

## Mains disconnection switch

FR61.1-230V

CE

The FR61.1-230V mains disconnection switch disconnects the power supply once all series connected loads are turned off, thus preventing any electromagnetic interference fields from occurring. Up to 200mA drawn (resp. an ohmic resistance  $> 1\text{ k}\Omega$ ), small loads are acceptable which, once major loads are disconnected, do not prevent isolation from being accomplished. There is no need for manually setting the limit; it is learned by the FR61.1-230V. Loads drawing more than 200mA are consistently defined as loads which should cause the line power to be connected.

As long as no major load is turned on, one pole of the monitored circuit remains isolated from the mains.

Neutral and earth are connected continuously to avoid aerial effect. A 230V DC voltage is applied for monitoring. Therefore bridging of the make contact is not permitted, ultimately causing failure of the device.

The monitoring DC voltage produces no measurable alternating field, due to the low residual ripple.

### How to connect the mains disconnection switch

Terminal L = Phase

Terminal N = Neutral

Terminal 3 = Monitored conductor

### Description of the function

The current consumption of the current circuit to be disconnected is determined after the mains voltage is restored. If the current consumption is less than 30mA, the monitored conductor will be opened. If the current consumption is greater than 30mA, the conductor remains connected and the self-learning process begins.

If the mains disconnection switch has disconnected the conductor, it monitors the current circuit continuously. If a consumer is activated, the mains disconnection switch closes the conductor after a delay of approx. 1 second.

If the mains disconnection switch has connected the conductor, it monitors the alternating current consumption of the current circuit. If the current consumption is less than the learnt-in value, the conductor will be opened after a two-second delay.

If a new low-rating consumer is activated for longer than 24 hours, the total power consumption of the monitored current circuit is less than 200mA and the light was switched on and off again within 24 hours, then this consumer will be learnt in and the conductor opened.

### Base loads

A base load is used where loads drawing less than 30mA are employed or where loads, whilst they cannot be recognized because of their capacitance, are expected to cause the line voltage to be applied. Base loads must consistently start or operate in parallel with the related load and be turned off with the latter.

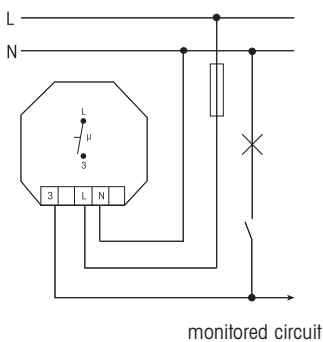
Typical applications: Fluorescent lamps, dimmer circuits and electronic transformers.

### GLE Base load element

It consists of a PTC in a small sleeve, with connecting leads, and can be fitted direct in a load, a switch box or a tapping box. It is not capable of keeping the mains disconnection switch connected unless an additional load is connected.

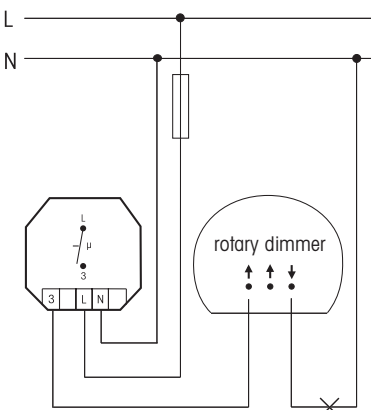
### Typical circuits

#### Standard connection



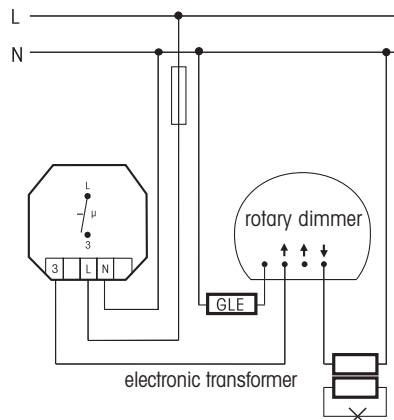
#### Elder rotary dimmers with phase-fired control (ON before zero crossing) for resistive and inductive loads

Can mostly be operated if no additional standby consumer is in the circuit. Otherwise see 'Modern dimmers'.



#### Modern rotary dimmers and rotary dimmers with phase-fired control (OFF before zero crossing) for electronic transformers

Only dimmers with an additional terminal mains disconnection switch can be used.



#### Touch dimmers and sensor dimmers

cannot be used. The universal dimmer switch EUD61NP and a push-button from the associated switch product range can replace a touch dimmer.

#### Switched-mode power supplies in consumer electronic units (e.g. TV sets), and plug-in power supply units

Only specific units or power supplies are recognized and disconnected by the mains disconnection switch, even while in standby mode. Where units or power supplies in a monitored circuit are not to be disconnected these must be isolated from line power through a switched socket outlet or a plug connector so the function of the mains disconnection switch is not affected.

#### Timed shutter control right at the window

Only specific shutter controls are recognized and disconnected by the mains disconnection switch. Where the shutter controls in the circuit to be disconnected are not to be disabled conventional shutter switches must be used instead. Tube-mounted motors with electronic limit switches are to be wired with a base load in parallel with control of the sense of rotation.

### Warning!

**Only a trained electrician may install this equipment, otherwise there is a risk of fire or electric shock.**

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