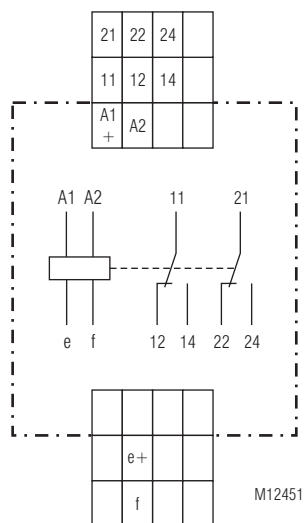




Product Description

The measuring relay UG 9831 of the VARIMETER series monitors overvoltage, undervoltage and voltage range in DC voltage systems. Early detection of impending failures and preventive maintenance prevent costly damage and as a user you benefit from the operational safety and high availability of your system.

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
A1 +, A2	Auxiliary voltage DC
e+, f	Voltage measuring input DC
11, 12, 14	Indicator relay (C/O contact)
21, 22, 24	Indicator relay (C/O contact)

Your Advantages

- Preventive maintenance
- For better productivity
- High repeat accuracy
- Wide measuring range DC 20 ... 1000 V
- Easy setting
- Protection against manipulation by sealable transparent cover over setting switches

Features

- According to IEC/EN 60255-1
- For DC monitoring
- Rotary switch for exact setting of the response values
- 2 changeover contacts
- De-energized on trip
- Indication for operating condition
- Width: 35 mm

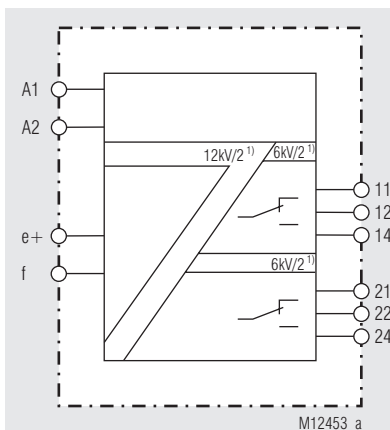
Approvals and Markings



Application

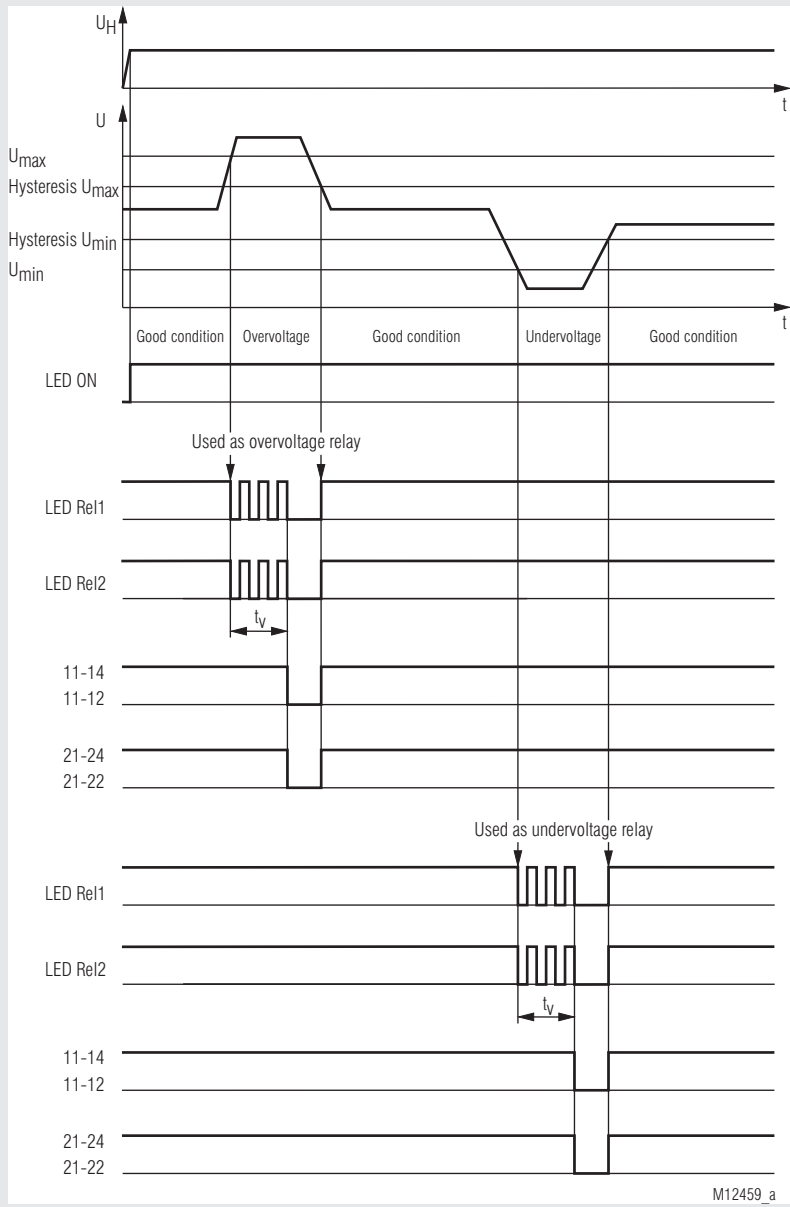
- For monitoring direct current voltage supply systems to detect undervoltage, overvoltage
- For monitoring direct current voltage supply systems to detect voltage range

Block Diagram



¹⁾ Rated impulse voltage / pollution degree

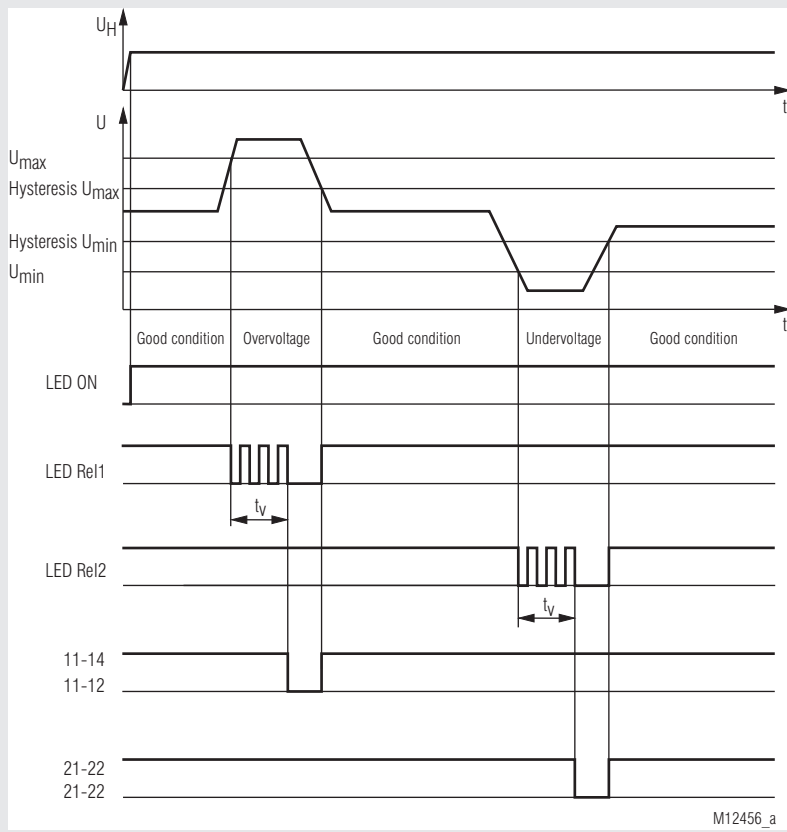
Function Diagram



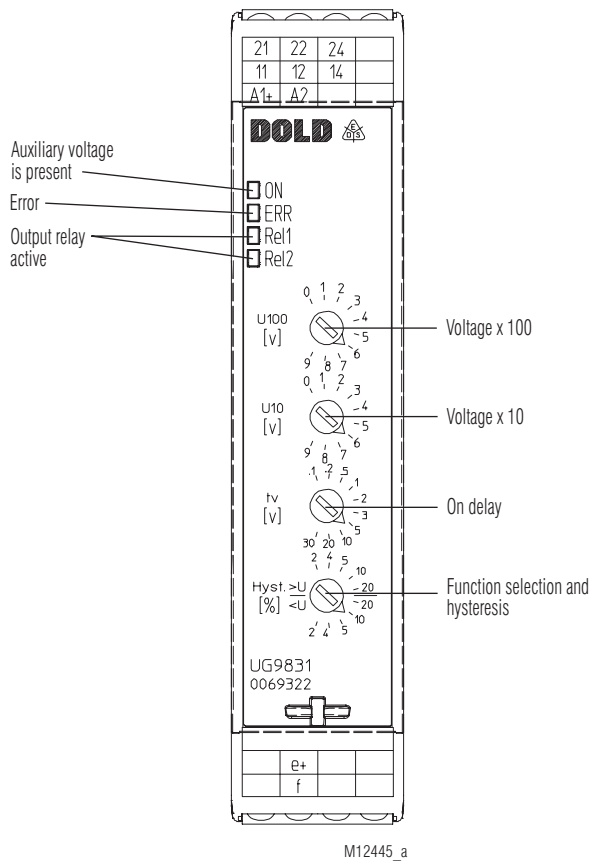
M12459_a

Function: Overvoltage / Undervoltage UG 9831

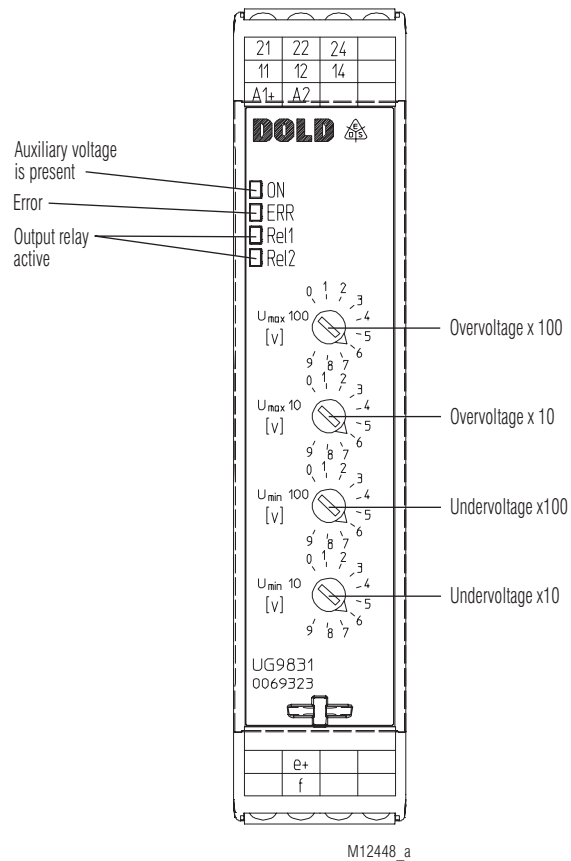
Function Diagram



Function: Window monitoring UG 9831/100



UG 9831.12



UG 9831.12/100

Indicators

The LED indicates the device status.

- Green LED ON (perm. on): Supply connected
- Red LED ERR (flashing): Failure code of the device
- Yellow LED REL1 (perm. on): On, when output relay 1 activated
(flashing): On delay t_v on process
- Yellow LED REL2 (perm. on): On, when output relay 2 activated
(flashing): On delay t_v on process
- Failure code *):
 - 1: Parameterisation error (incorrect setting of the voltage rotary switch on the device)
 - 11: Internal communication failure
 - 12: Checksum failure EEPROM
 - 13: Internal error

*) = Number of flashing pulses in sequence

Functional notes

The amount of input voltage is analysed for the devices.

Error Handling

If errors are detected in the unit, they are indicated by the red ERR LED. If the error is detected again after a restart by switching the supply voltage off and on again, the unit must be returned to the manufacturer.

Technical Data

Auxiliary Voltage A1/A2

Nominal auxiliary voltage U_H:	DC 24 V The power supply unit must meet the requirements of SELV /PELV
Voltage range:	0.8 ... 1.1 U_H
Nominal consumption:	2 W DC 24 V
Overvoltage protection:	Internal with MOV

Voltage Measuring e+/f

Nominal voltage U_N:	DC 20 ... 1000 V
Voltage range:	0.8 ... 1.2 * U_N
Internal resistance:	Approx. 10 M Ω

Setting Range

Setting value:	Adjustable from 20 ... 990 V, in 10 V steps via rotary switch
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Measuring accuracy

(in % of setting value): ± 2 %

Repeat accuracy: $< \pm 0.5$ %

Temperature influence: < 1 %

Hysteresis

(in % of setting value): 5 hysteresis values,
selectable by rotary switch
2; 4; 5; 10; 20 %

Variant /1__ : 2 % fixed

Reaction time: < 150 ms

Adjustable on delay t_v : 10 response delays,
selectable by rotary switch
0.1; 0.2; 0.5; 1; 2; 3; 5; 10; 20; 30 s

Variant /1__ : 0.1 s fixed

Output Circuit (Rel1: 11/12/14; Rel2: 21/22/24)

Rated output voltage:	AC 230 V
Contacts:	2 changeover contacts
Thermal current I_{th}:	2 x 4 A
Switching capacity to AC 15	
NO contacts:	3 A / AC 230 V IEC/EN 60947-5-1
NC contacts:	1 A / AC 230 V IEC/EN 60947-5-1
To DC 13	
NO contacts:	1 A / DC 24 V IEC/EN 60947-5-1
NC contacts:	1 A / DC 24 V IEC/EN 60947-5-1
Electrical life at 4 A, AC 230 V $\cos \phi = 1$:	2 x 10 ⁵ switching cycles
Short circuit strength max. fuse rating:	4 A gG / gL IEC/EN 60947-5-1
Mechanical life:	$\geq 10^8$ switching cycles

Technical Data

General Data

Nominal operating mode: Continuous operation

Temperature range

Operation: - 25 ... + 60 °C

Storage: - 40 ... + 85 °C

Altitude: ≤ 2000 m

Clearance and creepage distance

Rated impulse voltage / pollution degree

Meas. input / Auxiliary voltage: 12 kV / 2 IEC/EN 60664-1

Meas. input / Contacts: 12 kV / 2 IEC/EN 60664-1

Auxiliary voltage / Contacts: 6 kV / 2 IEC/EN 60664-1

Contacts 11,12,14 / 21,22,24: 6 kV / 2 IEC/EN 60664-1

Within contact path: 1.5 kV / 2 IEC/EN 60664-1

Overvoltage category: III

EMC

Electrostatic discharge (ESD): Zone B IEC/EN 60255-27

HF-irradiation: 8 kV (air) IEC/EN 61000-4-2

80 MHz ... 2.7 GHz: 10 V / m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

between wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

HF-wire guided: 10 V IEC/EN 61000-4-6

Damped oscillatory wave immunity test

Differential mode voltage: 1 kV IEC/EN 61000-4-18

Common mode voltage: 2.5 kV IEC/EN 61000-4-18

Interference suppression: Limit value class B EN 55011

Degree of protection

Housing: IP 40 DIN EN 60529

Terminals: IP 20 DIN EN 60529

Housing:

Thermoplastic with VO behaviour according to UL Subject 94

Vibration resistance: Amplitude 0.35 mm,

frequency 10 ... 55 Hz IEC/EN 60068-2-6

25 / 060 / 04 IEC/EN 60068-1

Climate resistance: DIN 46228-1/-2/-3/-4

Wire connections:

Wire connection

Pluggable screw terminal (PS): 0.25 ... 2.5 mm² solid or

0.25 ... 2.5 mm² stranded ferruled

Insulation of wires or sleeve length:

7 mm

Fixing torque: 0.5 Nm

Mounting: DIN-rail IEC/EN 60715

Weight: 160 g

Dimensions

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

Standard Types

UG 9831.12 DC 20 ... 1000 V DC 24 V

Article number: 0069322

• For overvoltage or undervoltage monitoring

• Nominal voltage: DC 20 ... 1000 V

• Nom. auxiliary voltage: DC 24 V

• Width: 22.5 mm

UG 9831.12/100 DC 20 ... 1000 V DC 24 V 0.1 s 2 %

Article number: 0069323

• For window monitoring

• Nominal voltage: DC 20 ... 1000 V

• On delay t_v : 0.1 s fixed

• Hysteresis: 2 % fixed

• Nom. auxiliary voltage: DC 24 V

• Width: 22.5 mm

Connection Examples

