

Vigirex

Residual current relays



Life protection



Service continuity

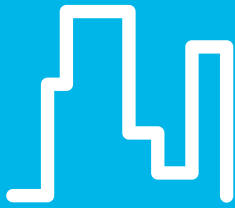


Simplicity

Schneider
Electric



Machines



Buildings



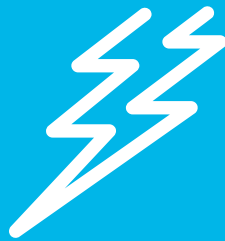
Retail



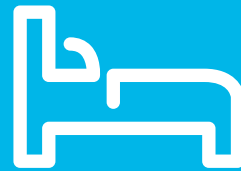
Hospitals



Airports



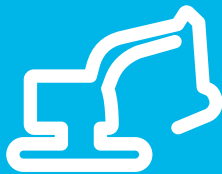
Electrical
energy



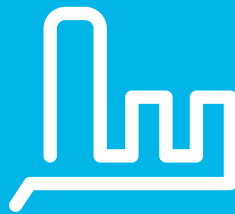
Hotels



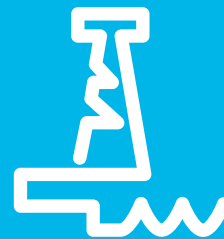
Industry



Mining



Refineries



Off-shore

- > 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.



Discover
the new
Vigirex
RH197M
relay!

Completing
the DIN rail
modular range
with the highest
settings flexibility.



new

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

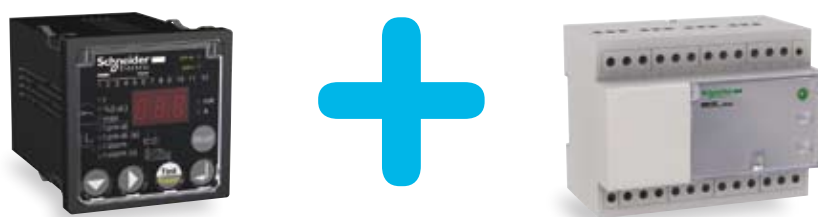
They indicate overruns of leakage current thresholds. They reset automatically when the fault is no longer present.

When used in conjunction with an autoreclosing controller, they protect against earth faults caused by insulation failures on:

- > telephone relays
- > radio repeaters
- > special applications.

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.



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.

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.

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.

Oversvoltage category IV

The reinforced insulation of Vigirex relays (oversvoltage 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

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.



Detection

with associated toroid

Alarm

with the Vigirex relay

A
three-step
process



1

Optimum continuity of service



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 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








2

3

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 | | | | | |
|--------------------------------------|--|--|---|---|--|
| Device |  |  |  |  * new |  |
| | RH10M&P | RH21M&P | RH99M&P | RH197M&P | RHUs/RHU |
| Functions | | | | | |
| Protection | • | • | • | • | • |
| Local indications | • | • | • | • | • |
| Remote hard-wired indications | | | | • | • |
| Remote indications via communication | | | | | • <i>except RHUs</i> |
| Display of measurement | | | | • | • |

| Monitoring relays | | | | Centralised monitoring relay | |
|--------------------------------------|---|--|--|---|---|
| Device |  |  * new |  |  |  |
| | RH99M&P | RH197M&P | RHUs/RHU | RMH | RM12T |
| Functions | | | | | |
| Protection | | • | • | | |
| Local indications | • | • | • | • | |
| Remote hard-wired indications | • | • | • | • | |
| Remote indications via communication | | | • <i>except RHUs</i> | • | |
| Display of measurement | | • | • | • 12 measurement channels | |



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.

| Installation system | Suitable format | |
|--|---------------------|-----------------------|
| | Front-panel mount | DIN rail |
| Main LV switchboard | • | |
| Power distribution switchboard | • | |
| | instrument zone | |
| | modular-device zone | • |
| Motor Control Centre (MCC) | | • with clip-in toroid |
| Automatic control panel or machine panel | | • with mounting lugs |
| Final distribution enclosures | | • |



RH197M benefits

- > Din rail device.
- > Adjustable tripping threshold from 30 mA to 30 A, with 19 user-selectable thresholds.
- > Adjustable alarm (50% or 100% of the tripping threshold value).
- > Instantaneous display of IΔn percentage by LED.
- > Optimum continuity of service (Nd) or optimum safety (Ne) modes.



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).



Tools for easy design

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



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.

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