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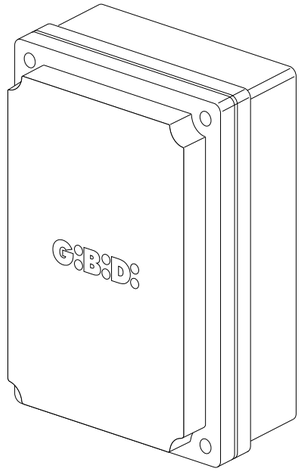

:F4 PLUS

F4 PLUS (AS04180)

Electronic control unit INSTRUCTIONS FOR INSTALLATIONS

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a **BANDINI INDUSTRIE** company

GI.BI.DI. S.r.l.
Via Abetone Brennero, 177/B
46025 Poggio Rusco (MN) - ITALY
Tel. +39.0386.52.20.11
Fax +39.0386.52.20.31
E-mail: comm@gibidi.com

Numero Verde: 800.290156

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ISO 9001 Cert. N. 0079

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- This product has been tested in Gi.Bi.Di. verifying the perfect correspondence of the characteristics to the current directive.
- Gi.Bi.Di. S.r.l. reserves the right to modify the technical data without prior notice depending on the product development.

⚠ **PLEASE READ CAREFULLY THIS MANUAL BEFORE PROCEEDING WITH THE INSTALLATION.**

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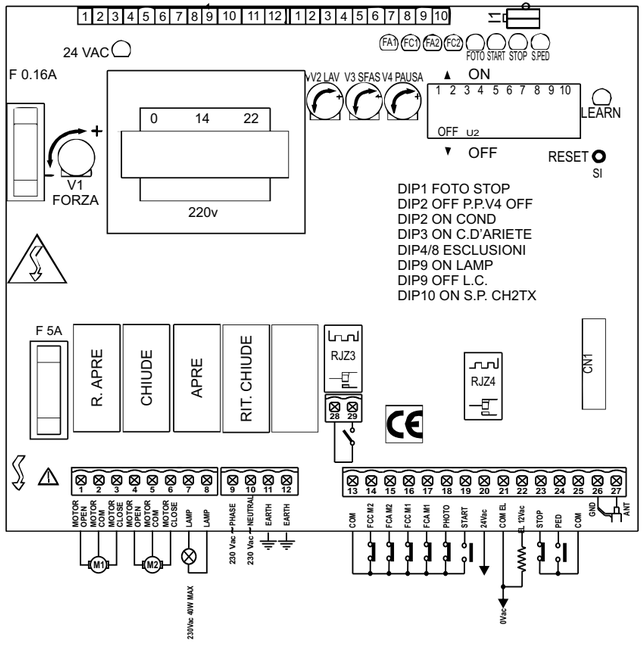

	English	
	Force	
	Run time	
	Phase shift time	
	Pause time	
	Courtesy light	
	Start pedestrian gate	

NOTE

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Control unit	**F4 PLUS/AS04180**
Type	**230 VAC electronic control unit for automation of one or two motors for swing gates, sliding gates, overhead doors and barriers**
Power supply	220 / 230VAC, single-phase, 50/60 Hz
Motor power supply	220 / 230 Vdc
No. of motors	1 o 2
Accessory power supply	24 Vac 8W max
Flashlight	230Vac 40W max
Radio receiver	Plug-in
Operating temperature	-20°C +60°C
Run time	100s max

TECHNICAL SPECIFICATIONS / FUNCTIONS

The F4PLUS electronic control unit for automation of motors for swing gates or sliding gates is in conformity with the directives in force.
It offers a complete operating range (condominium, step-by-step, step-by-step with automatic reclosing, pedestrian gate, water hammer) and adjustment functions (run time, pause time, phase shift and motor power).
It is versatile because of its options (4 limit switches, pre-flashing, flashlight controlled by control unit, courtesy light, cut-out of unused inputs with dip switches, built-in or plug-in radio).
Easy to install thanks to the control LEDs (red for the safety switches = NC contacts, yellow for the controls = NA contacts); the extractable terminal boards and the silk-screen printing on the printed circuit indicating connections and functions.

INSTALLATION

Use glands adequate to ensure proper mechanical connection of cable and maintain the box protection degree IP55. **(2).**

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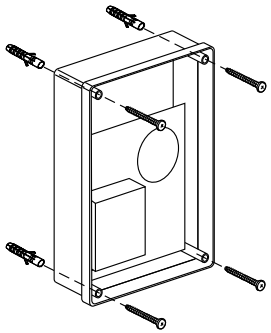

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INSTALLATION WARNINGS

- Before proceeding with installation, fit a magnetothermal or differential 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 3 mm.
- 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 attached screen-print. 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 risk.
- 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.
- After installation, always carefully check proper functioning of the system and the devices used.
- This instruction manual addresses persons qualified for installation of "live equipment". Therefore, good technical knowledge and professional practice in compliance with the regulations in force are required.
- Maintenance must be carried out by qualified personnel.
- Before carrying out any cleaning or maintenance operation, disconnect the control unit from the mains.
- This control unit may only be used for the purpose for which it was designed.
- Check the aim of the final use and make sure that all safety measures are taken.
- Use of the product for purposes different from the intended use has not been tested by the manufacturer, therefore any work is carried out on full responsibility of the installer.
- Mark the automated device with visible warning plates.
- Warn the user that children or animals may not play or stand around near the door.
- Appropriately protect the danger points (for example, using a sensitive frame).

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 appliance is not to be used by children or people with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
Do not touch the card for adjustments and/or maintenance.

WARNING: IMPORTANT SAFETY INSTRUCTIONS.
It is very important to follow the present instructions for your own safety.
Please keep this manual.

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ELECTRICAL CONNECTIONS: TERMINAL BOARDS

1	Output - OPENS motor 1 (motor to be used for pedestrian gate) *	**15**	LIMIT SWITCH input-opens motor 2 (NC)
2	COMMON output - motor 1 (motor to be used for pedestrian gate) *	**16**	LIMIT SWITCH input-closes motor 1(NC)
3	Output - CLOSES motor 1 (motor to be used for pedestrian gate) *	**17**	LIMIT SWITCH input-opens motor 1 (NC)
4	Output – OPENS motor 2	**18**	PHOTOCELL input (NC)
5	COMMON output - motor 2	**19**	START input (NO)
6	Output – CLOSES motor 2	**20**	24 Vac output for power supply of PHOTOCELLS and ACCESSORIES (max. 8W) (2 pair of photocells + radio receiver)
7	IF DIP 9 OFF = PHASE output for COURTESY LIGHT (+2 minutes after run time) IF DIP 9 ON= Fixed output for FLASHLIGHT code 70106	**21**	Common output (0 Vac) for power supply of PHOTOCELLS, ACCESSORIES and ELECTRIC LOCK
8	IF DIP 9 OFF = NEUTRAL output for COURTESY LIGHT (+2 minutes after run time) IF DIP 9 ON= Fixed output for FLASHLIGHT code 70106	**22**	12 Vac output for ELECTRIC LOCK (max. 15W)
9	LINE INPUT 230 V ~ NEUTRAL	**23**	STOP input (NC; if not used connect with jumper to terminal 25)
10	LINE INPUT 230 V ~ PHASE	**24**	Input for PEDESTRIAN GATE START (NA, acts on motor 1)
11	GROUND	**25**	COMMON input for STOP-START-START PEDESTRIAN GATE
12	GROUND	**26**	ANTENNA CORE input
13	COMMON for FA1-FC1-FC2-FA2- inputs of PHOTOCELL	**27**	ANTENNA BRAID input
14	LIMIT SWITCH input - closes motor 2 (NC)	**28 - 29**	Relay clean-contact to: - connect a flashlight with fixed light (code 70107) drawing power from the terminals 7 and 8 (the relay flashes fast during opening and slowly during closing). Control a warning light to signal gate movement. - connect a 24 Vac lamp powered by terminals 20-21 (max. 1Watt)

The motor capacitor is connected between terminals 1-3 (Motor 1) and 4-6 (Motor 2).

* If the system controls a double-gate system with phase shift (V3 turned clockwise), motor 1 starts opening two seconds before motor 2, while during closing it starts the mouvement with the delay set by adjusting trimmer V3.

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PROGRAMMING FUNCTIONS (DIP SWITCH)

DIP1	**ON**	When the photocell is intercepted, both during opening and closing, the gate motion is locked until the photocell is freed. Subsequently, there is always an opening phase.
	OFF	The photocell stops and immediately inverts the motion of the gate during the closing phase, while during opening it is uninfluential.
DIP2	**ON**	Enables the CONDOMINIUM function, i.e. one START command opens the gate, and no other START commands are accepted during opening. During PAUSE, one START command reloads the pause time. During closing, one START command reopens the gate.Reclosing occurs only in automatic mode after the pause time, also when V4 is on minimum.
	OFF	Enables the STEP-BY-STEP functions (one START command OPENS, a second command STOPS, a third command CLOSES the gate) or STEP-BY-STEP with AUTOMATIC RECLOSING depending on how trimmer V4 is positioned: • If turned completely anticlockwise = STEP-BY-STEP • If turned clockwise = STEP-BY-STEP with RECLOSING i.e. after the pause time it recloses automatically. To close with the remote control during the pause, two start commands must be given (the first command sets the gate to STOP).
DIP3	**ON**	Enables the WATER HAMMER function - exercises a brief thrust during closing before opening, facilitating release of the electric lock (if the limit switches are used, this function is disabled)
	OFF	Disables the WATER HAMMER function
DIP4	**ON**	Cuts out limit switch input - opens motor 1
	OFF	Enables the opening limit switch input motor 1
DIP5	**ON**	Cuts out limit switch input - closes motor 1
	OFF	Enables the closing limit switch input motor 1
DIP6	**ON**	Cuts out limit switch input - opens motor 2
	OFF	Enables the opening limit switch input motor 2
DIP7	**ON**	Cuts out limit switch input - closes motor 2
	OFF	Enables the closing limit switch input motor 2
DIP8	**ON**	Cuts out photocell input
	OFF	Enables the photocell input
DIP9	**ON**	The outputs 7-8 of the terminal board are used to control a FLASHLIGHT equipped with its own flashing circuit (code 70106)
	OFF	The outputs 7-8 of the terminal board become outputs for the COURTESY LIGHT and remain active for 3 minutes after the run time (max. 100W). In this mode the terminals 28-29 can be used to connect a flashlight without flashing circuit.(code 70107)
DIP10	**ON**	NOT USED
	OFF	NOT USED

In the event of a system with only one motor and using the limit switches, the dip switches 4, 5, 6 and 7 must all be set to OFF, while if using only one type of limit switch, e.g. Fa1 and/or Fa2, enable (OFF position) only the corresponding dip switch.

DEFAULT SETTINGS (DIP SWITCH)

DIP SWITCHES 1, 2, 3, 9, 10 OFF; DIP SWITCHES 4, 5, 6, 7, 8 ON

TRIMMER ADJUSTMENT

There are 4 trimmers (V1-V2-V3-V4) on the F4PLUS control unit to adjust the following:

TRIMMER	FUNCTION	DESCRIPTION
V1	FORCE	Turned clockwise it adjusts the motor torque from 40% to 98%. For the first 3 seconds pickup occurs.
V2	RUN TIME	Turned clockwise, it adjusts the RUN TIME from 2 to 100 seconds.
V3	PHASE SHIFT TIME	Turned clockwise, it adjusts the delay time between the start of the closing mouvement of motor 2 and the start of the closing of motor 1 (from 0 to 20 seconds). The phase shift during opening is fixed at 2 seconds. With V3 set to minimum the delays are cancelled both during opening and closing double sliding gate version) and the WATER HAMMER function is disabled.
V4	PAUSE TIME	Turned clockwise it adjusts the PAUSE TIME from 2 to 100 seconds. Adjusted to minimum, it disables the pause time = STEP-BY-STEP function.

DEFAULT SETTINGS

Trimmer V1 adjusted to maximum.
Trimmers V2, V3 and V4 adjusted to half their travel.

FINAL CHECKS AND TESTING

Before powering the control unit, check the following:
1) Check that the dip switches and trimmers have been set properly according to requirements.
2) Check the electrical connections; Improper connection may cause damage to the control unit and the operator.

POWER THE DEVICES

3) Check that the red LEDs of the safety devices are on and the yellow LEDs off
4) Check that when engaging any limit switches used the corresponding LEDs come on.
5) Check that when passing through the beam of the photocells the corresponding LED goes off.
6) Check that the motors are locked and ready for operation. Remove any obstacles from the operating range of the gate, then give the START command. Upon the first command, the control unit starts an opening phase; check that the motor rotation direction is correct.
6) If not, invert the wires of terminals 1-3 and/or 4-6.
7) Fine adjust the trimmers.

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TROUBLESHOOTING

Before any installation or maintenance operation, ensure that the power supply has been disconnected.!!

FAULT	POSSIBLE CAUSES and SOLUTIONS
Red 24 Vac LED off	Check the 230 Vac power supply and the relevant fuse F1(5A)
The operator does not open or reclose	Check that the red LEDs are on (except the LED of the limit switch active at that moment) and the yellow ones off.
The flashlight is on but the gate does not move.	Start has been pressed with the photocells engaged. Check that the photocells are not engaged; once released the gate will start moving.
Red LEDs FA1-FC1-FA2-FC2-PHOTOCELL off	Check that the relevant inputs and safety switches are connected (FA1-FC1-FA2-FC2-PHOTOCELL) or the relevant DIP SWITCH set to ON. Check the fuse F2 (0.16A).
Red STOP LED off	Check that the STOP input is connected to an NC button or that a jumper has been connected between the terminals 23 and 25 (WARNING: the STOP intervention causes a functional stop and NOT a safety stop).
Yellow LEDs always on	Check that the START and PEDESTRIAN GATE inputs have been connected to NO buttons.
After the run time the gate does not reclose	Check that the trimmer V4 (Pause) is not turned completely anticlockwise.
After the motors have stopped, the flashlight connected to terminals 7-8 does not go off.	Check that DIP9 is set to ON. If only 2 limit switches are used, the relevant DIP SWITCHES must set to OFF, the other 2 to ON.
Upon starting the gate does not execute the water hammer.	Check that DIP3 is set to ON and check that TRIMMER V3 is not on 0.
The gate does not perform a phase shift when it starts	Check that the trimmer V3 (closing delay) is not turned completely anticlockwise.
The transmitter has a small range	Check that the antenna has been positioned properly (braid terminal 26, core terminal 27,if a built-in radio or AU01630N receiver is used) (if an AU01710 plug-in receiver is used, the antenna must be connected to the terminals on the receiver). Check that there are no sources of disturbances in the vicinity which limit the range.
The card does not learn the TX code	Check the maximum number of codes that can be stored (200). Check if remote controls of the same family as the first are being learned: DIP SWITCH or ROLLING. Check that the frequency of the radio control is the same as the receiver.

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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 products:

ELECTRONIC CONTROL UNIT F4 PLUS

are in conformity with the following CEE 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,**
- **EN61000-6-2, EN61000-6-3**

Date 30/07/08

Managing Director
Oliviero Arosio

NOTE