

DEESYS

한국검정공사 형식승인품
전자기 적합성 시험필



Earth Leakage and Ground Fault Relay

- Multi Function Earth Leakage Detector and Fire Alarm
- Earth Leakage Fire Alarm and Relay [ELR] 1C, 5C, 10C
 - Earth Leakage Relay [ELR] 1C
- Multi Function Ground Relay [GFR] 5C, 10C
 - Aux Relay Board [Isolation] 5C, 10C
 - Ground Fault Relay 1C

누전경보기 지락검출계전기
(Analog/MICOM) (Analog/MICOM)



Multi Function Earth Leakage Detector & Fire Alarm

누전경보기를 설치해야 할 시설물(소방법 제 29조 3항)

누전경보기를 설치해야 할 소방 대상물(내화구조가 아닌 건축물로서 벽·바닥 또는 반자의 전부나 일부를 불연재료 또는 준불연재료가 아닌 재료에 철망을 넣어 만든것에 한한다)은 다음과 같다. 다만 가스시설 또는 지하구의 경우에는 그러하지 아니하다.(개정 94.7.20, 97.9.27)
 연면적 500㎡·이상(업무시설·통신촬영시설 교육연구시설 및 전시시설의 경우에는 1,000㎡이상)인 것(개정 94.7.20)
 계약전류용량(동일 건축물에 계약종변이 다른 전기가 공급되는 경우에는 그중 최대계약전류 용량을 말한다)이 100암페어를 초과하는 것

Facilities requiring installation of leakage detection and fire alarm devices:

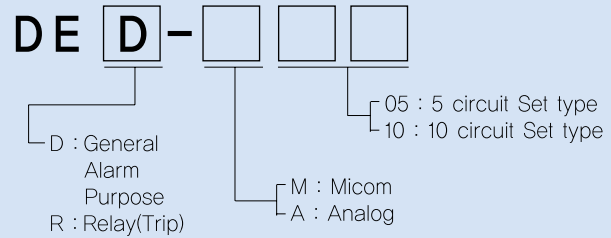
(As per the enforcement laws articles 17-8, 18-6, and 19-7 of the laws for prevention and extinguishing of fires)

| Objective facilities | Aggregated area | Contract current capacity |
|---|---|---|
| Class I facilities per article 17-8 -Theaters, Stadiums -Conference halls, Restaurants -Public markets, Supermarkets -Hotels, Motels -Dorm Inatories -Hospitals -Welfare institution for the seniors -Welfare institution for the handicapped -Kindergartens -Bathhousesds | 300㎡ or more All lines below same as above | Above 100A All lines below same as above |
| Class II facilities per article 18-6 -Rail stations & Bus terminals -Passenger's waiting rooms -Churches & Temples -Multi-family housings of 4 stories and up -Schools -Exhibition halls -Factories and Work places | 500㎡ or more All lines below same as above | Above 100A All lines below same as above |
| Class III facilities per article 19.7 -Warehouses -Garages -Hangars | 100㎡ or more All lines below same as above | Above 100A All lines below same as above |

Multi Function Earth Leakage Detector & Fire Alarm [ELD]

Optional Specification

- (For example)
- DED-M10 : Set MICOM type
ELD 10 circuit
 - DED-A05 : Set ANALOG type
ELD 5 circuit



Rating and Performance

| Description | Microm type | | Analog type | |
|--------------------------------------|--|--|---|-------------|
| | Model No | Model No | Model No | Model No |
| Model No | DED-M10(10C) | DED-M05(5C) | DED-A10(10C) | DED-A05(5C) |
| Type approval No | 07-4 | 07-5 | 07-17 | 07-12 |
| Rated supply voltage | AC:110/220V in common | | | |
| Rated supply frequency | 50/60Hz | | | |
| Nominal operating current | 0.2~0.5~1.0A(3 steps) ZCT Input:200mA/100mV | | | |
| Current | Operating | 53%~75% of nominal operating current 1sec 0.1A | | |
| | Non operating | 52% nominal operating current | | |
| Allowable supply voltage fluctuation | 80%~120% of rated supply voltage | | | |
| Reset Method | Manual/Automatic | | | |
| Warning circuit voltage | Below AC 600V | | | |
| LED indication | Leakage level:Digital Leaking circuit: RED LED Warning:RED LED Power supply:GREEN LED ZCT continuity:YELLOW LED Cont/Auto-alarm:YELLOW LED Buzzer alarm:YELLOW LED | | Leaking circuit: RED LED Warning:RED LED Power supply:GREEN LED ZCT continuity:YELLOW LED Cont/Auto-alarm:YELLOW LED Buzzer alarm:YELLOW LED | |
| | Power consumption | 3.5VA | 3.0VA | 8VA |
| Operating | 6.0VA | 5.5VA | 9VA | 7VA |
| Ambient temperature | -10°C(Thru + 50°C) | | | |
| Sound level | Buzzer(more than 75dB) | | | |
| Insulation resistance | Primary-case | } 100MΩ or more (Tested by 500V megger) | | |
| | Secondary-case | | | |
| | Primary-Secondary | | | |
| Dielectric strength | Primary-case:1500V | } AC 60Hz, 1Min | | |
| | Secondary-case 500V | | | |
| | Primary-Secondary:1500V | | | |
| Impulse wave withstand voltage | Between terminals | } Peak value:6.0kV, Duration of wave front:0.5~1.5ms Duration of wave tail:30~50ms and up | | |
| | Power supply terminals to case | | | |
| Vibration strength | On duty:Full wave width 1mm, 1000rpm, 10min | | | |
| | Not on duty:Full width 4mm, 1000rpm, 60min | | | |
| Mechanical shock resistance | On duty:Natural drop 15 times | | | |
| | Not on duty:Acceleration of 5kg Max force in any direction for 5 times | | | |
| Contact point capacity | 1a:AC 250V,0.5A or DC 30V, 2A / contact | | | |
| Fuse rating | 0.1A | | 0.2A | |
| Weight | 1.9kg | 1.7kg | 2kg | 1.9kg |
| Casing | ABS Resin/Black N1,5 | | | |
| Mounting method | Flush mounting | | | |

Multi Function Earth Leakage Detector & Fire Alarm [Analog]

DED-A10



동작 특성 설명

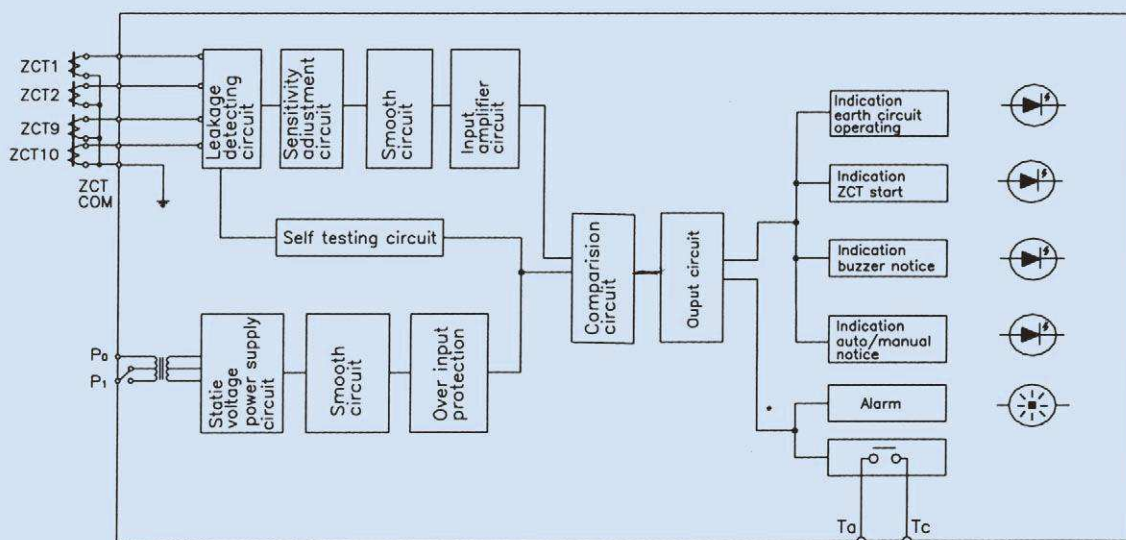
전기적 환경에 대한 서지보호 대책으로 전자기 적합성 시험을 필한 제품으로 어느 환경에서나 사용가능하며 전기적 환경에 대응할수 있는 회로를 추가하여 제작된 제품입니다.

1. 선로에 누전이 발생하면 해당 선로 변류기의 출력 전압이 누전 검출 회로에 입력되어 집니다.
2. 수신부는 누전 검출 전압을 감도 조정 회로에 의해 재조정한 뒤, 비교 판정을 하고 기준치 이상이 되면 다음과 같이 경보 표시 합니다.
 - ① 경보등(적색 LED)을 점등합니다.
 - ② 부저를 동작시켜 경보합니다.
(주의 : 부저 on/off 스위치를 off로 설정하였을 경우에, 부저 (on/off 주의) 등이 점멸하고 부저는 동작하지 않습니다.)
 - ③ 회로별 누전 표시등(적색 LED)의 해당 회로가 점등됩니다.
(주의 : 지속/자동 스위치를 자동으로 설정하였을 경우에는 지속/자동주의 등이 점멸하고, 누전이 복구되거나 없어졌을 때 자동적으로 위 ①,②항의 경보표시가 소멸됩니다.)
3. 복귀(Reset)
선로의 누전상태를 보수한 후 지속/ 자동 스위치가 지속으로 설정 되어 있을 경우에는 복귀 스위치를 눌러 수신부의 기능을 초기 상태로 환원합니다.

Performance Features

1. In case of leakage, output voltage that is induced in the current transformer is stored to leakage detection circuit.
2. Receiver adjusts input voltage deriving to leakage to sensitivity scale for comparison with the criterion. And if the value is determined to be exceeding the criterion, it generates warning and alarm as follows.
 - 1) The alarm lamp(Red LED) turns on.
 - 2) The buzzer sound on to sign the fault.
Note : If buzzer on/off switch is set to off, position buzzer on/off lamp will blink without sounding.
 - 3) Leaking circuit indicator lamp (Red LED) of the applicable circuit turns on or off.
Note : If Continue / Auto switch is set to Auto position, continue / Auto warning lamp will blink. When the leakage is stopped or the circuit is recovered to normal state, the alarms of subparagraphs 1) and 2) will automatically disappear.
3. Reset
If Continue / Auto switch is set to continue position, press reset button to initialize receiver function as soon as the leakage defect is removed.

Internal block diagram



Multi Function Earth Leakage Detector & Fire Alarm [Analog]

설치전 점검사항

- ※ 경보기를 설치하기전 다음 사항을 점검하여, 경보기의 기능을 확인 하시기 바랍니다.
1. 수신부의 P₀, P₁ 단자에 전원 전압(AC 220V)를 연결하고 뒷면의 전원 on/off 스위치를 on으로 설정하십시오.
(경보기의 전원 전압은 공장 출하시 설정치가 AC 220V입니다. 만약 AC 110V를 사용하실 경우 뒷면의 슬라이드 스위치를 AC 110V로 전환 조정하여 사용하십시오.)
 2. 전원등 (녹색 LED)이 정상적으로 점등되면, 회로 시험 및 ZCT 도통 스위치를 회로별로 눌러 회로시험을 합니다. 각 회로별 스위치를 누르면 회로별 누전 표시 LED와 경보 LED가 점등되고 경보음이 울립니다. 개별 시험후 복귀 스위치를 눌러 초기상태로 복귀시키십시오.
 3. 2의 시험을 지속/자동 스위치를 자동에, 부저 on/off S/W를 off로 설정하고 재차 행하십시오. 이때 부저는 울리지 않고 모든 표시장치는 자동으로 환원됩니다.
(주의: ZCT 도통 LED는 회로별 단자에 ZCT를 접속한 후 도통 스위치를 눌러야 점등합니다.)
 4. 이상의 시험이 끝나면 뒷면의 on/off 스위치를 off 상태로 전환한후 전원을 제거하십시오.

Checking Items Before Installation

- Note : Check following items to ensure normal function of the device before installation
1. Connect power line (AC 220V) to terminals P0 and P1 of the receiver and set power on/off switch to on position.
(The power is set to AC 220V at factory for delivery. If AC 110V is used, set the position of selector switch to AC 110V position.)
 2. When power lamp (Green LED) is turned on to indicate normal status, carry out circuit tests by pressing circuit test switch and act continuity switch for each circuit. When circuit test switch of a line is pressed, leakage indicator LED and warning LED of the circuit turn on with alarm. When the test is over, initialize all the function by pressing reset button.
 3. Repeat the testing explained in above paragraph 2 with Cont/Auto switch that is set to Auto position and buzzer on/off switch that is set to off position. In this instance, /and buzzer will not sound and all the indicators will return to normal status automatically.
(Note : ZCT continuity LED will light only when ZCT is connected to circuit terminals and continuity test switch is pressed).
 4. After the completion of above tests, return the power switch on back panel that is set to off and then remove power connection

설치후 점검 사항.

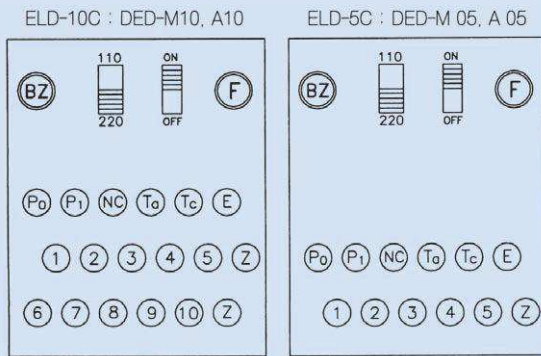
1. 전원등이 점등되었는지 확인합니다.
2. 회로시험 및 ZCT 도통 스위치를 눌러 각 회로별 동작상태 및 해당 회로의 ZCT도통 LED가 점등되는지 확인합니다. 만약 점등되지 않을 시에는 해당 단자의 연결상태를 점검하시기 바랍니다.
3. 복귀 스위치를 눌러 수신부의 전기능을 초기감시상태로 환원시킵니다.

Checking Items After Installation

1. Check whether power supply lamp is turned on or not
2. Press circuit test switch and ZCT continuity switch. And check whether if circuit state indicator lamp and ZCT continuity indicator lamp of the circuit turn on. If no, check connections of terminals.
3. Initialize the performance of receiver by pressing reset button.

Multi Function Earth Leakage Detector & Fire Alarm [Analog]

External terminal arrangement



BZ:BUZZER

110 : AC 110/220 Selection S/W



ON : Power ON/OFF S/W

Ⓛ: FUSE

P₀, P₁ : 110/220V Common

T_a, T_c : Warning relay contacts(no voltage)

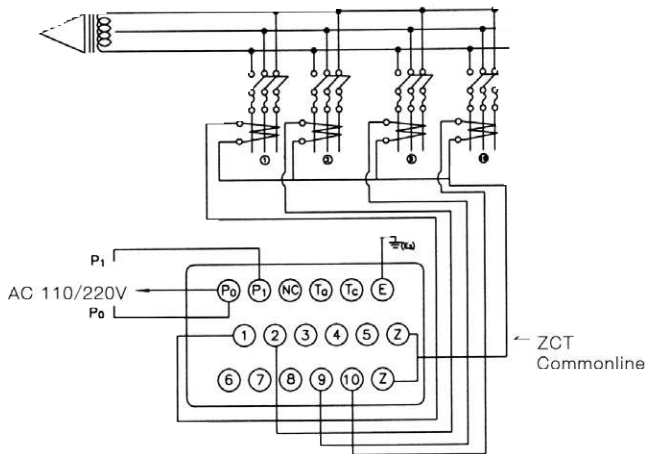
1~10 : ZCT Secondary circuit terminals

Z : ZCT Secondary circuit common terminal

E : Grounding terminal

NC : Idle terminal

Leakage detector external wiring



1. In case of 3 phase 4 line power system, go through all 4 lines into ZCT.
2. Control power shall be connected to P₀ and P₁ for AC 110/220V in common(Check setting of voltage selector switch).
3. Terminal T_a and T_c, (no voltage) is used to connect externally installed buzzer and warning lamps.
4. Terminal Z is common to all circuits. That all common terminals shall be connected to terminal Z.
5. Terminal E is for grounding, It should be connected ground terminal on terminal Z.
6. Use power service outlet for it self alone without tapping.

※ ZCT Common단자는 내부에서 연결이되어 있으므로 한단자만 사용해도 됩니다.(10C만 해당)

External dimension(ELD-M10/M05,ELD A10/A05)

