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KR4 - U/I

Voltage analog signal converter
0-10V for analog current signal 4-20mA
in a housing for a DIN rail

1. Main description of KR4–U/I

The KR4-U / I converter is used to convert the analog voltage signal 0-10V to a 4-20 mA analog current signal. The analog input can be supplied with a 0-10V voltage signal produced by any other electrical / electronic device.

The signal from the analog output can control any electrical device with a 4-20 mA current input. For example, using the KR4-U / I converter, the voltage output of the PLC can be connected to an external device with a 4-20 mA current input.

2. Calibration of KR4-U / I input and output signals

The values of analog signals - the input voltage and the current output are calibrated by the manufacturer at the production stage of the device. However, it is possible to independently correct these signals in a small range +/- several percent. For this purpose, internal multi-turn potentiometers are used, the knobs of which are available after removing the upper housing panel. Note - do not mindlessly turn the knobs of the calibration potentiometers, as this will cause major inaccuracies in analogue signal processing and the need for a new KR4-U / I calibration.

The method of correct calibration KR4-U / I:

To perform the calibration you need an accurate milliammeter of direct current and a precise source of a constant voltage signal of 5V to 9V. First, you need to calibrate the value of the current output signal.

To do this:
- connect 24V power supply to terminals 1 and 2 KR4-U / I
- connect terminals 1 and 3 together (supplying voltage + 24V to voltage input is allowed for calibration purposes)
- connect a milliammeter to the output of the current signal
- by adjusting the potentiometer located closer to the current output set the current value equal to 20mA

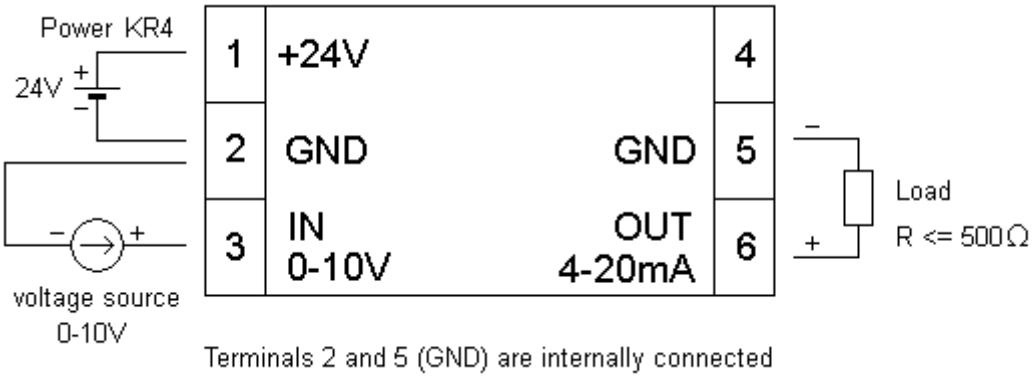
Then the value of the voltage input signal should be calibrated.

To do this:
- connect 24V power supply to terminals 1 and 2 KR4-U / I
- connect a milliammeter to the output of the current signal
- for voltage input, provide a signal with a stable and known value between 5V and 10V
- by adjusting the potentiometer located closer to the voltage input, set the current value at the output corresponding to the input voltage, eg 5V -> 12mA or 6V -> 13.6mA, or 7V -> 15.2mA, or 7.5V -> 16mA, or 8V -> 16.8mA, or 9V -> 18.4mA (please note that the 0-10V signal is converted to a 4-20mA signal, not a 0-20mA signal)

3. Description of terminals KR4-U / I

1 - power supply terminal + 24V
2, 5 - internally connected - ground for signals: power, input and output
3 - input of analog 0-10V voltage signal
4 - unused terminal
6 - 4-20mA current analog signal output

4. Connection diagram of KR4-U/I converter



5. Technical data KR4 - U/I.

Power supply:

- power supply voltage: **24V +/-20%**
- power consumption: **3mA max + current flowing from the current output**

Voltage input:

- input resistance: **>= 220kΩ**

Current output:

- load resistance: **max 500Ω**

- accuracy of analog signal processing: **+/- 0.2%**
- response / conversion time (10-90%): **0.1sek**
- operating temperature range: **0-65 °C**
- relative humidity range: **0-90% (without condensation)**
- level of security: **IP20**
- work position: **any**
- housing dimensions: **17.5 x 94 x 65 mm**
- assembly: **in a housing for a DIN rail (TS35)**