

Zelio Control - measurement and control relays

Voltage control relays for 3-phase supply, model RM 84 873

- Controls overvoltage and undervoltage on its own power supply (window type).
- RM 84 873 201: phase to phase / RM 84 873 211: between phase and neutral.
- Minimum and maximum thresholds can be adjusted separately.
- Absence of neutral detected on relay RM 84 873 211.
- Delay on crossing the upper or lower threshold, adjustable between 0.1 and 10 seconds on the front panel of the device.
- Overvoltage and undervoltage indicated by 2 yellow LEDs.
- Power on indicated by 1 green LED.
- 2 output relays: upper and lower threshold.
- 2 separate time delays.

Operating principle

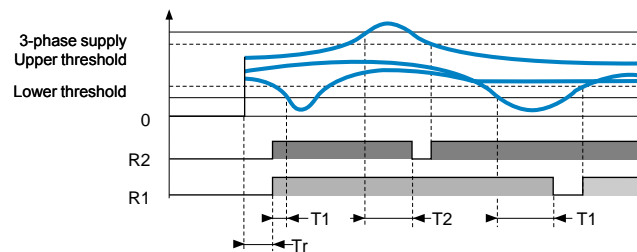
The two relays are energised when the measured voltages are between the minimum and maximum thresholds, which can be adjusted separately via two potentiometers on the front panel of the device.

If one or more voltages go outside the "window" between the two thresholds, the relay corresponding to the fault de-energises following a delay which can be adjusted on the front panel. Each relay can have its own individual time delay (0.1 to 10 s).

A hysteresis fixed at 3 % ensures bounce-free relay switching when the voltage levels return to a value between the upper and lower thresholds.

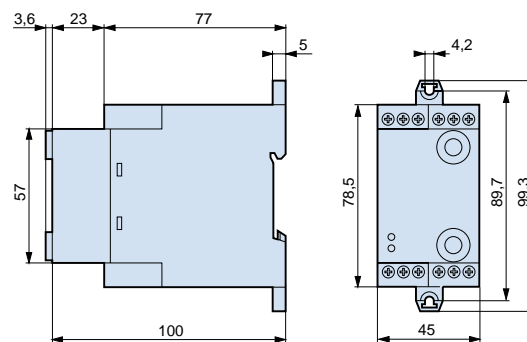
The device is not affected by the phase sequence, or by harmonic distortion.

A green LED indicates that the power supply is ON. Two yellow LEDs indicate when the upper and lower thresholds have been exceeded. They are lit when the voltages are within the set "window".



	Lower threshold	Upper threshold
RM 84 873 201	340...392	408...460
RM 84 873 211	195...225	235...264

Dimensions



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References



RM 84 873 211

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Power supplies measured	Reference	Weight kg
~ 3 x 400 V	RM 84 873 201	0.310
~ 3 x 400 V + neutral	RM 84 873 211	0.310

Supply characteristics

Supply voltage U_n on terminals L1-L2	V	~ 400, $\pm 30\%$ (50/60 Hz)
Maximum power	VA	4 at U_n 8 at $U_n + 20\%$
Immunity to microbreaks	ms	10
Delay on pick-up	s	About 3
Creepage distance and clearance	kV	4kV/3 Conforming to IEC 60664-1

Control circuit characteristics

Adjustment of upper threshold		102...115 % of U_n
Adjustment of lower threshold		85...98 % of U_n
Fault delay	s	0.1...10 (0...+ 50 %)
Hysteresis		About 3 %
Setting accuracy		$\pm 10\%$
Repeat accuracy	Upper threshold	0.06 %
	Lower threshold	0.09 %
Temperature drift		$\pm 0.05\%/^{\circ}\text{C}$

Output circuit characteristics

Output		2 C/O contacts, AgCdO
Breaking capacity		~ 2000 VA, --- 80 W
Maximum breaking current	A	~ 8, --- 8
Minimum breaking current	mA	~ 100, --- 100
Maximum switching voltage	V	~ 250, --- 250
Mechanical life		30 x 10 ⁶ operating cycles
Electrical life	AC-12	2000 VA - 10 ⁵ operating cycles
	AC-15	Cos $\varphi = 0.3$ - 6000 operating cycles
	DC-13	L/R = 300 ms - 6000 operating cycles

Other characteristics

Delay on crossing the threshold	s	0.1...10 Max : 10...15)
Indication	Supply	Green LED
	Overvoltage relay	Yellow LED
	Undervoltage relay	Yellow LED
Protection class	Terminal block	IP 20
Conforming to IEC 529-5	Enclosure	IP 50
Enclosure		Self-extinguishing Pc, panel or DIN rail mounted
Terminal capacity	With cable end	mm ² 2 x 1.5
	Without cable end	mm ² 2 x 2.5
Tightening torque	Conforming to IEC 947-1	Nm 0.6 max (M3 screw)
Temperature limits	Operation	$^{\circ}\text{C}$ - 20...+ 60 (conforming to IEC 68-1-14)
	Storage	$^{\circ}\text{C}$ - 30...+ 70 (conforming to IEC 68-1-1/2)
Relative humidity	Conforming to IEC 68-2-30	93 % without condensation
Vibrations	Amplitude	mm 0.35
Conforming to IEC 682-6	Frequency	Hz 10...55
Insulation resistance	Conforming to IEC 255-5	M Ω > 10 at ~ 500 V
Dielectric strength	Conforming to IEC 255-5	kV > 2.5/1min/1 mA/50 Hz
Impulse voltage	Conforming to IEC 255-5/664-1	kV 5, wave 1.2-50 μs
Product certifications		C UL us, CSA