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# SIGNS USED IN THE SAFETY NOTES

THE WARNING SIGN BELOW INCLUDES INFORMATION THAT MUST BE READ CAREFULLY TO PROTECT PEOPLE FROM ACCIDENTS.



Warns against general danger situations,  
or gives a very important piece of information.

## INSTRUCTIONS FOR THE INSTALLATION



**AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:**

<b>EN 60204 –1</b>	<b>(MACHINERY SAFETY. ELECTRICAL EQUIPMENT OF MACHINES, PART 1: GENERAL RULES)</b>
<b>EN 12445</b>	<b>(SAFE USE OF AUTOMATED LOCKING DEVICES, TEST METHODS)</b>
<b>EN 12453</b>	<b>(SAFE USE OF AUTOMATED LOCKING DEVICES, REQUIREMENTS)</b>

The installer must provide for a device (es. magnetotermical switch) ensuring the omnipolar sectioning of the SILVER equipment from the power supply.

The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).

For the connection of stiff or flexible tubes and fasteners, use connectors according to IP44 protection grade.

Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the A Compliance Certificate concerning the whole installation (EEC Machine Directive 89/392, Annex IIA).

The automated vehicular gates shall comply with the following rules:





EN 12453, EN 12445, EN 12978 as well as any local rule in force.

Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.

The door thrust force adjustment shall be measured by means of a proper tool and adjusted according to the max. limits, which EN 12453 allows.

We recommend to make use of an emergency button, to be installed by the automation (connected to the control card STOP input) so that the gate may be immediately stopped in case of danger.

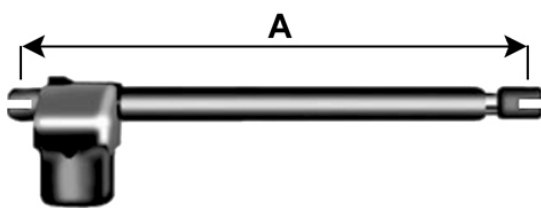
# LIST OF PARTS

REF.	DESCRIPTION	PHOTOGRAPH	Q.TY
1	ELECTROMECHANICAL OPERATORS		2
2	MOTOR FASTENING PINS		4
3	MOTOR-COLUMN FASTENING BRACKET		2
4	MOTOR-SHUTTER FASTENING BRACKET		2
5	MOTOR UNLOCK KEY		2
6	SEEGER		8
7	CAPACITORS		2

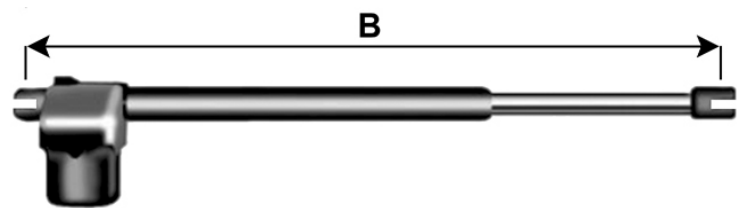
# TECHNICAL SPECIFICATIONS

	SILVER 230V 50Hz	SILVER 127V 60Hz
POWER SUPPLY	230 Va.c. 50 Hz 350W	127 Va.c. 60Hz 350W
CAPACITORS	8 $\mu$ F	25 $\mu$ F
MAXIMUM THRUST	350 daN	350 daN
WORK CYCLE	20 %	20 %
WORK TEMPERATURE	- 20 ÷ 55 °C	- 20 ÷ 55 °C
IP	44	44
WEIGHT	6,5 Kg	6,5 Kg

MODEL		DIMENSIONS
MOTOR 500mm – MODEL 230V 50Hz 1400 rpm	MA514S2305 MA514D2305	A = 805mm B = 1315mm
MOTOR 500mm – MODEL 230V 50Hz 900 rpm	MA509S2305 MA509D2305	A = 805mm B = 1315mm
MOTOR 400mm – MODEL 230V 50Hz 1400 rpm	MA414S2305 MA414D2305	A = 715mm B = 1105mm
MOTOR 400mm – MODEL 127V 60Hz 1400 rpm	MA414S1276 MA414D1276	A = 715mm B = 1105mm
MOTOR 400mm – MODEL 230V 50Hz 900 rpm	MA409S2305 MA409D2305	A = 715mm B = 1105mm
MOTOR 300mm – MODEL 230V 50Hz 1400 rpm	MA314S2305 MA314D2305	A = 615mm B = 915mm
MOTOR 300mm – MODEL 230V 50Hz 900 rpm	MA309S2305 MA309D2305	A = 615mm B = 915mm



**COMPLETELY CLOSED**



**COMPLETELY OPEN**

**Fig.1**

## PREPARATORY STEPS

The automatism has been devised to serve gates up to 6 meters wide with 500mm-actuators, gates up to 5 meters wide with 400mm-actuators and gates up to 4 meters with 300mm-actuators. It can be used on light, heavy, wood, metal, PVC, or aluminium gates; the actuator's thrust mechanism make the system effective and reliable.

Before proceeding with the installation, please make sure that your gate opens and closes freely, and that:

- hinges and pins are in optimum condition and properly greased
- no obstacles are within the moving area
- there is no friction with the ground or between the leaves (minimum 7÷8 mechanical expansion)
- your gate is equipped with a central latch and two side ones – they are essential for a good system behaviour.

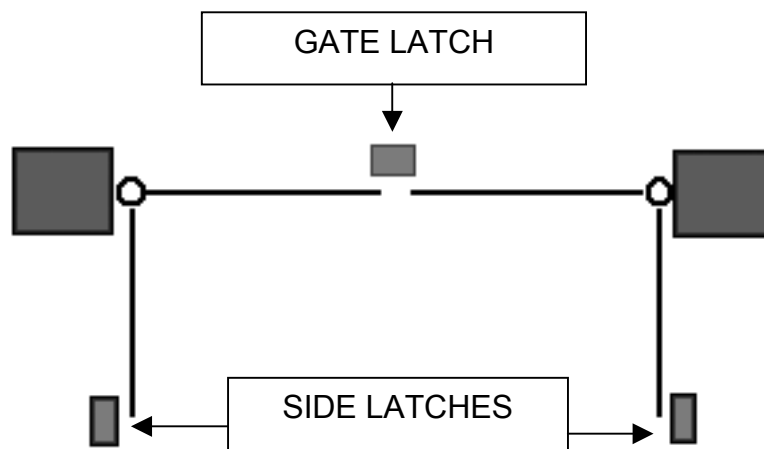


Fig. 2

## ASSEMBLING THE ACTUATORS

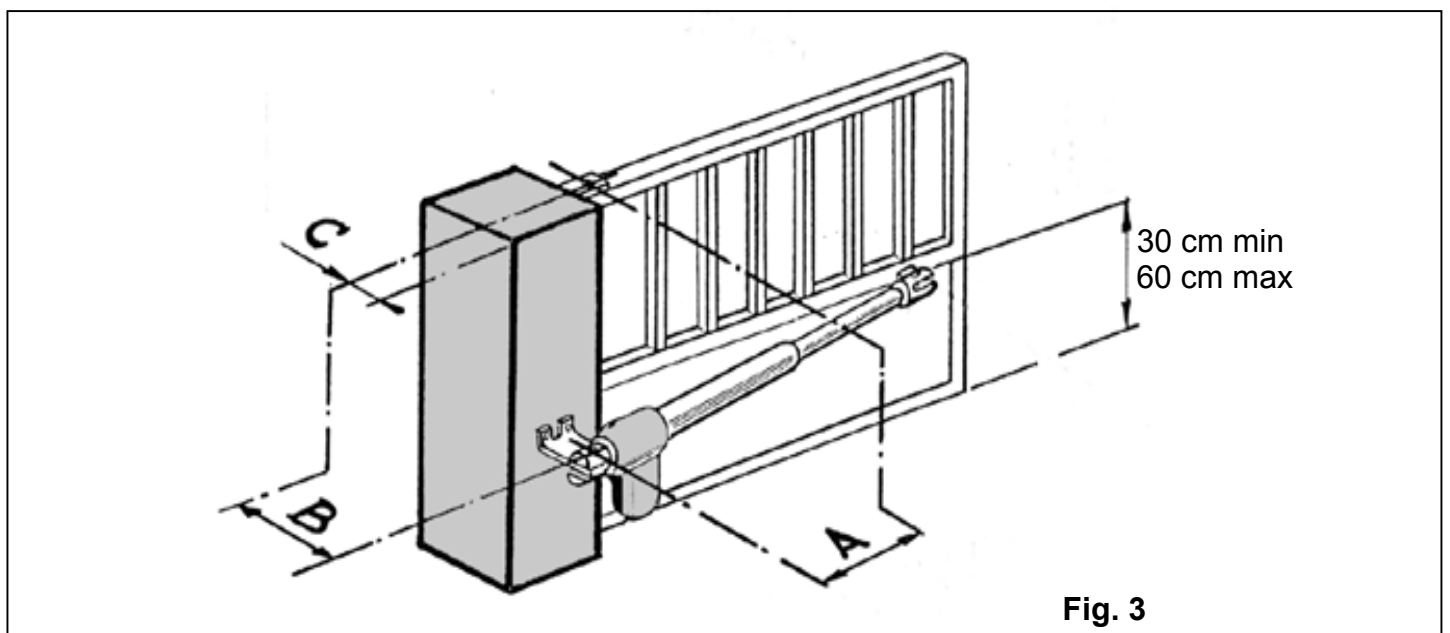
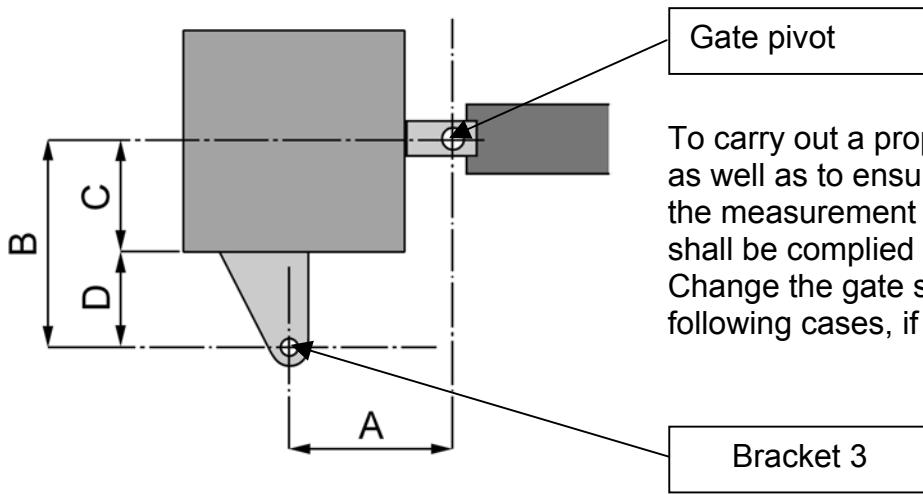


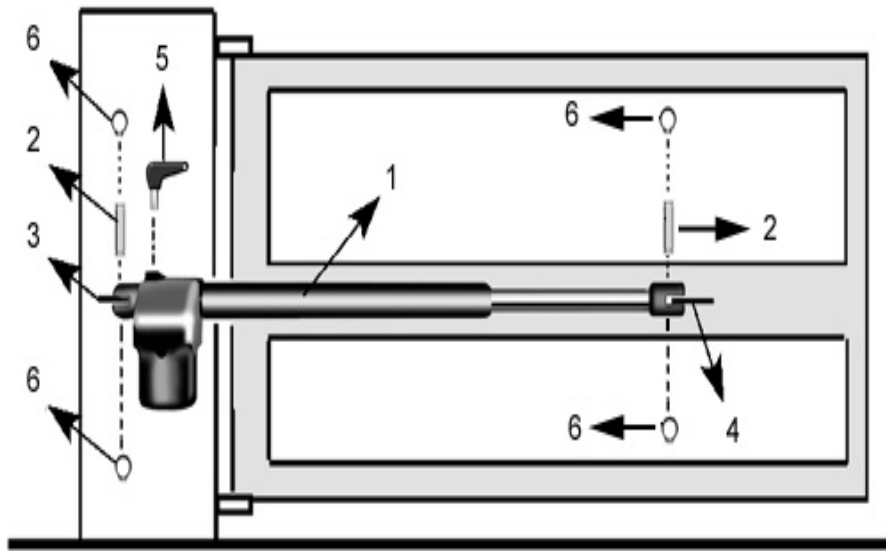
Fig. 3



To carry out a proper installation of the operator parts as well as to ensure the best automation performance, the measurement levels shown in the following table shall be complied with.

Change the gate structure to adapt it to one of the following cases, if necessary.

	C(mm)	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
<b>300mm ANGLE 90°</b>	A(mm)	120	120	120	120	110	110	100	100	100	100						
	B(mm)	135	145	155	150	160	160	170	170	170	170						
	D(mm)	105	105	105	90	90	80	80	70	60	50						
<b>300mm ANGLE up to 100°</b>	A(mm)	120	110	110	110	110	110	110	100								
	B(mm)	135	145	140	140	140	140	140	150								
	D(mm)	105	105	90	80	70	60	50	50								
<b>400mm ANGLE 90°</b>	A(mm)	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	120
	B(mm)	155	155	155	165	175	185	195	205	215	210	220	220	220	220	220	230
	D(mm)	125	115	105	105	105	105	105	105	105	90	90	80	70	60	50	50
<b>400mm ANGLE up to 110°</b>	A(mm)	160	160	160	160	160	160	160	160	160							
	B(mm)	155	155	155	150	160	160	160	160	160							
	D(mm)	125	115	105	90	90	80	70	60	50							
<b>500mm ANGLE 90°</b>	A(mm)	160	160	160	160	160	160	160	140	140	140	140	140	140	140	140	140
	B(mm)	165	175	175	175	185	185	195	205	215	225	235	245	255	265	275	285
	D(mm)	135	135	125	115	115	105	105	105	105	105	105	105	105	105	105	105
<b>500mm ANGLE up to 110°</b>	A(mm)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	190
	B(mm)	165	175	175	175	185	185	195	205	215	210	210	210	210	210	220	230
	D(mm)	135	135	125	115	115	105	105	105	105	90	80	70	60	50	50	50

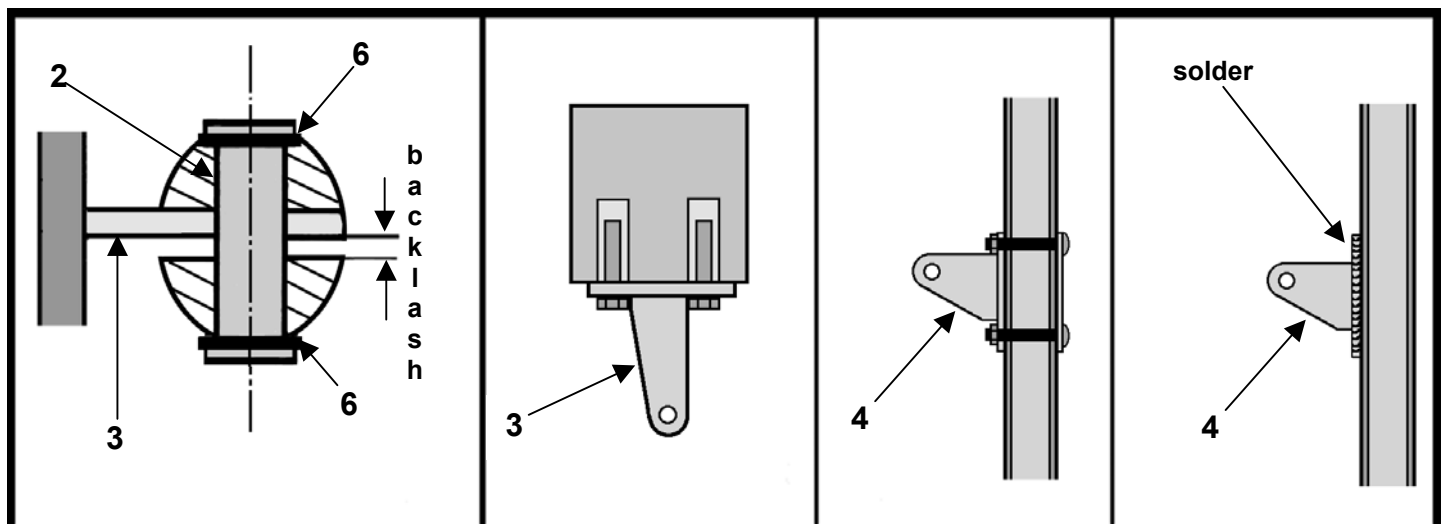


**Fig. 4**

After reporting the most suitable measures A and B on the columns, proceed with the following actions:

- Close the leaf
- Release actuator 1 by means of unlock key 5
- Fasten bracket 4 on the ram of actuator 1
- Pull the ram out, leaving 1 cm (130 cm max. for 500mm / 110 cm max. for 400mm / 90 cm max. for 300mm)
- Mark position of bracket 4 on the leaf
- Check that the actuator ram is fully retracted but 1 cm, when the leaf is open. The leaf must lay on the side pin, which is fixed to the ground
- Fasten bracket 3 on the column by means of a wrench M8\*60 (Fig. 6)
- Fasten bracket 4 on the gate by using 8 mm bolts (Fig. 7) or, in case of a steel gate frame, solder the bracket directly on the gate (Fig. 8)
- Mount actuator 1 on brackets 3 and 4.

**IMPORTANT:**      **1 Place brackets 3 and 4 at the same level.**  
**2 Do not tighten the rams on their fastening brackets; leave a functional play as shown in the picture below.**



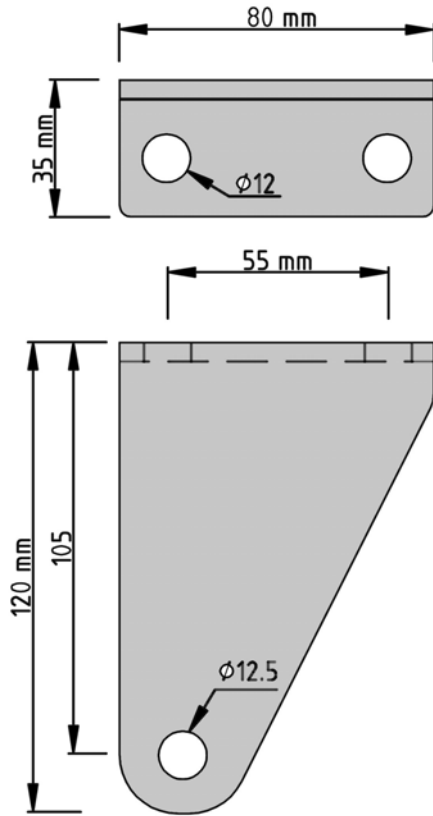
**Fig. 5**

**Fig. 6**

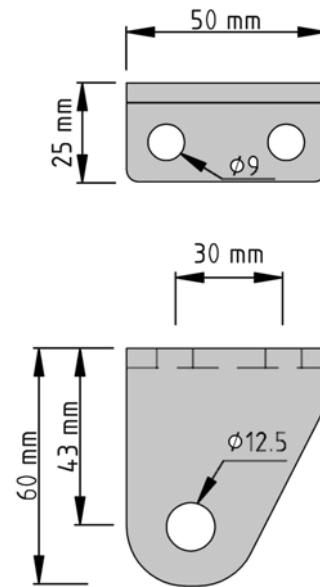
**Fig.7**

**Fig. 8**

## COMPONENT DIMENSIONS



**Fig.9 MOTOR-COLUMN FASTENING BRACKET**



**Fig.10 MOTOR-LEAF FASTENING BRACKET**

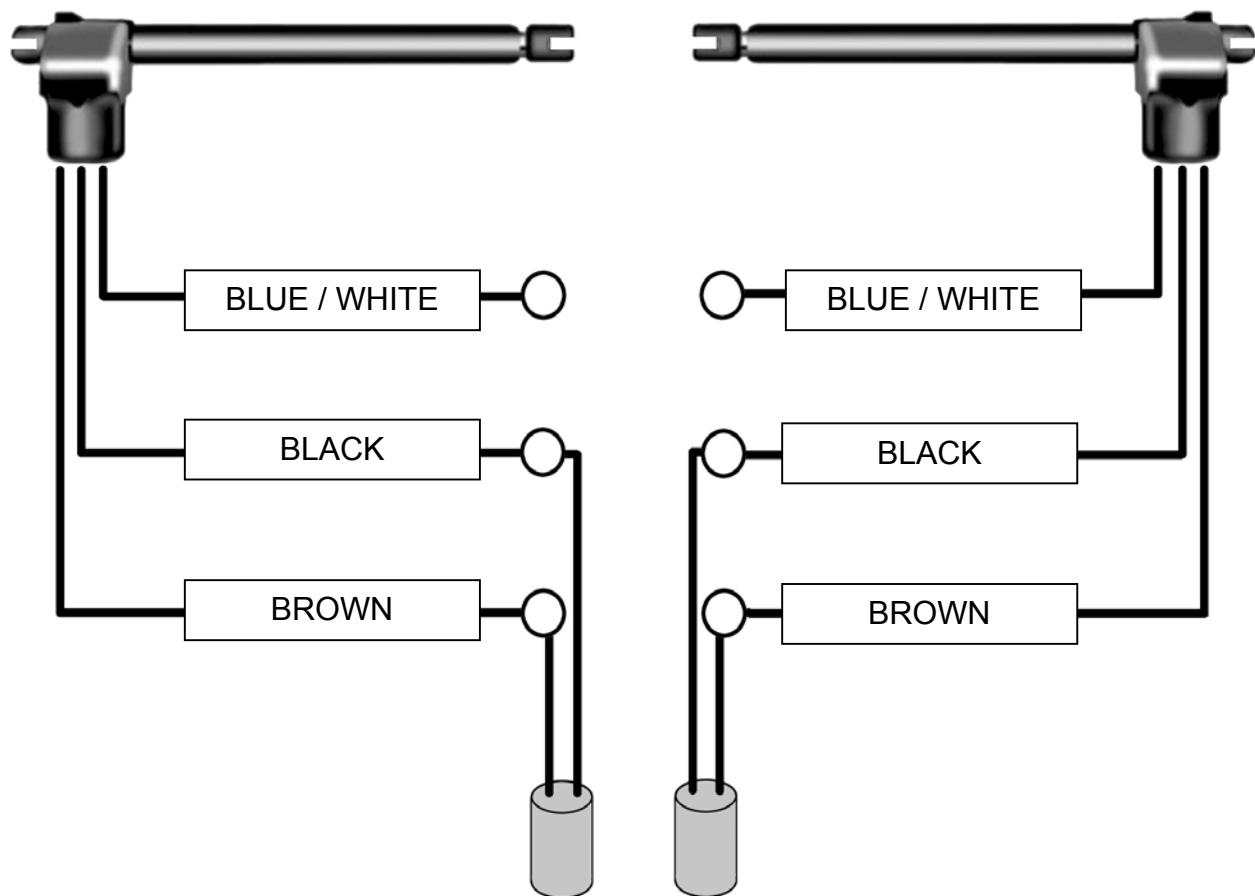
## MOUNTING THE MOTORS ON THE BRACKETS

After securing brackets 3 and 4 on the column and on the leaf respectively, place the actuator onto them by letting bracket 3 slide through extreme A of the actuator and bracket 4 through extreme B (to release the motor, use key 5).

To fix extreme A of actuator 1 to bracket 3, use pin 2, by inserting it into the hole. Insert pins in the proper grooves at both extremes by using the two seegers 6.

To fix extreme B of actuator 1 to bracket 4, use pin 2, by inserting it into the hole. Insert pins in the proper grooves at both extremes by using the two seegers 6.

## CONNECTING THE MOTORS TO THE CONTROL UNIT



THE LEAF ACTUATOR THAT OPENS FIRST MUST BE CONNECTED TO THE TERMINAL BOARD WITH SILKSCREEN **M1**.

COLOUR	LEFT MOTOR (S)	RIGHT MOTOR (D)
BLUE / WHITE	COMMON	COMMON
BLACK	CLOSING	OPENING
BROWN	OPENING	CLOSING

**IMPORTANT:** THE GROUND CABLE OF THE ACTUATORS AND THE GROUND CABLE OF THE POWER SUPPLY MUST BE CONNECTED TOGETHER



**WARNING !**

**CABLE CONNECTION:**

**4 x 1.5 mm<sup>2</sup>**