

# Zelio® Control Measurement Relays


## RM4UA Voltage Measurement Relays

### SPECIFICATIONS

#### Power Supply Circuit Specifications

Type of Relay		RM4UA0●			RM4UA3●			
Rated Supply Voltage (Un)	Vac 50/60 Hz	24	110–130	220–240	24–240	110–130	220–240 V	380–415
	Vdc	–	–	–	24–240	–	–	–
Average Consumption at Un	VA (Vac)	2	1.9–3.3	2.7–3.5	1.5–3.3	1.9–3.3	2.7–3.4	2.7–3
	W (Vdc)	–	–	–	1.2	–	–	–

#### Output Relay and Operating Specifications

Type of Relay		RM4UA0●	RM4UA3●
Number of C/O Contacts, SPDT		1	2
Output Relay State		Energized when: voltage measured > threshold setting	Energized when: voltage measured > threshold setting (" $>$ " function) voltage measured < threshold setting (" $<$ " function)
Switching Threshold Setting Accuracy		As a percentage of the full scale value: $\pm 5\%$	
Switching Threshold Drift		$\leq 0.06\%$ per $^{\circ}\text{C}$ , depending on the permissible ambient temperature $\leq 0.5\%$ , within the supply voltage range (0.85–1.1 Un)	
Hysteresis (adjustable)		5–30% of the voltage threshold setting	
Time Delay Setting Accuracy		As a percentage of the full scale value: $\pm 10\%$	
Time Delay Drift		–	$\leq 0.5\%$ , within the supply voltage range (0.85–1.1 Un)
Measuring Cycle		$\leq 80$ ms	$\leq 0.07\%$ per $^{\circ}\text{C}$ , depending on the rated operating temperature

#### Measuring Input Specifications

##### Internal Input Resistance and Permissible Overload Depending on the Current Measurement Ranges




Type of Relay	RM4UA●1			RM4UA●2			RM4UA●3	
Measurement Range 50–60 Hz Vac and Vdc (V)	0.05–0.5	0.3–3	0.5–5	1–10	5–50	10–100	30–300	50–500
Internal Input Resistance Ri (k $\Omega$ )	6.6	43	71	23	112	225	668	1111
Permissible Continuous Overload (V)	20	60	80	90	150	300	400	550
Permissible Non-Repetitive Overload for $t \leq 1$ s (V)	25	80	100	100	200	400	500	550

### SELECTION




#### Voltage Measurement Relays: Overvoltage Detection



RM4UA01

Time Delay	Voltage to be Measured Depending on Connection (Vac or Vdc)	Width in. (mm)	Output Relay	Supply Voltage 50/60 Hz	Catalog Number	Weight lb (kg)
None	0.05–0.5 V	0.87 (22.5)	1 C/O–SPDT 	24 Vac	RM4UA01B	0.37 (0.168)
	0.3–3 V			110–130 Vac	RM4UA01F	0.37 (0.168)
	0.5–5 V			220–240 Vac	RM4UA01M	0.37 (0.168)
	1–10 V	0.87 (22.5)	1 C/O–SPDT 	24 Vac	RM4UA02B	0.37 (0.168)
	5–50 V			110–130 Vac	RM4UA02F	0.37 (0.168)
	10–100 V			220–240 Vac	RM4UA02M	0.37 (0.168)
	30–300 V	0.87 (22.5)	1 C/O–SPDT 	24 Vac	RM4UA03B	0.37 (0.168)
	50–500 V			110–130 Vac	RM4UA03F	0.37 (0.168)
				220–240 Vac	RM4UA03M	0.37 (0.168)

#### Voltage Measurement Relays: Overvoltage or Undervoltage Detection

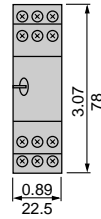
Adjustable Time Delay	Voltage to be Measured Depending on Connection (Vac or Vdc)	Width in. (mm)	Output Relay	Supply Voltage 50/60 Hz	Catalog Number	Weight lb (kg)
0.05–30 s	0.05–0.5 V	0.87 (22.5)	2 C/O–DPDT 	24–240 Vac/Vdc	RM4UA31MW	0.37 (0.168)
	0.3–3 V			110–130 Vac	RM4UA31F	0.37 (0.168)
	0.5–5 V			220–240 Vac	RM4UA31M	0.37 (0.168)
				380–415 Vac	RM4UA31Q	0.37 (0.168)
	1–10 V	1.77 (45)	2 C/O–DPDT 	24–240 Vac/Vdc	RM4UA32MW	0.37 (0.168)
	5–50 V			110–130 Vac	RM4UA32F	0.37 (0.168)
	10–100 V			220–240 Vac	RM4UA32M	0.37 (0.168)
				380–415 Vac	RM4UA32Q	0.37 (0.168)
	30–300 V	1.77 (45)	2 C/O–DPDT 	24–240 Vac/Vdc	RM4UA33MW	0.37 (0.168)
	50–500 V			110–130 Vac	RM4UA33F	0.37 (0.168)
				220–240 Vac	RM4UA33M	0.37 (0.168)
				380–415 Vac	RM4UA33Q	0.37 (0.168)

For additional application data, refer to page 2.

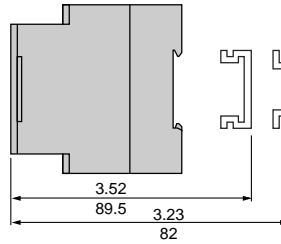
# Zelio® Control Measurement Relays RM4UA Voltage Measurement Relays

## DIMENSIONS

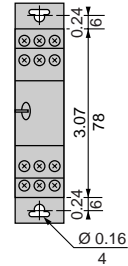
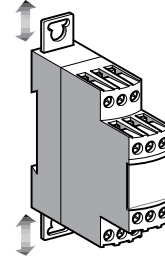
RM4UA  
(common side view)



Rail Mounting



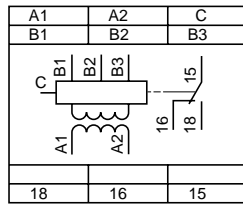
Direct Mounting



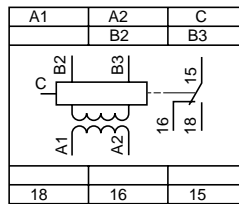
Dual Dimensions =  $\frac{\text{in}}{\text{mm}}$

## WIRING CONNECTIONS

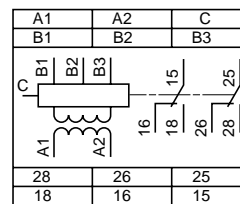
Terminal Blocks  
RM4UA01, UA02



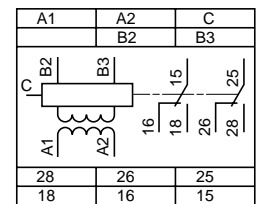
RM4UA03



RM4UA31, UA32



RM4UA33



### Connection and current values to be measured, depending on type of RM4UA

RM4UA.1	B1-C	0.05-0.5 V	RM4UA.2	B1-C	1-10 V	RM4UA.3	B2-C	30-300 V
A1-A2 supply voltage	B2-C	0.3-3 V		B2-C	5-50 V		B3-C	50-500 V
B1, B2, B3, C Voltages to be measured (see table to right)	B3-C	0.5-5 V		B3-C	10-100 V			

## Application Diagrams

Example: Overspeed Monitoring (Undervoltage Function)

