and print function [Print]; descriptions are as follows:

### 3.1 Function

Provides the main function for the system; its operations and function descriptions are as follows:

- (1) Press [Func].
- (2) The LCD screen will display as follows:



- (3) Please use the [↑] or [↓] buttons to select the item needed.
- (4) Press [Enter] to enter the selected item function.
- (5) Press [Exit] to return to the previous screen.

### 3.1.1 Self-test

This function allows the setting for whether this machine will execute the self-test function immediately upon powering on.

- (1) Press [Func]; please use [↑] or [↓] to select Self-Test and then press [Enter].
- (2) The system will now execute the self-test function.
- (3) The LCD screen will display as follows:

系統自我測試		停止 測試
項目	狀態	
1. CPU	..... OK	
2. SRAM	..... OK	
3. ROM	..... OK	
4. EEPROM-1	..... N/A	
5. USB	..... OK	
6. CLOCK	..... OK	
7. OPEN/SHORT	.....	
<div></div>		0%
EXIT- QUIT      ENTER- SKIP		

- (4) Press [Exit] to exit

### 3.1.2 System Info.

This item allows for the viewing of the 8740 machine and version information; it lists the machine's model number, test pins, total space used by files, and the total remaining space, etc. And it can perform system update.

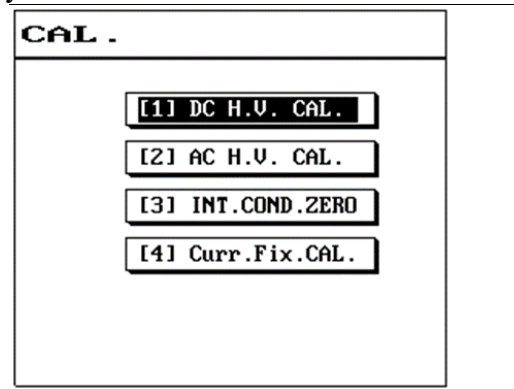
- (1) Press [Func]; please use [↑] or [↓] to select System Info and then press [Enter].
- (2) The LCD screen will display as follows:

SYSTEM INFO.		UP DATE
[1] MODEL	CT-8740FA	
[2] TEST CAPABILITY	512	
[3] SOFTWARE VER.	V9.09.042	
[4] EDITION	STANDARD	
[5] RELEASE DATE	Sep 5 2019	
[6] HARDWARE VER.	20160323	
[7] TOTAL FILE SPA.	15744K	
[8] FREE FILE SPACE	15134K	
[9] RUN TIME	4:09:55	

### 3.1.3 Calibration

This function includes [1] DC H.V.CAL, [2] AC H.V. CAL [3] AC H.V. CAL [4] Curr.Fix.CAL.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select Calibration and then press [Enter].
- (3) The LCD screen will display as follows:



- (4) Press [Exit] to exit.

#### DC H.V.CAL

The DC high voltage correction is used to adjust the READING (test value) closest to the DC setting value.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select Calibration and then select DC H.V. CAL. and press [Enter].
- (3) The LCD screen will display as follows:

HV CAL.(DC)		LAST CAL. 1989-08-05	UP
VOLTAGE	CODE	READING	DOWN
50 V	24	49.1 V	
100 V	44		
200 V	85		
300 V	127		
400 V	168		
500 V	210		
600 V	252		
700 V	293		
800 V	335		
900 V	377		
1000 V	419		
1100 V	461		
1200 V	502		
1300 V	544		
1400 V	586		
1500 V	628		

OK  
AUTO CAL.  
QUIT

- (4) Press S1 [UP] or S2 [DOWN] to adjust the READING (test value) closest to the DC setting value. Or S5 for automatic adjustment.
- (5) When setting is complete, please press S4 [OK].
- (6) To cancel the set data, simply press S6 [QUIT].

## AC H.V. CAL

The AC high voltage correction is used to adjust the READING (test value) closest to the AC setting value.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select Calibration and then select AC H.V. CAL. and press [Enter].
- (3) The LCD screen will display as follows:

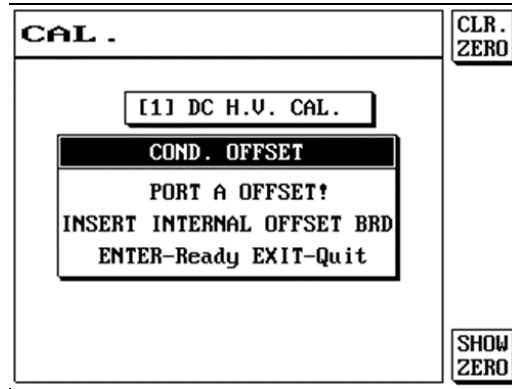
HV CAL.(AC)		LAST CAL. 1989-08-05	UP
VOLTAGE	CODE	READING	DOWN
100 V	22	100.0 V	DOWN
200 V	44		
300 V	66		OK
400 V	89		
500 V	111		AUTO CAL.
600 V	133		
700 V	155		QUIT
800 V	177		
900 V	199		QUIT
1000 V	221		

- (4) Press S1 [UP] or S2 [DOWN] to adjust the READING (test value) closest to the DC setting value.  
Or S5 for automatic adjustment.
- (5) When setting is complete, please press S4 [OK].
- (6) To cancel the set data, simply press S6 [QUIT].

## INT.COND.ZERO

This function can execute the internal resistance offset action of the machine.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select Calibration and then select INT.COND.ZERO and press [Enter].
- (3) The LCD screen will display as follows:



- (4) Press [Enter] to execute the internal resistance offset action (when you want to execute internal resistance offset, please first insert the INTERNAL OFFSET board).
- (5) If PORT A (slot A) completed internal resistance offset, the LCD will display a message asking whether to continue to offset the internal resistance of PORT B (slot B). If the machine you purchased is 256PIN, it will offset the internal resistance all the way to PORT D in sequence.
- (6) Change the offset board to the COND OFFSET board, and repeat steps (4) and (5).
- (7) Change the offset board to the 50Ω COND offset board for PORT A (slot A) for execution.

## Constant Current Box Calibration:

This function is an optionally purchased fixture calibration option.

Press [Func].

Please use [↑] or [↓] to select measurement parameter calibration, and then select constant current box calibration Curr.Fix.CAL and press [Enter].

The LCD screen will display as follows:

CAL.(AF)			UP
VOLTAGE	CODE	READING	DOWN
0.1A	919	2.49 V	DOWN
0.5A	844	4.13 V	
1.0A	748	3.66 V	DOWN
1.5A	655	3.20 V	
2.0A	566	2.77 V	DOWN
2.5A	479	2.34 V	
3.0A	388	1.90 V	DOWN
3.5A	300	1.47 V	
4.0A	208	1.02 V	DOWN
4.5A	118	0.58 V	
5.0A	25	0.12 V	DOWN
			OK
			QUIT

### 3.1.4 Pin Search

This function can display which is the current output pin.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select pin search and then press [Enter].
- (3) Connect the probe to the pin search connection, and point the probe to the pin you want to find out.
- (4) The LCD screen will display as follows:



- (5) A36 and B29 in the figure represents the 36th pin of slot A and the 29th pin of slot B respectively.

### 3.1.5 Ethernet Fixture Setting (Ethernet Fix.)

This function sets the protocol, IP, and server port, etc. for networking.

- (1) Press [Func].
- (2) Please use [↑] or [↓] to select find network fixture setting (Ethernet Fix.) and press [Enter].
- (3) The LCD screen will display as follows:

SYSTEM SETUP		PROG
[ 1]Protocol	TCPS	
[ 2]Sever IP	ERROR	
[ 3]Sever port	0	
[ 4]Host Address	ERROR	
[ 5]Host mask	ERROR	
[ 6]Host gateway	ERROR	
[ 7]cmd.delay	50ms	
[ 8]Reset dly.	700ms	

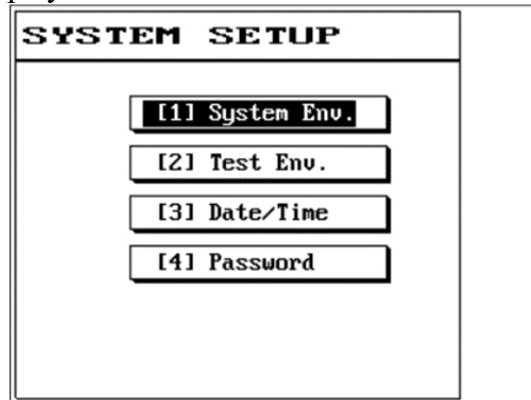
- [1] Protocol:  
TCPC: Transmission Control Protocol Client  
TCPS: Transmission Control Protocol Server
- [2] Sever IP: IP address of server
- [3] Sever Port: Server terminal (port) 0-65535
- [4] Host Address: Host address
- [5] Host Mask: Host mask (mask)
- [6] Host Gateway: Host gateway (gateway)
- [7] Instruction Delay: Delay time 50-9999ms
- [8] Reboot Delay: Delay time 700-9999ms



## 3.2 System Setup (SYS)

System setting includes system configuration and test related action settings; their operation and function descriptions are as follows:

- (1) Press [Sys].
- (2) The LCD screen will display as follows:



- (3) Please use [↑] or [↓] to select the item needed and then press [Enter].
- (4) Press [Exit] to exit when completed.

### 3.2.1 Setting the System Environment

- (1) The LCD screen will display as follows:

SYSTEM SETUP		PROG
[1] Power ON Self-Test	OFF	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	ALL KEY	
[4] Key Lock	UNLOCK	
[5] Sound Volume	5	
[6] LCD Contrast	7	
[7] Inverse LCD	OFF	
[8] Language	ENGLISH	
[9] BaudRate	115200	

- (2) Please use [↑] or [↓] to select the item needed.
- (3) If needed, please press S1 or ←→ [Item selection] to switch.
- (4) Press [Exit] to exit when completed.

### (1) Power ON Self-Test

There is a total of two options: The default value is | On |.

On: Perform power on self-test.

Off: Do not perform power on self-test.

### (2) Power Line Freq

Set the input power frequency (50Hz/60Hz).

### (3) Key Stroke Sound

This tester allows enabling/disabling button sounds according to the needs. The default value is |ALLKEY|.

ALLKEY: Set it so that there are sounds when the buttons are pressed.

DISABLE: Set it so that there are no sounds when the buttons are pressed.

VALID: When the button is valid, there is sound when the button is pressed

INVALID: When the button is invalid, there is sound when the button is pressed

### (4) Key Lock

This machine provides key lock protection in order to prevent data from being modified randomly; please first go to system **settings to change the system password** and then go to **key lock** and select | Lock | before this function can be used.



#### Note:

1. A password must be entered when the release key lock protection is selected, so please read the User Manual carefully.

- (1) Press [Sys] and use [↑] or [↓] to select this item function.
- (2) Press S1 (PROG) or →← [Item selection].
- (3) The LCD screen will display as follows.

SYSTEM SETUP		PROG
[1] Power ON Self-Test	ON	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	ALL KEY	
[4] Key Lock	LOCK	
[5]	SET PASSWORD	
[6]	PASSWORD:	
[7]		
[8] Language	ENGLISH	
[9] BaudRate	115200	

### (5) Sound Volume

Press S1 or →← [Item selection] to adjust the volume size (1~10).

### (6) LCD Contrast

Press S1 or →← [Item selection] to adjust the LCD brightness level.

**(7) Inverse LCD**

Press S1 or →← [Item selection] to switch the LCD display method.

**(8) Language**

Press S1 or →← [Item selection] to switch between Chinese or English display.

**(9) Baud Rate**

Press S1 or →← [Item Selection] to switch between 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, and 115200.

## 3.2.2 Setting the Test Environment

(1) The LCD screen will display as follows:

<b>SYSTEM SETUP</b>		PROG
[1] TESTER ID	1	
[2] TEST ALARM	NO	
[3] CONSECUTIVE ALARM	OFF	
[4] DISPLAY TEST DATA	ALL	
[5] AUTO PRINT DATA	KEY	
[6] OUTPUT SIGNAL	STATIC	
[7] STEP TRIGGER	AUTO	
[8] TEST FILE	AUTO	
[9] STEP TEST FAIL	BREAK TEST	NEXT PAGE
<b>SYSTEM SETUP</b>		PROG
[10] STEP DISP ALL	OFF	
[11] FAIL LOCK	OFF	
[12] Test Statistic	ON	
[13] Test Data Up Load	USB STORE	
[14] CONNECT. DET.	ON	
[15] Mul. DUT OPT.	4	
[16] SF.Stat MODE	MUL.DUT	PREV PAGE
[17] SET PULSE TIME	200 mS	
[18] Mul.DUT OUTSGL	FAIL	NEXT PAGE
[19] Seq.Result Mode	MERGE	
<b>SYSTEM SETUP</b>		PROG
[20] PC LINK CMD	OFF	
[21] TEST COUNTER	0	
[22] COND.ZERO RANGE	10	
[23] R Offs. Delay	3000	
[24] AF.DELAY TIME	5 mS	
[25] Default Setting	OFF	
[26] OS CHECK TIMES	3	PREV PAGE
[27] COND AVG TIMES	4	
[28] SEQ. STAT.	GENERAL	NEXT PAGE
[29] AF.TEST TIME	0.0S	

SYSTEM SETUP	
[30] SAVE MODE	MANUAL
[31] TEST ALL M.D FAIL	CONTINUE
[32] A FIX.0.1-4A OUT.	ONE ON
[33] OS MISS WIRE	ON
[34] CK.CBL.Exist(HV)	OFF

PROG

PREV  
PAGE

- (2) Please use [↑] or [↓] to select the item needed.
- (3) If needed, please press S1 (PROG) or ←→ [Item selection] to switch.
- (4) Press [Exit] to exit when completed.

### (1) TESTER ID

Allows assigning an ID for this tester.

### (2) TEST ALARM

This function provides alarms for test results; there are a total of 4 options that can be set according to the needs.

<b>ALL</b>	There is sound whether the result of the DUT is good or failed.
<b>NO</b>	There is no sound whether the result of the DUT is good or failed.
<b>PASS</b>	There is only sound when the result of the DUT is good.
<b>FAIL</b>	There is only sound when the result of the DUT failed.

### (3) CONSECUTIVE ALARM

When errors occur during testing, a continuous alarm will sound.

ON: Enables the consecutive alarm function.

OFF: Disables the consecutive alarm function.

### (4) DISPLAY TEST DATA

This function is used to set the display of the test statistical data and print format; there are a total of three options.

<b>ALL</b>	Display and print test data whether there are errors or not.
<b>NO</b>	Do not display and print test data whether there are errors or not.
<b>FAIL</b>	Display and print error step.

### (5) AUTO PRINT DATA

Whether to print test data automatically. There is a total of two options and the default value is |Key|.

**KEY:** Auto print data mode is off and keys are used to control whether to print the test data.

**AUTO:** Auto print data mode is on.

### (6) OUTPUT SIGNAL

Selects signal output mode. There are three modes: STATIC, PULSE, and ON.

**OFF:** Remote control with no output.

**STATIC:** Remote control is continuous output until the next test. When you are unsure of the PLC reception speed, please set it as continuous mode, and note that the output signals all have a pull-up resistor of 4.7K when sent to PLC input.

**PULSE:** When the remote control has a pulse output of 200ms. Users can set the pulse width according to their needs.

## **(7) STEP TRIGGER**

Selects the step start mode. There are three modes. KEY, AUTO, and EXTERNAL.

## **(8) TEST FILE**

Choose whether to use SINGLE or MULTI-STEP test.

**SINGLE:** Current file test (which is the {**Current file**} displayed on the main screen).

**MULTI-STEP:** Step file selection test.

**AUTO:** Use step file test when there are step files, and use current file test if there are none.

## **(9) STEP TEST FAIL**

Processing method to use when the step file test failed. Available selections include BACK FIRST, REPEAT FIRST, BREAK TEST and TEST ALL.

## **(10)STEP DISP ALL**

Whether to display the steps when using step file test.

ON: Yes

OFF: No

## **(11)FAIL LOCK**

Lock the keys when test failed. Test signal must be sent remotely in order to unlock.

## **(12)TEST Statistic**

Whether the keep statistics of the test results.

## **(13)Test Data Up Load**

Function to select whether to upload the test results.

**OFF:** Do not upload the test results.

**USB STORE:** Generates a test result file on the USB flash drive.

**TO PC USB:** Transmits the test result to the computer terminal through the RS232 interface.

## **(14)CONNECT .DET**

Tests the step files one by one and ends the test when PASS is matched. The test result is PASS. If the test results of all step files failed, the test result is FAIL. When this function is enabled, the function becomes invalid when "[9] Step test fail".

**(15) Mul.DUT OPT**

4: The maximum number of DUTs that can be set for MultiDUT is 4 sets.

14: The maximum number of DUTs that can be set for MultiDUT is 14 sets (expansion box required for use with REMOTE signal output).

**(16) SF.Stat MODE**

General: Statistics is performed once the test has completed.

Empty: After DUT has been removed when test has completed, statistics is performed once the short-circuit breaker is in an empty state.

MultiDUT MUL.DU: When the test has completed, multiple DUTs will be included in the statistics.

**(17) SET PULSE TIME**

The pulse hold time 1-1000s when pulse mode is used for the REMOTE signal output.

**(18) Mul.DUT OUTSGL**

PASS: Test result is PASS output signal.

FAIL: Test result is FAIL output signal.

**(19) Seq.Result Mode**

Individual MERGE: Output result for each step individually.

Merge ALOND: Merge (OR) output results of each step.

**(20) PC LINK CMD**

ON: Used with official connection software.

OFF: Not used with official connection software.

**(21) TEST COUNTER**

Gives a warning when the number of tests reaches the number of times set; 0 disables this function, 0-999999.

**(22) COND.ZERO. RANGE**

When the offset value exceeded the value set, give up offset 1-45.

**(23) R Offs. Delay**

When component R is testing delay offset 3000-60000.

**(24) AF.DELAY TIME**

When the fixture current box is testing, delay 1-20000mS after outputting current.

**(25) Default Setting**

ON: Execute reset to default setting.

OFF: Do not execute reset to default setting.

**(26) OS CHECK TIMES**

If the number of short-circuit test results failed is the same as the number of times set, determine the result as fail 1-1000.

**(27) COND AVG TIMES**

Conduction test times 1-99.

**(28) SEQ. STAT**

General: Statistics is performed once the test has completed.

MultiDUT MUL.DU: When the test has completed, multiple DUTs will be included in the statistics.

**(29) AF.TSET TIME**

Total test time for fixture current box; the test results within this time are aggregated and averaged. 0 means single test.

**(30) SAVE MODE**

AUTO: Saves when the exit button on the setting screen is pressed.

MANUAL: The save button must be pressed for saving.

**(31) TEST ALL M.D FAIL**

Fail CONTINUE: MultiDUT test is used with continuous testing under all test completed mode; when there are DUTs that fail, continue testing until test has completed.

All Fail STOP: MultiDUT test is used with continuous testing under all test completed mode; stops when all DUTs fail.

**(32) A FIX. 0.1-4A OUT.**

ALL ON: All channels output current.

ONE ON: Fixed single channel outputs current.

**(33) OS MISS WIRE**

ON: Enables the OS misplacement detection function.

OFF: Disables the OS misplacement detection function.

**(34) CK.CBL.Exist (HV))**

ON: Gives a warning when DUT is removed before high voltage test is completed; the DUT must have a short-circuit breaker.

OFF: Disables the warning function.



### 3.2.3 Setting the System Time

This function can adjust the system's year/month/day/hour/minute/second.

- (1) Press [Sys].
- (2) Use [↑] or [↓] to select [3]Date/Time function.
- (3) The LCD screen will display as follows.

SET DATE/TIME		SET
		QUIT
OLD DATE	: 11-26-15	
OLD TIME	: 20:19:49	
NEW DATE	: MM-DD-YY 11-26-15	
NEW TIME	: 20:19:00	

- (4) The time format is MM/DD/YY; please press S1 [SET] to save when input is completed.
- (5) Press [Exit] to exit.



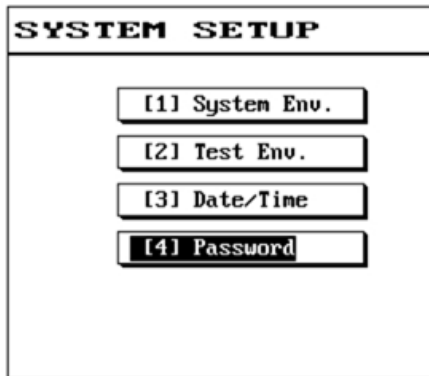
**Note:**

1. Hour is in 24 hour format

### 3.2.4 Changing the System Password

This tester provides key lock protection in order to prevent data from being modified randomly.

- (1) Press [Sys].
- (2) Please use [↑] or [↓] to select this item and then press [Enter].
- (3) The LCD screen will display as follows.



- (4) If you are setting the password for the first time, enter the new password directly. If you have previously set a password, then you must first enter the original password and press [Enter].
- (5) Then enter the new password again and press [Enter]; the screen will display {Successfully set} at this time.
- (6) Once the new password was successfully set, it will automatically return to the function menu.
- (7) To change the password, please repeat the setting steps described above.

### **3.3 Print**

This tester provides direct printer output, making it easy for you to print out the data needed; its operation and function descriptions are as follows:

- (1) Select the data or screen needed.
- (2) Simply press [Print].

### **3.4 Learn**

The short circuit setting of this machine is set by learning, which means saving the test cable connection conditions in the system memory and the system will display the test results on the LCD.

### **3.5 File**

For information on Section 3.5, please refer to Chapter 4 Comprehensive testing mode, Section 4.3 File for details.

## 3.6 Statistic

This function allows viewing of the test result statistical data, including: total number of tests, number of passes, number of fails and cause of failure analysis, which searches for the number of fails in each item category.

- (1) Press [Stat].
- (2) The LCD screen will display as follows.

STATISTIC File:1		QTY. RATE
TEST	██████████	1
PASS	██████████	1
FAIL		0
—FAIL ANALYSIS—		
O/S		
COND.		
COMP.		
INSU.		
HIPO.		
INTE.		
		CLR.

- (3) Press S1 [QTY.RATE] to display the statistical data using percentages.
- (4) The LCD screen will display as follows.

STATISTIC File:1		QTY. RATE
TEST	██████████	100.0%
PASS	██████████	100.0%
FAIL		0.0%
—FAIL ANALYSIS—		
O/S		
COND.		
COMP.		
INSU.		
HIPO.		
INTE.		
		CLR.

- (5) Press S6 [CLR] to clear all current statistical data.
- (6) Press [Exit] to exit when completed.

## 3.7 Mode

Press [O/S] and then press S6 [O/S EDIT] to enter TEST MODE.

<b>O/S NET</b> File:9		LEARN
Net Pin#	Page: 1/7 {1Nets} {512Pins}	
001	A01-A02-A03-A04-A05-A06-A07-A08-A09-A10-A11-A12-A13-A14-A15-A16-A17-A18-A19-A20-A21-A22-A23-A24-A25-A26-A27-A28-A29-A30-A31-A32-A33-A34-A35-A36-A37-A38-A39-A40-A41-A42-A43-A44-A45-A46-A47-A48-A49-A50-A51-A52-A53-A54-A55-A56-A57-A58-A59-A60-A61-A62-A63-A64-B01-B02-B03-B04-B05-B06-B07-B08-B09-B10-B11-B12-B13-B14-B15-B16-B17-B18-B19-B20-	CLR. ZERO
		DISP ZERO
		O/S EDIT
<b>TEST MODE</b> File:9.05281		PROG
[1] O/S Threshold	5KΩ	
[2] MAX. Capacitance	0.05μF	
[3] IDENTIFY O/S ENDS	NO	
[4] SINGLE SIDE SENS.	50	
[5] INTER. O/S Time	1.0 Sec	
[6] INTER. O/S Scan	128	
[7] SINGLE SIDE MODE	Sens.	
[8] SINGLE SIDE PER.	10	
[9] Q.INTER. O/S TIME	1.0 Sec	NEXT PAGE

- (1) Press S6(NEXT PAGE)
- (2) The LCD will display the following screen:

<b>TEST MODE</b> File:1		PROG
[1] QINTER. O/S Scan	64	
[2] QINTER.Delay	0	
		PREV PAGE

**[1] O/S Threshold:**

Available options include 2K, 5K, 10K, 20K and 100K; other functions are used to determine the short circuit value. If it is set as 2K, cables with resistance under 2K are considered to be short-circuited and with resistance above 2K are considered to be open circuit.

**[2] Max. Capacitance :**

Can be set between 0.05u-5u; this value should be set to a great number when the cables are longer in order to have stable tests.

**[3] IDENTIFY O/S ENDS:**

This is able to display the index display for the A Port or B Port short circuit.

**[4] SINGLE SIDE SENS:**

This act when the cable type is set as unilateral; it is considered short circuit when the test value is higher than the value set here.

**[5] INTER. O/S TIME:**

Unlimited when set to 0; the test will only stop when the DUT is removed. When a value is set, it is the number of seconds to test.

**[6] INTER. O/S Scan:**

128/256/512 items can be set.

Sets test point upper limit; if set as 128, the test will scan from PIN1 (A01) to PIN128 (B64). To reduce test time.

**[7] SINGLE SIDE MODE:**

Sensitivity Sens.: Uses single side test sensitivity as the standard value; when the test value is greater than the standard value, the test result is FAIL.

Percentage Perc.: Uses the capacitance value learned as the standard value; when the test value is greater than the percentage range of the standard value, the test result is FAIL.

**[8] SINGLE SIDE PER.:**

The percentage setting value for the percentage mode of the single side test mode.

**[9] Q.INTER. O/S TIME:**

Sets test time, 0 is **repeat test** and the result is determined as PASS when DUT is removed.

**[1] QINTER. 0/S Scan:**

Sets test point upper limit; if set as 128, the test will scan from PIN1 (A01) to PIN128 (B64). To reduce test time.

**[2] QINTER.Delay:**

The capacitance of the DUT itself causes the test to be unstable; increasing the delay time will increase the test stability.

- (1) Press [Mode]
- (2) The LCD screen will display as follows:

## 2. CABLE TYPE: {NORMAL}

<b>TEST MODE</b> File:3		PROG
[1] CABLE TYPE	NORMAL	
[2] START UP MODE	CONTINUE	
[3] AUTO SCAN DELAY	0.0Sec	Mult iDUT
[4] REPEAT INTERVAL	0.8Sec	
[5] REPEAT COUNT	99999	
[6] BREAK IF FAIL	YES	
[7] STEP TEST FAIL	REPEATTEST	
[8] OS TEST REPEAT	NO	
[9] MANUAL REST DELAY	0.0Sec	ITEM

Press [Learn]; the LCD screen will display as follows:

<b>O/S NET</b> File:1		LEARN
Net Pin#	Page: 1/3 { 32Nets } 64Pins	
001 A01-A02		
002 A03-A04		
003 A05-A06		
004 A07-A08		
005 A09-A10		
006 A11-A12		
007 A13-A14		
008 A15-A16		
009 A17-A18		
010 A19-A20		
011 A21-A22		
012 A23-A24		

When performing the cable test, press [TEST] and the LCD screen will display as follows:

<b>TEST</b>	TestTime: 0.55Sec	PASS
TEST:2640 PASS:2393 FAIL:247		
O/S TEST ..... PASS		
Plug In the Cable		EMPTY

From the LCD display screen, we can find out the total number of tests and the number of passes and fails.

(1) When test mode is being set, set the cable type as {SINGLE STEP}.

TEST MODE File:3		PROG
[1] CABLE TYPE	SINGLE STEP	Multi IDUT
[2] START UP MODE	CONTINUE	
[3] AUTO SCAN DELAY	0.0Sec	
[4] REPEAT INTERVAL	0.8Sec	
[5] REPEAT COUNT	99999	
[6] BREAK IF FAIL	YES	ITEM
[7] STEP TEST FAIL	REPEATTEST	
[8] OS TEST REPEAT	NO	
[9] MANUAL REST DELAY	0.0Sec	

Press [Learn]; the LCD screen will display as follows:

STEP READ File:1		READ
StepPin#		OK  QUIT

Use the automatic pin search probe to specify the short circuit pin to test; example is as follows:  
When using the PIN SEARCH probe on the panel, touch the relative position (A01) specified by the cable and the LCD will display that pin.

STEP READ File:1		READ
StepPin#		OK  QUIT
1	A01	

Place the probe sequentially on the pins specified by the cables (A03, A05, A07) and also press S1 [READ]; press S4 [OK] when completed.

When performing the cable test, press [TEST] and the LCD screen will display as follows:



TEST		
TEST:0	PASS:0	FAIL:0
Plug In the Cable		EMPTY

Please use the automatic pin search probe and place it on A01; the LCD screen will display as follows:

TEST		TESTING...	OS LIST
TEST:0	PASS:0	FAIL:0	
A01	.....	PASS	
A03	.....	PASS	
A05	.....	PASS	
\A07			
0/S		STEP: 4/4	

The automatic pin probe must be placed on A03, A05, and A07 sequentially in order to complete the cable test action.

TEST		TestTime: 1.53Sec	1.OK 2.OK 3.OK 4.OK
TEST:4	PASS:3	FAIL:1	PASS

Since we initially have 4 steps preset, so for the test of each DUT, steps 1 to 4 of the step test must be completed successfully in order for it to pass. A maximum of 128 test steps can be set.  
When test mode is being set, **set the cable type as {unilateral}**.

Press [Learn] when there is no DUT, the LCD screen will display as follows:

TEST MODE File:3		PROG
[1] CABLE TYPE	SINGLE SIDE	Mult iDUT
[2] START UP MODE	CONTINUE	
[3] AUTO SCAN DELAY	0.0Sec	
[4] REPEAT INTERVAL	0.8Sec	
[5] REPEAT COUNT	99999	
[6] BREAK IF FAIL	YES	ITEM
[7] STEP TEST FAIL	REPEATTEST	
[8] OS TEST REPEAT	NO	
[9] MANUAL REST DELAY	0.0Sec	

O/S NET File:1		LEARN
Net Pin#	Page: 1/11 {128Nets} {128Pins}	CLR. ZERO  O/S ZERO  O/S EDIT
001 A01	9	
002 A02	8	
003 A03	9	
004 A04	8	
005 A05	9	
006 A06	10	
007 A07	9	
008 A08	7	
009 A09	18	
010 A10	10	
011 A11	10	
012 A12	9	

The value displayed at the right of the screen is the unilateral test sensitivity; press S5 O/S ZERO and then press LEARN and the value will change to zero. S4 is the CLR.ZERO value.  
Press [Learn] after inserting the DUT, the LCD screen will display as follows:

O/S NET File:1		LEARN
Net Pin#	Page: 1/6 { 64Nets} { 64Pins}	CLR. ZERO  DISP ZERO  O/S EDIT
001 A01	12	
002 A02	19	
003 A03	20	
004 A04	20	
005 A05	20	
006 A06	20	
007 A07	20	
008 A08	21	
009 A09	20	
010 A10	20	
011 A11	20	
012 A12	20	

When test mode is being set, enter the value needed for the **SINGLE SIDE SENSE**.  
P.S Use 80-90% of the minimum value learned as the setting value.



**[2] START UP MODE:**

AUTO SCAN Starts test after the DUT is inserted.

MANUAL Press the Test button after the DUT is placed to start the test.

CONTINUE Continuous tests are performed after the Test button is pressed.

**[3] AUTO SCAN DELAY:**

This is only effective when Automatic is selected as the test start method; its function is to wait a few seconds before starting the test after the DUT is inserted.

**[4] REPEAT INTERNAL:**

The cable activation mode is the repeat test interval of repeat test.

**[5] REPEAT COUNT:**

This is only effective when Continuous is selected as the test start method; it allows setting of the number of times to test.

**[6] BREAK IF FAIL:**

If errors occur during test, there are three options displayed at all times: {Stop test}, {Do not test high voltage} and {Finish all tests}.

**[7] STEP TEST FAIL:**

REPEATTEST: When the cable type is point test and this step test fails, repeat this step test.

BACK FIRST: When the cable type is point test and this step test fails, return to the first step test.

**[8] OS TEST REPEAT:**

YES: Continue test when short-circuit test fails; determines test result as FAIL when DUT is removed.

NO: Determines test result as FAIL when short-circuit test fails.

**[9] MANUAL REST DELAY:**

When the test button is pressed, delay in the length of time set and then start test.

### 3.7.1 MultDut

First learn the DUT pin; press mode setting.

TEST MODE File:3		PROG
[1] CABLE TYPE	SINGLE STEP	Mult iDUT
[2] START UP MODE	CONTINUE	
[3] AUTO SCAN DELAY	0.0Sec	
[4] REPEAT INTERVAL	0.8Sec	
[5] REPEAT COUNT	99999	
[6] BREAK IF FAIL	YES	
[7] STEP TEST FAIL	REPEATTEST	
[8] OS TEST REPEAT	NO	
[9] MANUAL REST DELAY	0.0Sec	
		ITEM

Select MULTIDUT

TEST MODE File:TEMP			PROG
Item	EN./ST.	NUM/END	
[1] TEST M.DUT	NO	1	
[2] DUT1	A01	A01	
[3] DUT2	A01	A01	
[4] DUT3	A01	A01	
[5] DUT4	A01	A01	

The selection is, set the start and end of the DUT according to the pin learned; a maximum of 4 tests can be selected and the start and end pins of the DUT can be set. (P.S There must be no other DUT at the start and end of the DUT.)

Press “TEST” when setting is completed.

TEST		TestTime: 0.01Sec	1. OK
TEST:1	PASS:1	FAIL:0	2. OK
O/S TEST	.....	PASS	3. OK
			4. OK
			PASS
Extract the Cable			

### 3.7.2 Item

Press **Mode**.

<b>TEST MODE</b> File:9.05281		PROG
[1] CABLE TYPE	<b>SINGLE SIDE</b>	Mult iDUT
[2] START UP MODE	AUTO SCAN	
[3] AUTO SCAN DELAY	0.0Sec	
[4] REPEAT INTERVAL	0.0Sec	
[5] REPEAT COUNT	99999	
[6] BREAK IF FAIL	YES	ITEM
[7] STEP TEST FAIL	REPEATTEST	
[8] OS TEST REPEAT	NO	
[9] MANUAL REST DELAY	0.0Sec	

Press **Test Mode**.

<b>ITEM SEL.</b> File:2		PROG
ITEM	TEST	
[1] OPEN/SHORT	<input checked="" type="checkbox"/>	
[2] CONDUCTANCE	<input type="checkbox"/>	
[3] COMPONENT	<input type="checkbox"/>	
[4] AC HIPOT	<input type="checkbox"/>	
[5] DC INSUL./HIPOT	<input type="checkbox"/>	
[6] Q.CONDUCTANCE	<input type="checkbox"/>	
[7] INTERMITTENCE O/S	<input type="checkbox"/>	

- (1) Please use [↑] or [↓] to move to the item you want to set.
- (2) Press S1 [Item selection] to switch whether to execute test for the selected item.

## Chapter 4. Comprehensive Test mode

Test mode uses programmed design functions to perform simultaneous and automatic tests according to the different test conditions set for different test items in order to satisfy different needs and achieve optimal efficiency; it can be divided into:

- Test condition setting
- Comprehensive test implementation
- File management

Detailed descriptions are as follows:

### 4.1 Test Condition Setting

This part refers to the setting of some control standards and corresponding test conditions for the DUT, including O/S / Cond / R / C / HIPOT / Diode settings; its contents mainly includes

- The test signals (frequency, voltage size and current etc.) of each test item (parameter)
- Control standard, specification control standard value, error ratio.

#### 4.1.1 Test Condition Setting Short Circuit Table (OPEN/SHORT)

- (1) Press [O/S].
- (2) The LCD screen will display as follows:

O/S NET		File:9	LEARN
Net	Pin#	Page: 1/7 (512Pins)	
001	A01-A02-A03-A04-A05-A06-A07-A08-A09-A10-A11-A12-A13-A14-A15-A16-A17-A18-A19-A20-A21-A22-A23-A24-A25-A26-A27-A28-A29-A30-A31-A32-A33-A34-A35-A36-A37-A38-A39-A40-A41-A42-A43-A44-A45-A46-A47-A48-A49-A50-A51-A52-A53-A54-A55-A56-A57-A58-A59-A60-A61-A62-A63-A64-B01-B02-B03-B04-B05-B06-B07-B08-B09-B10-B11-B12-B13-B14-B15-B16-B17-B18-B19-B20-		CLR. ZERO DISP ZERO O/S EDIT

The short circuit table comes from learning.

- (3) Press [Exit] to exit when completed.

## 4.1.2 Conductance

- (1) Press [Cond].
- (2) The LCD screen will display as follows.
- (3) Please use [ $\uparrow$ ] or [ $\downarrow$ ] to select the item you want to set.

COND .		File:2
[1] MAX. CONDUCTANCE	3.000 $\Omega$	COND NET
[2] MIN. CONDUCTANCE	0.000 $\Omega$	
[3] COND. OFFSET	+0.000	
[4] CONDUCTANCE MODE	SERIES	
[5] INTERMITTENCE LIMIT	50.0 $\Omega$	
[6] INTERMITTENCE TIME	1 Sec	
Zero Stat: NO		COND ZERO
		CLR. ZERO

NET CONSTEP: 1PAGE: 1/3							SET
Name	T	P+	P-	StdVal	Tol		
COND	T	A01	A02	1.000 $\Omega$	10.0	J	CANC -EL
COND	T	A03	A04	1.000 $\Omega$	10.0	J	
COND	T	A05	A06	1.000 $\Omega$	10.0	J	OK
COND	T	A07	A08	1.000 $\Omega$	10.0	J	
COND	T	A09	A10	1.000 $\Omega$	10.0	J	SET ALL
COND	T	A11	A12	1.000 $\Omega$	10.0	J	
COND	T	A13	A14	1.000 $\Omega$	10.0	J	CANC EALL
COND	T	A15	A16	1.000 $\Omega$	10.0	J	
COND	T	A17	A18	1.000 $\Omega$	10.0	J	
COND	T	A19	A20	1.000 $\Omega$	10.0	J	
COND	T	A21	A22	1.000 $\Omega$	10.0	J	
COND	T	A23	A24	1.000 $\Omega$	10.0	J	

- (1) **Maximum conductance value:** Please use the number buttons to enter a value according to your needs as the upper limit of the cable conductance.
- (2) **Minimum conductance value:** Please use the number buttons to enter a value according to your needs as the lower limit of the cable conductance.
- (3) **Conductance adjustment value:** Resistance value can be entered to increase or decrease the resistance of the fixture.
- (4) **Conductance mode:** Use S1 [Item selection] to switch between serials, radiation, or composite.
- (5) **Intermittence limit:** Resistance value can be entered to be used as the basis to determine the test result.
- (6) **Intermittence time:** A time value can be entered to be used as the continuation time for the test.

Press S3 [COND NET] to enter conduction edit:

**COND NET:** Allows importing of the O/S learned into component edit.



NET CONSTEP: 1PAGE: 1/3						SET
Name	T	P+	P-	StdVal	Tol	
COND	T	A01	A02	1.000Ω	10.0	
COND	T	A03	A04	1.000Ω	10.0	
COND	T	A05	A06	1.000Ω	10.0	
COND	T	A07	A08	1.000Ω	10.0	
COND	T	A09	A10	1.000Ω	10.0	
COND	T	A11	A12	1.000Ω	10.0	
COND	T	A13	A14	1.000Ω	10.0	
COND	T	A15	A16	1.000Ω	10.0	
COND	T	A17	A18	1.000Ω	10.0	
COND	T	A19	A20	1.000Ω	10.0	
COND	T	A21	A22	1.000Ω	10.0	
COND	T	A23	A24	1.000Ω	10.0	

Press S1 [Select] the item needed and then press S4 [Import component]:

NET CONSTEP: 1PAGE: 1/3						SET
Name	T	P+	P-	StdVal	Tol	
COND	T	A01	A02	1.000Ω	10.0	J
COND	T	A03	A04	1.000Ω	10.0	J
COND	T	A05	A06	1.000Ω	10.0	J
COND	T	A07	A08	1.000Ω	10.0	J
COND	T	A09	A10	1.000Ω	10.0	J
COND	T	A11	A12	1.000Ω	10.0	J
COND	T	A13	A14	1.000Ω	10.0	J
COND	T	A15	A16	1.000Ω	10.0	J
COND	T	A17	A18	1.000Ω	10.0	J
COND	T	A19	A20	1.000Ω	10.0	J
COND	T	A21	A22	1.000Ω	10.0	J
COND	T	A23	A24	1.000Ω	10.0	J

Import to component edit:

EDIT STEP: 1PAGE: 1/3						COPY
Name	T	P+	P-	StdVal	Tol%	
COND	T	A01	A02	1.000Ω	10.0	
COND	T	A03	A04	1.000Ω	10.0	
COND	T	A05	A06	1.000Ω	10.0	
COND	T	A07	A08	1.000Ω	10.0	
COND	T	A09	A10	1.000Ω	10.0	
COND	T	A11	A12	1.000Ω	10.0	
COND	T	A13	A14	1.000Ω	10.0	
COND	T	A15	A16	1.000Ω	10.0	
COND	T	A17	A18	1.000Ω	10.0	
COND	T	A19	A20	1.000Ω	10.0	
COND	T	A21	A22	1.000Ω	10.0	
COND	T	A23	A24	1.000Ω	10.0	

- (7) Cable off: After inserting the offset fixture, press S5 [COMD ZERO] to perform offset, and the cable offset located at the bottom left will display: Yes.
- (8) Clear offset: Press S6 [CLR ZERO] to clear the previous conduction value, and the cable offset located at the bottom left will display: None.



#### Note:

1. Short circuit according to the minimum resistance value of the DUT's NET for offset fixture

### 4.1.3 R/C/D Component Setting Edit (Resistance)

- (1) Press the [R/C/D] button and the screen will display as follows:

EDIT		STEP: 1		PAGE: 1/1	
Name	T	P+	P-	StdVal	Tol%

COPY

DEL.

HOME

END

- (2) After entering the name, move the cursor to line T and then use S1 S2 S3 to select test capacitance C, resistance R, and diode D.
- (3) The voltage (V) function must be used with the 8740 CC3 constant current box (purchased optionally), and only the following points can be used to perform cable voltage drop/impedance test. Point operation restrictions are as described in the table below.

EDIT		STEP: 1		PAGE: 1/1	
Name	T	P+	P-	StdVal	Tol%
1	R	A01	B01	1.000K	10.0
2	C	A01	B01	1.000n	10.0
3	D	A01	B01	0.700U	10.0
4	V	A01	B01	1.000U	10.0
5	T	A01	B01	1.000R	10.0

R

C

D

V

T

- (4) When users pay more attention to the precision of the cable voltage drop and the impedance, connect all DUTs first, then use the short cable (internal resistance less than 10mΩ) to short-circuit the red and black terminal in front of the constant current box and then press offset. When the test current is changed, offsetting is recommended in order to measure the more accurate data.

Loop	Current Positive Point	Current Negative Point	0.1A-4.0A (±10%)				When Current Exceeds 4.0A (open all four channels)
1	A2	B2	ON	---	---	---	ON
2	A8	B8	---	ON	---	---	ON
3	A18	B18	---	---	ON	---	ON
4	A24	B24	---	---	---	ON	ON

When the 8740 host is used with the 8740 CC3 constant current box to perform cable voltage drop test, use of a genuine fixture adapter board is recommended; if users need to use their own adapter board, please beware of the PIN definitions of the DUT and the PIN definitions in the previous table, as well as the operation restrictions. In order to measure the most accurate voltage drop and ensure that the DUT was not tested out of spec, prevent over-current from causing damage to the cable/contact due to overload.

Setting the current for more than 4A is mainly used for low resistance (under 0.2Ω) tests; users must beware that the enabling of the loop is different from under 4A (included). This will give different test

results; users must beware of the difference of this setting.

- (5) Set the + - pins; the pins can be entered manually or use automatic pin search (to use automatic pin search, the probe must be inserted to the PIN SEARCH located at the front panel and then touch the ABCDEFG Port pins); the LCD screen will display as follows:

<b>EDIT</b> STEP: 1PAGE: 1/1						<div>A</div> <div>B</div> <div>C</div> <div>D</div> <div>FIND PIN</div>
Name	T	P+	P-	StdVal	Tol%	
1	R	A01	B01	1.000K	10.0	
2	C	A01	B01	1.000n	3.0	
3	D	A01	B01	0.700V	3.0	
4	V	A01	B01	1.000V	3.0	
5	T	A01	B01	1.000n	3.0	

- (6) After the cursor moves to the standard value line, enter the actual test value or use the S1 [Learn] and S2 [MEANS All] function; the LCD screen will display as follows:

<b>EDIT</b> STEP: 1PAGE: 1/1						<div>MEAS STEP</div> <div>MEAS ALL</div> <div>SAME</div> <div>OFFS</div> <div>CLR. OFFS</div>
Name	T	P+	P-	StdVal	Tol%	
1	R	A01	B01	1.000K	10.0	
2	C	A01	B01	1.000n	10.0	
3	D	A01	B01	0.700V	10.0	
4	V	A01	B01	1.000V	10.0	
5	T	A01	B01	1.000Ω	10.0	

- (7) When the component is resistance or capacitance, press S5 [CLR.OFFS] to offset; the LCD screen will display as follows:

EDIT						STEP: 1PAGE: 1/1
Name	T	P+	P-	StdVal	Tol%	
1		C	A01 B01	1.000n	10.0	

**OFFSET**

Disconnect cable!

ENTER- OK EXIT-QUIT

MEAS STEP

MEAS ALL

SAME

OFFS

CLR. OFFS

- (8) Press [Enter] to perform the offset action.
- (9) Press S6 [ALL SAME] to clear the data used for resistance or capacitance offset.
- (10) When the component is resistance, press SHIFT+S5 [CLR.OFFS] to display the data for resistance offset; the LCD screen will display as follows:

E						1
Na						
1						

**R ZERO OFF**

1 A01-B01 0.00Ω

MEAS STEP

MEAS ALL

SAME

OFFS

CLR. OFFS

- (11) When the component is diode or current leakage, press S3 [SET PARA] to perform parameter setting; the LCD screen will display as follows:

EDIT						STEP: 1PAGE: 1/1
Name	T	P+	P-	StdVal	Tol%	
1		D	A01 B01	0.700V	10.0	

**SET PARAMETER**

DIODE TEST MOD: CURRENT

SET DIODE CURR: 1.0 mA

MEAS STEP

MEAS ALL

SET PARA

SAME

- (12) Item descriptions are as follows:

- Name Please enter the name for the resistance test group set.

- +Pin (Positive pin) Positive pin setting; please enter the pin selected.
- – Pin (negative pin) Negative pin setting; please enter the pin selected.
- Standard value Standard value setting; please enter the value needed.
- Error % Error value setting; please enter the setting value according to your needs, it ranges from 0-9999.9. Press S6 [SAME] to set all the error % to the same value.
  - $\geq$  STD Press S1 [Greater than] to set the error % as greater than or equal to the standard value.
  - $\leq$  STD Press S2 [Less than] to set the error % as less than or equal to the standard value.

## 4.1.4 High Voltage Setting Edit (HV)

This function is the setting for DC insulation, test voltage for AC tolerance, frequency, time, specification, and other items.

(1) Press [HV].

(2) The LCD screen will display as follows.

HIPOT		File:3	
Item	DC	Hipot	
[1] Voltage	1500V	1000V	AC ZERO
[2] Frequency	Insu.	60Hz	DC ZERO
[3] Test rate	NORM	SLOW	
[4] Spec.	1000.0MΩ	1.00mA	
[5] Offset	0.0MΩ	0.00mA	
[6] All-Ground	OFF	OFF	
[7] Binary	ON	ON	
[8] Time	0.01Sec	0.01Sec	DISP ZERO
[9] All nets	OFF	OFF	
[10]Time	0.01Sec	0.01Sec	NEXT PAGE
[11]GND pin	A01	A01	

(1) Please use the direction button sot move to the item you want to set.

(2) Enter your specification control standard value.

(3) Descriptions of the insulation and tolerance items are as follows:

### AC Offset AC ZERO:

Used to deduct the small leakage current of the internal loop of the tester and on the test fixture in order to measure more precise AC HIPOT leakage current.

### DC Offset DC ZERO:

Used to deduct the equivalent insulation value of the internal loop of the tester and the text fixture in order to test higher DC IR insulation.

Beware when using the two functions described above: The AC/DC offset value must be less than 1/4 of the test value; it must not be less than 1:1 under the worst case, and this means that the offset value is the same as the test value signal size. Under poor environments, it is difficult for the offset value to be provided steadily and used for extended periods of time.

The offset function can also be used to determine the condition of the fixture terminal. For production engineers to import and use in stage analysis.

### (1) Voltage

Set the test voltage value for DC insulation and AC tolerance; the DC voltage is 50V-1000V (8740N/8740NA) or 50V-1500V (8740FA), and the AC voltage is 100V-700V (8740-NA) or 100-1000 (8740FA).

### (2) Frequency

Set the test frequency; only the AC part can be set (50/60Hz), DC insulation: switches between tolerance and insulation, which is switching the test specification type. The tolerance test specification is uA and the insulation test specification is MΩ.

### (3) Test rate

Slow: Test method that uses a stable test value as top priority.

Regular: Test method that finds a balance between stable test value and test speed.

Quick: Test method that saves gear changing time under known test specification conditions.

### (4) Spec

Set the test specification of the DC insulation and AC tolerance test; the DC insulation specification can be set between 0.1MΩ-1000MΩ, 0.1uA-1000uA.

※ When the setting is set as 5MΩ or below 5uA, the maximum test voltage is 650V and the AC tolerance specification can be set between 0.01mA-5mA.

### (5) Offset

AC tolerance test offset.

### (6) All-Ground

Ground pin must be set for this mode to perform insulation test for non-grounded cable to specified grounded cable; its advantage is that the test speed is fast, but its disadvantage is that insulation test is not performed between non-grounded cables.

	A	B	C	D	E	F	G	H
Step 1	+	+	+	+	+	+	+	—

All ground test method

### (7) Binary

This mode is similar to quick categorization; if there are 8 test pins DUT A B C D E F G H, when test is performed for each cable or pin, it has to be tested 7 times sequentially in order to determine whether the DUT passed. But if the quick test method is used, the first time A B C D and E F G H are divided into two groups for testing, and the second time A B E F and C D G H are divided into two groups for testing, and the third time A C E G and B D F H are divided into two groups for testing, then the test only needs to be performed three times to confirm whether the DUT passed. Therefore if the DUT has 128 pins, if test is performed for every cable or pin, the test has to be performed 127 times, but with the quick test method the test only has to run 8 times. However, the disadvantage is that it cannot find out which are the error pins and the cable segment resistance will be slightly lower than the actual value because the cable segments were tested in parallel.

	A	B	C	D	E	F	G	H
Step 1	+	+	+	+	—	—	—	—
Step 2	+	+	—	—	+	+	—	—
Step 3	+	—	+	—	+	—	+	—

Quick binary test method

### (8) Time

Set the DC insulation and AC voltage continuation time for [6] All-Ground and [7] Binary; the continuation time can be set between 0.01Sec-60Sec.

**(9) All nets**

This is the most fundamental test method for the high voltage insulation test; high voltage is connected to the test pin A and the other pins are grounded to observe its current leakage or insulation value, and then high voltage is connected to test pin B and the other pins are grounded to observe its current leakage or insulation value and so on. High voltage is connected to each pin while other pins are grounded to observe their current leakage or insulation value. This way it can confirm that all the test pin high voltage insulation tests have no problems, and the number of tests for this method is N-1 times. This test method is more accurate and it can find the insulation and current leakage value for each pin; its disadvantage is that it is slower.

	A	B	C	D	E	F	G	H
Step 1	+	—	—	—	—	—	—	—
Step 2	—	+	—	—	—	—	—	—
Step 3	—	—	+	—	—	—	—	—
Step 4	—	—	—	+	—	—	—	—
Step 5	—	—	—	—	+	—	—	—
Step 6	—	—	—	—	—	+	—	—
Step 7	—	—	—	—	—	—	+	—
Step 8	—	—	—	—	—	—	—	+

One to other test method

**(10) Test time**

Set the DC insulation and AC voltage continuation time for [9] All nets;  
the continuation time can be set between 0.01Sec-60Sec.

**(11) Ground pin**

Ground pin set

Select S6 [NEXT PAGE] and the LCD screen will display as follows:

HIPOT		File:1
[1] DC V ramp time	10 ms	
[2] Arc detect	YES	
[3] Single node	NO	
[4] DC Arc Sens	4	
[5] AC Arc Sens	4	
[6] A PORT MaxPin(AInet	64	
[7] B PORT MaxPin(AInet	64	
[8] C PORT MaxPin(AInet	64	
[9] D PORT MaxPin(AInet	64	

PREVIOUS

NEXT PAGE

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PAGE



**The following requirements must be followed for quick test:**

1. Quick test is a test method designed to be used specifically when the insulation value of the DUTs are within fixed range and saves time by not jumping sections, and has the goal of gaining highest capacity.
2. Each 1V can only test 1M ohm 1uA is a very small current.
3. Set the correct test specifications; to test 100M test specifications, the voltage must be set to 100M ohm.
4. Make suitable adjustments for the test time according to the DUT.

**(12) Test pin number**

Set the maximum number of pins for the quick binary test.

Select S6 [NEXT PAGE] and the LCD screen will display as follows:

<b>HIPOT</b>		File:3
[1] DC V ramp time	10	ms
[2] Arc detect	YES	
[3] Single node	YES	
[4] DC Arc Sens	4	
[5] AC Arc Sens	4	
[6] A PORT MaxPin(AInet	64	
[7] B PORT MaxPin(AInet	0	
[8] C PORT MaxPin(AInet	0	
[9] D PORT MaxPin(AInet	0	
[10] E PORT MaxPin(AInet	0	
[11] F PORT MaxPin(AInet	0	
[12] G PORT MaxPin(AInet	0	
[13] H PORT MaxPin(AInet	0	

PREV  
IOUS

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PAGE

**(1) DC V ramp time**

Set the voltage increase time for the DC insulation and AC tolerance test. The increase time for the voltage of the DC insulation test can be set from 10-1000 ms , the smaller the setting value the faster it increases.

**(2) Arc detect**

Set whether to enable arc detection.

**(3) Single node**

Set whether to test for empty pins; it is mainly used to test tests with no circuits.

**(4) DC arc Sens**

Set the DC arc detection sensitivity; the lower the value the more sensitive it is, the higher the value the less sensitive it is.

**(5) AC arc Sens**

Set the AC arc detection sensitivity; the lower the value the more sensitive it is, the higher the value the less sensitive it is.

**(6) A (B, C, D, E, F, G, H) PORT MaxPin (Alnet**

Set the final pin of A (B, C, D, E, F, G, H) PORT.

Select S6 [NEXT PAGE] and the LCD screen will display as follows:

HIPOT			File:0909042	PROG
Item	DC	Hipot		
[1] Max.pin(B)	512	512		
[2] Bin Times	Def.	Def.		
[3] TD Times	60.00Sec	0.00Sec		
				PREVIOUS

[1] **Max .Pin(B):**

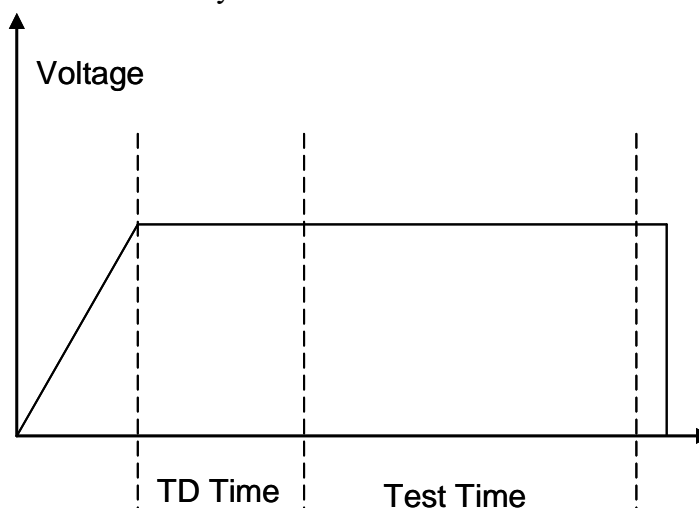
Set the maximum number of pins for the quick binary test.

[2] **Bin Times:**

Binary quick test times, the corresponding point to the high voltage is different in each time. If 8 point is 3 times, the 1st high voltage corresponding point is +-+--+-, the 2nd time is ++--+---, and the 3rd time is ++++----. The default binary test for the 128-point model is 7 times.

[3] **TD Times:**

Users can set to wait for a period of time after the high voltage climbs to the specified voltage before performing the test; this is mainly to allow the DUT charging time constant to stabilize before measuring the insulation value. This way more consistent data can be measured.



## **4.2 Comprehensive Test Implementation**

After the settings above are completed, comprehensive test implementation can be performed. Since the operating procedures are different, it can be divided into two types: Real Time Test and Existed Test; individual descriptions are as follows:

### **4.2.1 Real-time Test**

This part set the test conditions saved in the main memory as the test condition and performs test to DUTs in real time. It is the most commonly used test method. Its step descriptions are as follows:

- (1) First check whether the test condition settings are correct.
- (2) Press [Mode] to display the test mode setting screen.
- (3) Check and confirm whether the test mode settings are correct, and change according to your needs.
- (4) After confirming there are no errors, press [EXIT] to exit and return to the main screen.
- (5) Press [TEST] to start testing.
- (6) When the test is complete or if the test needs to be interrupted, please press [EXIT] to exit.

## 4.2.2 Existed Test

You can load Existed Files saved in the memory to the main memory to perform testing; instructions are as follows:

- (1) Press [File].
- (2) Please use [↑] or [↓] to move the cursor to select the file name to load.
- (3) After confirming, press [Enter]; the tester will start loading the selected file into the main memory
- (4) At this time the LCD screen will return to the main screen and the name of the file you selected will be displayed for current file; file loading has been completed at this time.
- (5) Please press [EXIT] to exit and return to the main screen.
- (6) Press [Mode] to display the test mode setting screen.
- (7) Check and confirm whether the test mode settings are correct, and change according to your needs.
- (8) After confirming there are no errors, press [EXIT] to exit and return to the main screen.
- (9) Press [TEST] to start testing.
- (10) When the test is completed or if the test needs to be interrupted, please press [EXIT] to exit.

## 4.3 File Management

You can execute select old file/delete old file/file sorting actions to make it easier to manage and use the files; instructions are as follows:

### 4.3.1 Select File

Select file loads files saved on the permanent memory to the main memory so that they can be used for other purposes, including testing, editing, and printing etc. Instructions are as follows:

- (1) Press [File].
- (2) The LCD screen will display as follows.

F I L E					SET STEP
Total 12 file(s)					
No.	Name	Size	Date	Time	
1	BURN-1	738	11-26-15	21:54	NEW
2	1RODD-B	2970	11-26-15	21:54	
3	1RODD-A	2970	11-26-15	21:54	UP
4	1REVEN-B	3042	11-26-15	21:54	LOAD
5	1REVEN-A	3042	11-26-15	21:54	
6	INSUL	738	11-26-15	21:54	UP
7	HIPOT	738	11-26-15	21:54	ALL
8	CRD-B	3042	11-26-15	21:54	
9	CRD-A	3042	11-26-15	21:54	DEL.
10	COND	1134	11-26-15	21:54	
11	C	1314	11-26-15	21:54	
12	R	1422	11-26-15	21:54	SORT

- (3) Please use [↑] or [↓] to move the cursor to select the file name to load.
- (4) Press [Enter] to execute the load file action.
- (5) The tester will start loading the selected file into the main memory.
- (6) At this time the LCD screen will return to the main screen and the name of the file you selected will be displayed for current file; file loading has been completed at this time.

## 4.3.2 Step Setting

When you need to perform multiple test steps to a DUT, you can set the test steps that need to be performed using step test to simplify your test process and reduce your test time.

- (1) Press [File] and then press S1 [SET STEP].
- (2) The LCD screen will display as follows:

STEP SETUP				EDIT STEP
Step	File	Step	File	LEA- RN
				STEP TEST

- (3) You can press S1 [EDIT STEP]; the LCD screen will display as follows:

STEP SETUP			UP
Step	File	File list	DOWN
		BURN-1	SET
		1RODD-B	OK
		1RODD-A	CLR.
		1REVEN-B	QUIT
		1REVEN-A	
		INSUL	
		HIPOT	
		CRD-B	
		CRD-A	
		COND	
		C	
		R	

- (4) Use [↑] or [↓] to move the cursor to select and set the test steps needed to be performed to the DUT.
- (5) For example: We selected the three files EX1, EX2 and EX3.
- (6) Use [↑] or [↓] to move the cursor to EX1, and then press S3 [SET].

(7) The LCD screen will display as follows:

STEP SETUP			UP
Step	File	File list	DOWN
1	EX1	STEP-5 STEP-4 STEP-3 STEP-2 STEP-1 EX1 EX2 EX3	SET
			OK
			CLR.
			QUIT

And then use [↑] or [↓] to move the cursor to EX2, and then press S3 [SET].

(8) The LCD screen will display as follows:

STEP SETUP			UP
Step	File	File list	DOWN
1	EX1	STEP-5 STEP-4 STEP-3 STEP-2 STEP-1 EX1 EX2 EX3	SET
2	EX2		OK
			CLR.
			QUIT

(9) Continue to use [↑] or [↓] to move the cursor to EX3, and then press S3 [SET].

(10) The LCD screen will display as follows:

STEP SETUP			UP
Step	File	File list	DOWN
1	EX1	STEP-5 STEP-4 STEP-3 STEP-2 STEP-1 EX1 EX2 EX3	SET
2	EX2		OK
3	EX3		CLR.
			QUIT



(11) Please press S4 [OK] and the LCD screen will display as follows:

STEP SETUP			
Step	File	Step	File
1	EX1		
2	EX2		
3	EX3		

EDIT  
STEP

LEA-  
RN

STEP  
TEST

(12) This way step test setting is complete; S2 [LEARN] can also be used for setting.

(13) For example: Put the DUT in place and press S2 [LEARN]; the LCD screen will display as follows:

STEP SETUP			
Step	File	Step	File
1	Learn...		

LEA-  
RN

OK

(14) Press S1 [Learn] and the 1st step setting will be generated; the LCD screen will display as follows:

STEP SETUP			
Step	File	Step	File
1	STEP-1		
2	Learn...		

LEA-  
RN

OK

- (15) And so on; we can set the 1<sup>st</sup>, 2<sup>nd</sup>...step. Assume we have set a total of five test steps, once setting is completed, press S3 [OK] and the LCD screen will display as follows:

STEP SETUP				EDIT STEP
Step	File	Step	File	LEARN
1	STEP-1			STEP TEST
2	STEP-2			
3	STEP-3			
4	STEP-4			
5	STEP-5			

- (16) This also completes the setting for step test.  
(17) Press S3 [Step Test] or [TEST] and the LCD screen will display as follows:

TEST		
TEST:0	PASS:0	FAIL:0
<div>Plug In the Cable</div> <div>EMPTY</div>		

- (18) Performs the 1st test step; the LCD screen will display as follows:


<b>TEST</b>		<b>TESTING...</b>	
TEST:61	PASS:49	FAIL:12	
EVEN	A61*A62(	1.00Ω	1.01Ω
EVEN	A62*A61(	1.00Ω	1.01Ω
EVEN	A63*A64(	1.00Ω	1.02Ω
EVEN	A64*A63(	1.00Ω	1.02Ω
<b>STEP 2</b>		<b>Step 2...</b>	

- (19) First step PASS, the LCD screen will display {wait for test step 2}.

(20) And so on until all five steps set are completed, then the LCD screen will display as follows:

<b>TEST</b>		TestTime: 35.98Sec
TEST:0	PASS:0	FAIL:0
O/S TEST ..... PASS		
Plug In the Cable		EMPTY

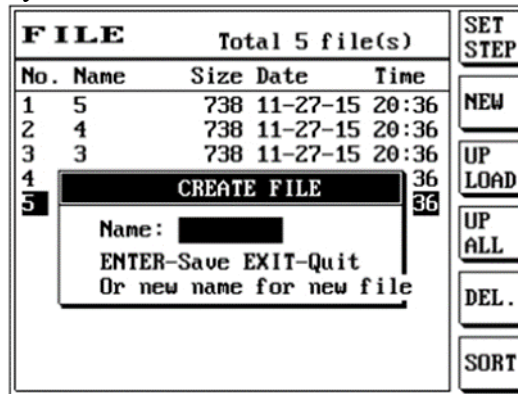
(21) This completes the step test.

	<p><b>Note:</b></p> <ol style="list-style-type: none"><li>1. When each test step is completed, the machine will scan for short circuits (O/S). The machine will only perform the next test step after the short circuit (O/S) status changes.</li><li>2. If you want the machine to perform the next test step without waiting for the short circuit (O/S) status change, please set the [test start method] in the file test mode of that test step as <b>continuous</b>.</li></ol>
---	--

### 4.3.3 Create New File

The function to create a new file in the permanent memory; its instructions are as follows:

- (1) Press [File].
- (2) Press S2 [NEW] to perform the create new file action.
- (3) The LCD screen will display as follows:

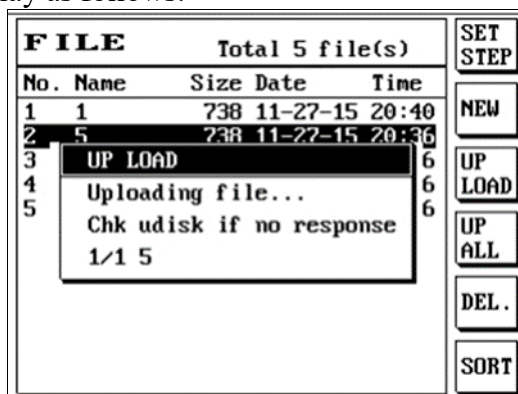


- (4) Enter file name
- (5) Confirm the file name you want to create and press [Enter] to complete the create new file action.

### 4.3.4 Upload File

Upload file uploads the selected single file to the USB flash drive; its instructions are as follows:

- (1) Press [File] and use [↑] or [↓] to move the cursor to select the file name to upload, and insert the USB flash drive into the front panel.
- (2) Press S3 [UPLOAD] to execute the upload file action.
- (3) The LCD screen will display as follows:

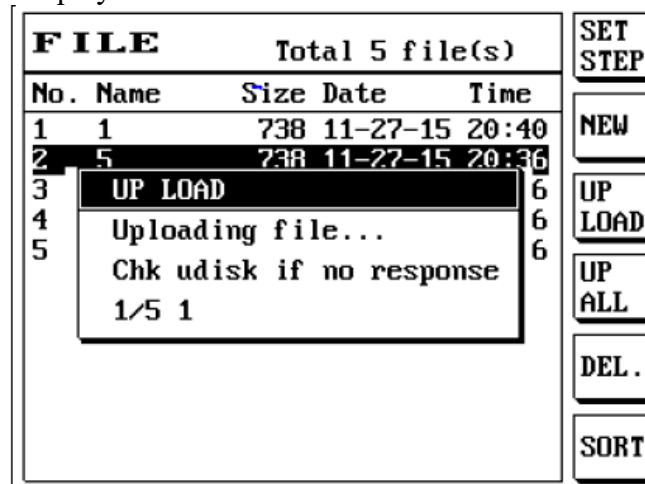


- (4) Confirm the file name you want to upload and press [Enter] to complete the upload file action.

### 4.3.5 Upload All

Upload all uploads all the files to the USB flash drive; its instructions are as follows:

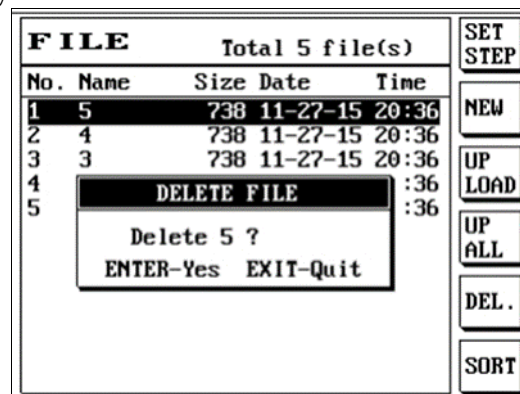
- (1) Press [File].
- (2) Press S4 [UP ALL] to execute the upload all files action.
- (3) The LCD screen will display as follows:



### 4.3.6 Delete File

Delete file permanently deletes files saved on the permanent memory in order to avoid using up precious permanent memory; its instructions are as follows:

- (1) Press [File] and use [↑] or [↓] to move the cursor to select the file name to delete.
- (2) Press S5 [DEL.] to execute the delete file action. [SHIFT] + S5 S5 [DEL.] deletes all files.
- (3) The LCD screen will display as follows:



- (4) Confirm the file name you want to delete and press [Enter] to complete the delete file action.

### 4.3.7 Sort File

Sort file sorts the files according to four rules (); its instructions are as follows:

- (1) Press [File].
- (2) Press S6 [SORT] to execute the file sort action.

The LCD screen will display as follows:

- (3)
  1. Unsorted files.

FILE		Total 5 file(s)			SET STEP
No.	Name	Size	Date	Time	
1	5	738	11-27-15	20:36	NEW
2	4	738	11-27-15	20:36	UP
3	3	738	11-27-15	20:36	LOAD
4	2	738	11-27-15	20:36	UP
5	1	738	11-27-15	20:36	ALL
					DEL.
					SORT

2. Press S6 [SORT] to execute the file sort action.

FILE		Total 5 file(s)			SET STEP
No.	Name	Size	Date	Time	
1	1	738	11-27-15	20:40	NEW
2	5	738	11-27-15	20:36	UP
3	4	738	11-27-15	20:36	LOAD
4	3	738	11-27-15	20:36	UP
5	SORT FILE			:36	ALL
	Ascending by date				DEL.
					SORT

3. File order after sorting.

FILE		Total 5 file(s)			SET STEP
No.	Name	Size	Date	Time	
1	1	738	11-27-15	20:36	NEW
2	2	738	11-27-15	20:36	UP
3	3	738	11-27-15	20:36	LOAD
4	4	738	11-27-15	20:36	UP
5	5	738	11-27-15	20:36	ALL
					DEL.
					SORT

## 4.3.8 Import File

Import file imports files on the USB flash drive to the tester; its instructions are as follows:

- (1) Press [SHIFT] + [File].
- (2) The LCD screen will display as follows:

1. Enters the import file screen.

USB FILE			PROG
No.	SEL	FILE NAME	IMP FILE
0	( )	1	IMP SEL
1	( )	2	SEL ALL
2	( )	3	CANC EALL
3	( )	4	
4	( )	5	

2. Press S1 [PROG] or S4 [SEL ALL] to select the file to import; on the other hand you can press S5 [CANCEALL] to cancel the selected files.

USB FILE			PROG
No.	SEL	FILE NAME	IMP FILE
0	(*)	1	IMP SEL
1	(*)	2	SEL ALL
2	(*)	3	CANC EALL
3	(*)	4	
4	(*)	5	

3. Press S1 [IMP SEL] to import the file currently selected (highlighted) using the up and down buttons; the file will be imported whether it was selected or not. Press S3 [IMP SEL] to import the file selected using S1 [PROG] or S4 [SEL ALL].

FILE		Total 5 file(s)			SET STEP
No.	Name	Size	Date	Time	NEW
1	STEP-5	3058	09-05-17	13:36	UP LOAD
2	STEP-4	3058	09-05-17	13:36	UP ALL
3	STEP-3	3058	09-05-17	13:36	DEL .
4	STEP-2	3058	09-05-17	13:36	SORT
5	STEP-1	3058	09-05-17	13:36	

# APPENDIX A Cable Wiring Configuration

## 1. RS-232C CABLE

Baud Rate : 115200bps

Character Length : 8bits

Stop Bit : One Bit

Parity : Non-Parity

Character : ASCII Character

Function	8740	Controller
RxD	Pin2	Pin3
TxD	Pin3	Pin2
GND	Pin5	Pin5

## 2. PRINTER CABLE

25-PIN connector (male)	36-PIN connector (male)	Signal
1	1	STROBE
2	2	DATA 0
3	3	DATA 1
4	4	DATA 2
5	5	DATA 3
6	6	DATA 4
7	7	DATA 5
8	8	DATA 6
9	9	DATA 7
10	10	ACKNLG
11	11	BUSY
13	13	SLCT
18 - 25	19 - 30, 33	GND



### 3. REMOTE CABLE

The definition of the 15-PIN connector is as described below; **CTL[7:0] is open collector output and requires an external pull-up resistor to provide high potential.**

PIN	Signal Name	Reference Potential	Single DUT	MultDUT signal	Pull-up Resistor
1	CTL0	EGND	Testing	Testing	Must use 4.7K-10K $\Omega$
2	CTL1	EGND	High voltage testing	High voltage testing	Must use 4.7K-10K $\Omega$
3	CTL2	EGND	PASS Status	Total PASS	Must use 4.7K-10K $\Omega$
4	CTL3	EGND	FAIL Status	Total FAIL	Must use 4.7K-10K $\Omega$
5	CTL4	EGND		DUT 1 FAIL/PASS	Must use 4.7K-10K $\Omega$
6	CTL5	EGND		DUT 2 FAIL/PASS	Must use 4.7K-10K $\Omega$
7	CTL6	EGND		DUT 3 FAIL/PASS	Must use 4.7K-10K $\Omega$
8	CTL7	EGND		DUT 4 FAIL/PASS	Must use 4.7K-10K $\Omega$
9	EGND	EGND	The internal isolated power reference potential and GND has an insulation relationship of >2G $\Omega$ .		
10	SW1	EGND	Test can be started when EGND + SW1 short-circuits (Panel Test).		
11	SW2	EGND	Exits when EGND+ SW2 short-circuits (Exits Panel).		
12	RESET	EGND	Machine reset when RESET+ EGND short-circuits (Panel Reset).		
13	+5D	EGND	The internal isolated power's 5V 0.2A output capability must not short-circuit with the external power.		
14	+12D	GND	The internal 12V requires the use of a REMOTE extension cable. Connect EGND and GND.		
15	EGND		The internal isolated power reference potential and GND has an insulation relationship of >2G $\Omega$ .		

#### 4. REMOTE Output Waveform

SW1 (TEST)

CTL0 (Testing)

CTL1 (High Voltage Output)

CTL2/3 (PASS/FAIL)

Continuous

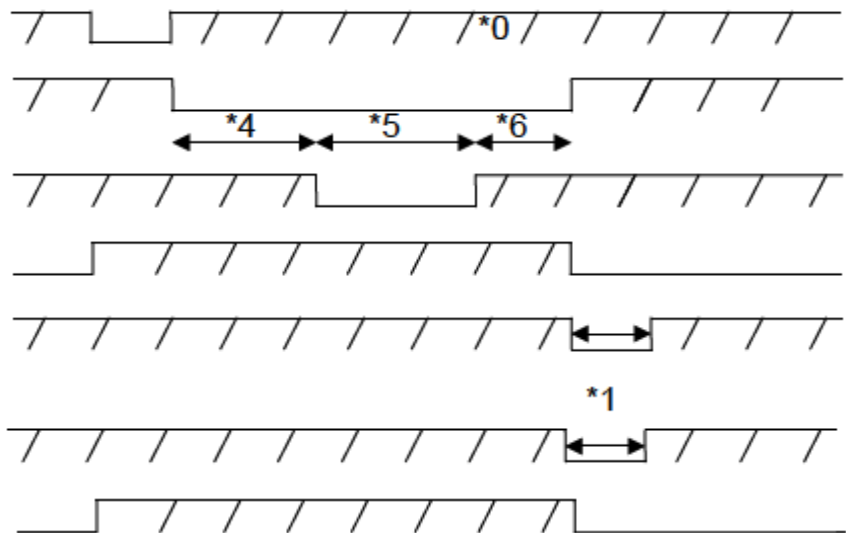
CTL2/3 (PASS/FAIL) Pulse  
Signal

CTL4-CTL7 (PASS/FAIL)

Multi-DUT Pulse Signal

CTL4-CTL7 (PASS/FAIL)

Multi-DUT Continuous Signal



\*0 Output high potentials require pull-up resistors to achieve; the voltage can reach a maximum of 30V.

\*1 Pulse holding time output can be set to 1ms-1000ms.

\*2 Activate test when there is low potential.

\*3 Hold until the next round of testing has started.

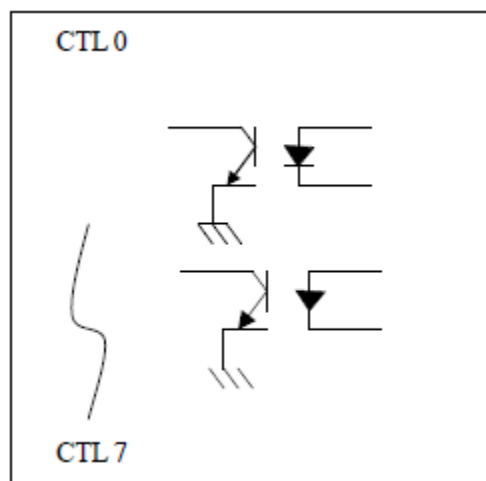
\*4 The length of this interval is set according to the pretest items of the high voltage test.

\*5 There is the only output when AC/DC high voltage is enabled.

\*6 The length of this interval is set according to the post-test items of the high voltage test.

The above is the output waveform for a single test file when defined as all tests completed; details are set according to the test file.

#### 5. CTL0 - CTL1 internal circuit diagram is as shown in the figure below:



## APPENDIX B Test Range and Functions

Item	Symbol	Test range	Error range	Minimum test voltage
			<256   512	
Resistance	R	0.10Ω - 1.99Ω	±20%	
	R	2.00Ω - 4.99Ω	±10%	
	R	5.00Ω - 49.99Ω	±5%	
	R	50.00Ω - 99.99KΩ	±2%	
	R	100.0KΩ - 199.9KΩ	±5%	
	R	200.0KΩ - 499.9KΩ	±5% / 10%	
	R	500.0KΩ - 999.9KΩ	±5% / 10%	
	R	1.00MΩ - 1.99MΩ	±10%	
Capacitance	C	1pF-19.99pF	±20%	
	C	20.00pF-39.99pF	±10%	
	C	40.00Pf - 3.0uF	±5%	
Conduction	COND	0.1Ω - 50.0Ω	±1%	
Insulation resistance	IS	1MΩ - 1.99MΩ	±10%	50V
	IS	2.00 MΩ - 4.99 MΩ	±10%	50V
	IS	5.00 MΩ - 9.99 MΩ	±10%	50V
	IS	10.00 MΩ - 19.99 MΩ	±10%	50V
	IS	20.00 MΩ - 49.99 MΩ	±10%	50V
	IS	50.00 MΩ - 99.99 MΩ	±10%	100V
	IS	100.0 MΩ - 199.9 MΩ	±10%	200V
	IS	200.0 MΩ - 499.9MΩ	±20%	500V
	IS	500 MΩ - 1000.0MΩ	±20%	1000V
Diode	D	0.6 - 6.8V	±25%	
		>=7.0V	---	
Short circuit determination value	O/S	2KΩ - 100KΩ	±10%	
Intermittence test		20Ω - 2KΩ	±10%	
Unilateral test		1pF-999pF	±20%	
HIPOT current leakage		0.02mA-0.0499mA	±50%	
		0.05mA-0.099mA	±20%	
		0.1mA-0.199mA	±20%	
		0.2mA-0.499mA	±20%	
		0.5mA-4.99mA	±10%	

## APPENDIX C Technical specifications

Advanced functions	Programmable continuous testing
	Automatic pin search
	Self-diagnosis
	Self correction offset
Basic accuracy	±5%
Test scan mode	Switchable automatic/short circuit scan
Test signal source	
Low voltage test signal	
Rated output	5Vdc
	±5% accuracy
DC insulation/AC tolerance test range	
8740-FA	50-1500VDC /100-1000VAC
8740-NA	50-1000VDC /100-700VAC
8740-NAC	50-1000VDC /100-700VAC
8740-N	50-1000VDC /-----
	50V Resolution
High voltage output accuracy	±5% accuracy
Display/sound device	320x240 resolution graphic LCD display
	6 digit digital display digit
	Pass/Fail LED red green indicator/screen display/sound
Test pin	128 independent measurement contacts.
	256 contacts can be selected.
	High voltage correction positive and negative output
	Automatic pin search terminal
Control panel	System/quick/edit/function button group
Interface	RS-232 communication port (only for future connection software use)
	Printer port
	Remote control port
	USB port (test result/test setting file/system update) <a href="#">USB Disk Detailed Supported Specifications:</a> <a href="#">Speed USB 2.0, File System: FAT32,</a> <a href="#">Capacity 32G Bytes and below (including 32GB).</a>
Memory device	Built-in 2048KB SRAM
	A maximum of 250 set of test setting files can be saved.
	Built-in CR2032 battery
Power supply	AC 115/230V 1.1A Switchable Voltage Input±10%
	60/50Hz

## APPENDIX D Version

10/14/2015 V1.0	Original Issue
10/14/2015 V1.01	Modified specifications, added USB function description.
11/18/2015 V1.02	Modified UART and Remote port descriptions.
12/09/2015 V1.03	Added test speed operations and test condition descriptions.
5/20/2016 V1.04	Adjusted the R value error range in technical specifications.
8/18/2016 V1.05	Added 8740NAC model for USB TYPE-C to use.
9/5/2016 V1.06	Modified 512point model resistance measurement accuracy and all series resistance measuring range.
9/6/2016 V1.07	Removed invalid function descriptions under RCD mode.
10/26/2018 V1.08	Added REMOTE PORT instructions. Pin connection.
2/21/2019 V1.09	Modified machine fuse specifications and added current indication for power.
6/25/2019 V1.10	Added USB Host Disk specification descriptions. Modified placement and storage descriptions.
9/06/2019 V1.1	Added introductions to networking fixture, constant current box fixture, and the set test environment function.
10/01/2019 V1.2	Introductions to AC and DC offset and test delay (AC/DC high voltage) functions.