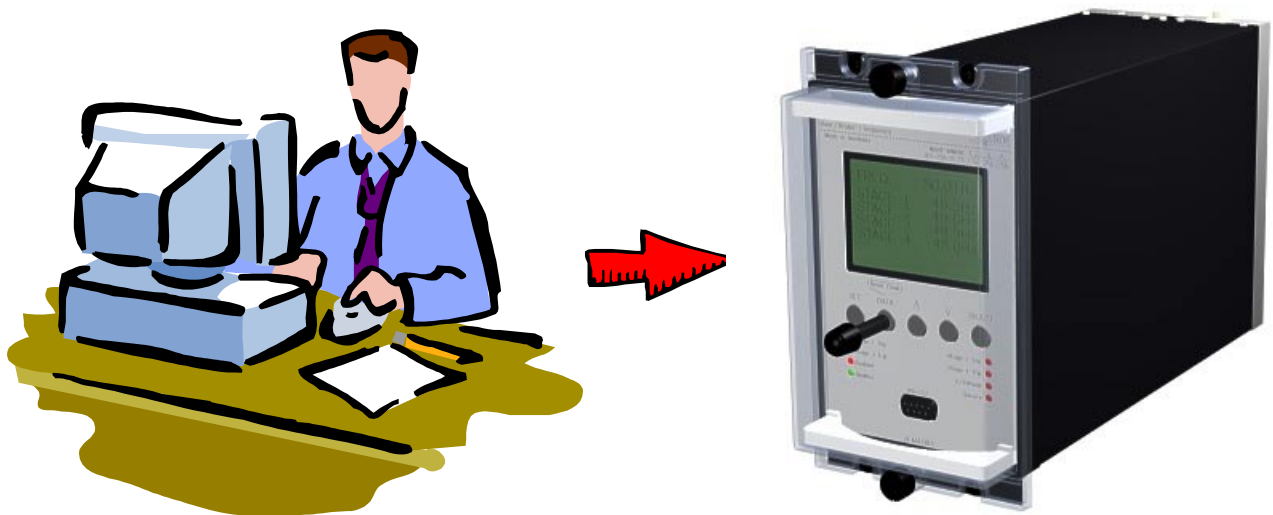


## SOFTWARE FUNCTION & VERIFICATION

# 2V067 D UMX

### VOLTAGE RELAY



Issue	Date	Summary of changes
A	08/11/2002	Initial issue

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ERL	DG	DG	



### 3.0 DESCRIPTION – UMX2V067D UMX

#### 3.1 Standard Features

The 2V67 provides a range of standard features as described in the RMS Technical Bulletin which may be downloaded from:

[www.rmspl.com.au/handbook/2V67.pdf](http://www.rmspl.com.au/handbook/2V67.pdf)

##### 3.1.1 Voltage Display (Data Page)

Display range:	20-145V	Input voltages < 20V will be displayed as 0V
Display accuracy:	+/-0.3V	
Display resolution:	4.5 digits	

##### 3.1.2 Status Input Function

The status input function is factory set to enable on the application of a control voltage. It is also possible for the status input to operate on the removal of a control voltage by simply changing a software flag in the PC setup program.

##### 3.1.3 Reset Time Delay

Electronic reset time is adjustable between zero & 5 seconds. When the voltage pick up & drop out points are set very close together it is advisable to set a longer reset delay to avoid timer resetting due to transient voltage fluctuations.

##### 3.1.4 Relay Enable Status Input

The status input on the 2V67 is used to enable the monitoring stages of the relay. The relay must be “enabled” in order for the time delay stages to operate.

##### 3.1.5 Relay Enable

A status input is provided to place the 2V67 in an enabled or inhibited condition.

###### Status Input Sense

The status input may be user configured such that application of a control voltage will enable the relay (Relay normally inhibited).

Alternatively the status input may be user configured such that removal of a control voltage will enable the relay (Relay normally enabled).

###### 2V67 Enabled

The trip conditions are only active when while the 2V67 relay is enabled. The “enable” output relay and front panel LED will pickup when the 2V67 is enabled.

###### 2V67 Inhibited

The stage trip conditions are not active when the 2V67 is inhibited.

### 3.2 Special Features of this Software UMX Version

The UMX supports the three-pole 2V67 hardware.

In this UMX, each phase or all phases trip a common group of output relays when the monitored voltage falls outside the setpoint, and the delay time has been exceeded.

#### 3.2.1 Voltage Set Points

Inputs:	3 phase 110V AC
Setting stages:	Common settable voltage
Setting range	30 to 132VAC in 1 volt steps
Hysteresis:	1.0 to 10V
Undervoltage function:	DO at set point PU at set point + hysteresis
Measurement resolution:	0.05V (0.1V displayed)
Measurement accuracy:	+/-0.25V

#### 3.2.2 Delay Timers

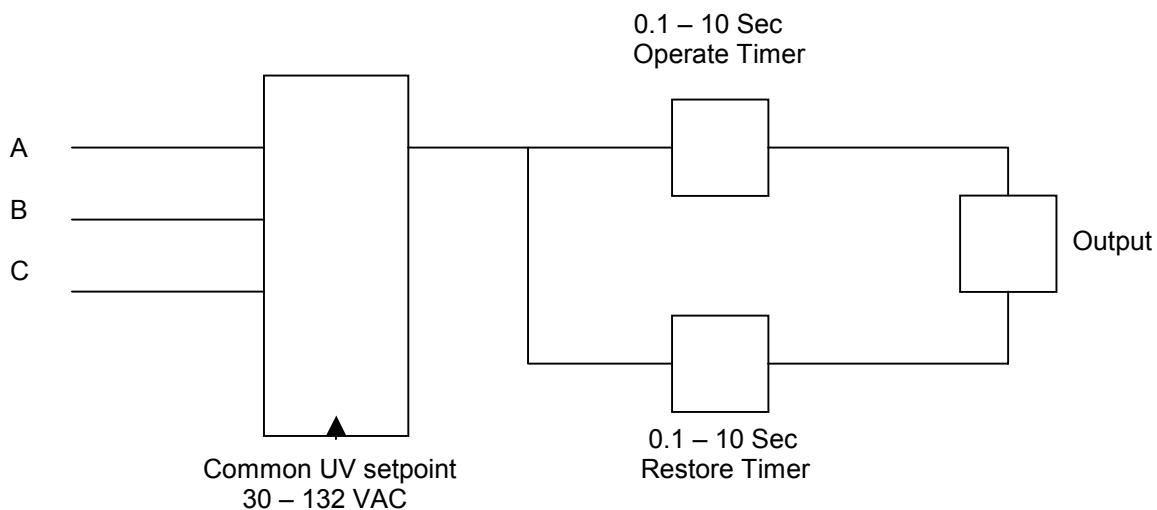
Operate Time delay	0.1 – 10.0 seconds 100ms steps
Reset time delay	0.1 – 10.0 seconds 100ms steps

#### 3.2.3 Voltage Setting Window

The 2V67 relay provides a Voltage Setting Window as follows:

- b) Three Phase Under Voltage Set Point
- c) Voltage Reset Hysteresis

#### 3.2.4 Logic Diagram Voltage Setting And Timers



### 3.2.5 Voltage Monitoring Functionality

#### Timers Start

When an UV set point is reached, the corresponding Trip timer starts.

#### Trip Time Out

Provided the start condition is maintained for the duration of the trip time delay, the UV output contact will pick up and the corresponding front panel LED indicator comes on. If the UV condition is removed, the output contact will reset after the reset timer has timed out.

#### Relay Reset

Reset of the relay is determined by the hysteresis and the reset time settings. For under voltage detection, reset will occur at the set point plus the hysteresis setting if the condition is maintained for the duration of the reset delay.

#### Flag Reset

The Trip LEDs are self reset

## 4.0 USER INTERFACE

Refer to the  $\mu$ MATRIX Users Guide for detailed instructions on the operation of the user interface.

To download a PDF version of the guide:

[www.rmspl.com.au/digital/uMATRIXInfo.pdf](http://www.rmspl.com.au/digital/uMATRIXInfo.pdf)

To download further  $\mu$ MATRIX software & documentation:

[www.rmspl.com.au/uMATRIX.htm](http://www.rmspl.com.au/uMATRIX.htm)

## 5.0 Loading software, Calibration & Test

This section requires at least the following:  
A PC with Windows 98 or later and at least one COM port.  
UMatrixWin software.  
The correct serial cable.  
The ability to interrogate the relay via the front panel buttons.  
A general understanding of how UMX and UMP files work with the relay.

*Settable parameters will be overwritten by loading a new UMX file. They can however, be saved to a UMP file and then returned to the relay later. To learn how to do this, refer to the uMatrix Userguide.*

### 5.1 Loading the UMX

Before loading the UMX2V067D software, ensure that it is compatible with your hardware. Download the compatibility list from the RMS website at:

[www.rmspl.com.au/digital/compatibility.pdf](http://www.rmspl.com.au/digital/compatibility.pdf)

Now ensure that the bios version in the relay matches the table in section 2.0 of this document. (If the bios version is different, you may not be able to load this UMX. Contact RMS for support.)

Load the UMX via the front panel COM port using the 'uMatrixWin' software. Now ensure that the UMX version matches the table in section 2.0.

*To interrogate for versions, press 'SET' and 'DATA' buttons simultaneously, then select 'Version Page'. Alternatively, use uMatrixWin – Options – Utilities.*

Check versions

The relay is now ready to calibrate. *Note: calibration is a factory function. If you are simply changing or re-loading a UMX, re-calibration is not necessary. The relay is deemed to be fully operational.*

**5.2 Calibration using 'WinCal'**

Test equipment required:

As 5.0 plus

Calibrated Test Set (Volts, Amps, Timing & Phase Angle)

- a) With the test set and PC connected to the relay, start Wincal, select uMatrix – Connect.
- b) Select uMatrix – Calibrate and follow the prompts. When completed, verify the following parameters.
- c) Check Voltage display reading accuracy:

<b>MINIMUM</b> 29.8	<b>MAXIMUM</b> 30.2	<b>NOMINAL VAC</b> 30	<b>ACTUAL A</b>	<b>ACTUAL B</b>	<b>ACTUAL C</b>
<b>MINIMUM</b> 59.8	<b>MAXIMUM</b> 60.2	<b>NOMINAL AC</b> 60.0	<b>ACTUAL A</b>	<b>ACTUAL B</b>	<b>ACTUAL C</b>
<b>MINIMUM</b> 119.8	<b>MAXIMUM</b> 120.2	<b>NOMINAL AC</b> 120.0	<b>ACTUAL A</b>	<b>ACTUAL B</b>	<b>ACTUAL C</b>

If the relay settings in the above are correct, the relay is deemed to be fully operational.

TESTED BY : \_\_\_\_\_ DATE : \_\_\_\_\_

6.0 CONNECTION DIAGRAM

