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When you rent Test Equipment from TDC, we want you to know that you will have a dedicated personal service from start to finish. Our Customer Service team is here to support you throughout your rental period.

TDC are independent specialists promoting all high quality manufacturers and instrument types. Equipment can be delivered Next Day or Same Day to suit your requirements.

When you are finished, simply contact us to arrange your equipment collection or alternatively you can despatch it back to us – we make it easy.

RENTING FROM TDC JUST MAKES SENSE

By using TDC Test Equipment Rental Solutions, you benefit from our extensive rental inventory that is second to none. We constantly refresh our equipment range with branded equipment manufacturers such as Megger, FLUKE, Chauvin Arnoux, OMICRON, FLIR, b2 HVA, Agilent Technologies, Dranetz BMI, Fujikura, JDSU, Ametek Jofra, GE DRUCK, RAE Systems, TSI Airflow, Rohde & Schwarz, NORBAR, PANAMETRICS, Tektronix and many more.

You can utilise our rental equipment to suit your own requirements, from one week to as many months as you need. You only pay for what you use down to the day. Renting with TDC is straightforward and easy. Our expert Sales and Applications Engineers will find the best solution to suit your application.

Delivery & Collection is arranged by us - we make it hassle free and easy.

TDC 6 POINT RENTAL GUARANTEE - OUR REPUTATION MATTERS



1 SAME DAY DISPATCH

Many of our customers operate to very strict deadlines. Providing the order is placed and confirmed before 3pm, your equipment will be despatched the same day.



2 QUALITY

All Equipment is checked prior to dispatch to ensure it is servicable and in safe working order. Certification checks are standard.



3 SUPPORT

We will provide you with enough information to make an informed choice of the correct equipment required for your application.



4 PRICE

We offer a simple price match promise. We'll match any genuine competitor quote.



5 CUSTOMER SERVICE

We can promise that throughout your rental period, we will do our utmost to provide you with the best customer service. All information we provide is in good faith and free of charge. We will provide a quote for any consultancy or professional advice that may be required.



6 REPUTATION

We know we are only as good as our last job. We don't just want regular customers - we want to build loyal customers.



For all enquiries, please contact: Gordon Thow (Test Equipment Rental Manager)

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 **HYUNDAI ELECTRIC**



TEST EQUIPMENT RENTAL SERVICES

Higher OCR Checker V103

User Manual

HIGHER OCR CHECKER (User Manual)



Last Update: 2016-12-13
Document Version: rev1.03

Refer to this manual before use this equipment.
Keep this manual with the equipment.

The symbols which might appear on manual or checker says messages below



WARNING

It may cause critical injury or take your life.

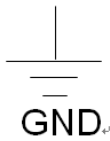
Do not continue your work when this symbol appear on monitor or manual until the skilled engineer carries out proper action



CAUTION

It may cause fire or serious damage to this equipment or others.

Do not continue your work until the skilled carries our proper action.

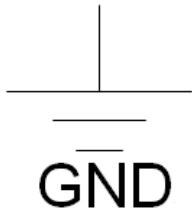


EARTH

This is the conductor part which should be connected to external protecting ground device for safety.



WARNING



1. Refer to this manual while working near the place with left warning symbol. If not it may cause critical injury also the checker's degradation. This symbol is used with other warning symbols.

2. When the voltage is applied to this checker, connect 3-pin power code to ground power code. If there is no 3-pin power code make a ground through green line with convertible adapter or connect frame ground in rear board to earth directly. If there is no grounding works it may cause serious injury or damage to checker.



WARNING

3. User can't repair this checker. Do not try to open cover and disassemble inner part. This equipment have high voltage component which might cause serious injury for non-skilled engineer. Take care of damage to inner part.



CAUTION

4. This checker should be used in right place if the check is placed with its side up. It is unstable and might fall down even little impact.

**product
defective
prevention**

1. Use rated voltage

Do not use the checker under the other voltage is applied except its rated voltage

2. Proper ventilation condition.

To prevent product's overheating keep proper ventilation condition

3. Do not operate checker under the suspicion of fault.

If you become suspicious of damage or fault of this checker, contact immediately to manufacturer.

4. Do not operate equipment once protecting device is defected.

If there is damage in checker or it malfunctions, protection device might get damaged. Do not operate equipment under this condition and contact manufacturer.

**Caution for
place**

1. Material or liquid inflow

Do not insert any material into the checker. dangerous voltage might be applied through it and cause electric short. Don't spill water on the equipment.

2. Unstable place

Do not place on tripod, installation, wagon and table with projecting rack which may cause falling down. Which may cause human's injury and product's damage

**Caution for
storage**

- Keep all equipment in their case at all times.
- Keep all accessories in case at all times

Caution for Warranty

1. When defective is over the coverage of this manual
2. When defective is from wrong operation, use, and user's remodeling.
3. When defective is from unreasonable use or totally over normal use range
4. When defective is from insufficient or inappropriate maintenance
5. When defective is from fire, earthquake, flood and disaster.
6. When defective is from use of not honest component
7. When defective is from use in undesignated installation place and power supply

※ All warranties are invalid if defective is from above reasons

※ All warranties are valid for the initial purchaser.

※ Manufacturer doesn't take responsibilities for defective from user's carelessness.

■ Manual composition

This manual composes of 8 chapters. Each chapter's outline is below

■ Each Chapter's Composition

Chapter 1. General Overview

Product Overview, Equipment, Specification, Using Environment

Chapter 2. Preparation Before Use

Using place, Environment Condition, Safety Action, Battery Replacement.

Chapter 3. Front Panel

Appearance and Control, Control panel

Chapter 4. Breaker Test

Preparation for trip and pick-up test, Menu Tree, Test Method

Chapter 5. OCR single Test

Preparation for OCR trip and pick-up test, Test Method

Chapter 6. Checker Calibration

Preparation for Checker Calibration, Calibration method

Chapter 7. OCR DATA Communication

Preparation for OCR DATA Communication, Communication method

Chapter 8. Software Update

Preparation for Update, Update method, Troubleshooting

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Chapter 1. General Overview

This Chapter explains overview of HIGHER OCR CHECKER, system composition and specifications.

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1 General Overview

1.1 Product Overview

This auxiliary device is OCR Checker, used at ACB in test position. Device generate fault wave and apply it to OCR for testing UPR-TYPE Over Current Relay status.

1.2 Usage

For UPR-Type OCR Test



1. The Device simulates secondary output current of CT, to test ACB UPR TRIP function.
2. Test result by the device can imply errors in trip time due to simulated signal.
3. If more accuracy needed, test the UPR with applying current directly to CT primary side.

1.3 Specifications

Item		Index
Power Input		AC/DC 100~220V, 50/60Hz
Fault wave Voltage Source	Amplitude	0mV ~ 3400mV
	Accuracy	$\pm 3\%$ @ (RMS 200mV~3400mV)
Size		H:165mm * W:411mm * D:321mm

1.4 Comparability

Following UPR models can be tested with the device.

- 1) UPR-1L-GL 2.0, UPR-2L-GS 2.0, UPR-1S-AL 2.0, UPR-2S-AS 2.0
- 2) UPR-LN, UPR-LA, UPR-LP, UPR-LH, UPR-SN, UPR-SA, UPR-SP

1.5 Box Content



Contents	Quantity
High Accuracy OCR CHECKER	1EA
TOUCH PEN	1EA
POWER CABLE	1EA
10-pin cable (to OCR test connector)	1EA
4-lug cable (COM & PTA TEST CABLE, for auto-connection type only)	1EA
12-connector cable (for manual-connection type or OCR single test)	1EA
Gender cable (for manual-connection type only)	1EA

Chapter 2. Preparation Before Use

This Chapter explains preparation and safety steps before use. Safety steps are necessary to prevents damaging device and injuring user.

Please read this chapter carefully before use the device.

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2 Preparation Before Use

2.1 Using Place and Environment Condition

The device should be used under conditions below.

- 1) Altitude: under 1,000m
- 2) Temperature
 - A. Using Temperature: 0°C ~ 55°C
 - B. Keeping Temperature: -25°C ~ 70°C
- 3) Moisture Condition: Under 80% (no dew condensation)

2.2 Not Allowed Place

Device performance is not affected by any other weather condition (precipitation, snowfall, sunshine, etc.), but for best performance beware the places below.

- 1)The place with exposure to gas
- 2)The place with extreme vibration
- 3)The place with high moist
- 4)The place with exposure to direct sunlight.
- 5) The place with extreme voltage fluctuation

2.3 Safety Steps

2.3.1 Safety actions against electric short.

2.3.2 Check device power before turn it on.

Device can get damage if voltage is over rate voltage.

2.3.3 Check input level

Checker has self-protection for 10~30% over input. But extremely high voltage or current possibly makes damage to device. Check the input signal level.

2.4 Power on

2.4.1 Connect enclosed adaptor to AC 110~220V terminal in top-right

2.4.2 Push the power switch in top-right to (-) direction

Chapter 3. Front Panel

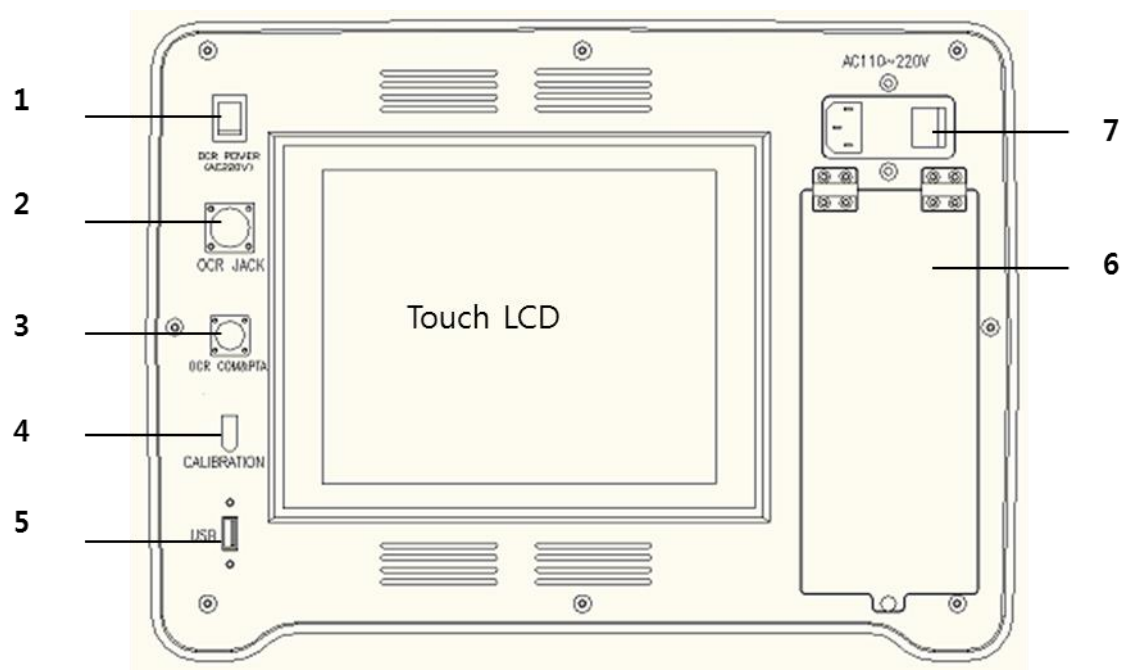
This chapter explains front panel.

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3.1 Front Panel



No.	
1	Power switch for OCR Single Test (OFF position)
2	10-pin cable port (Error Signal Output)
3	4-lug cable port (OCR COM & PTA) / 12-pin connector port (OCR Test)
4	Checker Calibration Port
5	USB port
6	Cable storage
7	Checker power cable terminal & Power Switch

Chapter 4. Breaker Test

This chapter explains how to do trip and pick-up test.

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4 Breaker Test

4.1 Preparation Before Test

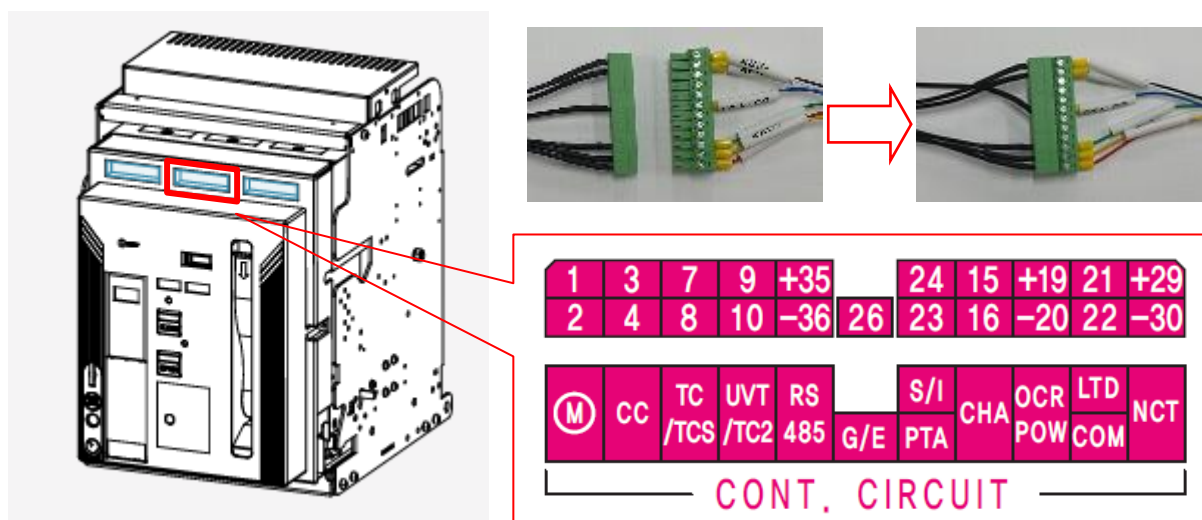
- Check the testing OCR type. Connect OCR JACK port at checker and test port at OCR.
Caution:
 - The circuit breaker should be in Test position, or no-load state while test.
 - Check the OCR turned off before connecting checker and OCR.
 - Check the “OCR POWER” SWITCH in CHECKER is OFF-state.
 - To get accurate trip time at STD, GFT test, short ZSI input (33, 34) at ACB terminal block in OCR Test. (A, P, H type OCR)



- Auto Connection TYPE : Connect 4-lug cable to terminal in OCR.

OCR port number	COM & PTA TEST CABLE label
23	PTA D1
22	PTA D2
35	485+
36	485-

- Manual Connection TYPE: Connect 12-pin connector and gender, and connect it to CONNECTOR in top of OCR.



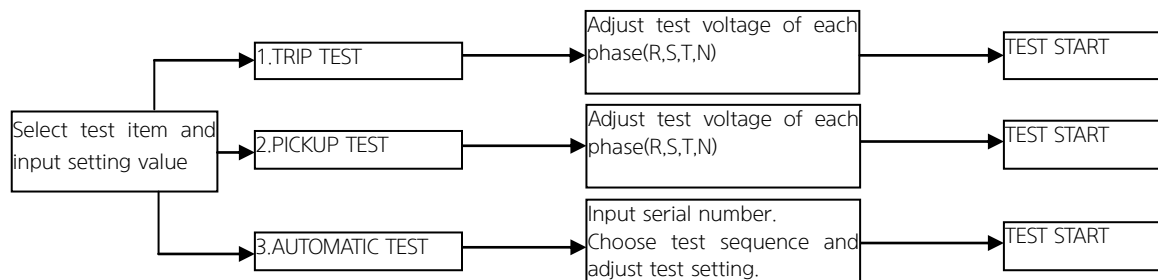
- Turn on the checker. Display shows main menu after logo disappeared
- **Caution for Cable Connection:**
 - 1) Check the OCR turned off before connecting checker and OCR.
 - 2) Check the “OCR POWER” SWITCH in CHECKER is OFF-state.
 - 3) When test A, P, H type OCR, after connect gender cable turn on the OCR POWER switch in device, and test it
 - 4) To get accurate trip time at STD, GFT test, short ZSI input (33, 34) at ACB terminal block in OCR Test. (A, P, H type OCR)



1. The circuit breaker should be in Test position, or no-load state while test.
2. Don't connect checker cable while OCR's control power applied.
3. Don't touch OCR and Checker cable while testing.
4. Beware to direction of cable when connect OCR and Checker.
5. Keep “OCR POWER” switch in OFF position at checker before connecting 10-pin cable always.
6. If you ignore them, OCR can be burned

4.2 Menu Tree

4.2.1 Test Menu Tree



4.3 OCR Checker Test Function

- OCR Checker can do TRIP time test PICKUP level test.
- Input values in Home → BREAKER TEST → Trip unit configure screen. OCR Type, Ict, In, Ir, FREQ, CT values should be same with OCR. [Fig. 1] After it, choose TRIP or PICKUP Test.
- Power Control function prevent powering 24V to connector cable when disconnected state. For further instruction about Power Control function, refer Power Control Setting in 15 pages.
- If trip unit is L type, use values same with OCR. [No. 1 in Fig. 1]
- If trip unit is S type, In value is rate current. [No.4 in Fig.1]

1. For more accurate test, following setting values are recommended.

Test signal should be set that L Type is 6 times and S Type is 1.2 times to trip at the time of UPR Tr setting.

ex) If UPR Ir = 1.0 setting,

UPR Type	LN, LA, LP, LH	SN, SA, SP
LTD Test level	6.00 Ir	1.2 Ir



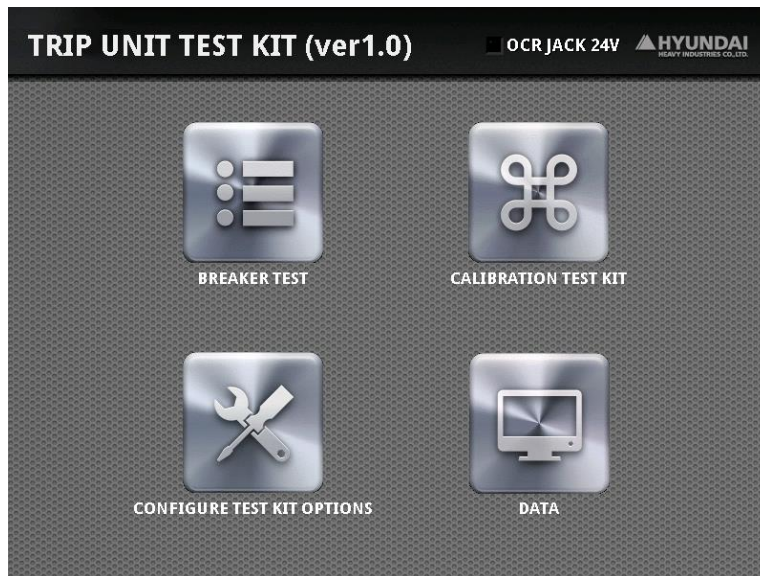
경고

For Short time, Instantaneous and Ground fault test, test signal should be set over 110% of UPR Isd, Ig and Ii setting.

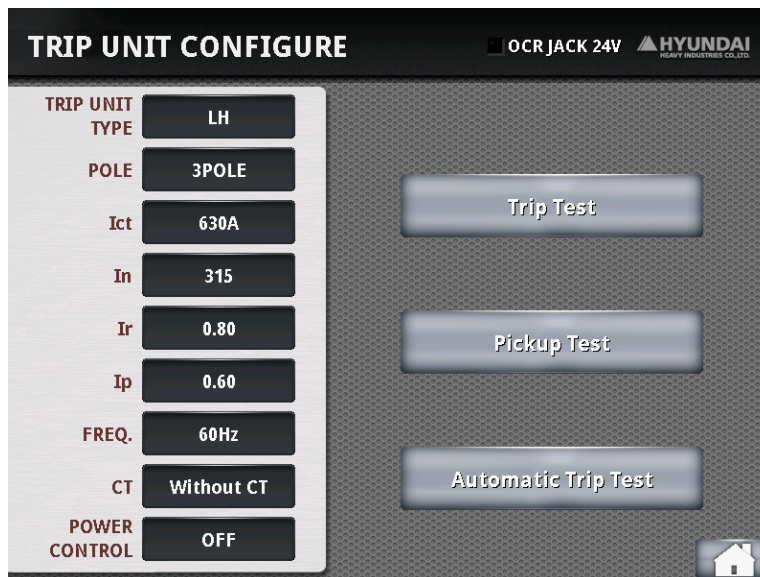
ex) If UPR Isd: 4, Ig: 0.2, Ii: 6 setting

UPR Type		LN, LA, LP, LH	SN, SA, SP
Test level	STD	4.40 In	4.40 In
	GFT	0.3 Ict	0.3 Ict
	INST	6.6 In	6.6 In

2. In test except LTD, if test level set to 100%, trip time can be different from the catalogue spec.



OCR Chcker
Home screen

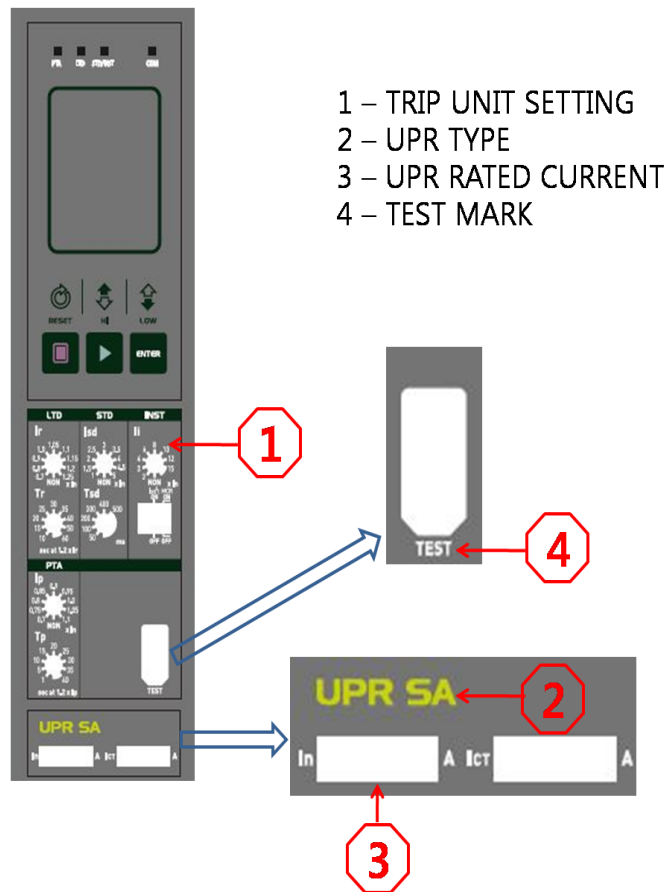


Touch the item to set value. Choose the item in popup dropdown list.

If OCR is attached to ACB, CT should be set to "With CT". If OCR single testing, choose "without CT".

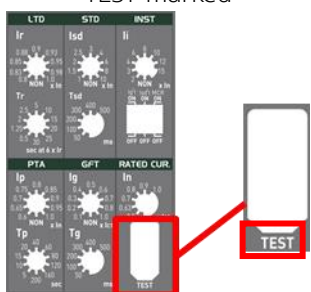
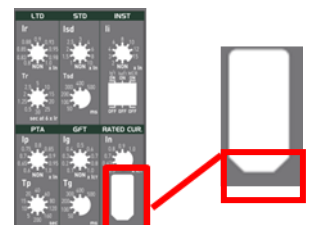
* TRIP UNIT TYPE SETTING BY OCR TYPE TABLE

CHECKER TRIP UNIT TYPE	OCR TYPE	
LN	1L-GL 2.0	NONE LCD TYPE
LA	2L-GS 2.0, LAG 2.0	LCD TYPE
LP	2D-GT 2.0	ENERGY TYPE
LH	-	HARMONIC TYPE
SN	1S-AL 2.0	NONE LCD TYPE
SA	2S-AS 2.0	LCD TYPE
SP	-	ENERGY TYPE



[Fig. 1] Trip unit example in circuit breaker for configure the Trip unit Parameter screen

* POWER CONTROL Setting

UPR TEST MARK	CHECKER POWER CONTROL Setting	Remarks
<p>TEST marked</p> 	ON	Test can start only when UPR and checker are properly connected.
<p>TEST not marked</p> 	OFF	Test can start regardless connection state. Please refer "Caution for Cable Connection" at 11 pages. If cable connected or disconnected while testing, it may damage OCR.

Caution

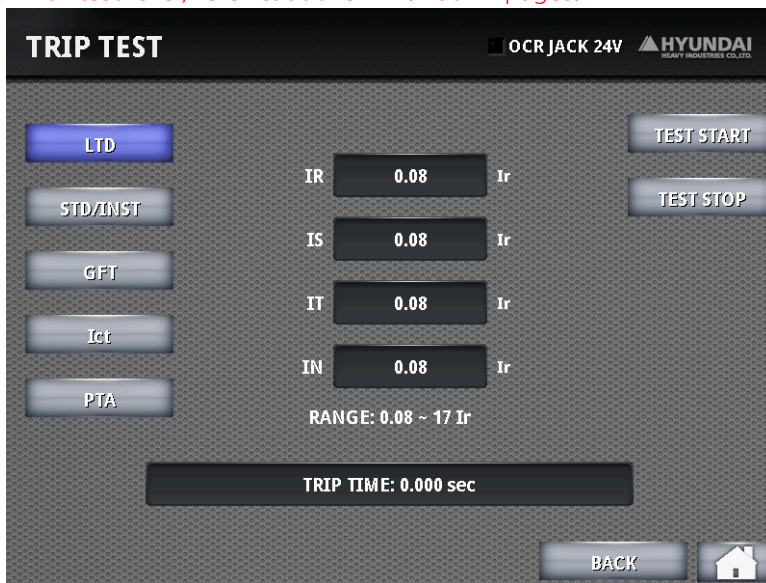
- 1) Only UPR with TEST MARK can available Power Control function of the Checker.
- 2) If UPR and Checker are disconnected while Power Control ON state, the device immediately halt the powering through cable.
- 3) If there is no TEST Mark on UPR, Power Control should be turned off to test the device.
(START button is disabled when Power Control is ON state).

4.3.1 TRIP TEST

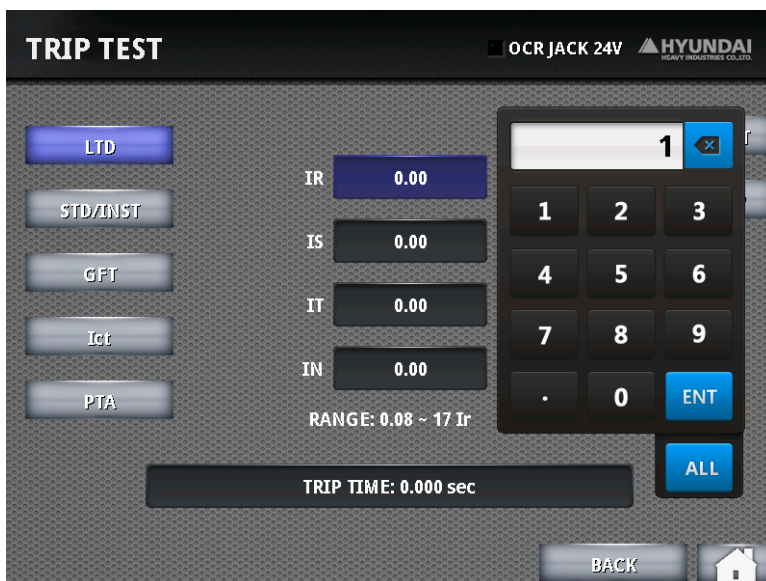
- HOME -> BREAKER TEST -> Trip unit configure -> TRIP TEST Screen
- Measure TRIP TIME. Can set test voltage amplitude in each phase.
- Can choose five test item in TRIP SET –LTD, STD/INST, GFT, Ict, PTA. Each shown value is multiplied by 0, 0.08~17.00 times.
- Shown unit of values varies by item. For example, "LTD" test shows values by Ir. By In in "STD/INST" test, by Ict in "GFT" and "Ict" test, and by Ip in "PTA" test
- 4-lug cable should be connected to PTA ports (22-23) at ACB for PTA test.

Caution:

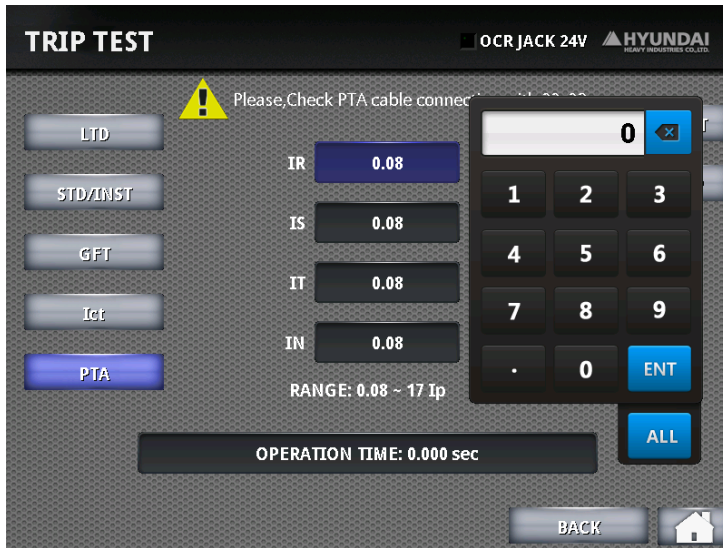
- 1) Don't touch OCR and Checker cable while testing or green light at "OCR JACK 24V" turns on.
- 2) For test level, refer cautions in 4.2 at 12 pages.



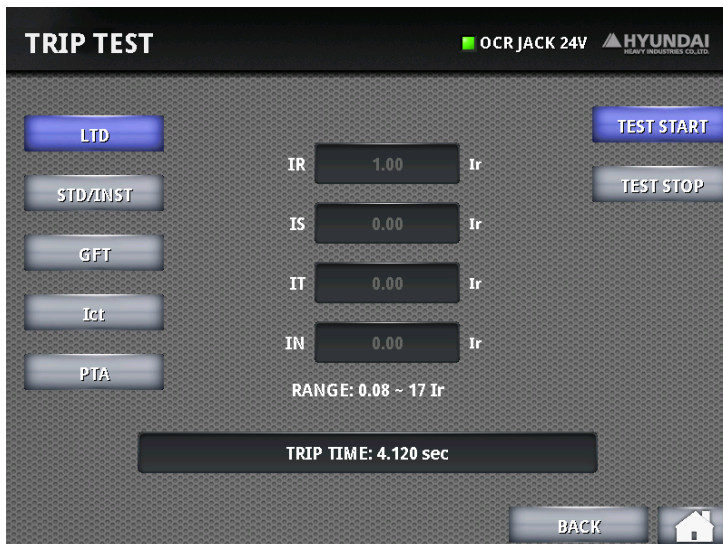
TRIP TEST Screen
Choose the test item in LTD, STD/INST, GFT, Ict, PTA



Touch the phase want to change amplitude, and then pop-up input window is shown. Input the error signal amplitude and touch ENT to apply. If touch ALL, changes are applied to all phases (R,S,T,N).



In PTA test, check the connection between 4-pin connector (OCR COM & PTA port) and OCR.



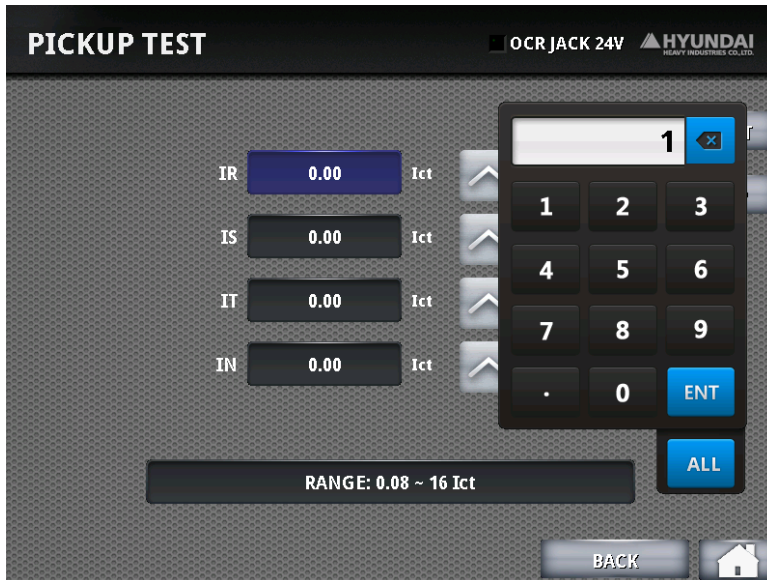
After setting complete, touch TEST START button. Error signal is generated, and green light is turned on at OCR JACK 24V in menu bar.



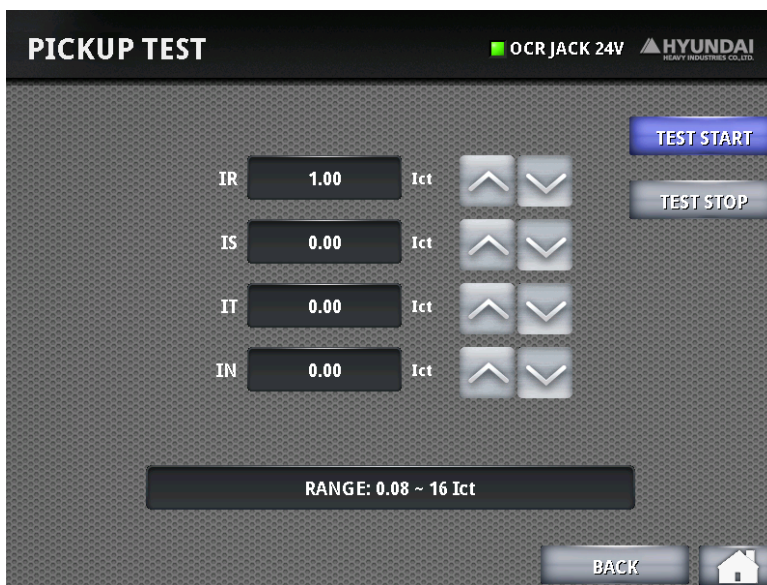
Test ends when OCR tripped, or user touches TEST STOP. OCR JACK 24V light is turned off.

3.3.2. PICKUP TEST

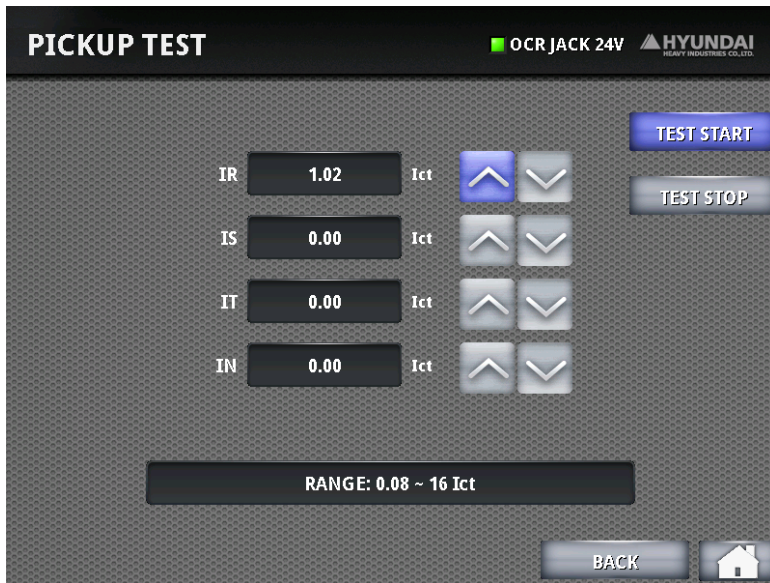
- HOME->BREAKER TEST 선택->Trip unit configure -> PICKUP TEST
- Test shows PICKUP LEVEL at screen. You can change test voltage amplitude in each phase before or during the test.



Touch the phase want to change amplitude, and then pop-up input window is shown. Input the error signal amplitude and touch ENT to apply. If touch ALL, changes are applied to all phases (R,S,T,N).



Touch TEST START button. Fault wave is generated, and green light is turned on at OCR JACK 24V in menu bar.

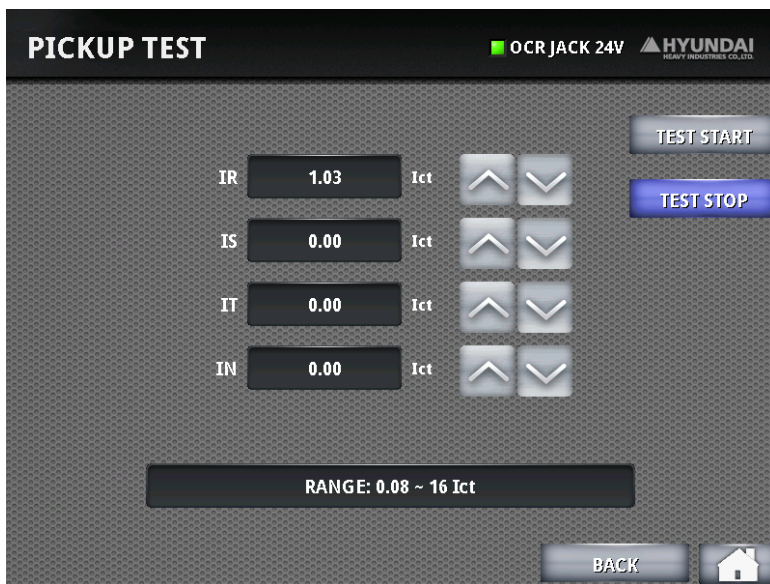


Test signal's value is changed by touching buttons.

Start from lower value than PICKUP set value, and increase it to test OCR's PICKUP.

In long time test, LED in front flickers.

In STD/INST test, after applying maintain values at least 3 seconds for test accuracy.



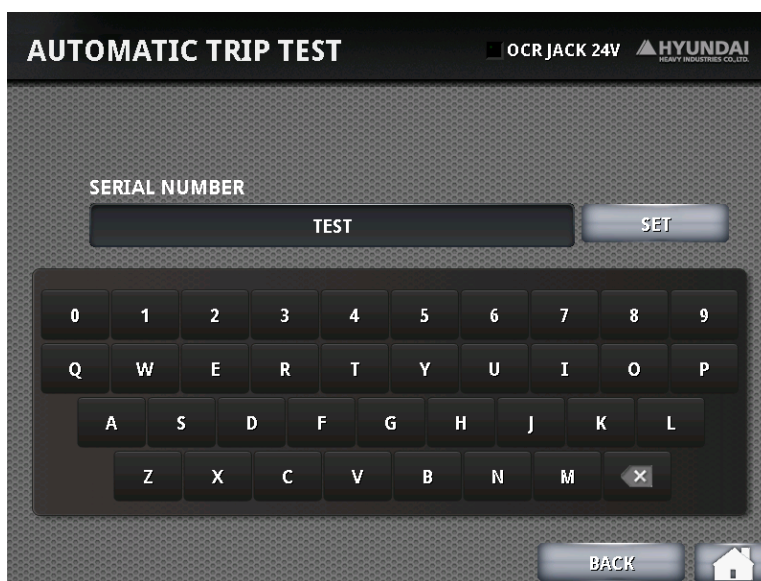
PICKUP LEVEL is shown. Touch TEST STOP to stop the test.

3.3.3. AUTOMATIC TRIP TEST

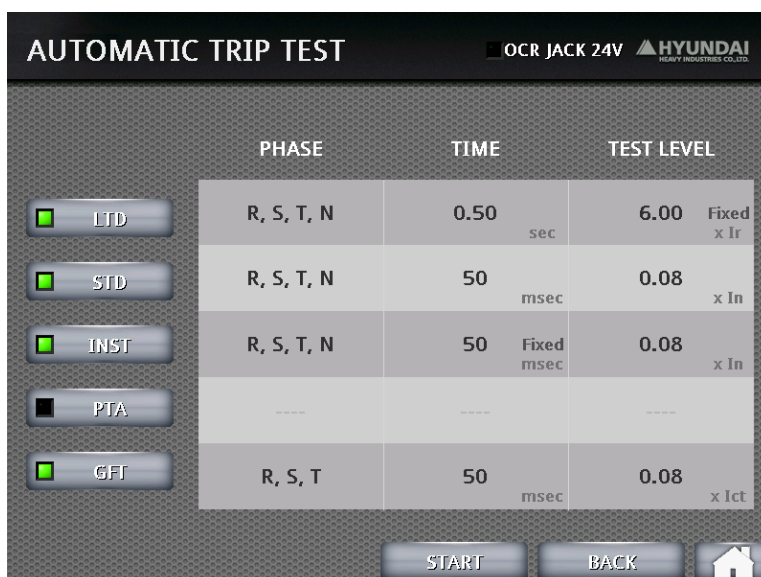
- HOME -> BREAKER TEST -> Trip unit configure -> AUTOMATIC TRIP TEST
- Can perform multiple tests at once. After test, can see all tests result in one screen, and generate report file and save it in connected USB memory.
- Can select test sequence, and adjust test level.
- In TRIP SET, you can choose one or multiple of the following test items, LTD, STD/INST, GFT, Ict, PTA. Each setting range for test is from 0.08 to 17.00.
- By test item, the standard for test level of simulated fault signal is varied. For example, standard is "Ir" at LTD, and "In" at STD/INST.
- For PTA test, 4-lug cable should be connected to PTA terminal (22~23) in ACB terminal block.

Cautions:

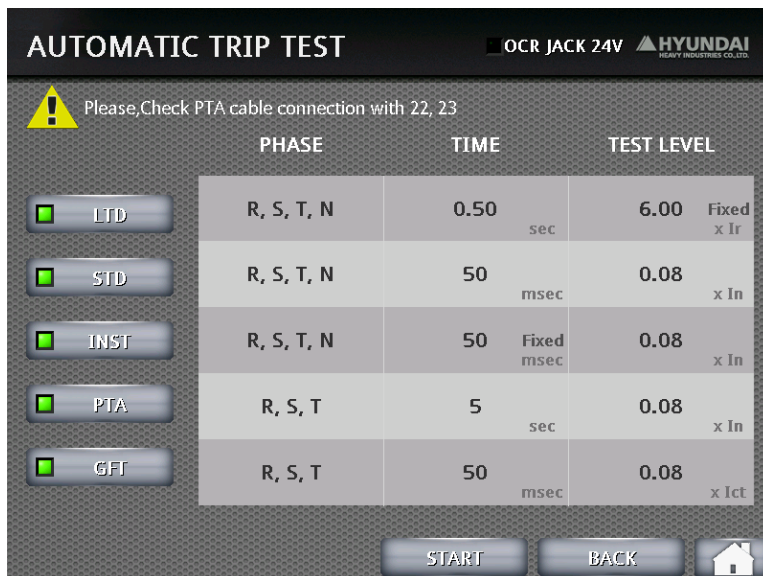
- 1) Don't touch OCR and Checker cable while testing or green light at "OCR JACK 24V" turns on.
- 2) For test level, refer cautions in 4.2 at 12 pages.



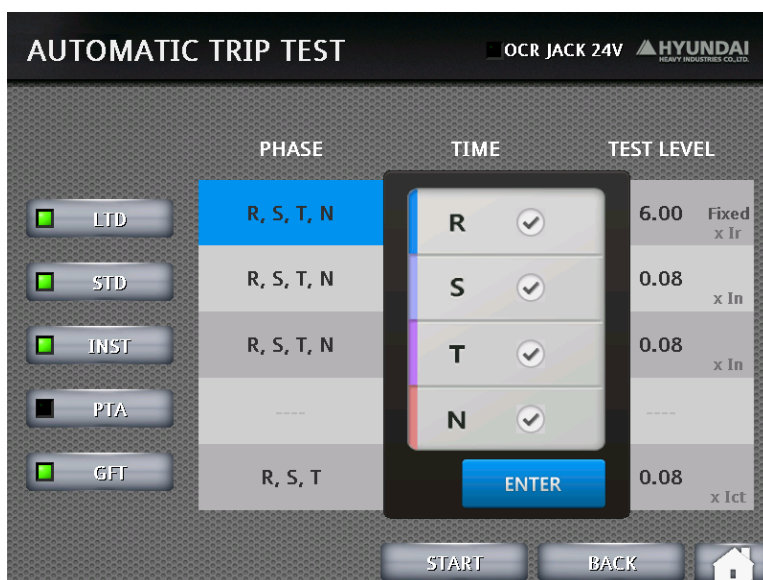
For managing test result, input serial of ACB UPR.



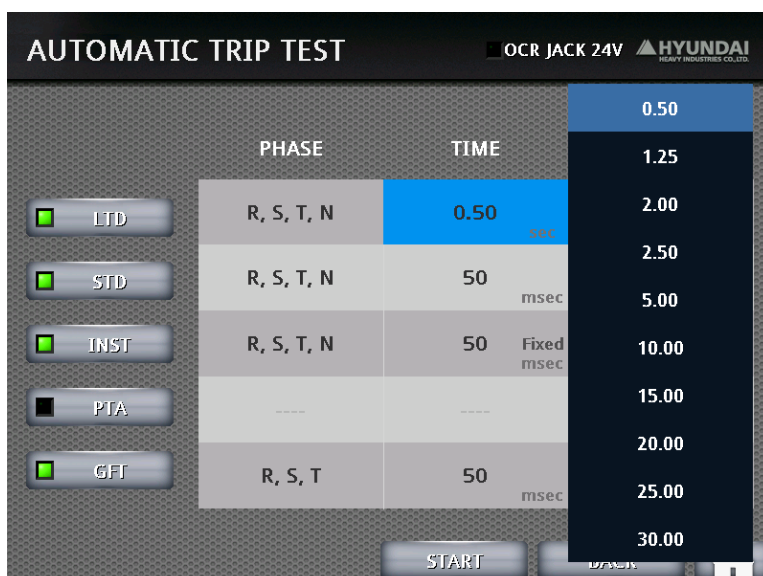
Touch the test item buttons want to perform in left side. Setting values for each test are shown. If setting values can't be changed, "Fixed" sign will be appeared next to it.



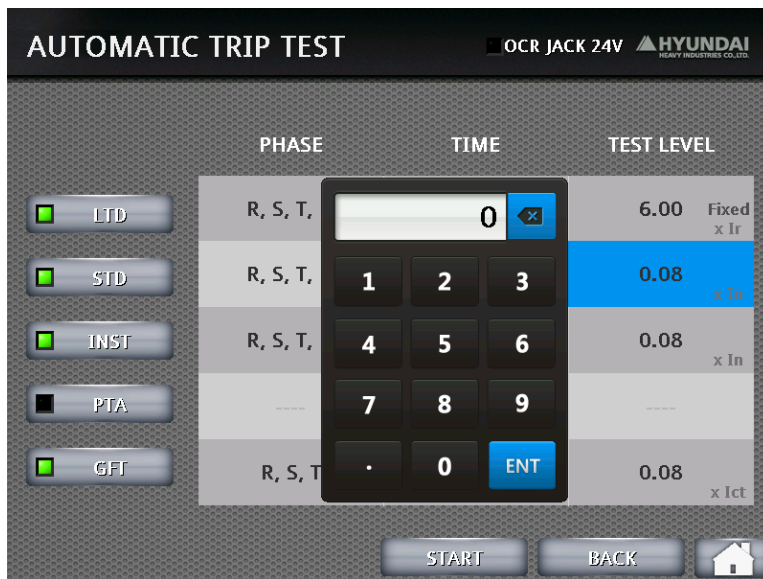
If perform PTA test, check the connection between 4-lug Wire (OCR COM & PTA terminal) and OCR.



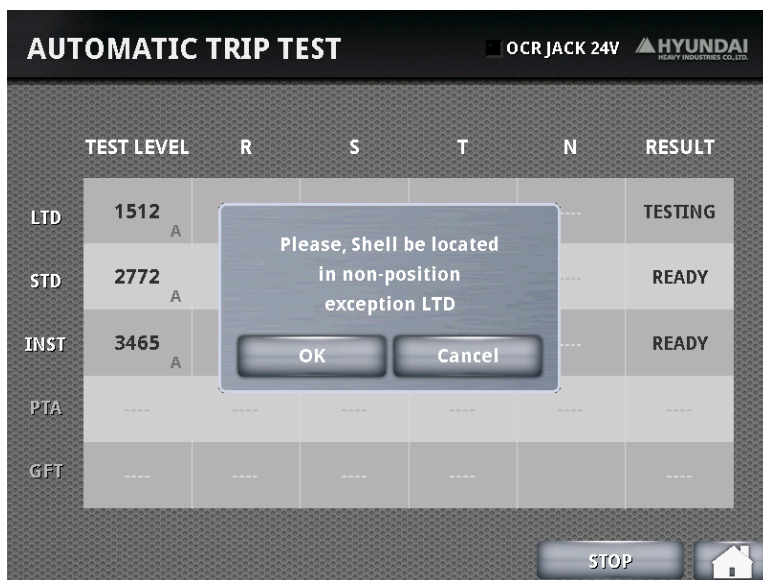
Pop-up screen for selecting test phase will be appeared by touching phase cell of each test. Select the phase, and touch "ENTER" to apply it.



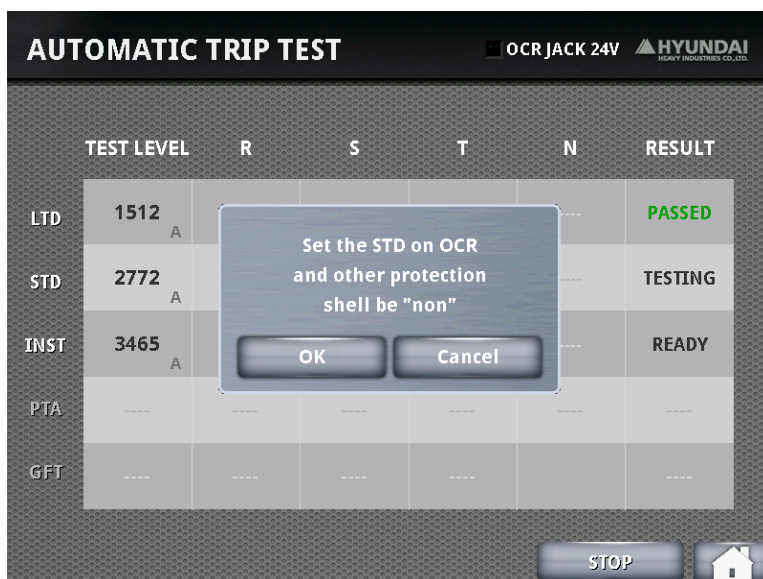
Pop-up screen for selecting test time will be appeared by touching time cell of each test. Select the time, and touch "ENTER" to apply it.



Pop-up screen for input test level will be appeared by touching test level cell of each test. Input the test level value, and touch "ENTER" to apply it.



After complete the setting, touch the START button and test screen will be shown. Popup will be shown to request turn off all other protection functions of OCR except being tested function in sequence. Turn the rotary switches in OCR to NON to turn off them. Then touch the OK button in Checker to start the test sequence.



After one sequence is finished, another popup will be shown to request turn off the other functions of OCR. Turn on only tested function, and off all other functions. Then touch the OK button in Checker to start the test sequence.

OCR JACK 24V

HYUNDAI

HEAVY INDUSTRIES CO., LTD.

TEST LEVEL

R

S

T

N

RESULT

LTD

1512

A

0.519

sec

0.558

sec

0.519

sec

PASSED

STD

2772

A

0.046

sec

0.046

sec

0.047

sec

PASSED

INST

3465

A

0.037

sec

0.037

sec

0.041

sec

PASSED

PTA

GFT

EXPORT

BACK

Result screen will be shown after all sequence ended. If USB memory stick is connected to checker, report file can be exported to memory stick by touching EXPORT button. If some test sequence fails, "FAILED" sign will be appeared in RESULT column, and "RETRY" button will also be appeared. You can retry the test for failed items only by touching RETRY button.

AUTOMATIC TRIP TEST

OCR JACK 24V

HYUNDAI
HEAVY INDUSTRIES CO., LTD.

	TEST LEVEL	R	S	T	N	RESULT
LTD	1512 A				----	PASSED
STD	2772 A				----	PASSED
INST	3465 A				----	PASSED
PTA	----	----	----	----	----	----
GFT	----	----	----	----	----	----

EXPORT

BACK

USB memory not found
Please, connect USB memory
correctly

RETRY

Cancel

If the EXPORT button is touched when USB memory stick is not connected, or recognized to system yet, error popup will be appeared. If you use large capacity USB memory, because it may take time to recognize, please retry after a while.

AUTOMATIC TRIP TEST

OCR JACK 24V

HYUNDAI
HEAVY INDUSTRIES CO., LTD.

	TEST LEVEL	R	S	T	N	RESULT
LTD	1512 A				----	PASSED
STD	2772 A				----	PASSED
INST	3465 A				----	PASSED
PTA	----	----	----	----	----	----
GFT	----	----	----	----	----	----

EXPORT

BACK

Report exported successfully

20160530_163104_UPR-LH.CSV

OK

After successful exportation, generated file name will be shown as pop-up.

Generated Report Example

OCR Automatic Trip Test Report							
Model	UPR-LH						
Serial No.	TEST3						
Date	2016-05-30 16:31						
Test Condition							
Pole	3POLE						
Frequency	60Hz						
In Setting	315A						
Ict Setting	630A						
Ir Setting	0.80(252A)						
Ip Setting	0.60(189A)						
LTD Time	0.50sec						
LTD Level	1512A						
STD Time	50msec						
STD Level	2772A						
INST Time	50msec						
INST Level	3465A						
GFT Time	----						
GFT Level	----						
PTA Time	----						
PTA Level	----						
OCR Test Report							
	Spec	Test Level	R	S	T	N	Result
LTD Time	400~600msec	1512A	0.519sec	0.558sec	0.519sec	----	PASSED
STD Time	37~62msec	2772A	0.046sec	0.046sec	0.047sec	----	PASSED
INST Time	~ 50msec	3465A	0.037sec	0.037sec	0.041sec	----	PASSED
PTA Time	----	----	----	----	----	----	----
GFT Time	----	----	----	----	----	----	----
Overall							PASSED

Chapter 5. OCR Single Test

This chapter explains how to do OCR single test.

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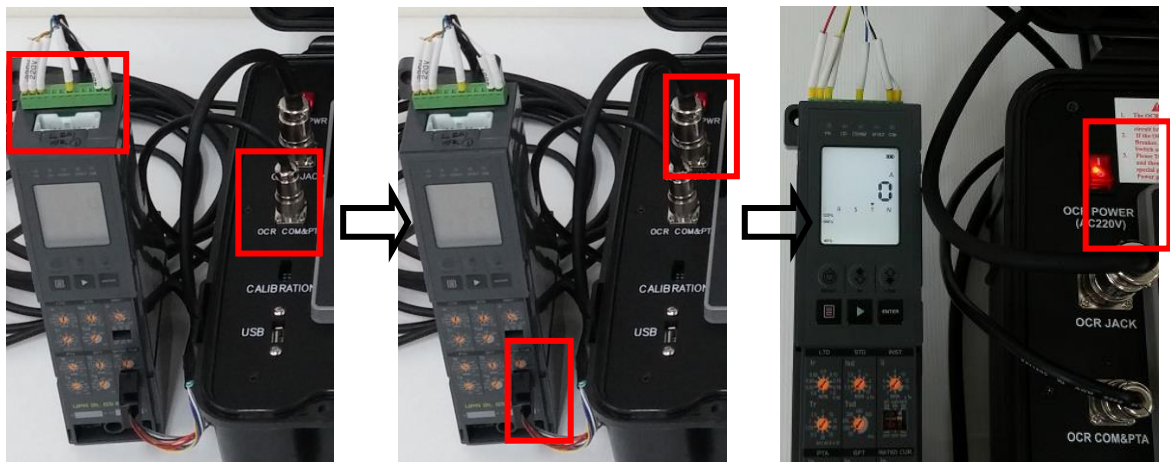
5 OCR Single Test

5.1 Preparation Before Test

- Make the "OCR POWER" switch to OFF before connect 12-pin connector cable to OCR.
- Connect 14-pin cable Jack to OCR Test terminal.
- Connect OCR test port and OCR JACK port in left top of checker by 10-pin cable.
- Turn on the power switch in checker.
- Display shows main menu after logo disappeared.
- If OCR is LN or SN type, keep "OCR POWER" switch in OFF position always. LN and SN model OCRs don't have external power module. If not, turn on "OCR Power" switch.

Caution:

- OCR and Checker should be turned down before connect checker.
- If OCR is UPR A, P, and H type (NOT N), after cable connected turn on the "OCR POWER" switch and do the test.
- To prevent errors by other relaying variables, set to NONE in OCR setting (LTD, STD, INST, PTA, GFT) except test item.



1. Don't connect checker cable while OCR's control power applied.
2. Don't touch OCR and Checker cable while testing.
3. Beware to direction of cable when connect OCR and Checker.
4. Keep "OCR POWER" switch in OFF position at checker before connecting 12-pin cable always.
5. If you ignore them, OCR can be burned.

Chapter 6. Checker Calibration

This Chapter explains how to calibrate the checker.

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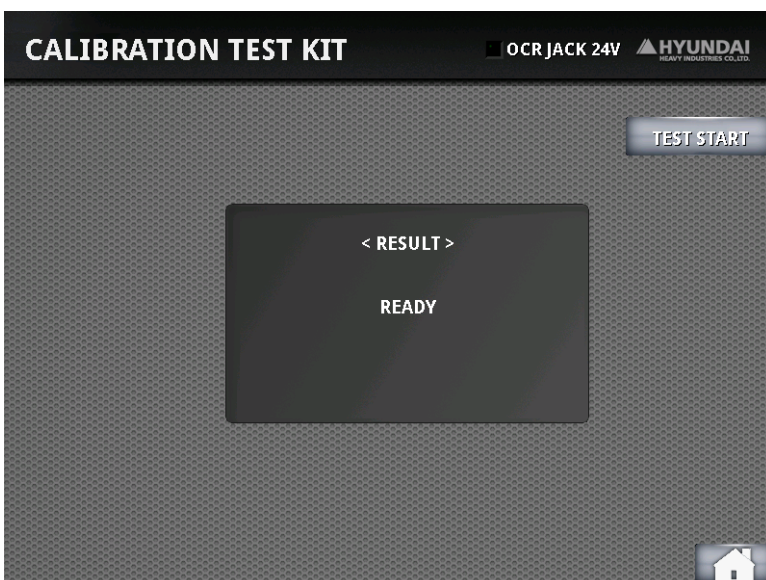
6 Checker Calibration

6.1 Calibration method

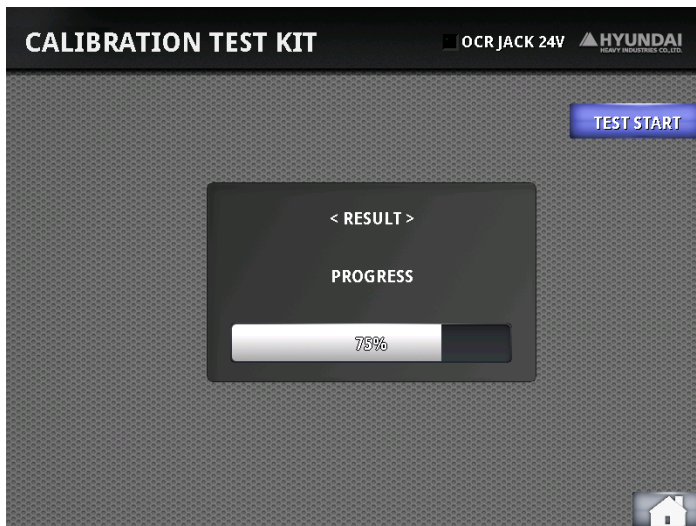
- Calibration is function checks the Checker's output error signal. Apply rate voltage and 10 times multiplied voltage in R, S, T, N phase, and compare the outputs signals
- Connect 10-pin cable port and checker calibration port in checker by 10-pin cable.
- Turn on the power switch and choose Home->Calibration test kit menu.
- Start the test by touching TEST START.



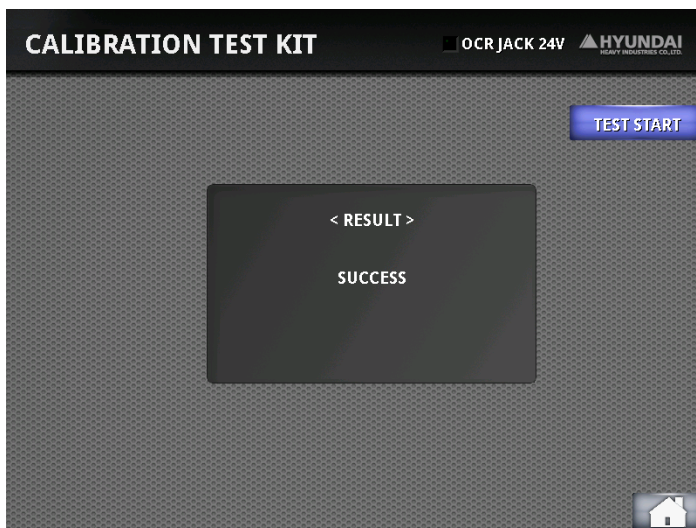
Connect 10-pin cable port and checker calibration port in checker by 10-pin cable.



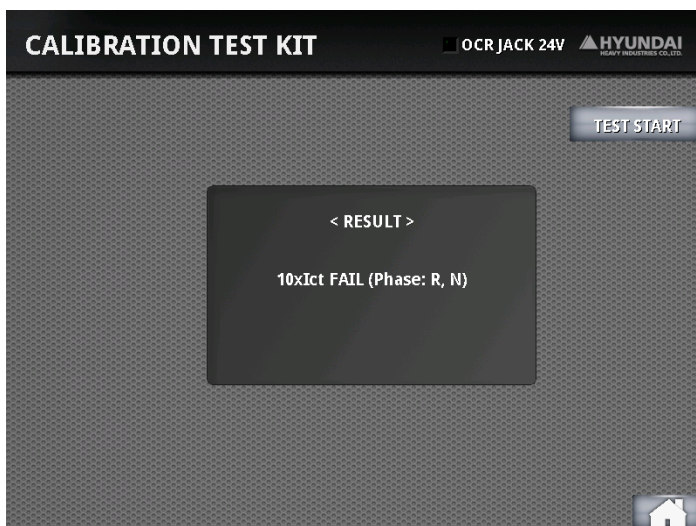
Turn on the power switch.
Choose Calibration test kit menu.



Calibration TEST
progress screen



Success screen



If test fails, please contact the
customer center

Chapter 7. OCR DATA Communication

This chapter explains how to read or write data at OCR by communication function.

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7 OCR DATA Communication

7.1 Preparation Before Communication

- Connect 485+ and 485- in 4-Lug cable to port 35(485+) and 36 (485-) in ACB terminal.
- Apply external power to port 19 and 20 in ACB terminal if A, P, H type OCR (LA, SA, LP, SP, LH)
- Connect 10-pin cable to TEST JACK in OCR if N type OCR (LN, SN)

Caution:

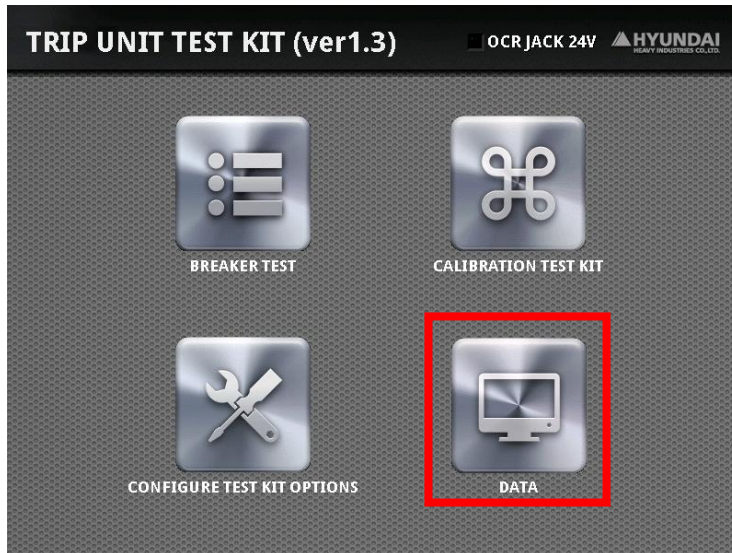
- OCR should be turned down before connect checker.
- Check "OCR POWER" switch in OFF position at checker.
- If N type OCR, DON'T apply external power to port 19 and 20 in ACB terminal.



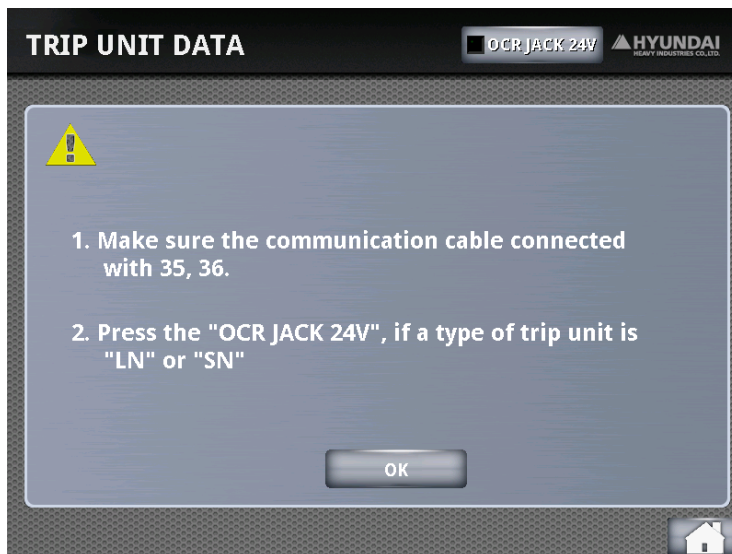
1. Don't connect checker cable while OCR's control power applied.
 2. Don't touch OCR and Checker cable while testing.
 3. Beware to direction of cable when connect OCR and Checker.
 4. Keep "OCR POWER" switch in OFF position at checker before connecting 10-pin cable always.
 5. If you ignore them, OCR can be burned.
-

7.2 Communication Method

- Contents vary by OCR type. For further information, read OCR part in ACB catalogue.
- 4-lug cable should be connected to ACB to read the context of transmitted data.
- Communication parameters in the Checker should be matched to parameters in OCR.
- Power Control function prevent powering 24V to connector cable when disconnected state. For further instruction about Power Control function, refer Power Control Setting in 15 page.



Choose DATA menu.



To read the data check the followings.

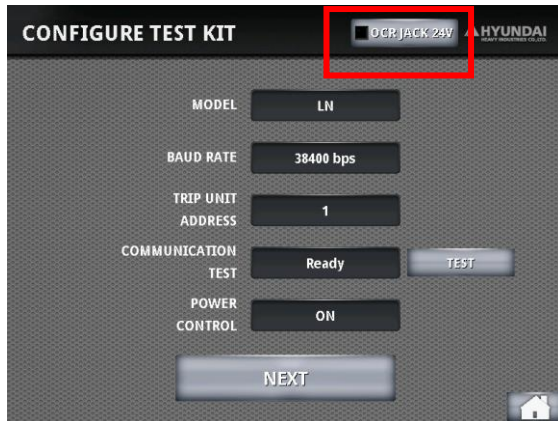
- 1) Connect 35, 36 port in ACB terminal and 4-lug cable.
- 2) If OCR type is LN or SN, press the "OCR JACK 24V" in menu bar. Green light should be turned on. It means power is supplied to OCR.

1) LN, SN type OCR

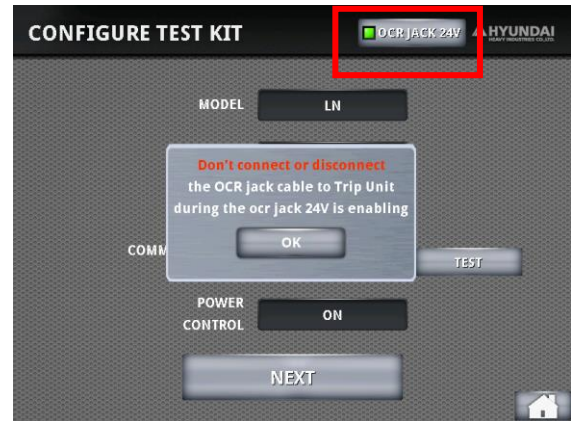
Press the "OCR JACK 24V" in menu bar to supply power to OCR. LN and SN model OCRs don't have external power module.

Caution:

- 1) Don't connect 10-pin cable to OCR while green light at "OCR JACK 24V" is on. OCR can be burned.



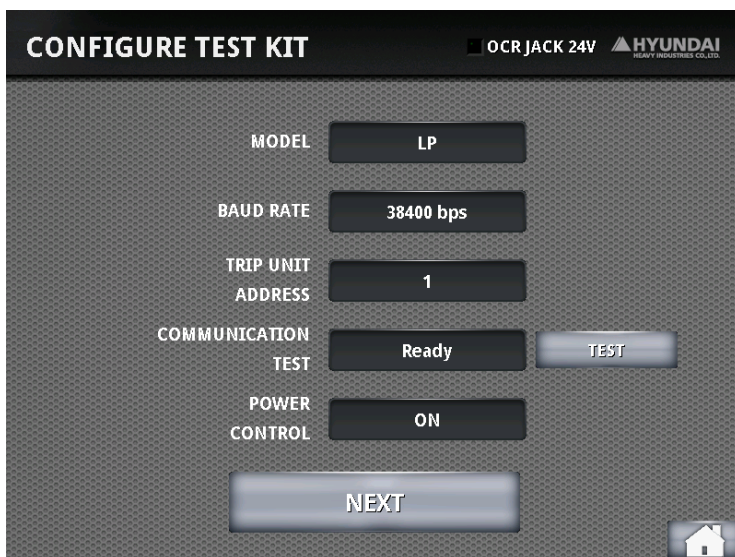
If LN, SN type OCR, Press the "OCR JACK 24V" in menu bar



Green light turns on. Touch OK in dialog popup.

2) LA, LP, LH, SA, SP type OCR

- Don't touch "OCR JACK 24V" button, follow below steps. Green light should be turned off.



Set BAUD RATE and TRIP UNIT ADDRESS.
(Default
BAUDRATE: 38400, ADDRESS: 1)
Touch TEST button to check network status.

If test fails, FAIL message will be shown. Recheck the preparation instructions are done and retry.

Check SUCCESS status and press NEXT.

CONFIGURE TEST KIT

OCR JACK 24V

MODEL

LP

BAUD RATE

38400 bps

TRIP UNIT ADDRESS

1

COMMUNICATION TEST

Ready

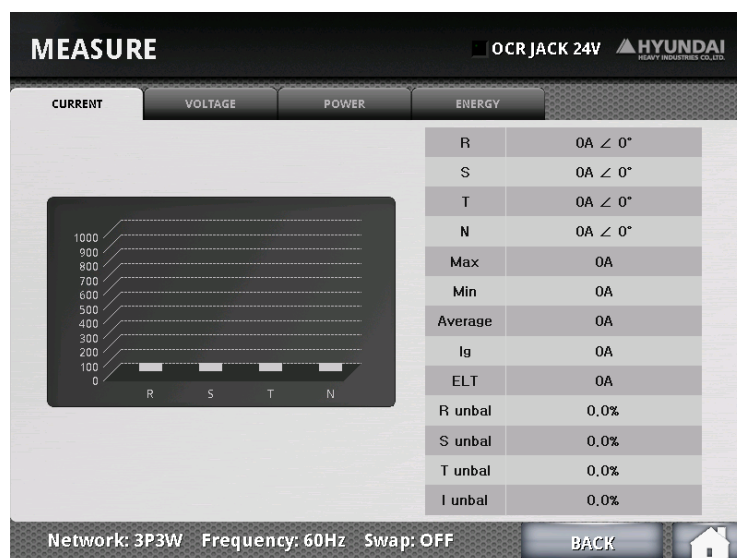
TEST

POWER CONTROL

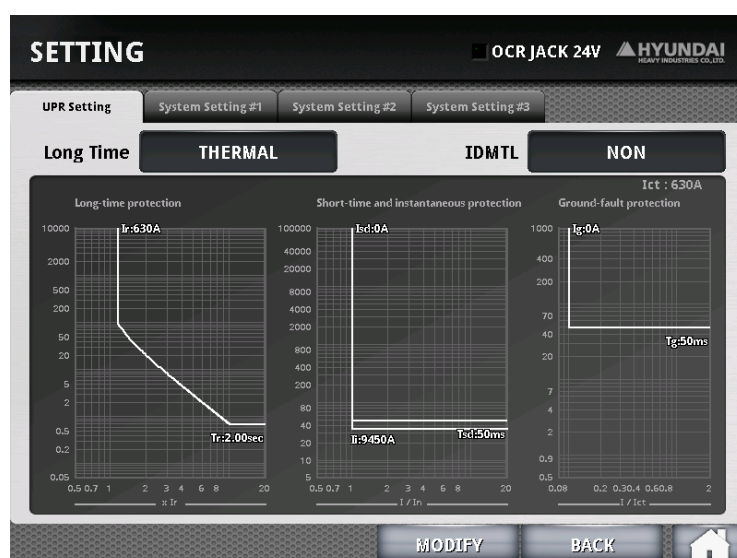
ON

NEXT

Can read or write data in figure. Menu can vary by OCR TYPE, and some menus can be unavailable.



Measure screen will be shown by touching MEASURE menu (figure). Screen shows OCR measurement information.



Setting screen will be shown by touching SETTING menu. Shown items can vary by OCR TYPE.

SYSTEM EVENT OCR JACK 24V HYUNDAI

No	Time	Description	Location
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

SAVE UPDATE BACK

System Event screen will be shown by touching SYSTEM EVENT menu.

(Unavailable at LN, SN)

SYSTEM EVENT OCR JACK 24V HYUNDAI

No	Time	Description	Location
1	2014/11/11-09:28:25	Power on	Local
2	2014/11/11-09:22:44	Power on	Local
3	2014/11/11-09:19:51	Power on	Local
4	2014/11/10-20:52:10	Neutral setting changed	Remote
5	2014/11/10-20:51:50	Neutral setting changed	Remote
6	2014/11/10-20:51:31	Power on	Local
7	2014/11/10-18:40:17	Power on	Local
8	2014/11/10-17:49:10	Communication setting changed	Remote
9	2014/11/10-17:48:39	Communication setting changed	Remote
10	2014/11/10-17:48:19	Power on	Local

SAVE UPDATE BACK

Touch UPDATE to show saved events.
System event can save into USB Memory stick connected to device by touching enabled START button.

FAULT EVENT OCR JACK 24V HYUNDAI

FAULT EVENT FAULT WAVEFORM

No	Time	Type	Fault phase	R	S	T
1						
2						
3						
4						
5						
6						
7						
8						
9						

SAVE UPDATE BACK

Fault event screen will be shown by touching FAULT EVENT TAP in FAULT EVENT menu.

(Unavailable at LN, SN)

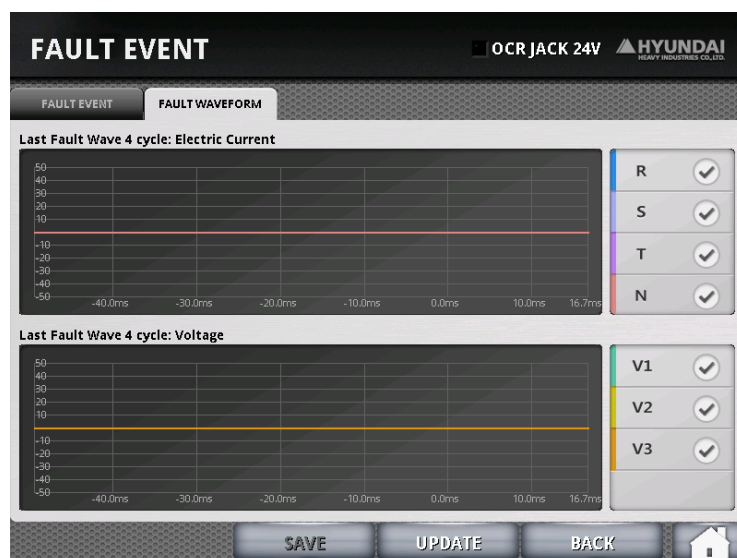
FAULT EVENT OCR JACK 24V HYUNDAI

FAULT EVENT FAULT WAVEFORM

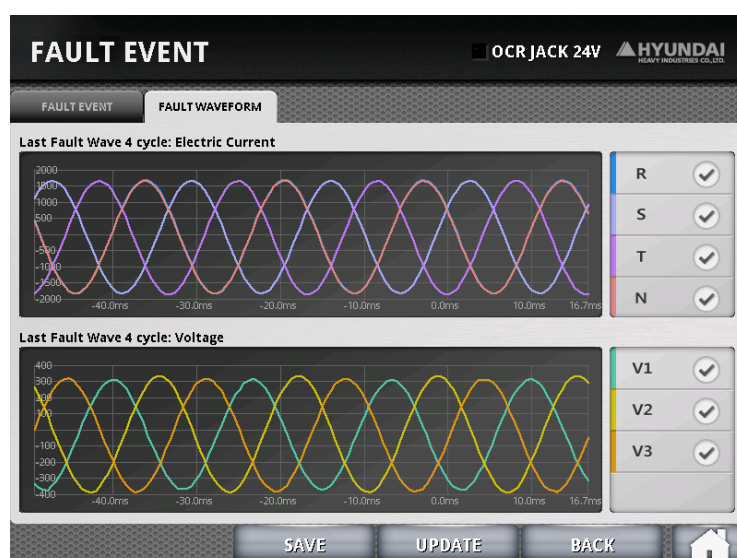
No	Time	Type	Fault phase	R	S	T
1	2014/10/22-13:10:08	LTD(Thermal)	T	592	604	608
2	2014/10/22-12:58:02	STD	R	2821	30	40
3	2014/10/22-13:21:48	STD	R	2900	34	42
4	2014/10/22-13:20:12	INST	HI/Test Trip	10080	10080	10080
5						
6						
7						
8						
9						

SAVE UPDATE BACK

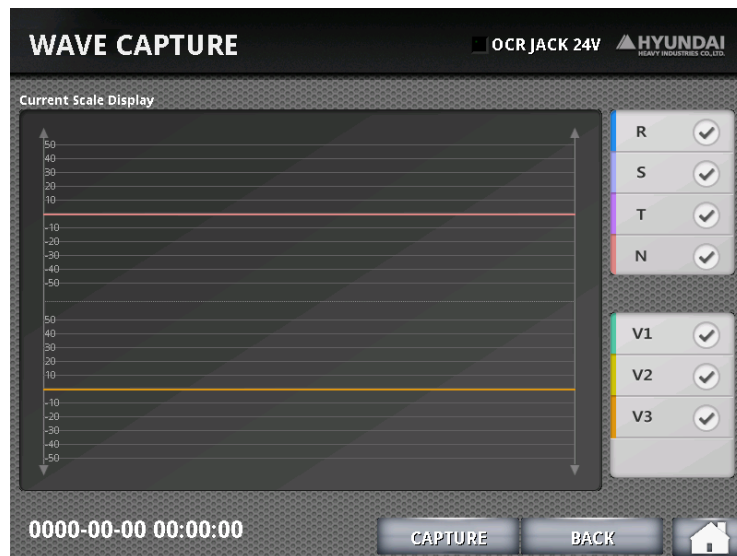
Touch UPDATE to show saved events.
Fault event can save into USB Memory stick connected to device by touching enabled START button.



This screen will be shown by touching FAULT WAVE TAP in FAULT EVENT menu.

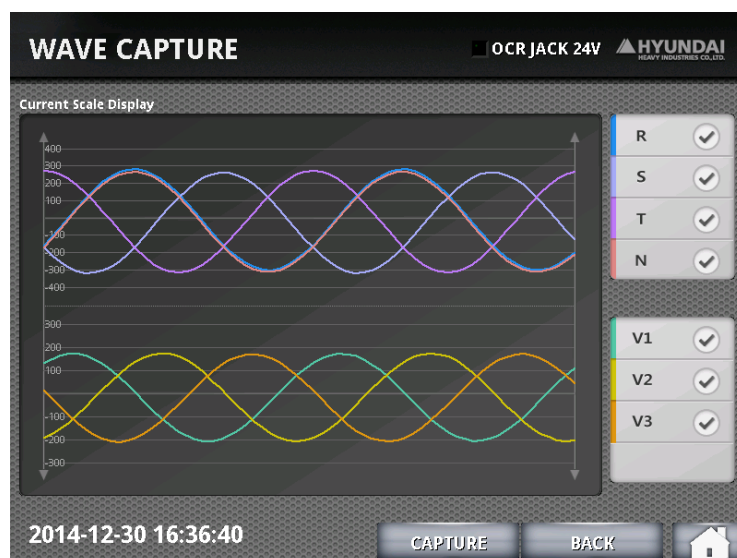


Touch UPDATE to show recent fault wave.
Fault waveform can save into USB Memory stick connected to device by touching enabled START button.

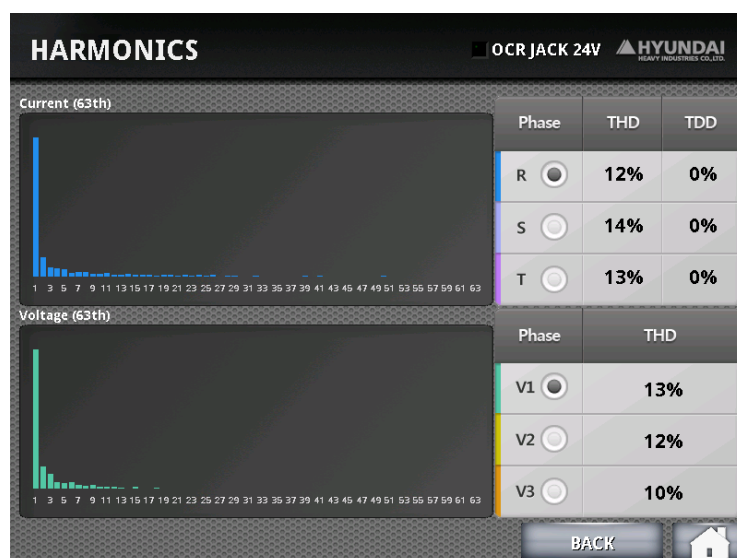


Wave capture screen will be shown by touching WAVE CAPTURE menu.

(Available at LP, LH, SP type)



Touch UPDATE to show current and voltage signals.



Touch HARMONICS menu to show Harmonic, THD, and TDD of current and voltage.

Only for LH Type

Chapter 8. Software Update

This chapter explains how to update software.

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Item

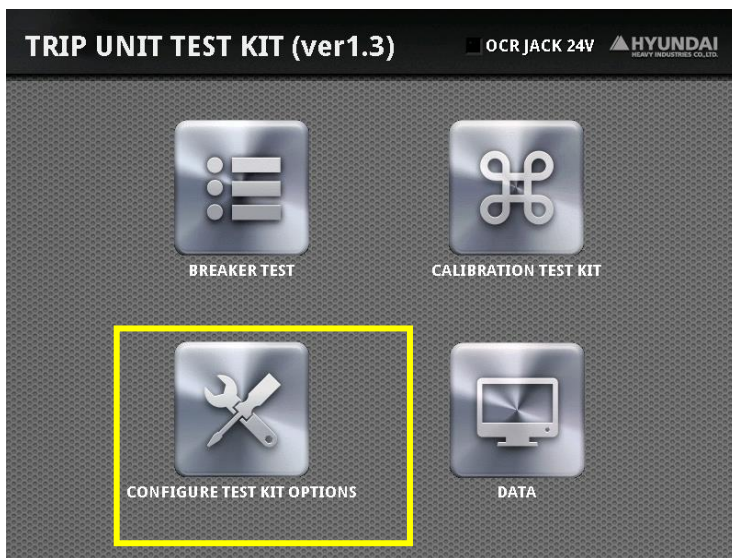
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8 Software Update

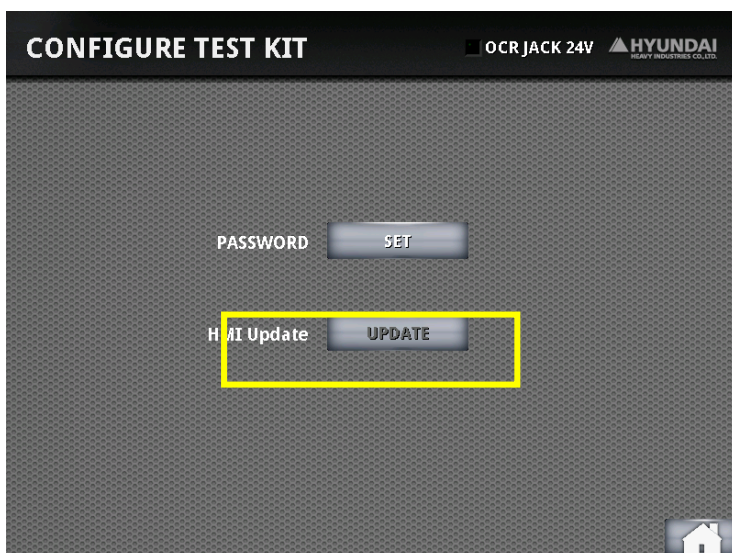
8.1 Preparation Before Update

- Prepare USB memory stick formatted by FAT 32 file system.
- Size of USB memory stick should be bigger than update file. No limit on size by recognizing problem, but if memory stick is too big, recognizing time can be longer.
- Copy "updateChecker.bin" file to Root in US memory stick. Don't rename the file.
- Don't turn off the device while updating. Be sure to apply stable power source before update.

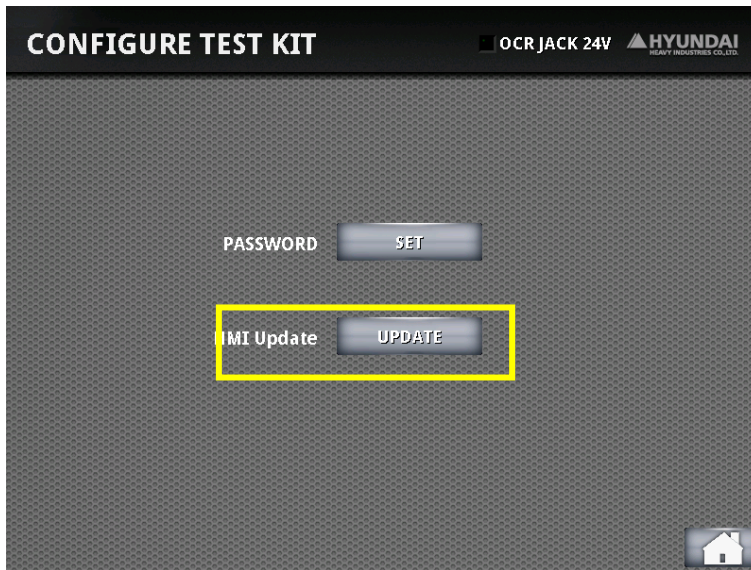
8.2 How To Update



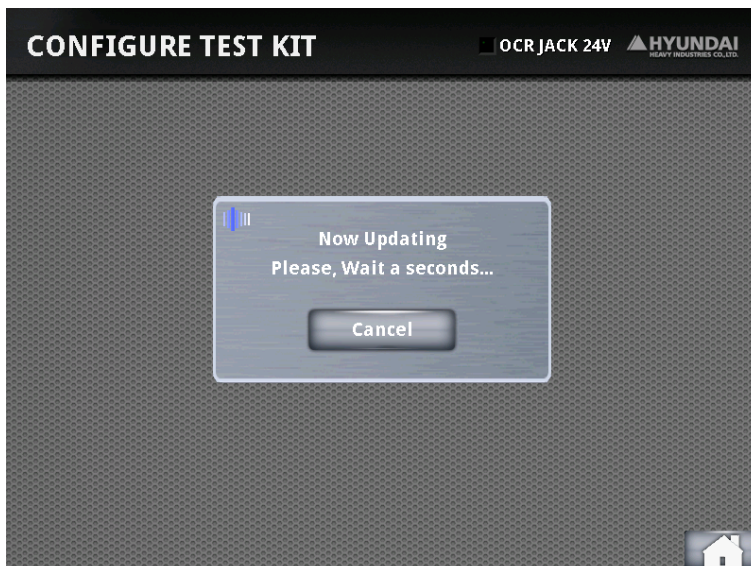
Touch CONFIGURE TEST KIT OPTIONS menu in main menu.



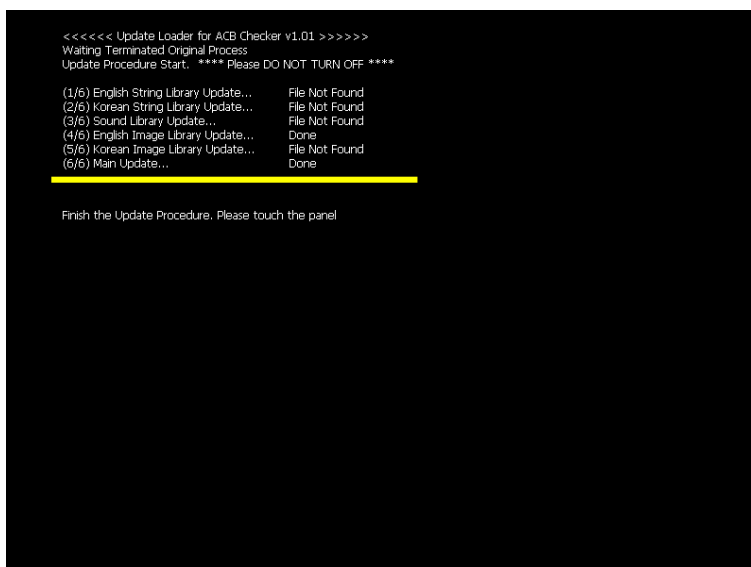
Update button is unavailable when USB memory stick is not plugged on USB port in the Checker.



Plug USB memory stick.
After recognizing, button
will be available. If USB
memory stick is too big,
recognizing will be longer.



Touch the UPDATE button.
System verifying update
file.



After file verified, update
will start automatically.

Please wait until "Finish
the Update Procedure.
Please touch the panel"
message is shown.

And check 6th item is
done.

To go to main menu,
touch the screen once.

8.3 Troubleshooting

- Following Error messages can be shown in update.

* Error message table

Error message	Do
Not found USB storage	<ul style="list-style-type: none">- Unplug and plug USB memory stick again.- Use other USB memory stick.
File not found	<ul style="list-style-type: none">- Check update file is placed in root folder of USB memory stick.- Check update file name is "updateChecker.bin".
Try again	<ul style="list-style-type: none">- Do the update again.- Do the update after unplug the power cable and plug it again.
Incorrect File	<ul style="list-style-type: none">- Check the "updateChecker.bin" is fakes or not.- Copy the "updateChecker.bin" to USB memory stick again.- Download the update file again.
Corrupted File	<ul style="list-style-type: none">- Check the "updateChecker.bin" is fakes or not.- Copy the "updateChecker.bin" to USB memory stick again.- Download the update file again.



AC/DC Motors & Generators



Electrical Engineering



Mechanical Engineering



Condition Monitoring



Precision Machining



Marine Electronics



Elec & Mech Product Supply



Calibration and Rental Services



Quality Coatings



Transformers



Control Panels



Compressors



Auxiliary Power Systems

To differentiate our organisation in order to achieve continuous, sustainable growth, TDC endeavours to fully understand and exceed the expectations of our customers, and to work proactively to deliver **Engineering Excellence.**



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