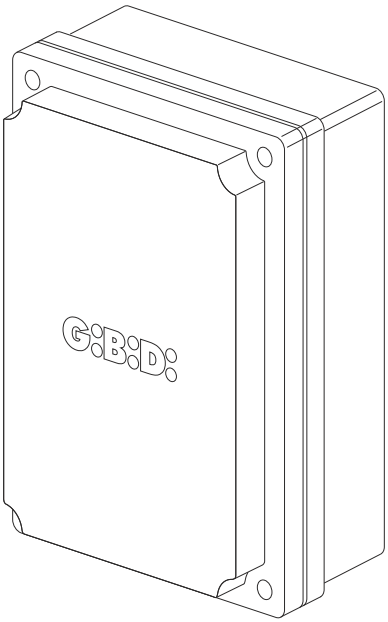

F4 PLUS

F4 PLUS (AS05950)

Electronic control unit
INSTRUCTIONS FOR INSTALLATION

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1 - TECHNICAL SPECIFICATIONS

Control unit	F4 PLUS
Code	AS05950
Type	Electronic control unit for automation of a swing gate, sliding gate, overhead door or barrier with one or two 230 VAC motor
Power supply	230 VAC single-phase 50/60 Hz
No. of motors	1 or 2
Motor power supply	230 VAC
Flashlight	230 VAC 40W max
Warning light	24 VAC 3W max
Electric lock	12 VAC 15W max
Accessory power supply	24 VAC 8W max
Radio receiver	Plug-in
Operating temperature	-20°C +60°C
Degree of protection	IP55

2 - TECHNICAL SPECIFICATIONS/FUNCTIONS

- Red warning LEDs for the N.C. contacts (FCAM1-FCCM1-FCAM2-FCCM2-PHOTO-STOP).
- Green warning LEDs for the N.O. contacts (START-PED).
- Control of one 12VAC electric lock.
- Hammer stroke control.
- Run, pause and phase shift time adjustment.
- Fixed or intermittent flashlight control.
- Courtesy light control.
- Programming of automatic closing.
- Photocell active during closing (operation during opening can be selected with a DIP switch).
- Motor force adjustment with appropriate trimmer.
- Operating range: Automatic - Step-by-step with stop - Pedestrian.
- STOP input control with functioning as STOP (lock) or frame (obstacle freeing).
- Hydraulic retention for hydraulic motors (DIP1_10 ON).
- DIP switch to disable the LIMIT SWITCH and PHOTOCELL inputs if not used.

Thank you for choosing GIBIDI.

⚠ **CAREFULLY READ THESE INSTRUCTIONS BEFORE PROCEEDING WITH INSTALLATION.**

WARNINGS:
This product has been tested by GI.BI.DI. for full compliance with the requirements of the directives in force. GI.BI.DI. S.r.l. reserves the right to change the technical data without prior notice in relation to product development.

DISPOSAL: GI.BI.DI. advises recycling the plastic components and to dispose of them at special authorised centres for electronic components thus protecting the environment from polluting substances.

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3 - INSTALLATION WARNINGS

- Before proceeding with installation, fit a differential magnetothermal switch with a maximum capacity of 10A upstream of the system. The switch must guarantee omnipolar separation of the contacts with an opening distance of at least 3mm.
- To prevent possible interference, differentiate and always keep the power cables (minimum cross-section 1.5 mm²) separate from the signal cables (minimum cross-section 0.5 mm²).
- Make the connections referring to the following tables and to the screen-printing on the board. Be extremely careful to connect in series all the devices that are connected to the same N.C. (normally closed) input, and in parallel all the devices that share the same N.O. (normally open) input.
- Incorrect installation or improper use of the product may compromise system safety.
- Keep all the materials contained in the packaging away from children since they pose a potential hazard.
- The manufacturer declines all responsibility for improper functioning of the automated device if the original components and accessories suitable for the specific application are not used.
- When installation is complete, always carefully check proper functioning of the system and the devices used.
- This instruction manual addresses professionals qualified to install “live equipment” and therefore requires good technical knowledge and installation in compliance with the regulations in force.
- Maintenance must be carried out by qualified personnel.
- Before carrying out any cleaning or maintenance operation, disconnect the control unit from the mains.
- The control unit described in this document may only be used for the purpose for which it was designed.
- Check the intended end use and take all the necessary safety precautions.
- Use of the products for purposes different from the intended use has not been tested by the manufacturer and is therefore on full responsibility of the installer.
- Mark the automated device with visible warning plates.
- Warn the user that children or animals should not play or stand near the gate.
- Appropriately protect the dangerous points (for example, using a sensitive frame).

4 - WARNINGS FOR THE USER

In the event of an operating fault or failure, cut the power upstream of the control unit and call Technical Service. Periodically check functioning of the safety devices. Any repairs must be carried out by specialised personnel using original and certified materials.

The product may not be used by children or persons with reduced physical, sensorial or mental capacities, or lacking experience and knowledge, unless appropriately instructed. Do not access the circuit board for adjustments and/or maintenance.

WARNING: IMPORTANT SAFETY INSTRUCTIONS.
It is important for the safety of persons to follow these instructions.
Keep this instruction manual.

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5 - ELECTRICAL CONNECTIONS: TERMINAL BOARDS

Terminal	Position	Signal	Description
M1	1		Motor 1 connection (opening)
	2		Motor 1 connection (common)
	3		Motor 1 connection (closing)
	4		Motor 2 connection (opening)
	5		Motor 2 connection (common)
	6		Motor 2 connection (closing)
	7		COURTESY LIGHT output (PHASE) if DIP1_9 = OFF Fixed output for FLASHLIGHT if DIP1_9 = ON
	8		COURTESY LIGHT output (NEUTRAL) if DIP1_9 = OFF Fixed output for FLASHLIGHT if DIP1_9 = ON
M2	9	N	230VAC power supply NEUTRAL
	10	L	230VAC power supply PHASE
	11	EARTH	Earth wire connection
	12	EARTH	Earth wire connection
M3	13	COM	COMMON for LIMIT SWITCH, PHOTOCELL, STOP, START and PEDESTRIAN inputs
	14	FCCM2	Closing limit switch input - MOTOR 2 (N.C.)
	15	FCAM2	Opening limit switch input - MOTOR 2 (N.C.)
	16	FCCM1	Closing limit switch input - MOTOR 1 (N.C.)
	17	FCAM1	Opening limit switch input - MOTOR 1 (N.C.)
	18	PHOTO	PHOTOCELL input (N.C.)
	19	START	START input (N.O.)
	20	24Vac	24VAC output for PHOTOCELL, ACCESSORIES power supply (max 8W)
	21	0Vac	0VAC output for PHOTOCELL, ACCESSORIES and ELECTRIC LOCK power supply
	22	EL1	12VAC output for ELECTRIC LOCK (max 15W)
	23	STOP	STOP input if DIP2_1 in OFF - FRAME input if DIP2_1 in ON. If not used, make a bridge with terminal 25 and open jumper SW15.
	24	PED	PEDESTRIAN start input (N.O.) - ACTS ON MOTOR 1. The pedestrian maneuver is made with automatic logic and cannot be modified.
	25	COM	COMMON for LIMIT SWITCH, PHOTOCELL, STOP, START and PEDESTRIAN inputs
	26	COM	ANTENNA BRAID input
	27		ANTENNA CORE input
M4	28	RELAY CLEAN-CONTACT FOR: • Fixed-light flashlight connection taking the power supply from terminals 7 and 8 (the relay flashes fast during opening and slow during closing). • Controlling a warning light to signal gate movement. Connect a 24VAC light powered by terminals 20-21 (max 3W). The light flashes fast during opening, slow during closing, it is on during pause and it is off during sleep time.	
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6 - PROTECTION FUSES

Position	Value	Type	Description
F1	**5A**	FAST	Protects the circuit board and the motors.
F2	**160mA**	FAST	Protects the circuit board and the accessories.

7 - WARNING LEDs

LED	Colour	Signal	Description
L1	RED	FCCM2	Always on. Goes off when the CLOSING LIMIT SWITCH of motor 2 is reached.
L2	RED	FCAM2	Always on. Goes off when the OPENING LIMIT SWITCH of motor 2 is reached.
L3	RED	FCCM2	Always on. Goes off when the CLOSING LIMIT SWITCH of motor 1 is reached.
L4	RED	FCAM1	Always on. Goes off when the OPENING LIMIT SWITCH of motor 1 is reached.
L5	RED	PHOTO	Always on. Goes off when the photocell is intercepted interrupting the beam.
L6	GREEN	START	Comes on when the START command is activated and goes off when released.
L8	GREEN	PED	Comes on when the PEDESTRIAN start command is activated and goes off when released.
L10	RED	SAF. / STOP	Always on. It turns off after STOP/COSTA INPUT intervention.

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8 - DIP SWITCH DIP1

The settings are stored during the rest phase (gate closed).

The default settings are highlighted in the boxes with grey background.

DIP	Function	Status	Description
DIP1_1	PHOTOCELL DURING OPENING	ON	When the photocell is intercepted during both opening and closing, the gate motion is locked until the photocell is freed. Subsequently, there is always an opening phase. During pause, the photocell reloads the pause time.
		OFF	The photocell stops and immediately inverts the gate motion during closing while it is uninfluential during opening. During pause, the photocell reloads the pause time.
DIP1_2	OPERATING LOGIC	ON	**AUTOMATIC logic** **Operation in response to the START command:** • Gate closed → OPENS • During opening → UNINFLUENTIAL • Gate open → Reloads the automatic closing time if automatic closing is enabled, otherwise it closes. • During closing → OPENS
		OFF	**STEP-BY-STEP WITH STOP logic** **Operation in response to the START command:** • Gate closed → OPENS • During opening → STOPS • Gate open (PAUSE) → STOPS • During closing → OPENS • After a STOP → inverts the motion
DIP1_3	HAMMER STROKE	ON	Operation: following a START, OPENING or PEDESTRIAN command, the following will occur in sequence: • electric lock activation • closing pulse of 1 second • opening • after 2 seconds, electric lock deactivation This function cannot be activated with a sliding gate configuration and is unadvisable with electromechanical operators.
		OFF	Hammer stroke disabled. Simultaneous electric lock activation and opening.

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DIP1_4	MOTOR 1 OPENING LIMIT SWITCH	ON	Disables the limit switch input	In the case of a system with only one motor and using the limit switches, the DIP switches 4, 5, 6 and 7 are to be set to OFF; while if using only one type of limit switch (e.g. FCAM1 and/or FCCM1), enable only the corresponding DIP switch (set to OFF).
		OFF	Enables the limit switch input	
DIP1_5	MOTOR 1 CLOSING LIMIT SWITCH	ON	Disables the limit switch input	
		OFF	Enables the limit switch input	
DIP1_6	MOTOR 2 OPENING LIMIT SWITCH	ON	Disables the limit switch input	
		OFF	Enables the limit switch input	
DIP1_7	MOTOR 2 CLOSING LIMIT SWITCH	ON	Disables the limit switch input	
		OFF	Enables the limit switch input	
DIP1_8	PHOTOCELL	ON	Disables the photocell input	
		OFF	Enables the photocell input	
DIP1_9	TERMINALS 7-8 FUNCTIONING	ON	The outputs 7-8 of the terminal board are used to control a FLASHLIGHT equipped with its own flashing circuit.	
		OFF	The outputs 7-8 of the terminal board are used to control a COURTESY LIGHT that remains active for 2 minutes after the motor movement. In this mode, the terminals 28-29 can be used to connect a FLASHLIGHT without a flashing circuit.	
DIP1_10	HYDRAULIC LOCK RETENTION	ON	For HYDRAULIC motors only. If the gate has not performed any operation in the last 5 hours, a 2-second closing pulse is given. THE STOP KEY DISABLES THE FUNCTION.	
		OFF	HYDRAULIC RETENTION deactivated.	

9 - DIP SWITCH DIP2

The settings are stored during the rest phase (gate closed).

The default settings are highlighted in the boxes with grey background.

DIP	Function	Status	Description
DIP2_1	TERMINAL 23 FUNCTIONING	ON	The STOP input (23) functions as FRAME and when intercepted, will invert the motion for 2 seconds in order to free the obstacle. See also jumper SW15.
		OFF	The STOP input (23) functions as STOP and when intercepted, will lock the motion. See also jumper SW15.
DIP2_2	TERMINAL M4 FUNCTIONING	ON	Terminal M4 operates as WARNING LIGHT.
		OFF	Terminal M4 operates as FLASHING LIGHT.
DIP2_3 DIP2_4	NOT USED		

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10 - JUMPER SW15

The settings are stored during the rest phase (gate closed).

The default settings are highlighted in the boxes with grey background.

JUMPER	Function	Status	Description
SW15	TERMINAL 23 FUNCTIONING		N.C. devices are connected to STOP/COSTA input (23)
			Resistive 8,2Ohm devices are connected to STOP/COSTA input (23)

11 - TRIMMER ADJUSTMENT

Trimmer	Default	Description
FORCE		Turning clockwise adjusts (increases) the motor torque from 25% to 100%. In the first 3 seconds, a pick-up with 100% power occurs.
RUN TIME		Turning clockwise adjusts (increases) the run time from 2 to 103 seconds.
P.S. TIME		Turning clockwise adjusts (increases) the closing delay time of leaf 1 with respect to leaf 2 from 0 to 20 seconds. The phase shift during opening is fixed at 2 seconds. Set to minimum, the delays during both opening and closing will be cancelled (version with 2 sliding gates with consequent deactivation of the hammer stroke).
PAUSE		Turning clockwise adjusts (increases) the pause time from 3 to 103 seconds. If adjusted to minimum, automatic closing is disabled only if **STEP-BY-STEP WITH STOP logic is set (DIP1_2 = OFF)**.

12 - FINAL CHECKS

Before powering the control unit, proceed with the following checks:

- Check the electrical connections; improper connection may be harmful to both the control unit and the operator.
- Check that the limit switches (if used) are in the correct position.
- Always provide for mechanical stops during opening and closing
- Adjust the RUN TIME trimmer setting the desired run time (up to maximum 103 seconds turning clockwise).
- Adjust the P.S. TIME trimmer setting the desired phase shift time.
- Adjust the PAUSE trimmer setting the desired pause time (up to maximum 103 seconds turning clockwise).
- Set the DIP switches for the desired operation.

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- Power the device.
- Check that the red LEDs of the N.C. contacts are on and the green LEDs of the N.O. contacts are off.
- Check by tripping the limit switches (if used and enabled with the appropriate DIP switches) that the corresponding LEDs go off.
- Check by passing through the photocell beam (if used and enabled with the appropriate DIP switch) that the corresponding LED goes off.
- Check that the motors are locked and ready for operation with the GATE AT HALFWAY ITS TRAVEL.
- Remove any obstacles in the range of action of the gate and then give a START command.
- Upon the first command, the control unit starts an opening phase; check that the gate moves in the correct direction. If not, cut the power to the control unit and invert the wires of terminal M1 (position 1-3 for motor 1 and 4-6 for motor 2). Repower the control unit and give a START command.
- During motion, turn the FORCE trimmer anticlockwise until finding the desired force/speed value.
- Check proper functioning of the automated device.

13 - SUMMARY OF FLASHLIGHT SIGNALLING

Device	Signalling	Effect
Frame intercepted before motion	3 slow flashes	Gate/door locked

CE Declaration of conformity

The manufacturer:

GI.BI.DI. S.r.l.
Via Abetone Brennero, 177/B,
46025 Poggio Rusco (MN) ITALY

declares that the product:

F4 PLUS ELECTRONIC CONTROL UNIT

is in conformity with the following EEC Directives:

- **LVD Directive 2006/95/CE and subsequent amendments**
- **EMC Directive 2004/108/CE and subsequent amendments**

and that the following harmonised standards have been applied:

- **EN60335-1**
- **EN 61000-6-2, EN 61000-6-3**

Date 15/06/2017

The Legal Representative
Michele Prandi

NOTES

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