

# SWING-GATE OPERATOR

# FA00094-EN





INSTALLATION MANUAL



**EN** English



## WARNING! important safety instructions for people: **READ CAREFULLY!**



#### PREMISE

• This product should only be used for the purpose for which it was EXPLICITLY DESIGNED. ANY OTHER USE IS DANGEROUS. CAME S.P.A IS NOT LIABLE FOR ANY DAMAGE CAUSED BY IMPROPER, WRONGFUL AND UNREASONABLE USE • KEEP THESE WARNINGS TOGETHER WITH THE INSTALLATION AND OPERATION MANUALS THAT COME WITH THE OPERATOR.

#### BEFORE INSTALLING

#### (CHECKING WHAT'S THERE: IF SOMETHING IS MISSING, DO NOT CONTINUE UNTIL YOU HAVE COMPLIED WITH ALL SAFETY PROVISIONS)

• CHECK THAT THE AUTOMATED PARTS ARE IN PROPER MECHANICAL ORDER. THAT THE OPERATOR IS LEVEL AND ALIGNED, AND THAT IT OPENS AND CLOSES PROPERLY. Make sure you have suitable mechanical stops • If the operator is to be INSTALLED AT A HEIGHT OF LESS THAN 2.5 M FROM THE GROUND OR OTHER ACCESS LEVEL, MAKE SURE YOU HAVE ANY NECESSARY PROTECTIONS AND/OR WARNINGS IN PLACE • IF ANY PEDESTRIAN OPENINGS ARE FITTED INTO THE OPERATOR, THERE MUST ALSO BE A A SYSTEM TO BLOCK THEIR OPENING WHILE THEY ARE MOVING . Make sure that the opening automated door or gate cannot entrap people AGAINST THE FIXED PARTS OF THE OPERATOR • DO NOT FIT UPSIDE DOWN OR ONTO ELEMENTS THAT COULD BEND. IF NECESSARY, ADD SUITABLE REINFORCEMENTS TO THE ANCHORING POINTS • Do NOT INSTALL DOOR OR GATE LEAVES ON TILTED SURFACES • MAKE SURE ANY SPRINKLER SYSTEMS CANNOT WET THE OPERATOR FROM THE GROUND UP • MAKE SURE THE TEMPERATURE RANGE SHOWN ON THE PRODUCT LITERATURE IS SUITABLE TO THE CLIMATE WHERE IT WILL BE INSTALLED • FOLLOW ALL INSTRUCTIONS AS IMPROPER INSTALLATION MAY RESULT IN SERIOUS BODILY INJURY • IT IS IMPORTANT TO FOLLOW THESE INSTRUCTIONS FOR THE SAFETY OF PEOPLE. KEEP THESE INSTRUCTIONS.

#### INSTALLING

• SUITABLY SECTION OFF AND DEMARCATE THE ENTIRE INSTALLATION SITE TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THE AREA, ESPECIALLY MINORS AND CHILDREN • BE CAREFUL WHEN HANDLING OPERATORS THAT WEIGH OVER 20 KG. IF NEED BE, USE PROPER SAFETY HOISTING EQUIPMENT • ALL OPENING COMMANDS (THAT IS, BUTTONS, KEY SWITCHES, MAGNETIC READERS, AND SO ON) MUST BE INSTALLED AT LEAST 1.85 M FROM THE PERIMETER OF THE GATE'S WORKING AREA, OR WHERE THEY CANNOT BE REACHED FROM OUTSIDE THE GATE. ALSO, ANY DIRECT COMMANDS (WHETHER BUTTONS, TOUCH PANELS, AND SO ON) MUST BE INSTALLED AT LEAST 1.5 M FROM THE GROUND AND MUST NOT BE REACHABLE BY UNAUTHORIZED PERSONS • ALL MAINTAINED ACTION COMMANDS, MUST BE FITTED IN PLACES FROM WHICH THE MOVING GATE LEAVES AND TRANSIT AND DRIVING AREAS ARE VISIBLE • APPLY, IF MISSING, A PERMANENT SIGN SHOWING THE POSITION OF THE RELEASE DEVICE • BEFORE DELIVERING TO THE USERS, MAKE SURE THE SYSTEM IS EN 12453 STANDARD COMPLIANT (REGARDING IMPACT FORCES), AND ALSO MAKE SURE THE SYSTEM HAS BEEN PROPERLY ADJUSTED AND THAT ANY SAFETY, PROTECTION AND MANUAL RELEASE DEVICES ARE WORKING PROPERLY • APPLY WARNING SIGNS WHERE NECESSARY AND IN A VISIBLE PLACE, (SUCH AS, SUCH AS THE GATE'S PLATE

#### SPECIAL USER-INSTRUCTIONS AND RECOMMENDATIONS

• KEEP GATE OPERATION AREAS CLEAN AND FREE OF ANY OBSTRUCTIONS. MAKE SURE THAT THE PHOTOCELLS ARE FREE OF ANY OVERGROWN VEGETATION AND THAT THE OPERATOR'S AREA OF OPERATION IS FREE OF ANY OBSTRUCTIONS • DO NOT ALLOW CHILDREN TO PLAY WITH FIXED COMMANDS, OR TO LOITER IN THE GATE'S MANEUVERING AREA. KEEP ANY REMOTE CONTROL TRANSMITTERS OR ANY OTHER COMMAND DEVICE AWAY FROM CHILDREN, TO PREVENT THE OPERATOR FROM BEING ACCIDENTALLY ACTIVATED. • THE APPARATUS MAY BE USED BY CHILDREN OF EIGHT YEARS AND ABOVE AND BY PHYSICALLY, MENTALLY AND SENSORY-CHALLENGED PEOPLE, OR EVEN ONES WITHOUT ANY EXPERIENCE, PROVIDED THIS HAPPENS UNDER CLOSE SUPERVISION OR ONCE THEY HAVE BEEN PROPERLY INSTRUCTED TO USE THE APPARATUS SAFELY AND TO THE POTENTIAL HAZARDS INVOLVED. CHILDREN MUST NOT PLAY WITH THE APPARATUS. CLEANING AND MAINTENANCE BY USERS MUST

NOT BE DONE BY CHILDREN, UNLESS PROPERLY SUPERVISED • FREQUENTLY CHECK THE SYSTEM FOR ANY MALFUNCTIONS OR SIGNS OF WEAR AND TEAR OR DAMAGE TO THE MOVING STRUCTURES, TO THE COMPONENT PARTS, ALL ANCHORING POINTS, INCLUDING CABLES AND ANY ACCESSIBLE CONNECTIONS. KEEP ANY HINGES, MOVING JOINTS AND SLIDE RAILS PROPERLY LUBRICATED • PERFORM FUNCTIONAL CHECKS ON THE PHOTOCELLS AND SENSITIVE SAFETY EDGES, EVERY SIX MONTHS. TO CHECK WHETHER THE PHOTOCELLS ARE WORKING, WAVE AN OBJECT IN FRONT OF THEM WHILE THE GATE IS CLOSING; IF THE OPERATOR INVERTS ITS DIRECTION OF TRAVEL OR SUDDENLY STOPS, THE PHOTOCELLS ARE WORKING PROPERLY. THIS IS THE ONLY MAINTENANCE OPERATION TO DO WITH THE POWER ON. CONSTANTLY CLEAN THE PHOTOCELLS' GLASS COVERS USING A SLIGHTLY WATER-MOISTENED CLOTH; DO NOT USE SOLVENTS OR OTHER CHEMICAL PRODUCTS THAT MAY RUIN THE DEVICES • IF REPAIRS OR MODIFICATIONS ARE REQUIRED TO THE SYSTEM. RELEASE THE OPERATOR AND DO NOT USE IT UNTIL SAFETY CONDITIONS HAVE BEEN RESTORED • CUT OFF THE POWER SUPPLY BEFORE RELEASING THE OPERATOR FOR MANUAL OPENINGS AND BEFORE ANY OTHER OPERATION, TO PREVENT POTENTIALLY HAZARDOUS SITUATIONS. Read the instructions IF the power supply cable is damaged, it must BE REPLACED BY THE MANUFACTURER OR AUTHORIZED TECHNICAL ASSISTANCE SERVICE, OR IN ANY CASE, BY SIMILARLY QUALIFIED PERSONS, TO PREVENT ANY RISK • IT IS FORBIDDEN FOR USERS TO PERFORM ANY OPERATIONS THAT ARE NOT EXPRESSLY REQUIRED OF THEM AND WHICH ARE NOT LISTED IN THE MANUALS. FOR ANY REPAIRS, MODIFICATIONS AND ADJUSTMENTS AND FOR EXTRA-ORDINARY MAINTENANCE, CALL TECHNICAL ASSISTANCE . LOG THE JOB AND CHECKS INTO THE PERIODIC MAINTENANCE LOG.

#### FURTHER RECOMMENDATIONS FOR ALL

• Keep clear of hinges and mechanical moving parts • Do not enter THE OPERATOR'S AREA OF OPERATION WHEN IT IS MOVING • DO NOT COUNTER THE OPERATOR'S MOVEMENT AS THIS COULD RESULT IN DANGEROUS SITUATIONS • Always pay special attention to any dangerous points, which have to BE LABELED WITH SPECIFIC PICTOGRAMS AND/OR BLACK AND YELLOW STRIPES • While using a selector switch or a command in maintained actions, keep 💈 CHECKING THAT THERE ARE NO PERSONS WITHIN THE OPERATING RANGE OF ANY MOVING PARTS, UNTIL THE COMMAND IS RELEASED . THE GATE MAY MOVE AT Manual code: FA00094-EN v. 3 - 01/2017 - © Came S.p.A. The contents of this manual may be changed at any time without ANY TIME AND WITHOUT WARNING • ALWAYS CUT OFF THE MAINS POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE OR CLEANING.



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## LEGEND

- Description: This symbol shows which parts to read carefully.
- ▲ This symbol shows which parts describe safety issues
- This symbol shows which parts to tell users about.

#### DESCRIPTION

Irreversible operator with control board and jointed transmission-arm for swing gates with each leaf up to 2.3 m long.

#### Intended use

This operator is designed to power swing gates for residential and apartment block use.

Any installation and/or use other than that specified in this manual is forbidden.

## Limits to use



▲ We suggest you always fit an electrolock onto swing gates for a more reliable closure.

#### Technical data

Туре	FA70230CB
Protection rating (IP)	54
Power supply (V - 50/60 Hz)	230 AC
Power supply to motor (V - 50/60 Hz)	230 AC
Stand-by consumption (W)	5.5
Power (W)	160
Torque (Nm)	180 max
Opening time at 90° (s)	15
Duty cycle (%)	30
Operating temperature (°C)	-20 ÷ +55
Motor's heat protection (°C)	150
Insulation class	
Condenser (µF)	10
Weight (Kg)	12.7

#### Dimensions

(mm)





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#### Applicative examples





Fitted with standard jointed transmission-arm.

Fitted with the STYLO-BD straight transmission-arm and slide rail.

## **GENERAL INSTALLATION INDICATIONS**

 $\triangle$  Only skilled, qualified staff must install this product.

#### Preliminary checks

 $\triangle$  Before beginning, do the following:

- check that the gate structure is sturdy enough, the hinges work efficiently and that there is no friction between the fixed and moving parts;
- if ground stops are not, or cannot be, fitted, use the supplied mechanical stops;
- make sure that the point where the gearmotor is fastened is protected from any impacts and that the anchoring surface is solid enough;

• make sure you have set up a suitable dual pole cut off device along the power supply that is compliant with the installation rules. It should completely cut off the power supply according to category III surcharge conditions (that is, with minimum contact openings of 3 mm);

• (a) make sure that any connections inside the container (ones that ensure continuity to the protection circuit) are fitted with additional insulation with respect to those of other electrical parts inside:

set up suitable tubes and conduits for the electric cables to pass through, making sure they are protected from any mechanical damage

#### **Tools and materials**

Make sure you have all the tools and materials you will need for installing in total safety and in compliance with applicable regulations. The figure shows some of the equipment installers will need.



## Cable types and minimum thicknesses

Connection	Cable type	Cable typeCable length 1 < 15 m	
Control panel power supply 230 V AC	H05BN-F		3G x 2,5 mm <sup>2</sup>
Power supply to motor 230 V AC	4G x 1,5 mm <sup>2</sup> 4G x 2		4G x 2,5 mm <sup>2</sup>
Flashing light	2 x 0,5		5 mm <sup>2</sup>
Photocell transmitters	FROR CEI 20-22	2 x 0,5 mm <sup>2</sup>	
Photocell receivers	CEI EN 50267-2-1 4 x 0,5 mm <sup>2</sup> 2 x 0,5 mm <sup>2</sup>		5 mm <sup>2</sup>
Command and safety device			5 mm <sup>2</sup>
Antenna	the RG58 antenna	max 10 m	

If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.

For multiple, sequential loads along the same line, the dimensions on the table need to be recalculated according to the actual power draw and distances. For connecting products that are not contemplated in this manual, see the literature accompanying said products

#### INSTALLATION

▲ The following illustrations are just examples, in that the space available for fitting the operator and accessories varies depending on the overall dimensions. It is up to the installer to find the most suitable solution.

The drawing show an operator fitted on the left. Install the operator on the right, symmetrically.

#### Corrugate tube laying

- Lay the corrugated tubes you will need for the cables coming out of the junction pit.
- The number of tubes depends on the type of system and the accessories you are going to fit. You need to lay two corrugated tubes where the operator is fitted.



#### Fastening the brackets

Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.



Marked the spots where the gate-post brace and gate brace will be fitted. The center-distances of the holes on the braces are shown in the Dimensions paragraph.

Drill the anchoring points, fit the dowels or use plugs that will hold fast the screws.

The drawings are mere examples. Installers should carefully choose the most suitable set up according to the type and thickness of the gate leaf.



Before fitting the operator, remove the casing, as follows: - open the release-hatch protective-cap, fit the trilobe key into the lock and turn it counterclockwise. (**0**).

- open the hatch door and loosen the screw that fastens the casing to the gearmotor  $(\mathbf{Q})$ .
- raise the cove by slightly pulling on its sides and pull out the gate-post brace from the gearmotor ( $m{\Theta}$ ).



Use suitable screws to fasten the brackets.

Fit the rubber shim into the gate-post brace. Lay the electric cables and run them through the cable glands; fasten them using the clamp on the gate-post brace.



#### Fastening the operator

Fit the gearmotor into the gate.post brace and tighten the nuts and bolts. Fit the plug into the socket on the gearmotor drive-shaft.



Fasten the transmission arm to the drive-shaft using the slow-shaft washer and bolt.



Pin the driven arm to the transmission arm and tighten the washer and bolt.



Release the gearmotor (see RELEASING THE GEARMOTOR), fit the driven arm to the gate brace as shown in the drawing.



#### Establishing the limit-switch points

If the system is already fitted with opening and closing ground-stops, there is no need to adjust the limit switches. Contrarily, adjust the limit switches.



#### Operator fitted on the left.

With the gearmotor released and with the gate-leaf open at maximum 110°, turn the lower cam clockwise until the micro-switch activates. Fasten the cam by tightening the center screw.



Close the gate leaf, turn the upper cam counter-clockwise until the micro-switch activates. Fasten the cam by tightening the center screws.



Operator fitted on the right.

With the gearmotor released and the gate-leaf closed, turnthe lower cam clockwise until the microswitch activates. Fasten the cam by tightening the center screw.



Fully open the gate leaf to maximum 110°, turn the upper cam counter-clockwise until the micro-switch activates. Fasten the cam by tightening the center screws.



## ELECTRICAL CONNECTIONS AND PROGRAMMING

△Warning! Before working on the control panel, cut off the main current supply and, if present, remove any batteries. All connections are quick-fuse protected.

FUSES	ZF1
LINE - Line	5 A-F
ACCESSORIES - Accessories	3.15 A-F
CONTROL BOARD - Card	315 mA-F

#### **Description of parts**

- 1. Terminal board for microswitches
- 2. Line fuse
- 3. Power supply terminals
- 4. Transformer terminals
- 5. Control board fuse
- 6. Terminals for control and safety devices
- 7. Warning LED
- 8. Antenna terminal
- 9. AF card connector

- 10. DIP-SWITCH
   11. ACT Trimmer
   12. Trimmer OP. TIME
   13. Trimmer DELAY 2M
   14. Programming key
   15. Accessories fuse
   16. Occurrent fuse
- 16. Condenser 17. Transformer





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Connecting the operator and gearmotor

White Red







Electrical connections: operator fitted on the right (inner view).



#### Command and control devices

▲Before fitting the AF card, you MUST CUT OFF THE MAINS POWER SUPPLY and, remove any emergency batteries.



#### Safety devices

C1 (NC), input for safety devices such as photocells, which are compliant with EN 12978 standards. Reopening during closing. When the gate leaves are closing, opening the contact inverts their movement until they are entirely open.



Programming the features



DI	P-SWITCH	Description of functions
	1 ON	AUTOMATIC CLOSING (1 OFF -deactivated)
	2 ON	OPEN-STOP-CLOSE-STOP from the button on 2-7 and/or from a transmitter (with AF card fitted)
	2 OFF	OPEN-CLOSE-INVERT from the button on 2-7 and/or from a transmitter (with AF card fitted)

# Adjusting the trimmers



Trimmer	Description of functions	
<ul> <li>Automatic Closing Time         <ul> <li>A.C.T. It sets the open gate's waiting time. Once this time elapses, a closing maneuver is automatically performed. The time can be set between 0 and 120 seconds.</li> <li>Operating time</li></ul></li></ul>		
		DELAY 2M

#### Activating the radio control

Connect the RG58 cable antenna cable to the corresponding terminals **①**.

For TOP, TAM and TWIN series transmitters with 433.92 MHz frequency, set the AF card jumper as shown in the figure **2**. Fit the AF card into the control board connector **3**.

Before fitting the AF card, you MUST CUT OFF THE MAIN POWER SUPPLY and, remove any emergency batteries.



Keep pressed the programming key on the control board. The warning LED flashes. Press any key on the transmitter you want to memorize. The LED stays on to indicate that memorization has been successful **6**.





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## **FINAL OPERATIONS**

Once you have finished with the connections and started up the operator, fit the casing over the gearmotor (**O**). Fit the casing over the gearmotor and close the hatch  $(\mathbf{Q})$ .

Lock the gearmotor using the key and fit the protection cap (3).





#### RELEASING THE GEARMOTOR

▲ This procedure must be done with the main power cut off.

▲ Manually releasing the operator may result in uncontrolled movement of the gate, if this has any mechanical problems or is unbalanced.



# INSTALLING AND CONNECTIONS FOR OUTER OPENING

Following, are the only things that change compared to a standard installation:

#### Fastening the brackets

Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.

## Application dimension (mm)



#### Operator fitted on the left.

With the gearmotor released and with the gate-leaf closed, turn the lower cam clockwise until the micro-switch activates. Fasten the cam by tightening the center screw.



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Connecting the operator





Electrical connections: Operator installed on the left (outer view).



Electrical connections: operator fitted on the right (inner view).



## Connecting the operator and gearmotor



## TROUBLESHOOTING

TROUBLES	POSSIBLE CAUSES	FIXES
It neither opens nor closes	<ul> <li>There is no power supply</li> <li>The gearmotor is stuck</li> <li>The transmitter's battery is run down</li> <li>The transmitter is broken</li> <li>the stop button is either stuck or broken</li> <li>The opening/closing button or the key-switch selector is stuck</li> </ul>	<ul> <li>Check whether the power is on</li> <li>Lock the gearmotor</li> <li>Replace the batteries</li> <li>Call for assistance</li> <li>Call for assistance</li> <li>Call for assistance</li> </ul>
The gate opens but does not close	The photocells are dirty	Clean the photocells and check their proper working state

## MAINTENANCE

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## Periodic maintenance

Before doing any maintenance, cut off the power supply, to prevent any hazardous situations caused by accidentally activating the operator. *Periodic maintenance log kept by users (every six months)* 

Date	Notes	Signature

#### Extraordinary maintenance

▲ The following table is for logging any extraordinary maintenance jobs, repairs and improvements performed by specialized contractors. Any extraordinary maintenance jobs must be done only by specialized technicians.

## Extraordinary maintenance log

Fitter's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed	
Fitter's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed	
Fitter's stamp	Name of operator
·	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed	•
Fitter's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed	
Fitter's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed	
Fitter's stamp	Name of operator
Fitter's stamp	Name of operator Job performed on (date)
Fitter's stamp	Job performed on (date)
Fitter's stamp	
	Job performed on (date) Technician's signature
	Job performed on (date) Technician's signature Requester's signature

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#### DISMANTLING AND DISPOSAL

CAME S.p.A. applies a certified Environmental Management System at its premises, which is compliant with the UNI EN ISO 14001 standard to ensure the environment is safeguarded.

Please continue safeguarding the environment. At CAME we consider it one of the fundamentals of our operating and market strategies. Simply follow these brief disposal guidelines:

DISPOSING OF THE PACKAGING

The packaging materials (cardboard, plastic, and so on) should be disposed of as solid urban waste, and simply separated from other waste for recycling.

Always make sure you comply with local laws before dismantling and disposing of the product.

DO NOT DISPOSE OF IN NATURE!

DISMANTLING AND DISPOSAL

Our products are made of various materials. Most of these (aluminum, plastic, iron, electrical cables) is classified as solid household waste. They can be recycled by separating them before dumping at authorized city plants.

Whereas other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants.

These must therefore be disposed of by authorized, certified professional services.

Before disposing, it is always advisable to check with the specific laws that apply in your area.

DO NOT DISPOSE OF IN NATURE!

**REFERENCE REGULATIONS** 

The product complies to the reference regulations in effect.

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