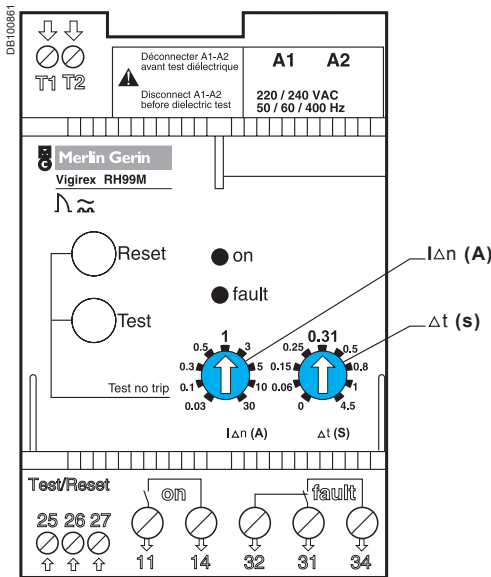




**$I\Delta n$  (A):** residual operating-current setting (the relay operates for a fault current  $\geq I\Delta n$ ).  
 Schneider Electric guarantees non-operation for all fault currents  $< 0.8 I\Delta n$ .  
 **$\Delta t$  (s):** minimum non-operating time.

## Function

Vigirex relays measure the earth-leakage current in an electrical installation via their associated toroids.

Vigirex relays may be used for:

- residual-current protection (RH10, RH21, RH99)
- earth-leakage monitoring (RMH or RH99)
- residual-current protection and earth-leakage monitoring (RH197P, RHUs and RHU).

## Residual-current protection relay

Protection relays control the interruption of the supply of power to the monitored systems to protect:

- people against indirect contact and, in addition, against direct contact
- property against fire hazards
- motors.

A relay trips the associated circuit breaker when the set residual operating current  $I\Delta n$  is overrun.

Depending on the relay, the threshold  $I\Delta n$  can be fixed, user-selectable or adjustable and the overrun can be signalled by a digital display of the measured current or a LED.

The leakage current is displayed:

- for the RH197P, on a bargraph made up of 4 LEDs indicating levels corresponding to 20, 30, 40 and 50 % of  $I\Delta n$
- for the RHUs and RHU, by digital display of the value of the leakage current.

Circuit-breaker tripping can be either instantaneous or delayed. On some relays, it is possible to adjust the time delay.

The protection relays store the residual-current fault in memory. Once the fault has been cleared and the output contact has been manually reset, the relay can be used again.

## Earth-leakage monitoring relays

These relays may be used to monitor drops in electrical insulation due to ageing of cables or extensions in the installation.

Continuous measurement of leakage currents makes it possible to plan preventive maintenance on the faulty circuits. An increase in the leakage currents may lead to a complete shutdown of the installation.

The control signal is issued by the relay when the residual-current operating threshold is overrun.

Depending on the relay, the threshold can be adjustable or user-selectable and the overrun can be signalled via a LED, a bargraph or a digital display of the measured current.

The leakage current is displayed:

- for the RH197P, on a bargraph made up of 4 LEDs indicating levels corresponding to 20, 30, 40 and 50 % of  $I\Delta n$
- for the RMH, RHUs and RHU, by digital display of the value of the leakage current.

The control signal can be either instantaneous or delayed. On some relays, it is possible to adjust the time delay.

Earth-leakage monitoring relays do not store the residual-current fault in memory and their output contact is automatically reset when the fault is cleared.

When used in conjunction with a Multi 9 ATm3 or ATm7 auto-reclosing controller (Schneider Electric catalogue numbers 18306 and 18307 respectively), they protect against earth faults due to insulation failures. Typical applications include telephone relay and radio repeater stations. In the event of a transient fault, this system can be used to automatically restore the supply of electrical power to an unattended station, thereby increasing availability and continuity of service.

## Use

Vigirex relays may be used for protection and maintenance at all levels in the installation. Depending on the relays, they may be used in TT, IT or TNS low-voltage AC installations for voltages up to 1000 V and frequencies from 50/60 Hz up to 400 Hz.

Vigirex protection relays are suitable for use with all electrical switchgear devices available on the market.