AUTOMATION SYSTEMS

Version 1.3

ENGLISH

CONTROLLER FOR GARAGE OPENER

Connection and programming manual

GO801/1001-CB

dtm SYSTEM

www.dtm.pl

CE

SAFETY OF THE IMPLEMENTATION OF THE AUTOMATION SYSTEM

Before starting the installation, carefully read the entire installation and operation manual of the product. Non-observance and non-compliance with the notes in this manual may lead to an accident, resulting in personal injury or material damage.

The controller ensures correct and safe operation only if the installation and use comply with the following safety rules. DTM System is not responsible for accidents resulting from improper use or unprofessional installation of devices.

- Do not leave packaging materials within the reach of children, as they are potentially dangerous;
- This product has been designed and manufactured solely for the intended use described in this documentation. Using it for any other purpose may adversely affect the technical condition and operation of the device, and is a potential source of danger;
- The DTM System company is not responsible for the consequences of improper and inconsistent with the intended use;
- Do not install the device in an environment characterized by an increased risk of explosion or the presence of aggressive air;
- Automatic gates should comply with the standards, as well as with any applicable local regulations, they must comply with the requirements of EN 12604;
- DTM System is not responsible for the consequences of design defects of the driven elements or for their deformation that may occur during use;
- Installation must comply with the requirements of standards EN12453;
- Before starting any work on the system, disconnect all power sources;
- The electrical installation to which the automation is connected must comply with the applicable standards and be properly made;
- The installer should provide the device with a residual current device ensuring that the devices are cut off from the main power supply. The standards require a separation of the contacts of at least 3mm in each pole (EN60335-1). It is recommended to use a 6A thermal fuse with a circuit breaker for all circuits;
- Make sure that the power circuit is protected with a residual current device;
- Safety mechanisms (standard EN12978) provide protection against the risks associated with the movement of moving mechanical parts, such as crushing, snagging and detachment;
- The DTM System company does not guarantee the safety and efficient operation of the device in the case of using components that are not products offered by DTM System;
- Only genuine parts should be used for servicing;
- Do not modify the device components in any way;
- The end user should be informed about the method of operation, handling in case of failure and about the dangers resulting from using the device
- The device may only be operated by properly trained adults;
- Control devices should be kept out of the reach of children in order to protect the automation system against accidental activation;
- The device may only be serviced by qualified personnel;
- During assembly or repair work, be careful not to wear jewelry, watches or loose clothing;
- After installation, it is necessary to check that the device is correctly set up and that the controlled devices and the safety system are working properly;
- Crush or injury protection systems (e.g. photocell systems) must work properly after the drive has been mounted and connected to the mains;
- The radio remote control may only be used when a safe force value is set;
- The radio remote control may only be used if it is possible to observe the door movement and there are no people or objects in the movement area.

SAFETY IN THE USE OF THE AUTOMATION SYSTEM

Non-observance and non-compliance with the notes in this manual may lead to an accident, resulting in personal injury or material damage. Please read the following warnings carefully. The gate drive ensures correct and safe operation only if the installation and use comply with the following safety rules. DTM System is not responsible for accidents resulting from improper use or unprofessional installation of devices.

- During the operation of the automation system, both children and adults must keep a safe distance from the operating automation.
- The automation system can only be operated by properly trained adults.
- Control devices should be kept out of the reach of children in order to protect the automation system against accidental activation.
- Movement between the gate leaves is allowed only when it is fully open.
- Movement of the automation components should not be impeded, all obstacles hindering the movement should be removed.
- Signal lamps and signboards must be efficient and clearly visible.
- Manual operation of the system is only possible when the power supply is disconnected.
- In the event of a failure, disconnect the power supply and then call the service center for necessary repairs.
- Do not perform any repairs or maintenance of the device yourself. The device may only be serviced by qualified personnel.
- Make sure that the persons who install, maintain or operate the device follow these instructions. Keep these instructions in a place where you can refer to them quickly when needed.

1. General information

The controller enables both remote and manual control of the garage actuator. Thanks to the safety inputs and the amperometric function, it meets the requirements of safety standards in gate automation.

2. Technical data GO801/1001

- power supply:	230-240V AC 50/60Hz
- nominal power:	235/245W
- work intensity (cycles per hour):	4min ON, 36min OFF
- temperature range:	-20 ° C to + 40 ° C
- built-in lighting, lighting time:	permanent LED, 3min.
- frequency:	433MHz or 868MHz
- auto-closing time:	1-9 minutes, adjustable every 1 minute.
- overload protection:	programmable with the possibility of adjusting the value of the overload threshold in the range of 3-1, reverse and stop when closing, stop when opening
- remotes memory:	20 remote controls
- automation control:	NO type wall switch / radio remote controls
- input for safety devices:	photocell and open door sensor (or the 'Stop' button), NC type, factory installed jumpers
- accessories power output:	+ 12VDC max. 800mA
- signaling output (lamps):	+ 35V DC max. 500mA active when the engine is running
- working modes:	step by step, closing after time
- deceleration function:	soft start and stop
- maximum gate movement speed:	180mm / s
- photo input operating mode:	reverse when closing
- Ingress Protection Rating:	IP-20
- emergency power supply (backup):	connector for an external battery 24V / 3.5Ah

3. Installation

3.1. Important reminder

CAUTION! Electrical installations and automation of the drive must be performed by experienced and qualified personnel in accordance with applicable legal regulations. There is a dangerous voltage of 230V 50Hz in the devices, therefore all connections must be made with the voltage switched off. The installer's task is to mount the system safely enough to minimize the risks associated with its use. Anyone who installs the device without complying with all applicable regulations is responsible for any damage that the device may cause.

3.2. Description of the individual elements of the controller

The drive head consists of a motor and a controller in one housing. In order to start them, make appropriate electrical connections of safety and control elements (accessories connector), properly power the drive (230VAC power plug) and program the controller using buttons on the control panel.
The presence of the supply voltage is indicated by the lighting of the LED display. If the '-' symbol is displayed, it means that no force settings are programmed. If the drive is programmed the display will show "u".

CAUTION!
The control panel settings that are not adjusted to the installation conditions may soon lead to its destruction and loss of warranty! After completing the stage of creating the installation and connecting devices, it is necessary to program the control panel so that its operating parameters can be adapted to the current installation. In particular, always define the end positions of the gate and set the power during the learning process. Alternatively, after learning, you can increase the overload protection threshold. The intended connections must be strictly adhered to. If there is any uncertainty as to the correctness of the connections, it is recommended to verify them based on the relevant technical sheets of the devices to be installed. Incorrect connections may cause serious damage to the controller and other devices.

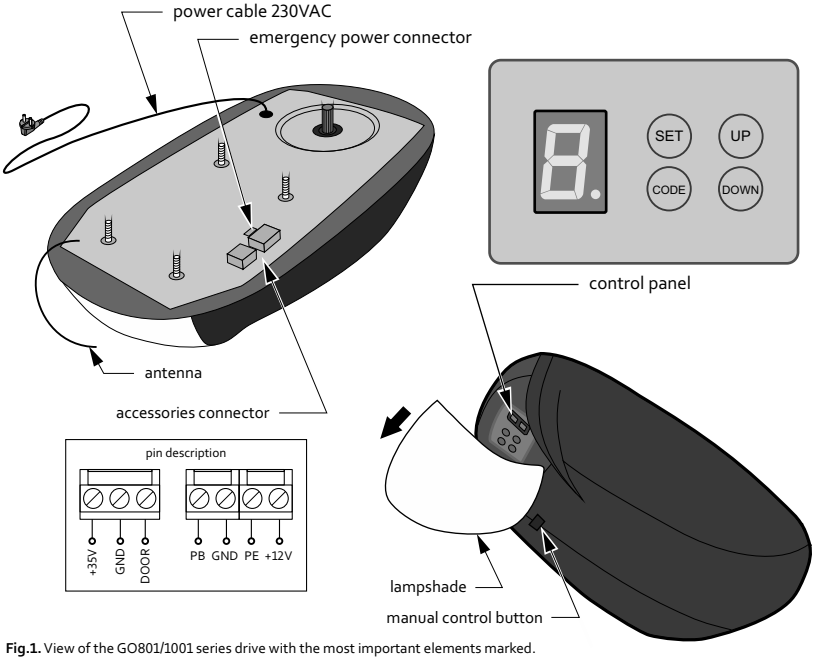

Fig.1. View of the GO801/1001 series drive with the most important elements marked.

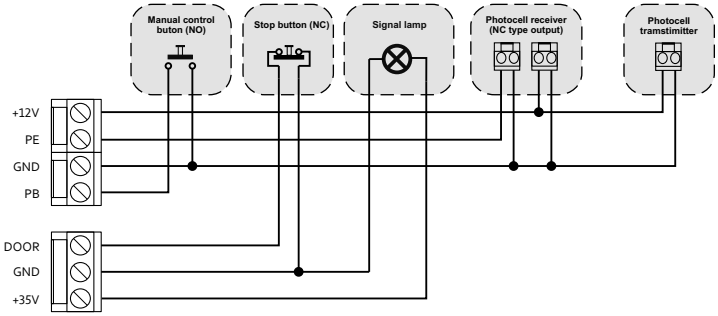

Fig.2. Connection of accessories diagram to GO801/1001 drive.

3.3. Description of electrical connections of GO801/1001-CB controller, figure 2

3.3.1. Mains supply, plug 230VAC, 50Hz

The drive is powered from a socket located maximum 0.5 m from the drive head.

3.3.2. 12V accessories power supply

The power supply for accessories is provided on the terminals + 12V (DC) and GND. The maximum output load is 800mA.

3.3.3. Photocells connection

Connect the photocells to the PE and GND terminals. The photocells work in reverse mode when closing. The PE input can be enabled / disabled in the controller menu.

3.3.4. Manual control

The additional manual control button is connected to the PB and GND terminals. Momentary button of NO type must be connected. The input only works in step by step control (SBS) mode. As standard, the manual control button is located on the drive head, figure 1.

3.3.5. Security of additional doors

Connect the closing sensor of the additional door in the gate or the "stop" button to the DOOR and GND terminals. The input is of the NC type.

3.3.6. Signal lamp

A lamp signaling the gate movement can be connected to the terminals + 35V and GND (max. 500mA). The output is active when the drive motor is running.

3.3.7. Backup battery

The drive is adapted to be connected via a dedicated connector to a 24V / 3.5Ah battery as an emergency power supply.

4. Programming the GO801/1001-CB controller

Programming is carried out by means of a seven-segment LED display and SET, CODE, UP, DOWN buttons located on the drive's panel, figure 1.

In the factory, the controller does not have the load characteristics saved, therefore it is required to carry out learning. **Without the learning, the automation will not start.** Lack of learning is signaled on the display by a message in the form of the symbol '-'.

4.1. Programming the controller settings

4.1.1. Determine the end positions of the gate and determine the force (drive learning)

Press the SET button and hold it down until the LED display shows "1", then adjust the top position of the door by pressing the UP button and correcting with the DOWN button to determine the final top end position. Then press the SET button and the display will automatically change to "2". Set the lower gate position by pressing the DOWN button. Make any corrections by pressing the UP or DOWN buttons. Then press the SET button. The drive will automatically execute a full cycle (open and close) to set the obstacle collision overload thresholds.During the opening and closing cycle of the automatic learning process, make sure that the passage of the gate is not impaired in any way. If the gate, after programming during normal operation, does not complete the full opening / closing cycle, stops or reverses, repeat the learning procedure. **In order for the learning to end correctly, it is necessary to complete all stages.**

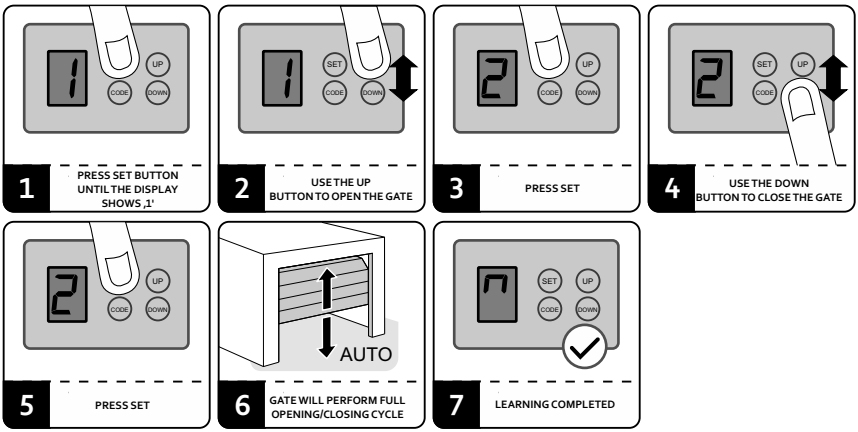

Fig. 3. The drive learning process.

4.1.2. Overload adjustment

The drive has an overload protection in accordance with the PN-EN 12453 standard. If there is resistance during door operation, the drive stops and reverses when closing and stops when opening. The overload value is set to 3 by the manufacturer and is independent of the self-learning measurements. It should be remembered that the set force of the overload protection should be the minimum force at which the gate performs a complete opening / closing cycle. It is possible to adjust the motor current overload threshold in the range of 3-1.
To adjust the overload, keep the SET button pressed until the display shows 3. Use the UP and DOWN buttons to set the desired value. Confirm with the SET button.

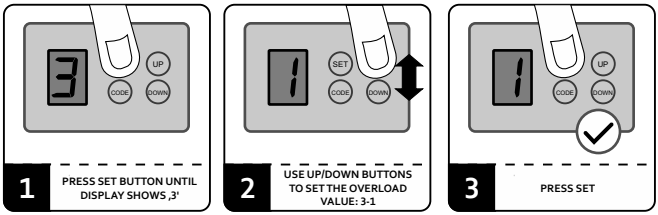

Fig. 4. Overload programming.

4.1.3. Activating / deactivating the photocell

Keep the DOWN button pressed to activate or deactivate the photocell input.
'II' or 'H' will appear on the display. Use the UP and DOWN buttons to turn on - 'H' or turn off 'II' the photocell. Confirm with the SET button.

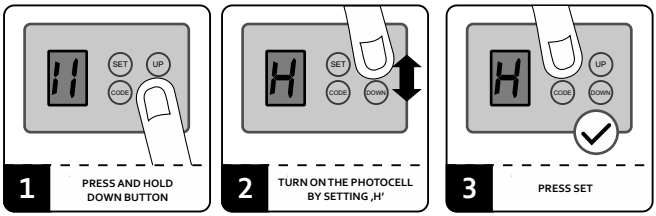

Fig. 5. Turn on/off photocell input.

4.1.4. Auto-closing time

It is possible to set a time for automatic closing of the gate. When the timer is active, the countdown starts only when the gate is fully open. The time is set in minutes from 0 to 9.

To activate / deactivate the auto-closing time, hold down the UP button. The display will show the current value of the auto-closing time. Use the UP and DOWN buttons to set the required value, where 0 means switching off the function, and values from the range 1-9 - the time in minutes after which the automatic closing will start. Confirm with the SET button.

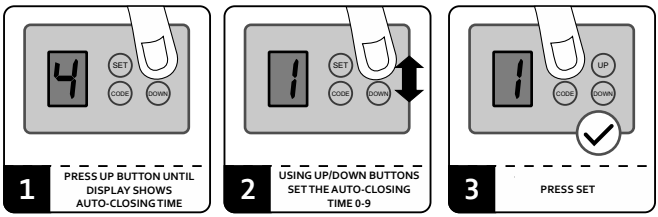

Fig. 6. Auto-closing time programming.

Drive will not proceed auto-closing when it encounters an obstacle.

4.2 Remote controls menu

4.2.1. Adding a remote control button

To add a button of the remote control, press and hold the CODE button until the dot starts blinking on the display. Press twice the button of the remote control to be added to the controller. After the signal is received for the first time, the dot will turn off, and after the second signal, it will start flashing more frequently. After adding the remote control, the controller will switch to the operating mode. Memory of 20 transmitters. Adding subsequent transmitters causes overwriting of the initially added ones.

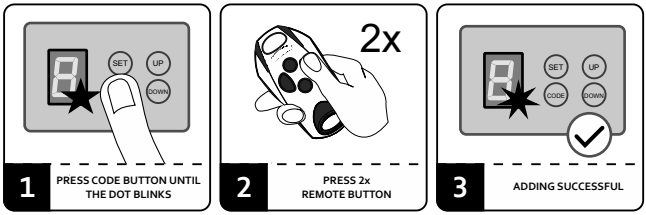

Fig. 7. Adding a remote control button.

4.2.2. Deleting the remote control memory

To remove all remotes added to the controller, press and hold the CODE button for 8 seconds. First, the dot flashes on the display, indicating the process of deleting the remotes memory, then the 'C' symbol will appear, indicating that the remotes are removed from the memory.

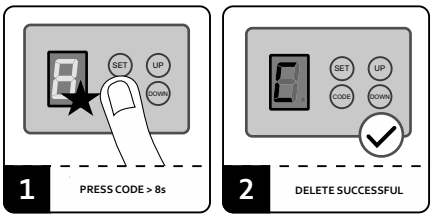

Fig. 8. Deleting the remote control memory.

5. Acceptance tests

5.1. General remarks

After installing the controller and all cooperating devices, especially safety devices, final tests should be made in order to check the entire automation. These tests should be performed by competent personnel who are aware of the risks involved! Particular attention should be paid to the mechanical aspects of the door in accordance with the EN 12604 standard, safety devices in accordance with EN 12978 and the safety of use of motorized doors in accordance with EN 12453. Final tests are the most important phase in the implementation of automation. Individual components, such as the motor, photocells, etc., may require specific checks and therefore it is recommended to follow the checking procedures in the manuals for the relevant components.
If you do not want to install safety devices, remember to permanently short-circuit the terminals for safety devices. The absence of a bridge will prevent any movement of the drive.

5.2. Final attempts

5.2.1. Direction of movement control

Check that the automation is physically moving in the right direction. If movement is in the opposite direction or there is no movement, check the correctness of installation and/or electrical connections. You may need to rerun the programming procedure.

5.2.2. Safety devices control

If photocells are installed, the photocell must be violated manually and the reaction of the drive must be checked. Similarly, check other safety devices, if present.

5.2.3. Checking the functions controlling the movement of the actuator

Check remote control buttons and/or manual control button. After the next impulses from the buttons, the correct sequence of gate movement should be performed.

5.2.4. Overload protection control

After starting gate closing, physically block the movement of the gate leaf. This should be done safely and with increased caution. The force needed to block the gate in such a way that the controller automatically stops the gate movement should be assessed. Repeat the process for the opening direction. If necessary, correct the set force value. After correcting the setting, perform the above test again. The force necessary to block the gate, which will cause the actuator to switch off automatically, must be small enough so that the gate does not cause a risk of injury (especially to the child).

If the overload protection does not provide a satisfactory effect, other safety devices must be used (e.g. safety edges, additional photocells, etc.).

DISPOSAL

Electrical and electronic devices must not be disposed of with household waste. The correct disposal of the device enables the preservation of the Earth's natural resources for longer and prevents the degradation of the natural environment.

WARRANTY

DTM System provides the devices that are operational and ready for use. The introducer grants a warranty on the basis of a correctly completed warranty card and sales document. The introducer undertakes to repair the device free of charge, if during the warranty period there were defects caused by the introducer's fault. The defective device must be delivered to the place of purchase, including a copy of the proof of purchase, a correctly completed warranty card and a short, unambiguous description of the damage. The cost of disassembly and assembly of the device is borne by the user. The warranty does not cover batteries in remote controls, any damage resulting from improper use, unauthorized adjustments, alterations and repairs as well as damage caused by lightning, overvoltage or short circuit of the power supply network. The detailed terms and conditions of granting a guarantee are regulated by relevant legal acts.

CE DTM System hereby declares that the device complies with Directive 2014/53/EU; 2014/30/EU; 2014/35/EU; 2006/42/EG. The full text of the EU declaration of conformity is available at the internet address: **www.dtm.pl**

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