

### General

GKE-40 over and undervoltage protection relay is designed to protect devices with sensitive operating voltage values from errors that may arise from mains voltage.

It is suitable to use for loads up to a maximum of 40A.

### Device Usage and Principle of Operation

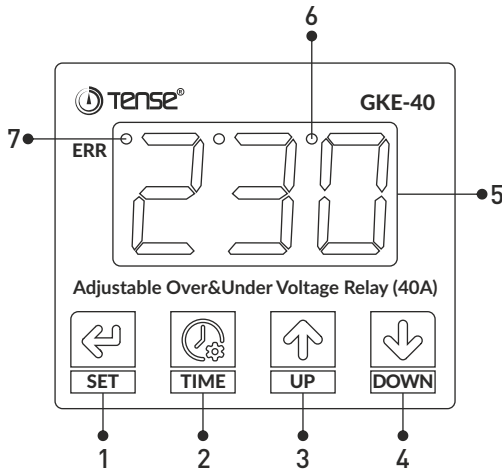
Make the connections of the device according to the connection type. Otherwise, the device may be damaged. Adjust the high and low voltage settings of the device according to the operating voltage values of the load you will use.

**When the device is energized;** If the mains (input) voltage value is between the high voltage and low voltage set values set on the device, the device energizes the relay, if not, the device does not energize the relay and the error led turn on, the mains (input) voltage value shown on the display flashes throughout the error.

**Error state;** If the mains (input) voltage value is between the high and low voltage set values (when the device is not in error), the mains (input) voltage value rises above the high voltage set value or falls below the low voltage set value; the device waits for the set error waiting time, then the device de-energizes the relay, the error led turn on, the mains (input) voltage value shown on the display flashes throughout the error.

**The state of getting out of error;** When the mains (input) voltage value is not between the high and low voltage set values (when the device is in high or low voltage error), when the mains (input) voltage value returns to normal (when it reaches a value between the high and low voltage set values); the device waits for the set error waiting time, then the device energizes the relay, the error led turns off, the mains (input) voltage value on the display lights steadily.

### Display and Buttons



**1 - SET Button:** This button is used to save after setting/changing high/low voltage setting values and error wait time.

**2 - TIME button:** To set the error waiting time, this button is pressed for 1 second, then the error waiting time saved on the device is displayed on the screen. While the error wait time value is displayed on the screen, the desired value is set by using the UP / DOWN buttons. The set value is saved by pressing the SET button.

**3 - UP button:** To set the high voltage set value, this button is pressed for 1 second, then the high voltage set value saved in the device is displayed on the screen. While the high voltage setting value is displayed on the screen, the desired value is adjusted by using the UP / DOWN buttons. The set value is saved by pressing the SET button.

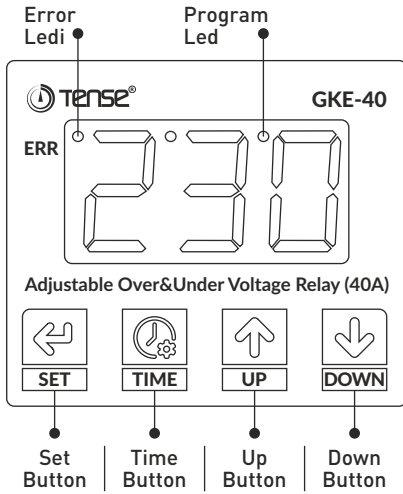
**4 - DOWN button:** To set the undervoltage set value, this button is pressed for 1 second, then the undervoltage set value saved in the device is displayed. While the undervoltage set value is displayed on the screen, the desired value can be set by using the UP / DOWN buttons. The set value is saved by pressing the SET button.

**5 - Display Group:** During normal operation, the input (mains) voltage value is displayed here, the screen lights up steadily when not in error state, the display flashes in case of error (high or low voltage). During programming, the value of the relevant program is shown on the display (high, low voltage and error wait setting values).

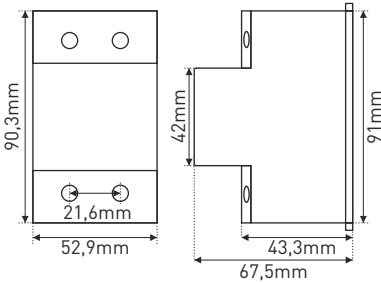
**6 - Setting led:** While the high, low voltage setting values and error wait times are adjusted by the user, this led will flash. Ex. : Setting LED flashes while changing the setting by applying the explanations in items 1, 2, 3 and 4.

**7 - Error led:** In case of high or low voltage error, this led turn on.

## Setting Up the Device

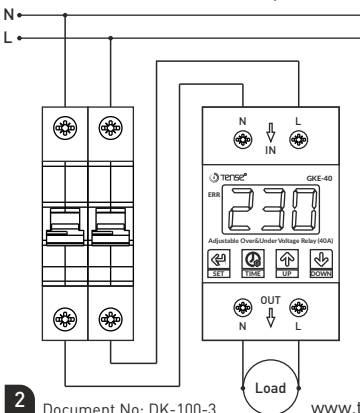


### Dimensions



### Connection Diagram

The Neutral and Phase connection comes from the mains must be connected to the "N" and "L" terminals at the IN part of the device. Neutral and Phase connection of the devices that are desired to be protected from over and under voltage should be taken from the "N" and "L" terminals in the OUT part of the device.



**Setting the high voltage value;** Press the Up Button for 1 second to set the high voltage value. The program led will start flashing and the high voltage value stored in the device will be displayed on the screen. While the high voltage value is displayed on the screen, the desired value is adjusted by using the Up/Down buttons. The set value is saved by pressing the SET button. The program led will turn off and the input (mains) voltage value will be displayed on the screen.

**Setting the low voltage value;** Press the Down Button for 1 second to set the low voltage value. The program led will start flashing and the low voltage value stored in the device will be displayed on the screen. While the low voltage value is displayed on the screen, the desired value is adjusted by using the Up/Down buttons. The set value is saved by pressing the SET button. The program led will turn off and the input (mains) voltage value will be displayed on the screen.

**Setting the error wait time value;** Press the Time Button for 1 second to set the error wait time value. Program led will start flashing and error wait value stored in the device will be displayed on the screen. While the error wait value is displayed on the screen, the desired value can be adjusted by using the Up/Down buttons. The set value is saved by pressing the SET button. The program led will turn off and the input (mains) voltage value will be displayed on the screen.

**Adjusting the screen brightness;** Press the Set button for 1 second to adjust the screen brightness. Program led will start flashing and screen brightness value stored in the device will be displayed on the screen. While the screen brightness value is displayed on the screen, the desired value can be adjusted by using the Up/Down buttons. The adjusted value is saved by pressing the SET button. The program led will turn off and the input (mains) voltage value will be displayed on the screen.

### Technical Informations

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Technical Specifications	Rated Current	40A
	Rated Voltage	230V AC
	Frequency	50Hz. - 60Hz.
	Protection Range	0V - 450V AC
	Operating Temp.	-20°C - +55°C
	Operating Power	<4VA
	Operating Altitude	<2000m
	Display	3 Digit LED Display
Settings Ranges	Weight	<250gr.
	High Voltage	230V - 300V
	Low Voltage	120V - 210V
	Error Waiting	0.1sec. - 600sec.
Factory Settings	Screen Brightness	1 - 5
	High Voltage	240V ± 5V
	Low Voltage	180V ± 5V
	Error Waiting	5sec.
Mountings	Screen Brightness	5
	Cable Diameter	Maks. 6mm <sup>2</sup>
	Connection Type	Terminal Connection
	Mounting Type	Mounting on DIN rail



MADE IN  
TURKEY