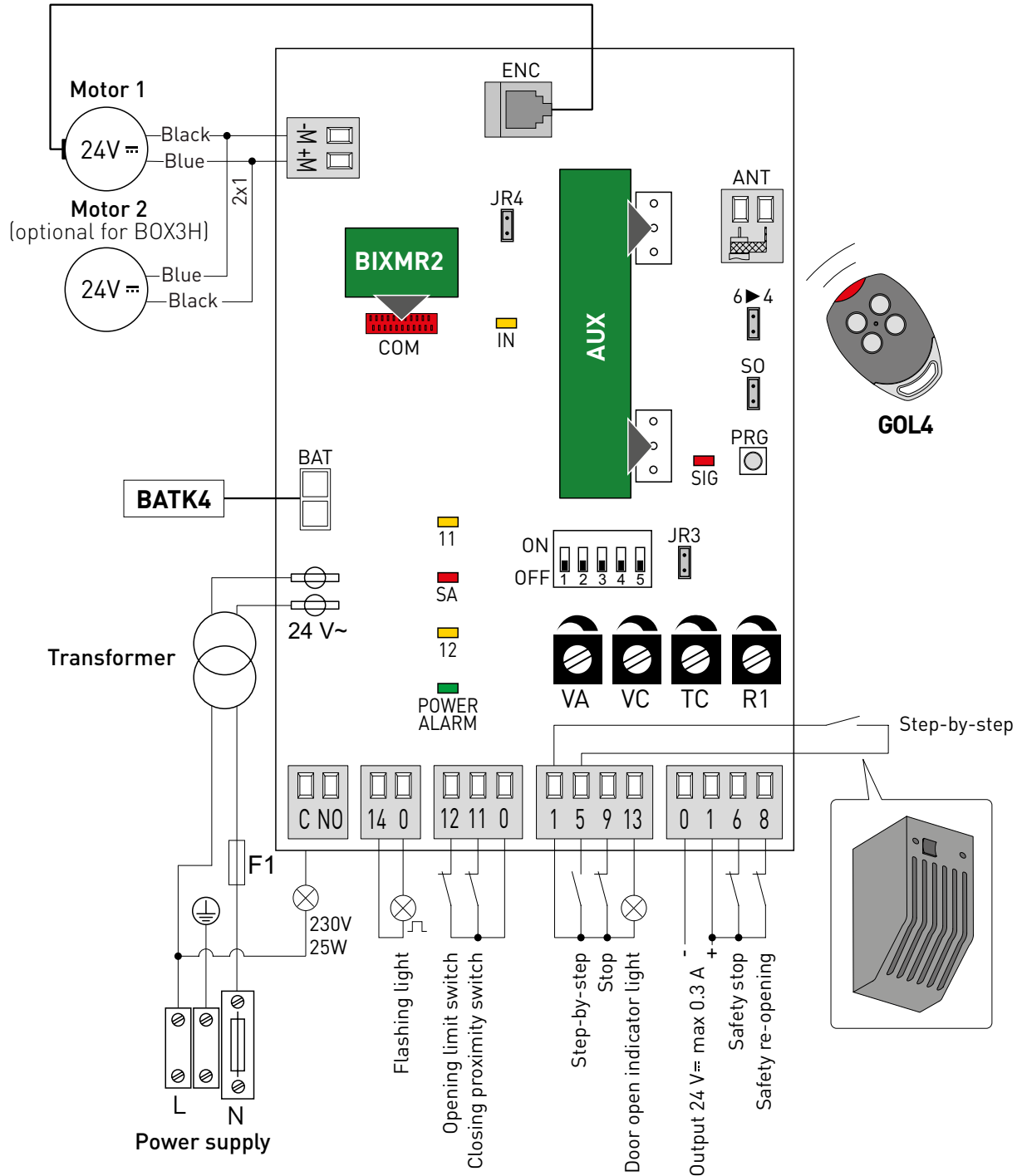


Ditec E1HBOX

Installation manual for control panel for BOX3EH automation



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Key



This symbol indicates instructions or notes regarding safety, to which special attention must be paid.



This symbol indicates useful information for the correct operation of the product.

All right reserved

All data and specifications have been drawn up and checked with the greatest care. The manufacturer cannot however take any responsibility for eventual errors, omissions or incomplete data due to technical or illustrative purposes.

1. General safety precautions



Failure to respect the information given in this manual may cause personal injury or damage to the device. Keep these instructions for future reference.

This installation manual is intended for qualified personnel only.

Installation, electrical connections and adjustments must be performed by qualified personnel, in accordance with Good Working Methods and in compliance with the current regulations.

Read the instructions carefully before installing the product.

Incorrect installation may cause danger.



The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger.

Before installing the product, make sure it is in perfect condition.

Do not install the product in explosive areas and atmospheres: the presence of inflammable gas or fumes represents a serious safety hazard.

Before installing the motorisation device, make all the necessary structural modifications to create safety clearance and to guard or isolate all the crushing, shearing, trapping and general hazardous areas.

Make sure the existing structure is up to standard in terms of strength and stability. The motorisation device manufacturer is not responsible for failure to observe Good Working Methods when building the frames to be motorised, or for any deformations during use.



The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account the applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the motorised door or gate.

The safety devices must protect against crushing, cutting, trapping and general danger areas of the motorised door or gate.

Display the signs required by law to identify hazardous areas.

Each installation must bear a visible indication of the data identifying the motorised door or gate.

When necessary, connect the motorised door or gate to an effective earthing system that complies with the current safety standards. During installation, maintenance and repair operations, cut off the power supply before opening the cover to access the electrical parts.

The automation protection casing must be removed by qualified personnel only.

The electronic parts must be handled using earthed antistatic conductive arms. The manufacturer of the motorisation device declines all responsibility if component parts not compatible with safe and correct operation are fitted.

Only use original spare parts when repairing or replacing products.



The installer must supply all information concerning the automatic, manual and emergency operation of the motorised door or gate, and must provide the user with the operating instructions.

2. EC DECLARATION OF CONFORMITY

Manufacturer: DITEC S.p.A.

Address: via Mons. Banfi, 3 21042 Caronno P.Ia (VA) - ITALY

declares that the control panel E1HBOX (with receiver 433.92 MHz) is in conformity with the provisions of the following EC directives:

R&TTE Directive 1999/5/EC;

EMC Directive 2004/108/EC;

Low Voltage Directive 2006/95/EC.

Caronno Pertusella, 01-09-2010

Silvano Angaroni
Managing Director

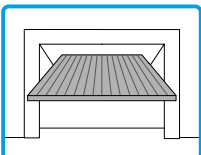
3. TECHNICAL DATA

	E1HBOX
Power supply	230 V~ 50/60 Hz
F1 fuse	F1.6A
1 motor output	24 V= 9 A max
2 motors output	24 V= 2x5.5 A max
Accessories power supply	24 V= 0.3 A
Temperature	min -20 °C max +55 °C
Degree of protection	IP24D
Memorable radio codes	200
Radio frequency	433.92 MHz




NOTE: the given operating and performance features can only be guaranteed with the use of DITEC accessories and safety devices.

3.1 Applications



4. CONNECTION OF POWER SUPPLY

Before connecting the power supply, make sure the plate data correspond to that of the mains power supply. An omnipolar disconnection switch with minimum contact gaps of 3 mm must be included in the mains supply. Check that upstream of the electrical installation there is an adequate residual current circuit breaker and a suitable overcurrent cutout.


Use a H05RN-F 3G1,5 or H05RR-F 3G1,5 type electric cable and connect to the terminals L (brown), N (blue),  (yellow/green) in the automation.

Secure the cable using a special cable clamp.

Make sure there are no sharp edges that may damage the power supply cable.

Connection to the mains power supply, in the section outside the automation, is made with independent channels and separated from the connections to the control and safety devices.

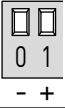


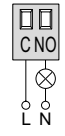



5. COMMANDS

Command	Function	Description
1 — 5	N.O. STEP-BY-STEP WITH AUTOMATIC CLOSING	With DIP1=OFF and TC<MAX, the closing of the contact activates opening or closing operations in the following sequence: open-stop-close-open. <i>NOTE: the stop is not permanent but lasts for a duration set by TC.</i>
	STEP-BY-STEP WITHOUT AUTOMATIC CLOSING	With DIP1=OFF and TC=MAX, the closing of the contact activates opening or closing operations in the following sequence: open-stop-close-open.
	OPENING WITH AUTOMATIC CLOSING	With DIP1=ON and TC<MAX, the closing of the contact activates the opening operation.
	OPENING WITHOUT AUTOMATIC CLOSING	With DIP1=ON and TC=MAX, the closing of the contact activates the opening operation. <i>NOTE: once the automation stops, the closing of the contact performs the opposite operation to the one performed before stop.</i>
1 — 6	N.C. SAFETY STOP	With 6▶4=ON, all operations are stopped and/or blocked when the safety contact is opened.
1 — 6	N.O. CLOSING	With 6▶4=OFF, the closing of the contact activates the closing operation.
1 — 8	N.C. REVERSE SAFETY CONTACT	The opening of the safety contact triggers a reversal of motion (re-opening) during closing.
1 — 9	N.C. STOP	The opening of the safety contact stops the current operation.
1 — 9	N.O. HOLD-TO-RUN FUNCTION	The opening of the 1-9 contact enables the hold-to-run function. - hold-to-run opening 1-5 [with DIP1=ON]; - hold-to-run closing 1-6 [with 6▶4=OFF]. <i>NOTE: any safety device, automatic closing and plug-in card inserted in AUX is disabled.</i>
0 — 11	N.C. CLOSING PROXIMITY LIMIT SWITCH	With DIP2=OFF, after the contact has opened, the closing movement stops on the mechanical stop. With DIP2=ON, the opening of the contact stops the opening operation.
0 — 12	N.C. OPENING LIMIT SWITCH	With DIP2=OFF, the opening of the contact stops the opening operation. With DIP2=ON, after the contact has opened, the closing movement stops on the mechanical stop.
PRG 	N.O. TRANSMITTERS STORAGE AND CANCELLATION	WARNING: the BIXMR2 storage module must be inserted. Transmitter storage: - press the PRG key (the SIG LED comes on), - transmit the transmitter to be stored (the SIG LED flashes), - wait 10 s to complete storage (the SIG LED goes out). Transmitter cancellation: - press the PRG key for 3 sec (the SIG LED flashes), - press the PRG key for another 3 sec (the SIG LED flashes quickly).







WARNING: make a jumper for all the N.C. contacts if not in use. The terminals with the same number are equal.




6. OUTPUTS AND ACCESSORIES







Output	Value - Accessories	Description
	24 V= 0.3 A	Accessories power supply. Power supply output for external accessories, including automation status lamp.
1 —  — 13	24 V= 3 W	Automation status lamp (proportional). The light switches off when the automation is closed; the light switches on when the automation is open; the light flashes with a variable frequency while the automation is operating.
0 —  — 14	LAMPH 24 V= 25 W	Flashing light. Activated during opening and closing operations. <i>NOTE: two LAMPH flashing lights with 24 V= 15 W bulbs can be connected.</i>
	LUXKBOX 230 V~ 25 W	Internal courtesy light. A courtesy light that turns on for 180 s with every opening (total or partial), step-by-step and closing command can be connected in series to the NO contact.
	230 V~ 100 W	External courtesy light. An external courtesy light that turns on for 180 s with every opening (total or partial), step-by-step and closing command can be connected.
AUX		The control panel has one housing for plug-in cards such as a radio receiver type, magnetic loops, etc. Plug-in card operating is selected using DIP1. <i>WARNING: the plug-in cards must be inserted and removed with the power supply disconnected.</i>
	BIXMR2	The storage module allows remote controls to be stored. If the control panel is replaced, the BIXMR2 storage module being used can be inserted in the new control panel. <i>WARNING: the storage module must be inserted and removed with the power supply disconnected.</i>
		Motor-encoder connection. Connect the motor and encoder to the control panel by means of the supplied cables.
	BATK4 2x12 V 1.2 Ah	Battery operating. The batteries are kept charged when the power supply is on. If the power supply is off, the control panel is powered by the batteries until power is re-established or until the battery voltage drops below the safety threshold. If this occurs, the control panel turns off. <i>WARNING: the batteries must always be connected to the control panel for charging. Periodically check the efficiency of the batteries.</i> <i>NOTE: the operating temperature of the rechargeable batteries is approximately +5°C/+40°C.</i>

7. ADJUSTMENTS

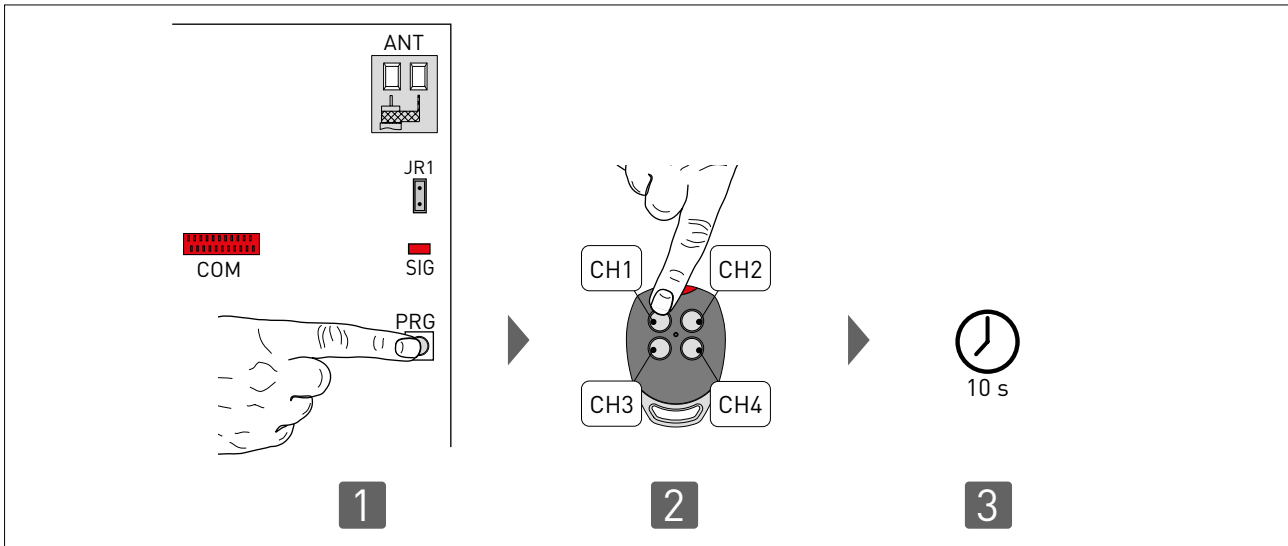
	Description	OFF 	ON 
DIP1	Command 1-5 operation. <i>NOTE: it also sets operating mode of the plugin cards connected on AUX.</i>	Step-by-step.	Opening.
DIP2	Motor installation position. The installation position is intended by viewing the automation from the side being examined.	Central or right side.	Left side.
DIP3	Restore automatic closing time.	50%	100%
DIP4	Automation status at power on. Indicates how the control panel considers automation when powered up.	Open. <i>NOTE: with limit switches installed, preferably set DIP4=OFF.</i>	Closed. <i>NOTE: if the automatic closing function is not used, preferably set DIP4=ON.</i>
DIP5	3 seconds preflashing.	Disabled during opening. Enabled only with automatic closing with TC>3 s.	Enabled for both opening and closing.

	Description	OFF 	ON 
JR3	Automation type.	2 motors automation.	1 motor automation.
JR4	Incorporated radio receiver.	Disabled.	Enabled.
SO	Reversal safety switch function.	With the automation blocked, if the contact 1-8 is open, it is possible to activate the opening operation.	With the automation blocked, if the contact 1-8 is open, any operation is impossible.
6▶4	Command 1-6 operation.	Closing.	Stop.

Trimmer	Description
VA-VC 	Opening speed adjustment. Adjusts the opening speed. Closing speed adjustment. Adjusts the closing speed.
TC 	Setting automatic closing time. From 0 to 120 s. With DIP3=OFF, once a safety switch has been activated, the counter starts as soon as the safety switch is released (for example after passing through the photocells), and lasts for a period of time set with trimmer TC (50%). With DIP3=ON, the counter starts when automation is opened and lasts for the entire duration set with trimmer TC (100%). <i>NOTE: after the activation of the stop command, once contact 1-9 has closed again, automatic closing is only enabled after a total, partial or step-by-step opening command.</i>
R1 	Obstacle thrust adjustment. The control panel is equipped with a safety system that stops motion if an obstacle is encountered during an opening operation and inverts the movement during a closing operation. R1=MIN gives maximum obstacle sensitivity (minimum thrust). R1=MAX gives maximum thrust.

LED	On	Flashing
IN 	Receipt of command or change in status of a dip-switch.	/
SIG 	Transmitter enabling/storage phase.	<ul style="list-style-type: none"> • Reception of a radio transmission of a stored transmitter. •• Reception of a radio transmission of a not stored transmitter. ••••• Cancellation of transmitters in progress. •••• Memory damaged.
11 	0-11 limit switch contact is open.	/
SA 	At least one of the safety contacts is open.	<ul style="list-style-type: none"> ••••• Safety test failure (terminal 41). Operations count performed (only when control panel is switched on): <ul style="list-style-type: none"> • = 1000 operations •••• = 10000 operations
12 	0-12 limit switch contact is open.	/
POWERALARM 	Power supply on.	••••• Encoder not working.

8. RADIO RECEIVER OPERATION



The control panel is equipped with a radio receiver with a frequency of 433.92 MHz.

The antenna consists of a rigid wire, 173 mm long, connected to the ANT clamp.

It is possible to increase the range of the radio by connecting the antenna of the flashing lights, or by installing the tuned BIXAL antenna.

NOTE: to connect the external antenna to the control panel, use a coaxial cable type RG58 (max 10 m).

Check that the storage module is inserted on COM connector of the control panel.

Up to 200 remote controls can be stored in the storage module.

WARNING: if the radio receiver on the control panel is not used, set JR4=OFF and remove the storage module.

Transmitter storage:

- press the PRG button on the radio receiver or on the control panel; the SIG LED lights up;
- make a transmission by pressing one of the desired CH buttons of the transmitter (within the range of the radio receiver). The transmitter is now stored. During this phase, the SIG LED flashes. When the SIG LED is again lit up, it is possible to validate another transmitter. Validate all the new transmitters by making a transmission as indicated;
- you automatically exit the procedure 10 s after the last transmission, or you can press the PRG button again (the SIG LED goes off).

Up to four CH keys of a single remote control can be stored:

- if only one (any) CH key of the remote control is stored, command 1-5 (step-by-step/opening) is carried out;
- from two to four CH keys of a single remote control are stored, the functions matched with the CH keys are as follows:
 - CH1 = command 1-5 step-by-step/opening;
 - CH2 = partial opening command;
 - CH3 = command to switch on/off the courtesy light;
 - CH4 = stop command, equivalent to impulsive command 1-9.

Transmitter cancellation:

- keep pressed for 3 s the PRG button on the radio receiver or on the control panel, the SIG LED begins to flash;
- to erase all the transmitters from the memory of the radio receiver keep pressed for 3 s again the PRG button;
- to erase a single transmitter, press one of the previously stored CH keys of the transmitter to be erased;
- the cancellation is confirmed by the quick flashing of the SIG LED.

For further information see the user manual for GOL series transmitters.

If the control panel is replaced, the storage module being used can be inserted in the new control panel.

WARNING: the storage module must be inserted and removed with the power supply disconnected.

9. START-UP



WARNING *The operations in point 4 are performed without safety devices.
The trimmer can only be adjusted with the automation idle.*

- 1- Make a jumper for the N.C. safety contacts.
- 2- If installed, adjust the opening and closing stop limit switches.
NOTE: limit switches must be kept pressed until the operation has been completed.
- 3- Set TC=MAX.
Use DIP2 to set the installation position.
- 4- Switch on and check that the automation is operating correctly with subsequent opening and closing commands.
If installed, check that the limit switches are activated.
- 5- Connect the safety devices (removing the relative jumpers) and check they work correctly.
- 6- If required, adjust the automatic closing time with the TC trimmer.
WARNING: the automatic closing time after a safety device has triggered depends on the DIP3 setting.
- 7- Set the desired opening and closing speed using the VA and VC trimmers.
- 8- Set the obstacle thrust with the R1 trimmer.
WARNING: after adjusting check that the working forces exerted by the door wings are compliant with EN12453-EN12445 regulations.
- 9- Connect any other accessories and check they operate correctly.



NOTE: *in the event of servicing or if the control panel is to be replaced, repeat the start-up procedure.*

10. TROUBLESHOOTING

Problem	Possible causes	Remedy
The automation does not open or close.	No power. (POWER ALARM led off).	Check that the control panel is powered correctly.
	Short circuited accessories. (POWER ALARM led off).	Disconnect all accessories from terminals 0-1 (voltage must be 24 V $\overline{\text{—}}$) and reconnect one at a time.
	Blown line fuse. (POWER ALARM led off).	Replace F1 fuse.
	Safety contacts are open. (SA led on).	Check that the safety contacts are closed correctly (N.C.).
	The remote control does not work.	Check the correct memorization of the transmitters on the incorporated radio. If there is a fault with the radio receiver that is incorporated in the control panel, the radio control code can be read by removing the storage module.
	Photocells are activated. (SA led on).	Check that the photocells are clean and operating correctly.
External safety devices not activating.	Incorrect connections between the photocells and the control panel.	Connect N.C. safety devices together in series and remove any bridges on the control panel terminal board.
The automation opens/closes briefly and then stops.	Encoder disconnected, false encoder contacts, encoder fault. (POWER ALARM led flashing).	Check that the encoder is connected correctly, clean the contacts by connecting and disconnecting the encoder plug on the contacts, replace encoder.
	Motor leads crossed. (POWER ALARM led flashing).	Check the motor leads.
	There is friction.	Manually check that the automation moves freely, check the R1 adjustment.
The remote control has limited range and does not work with the automation moving.	The radio transmission is impeded by metal structures and reinforced concrete walls.	Install the antenna outside.
		Substitute the transmitter batteries.



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