

# Analogue Voltage Monitor

EPAK-VMR-1PH-300-24V 7760054244  
EPAK-VMR-1PH-300-230V 7760054245



## Safety instructions

### DANGER

**⚠️** For safe installation and safe operation the following must be observed:  
 • The device may only be installed by qualified personnel familiar with the national and international laws, directives and standards that apply to this region.  
 • Until the device is installed, do not connect hazardous voltages to the device.  
 • In applications where hazardous voltage is connected to in-/outputs of the device, sufficient spacing or isolation from wires, terminals and enclosure to surroundings (incl. neighbouring devices), must be ensured to maintain protection against electric shock.

### WARNING

**⚠️** Prior to installation, commissioning and maintenance of the device, the related safety regulations, technical specifications and operating instructions must be observed.  
 • Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock as well as rain and heavy moisture.  
 • All devices can be used for Overvoltage Category II and Pollution Degree 2. The device is designed to be safe at least under an altitude up to 2000 m.  
 • The device is provided with field wiring terminals and shall be supplied from a power supply having double or reinforced insulation. A power switch should be easily accessible and close to the device. The power switch shall be marked as the disconnecting unit for the device.  
 • Year of manufacture can be taken from the first two digits in the serial number.  
 • When disconnected, the device may be cleaned with a cloth moistened with distilled water.

### CAUTION

**⚠️** Appropriate safety measures against electrostatic discharge (ESD) are be considered when handling the devices.

## Introduction

The module monitors 6VAC/DC to 300VAC/DC voltage in single-phase power supply system. This voltage range can be divided into 2 individual ranges. Power is supplied via the individual 24VDC or 230VAC power supply. A relay with changeover contact is used for the switching output. The relay acts while the monitored parameters are normal; the relay resets while the monitored parameters are abnormal. The power supply, input and output are galvanically isolated between each other.

Weidmüller Interface GmbH Klingenbergstr.16  
32758 Detmold  
Germany

Weidmüller Interface (Shanghai) Co.,Ltd.  
25F, BM Intercontinental Business Center, 100 Yutong Road, Shanghai,  
China,200070  
Phone:+86 21 2219-5008  
Fax:+86 21 2219-5009  
www.weidmueller.com.cn

## Specification

Channel: 1

Input:

Input signal: DC, AC: Sinus signals  
Input range:  $U_1: 30\text{--}300\text{VAC/DC}$  ( $U_{N1}: 300\text{V}$ )  
 $U_2: 6\text{--}60\text{VAC/DC}$  ( $U_{N2}: 60\text{V}$ )  
Input frequency: 40Hz-60Hz (AC)  
Input resistance:  $1\text{M}\Omega \pm 5\%$

Output:

Contacts of relay: 1 set of individual SPDT  
Max Switching voltage: 250VAC/30VDC  
Continuous current: 3A @ 250VAC/30VDC  
Mechanical endurance:  $20 \times 10^6$   
Alarm mode: Under voltage/ Over voltage  
Alarm setting range: 10%~100%  $U_N$   
Hysteresis: 5%  $U_N$  (Fixed)  
Delay time: 0~10s (ON & OFF)  
Setting accuracy: 5% of  $U_N$   
Transmission accuracy: 5% of  $U_N$   
Repeat accuracy: 2% of  $U_N$   
Step response time:  $\leq 200\text{ms}$   
Temperature coefficient:  $< 250\text{ppm/K}$

Power supply:

Supply voltage: 18~30VDC or 85~264VAC (depending on different type)  
Current consumption: <60mA @ 24VDC with full load  
<2VA@230VAC with full load

Power protection: Inverse protect

Insulation Coordination:

Standards: EN50178  
EMC standards: IEC61000-6-2, IEC61000-6-4  
Rated voltage: 300VAC  
Impulse withstand voltage: 4000V(1.2/50us)  
Isolation voltage: 2.2kVAC, 1min, 50Hz  
Overvoltage category: II  
Pollution degree: 2

General Data:

Configuration: DIP switch, Potentiometer  
Operating temperature: -20 ~ +60°C  
Storage temperature: -40 ~ +85°C  
Humidity: 0 ~ 85%, Tu=40°C, no condensation  
Indicator:  
LED PWR: Green, power on  
LED ALM: Flash, delay time counting; Red, alarm  
Approval: CE

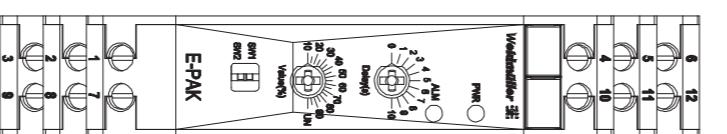
## Settings:

	DIP Switch 1	DIP Switch 2	POT 1	POT 2
Supply Voltage	ON	OFF	ON	OFF

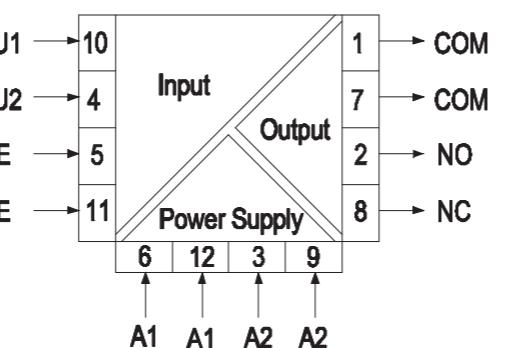
18~30VDC/85~264VAC 6~60V 30~300V Under Over

Delay Time 0~10s Alarm Value 10% ~ 100%

\* The default factory Settings : SW1 OFF, SW2 OFF  
\* Warning: Please disconnect the input and the power supply of the module, when you configure it.



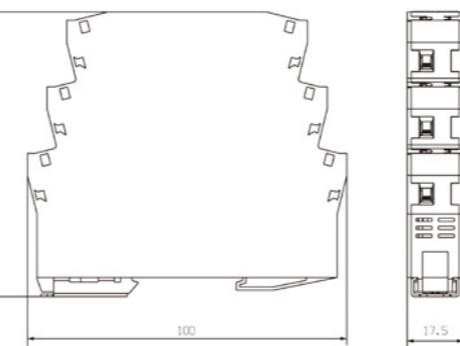
## Wiring



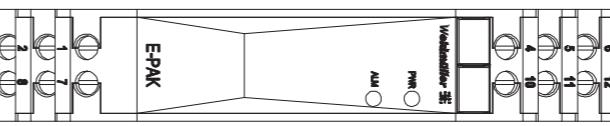
EPAK-VMR-1PH-300-24V: A1:24V+; A2:GND  
EPAK-VMR-1PH-300-230V: A1:L; A2:N

## Dimensions

HeightxLengthxWidth : 100 x 89 x 17.5(mm)

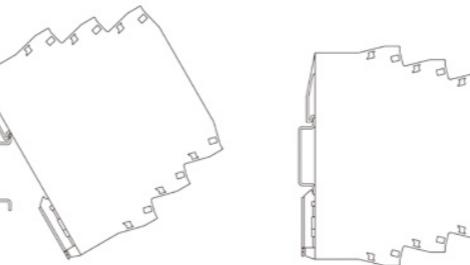


## Front cover and terminal definition



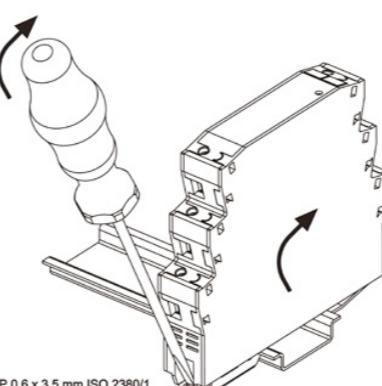
## Installation

The product is designed to be mounted onto a TS 35 DIN rail. It clips onto the rail via a spring-loaded mounting foot and can be removed via a spring release on the edge of the product near the mounting rail.



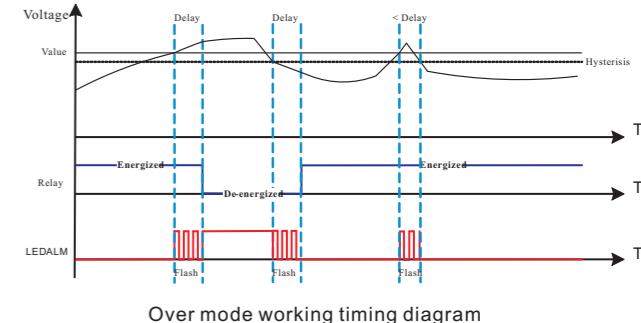
## Uninstallation

Please refer to the following picture when try to uninstall the isolator from the DIN rail. Insert the screw driver into the hold of the house feet and turn the screw driver to take off the isolator.



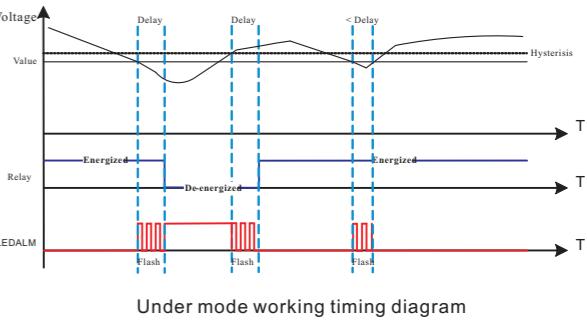
## Over voltage alarm

The coil of relay is de-energized and stays in alarm status while the monitored voltage is greater than the setting alarm voltage value and lasting time exceeds the tripping on delay time; The coil of relay is energized and stays in normal status while the monitored voltage is less than the setting alarm voltage with the subtraction of hysteresis and lasting time exceeds the tripping off delay time.



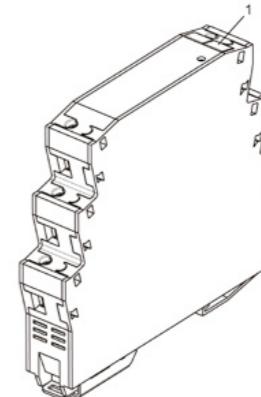
## Under voltage alarm

The coil of relay is de-energized and stays in alarm status while the monitored voltage is less than the setting alarm voltage value and lasting time exceeds the tripping on delay time; The coil of relay is energized and stays in normal status while the monitored voltage is greater than the setting alarm voltage with the addition of hysteresis and lasting time exceeds the tripping off delay time.



## Marker

A device marker is located below the upper set of terminals for customer identification.



## Maintenance

- Before powering the isolator, make sure the models type is correct according to the design and the application environmental conditions.
- Please choose the power supply with short circuit protection function.
- After the electronic products have been powered for more than fifteen minutes, the temperature of them should be stable.
- It is strictly prohibited to test the insulation capability between any two terminals of the product by a mega-ohmmeter. All of the connecting wires of the isolator must be disconnected, before testing the insulation of the system, otherwise internal components will be destroyed.
- Each product has been tested strictly and the quality is controlled rigidly. If you have any questions regarding this product, contact the nearest distributor or our company technical support hotline directly for assistance.
- In 12 months from delivery date, if the product works improperly in the process of normal usage, we will repair or replace it without charge.