Zelio Control measurement and control relays

Voltage control relays, model RM4 U

RM4 UB

Functions

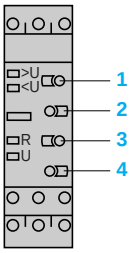
These devices are designed for monitoring single-phase voltages.
They have a transparent, hinged flap on their front face to prevent any accidental alteration of the settings. The flap can be directly sealed.

Applications

- Protection of electronic or electromechanical devices against overvoltage and undervoltage.
- Normal/emergency power supply switching.

Presentation

RM4 UB



1 Overvoltage setting potentiometer.
2 Undervoltage setting potentiometer.
3 Time delay function selector:
⊠ Fault detection delayed.
■ Fault detection extended.
4 Potentiometer for setting time delay in seconds.
R Yellow LED: indicates relay state.
U Green LED: indicates that supply to the RM4 is on.
> U Red LED: overvoltage fault.
< U Red LED: undervoltage fault.

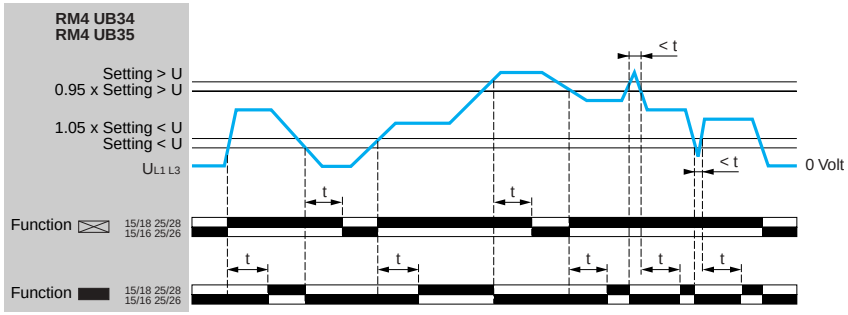
Operating principle

The voltage to be monitored is connected to terminals L1, L3 of the product.

There is no need to provide a separate power supply for RM4 UB relays; they are self-powered by terminals L1, L2, L3.

If the voltage goes outside the range to be monitored, the output relay is de-energised:
- **overvoltage**: red LED "> U" illuminates,
- **undervoltage**: red LED "< U" illuminates.
When the voltage returns towards its rated value, the relay is re-energised according to the hysteresis value (5%) and the corresponding red LED goes out.
A selector switch allows selection of an adjustable time delay from 0.1 s to 10 s. With function ⊠ , transient "over" or "under" voltages are not taken into account. With function ■ , all variations above or below are taken into account and re-energisation of the relay is delayed.
In all cases, in order to be detected, the duration of the overvoltage or undervoltage must be greater than the measuring cycle time (80 ms).

Function diagram



t: time delay

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Relays with adjustable thresholds

Adjustable time delay	Control threshold	Width	Output relay	Reference	Weight
s	**V**	**mm**			kg
0.1…10	Undervoltage 80…120 50/60 Hz Overvoltage 160…220	22.5	2 C/O	**RM4 UB34**	0.110
	Undervoltage 160…220 50/60 Hz Overvoltage 220…300	22.5	2 C/O	**RM4 UB35**	0.110

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Output relay and operational characteristics

Number of C/O contacts			2
Output relay state			Energised during fault free operation. De-energised on detection of an overvoltage or undervoltage fault.
Setting accuracy of switching threshold	As % of the setting value		± 3 %
Switching threshold drift	Depending on the permissible ambient temperature		≤ 0.06 % per degree centigrade
	Within the measuring range		≤ 0.5 %
Accuracy of time delay setting	As % of the full scale value		± 10 %
Time delay drift	Within the measuring range		≤ 0.5 %
	Depending on the rated operational temperature		≤ 0.07 % per degree centigrade
Hysteresis	Fixed		About 5 % of the de-energisation threshold
Measuring cycle		**ms**	≤ 80

Measuring input characteristics

Minimum operational voltage		**V**	**RM4 UB34**: 60 **RM4 UB35**: 160
Maximum permissible voltage between L1 and L3		**V**	**RM4 UB34**: 300 **RM4 UB35**: 300

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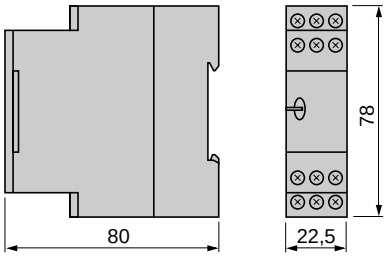
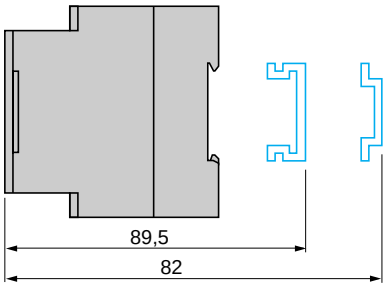
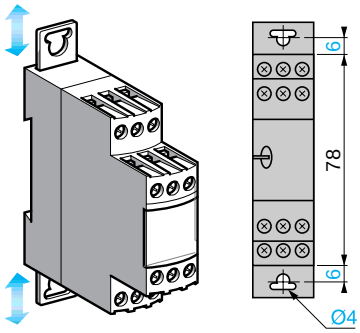
Dimensions
RM4 UB



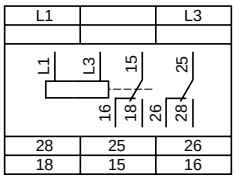
Rail mounting



Screw fixing



Scheme, connection
Terminal block
RM4 UB



L1, L3 Voltage to be monitored

15-18 1st C/O contact
15-16 of the output relay

25-28 2nd C/O contact
25-26 of the output relay

Application scheme
Example