

Intro

The CurrentPotmeter JGA2035 is a universal control unit that converts two Potentiometer signals (0 - 100%) to two +/- 4... 20 mA signals. The two circuits are electrically separated from each other.

The product does not require a separate power supply, the circuits are loop-powered.



Liability and warranty

Every JGA2035 is checked before sending for 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 JGA2035 without permission from Boutronic.

Boutronic is in no way liable for damage caused as a direct or indirect consequence by the use of the JGA2035.

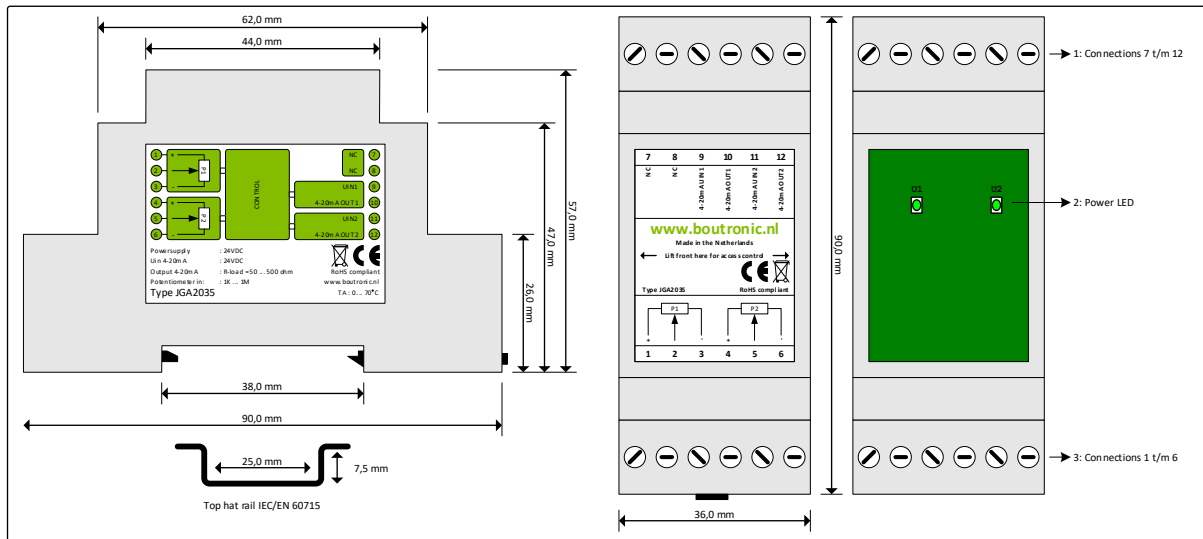
Manual JGA2035
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Connections

The figure below shows schematically the JGA2035:



Nr.	unit	Description
1	Connections 7 ... 12	Connections 7 to 12
2	Power LED	Both circuits have their own Power LED. It lights up green when the power supply is present and the Loop is properly connected.
3	Connections 1 ... 6	Connections 4 to 6

Potentiometer input

The potentiometer is connected to the potentiometer input. There are three connections for each potentiometer: power supply, runner and GND. These three signals must be connected for each potentiometer for correct operation. Various filters are present on the electronics to filter out spikes from the cable or potentiometer.

Current output

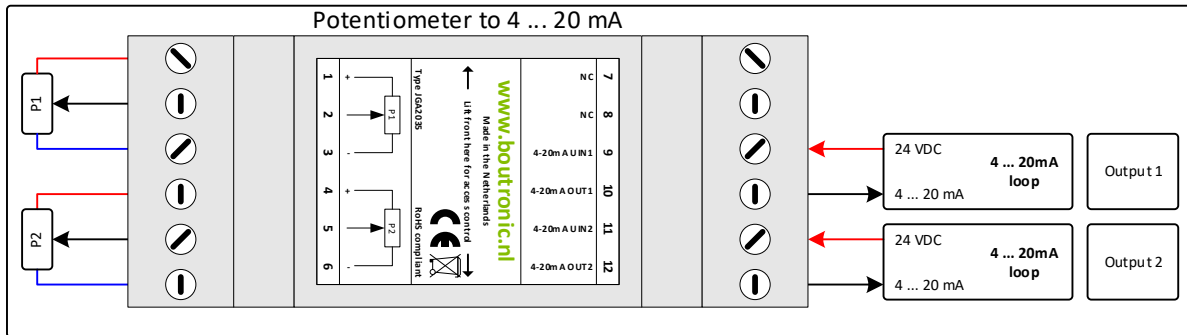
The current outputs will send current on base of the potentiometer position. The potentiometer value is scaled between minimum (4 mA) and maximum value (20 mA). The output current will in practice be slightly lower than 4mA and slightly higher than 20mA. Each power circuit is protected with a 50mA automatic fuse.

Power Current output

The current outputs must be supplied with a DC voltage, each circuit has its own power connection. The two circuits are electronically separated. If the same power source is used for both circuits, this separation is canceled.

Connection example

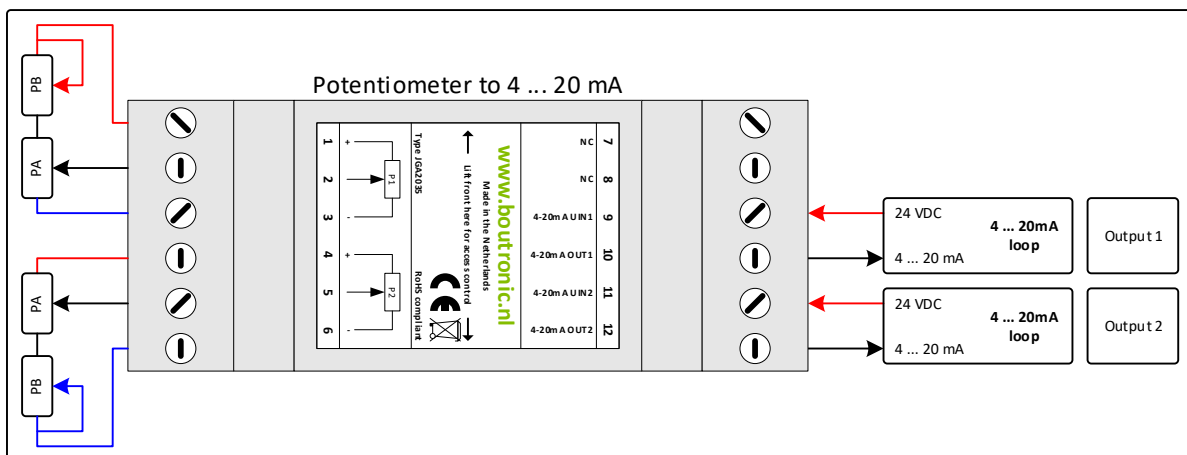
A connection example is given in the image below.



Fine adjustment of output currents

If it's desirable that the output current is finely or precisely adjusted, two potentiometers for each input can be used. See the image below for a connection example.

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.



Technical specifications

General

Description	Value	Unit	Remarks
Measurement	90 x 36 x 57	mm	L x B x H
Mounting	DIN-rail (Top hat rail)	-	IEC/EN 60715
Material Enclosure	Polycarbonate	-	UL94-V0
Lid	Polycarbonate	-	UL94-V2
Weight	80	gram	
Temperature storage	-30 ... +85	°C	
Temperature operational	-20 ... +75	°C	
Relative humidity	10 ~ 95% RH @ 40°C, non-condensing	-	
Protecting range	IP20		

Power

Description	Min	Typ.	Max	Unit	Remarks
Power in	20	24	30	VDC	
	-	50	-	mA	

Potentiometer input

	Min	Typ.	Max	Unit	Remarks
Potentiometer value	500	-	1M	ohm	At 500ohm the current output is 6 ... 20mA. From 1Kohm the current output is 4 ... 20mA.
Voltage over the Potentiometer		2,45		VDC	Regardless of the potentiometer value
Current through potentiometer:				mA	
500 ohm		4,81			
1000 ohm (1K)		2,45			
2000 ohm (2K)	-	1,24	-		
10000 ohm (10K)		0,25			
100000 ohm (100K)		0,02			
1000000 ohm (1M)		0,002			

Current output

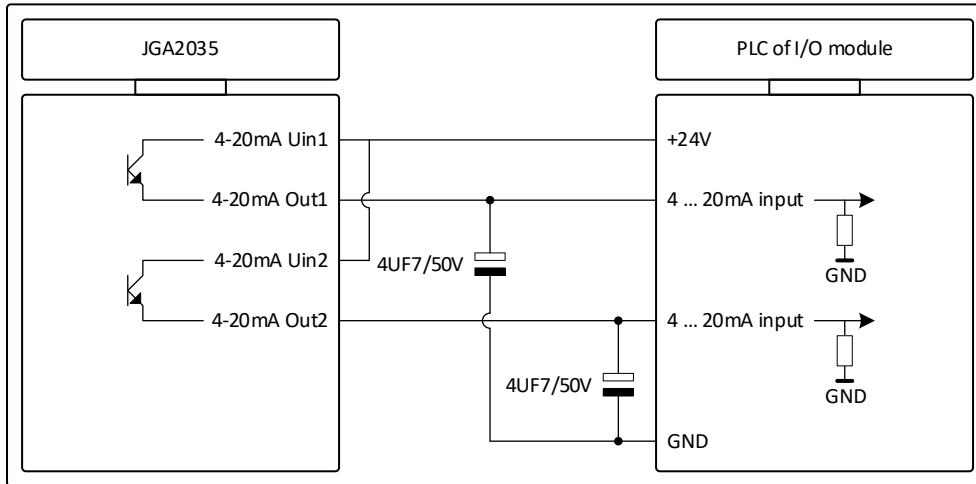
Unit	Min	Typ.	Max	Unit	Remarks
Output current	3,9	-	20,4	mA	At 500ohm the current output is 6 ... 20mA. From 1Kohm the current output is 4 ... 20mA.
Input voltage	20	24	30	VDC	
Fuse current Output		50		mA	1

1. With a resettable fuse

Additional filtering

If additional filtering is required, an extra capacitor (ELKO) of +/- 4UF7/50V can be placed between the input signal and the GND (minus) of the PLC or the I/O module.

This connection is shown schematically below.



Measurements

