Intro

The Voltagepotmeter JGA2013 is a universal control unit that converts two Potentiometer signals (0 - 100%) to two +/- 0 … 5 V or 0 … 10 V signals.

The Voltagepotmeter includes two ‘potentiometer to voltage’ circuits. The two circuits are supplied with a single power supply. The inputs and outputs are **NOT** isolated from each other.

The product can also be used to buffer a 0 … 10 V signal. The input signal will be transferred 1:1 or 2:1 to the output. A single output can source a maximum of 100 mA.

Liability and warranty

Every JGA2013 is checked before sending on correct operation.
Therefore Boutronic has a warranty period of 1 year.

The warranty expires if:

- The defect is caused by gross negligence or by improper installation
- Repairs and/or modifications to the JGA2013 without permission from Boutronic.

Boutronic is in no way liable for damage caused as a direct or indirect consequence by the use of the JGA2013.

Manual JGA2013
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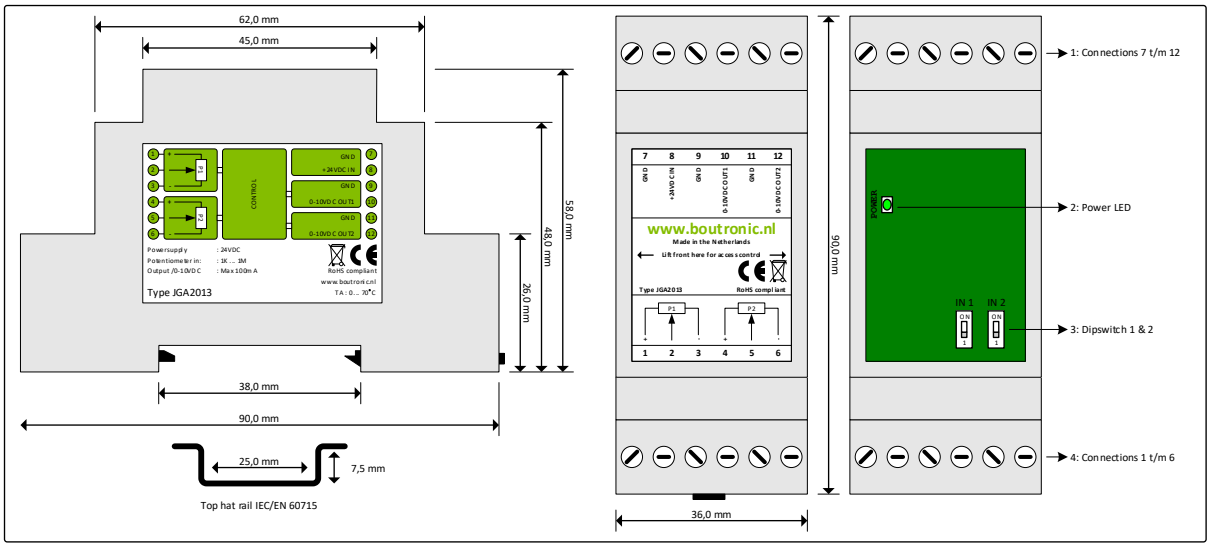
Menu

Connections

The figure below shows schematically the JGA2013:



Nr.	unit	Description
1	Connections 7 … 12	Connections 7 to 12
2	Power LED	The LED will emit green light when the power supply is connected
3	DIP-switches	DIP-switch to change the output range.
4	Connections 1 … 6	Connections 4 to 6

Power supply AC / DC

The JGA2013 must be externally powered with either an AC or DC voltage. For further information view chapter *Technical specifications*. The Power supply will connected to connections 7 and 8.

The power supply is protected with an automatic fuse of 300mA.

Voltage outputs

The voltage outputs will send a voltage based on the runner position of the potentiometer.
The potentiometer value is scaled between minimum (0 V) and maximum value (5 V/10 V).
The maximum output current is 100mA.

Each power circuit is protected with a 140mA automatic fuse.

Potentiometer- or Buffer input

Every circuit has its own signal input. The signals are filtered on the PCB
The potentiometer is connected to the potentiometer input.
Various filters are present on the electronics to filter out spikes from the cable or potentiometer and ensures the signal slowly becomes 0 V when the input signal is disconnected.

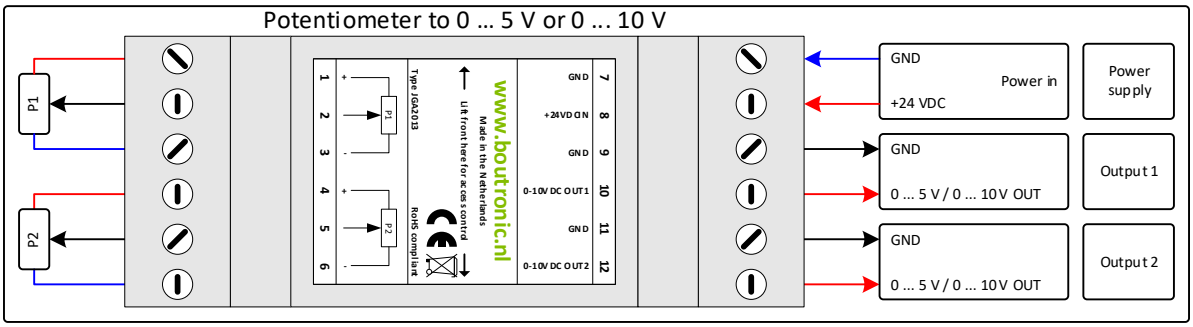
ATTENTION: The 10 Volt output and GND are not filtered. Wrong use can damage the VoltagePotentiometer.

Connection example

Connection examples are given below.

Potentiometer as an input signal

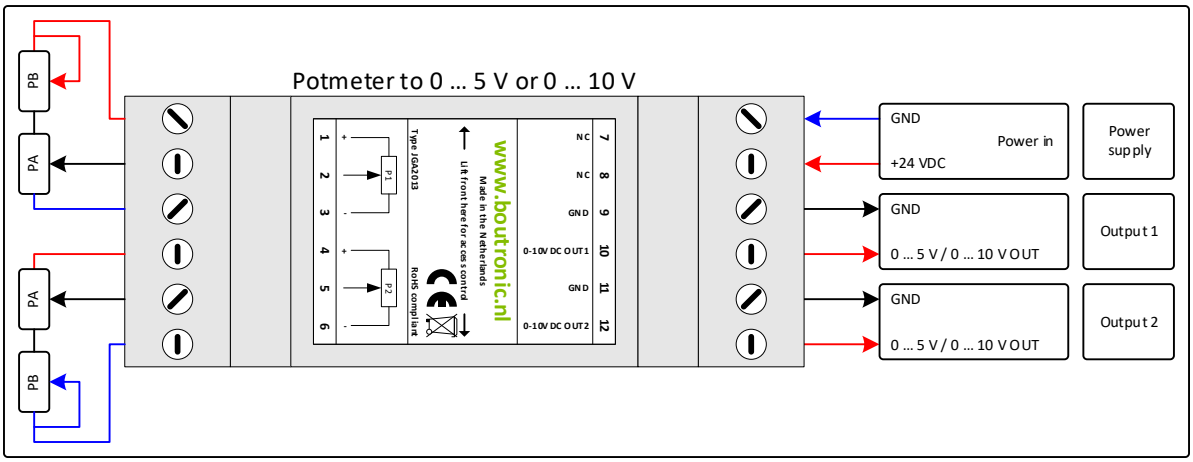
The image below shows how the potentiometer has to be connected to the VoltagePotentiometer. A potentiometer has three connections: The supply, the runner and a GND, see connections 1-6.



Fine adjustment of output voltage

If it's desirable that the output voltage can be finely or precisely adjusted, two potentiometers for each input signal can be used (see image below).

The image shows two connection examples. As a general rule PA has a 10 times higher resistance than PB. For example: PA = 100K and PB = 10K.

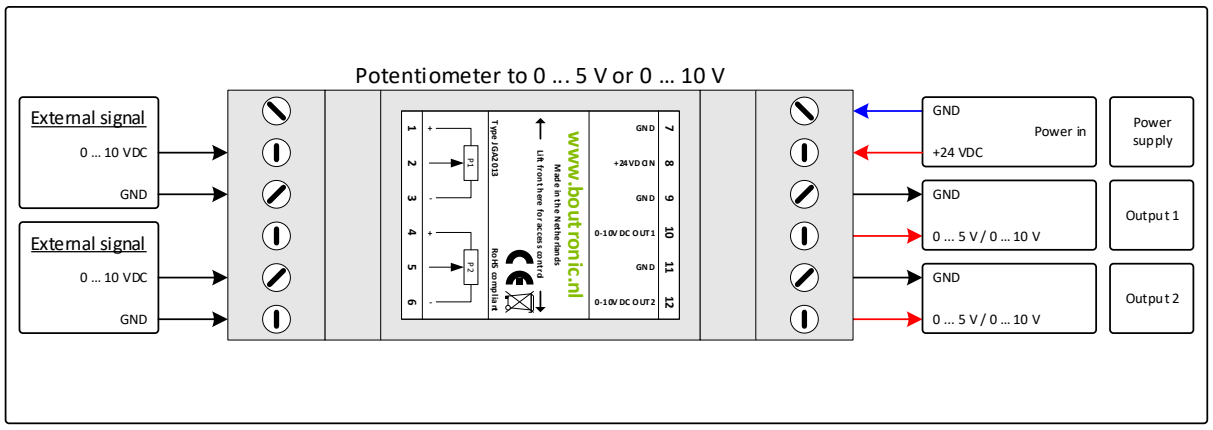


0 … 10V as an input buffer signal

The figure below depicts how an external signal has to be connected to the VoltagePotentiometer in order to use the input signal as a buffer. The external power supply has a (0 … 10 Volt) input signal and a GND. The positive side of the VoltagePotentiometer is no longer used. The VoltagePotentiometer is now called a VoltageBuffer.

The signals will be connected as followed:

- Input signal: connection 2 or 5
- GND: connection 3 or 6



Configurations

The VoltagePotentiometer module is a product without firmware. The configurations can only be made through the hardware. The following configurations are possible:

DIP-switch

The dipswitch can be used to change the output range from the standard 0 … 10 V to a 0 … 5 V range. This change can be made for both outputs respectively:

Dipswitch	position	Output range
1	OFF	0 … 10 Volt output 1
	ON	0 … 5 Volt output 1
2	OFF	0 … 10 Volt output 2
	ON	0 … 5 Volt output 2

Technical specifications

General

Description	Value	Unit	Remarks
Measurement	90 x 36 x 58	mm	L x B x H
Mounting	DIN-rail (Top hat rail)		IEC/EN 60715
Material	Plastic ABS		
Weight	80	gram	
Temperature Storage	-30 … +85	˚C	
Temperature operational	-20 … +70	˚C	

Power

Description	Min	Typ.	Max	Unit	Remarks
Power in	20	24	30	VDC	
	20	-	24	VAC	1
	-	10	-	mA	2
Fuse at voltage Input		300		mA	3

1. Attention: One phase is directly connected to the GND.
2. This current is dependent on the output current.
3. Protected with an automatic fuse.

Voltage output

Unit	Min	Typ.	Max	Unit	Remarks
Output voltage	0	-	10	VDC	1
Output current	0	-	100	mA	For each output
Fuse at voltage Output	-	140	-	mA	2

1. 5 VDC maximum when the switch is in the ON state.
2. Protected with an automatic fuse.

Potentiometer input

	Min	Typ.	Max	Unit	Remarks
Potentiometer value	1K	-	1M	ohm	
Voltage over the Potentiometer	-	-	10	VDC	

Housing dimensions