

VARIMETER DC voltage relay UG 9831

Translation
of the original instructions



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

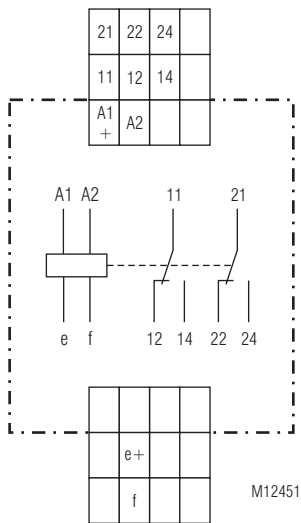
Product Description

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.

Approvals and Markings



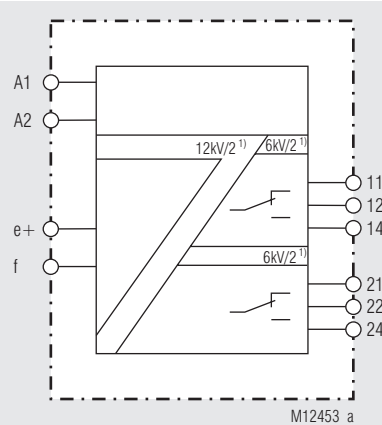
Circuit Diagram



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

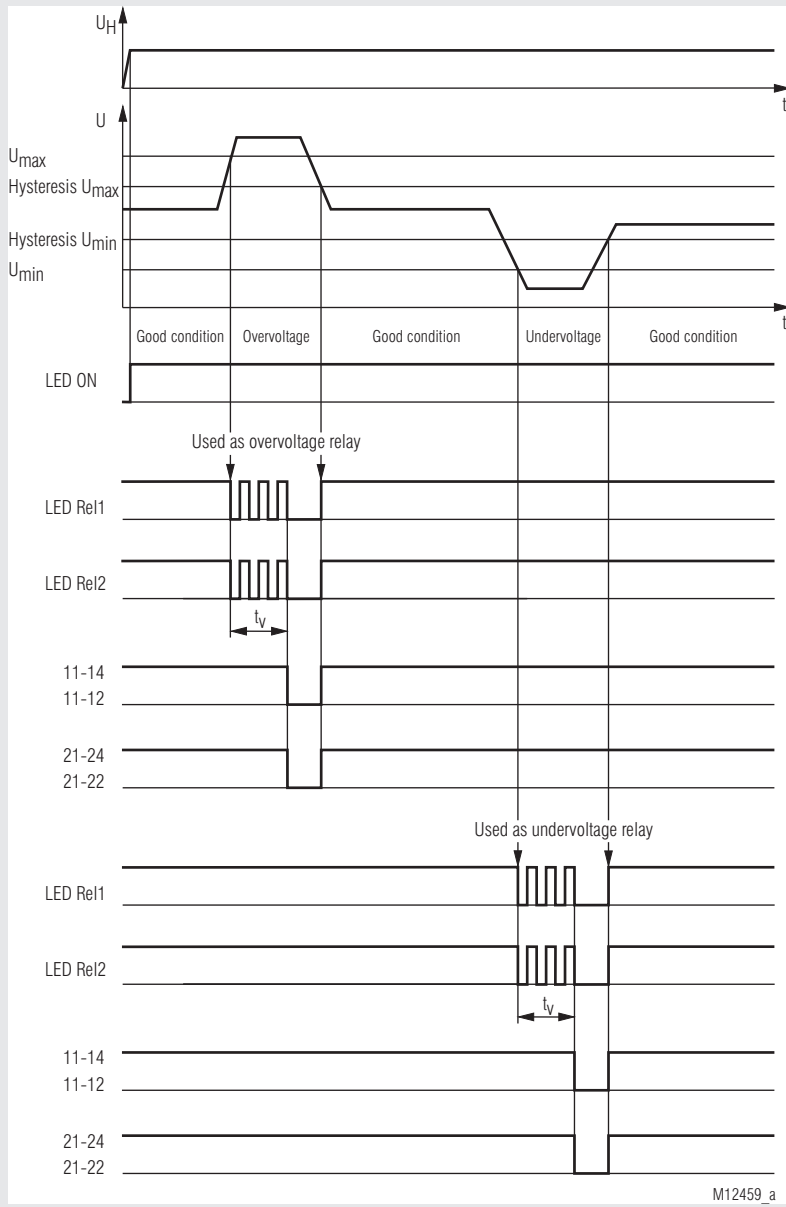


¹⁾ Rated impulse voltage / pollution degree

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)

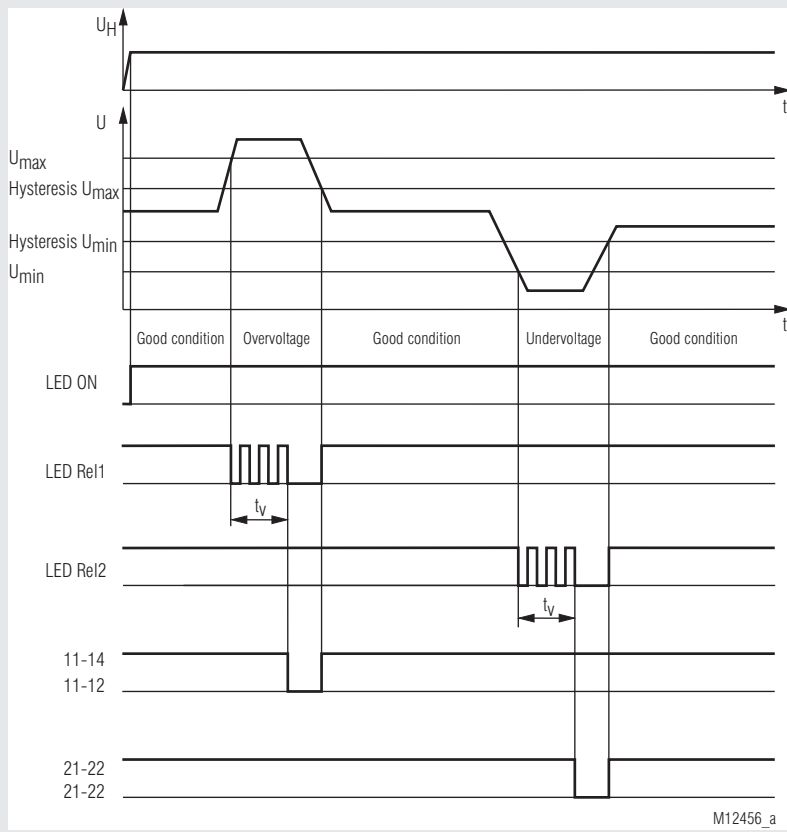
Function Diagram



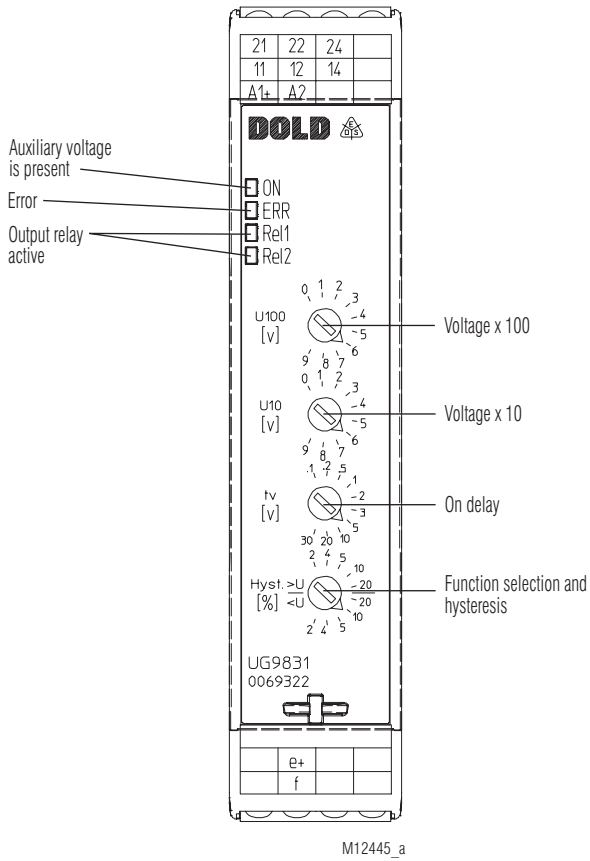
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Function: Overvoltage / Undervoltage UG 9831

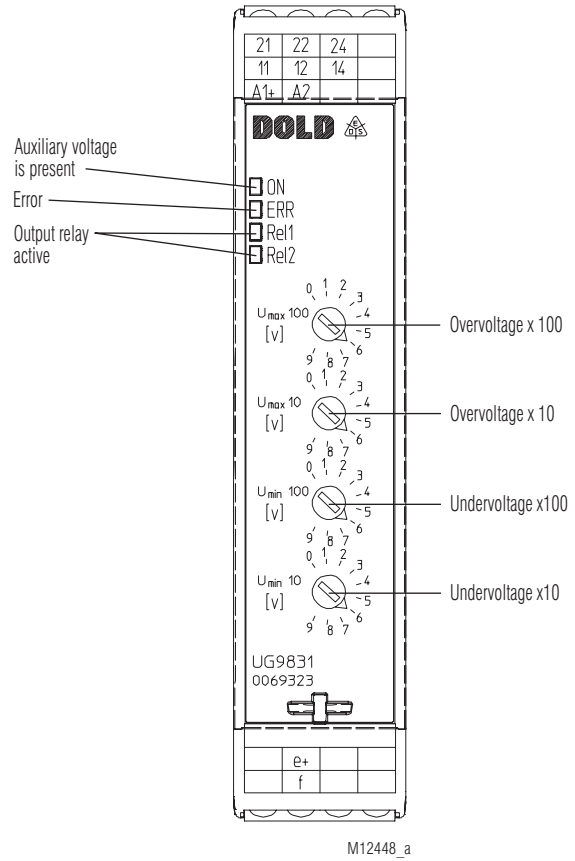
Function Diagram



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 *):
 - 11: Internal communication failure
 - 12: Checksum failure EEPROM
 - 13: Internal error

*) = Number of flashing pulses in sequence

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:	DC 1000 V
Measuring voltage range:	DC 20 ... 1000 V (Adjustable in 10 V steps)
Internal resistance:	Approx. 10 M Ω
Setting Range	
Measuring accuracy (in % of setting value):	$\pm 2 \%$
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:	1 changeover contact (Rel1) and 1 changeover contact (Rel2)
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 $\cos \varphi = 1$:	2×10^5 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	Zone B IEC/EN 60255-27
Electrostatic discharge (ESD):	8 kV (air) IEC/EN 61000-4-2
HF-irradiation	
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
Climate resistance:	25 / 060 / 04 IEC/EN 60068-1
Wire connections:	DIN 46228-1/-2/-3/-4
Wire connection	
Pluggable screw terminal (PS):	0.25 ... 2.5 mm ² solid or 0.25 ... 2.5 mm ² 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 1000 V DC 24 V	
Article number:	0069322
• For overvoltage or undervoltage monitoring	
• Nominal voltage:	DC 1000 V
• Auxiliary voltage:	DC 24 V
• Width:	22.5 mm
UG 9831.12/100 DC 1000 V DC 24 V 0.1s 2%	
Article number:	0069323
• For window monitoring	
• Nominal voltage:	DC 1000 V
• On delay t_v :	0.1 s fixed
• Hysteresis:	2% fixed
• Auxiliary voltage:	DC 24 V
• Width:	22.5 mm

Connection Examples

