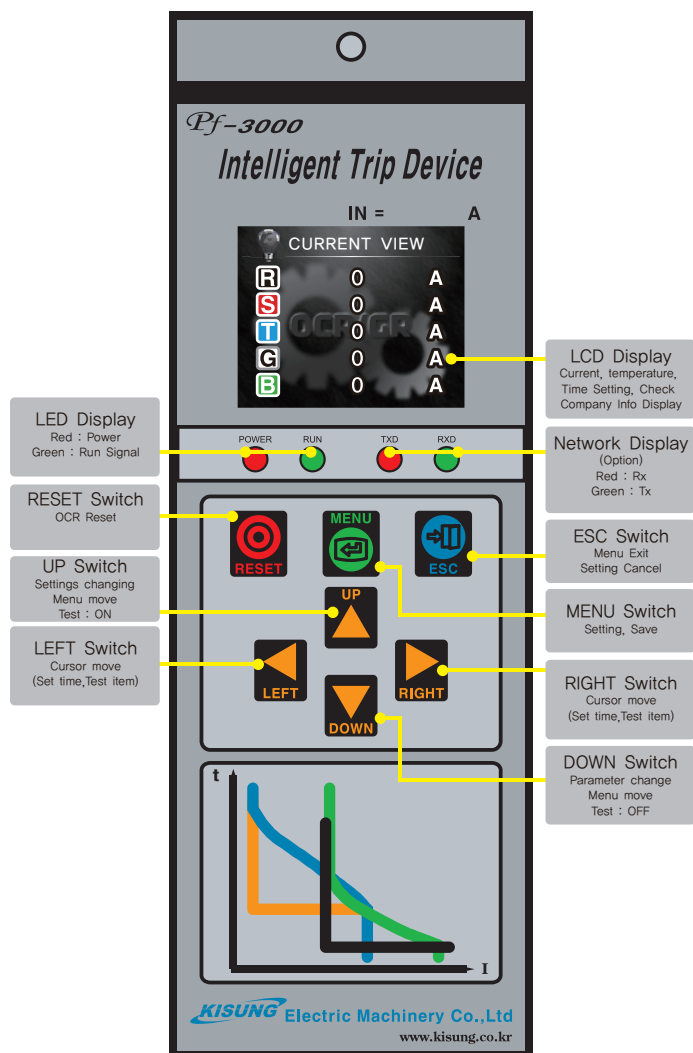


6. OCR / GR

6.1 External view



6.2 Details

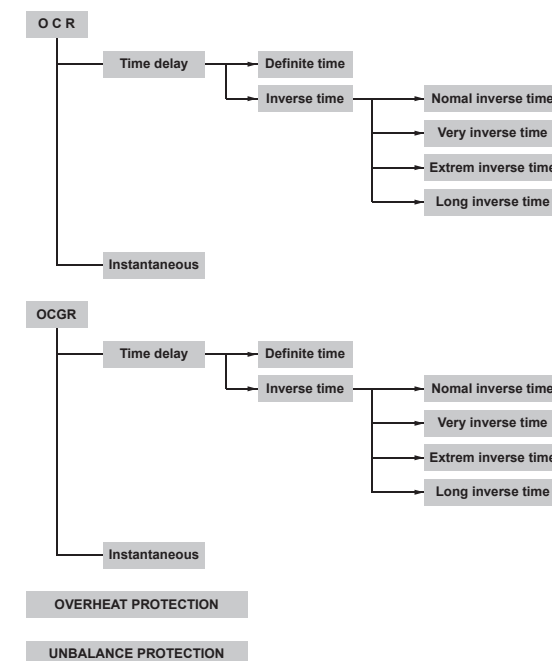
1. Introduction

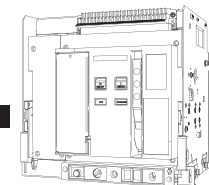
This product is to detect and operate over current, ground current, open phase, balance, bus bar temp (option) simultaneously as an over current trip unit using for low voltage air circuit breaker.

2. Features

- (1) All the menus are iconized in the color graphic LCD panel and displayed in multi language.
- (2) R, S, T phase, G (Ground), B (Balance) and Busbar Temperature(option) are displayed at real time.
- (3) Cause and details of the trip are recorded when tripping so it is easy to handle troubleshooting.

3. Protection function





6. OCR / GR

4. Function

(1) Display

1) LCD Display

Current, Temperature, Time, Configuration, Checkup, Company information display.

2) LED Display

- ① Power-Red, Signal-Green.
- ② 485 network :Rx-Red, Tx-Green (Option).

(2) Key Setting

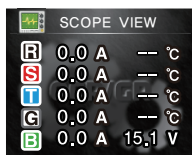
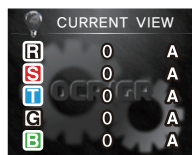
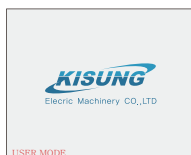
- ① Reset: Initialization.
- ② Menu: Menu selection, setting, save.
- ③ ESC: Cancel the setting, Change the mode, exit the menu.
- ④ Left, Right: Cursor movement.
- ⑤ Up, Down: Change menu, Adjust setting parameter upward/downward, Checkup On/Off control.

5. Basic operation and menu

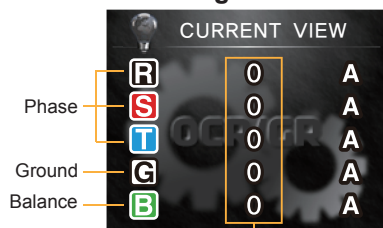
(1) Menu view

Basic view : logo -> view current -> view scope -> view clock

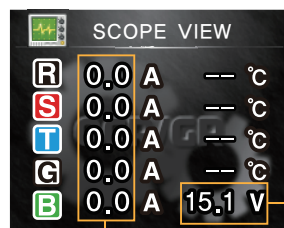
Operation button : RIGHT, LEFT button.



* Working Mode



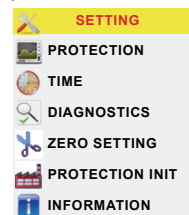
Current parameter



Internal CT current parameter
(on-site for confirmation)

OCR parameter
for internal power

(2) Menu

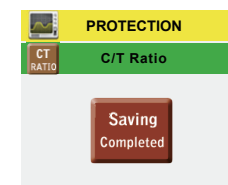


① Protection setting mode(Setup method 24page)



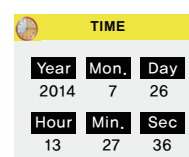
Button	Setting
LEFT, RIGHT	-
UP, DOWN	Move menu, Change parameter
MENU	Menu selection, Save the changed parameter
ESC	Exit Menu, Cancel setting

EX) C / T ratio View the Save Settings



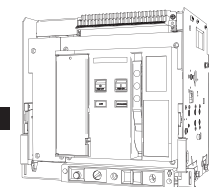
▪ Time setting is set after power-up in the field that requires the operation.

② Time setting mode



Button	Setting
LEFT, RIGHT	Move menu
UP, DOWN	Change parameter
MENU	Save the changed parameter
ESC	Exit Menu, Cancel setting

Over Current Trip Relay(OCR/GR)

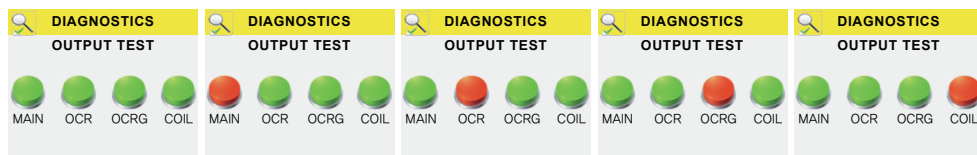


③ DIAGNOSTICS

DIAGNOSTICS
FLASH TEST
BUTTON TEST
LED TEST
OUTPUT TEST

Button	Setting
LEFT, RIGHT	-
UP, DOWN	Move menu
MENU	Menu selection
ESC	Exit Menu

- FLASH TEST : Testing the memory write (using the MENU button)
- BUTTON TEST : Up, Down, Left, Right, Enter, ESC button test (pushing ESC button make you move to higher level of menu)
- LED : LED ON/OFF test (using UP, DOWN key)
- OUTPUT TEST : Relay output(Main, OCR, OCGR), Power output(option)



Button	Setting
LEFT, RIGHT	Move menu
UP, DOWN	Output ON / OFF
MENU	-
ESC	Exit Menu

④ ZERO SETTING (Calibration)

- To set zero point of the current in case of some minor current display by noise without load.

ZERO SETTING

Turn off load before zero setting
Press enter button for entering zero setting.
Press esc button for exit
Press down button over 5sec for zero setting.

⑤ PROTECTION INIT

- Protection initialization (For default setting, see page 18)

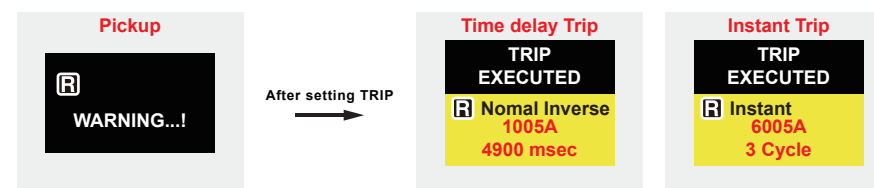


⑥ INFORMATION

INFORMATION
COMPANY
PRODUCT
EVENT
SPEC

Button	Setting
LEFT, RIGHT	-
UP, DOWN	Menu move
MENU	Menu selection
ESC	Exit Menu

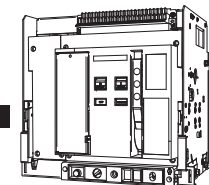
- COMPANY : Displaying the homepage address of manufacturer, telephone number, and fax number
- PRODUCT : Product related information (product version, etc)
- EVENT : Displaying the Trip information.
Basic trip Pickup starts with warning buzzer and trip relay operate with "TRIP EXECUTED" signal.



- Initial Trip will be displayed in the screen. You can find the detail information by resetting and selecting MENU > INFORMATION > EVENT

INFORMATION	
Trip Date	2014. 7. 28 11:26:35
Trip Phase(R/S/T/Ground/Balance)	R-Trip
Characteristic curve(Definition Time/Nomal Inverse)	Nomal Inverse
Very Inverse/Extrem Inverse/Long Inverse	1005 A, 4900 msec
Instant	Instant
Trip Count : 1	
Event 1/3	Total Trip Event

- SPEC : Displaying overall specification of OCR/GR



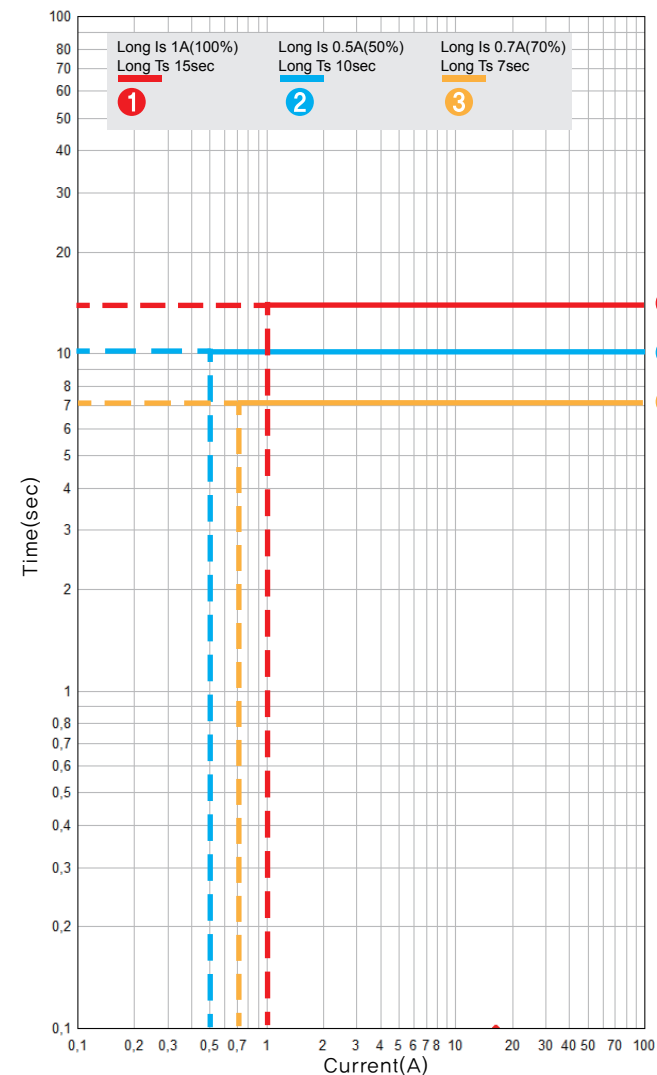
6. Setting Table and Characteristic Curve

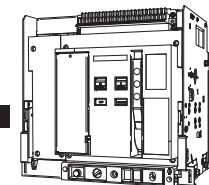
(1) Setting Table

No	List	Default	Minimum	Maximum	Step	Fast	Unit	Explanation
1	C/T Ratio	100	100	6300	10	100	%	C/T Ratio setting
2	OCR Curve	OFF	OFF(0)	LI(5)	1	1	-	OCR Curve setting : OFF(0), Definition Time(1), Nomal Inverse(2), Very Inverse(3), Extrem Inverse(4), Long Inverse(5)
3	OCR Long Is	100	40	150	5	10	%	Overcurrent Long current trip setting
4	OCR Long Ts	15	1.1	20	0.1	1	sec	Overcurrent Long time trip setting
5	OCR Short Is	400	200	1000	5	10	%	Overcurrent Short current trip setting
6	OCR Short Ts	0.5	0.1	1	0.1	1	sec	Overcurrent Short time trip setting
7	OCR Instant Cs	OFF	1	10	1	1	Cycle	Overcurrent Instant time trip setting
8	OCR Instant Is	600	200	1600	5	50	%	Overcurrent Instant current trip setting
9	OCGR Curve	OFF	OFF(0)	LI(5)	1	1	-	OCGR Curve setting : OFF(0), Definition Time(1), Nomal Inverse(2), Very Inverse(3), Extrem Inverse(4), Long Inverse(5)
10	OCGR Long Is	45	5	120	5	10	%	Overcurrent ground Long current trip setting
11	OCGR Long Ts	2	1.1	20	0.1	1	sec	Overcurrent ground Long time trip setting
12	OCGR Short Is	250	150	400	5	10	%	Overcurrent ground Short current trip setting
13	OCGR Short Ts	0.5	0.1	1	0.1	1	sec	Overcurrent ground Short time trip setting
14	OCGR Instant Cs	OFF	1	10	1	1	Cycle	Overcurrent ground Instant time trip setting
15	OCGR Instant Is	100	5	400	5	50	%	Overcurrent ground Instant current trip setting
16	UnBalance Is	OFF	10	400	5	50	%	UnBalance current trip setting
17	UnBalance Ts	2	0.1	20	0.1	1	sec	UnBalance time trip setting
18	Temperature TPs	OFF	50	110	1	10	℃	Temperature trip setting
19	Temperature Ts	10	1	200	1	10	sec	Temperature time trip setting

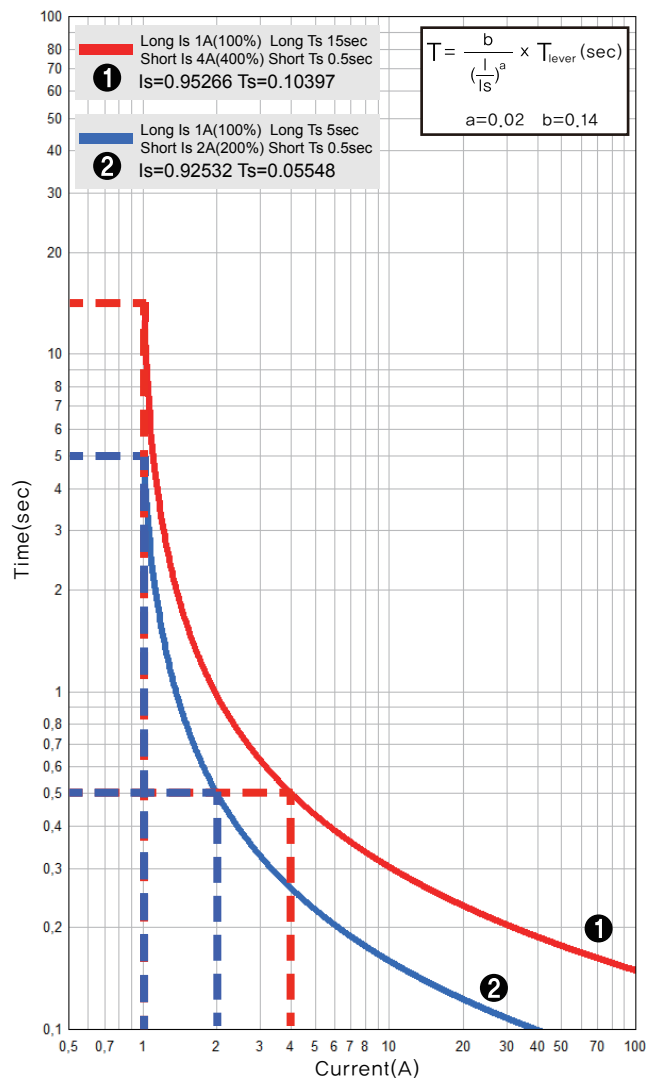
(2) Characteristic Curve

1) Definition Time

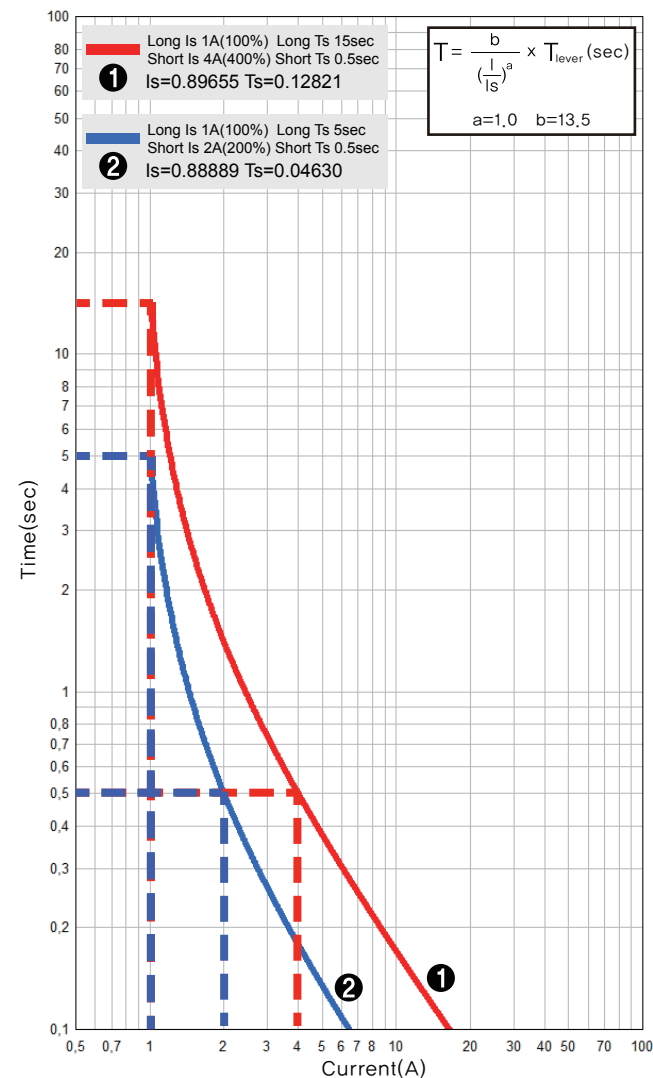


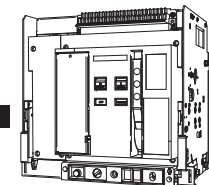


2) Nomal Inverse

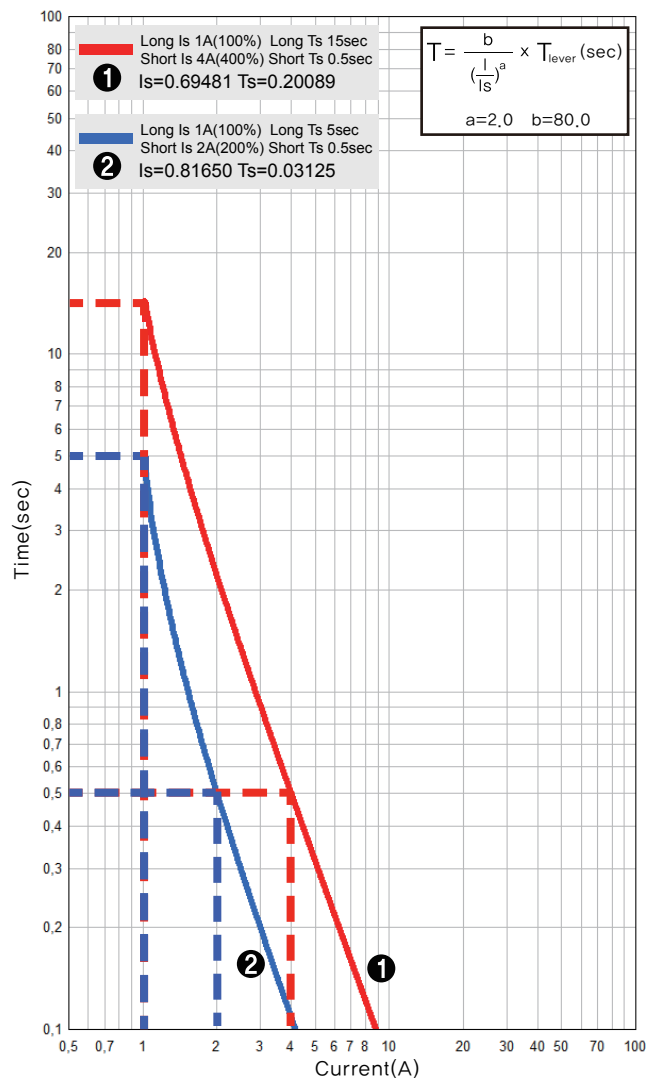


3) Very Inverse

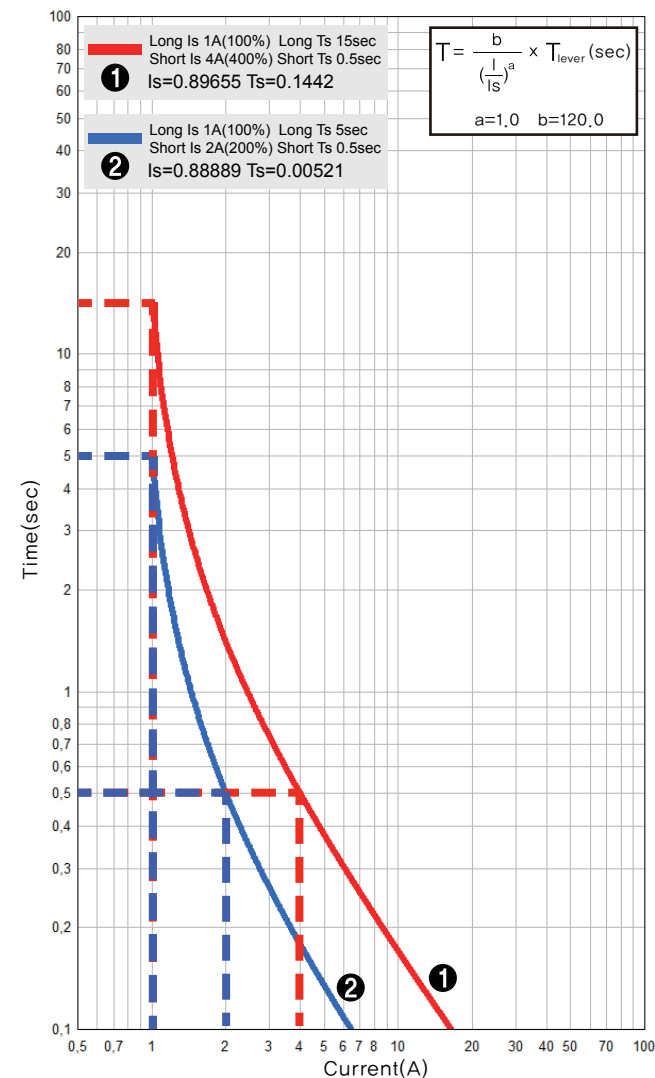


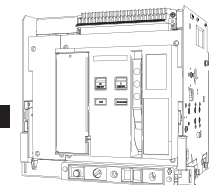


3) Extreme Inverse

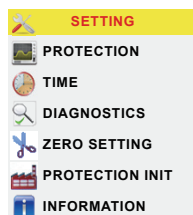


4) Long Inverse





7. PROTECTION Setup method



Button	Setting
LEFT, RIGHT	—
UP, DOWN	Move menu, Change parameter
MENU	Menu selection, Save the changed parameter
ESC	Exit Menu, Cancel setting

- Current Transformer Ratio

	Setup method
Range : 100 ~ 6300A STEP : 10 FAST : 100	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the CT ratio. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting the CT ratio, press MENU button to save. ④ Press ESC button to exit without saving the CT ratio setting.

- Overcurrent Characteristic Curve

	Setup method
	① Option : OFF, Definite Time, Normal Inverse, Very Inverse, Extreme Inverse, Long Inverse. ② Use UP/DOWN button to set up the Characteristic Curve. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCR Long Is

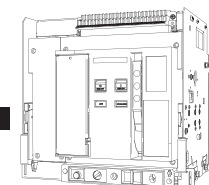
	Setup method
Range : 40~150% Step : 5 fast : 10	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCR Long Ts

	Setup method
Range : 1.1 ~ 20sec Step : 0.1 fast : 1	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCR Short Is (Definite time OCR curves of selected None)

	Setup method
Range : 200~1000% Step : 5 fast : 10	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.



- OCR Short Ts (Definite time OCR curves of selected None)

	Setup method
Range : 0.1~1sec Step : 0.1 fast : 1	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCR Instant Cs

	Setup method
Range : OFF~10cycle step : 1 cycle Fast : 1 cycle	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCR Instant Is

	Setup method
Range : 200~1600% step : 5 fast : 50	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCGR Curve

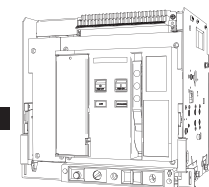
	Setup method
	① Option : OFF, Definite Time, Normal Inverse, Very Inverse, Extreme Inverse, Long Inverse. ② Use UP/DOWN button to set up the Characteristic Curve. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCGR Long Is

	Setup method
Range : 5~120% Step : 5 fast : 10	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.

- OCGR Long Ts

	Setup method
Range : 1.1 ~ 20sec Step : 0.1 fast : 1	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.



- OCGR Short Is (Definite time OCGR curves of selected None)

	Setup method
PROTECTION OCGR Short Is I : 250(A) P : 250(%)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 150~400% Step : 5 fast : 10	

- OCGR Short Ts (Definite time OCGR curves of selected None)

	Setup method
PROTECTION OCGR Short Ts T : 0.5(sec)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 0.1~1s Step : 0.1 fast : 1	

- OCGR Instant Cs

	Setup method
PROTECTION OCGR Instant Cs T : 3(Cycle)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : OFF~10cycle step : 1 fast : 1	

- OCGR Instant Is

	Setup method
PROTECTION OCGR Instant Is I : 250(A) P : 250(%)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 5~400% step : 5 fast : 50	

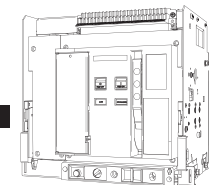
- UnBalance Is

	Setup method
PROTECTION UnBalance Is OFF	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 10~400% step 5 fast 50	

- UnBalance Ts

	Setup method
PROTECTION UnBalance Ts T : 2.0(sec)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 0.1 ~ 20s Step : 0.1 fast : 1	

OCR/GR, Circuit Diagram



- Temperature TP

	Setup method
PROTECTION Temperature TP OFF	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range: OFF, 50~110℃ Step : 1 fast : 10	

- Temperature Ts

	Setup method
PROTECTION Temperature Ts T : 10(sec)	① Display parameter : Initial parameter. ② Use UP/DOWN button to set up the item. (Pressing and holding Up/Down button changes the setting parameters quickly) ③ After setting is completed, press MENU button to save. (After all the settings, press the RESET button restarts) ④ Press ESC button to exit without saving the setting.
Range : 1~200sec step : 1 fast : 10	

7. Circuit diagram

