

Earth Leakage Detector & Relay User Manual

Model : WYED-M08/12/16N (ELD)
WYER-M08/12/16N (ELR)



Read this manual before using the product.


9PAC-00257(REV.1)


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Guidelines for Safety

- Guidelines for safety is to use product safe and properly and prevent accidents or dangers. Never forget to keep it.
- Guidelines can be classified into two, warning and caution, and their meanings are as follows.

 **Warning** When there is the possibility that serious injury or death can occur when violating directions.

 **Caution** When there is the possibility that slight injury or the damage of products can occur when violating directions.

Warning

1. When using in instruments that have great influence on lives or properties(for examples: nuclear energy control, medical equipment, vehicles, railroad, aviation, combustion apparatus, entertainment systems or safety device), use after being sure to attach duplex safety device.
 - There may be fire, loss of lives, or property damages.
2. Use after being sure to attach to panel, and ground FG or a terminal.
 - There may be the possibility of electric shock.
3. Don't connect, inspect and repair under the power-up.
 - There may be the possibility of electric shock.
4. Don't remodel products except by the company's engineers.
 - There may be the possibility of fire or electric shock.
5. Be sure to check input power source options, and connect after checking terminal number when connecting power sources.
 - There may be the possibility of fire.
6. Don't touch the terminal of load side immediately after power source is cut off.
 - There may be the possibility of electric shock.

Caution

1. Don't use outdoors (for outdoor, separate order)
 - It can be a cause of product's life becoming short, and there may be the possibility of electric shock.
2. When connecting power source and load wiring, pay attention to the thickness of cables according to load current.
 - There may be the danger of fire if the thickness of cables is thin for the current.
3. Tighten the screw of port by the regulated torque.
 - The regulated torque - M 3.5 : 0.6 ~ 1.2 N(6~12Kgf.cm), M4 : 1.3~1.5 N(10~14Kgf.cm), M5 : 2.1 ~ 3.0 N(15~25Kgf.cm)

-If the screw comes loose, there may be the possibility of fire because of bad contact.

4. Tighten the enclosed mounting fixing screws to the specified torque.

• M5= 1.2 ~ 1.5 N(12~15Kgf.cm)

• If tightened stronger than the specified torque, it may adversely affect the product.

5. Be sure to use within the range of rating and performance.

-Product's life is shortened, and it may be a cause of troubles.

6. Don't use water or organic solvent when cleaning.

-There may be the possibility of electric shock, fire and product deformation.

7. Don't install or operate in places with inflammable gas, explosive gas, direct ray of light, radiation heat, vibration and shock.

-There may be the possibility of troubles and fire.

8. Make sure that harmful conductors such as dust or fragments of cables may not be flowed into the inside of product.

-There may be the possibility of trouble or fire.

9. Never touch during operation as there is superheat on the radiator board.

-There may be the possibility of trouble or fire.

10. Dispose as industrial waste when discarding products.

1. Overview

1-1 Outline of the product

This electric leakage alarm is used to protect human life and property by preventing in advance the loss and burn of human life and equipment generated by electric leakage accidents in 600V AC or less power lines according to the laws regarding the installation, maintenance and safety management of fire-fighting facilities(article 36 clause 5), is composed of a first-class reception part(alarm) and a zero phase current transformer(ZCT), and is used for alarming and breaker tripping in a digital method.

1-2 Feature of the product

- Displays an alarm of electric leakage in the power line on LED by circuit.
- Displays checking if there is any disconnection in the short circuits and ZCT on the LCD in the front panel in characters.

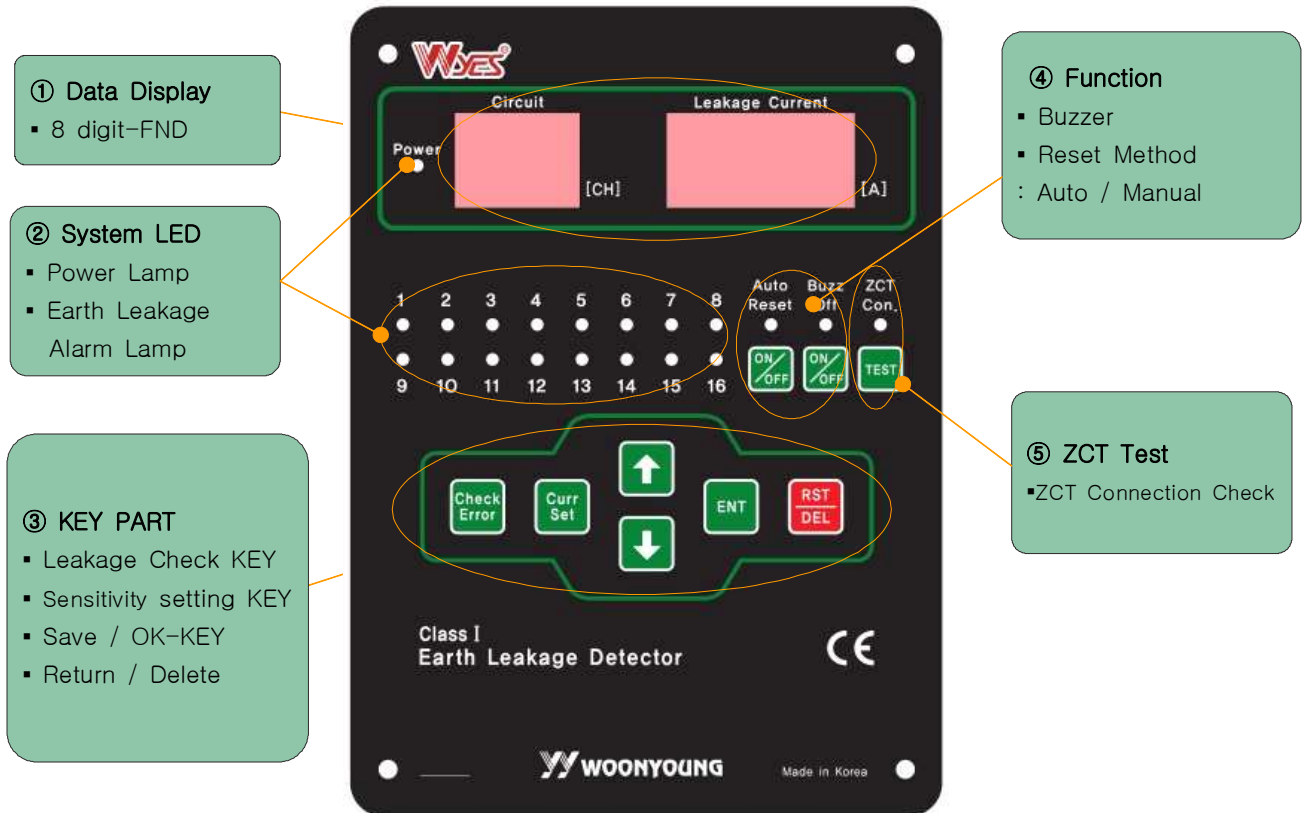
- Can set the electric leakage status in the power line in an auto return and manual return method.
- Has high accuracy in detection of electric leakage.
- Displays the electric leakage status in the power line on the circuit lamp or LCD screen in characters by circuit.
- Stores the current values of the short circuits and short lines to enable analysis after electric leakage accidents.
- Has a circuit against surges from the outside to prevent their effects.
- Various outputs
 - 1 common contact
 - 8 / 12 / 16 contacts by circuit
- Emission of buzzer sounds

2. Specification

ITEM	EARTH LEAKAGE DETECTOR & RELAY					
	ALARM TYPE (ELD)			TRIP TYPE (ELR)		
TYPE	WYED-M08N	WYED-M12N	WYED-M16N	WYER-M08N	WYER-M12N	WYER-M16N
Circuit (ch)	8	12	16	8	12	16
Power supply voltage	AC/DC 110~220V (±10%)					
Rated frequency	50/60Hz					
Current setting range	0.1 ~ 1.00A (0.1A Step)					
Operating range	<ul style="list-style-type: none"> • NonOperating : 52% of nominal operating current • Operating : 75% of nominal current 1sec 					
Operating temperature	-10℃ - +60℃					
Storage temperature	-12℃ - +80℃					
Buzzer	75dB/M more					
Contact capacity	AC 240V@5A, DC24V@10A					
Burden	Non operating	2.5VA				
	Operating	4VA		10VA	13VA	16.5VA
Insulation	<ul style="list-style-type: none"> • 1'st-2nd, 1'st-Earth • 2'nd-Earth : DC500V Megger 100MΩ more 					
Dielectric withstand voltage	<ul style="list-style-type: none"> • 1'st-2nd, 1'st-Earth: 2000V/1min • 2'nd-Earth: 500V /1min 					
Lightning impulse voltage	Circuit -Earth 6kV (1.2/50μs) +, - 1Time					
Vibration	<ul style="list-style-type: none"> • On duty : Full wave width 1min, 1000rpm 10min • Not on duty : Full wave width 4min, 1000rpm 60min 					
Mechanical shock	Acceleration of 5kg Max force in any direction for 5 Time					
Fuse capacity	250V 2A					
Weight	2.0kg					
ZCT Input	200mA/100mV (at connection 2kΩ)					
KC Certificate No	R-R-Wye-***** (***** : Model No)					

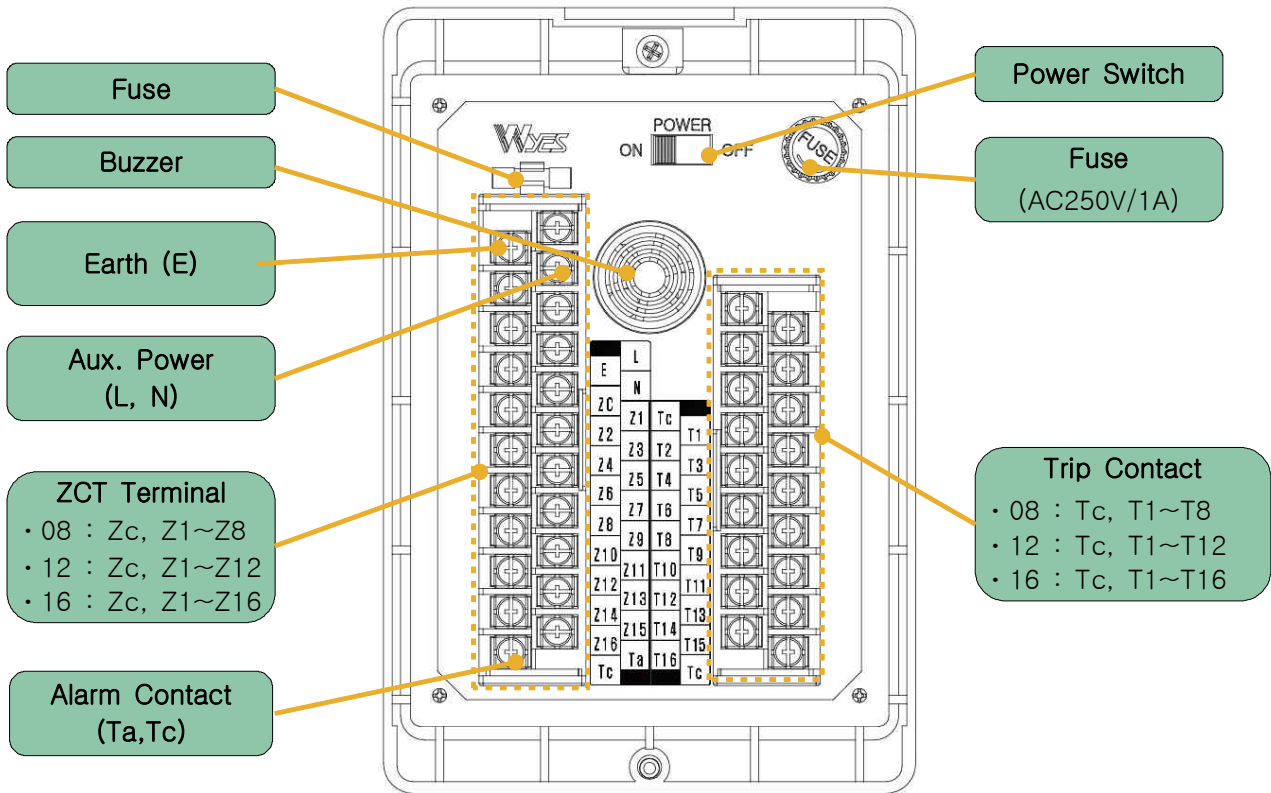
3. Description of the product

3-1 Name and description of the front part

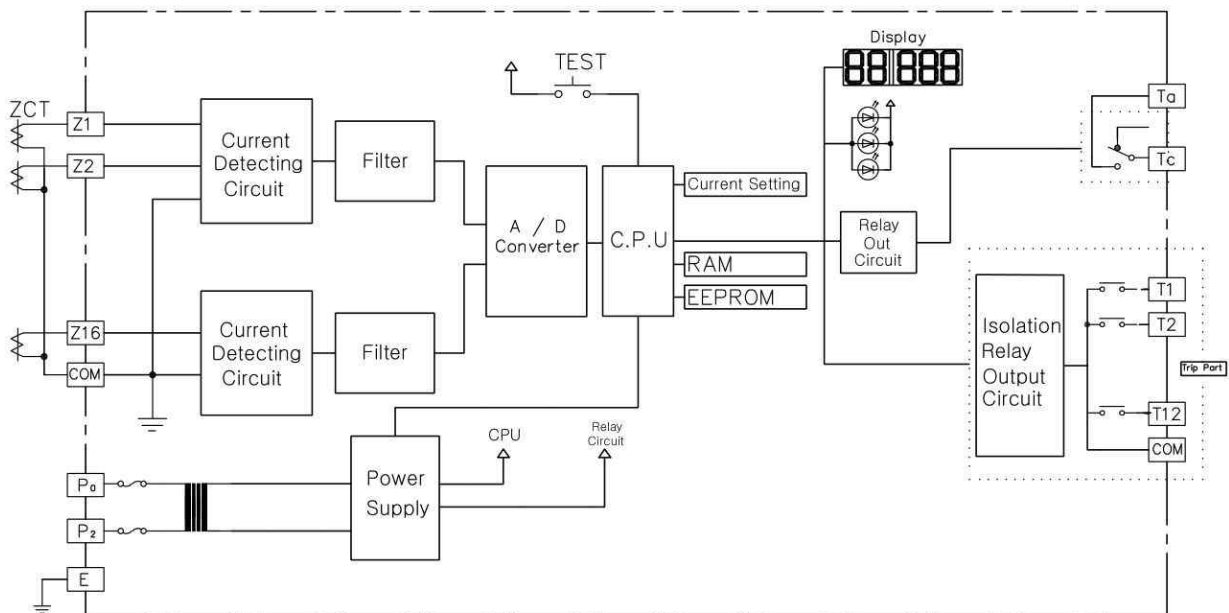


- ① Data Display
 - Measurement display of the line with 8-digit FND
 - Parameter data display
 - Each circuit display
- ② System LED
 - Power Lamp: Monitoring power failure and CPU status.
※ If a problem occurs with the product, the lamp will turn off.
 - If there happens a higher electric leakage than the sensitivity current setting, then the LED(red) in the corresponding circuit lights up.
- ③ KEY Part
 - Check Error KEY : Check leakage current data
 - Curr Set KEY : Sensitivity Current Setting
 - ▼▲ KEY : Use current and circuit setting changes
 - Ent KEY : Used to save after current correction and check after selecting circuit when testing circuit
 - RST / DEL KEY : Used to return the earth leakage alarm of alarm and delete the stored earth leakage data.
- ④ Function
 - Buzzer: Used to mute the buzzer
 - Reset Method : Select the earth leakage alarm return method (manual and automatic)
- ⑤ Circuit test
 - Check the state of alarm and ZCT connection

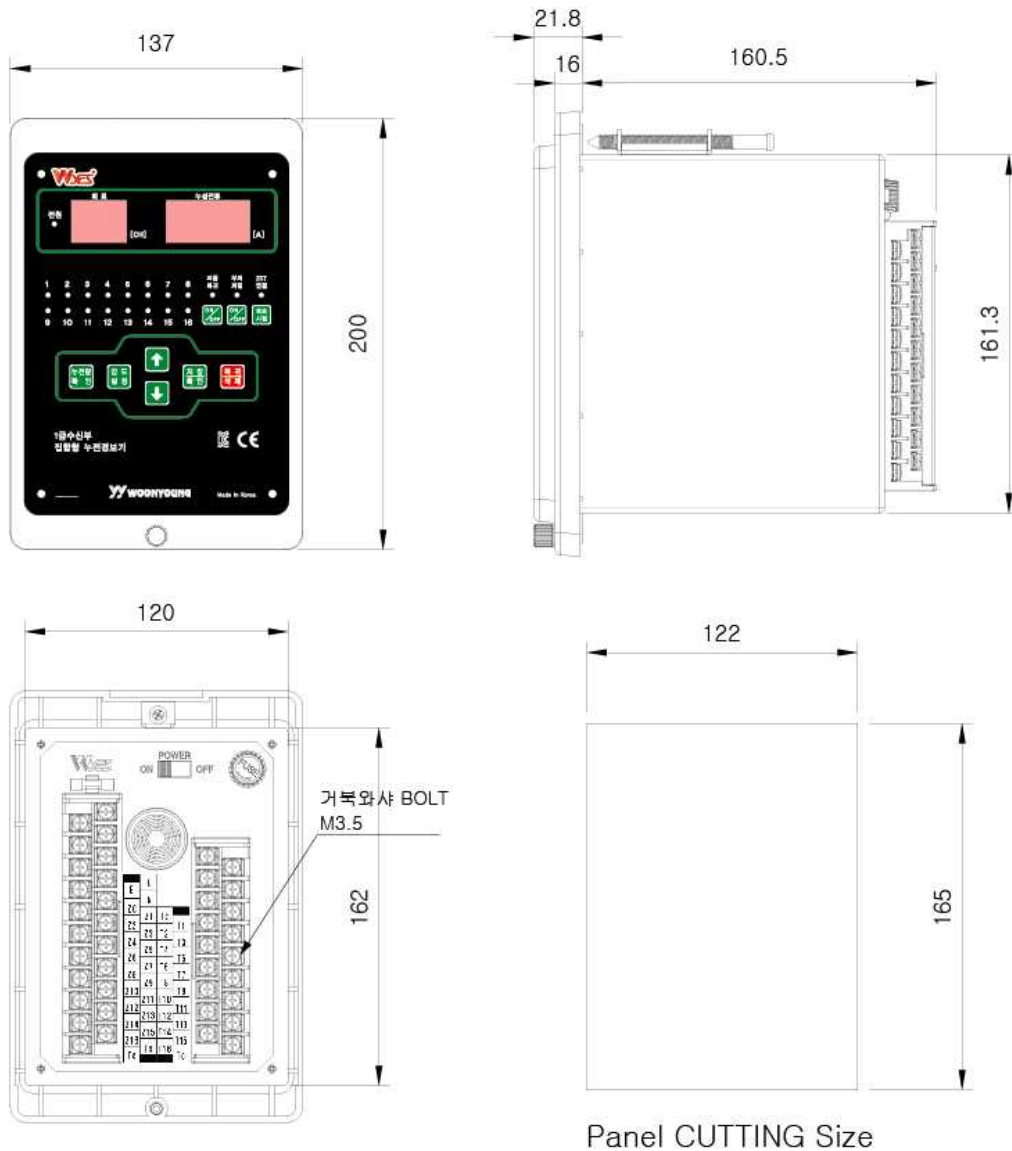
3-2 Terminal Diagram



3-3 INTERNAL BLOCK DIAGRAM



3-4 DIMENSION



3-5 Caution in installation

- There is a switch to turn ON/OFF the power, so if the FND doesn't light up after installation, check if the power switch is ON.
- Perform self operation tests by circuit by pushing the TEST button after installation to check if the alarm is normal.
- Working current is set to 0.5A when the product is released from the factory.
- Use the "Circuit test" function of 4-4 to check the product regularly for 6 months.
- When installing a ZCT, separate the secondary terminal line at least 10cm from the power line. In addition, for lines with severe noises(harmonics), use a shielded cable for the secondary line of the ZCT.
- When installing a ZCT, pass all of the 2 wires for 1P2W, 3wires for 1P3W, and 4 wires

4. Setup

4-1. Sensitivity Current Setting

- ① Press the **Curr Set** to select the circuit you want to set by pressing the **↑** **↓** when the circuit display **0 1** is blinking.
- ② Select the circuit by pressing the **ENT** to correct the set value **↑** **↓** to display the Data display section **0.50** number blinking.
- ③ Press the **ENT** to save the current setting and the circuit display will blink.
- ④ Repeat steps 2 to 3 to correct the other circuit's set value.
- ⑤ If you press **Curr Set** and **ENT** at the same time in ③, the value in ② can be collectively corrected.

4-2. Buzzer Mute Setting

- ① Press the **Buzz Off** to show on the Data display section **8 0FF** and mute the buzzer.
- ② To use the buzzer function, press the **Buzz Off** again and the Data display section will display **8 0N** and the buzzer will be activated.

4-3 Auto Reset Setting


- ① If you press the **Auto Reset**, **AR 0FF** is displayed on the Data display section, and the alarm signal generated by the short circuit will continue even if the short circuit is removed.
- ② To use the Auto Reset function, press the **Auto Reset** and the Data display section will display **AR 0N** and the Auto Reset function will be activated.



4-4. Circuit Test

- ① If you press the **ZCT Con.**, when the circuit display **0 1** is blinking, press **↑** **↓** to select the circuit you want to test.
- ② If you press the **ENT** after selecting a circuit, the presence or absence of ZCT connection will output an alarm as **1 0N** or **1 0FF** in the Data display section.
(ON: ZCT connection, OFF: No ZCT)
- ③ In Section ②, you can press the **Check Error** + **ENT** at the same time to perform the automatic test of all circuits in sequence.
- ⑤ To stop the test, press the **RST DEL**

※ When ZCT is connected to the circuit in the circuit test, the LED (red) of the circuit is also turned on.

4-5. Leakage Current Memory Check

- ① Pressing the  will display the total number of leaks.
- ② x10 digits of the circuit display indicate the number of saved data, and x1 digit indicates the sequence number.







At this time, if you press  , the leakage current value is displayed in the order of leakage current, and LED(red) of the corresponding circuit is turned on.

- ③ To delete the stored data, press and hold the  for about 2 seconds.

The display will show - - and the data will be deleted.

- ※ When you press the CHECK , if - - is displayed on the circuit display, it means that there is no leakage current memory.

4-6. Low Pass Filter Setting

- ① Press the  +  +  at the same time to change to the LPF function setting screen.
- ② You can set the LPF function On/Off by pressing the  .
- ③ After setting, press the  and the set status will blink 3 times.

※ LPF ON : 45~70Hz leakage current measurement

※ LPF OFF : 45~450Hz leakage current measurement

4-7. Setup range

The setup range for this device is as follows.

Item		WYED-MxxN	WYER-MxxN	Setup when released from the factory
Current	Setting range	0.1 ~ 1A (0.1A Step)		0.5A
	Measurement range	0.05A~1.50A, OVER		-
	Method	ONE(each) , ALL(total)		ONE(each)
Operation time		Cannot be Set		≒ 0.5 sec
Buzzer OFF		ON, OFF		ON
Auto Reset		ON, OFF		ON
Low Pass Filter		ON, OFF		ON
ZCT Circuit Test		MANUAL, AUTO		MANUAL



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