Introduction

The JGA2001 is a universal reverse polarity protection unit with two digital inputs an two relay outputs.

Liability and Warranty

Every JGA2001 is checked by Boutronic for correct execution and operation before shipment. Therefore, Boutronic applies 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 JGA2001 have been carried out without Boutronic's permission

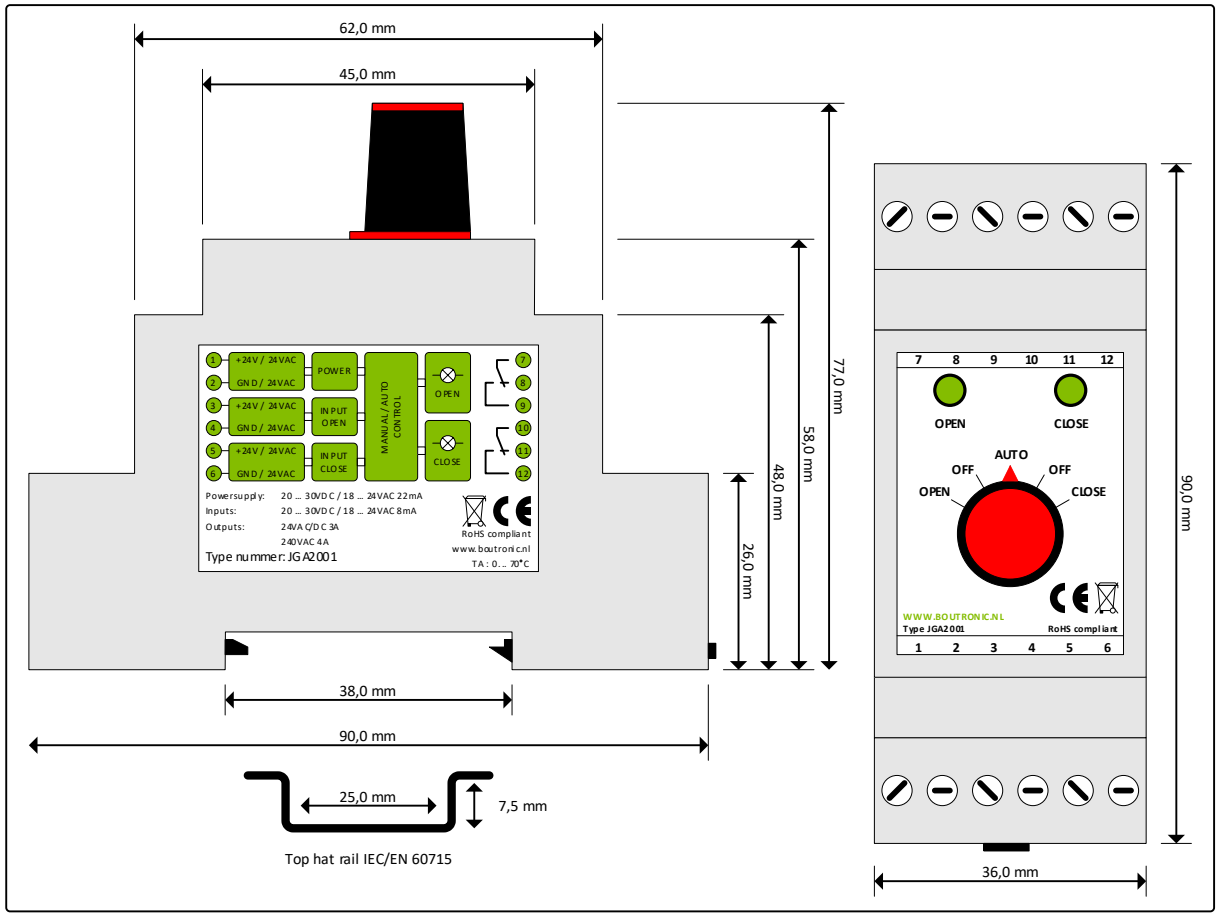
Boutronic is in no way liable for damage caused directly or indirectly by the use of the JGA2001.

Manual reverse polarity unit JGA2001 1.0c
june 2020
www.boutronic.nl

Table of contents

Connection data

The JGA2001 is schematically shown in the figure below:



Power supply input

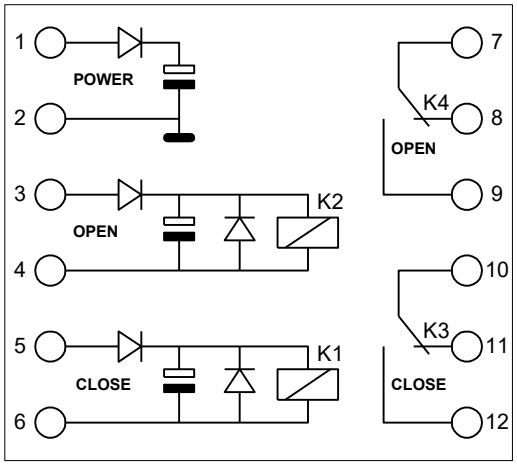
The power supply for the JGA2001 is internally half-wave rectified. The power supply can be 24VAC or 24VDC.

Open and Close input

These 2 inputs are galvanically isolated and both have two connections for control. This way, the inputs can function with a COMMON plus or a COMMON minus. They can be controlled with 15 ... 24 VAC or 15 ... 30 VDC. To control the input, a minimum current of 8 mA is required. If these inputs are controlled with a triac, it is possible that this current is too low for correct operation. If necessary, use an additional relay for this purpose.

Schematic

The internal schematic is simply shown below. The power input is used for switching the relay with contacts K3 and K4. The Open and Close inputs can have a different voltage. This way, for example, the power supply can be 24VDC and the Open and Close inputs 24VAC.

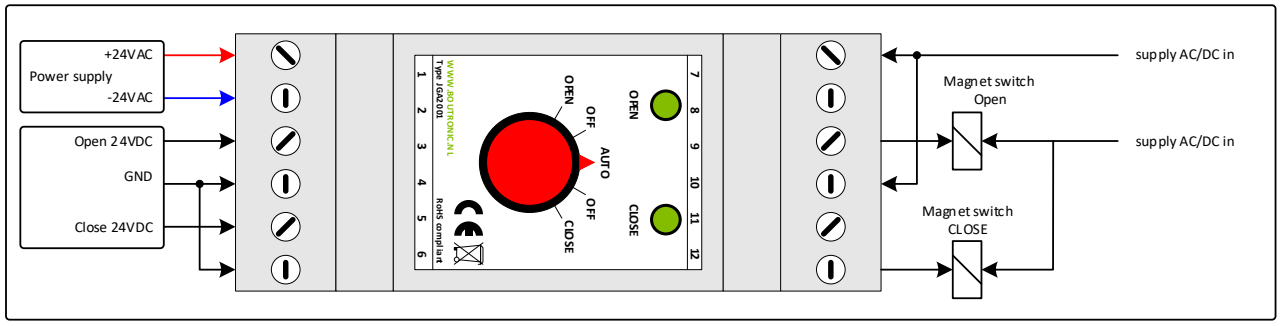


Cross-interlocking

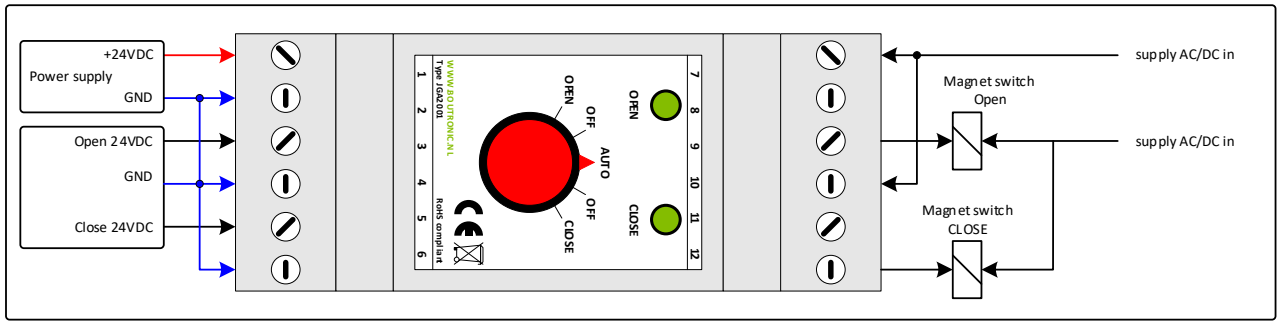
The control of each output relay has a cross-interlocking to prevent both relay outputs from being activated simultaneously. It is recommended to use the changeover contact of the outputs and apply a cross-interlocking there as well.

Connection example

Below is an example of magnet switch contactors. The power input and the open/close inputs have different power supplies.



Below is an example of controlling contactors. The power input and the open/close inputs have the same power supply.

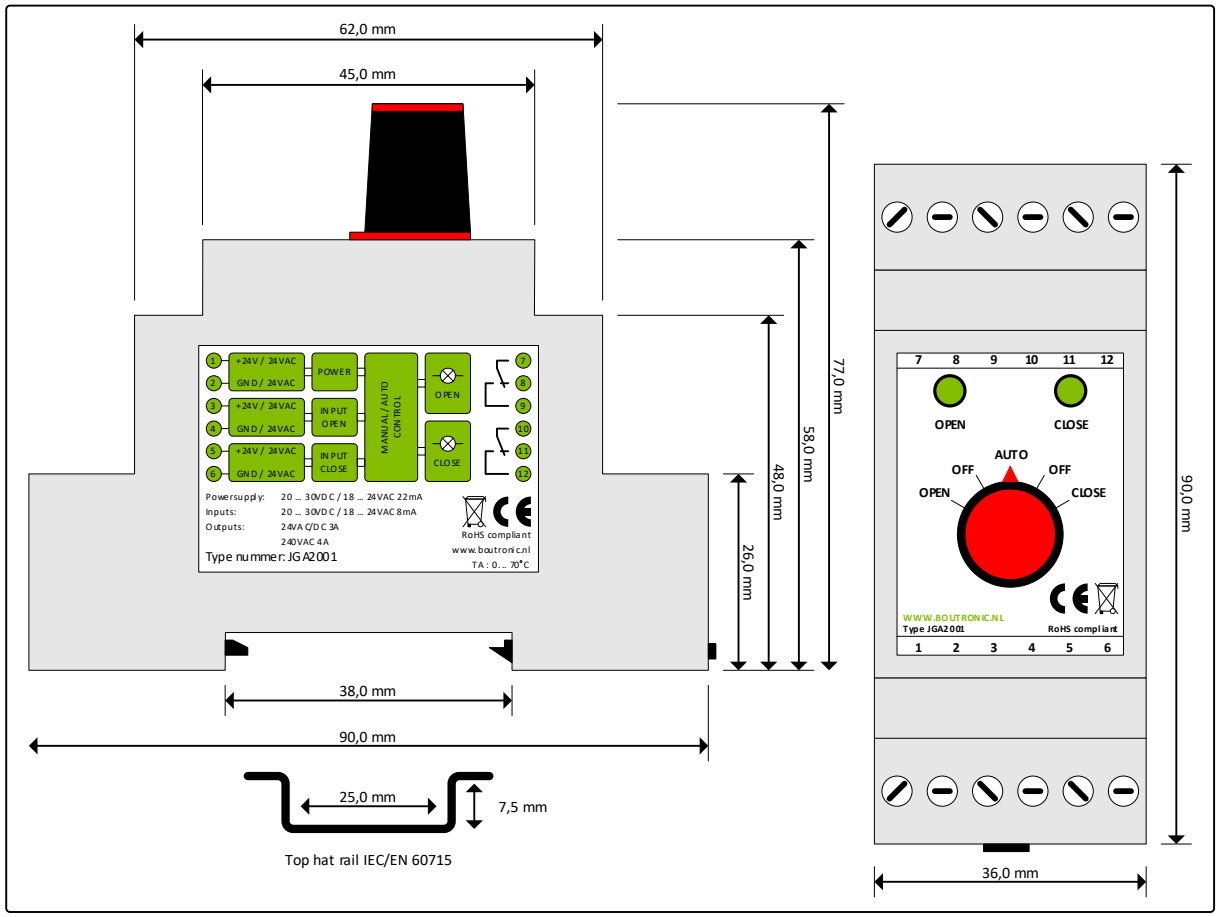


CE marking

The JGA2001 reversing unit is designed according to the guidelines below for EMC/EMI and complies with these requirements. No official EMC test has been performed by a notified body to confirm this.

Description	Guidelines
The EMC Directive	2014/30/EU
The RoHS-II Directive	2011/65/EU
NEN-EN-IEC 61000-6-1:2019	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards. Immunity for residential, commercial and light-industrial environments

Housing dimensions



Technical Specifications

General

Component	Value	Unit	Remarks
Dimensions	90 x 36 x 58	mm	L x B x H
Mounting	DIN-rail (Top hat rail)		IEC/EN 60715
Material	ABS plastic		
Weight	80	gram	
Storage temperature	-30 … +85	°C	
Operating temperature	-20 … +70	°C	

Power supply

	Min	Typ.	Max	Unit	Remarks
Power supply	20	24	30	VDC	
	20	24	24	VAC	
	-	35	-	mA	

Open and Close inputs

	Min	Typ.	Max	Unit	Remarks
Isolation	-	-	3750	Vrms	Galvanisch
Input voltage	20	-	30	VDC	
	20	-	24	VAC	
Input current	8	-	10	mA	

Outputs

	Min	Typ.	Max	Unit	Remarks
Isolation			3750	Vrms	Galvanisch
Relay contacts	1	-	4000	mA	
	1	-	230	VACDC	