Vigirex
Residual current relays

Life protection  Service continuity  Simplicity
> Designed for all types of distribution systems and all voltages
> Wide range of auxiliary supply voltages
> Wide setting and operating possibilities
> Wide range of compatible sensors up to 3200 A
> Compatible with all electrical switchgear devices on the market
A complete range of protection and monitoring devices

Vigirex residual current relays, with associated toroids, measure the earth leakage current in the electrical installation. They provide earth leakage protection and earth leakage monitoring.

**Protection relays**
They interrupt the power supply to the monitored system in the event of a fault. They protect:
> people against direct and indirect contact;
> equipment and property against fire.
They store the earth fault in the memory and order opening of the associated circuit breaker when the set operating residual current $I\Delta n$ is overrun. Depending on the relay, the threshold $I\Delta n$ is fixed, user-selectable or adjustable.

**Monitoring relays**
They indicate overruns of leakage current thresholds. They reset automatically when the fault is no longer present. When used in conjunction with an autoreclosing controller, they protect against earth faults caused by insulation failures.

**Centralised monitoring relay**
Use of an RMH Vigirex relay with an RM12T makes it possible to centralise the monitoring of 12 circuits in a single case.

Discover new Vigirex RHU and RMH relays
Replacing old communication offer by the new one with Modbus RS485-SL and integrated in Smart Panel architecture.

new
Absolute protection of life and property

The overrun of leakage current thresholds may represent a threat to life and property if it is not immediately located. Through permanent monitoring of this overrun, the Vigirex range makes the protection efficient.

Maximum safety
Vigirex residual current devices (RCDs) with appropriate settings provide effective protection of life and property. The characteristics of the relay/toroid combination ensure reliable measurements.

Operation guaranteed in less than 40 ms
Schneider Electric guarantees the safe clearing of faults by Vigirex relays set to 30 mA and combined with any of its circuit breakers rated up to 630 A.

Overvoltage category IV
The reinforced insulation of Vigirex relays (overvoltage category IV, i.e. the most severe category) makes direct connection possible at the head of the installation or on the upstream busbars without any additional galvanic isolation.

Continuous self-monitoring
Vigirex relays continuously monitor the power supply, relay/toroid link and internal electronics. Failure of the detection circuit is signalled and may be used to trip the circuit breaker. The LEDs on the front panel can also be used to check operation at any time.

Settings protected by a lead-sealable cover or password
Access to settings can be protected by a cover with a lead seal. The test and reset buttons remain accessible on the front panel of the relay. For RHU and RMH relays, settings are protected by a password through the keyboard.

Detection
with associated toroid

Alarm
with the Vigirex relay

A three-step process

Class 2 front panel insulation
Class II insulated front panel certification for the entire range as per standards IEC/EN 60664-1 and NFC 15-100.
The entire range offers numerous settings possibilities that may be used to create many discrimination levels, from the incomer to the final output circuits. With Vigirex, unnecessary downtime is eliminated.

**Diagnosis of installation faults**
The indication relays are used to:
> monitor electrical insulation faults,
> prevent outages,
> initiate preventive maintenance.

**Minimise outages**
Correct setting of the residual current devices (RCDs) ensures total discrimination for insulation faults in the installation, i.e. only the faulty section is shut down. Elimination of most cases of RCD nuisance tripping ensures both safety and continuity of service, two indispensable features for users.

**Reduced tripping tolerance**
Vigirex relays trip between $0.8 \text{ et } 1 \times I_{\Delta n}$, thus increasing immunity to nuisance tripping by 60% compared to the earth leakage protection requirements of standard IEC 60947-2.

During circuit energisation, the inverse-time tripping curve makes it possible to avoid nuisance tripping of the earth leakage protection system by false zero phase sequence currents caused by:
> high transient currents of certain loads (e.g. motors, LV / LV transformers),
> the charging of capacitances between active conductors and earth.

**Frequency filtering and true RMS measurement**
Frequency filtering by Vigirex residual current relays ensures maximum protection against insulation faults and a particularly high level of continuity of service.

Frequency converters such as variable speed drives generate high levels of high-frequency leakage currents. During normal operation, these leakage currents are not a danger to users. The residual current relay measures all types of signals and calculates the true RMS value weighted to allow for frequency filtering.

**Test and reset**
To monitor the protection or indication system, the relay includes a complete test function with or without tripping of the protection device.
Moreover, the purpose of the test is to check:
> the output contacts,
> the display (RHU/RHUs and RMH),
> the LEDs,
> the internal electronics.

**Protection**
with the circuit breaker
Simplicity of choice, Simplicity of installation

Developed to be suitable for all installation systems, the Vigirex range provides real simplicity of choice and assembly.

Overview of the Vigirex range

### Protection relays

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<td>except RHUs</td>
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<tr>
<td>Display of measurement</td>
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### Monitoring relays

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<thead>
<tr>
<th>Device</th>
<th>RH99M&amp;P</th>
<th>RH197M&amp;P</th>
<th>RHUs/RHU</th>
<th>RMH</th>
<th>RM12T</th>
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<td>Display of measurement</td>
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<td>12 measurement channels</td>
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Formats for all installation systems

Schneider MCB format devices in the Vigirex range can be mounted on a DIN rail (RH10, RH21, RH99 and RH197) or on a universal mounting plate using mounting lugs (RH10, RH21 and RH99). The 72 x 72 mm front-panel mount devices (RH10, RH21, RH99, RH197, RMH, RHUs and RHU) are mounted on panels, doors or front plates using clips.

<table>
<thead>
<tr>
<th>Installation system</th>
<th>Suitable format</th>
<th>Front-panel mount</th>
<th>DIN rail</th>
<th>with clip-in toroid</th>
<th>with mounting lugs</th>
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<tbody>
<tr>
<td>Main LV switchboard</td>
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<td>modular-device zone</td>
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<td>Automatic control panel or machine panel</td>
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<td>Final distribution enclosures</td>
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- **RHU**
  - Panel device
  - Adjustable tripping threshold from 30 mA to 30 A
  - Adjustable pre-alarm of the tripping threshold value
  - New HMI with keyboard unit display by LCD
  - Modbus communication RS485-SL.

- **DIN device**
  - With mounting lugs secured to a mounting plate

- **Clip-in toroid and plug-in connectors**
  - Plug-in connectors allow easy and secure disconnection for switchboard acceptance dielectric tests.
  - DIN-format Vigirex relays can be equipped with a toroid of 30 to 50 mm in diameter.

Front-panel mount device
All the guarantees of a leading brand

Certification
> The Vigirex residual current relays comply with all the major standards worldwide, in particular those dealing with:
  - earth leakage protection: IEC 60755 and IEC 60947-2 annex M (sequences MI/MII/MIII/MIV) for the protection of life and property,
  - installation: IEC 60364,
  - electromagnetic compatibility (EMC): IEC 61000,
  - insulation coordination: IEC 60664.

> And North American standards:
  - ground fault protection: UL 1053 and CSA 22.2 No. 144 (protection of equipment and property).

Distribution and service network
With more than 5000 sales outlets in 130 countries, you are guaranteed to find worldwide the range of products complying with your needs and satisfying user country standards perfectly.

Environmentally friendly products
Schneider Electric is committed to an environmental approach, manufacturing products in line with the requirements of European Directive RoHS (Restriction of Hazardous Substances) in non-polluting ISO 14001-certified manufacturing units.

Tools for easy design
Full documentation, CAD software and a library are available to assist you at all stages of installation design.

Make the most of your energy
www.schneider-electric.com