

## Latching Relay UG 8851



0268644

### Your Advantage

- Large voltage range AC/DC 24 ... 240 V
- Protection against manipulation by sealable transparent cover over setting switches
- More contacts at small design
- Energy saving, no holding capacity necessary

### Features

- According to IEC/EN 61810-1
- With forcibly guided contacts according to IEC 61810-3
- With manual operation and contact position indication via control lever
- With impulse energization A1 - A2
- With reset pulse B1 - B2
- 4 NC contacts, 4 NO contacts or 4 changeover contacts
- With pluggable terminal blocks for easy exchange of devices
- With coded terminal blocks
- Width 22.5 mm

### Product Description

The latching relay UG8851 is designed with a wide AC/DC nominal voltage range. Short pulses of several milliseconds switch the relay into a defined position. To change the contact position only low power is necessary. No energy is necessary to hold the relay in ON-state. This is energy efficient and reduces the powerdissipation of the unit. On loss of power the relay stays in it's defined position. The special feature of forcibly guided contacts (IEC 61810-3) allows reliable monitoring of the contact state.

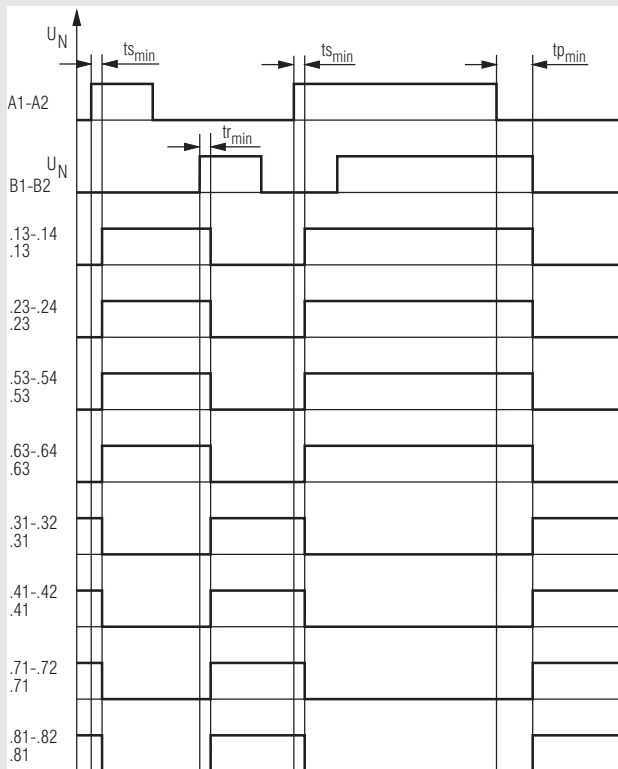
### Approvals and Markings



### Application

Pulse conversion into a continuous function  
A pulse control (inputs side) leads to a continuous function (output side).

### Function Diagram



M10967\_c

$t_{s_{min}}$  = min. pulse de\_activating (A1/A2)

$t_{r_{min}}$  = min. pulse de\_activating (B1/B2)

$t_{p_{min}}$  = min. off/changeover time \*)

\*)  $t_{p_{min}}$  is the minimum time that has to pass after the negative edge of a control voltage pulse before the unit accepts a new control voltage pulse.

### Function

The relay is operated either by voltage pulses or continuous voltage on the inputs A1-A2, B1-B2. When both coils are activated the contacts keep the state of the first energized coil. The 2 coil systems operate status driven. This means when both coils are energised and the first energised coil is deactivated the status of the contacts is inverted. On loss of voltage, the latching relay remains in it's las contact position.

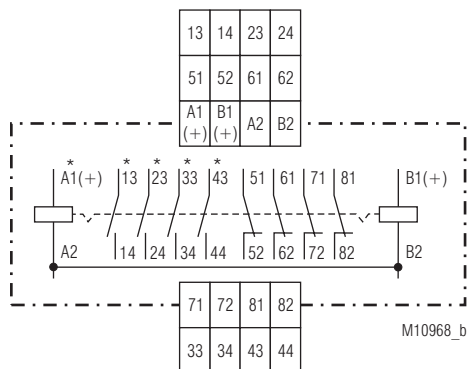
### Indication

- yellow LED \*A1: on, when control voltage A1/A2 connected
- yellow LED B1: on, when control voltage B1/B2 connected

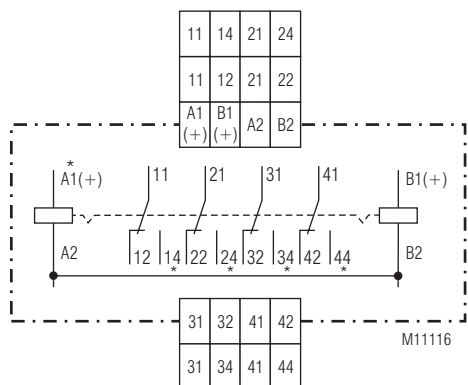
### Notes

If coil A1-A2 / coil B1-B2 are controlled with DC, the terminals A1(+) and B1(+) have to be connected on the positive pole.  
The device is available on request with customer specific RC element (Snubber Circuit) over the switching contact.

## Circuit Diagrams



UG 8851.19



UG 8851.14

## Connection Terminals

| Terminal designation  | Signal designation             |
|-----------------------|--------------------------------|
| A1(+), A2             | Pulse excitation AC/DC         |
| B1(+), A2             | reset pulse AC/DC              |
| 13 to 44              | 4 forcibly guided NO contacts  |
| 51 to 82              | 4 forcibly guided NC contacts  |
| 11 to 44 (UG 8851.14) | 4 forcibly guided C/O contacts |

## Technical Data

### Input

|  |   |
|--|---|
| <b>Nominal voltage <math>U_N</math>:</b> | AC/DC 24 ... 240 V  |
| <b>Voltage range:</b>                    | AC 0.8 ... 1.1 $U_N$<br>DC 0.9 ... 1.15 $U_N$                                 |
| <b>Nominal consumption:</b>              | AC 24 V / 0.1 VA<br>DC 24 V / 0.12 W<br>AC 230 V / 1.3 VA<br>DC 230 V / 1.4 W |

### Max. consumption during switching operation

|   |   |
|---|---|
| <b><math>t_{\text{ein}} &lt; 100\text{ms}</math>:</b> | AC 24 V / 2.5 VA<br>DC 24 V / 3 W<br>AC 230 V / 5.6 VA<br>DC 230V / 4.3 W |
|---|---|

### Nominal frequency:

50 ... 400 Hz

### Frequency range:

$\pm 5\%$

### Min. pulse duration $t_{\text{min}}$ , $t_{\text{rmin}}$ :

> 30 ms

### Min. on and off time $t_{\text{pmin}}$ :

> 300 ms

### Permissible residual current:

AC/DC < 4 mA

### Output

#### Contacts:

|             |                       |
|-------------|-----------------------|
| UG 8851.19: | 4 NO, 4 NC contacts   |
| UG 8851.14: | 4 changeover contacts |

#### Operate time of contacts:

< 30 ms

#### Release time of contacts:

< 30 ms

#### Thermal current $I_{\text{th}}$ :

6 A / 4 A / 3 A  
current via 2 / 3 / 4 contacts

#### Switching capacity

##### to AC 15

|              |                |                   |
|--------------|----------------|-------------------|
| NO contacts: | 3 A / AC 230 V | IEC/EN 60 947-5-1 |
| NC contacts: | 2 A / AC 230 V | IEC/EN 60 947-5-1 |

##### to DC 13:

|              |               |                   |
|--------------|---------------|-------------------|
| NO contacts: | 2 A / DC 24 V | IEC/EN 60 947-5-1 |
| NC contacts: | 2 A / DC 24 V | IEC/EN 60 947-5-1 |

#### Electrical life

|                            |                                      |                   |
|----------------------------|--------------------------------------|-------------------|
| to AC 15 at 1 A, AC 230 V: | 1 x 10 <sup>5</sup> switching cycles | IEC/EN 60 947-5-1 |
|----------------------------|--------------------------------------|-------------------|

3 000 switches/h at 50 % of the switching capacity  
0.5 x 10<sup>6</sup> switching cycles  
1 000 switches/h at 100% of the switching capacity

#### Permissible switching frequency:

3 000 switching cycles / h

#### Short circuit strength

##### max. fuse rating:

6 A gG / gL IEC/EN 60 947-5-1

#### Mechanical life:

10 x 10<sup>6</sup> switching cycles

### General Data

#### Operating mode:

Impulse- or continuous operation

#### Temperature range

Operation: - 20 ... + 60°C

Storage: - 40 ... + 70°C

#### Altitude:

< 2,000 m

#### Clearance and creepage distances

rated impulse voltage /

pollution degree

Control (A1, A2; B1, B2) /

contacts:

6 kV / 2

IEC 60 664-1

Contacts / contacts:

4 kV / 2

IEC 60 664-1

#### EMC

Electrostatic discharge:

8 kV (air)

IEC/EN 61 000-4-2

HF irradiation

IEC/EN 61 000-4-3, EN 50 121-3-2

80 MHz ... 1 GHz:

20 V / m

1 GHz ... 2.7 GHz:

10 V / m

Fast transients:

4 kV

IEC/EN 61 000-4-4

Surge voltages

between

wires for power supply:

2 kV

IEC/EN 61 000-4-5

between wire and ground:

4 kV

IEC/EN 61 000-4-5

Interference suppression:

Limit value class B

EN 55 011

HF-wire guided:

10 V

IEC/EN 61 000-4-6

## Technical Data

### Degree of protection:

Housing: IP 40 IEC/EN 60 529  
Terminals: IP 20 IEC/EN 60 529

**Housing:** Thermoplast with V0-behaviour to UL subject 94

**Vibration resistance:** Amplitude 0,35 mm frequency 10...55Hz, IEC/EN 60 068-2-6

20 / 60 / 04 IEC/EN 60 068-1

**Climate resistance:** EN 50 005

**Terminal designation:** DIN 46 228-1/-2/-3/-4

### Wire connection:

#### Terminal blocks with screw terminals

Cross section: 1 x 0.25 ... 2.5 mm<sup>2</sup> solid or stranded ferruled (isolated) or 2 x 0.25 ... 1.0 mm<sup>2</sup> solid or stranded ferruled (isolated)

Insulation of wires or sleeve length: 7 mm

**Wire fixing:** captive slotted screw M2,5

**Fixing torque:** 0,5 Nm

**Mounting:** DIN rail IEC/EN 60 715

**Weight:** 190 g

## Dimensions

**Width x height x depth:** 22.5 x 110 x 120.3 mm

## Classification to DIN EN 50155

**Vibration and shock resistance:** Category 1, Class B IEC/EN 61 373

**Protective coating of the PCB:** No

## Standard Type

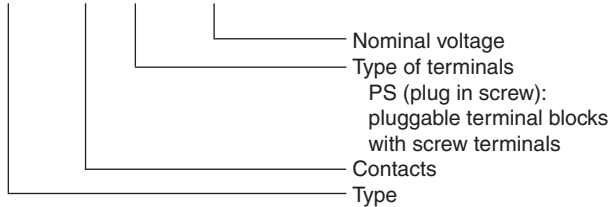
UG 8851.19PS AC/DC 24 ... 240 V

Article number: 0065644

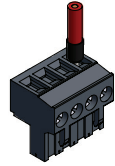
- Output: 4 NO contacts, 4 NC contacts
- Nominal voltage  $U_N$ : AC/DC 24 ... 240 V
- Width: 22.5 mm

## Ordering example

UG 8851 .19 PS AC/DC 24 ... 240 V



## Option with Pluggable Terminal Block



Screw terminal  
(PS/plugin screw)

## Safety Notes



### Dangerous voltage.

**Electric shock will result in death or serious injury.**



Disconnect all power supplies before servicing equipment.

- Faults must only be removed when the relay is disconnected
- The user has to make sure that the device and corresponding components are installed and wired according to the local rules and law (TUEV, VDE, Health and safety).
- Settings must only be changed by trained staff taking into account the safety regulations. Installation work must only be done when power is disconnected.
- Observe proper grounding of all components

