

Latching Relay UG 8851

Translation
of the original instructions



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 power dissipation of the unit. On loss of power the relay stays in its defined position. The special feature of forcibly guided contacts (IEC 61810-3) allows reliable monitoring of the contact state.

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

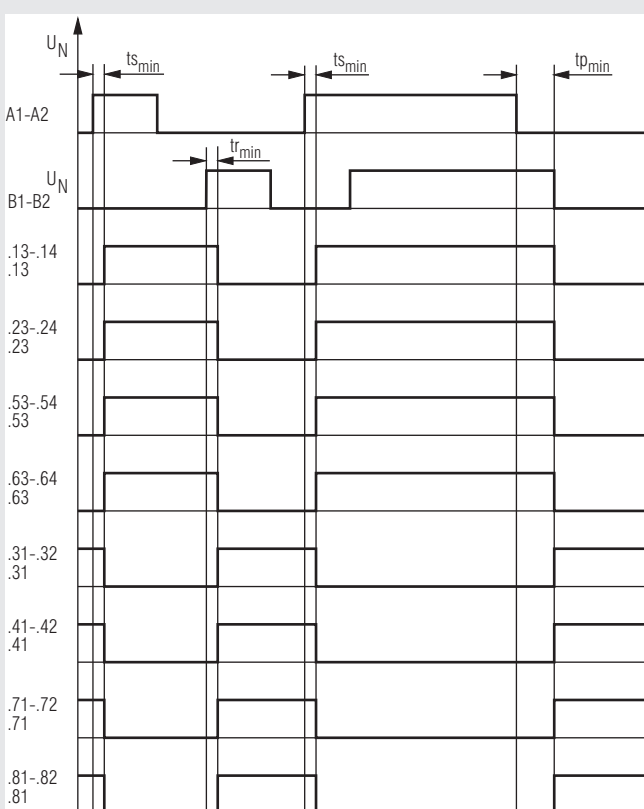
Features

- According to IEC/EN 60947-5-1
- 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
- As option 4 NC contacts, 4 NO contacts or 1 NC contact, 7 NO contacts or 4 changeover contacts
- With pluggable terminal blocks for easy exchange of devices
- With coded terminal blocks
- Width 22.5 mm

Approvals and Markings



Function Diagram



$t_{s_{min}}$ = Min. pulse deactivating (A1/A2)

$t_{r_{min}}$ = Min. pulse deactivating (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.

Application

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

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 its last contact position.

Indication

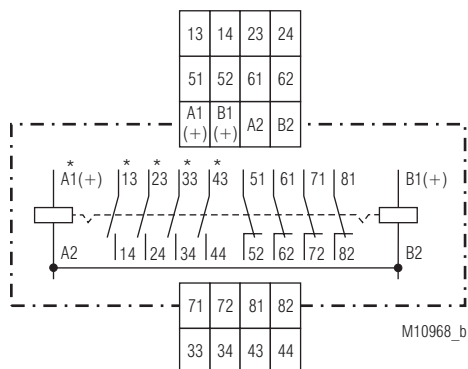
Yellow LED *A1: On, when control voltage A1/A2 connected

Yellow LED B1: On, when control voltage B1/B2 connected

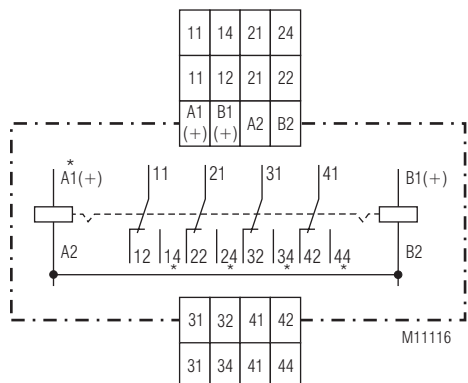
Notes

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.

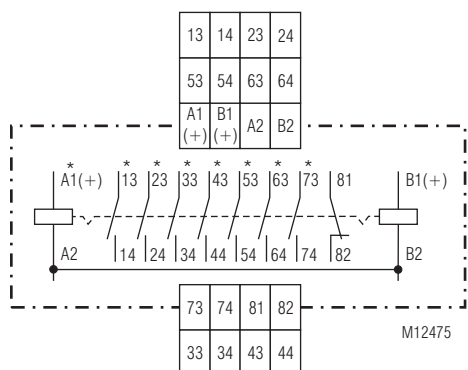
Circuit Diagrams



UG 8851.19



UG 8851.14



UG 8851.63

Connection Terminals

Terminal designation	Signal description
A1(+), A2	Pulse excitation AC/DC
B1(+), A2	Reset pulse AC/DC
13 to 44 (UG 8851.19)	4 forcibly guided NO contacts
51 to 82 (UG 8851.19)	4 forcibly guided NC contacts
11 to 44 (UG 8851.14)	4 forcibly guided C/O contacts
13 to 74 (UG 8851.63)	7 forcibly guided NO contacts
81, 82 (UG 8851.63)	1 forcibly guided NC contact

Technical Data

Input

Nominal voltage U_N:	AC/DC 24 ... 240 V
Voltage range:	AC 0.8 ... 1.1 U_N DC 0.9 ... 1.15 U_N
Nominal consumption:	AC 24 V / 0.1 VA DC 24 V / 0.12 W AC 230 V / 1.3 VA DC 230 V / 1.4 W

Max. consumption during switching operation

$t_{\text{ein}} < 100\text{ms}$:	AC 24 V / 2.5 VA DC 24 V / 3 W AC 230 V / 5.6 VA DC 230V / 4.3 W
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Nominal frequency: 50 ... 400 Hz

Frequency range: $\pm 5\%$

Min. pulse duration t_{min} , t_{rmin} : $> 30\text{ ms}$

Min. on and off time t_{pmin} : $> 300\text{ ms}$

Permissible residual current: AC/DC $< 4\text{ mA}$

Output

Contacts:

UG 8851.19: 4 NO contacts, 4 NC contacts

UG 8851.14: 4 changeover contacts

UG 8851.63: 7 NO contacts, 1 NC contact

Operate time of contacts: $< 30\text{ ms}$

Release time of contacts: $< 30\text{ ms}$

Thermal current I_{th} : 8 A / 6 A / 4 A / 3 A / 2.5 A / 2 A / 1.5 A
current via 1 / 2 / 3 / 4 / 5 / 6 / 7 contacts

Switching capacity

To AC 15

NO contacts: 3 A / AC 230 V IEC/EN 60947-5-1

NC contacts: 2 A / AC 230 V IEC/EN 60947-5-1

To DC 13:

NO contacts: 2 A / DC 24 V IEC/EN 60947-5-1

NC contacts: 2 A / DC 24 V IEC/EN 60947-5-1

Electrical life

To AC 15 at 1 A, AC 230 V:

1 x 10^5 switching cycles

3000 switches/h at 50 % of the switching capacity

0.5 x 10^6 switching cycles

1000 switches/h at 100% of the switching capacity

Permissible switching frequency:

3000 switching cycles / h

Short circuit strength

max. fuse rating:

6 A gG / gL IEC/EN 60947-5-1

Mechanical life:

10 x 10^6 switching cycles

General Data

Operating mode:

Impulse- or continuous operation

Temperature range

Operation:

- 20 ... + 60°C

Storage:

- 40 ... + 70°C

Altitude:

$< 2000\text{ m}$

Clearance and creepage distances

Rated impulse voltage / pollution degree

Control (A1, A2; B1, B2) / contacts:

6 kV / 2

IEC 60664-1

Contacts / contacts:

4 kV / 2

IEC 60664-1

EMC

Electrostatic discharge:

8 kV (air)

IEC/EN 61000-4-2

HF irradiation

IEC/EN 61000-4-3, EN 50121-3-2

80 MHz ... 1 GHz:

20 V / m

1 GHz ... 2.7 GHz:

10 V / m

Fast transients:

4 kV

IEC/EN 61000-4-4

Surge voltages

between

Wires for power supply:

2 kV

IEC/EN 61000-4-5

Between wire and ground:

4 kV

IEC/EN 61000-4-5

Interference suppression:

Limit value class B

EN 55011

HF-wire guided:

10 V

IEC/EN 61000-4-6

Technical Data

Degree of protection:

Housing: IP 40 IEC/EN 60529
Terminals: IP 20 IEC/EN 60529

Housing: Thermoplast with V0-behaviour to UL subject 94

Vibration resistance: Amplitude 0,35 mm frequency 10...55Hz, IEC/EN 60068-2-6

Climate resistance: 20 / 60 / 04 IEC/EN 60068-1

Terminal designation: EN 50005

Wire connection: DIN 46228-1/-2/-3/-4

Terminal blocks with screw terminals

Cross section: 1 x 0.25 ... 2.5 mm² solid or stranded ferruled (isolated) or 2 x 0.25 ... 1.0 mm² 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 60715

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 61373

Protective coating of the PCB: No

Standard Type

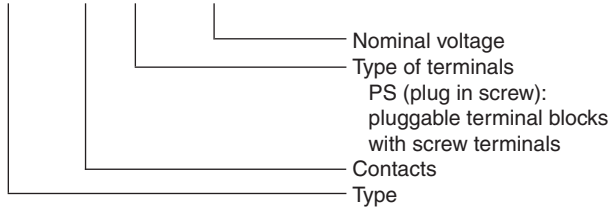
UG 8851.19PS AC/DC 24 ... 240 V

Article number: 0065644

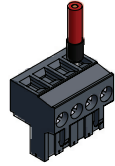
- Output: 4 NO contacts, 4 NC contacts
- Nominal voltage U_N : AC/DC 24 ... 240 V
- Width: 22.5 mm

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

