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1. INTRODUCTION

This under / over voltage monitoring relay type MV53 is based on the ComatReleco ECO-Line (for direct mounting to TS 35 DIN rail). This device monitors AC under and over voltage. The alarm values can be set with two separate DIP switches in several steps. The monitoring input voltage also supplies the power for the circuit of the device, therefore no other external supply is needed for correct operation.

As an output, the MV53 has a relay with one change over contact for a maximum switching capability of 6A, 250V and a load of up to 1750VA.

To monitor the desired over voltage, V_{o1} , can be selected with a DIP switch in steps of +2,5% up to +17,5% (e.g. AC270V in the AC230V version). There are seven different combinations possible. In the same way the under voltage value to monitor, V_{u1} , can be set with DIP switches. In this case in steps of -5% down to -35% (e.g. AC149,50V in the AC230V version).

When the monitored voltage is outside these set values, the relay drops out after the set delay time (t_{del}) has elapsed. The Alarm delay time can be set from 25msec to 2,5sec with a potentiometer. The output relay pulls in again after a minimum alarm reset time (t_r) when th voltage returns to within the set value parameters. There is a defined hysteresis for stable good condition.

The status condition is displayed by a bi colour LED, green indicates (ok) and red indicates if the monitored value is outside the selected values.

The device complies with the relevant directives and standards.

 Technical specifications are subject to change without notice

2. ORDER DESIGNATION

ComatReleco Voltage monitoring relay **MV53/AC230V**

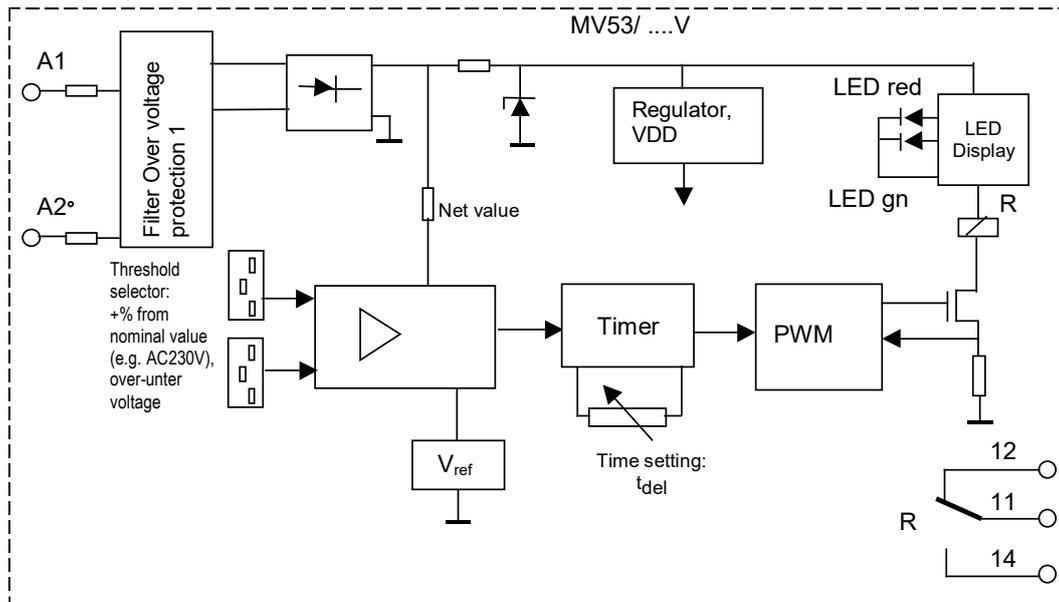
An AC115V and other Versions available on request.

Fo-61.01-D-401

Datei: MV53

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5. BLOCK DIAGRAM



6. TECHNICAL DATA

6.1. General Data

6.1.1. Mechanical Data

Case	DIN-Case (DIN 43 880), b22.5 x h90 x d70mm
Protection	IP 40, terminals IP 20
Case material	NORYL SE1 (UL 94V-1) or equivalent
Weight (without packing)	80g
Fastening	TS 35 DIN / EN 50022
Vibration- and shock-proof	IEC 68-2-6 / FC, IEC 571
Connection	Shielded Terminals 2 x 1.5 mm ² , 1 x 2.5 mm ²
Tightening torque	Pozi drive or standard screw driver no. 2 ≤ 0.8 Nm

6.1.2. Ambient conditions

Storage temperature	-40°C ÷ +85°C
Operating temperature	-25°C ÷ +60°C
Relative humidity	10 ÷ 95% non condensing

6.1.3. Working life

Expected Life time	>50 000h
Contact	see output (6.2.4)

6.2. Electrical data

Type ... /AC230V

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Data sheet

MV53/AC230V, 50-60Hz

AC- Voltage monitoring relay

ComatReleco

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Nominal monitoring voltage	AC230V
Supply range	AC130V ÷ 270V
Frequency	45Hz ÷ 65Hz
Inrush current	≤1,5A, τ ≤ 100μs
Over loading capability	300V, 10 sec
Adjustable monitoring	U _{NOM} = 230V: -35%...-5%;+2,5% ...17,5% (149V-270V)
Tolerance over voltage:	±0,5% from Voltage _{NOM} // 0° to 50°C
Tolerance under voltage:	±2,5% from Voltage _{NOM} // 0° to 50°C
Hysteresis	≤2% (aprox. 5V)
Frequency dependency for monitoring	≤0.02% / Hz
Current consumption	≤20 mA
Power consumption	≤10VA / ≤1.5W
Transient protection	IEC 255 - 4: 5kV, 2.5 W _s // EN 61000-4-5: A1-A2 2kV

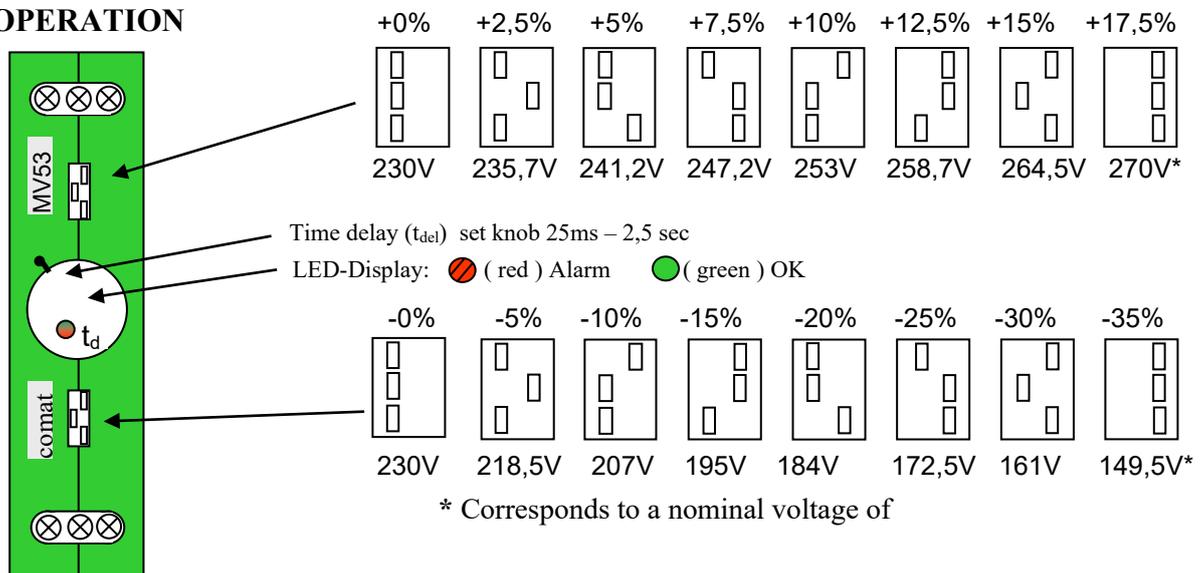
6.2.1. Time response

Alarm reset time	150ms ±25 ms min. alarm time
Signal delay time	≤100ms
Supply failure protection	≥10ms
Minimal alarm time	130ms ±25ms
Power on delay (start up)	≤ 1s
Temperature stability	± 1% over the entire temperature range

6.2.2. Output contact

Output	1 x CO,μ, contact AgNi
Switching voltage	(5) ÷ 250V
Switching current	(10mA) ÷ 6A // 20A/20ms
Switching load	1750VA // ...170W
Mechanical service life	> 2 x 10 ⁷

7. **OPERATION**



Setting the switches simultaneously in the position indicated will make the monitoring function inoperable (i.e. % from nominal value: ±0%).
The device will stay in alarm condition
 See "OPERATION" for selection table.

Fo-61.01-D-401 Datei: MV53

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MV53/AC230V, 50-60Hz

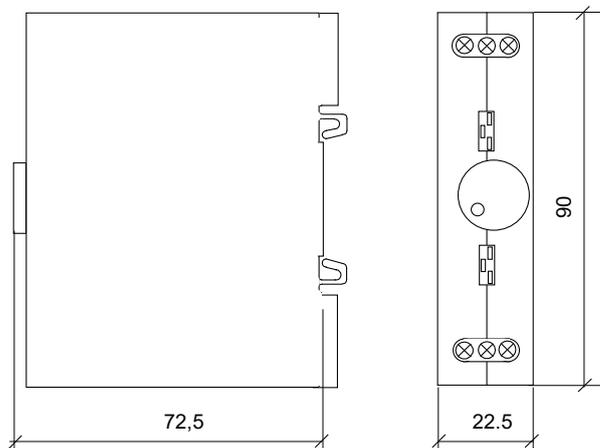
AC- Voltage monitoring relay

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8. STANDARDS / DIRECTIVES / CONFORMITY

Vibration safety	IEC 571	Item 6.3
Immunity to interference	IEC 255-4	Appendix E, Class III
	EN 50082-2	EN 61000-4-2 Air: 8kV
	EN 61000-4-4	≥ Level 3
	ENV 50140	10V/m
	ENV 50204	10V/m
	ENV 50141	10V
Interference emission	as per EN 50081-1	EN 55022 Class B
Low voltage	EN 60065	
Measuring relays	IEC 255-6	
Approvals	cURus in preparation	
Conformity, labelling	CE, cURus	

9. CASE



10. APPLICATION

The MV53 voltage monitor is designed for the monitoring of single phase voltages. It should be installed in areas where unacceptable supply conditions would cause damage to plant and control systems.

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