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January 2025



## VMKE Series

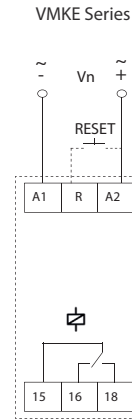
### 17.5MM Multifunction Voltage Monitoring Relays



#### Features

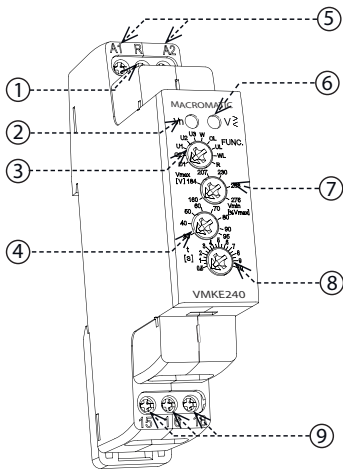
- Monitors the AC and DC voltage in single phase circuits.
- Supply voltage provided from the monitored voltage.
- Monitors voltage exceeding the upper voltage level ( $V_{max}$ ) and falling below the lower voltage level ( $V_{min}$ ) – according to the selected function.
- Smooth adjustment of both voltage levels – the lower level  $V_{min}$  is set in % of the upper level  $V_{max}$ .
- Adjustable time delay can be used to prevent nuisance trips.
- Option to select functions with fault state memory (Latch).
- The optional latched fault state can be reset by the control input (R).
- Measures root mean square value of the voltage - TRUE RMS.

#### Wiring



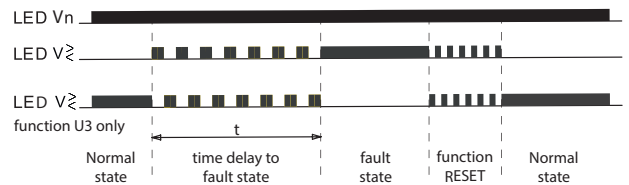
#### Description

VMKE240 shown below



1. Latch Reset Input (R)
2. Indication of supply/monitored voltage
3. Function settings
4. Lower level setting ( $V_{min}$ )
5. Supply/monitored voltage terminals (A1-A2)
6. Indication of operating state
7. Upper level setting ( $V_{max}$ )
8. Time delay setting (t)
9. Output contact (15-16-18)

#### LED Indication



Potentially hazardous voltages are present. Electrical shock can cause death or serious injury. Installation should be done by qualified personnel following all National, State and Local Codes.



Présence de tensions potentiellement dangereuses. Une décharge électrique peut causer la mort ou des blessures graves. L'installation devrait être effectuée par du personnel qualifié, suivant tous les codes nationaux, provinciaux et locaux.

## Technical parameters

	VMKE240	VMKE024D	VMKE120
<b>Supply and measuring</b>			
Supply/monitored terminals:	A1-A2		
Supply/monitored voltage:	AC/DC 48 – 276 V (AC 50-60 Hz)	DC 6 – 30 V	AC/DC 24 – 150 V (AC 50-60 Hz)
Consumption (max.):	2.5 VA/0.55 W	0.35W	2.5 VA/0.55 W
Upper level setting (Vmax):	AC/DC 160 – 276 V	DC 12 – 30 V	AC/DC 80 – 150 V
Lower level setting (Vmin):	30 – 95 %Vmax	50 – 95 %Vmax	30 – 95 %Vmax
Max. permanent voltage:	AC/DC 276 V	DC 36 V	AC/DC 276 V
Peak overload (1 s):	AC/DC 290 V	DC 48 V	AC/DC 290 V
Start-up Time Delay (d):	300 ms		
Time delay (t):	adjustable, 0.5 – 10 s		

## Accuracy

Setting accuracy (mech.):	5 % – mechanical setting
Repeat accuracy:	< 1 %
Temperature dependency:	< 0.1 %/°C (°F)
Hysteresis (fault to OK):	5 % (functions O1, U1, W) Vmax – Vmin (functions O2, U2, U3)

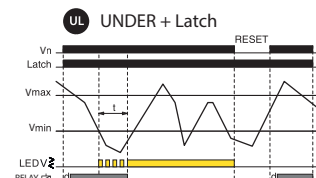
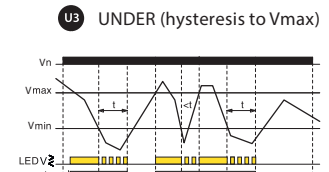
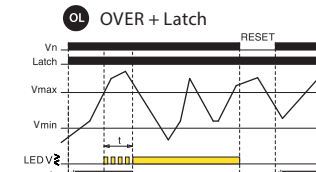
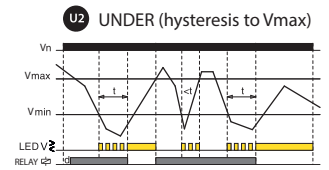
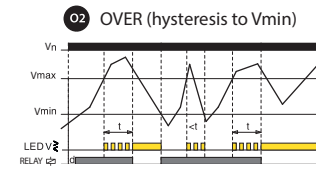
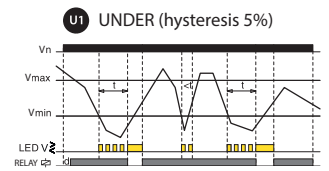
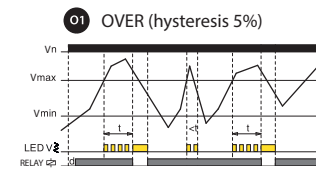
## Output

Contact type:	1x changeover	1x changeover	1x changeover
Contact material:	AgNi		
Contact rating:	10 A/250VAC		
Mechanical life:	10.000.000 ops.		
Electrical life (AC1):	100.000 ops.		

## Other information

Operating temperature:	–20 .. +55 °C (–4 .. 131 °F)		
Storage temperature:	–30 .. +70 °C (–22 .. 158 °F)		
Dielectric strength:	AC 4 kV (supply – output)		
Operating position:	any		
Mounting:	35MM DIN rail EN 60715		
Protection degree:	IP40 front panel / IP20 terminals		
Overvoltage category:	III.		
Pollution degree:	2		
Cross-wire section – solid/ stranded with ferrule (mm <sup>2</sup> ):	max. 1x 2.5, 2x 1.5/ max. 1x 2.5 (AWG 14)		
Dimensions:	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")		
Weight:	60 g (2.11 oz)	59 g (2.08 oz)	60 g (2.11 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27		
Terminal Torque:	M2.5, 0.4Nm, 3.54 in-lbs		

## Functions



### OVER:

If the value of the monitored voltage is lower than the set upper level "Vmax", the relay is energize. If the "Vmax" is exceeded, the relay will de-energize after the set delay (fault state).

If the voltage falls below the fixed hysteresis (O1 function) or the set lower level "Vmin" (O2 function), the relay will energize again.

If the OL function (OVER + Latch) is selected, when the upper voltage level "Vmax" is exceeded, the relay will de-energize even when the voltage returns from the fault state.

### UNDER:

If the value of the monitored voltage is higher than the set lower level "Vmin", relay will energize. When the voltage drops below the "Vmin", relay will de-energize after the set delay (fault state).

If the voltage exceeds the fixed hysteresis (function U1) or the set upper level "Vmax" (function U2, U3), the relay will energize again.

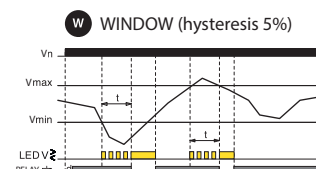
If the UL function (UNDER + Latch) is selected, when the voltage drops below the lower level "Vmin", the relay will remain energized even when returning from the fault state. Fault latch reset can be done as in the previous case.

### Fault latch reset can be done in three ways:

- Short-term interruption of supply voltage
- Using the control input (R)
- By setting the function switch to position R (RESET) or any function without latch fault

The RESET state lasts for 3 s after switching the function switch from the R position to a function with a memory fault (UL, OL, WL).

When moving to any other function from the R position, this delay does not apply.

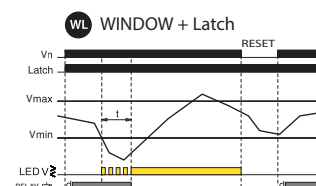


### WINDOW(BAND):

If the value of the monitored voltage is lower than the set upper level "Vmax" and at the same time higher than lower level "Vmin", the relay will energize. If the "Vmax" is exceeded or drops below the "Vmin", relay will de-energize after the set delay (fault state).

To return from the fault state, a fixed hysteresis is applied.

If the WL function (WINDOW + Latch) is selected, the fault state is again stored in memory and output contact stays open, even when returning from the fault state. Fault memory can be reset as described above in Fault Latch Reset.



## Notes for replacing VWKE Series Voltage Monitors

1. Recommended replacements are shown below:

- VWKE024D, replaced by VMKE024D
- VWKE120A, replaced by VMKE120
- VWKE240A, replaced by VMKE240

2. If replacing part number VWKE024D, please note that positive terminal is now terminal A2. LED functionality has also been changed, please see the LED indication chart.

3. To replace VWKE Series products, select function W.

4. Connection to the R terminal is not required for replacement of VWKE Series products.

5. The VWKE Series used a capital letter U to refer to voltage, the VMKE uses capital letter V instead.