

R-ELRM-10V and R-ELRM-30V- Specification

1. Rudolf earth leakage relay is a complete micro-processor based protection relay which is manufacture and tested to IEC60755, EN50081-1, EN50081-2, EN50082-1, EN50082-2 and CE compliant;
2. Rudolf earth leakage relay is designed to monitor and detect true RMS earth leakage current in conjunction with a separate toroid;
3. Rudolf earth leakage relay is equipped with internal monitoring feature providing self checking function to each relay from its micro-processor controller;
4. Rudolf earth leakage relay is equipped with a built in digital LED display to provide precise information of leakage current and status of setting;
5. Rudolf earth leakage relay sensitivity and time delay are adjustable using 2-button operation locate on the face of the relay and its setting are:

For ELRM-10V

- Sensitivity : 30, 50, 75, 100, 300, 500, 750 mA

1, 3, 5, 7.5, 10 (user – selectable)

Time delay : instantaneous, 50, 100, 250, 500msec (user – selectable)

For ELRM-30V

- Sensitivity : 6, 10, 30, 50, 75, 100, 300, 500, 750 mA

1, 3, 5, 7.5, 10, 15, 20, 25, 30A (user – selectable)

- Time delay : instantaneous, 50, 250, 500msec, 1, 2.5, 5, 10 sec (user – selectable)

6. Rudolf earth leakage relay come with a built in user programmable contact to provide pre-alarm indication via local bar indicator and remote contact. The programmable setting can be 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55% & 60% of its pre-set sensitivity;
7. Rudolf earth leakage relay have fast response time of <25msec to fault current that are 5 x greater than the set trip current;
8. Rudolf earth leakage relay is equipped with a self test duration of approximately 1sec operational during power on situation and memory storage of the leakage fault to be reset with the test/reset button. The test mode allow fault simulation to detect leakage current, toroid open circuit, supply voltage fault;

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9. Rudolf earth leakage relay is with possibility to differentiate various fault conditions.
 - Leakage current – when earth leakage relay trip on earth leakage
 - Toroid open circuit –when connection between the toroid and the relay is broken
 - Toroid short circuit – when connection between 11 & 13
 - Supply voltage fault – when supply voltage is <70% of Un
10. Rudolf earth leakage relay come with a tamper proof sealable cover and a local “test” button for simulation of fault condition and “reset” button for clearing of fault condition;
11. Rudolf earth leakage relay is equipped with 2 x 8A SPDT relay to provide contact operation for standard output and position safety output. Similarly contact point are available for remote operation to simulate “test” and “reset” position;
12. Contact rating for 2 x SPDT are :
 - AC1 250V 8A (2000VA)
 - AC15 250V 2.5A
 - DC1 25V 8A 200W

Electrical life \geq 150,000 operation at rated load
Dielectric voltage 2kV AC rms IEC60947-1
Rated impulse withstand voltage 4kV (1.2/650 micro sec) IEC60664
13. Rudolf earth leakage relay in housed in a 70mm DIN housing made of grey flame retardant Lexan UL94VO with mounting option onto 35mm symmetric DIN rail to BS 5584L1978 (EN50002, DIN 46277-3) and terminal conductor size \leq 2.5mm sq standard and \leq 4 mm sq solid;
14. Rudolf earth leakage relay must be use in conjunction with its co-ordinate toroid :
 - R-ZCT035 for 35mm sq internal diameter
 - R-ZCT070 for 70mm sq internal diameter
 - R-ZCT120 for 120mm sq internal diameter
 - R-ZCT210 for 210mm sq internal diameterhaving connection to external toroid of 1000:1 turn ratio and toroid withstand capacity : 50kA for 200msec and maximum distance between toroid and relay of 50 metres;
15. Rudolf earth leakage relay is with these technical specification :
 - supply voltage Un : 115VAC, 230VAC 85-115% of Un
 - frequency range : 50/60Hz (AC supplies)
 - Isolation : over-voltage category III
 - Rated impulse withstand voltage : 2.5kV (115Vac supplies) 4kV (230Vac supplies) for 1.2/50micro sec IEC60664
 - Power consumption (max) : 6VA (AC supplies)
 - Ambient temperature –5 to +60 deg C / -5 to +40 deg C (in accordance to IEC755)
 - Relative humidity : +95%

R-ELRM44V-30 - Specification

1. Rudolf earth leakage relay is a complete micro-processor based solution which is manufactured and conforms to: IEC 60755, IEC60947, IEC62020, IEC61543, IEC61000 and CISPR 22.
2. Rudolf earth leakage relay has obtained RoHS compliance; a directive that came into force in July 2006 and stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment".
3. Rudolf earth leakage relay is designed to monitor and detect true RMS earth leakage current in conjunction with a separate toroid.
4. Rudolf earth leakage relay is enhanced with an internal monitoring feature that provides self checking function.
5. Rudolf earth leakage relay has a LED bargraph that provides constant indication of any leakage current.
6. Rudolf earth leakage allows adjustable sensitivity and time delay via the trimpots located on the face of the relay and its settings are:

R-ELRM 44V-30

- Sensitivity: 30, 100, 300, 500mA, 1, 3, 5, 10, 20, 30A (user selectable)
 - Time delay: instantaneous, 60, 150, 250, 500, 800msec, 1, 2.5, 5, 10 sec (user selectable)
7. Rudolf earth leakage relay comes with a tamper-proof sealable cover and separate "test" and "reset" push buttons.
 8. Rudolf earth leakage relay has fast response time of <25mS to fault current that is five times greater than the set trip current.
 9. Rudolf earth leakage relay is with possibility to differentiate various fault conditions:
 - Leakage current – when earth leakage relay trip on earth leakage
 - Toroid open circuit – when connection between the toroid and the relay is broken
 - Toroid short circuit – when connection is between 8 & 9

R-ELRM44V-30 - Specification

10. Rudolf earth leakage relay is equipped with 1XSPNO relay and 1XSPDT relay to provide contact operation for positive safety and standard output respectively. In addition, it is coupled with connection facility for remote “test” and “reset” function to facilitate the fault simulation operation.

11. Contact rating for 1 X SPNO and 1 X SPDT relay are:

- AC1	(250V)	8A (2000VA)	6A (1500VA)
- AC15	(250V)	2.5A	4A
- DC1	(25V)	8A (200W)	6A(150W)

Electrical life \geq 150,000 ops at rated load

Dielectric voltage 2kV AC rms IEC60947-1

Rated impulse withstand voltage 4kV (1.2/50 μ S) IEC 60664

12. Rudolf earth leakage relay is housed in a 44mm DIN housing made of grey flame retardant Lexan UL94VO with mounting option onto 35mm symmetric DIN rail to BS 5584:1978 (EN50002, DIN 46277-3) and terminal conductor size \leq 2.5mm² stranded and \leq 4mm² solid.

13. Rudolf earth leakage relay must be used in conjunction with its co-ordinate toroid:

- R-ZCT035 for 35mm² internal diameter
- R-ZCT070 for 70mm² internal diameter
- R-ZCT120 for 120mm² internal diameter
- R-ZCT210 for 210mm² internal diameter

Having connection to external toroid 1000:1 turn ratio and toroid withstand capacity of 50kA for 200mS and maximum distance between toroid and relay of 50 metres

14. Rudolf earth leakage relay is with these technical specifications:

- Supply voltage Un: 12-125V DC (85%- 110% of U)
 - : 24VAC, (85-115% Of Un)
 - : 115/230 VAC (85-115% Of Un)
 - : 400VAC (85-115% Of Un)
- Frequency range: 50/60Hz (AC Supplies)
- Isolation : over-voltage category III
- Rated impulse withstand voltage: 800V (24VAC supplies), 2.5kV(115VAC supplies), 4kV (230/400VAC supplies) for 1.2/50 μ S IEC60664
- Power consumption (max): 6VA (AC supplies), 5W (DC supplies)
- Ambient temperature: -20°C to +55°C (-5°C to +40°C in accordance with IEC 60755)
- Relative humidity: +95%