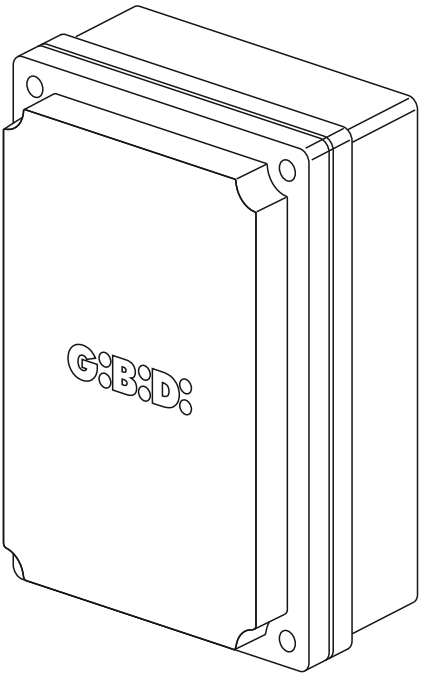

F4

F4 (AS06320)

Electronic control unit INSTRUCTIONS FOR INSTALLATION

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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.

1 - TECHNICAL SPECIFICATIONS

Control unit	F4
Code	AS06320
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
Flashing light	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.
- Management of the opening release stroke to release the electric lock and of the final stroke to hook the electric lock. Enabling the opening release stroke, you also activate the final stroke in closing (1s of extra motion).
- Working time learning by procedure or set with trimmer.
- Slow-down in opening and closing, only by run time learning procedure.
- Pause and leaf-delay time adjustment.
- Fixed or intermittent flashing light 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 functioning as STOP (lock) or edge (obstacle freeing).
- Hydraulic lock upkeep for hydraulic motors (DIP1_10 ON).
- DIP switch to disable the LIMIT SWITCH and PHOTOCELL inputs if not used.

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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 the labeling on the control 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 a competent person.
- 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 edge).
- Do not install in an explosive enviroment.

4 - WARNINGS FOR THE USER

In the event of an operating fault or failure, isolate 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 (LIVE) if DIP1_9 = OFF Fixed output for FLASHING LIGHT if DIP1_9 = ON
	8		COURTESY LIGHT output (NEUTRAL) if DIP1_9 = OFF Fixed output for FLASHING LIGHT if DIP1_9 = ON
M2	9	N	230VAC power supply NEUTRAL
	10	L	230VAC power supply LIVE
	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 - EDGE 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 operation is made using 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 flashing light connection taking the power supply from terminals 7 and 8 (the relay flashes fast during closing and slow during opening). • Controlling a warning light to signal gate movement. Connect a 24VAC light powered by terminals 20-21 (max 3W). The light flashes fast during closing, slow during opening, it is on during pause and it is off during sleep time.	
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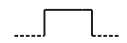
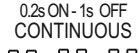
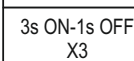
6 - PROTECTION FUSES

Position	Value	Type	Description
F1	6.3A	T	Protects the circuit board and the motors.
F2	160mA	T	Protects the circuit board and the accessories.

7 - WARNING LEDs

LED	Colour	Signal	Description	
L1	RED	FCCM2	Always on. Turns off when the CLOSING LIMIT SWITCH of motor 2 is reached.	
L2	RED	FCAM2	Always on. Turns off when the OPENING LIMIT SWITCH of motor 2 is reached.	
L3	RED	FCCM1	Always on. Turns off when the CLOSING LIMIT SWITCH of motor 1 is reached.	
L4	RED	FCAM1	Always on. Turns off when the OPENING LIMIT SWITCH of motor 1 is reached.	
L5	RED	PHOTO	Always on. Turns off when the photocell is broken/interrupted.	
L6	GREEN	START	Comes on when the START command is activated and goes off when released.	
L8	GREEN	PED	Comes on when the PED. start command is activated and goes off when released.	
L9	BLUE	MEMO	0.6s ON 0.6s OFF CONTINUOUS 	The control unit is blocked waiting to do the learning cycle. It is necessary to do the learning cycle.
			30s ON 	The control unit is in pre-learning phase after the activation of memo button.
			0.2s ON-2s OFF CONTINUOUS 	At rest and during the learning, the control unit is set for the operation with 1 motor.
			0.2s ON - 0.2s OFF 0.2s ON - 1s OFF CONTINUOUS 	At rest and during the learning, the control unit is set for the operation with 2 motors.
			0.3s ON - 0.3s OFF 0.3s ON - 0.3s OFF 0.3s ON - 1s OFF X4 	Learning aborted. Check photo-stop-edge-ped inputs. Signalling made also on WARNING and FLASHING LIGHT.
			3s ON-1s OFF X3 	Learning correctly made. Signalling made also on WARNING and FLASHING LIGHT.
L10	RED	SAF. / STOP	Always on. It turns off after STOP/EDGE 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 broken/interrupted during both opening and closing, the gate motion is ceased until the photocell is re-made. Subsequently the gate will always OPEN. Breaking or interrupting the photocell during PAUSE will cause the pause-time to begin counting down again.
		OFF	The photocell stops and immediately inverts the gate motion during closing while it is uninfluential during opening. Breaking or interrupting the photocell during PAUSE will cause the pause-time to begin counting down again.
DIP1_2	OPERATING LOGIC (SEE PAUSE TRIMMER)	ON	**AUTOMATIC logic** **Operation in response to the START command:** • Gate closed → OPENS • During opening → UNINFLUENTIAL • Gate open → If automatic closing is enabled (see PAUSE trimmer function) then the pause-time begins again, otherwise it closes. If automatic closing is enabled (as above) then a permanent START command (always closed) will hold the gate open, 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) → If automatic closing is enabled then the gate stops • During closing → STOPS • After a STOP → Inverts the motion
DIP1_3	ELECTRIC LOCK RELEASE 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 Operation AT THE END OF CLOSING CYCLE (ONLY WITH SLOW-DOWN ENABLED): • extra movement in closing of 1 second with FORCE trimmer settings. This function cannot be activated with a sliding gate configuration and is unadvisable with electromechanical operators.
		OFF	Electric lock release 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 FLASHING LIGHT 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.	
DIP1_10	HYDRAULIC LOCK UPKEEP	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 LOCK UPKEEP 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 EDGE and when activated, 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 activated, will stop 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. In this mode, the terminals 28-29 can be used to connect a FLASHING LIGHT without a flashing circuit.
DIP2_3	UNUSED	OFF	Keep this OFF, do not change.
DIP2_4	POSITIONAL TIME RECOVERY	ON	Extended positional time recovery: - Ideal for AGO motors with run time learning done - Ideal for TOP EVO motors with hydraulic slowdown
		OFF	Normal positional time recovery.

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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/EDGE input (23)
			Resistive 8,2KOhm devices are connected to STOP/EDGE input (23)

11 - TRIMMER ADJUSTMENT

Trimmer	Default	Description
FORCE		Turning clockwise adjusts (increases) the motor torque from 25% to 100%. The first 3 seconds of movement take place with 100% of motor torque (force).
RUN TIME		Set to the minimum (fully counter-clockwise), it will permit the RUN TIME LEARNING PROCEEDURE with SLOW-DOWN to take place. Turning clockwise, it adjusts the working time from 3.5 to 136 sec. and excludes learning procedure and slow down.
P.S. TIME (LEAF-DELAY TIME)		Turning clockwise adjusts (increases) the closing delay time of leaf 1 with respect to leaf 2 from 0 to 20 seconds. The leaf-delay 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), disables the opening release stroke DIP1_3 and the maintenance of the hydraulic lock upkeep.
PAUSE		Turning clockwise adjusts (increases) the pause time from 3 to 103 seconds. Automatic closing is disabled if adjusted to minimum. See operating logic DIP1_2.

12 - PRELIMINARY 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
- Set the DIP switches and trimmers 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.
- Remove any obstacle from the gate's range.
- Check that the motors are locked and ready for the operation in the HALF-OPEN position.

Only in case of operation without learning and with RUN TIME trimmer not to the minimum:
- At the first command, the control unit starts an opening movement: check that the direction of gate motion is correct. On the contrary, remove the power supply from the control unit, invert the wires of terminal M1 (position 1-3 for motor 1) (4-6 for motor 2). Supply power again and give START command.
- During the operation of the gates, turn the FORCE trimmer anti-clockwise until the desired force/speed is obtained.

13 - RUN TIME LEARNING PROCEDURE

- The «RUN TIME» trimmer must be at the minimum to be able to do the learning procedure. With any adjusting different from the minimum, the working time, both in opening and closing, is determined by the «RUN TIME» trimmer and the slow-down will be disabled.
- The breaking or interrupting of any device (PED, PHOTO, STOP/SAFETY) during the learning phase causes the interruption and the exit from the learning cycle and it is necessary to repeat it.
- During the learning cycle, the WARNING LIGHT is off and it will be briefly on after receiving a START command.
- The operators motion, during the learning procedure, occurs with the force set on FORCE trimmer.
- Sliding gate operators MUST have opening and closing limit switches. All the other types of motor must have the limit switches or the mechanical stops on the ground.
- Sliding gate operators must have the <<LEAF DELAY TIME>> trimmer set to the minimum.
- The run time learning is not compatible with TOP EVO operators with hydraulic slowdown.
- It is possible to make the stroke learning with the hydraulic operators. However, in case of successfully learning, the slowdown phases in opening and closing are not always granted.

Learning procedure:
- Unlock the operators and set the gates HALF-WAY.
- Lock-off the operators.
- Check that there are the mechanical stops on the ground and/or on the operator in opening and closing.
- Remove any obstacle from the the swing area of the gates.
- Check that LED L1, L2, L3, L4, L5 and L10 are on.
- Check that «RUN TIME» trimmer is at the minimum.
- Press MEMO button for 2 seconds.
- LED L9 is on and remains on for 30 seconds, after which it will switch off as the control unit automatically exits from the learning procedure.
- Choose within 30 seconds (LED L9 on) using the MEMO button the number of motors you have to use. The first press of the button enables the operation with 1 motor and LED L9 blinks, the second press of MEMO button enables the operation with 2 motors and LED L9 blinks twice.
- The sequence repeats itself any time you push MEMO button.
- Push the button 1 (START) of the transmitter or give a START impulse from the terminal board. Check that the movement of the motors is in the right direction (in closing at the beginning). On the contrary, block the learning cycle with any safety device, remove the power supply from the control unit, invert the wires of terminal M1 (position 1-3 for motor 1) (4-6 for motor 2) and repeat the procedure.

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Movements made during the learning with 2 motors:

- Motor 2 closes until running into the limit switch or until receiving a START impulse.
- Motor 1 closes until running into the limit switch or until receiving a START impulse.
- Pause of 1 second.
- Motor 1 opens until running into the limit switch or until receiving a START impulse.
- Motor 2 opens until running into the limit switch or until receiving a START impulse.
- Pause of 1 second.
- Motor 2 closes until running into the limit switch or until receiving a START impulse.
- Motor 1 closes until running into the limit switch or until receiving a START impulse.
- Pause of 1 second.
- Motor 1 opens, the first START command causes the beginning of the decelerated motion, the following START command or the opening limit switch causes the end of motor 1 motion in opening.
- Motor 2 opens, the first START command causes the beginning of the decelerated motion, the following START command or the opening limit switch causes the end of motor 2 motion in opening.
- Pause of 1 second.
- Motor 2 closes, the first START command causes the beginning of the decelerated motion, the following START command or the closing limit switch causes the end of motor 2 motion in closing.
- Pause of 1 second.
- Motor 2 closes, the first START command causes the beginning of the decelerated motion, the following START command or the closing limit switch causes the end of motor 2 motion in closing.
- End of learning, the LED L9 and the flashing light signal that the learning has been completed and turn off.

Movements made during the learning with 1 motor:

- Motor 1 closes until running into the limit switch or until receiving a START impulse.
- Pause of 1 second.
- Motor 1 opens until running into the limit switch or until receiving a START impulse.
- Motor 1 closes until running into the limit switch or until receiving a START impulse.
- Motor 1 opens, the first START command causes the beginning of the decelerated motion, the following START command or the opening limit switch causes the end of the motion of motor 1 in opening.
- Pause of 1 second.
- Motor 1 closes, the first START command causes the beginning of the decelerated motion, the following START command or the closing limit switch causes the end of the motion of motor 1 in closing.
- End of learning, the LED L9 and the flashing light signal that the learning has been completed and turn off.

In the event of the learning procedure not work then check the signaling of LED L9.

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14 - SOFT START

This function adds 1s at reduced speed at the beginning of each movement. It is particularly recommended for the electromechanical operators.

- Write down DIP1_1 position.
- Cut power to the control unit.
- Press and hold MEMO button.
- Supply the control unit.
- Release MEMO button.
- The blue led L9 starts to flash at regular intervals:
  - short flashings, inactive function
  - longer flashings, active function.
- The flashing light will light up steadily
- Bring DIP1_1 in ON to activate the function or in OFF to deactivate it.
- Press and hold MEMO button.
- After a few seconds, the led L9 will turn off and the flashing light will make two short flashings to confirm the correct storage.
- Bring DIP1_1 back to its original position.

14 - FINAL CHECKS

- Make some opening and closing cycles to check the right operation of the automation and adjust the doors force, acting on FORCE trimmer. If you have to make large adjustments from the values used during the learning sequence then it may be necessary to repeat the learning procedure.
- Check the right operation of the automation.

16 - SUMMARY OF FLASHING LIGHT SIGNALLING

Device	Signalling	Effect
Edge detection before motion	3 slow flashes	Gate/door locked
Photocell break/interruption at rest in presence of a START command (DIP1_1 = ON)	5 fast flashes	When released, it opens
Opening	0,8s ON, 0,8s OFF	The gate is opening
Closing	0,4s ON, 0,4s OFF	The gate is closing
LEARNING OK	3s ON, 1s OFF Repeated 3 times	Learning correctly made
LEARNING FAILED	0,3s ON, 0,3s OFF Repeated 4 times	Learning failed

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UKCA 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:

ELECTRONIC CONTROL UNITF4

Are in conformity with the essential requirements and other relevant requirement of:

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012;
Electrical Equipment (Safety) Regulations 2016;
Radio Equipment Regulations 2017;

and that the following harmonised standards have been applied:

- **EN 61000-6-1**
- **EN 61000-6-2**
- **EN 61000-6-3**
- **EN 60335-1**

Date 05/07/2019

The legal Representative
Michele Prandi

UE Declaration of conformity

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

Declares that the product:

ELECTRONIC CONTROL UNIT F4

are in conformity with the following directives:

- **2014/35/UE**
- **2014/30/UE**
- **2014/53/UE**
- **2011/65/UE**

and that the following harmonized standards have been applied:

- **IEC 61000-6-1:2016 RVL**
- **IEC 61000-6-2:2016 RVL**
- **IEC 61000-6-3:2020**
- **IEC 60335-2-103:2015+AMD1:2017+AMD2:2019 CSV**

Data 05/07/2019

Il Rappresentante Legale
Michele Prandi

Cod. AIC6580 - 02/2022 - Rev. 02

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: info@gibidi.com

Numero Verde: 800.290156

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