

AUTOMATION SYSTEMS

Document version 1

ENGLISH

MOVATIC232

DOUBLE-LEAF GATE CONTROLLER

Installation, commissioning and use instructions
for the installer and user.



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1. Introduction

The MOVATIC232 gate controller is used to control the drives of double-leaf gates, powered by alternating voltage 230V, 50Hz, with a power of max. 2 x 350W. It works with actuators equipped with open limit switches. Can operate in conjunction with actuators equipped with open position limit switches. The controller is configured via the controller menu using the LED display and push buttons. The controller has the function of slowing down the movement while stopping and regulating the power of the actuators. The control panel allows you to set automatic closing of the gate after a time and / or photo-closing (activated after the photocells are violated and released again). MOVATIC232 has an output for a 12 / 24V DC gate bolt and an additional output controlled by a radio button, which can work in bistable or monostable mode, intended for switching an external device. Radio control takes place via the DTM868MHz and optional 433MHz series transmitters.

2. Technical data

Basic parameters

• Power supply	230V AC, 50 Hz
• Power consumption in stand-by mode:	<0.5W
• Operating temperature (min./max.)	-20°C /+55°C
• External dimensions of the casing (W x D x H)	240 x 120 x 190 mm
• Mounting method	surface-mounted housing
• Enclosure	IP-66

Outputs / inputs

• Actuator output (voltage / maximum power / built-in capacitor / quantity)	230VAC / 2 x 350W / none / 2
• Signal lamp output	OC max. 24VDC/6W
• Peripheral power supply output (photocells, etc.)	24V DC, 0,5A
• Power output for photocell transmitters	OC type
• Gate bolt output	12 / 24V DC, 4 sec. when opening
• Additional output in bistable / monostable mode AC/DC	relay (potential-free), max.1A/30V
• Photocell inputs / quantity	programmable, NC type / 2
• Manual control input	programmable, NO type
• Manual control STOP input	NC type

Functions

• Adjustable opening and closing time / soft stop phases	yes
• Adjusting the power of the actuators	yes
• Second leaf delay adjustment	yes
• Gate auto-closing function	0,1..9,9min.
• Photo-closing function	0,1..9,9min.
• Photocell test	yes
• Device configuration memory	non-volatile

Radio control

- Frequency 868MHz
- Antenna input impedance 50ohm
- Antennas wire, terminals for external antennas
- Memory capacity 35 remotes
- Remote configuration assigning function to remote control button
- Possibility to erase all memory yes
- Possibility to delete a single remote control yes
- Possibility to add a remote control without interfering with the controller yes, the function of remote assigning the remote control
- Blocking the remote assigning function yes

Additional Modules

- Radio Module 433MHz SHR433

3. Installation

3.1. An important reminder

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 device, all connections must be made with the voltage turned off. The controller is classified in the category of "Automatic gates and doors" devices, requiring special care for safety considerations. The installer's task is to mount the system safely enough to minimize the risk of 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 device and installation method

The controller includes a motherboard and a housing. The housing has four points for mounting it on a vertical surface [1] and cable glands on each side. The main board (fig. 2) should be screwed to points [2] in fig. 1. The controller housing has an IP66 tightness degree. The cables should be led to the device through the lower part of the housing. When making holes in the housing, remember to ensure the required degree of "IP" tightness.

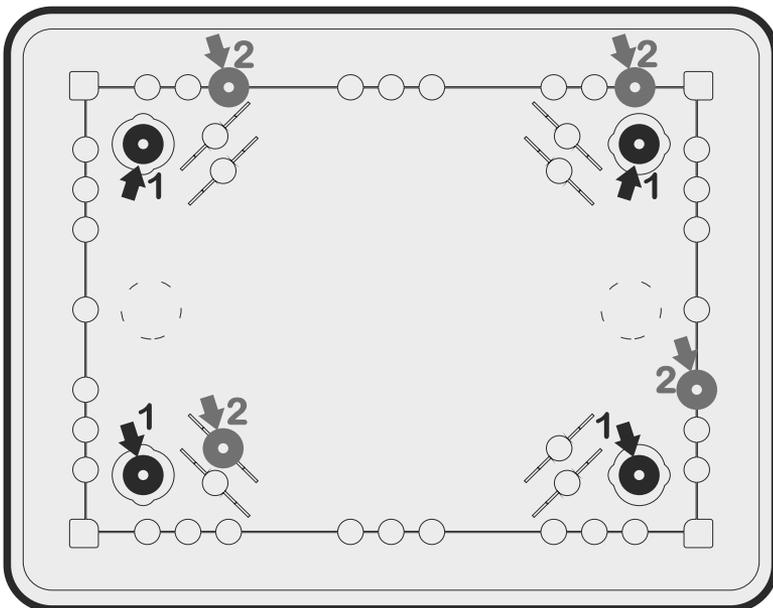


Fig.1. View of the controller housing, with the mounting locations for the housing [1] and the controller mounting locations [2] marked.

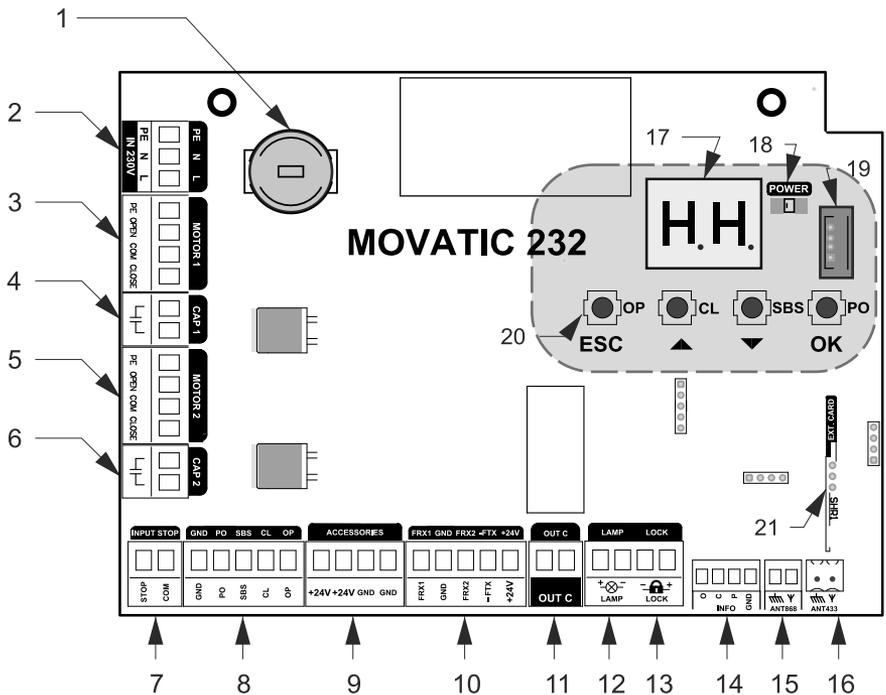
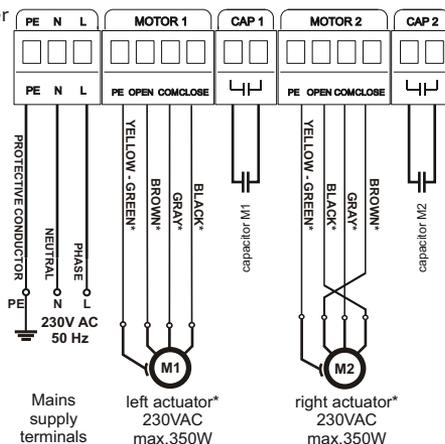


Fig.2. View of the controller motherboard with the most important elements marked.

1. time-delay fuse (4A / 250V, T)
2. connector for connecting 230V AC power
3. connector for connecting the motor 1
4. connector for connecting the motor capacitor 1
5. connector for connecting the motor 2
6. connection for motor capacitor 2
7. connector for connecting the STOP button (NC)
8. connector of manual control buttons
9. +24 VDC / max.10W accessory power connector
10. connector for connecting the photocell outputs and for the phototest function
11. additional relay output (NO)
12. LED lamp connector / max.6W
13. gate lock output 12/24VDC
14. signal output connector
15. connector for 868 MHz antenna
16. connector for 433 MHz antenna (optional)
17. LED display
18. power status LED indicator for controller (POWER)
19. programming port for MEMO programmer
20. user interface buttons
21. connector for 433 MHz module (optional)

Fig.3. View of the terminals for connecting the controller power supply and connecting the motors with capacitors.



* referst to the DTM300/400/600

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 in order to adjust its operating parameters to the current installation, in particular always adjust the power of the actuators and program the opening and closing times.

The intended connections must be scrupulously observed. In case of uncertainty, do not try, but read the relevant detailed technical sheets of the installed devices. Incorrect connections may cause serious damage to the controller and other devices. **DO NOT CONNECT ADDITIONAL MOTORS PARALLELLY**

3.3. Description of the electrical connections of the controller

Connection to the 230VAC electrical network may only be performed by a qualified specialist with appropriate authorizations. The delivered controller is immediately ready for operation. Connect all installed additional protection and control devices to the appropriate terminals in accordance with the connection diagrams.

3.3.1. Mains supply terminals 230VAC, 50Hz (L, N, PE)

This connector is intended to connect the controller power supply from the 230VAC, 50Hz mains. The power supply circuit to which the controller will be connected should be equipped with a switch that cuts off the power supply to the control board. As a standard, the phase conductor is connected to the L terminal, the neutral conductor to the N terminal, and the protective conductor (yellow-green) to the PE terminal.

3.3.2. Terminals for connecting the MOTOR 1 and MOTOR 2 actuators (PE, OPEN, COM, CLOSE)

The actuator that opens first (important when the leaves close "overlap") should be connected to the **MOTOR1** terminals. The second actuator should be connected to the **MOTOR2** terminals. Connect the actuator's opening wire to the **OPEN** terminal, the closing wire to the **CLOSE** terminal, the common wire to the **COM** terminal, and the actuator's protective wire shall be connected to the **PE** terminal.

Unused photocell inputs should be turned off by software.
NO terminals not used should be left unconnected.

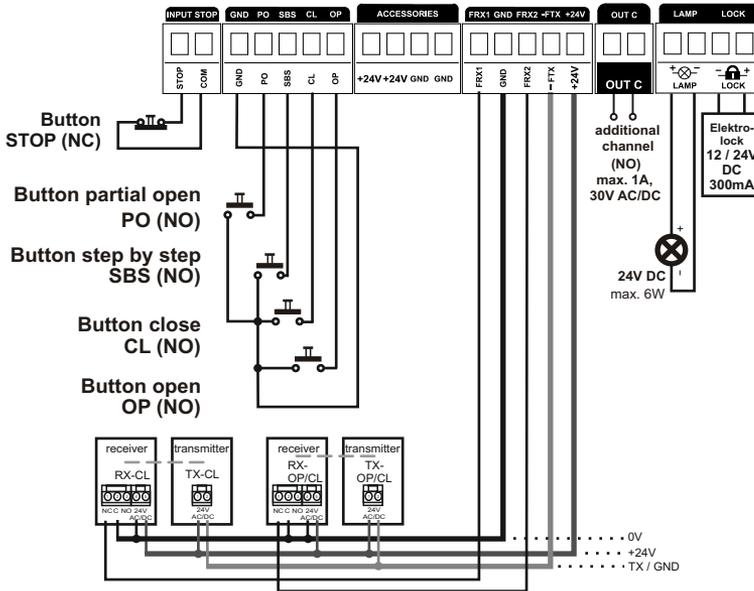


Fig.4. Diagram of connecting accessories to the BLUE232 controller.

3.3.3. Terminals for connection of CAP1 and CAP2 motor capacitors

Motor capacitors, appropriate for the given type of actuators, should be connected to CAP1 and CAP2 connectors.

3.3.4. Manual control terminal STOP

A momentary (monostable) NC type button should be connected to this terminal. The unused input should be shorted to the GND terminal or disabled in the controller menu. Violation of this input will cause an emergency stop of the gate.

3.3.5. Manual control terminals OP, CL, SBS, PO

A momentary NO type button can be connected to the OP terminal, which will activate OPENING. A momentary NO type button can be connected to the CL terminal, which will activate CLOSING. A momentary NO type button can be connected to the SBS terminal, which will control the automation SEQUENTIALLY in accordance with the settings in the controller menu. In this case, the gate can be opened, stopped and closed using the same button. The gate PARTIAL OPEN button (wicket function) can be connected to the PO terminal. All unused inputs should be left unconnected. The common terminal of the inputs is the GND terminal. Activation of the manual control button consists in pressing it momentarily (min. 0.1s).

3.3.6. Accessories power terminals 24VDC

The controller has 24VDC accessory power outputs with a maximum load capacity max. 10W.

3.3.7. Terminals for connecting photocell receivers FRX1 and FRX2

FRX1 and FRX2 inputs are dedicated to photocell receivers that perform the safety function during gate movement. Connect appropriately: FRX1 - output of the receiver of the first pair of photocells, FRX2 - output of the receiver of the second pair of photocells. In normal operation, the FRX1 and FRX2 input must be shorted to GND via the NC contact. An unused input should be disabled in the controller menu or connected to GND.

3.3.8. Photocell transmitters power output terminal -FTX (photo-test)

The transmitter power supply should be connected between the +24V and -FTX terminals, regardless of the use of the photo-test function. If the number of wires is limited, the connection to the -FTX terminal can be replaced with a connection to GND - however, in this case it is not possible to use the photo-test function. The power supply connection for the second pair of photocells should be done in the same way. When the photo-test function is turned on, the controller checks the correct operation of the photocells. This is done by controlling the reaction of the photocell receiver to the disappearance of the light beam from the transmitter. If everything is OK, the engine starts. If the procedure fails, the controller will report a failure, which is indicated by a signal lamp and LED display. The photo test must be set separately for each pair of photocells in the controller menu. **The photo-test function significantly increases the level of safety. The photo-test function is turned on in the controller's service menu.**

3.3.9. Signaling output terminals for connecting a signal lamp LAMP

Clamps are used to connect a 24V LED lamp with a maximum power of 6W. Connect it to the LAMP+ i LAMP-.

Lamp	Times	Description
	1s - 1s	gate / wicket during opening
	0,5s - 0,5s	gate / wicket during closing
	czas AF	countdown of the time until the gate / wicket closes
	+3s 0,25s - 0,25s	service inspection required
	3x 0,4s - 1s	check the operation of the photocells/phototest
	6x 0,4s - 1s	internal damage of the controller – service

Tab.1. Output operation method for signal lamps.

3.3.10. Additional output terminals (OUTC)

The controller is equipped with a relay with leaded NO contacts with a maximum load capacity of 30VAC / DC 1A, enabling the control of an additional device, such as an electrolock, additional controller, lighting (using an additional relay with an appropriate load capacity), etc. The output is switched on the remote control.

3.3.11. Clamps for connecting the gate bolt

The controller is equipped with an output that can control the 12 / 24V DC gate bolt. Remember about the maximum load capacity of the accessory power output, 10W in total.

3.3.12. Information output terminals INFO C, O, P

These are OC type outputs for connecting input modules of facility automation systems. The method of using information about the gate being closed [c], open [o] and in an intermediate position [p] depends on the user's needs. It may as well function as a control for road semaphores. The output load is 50mA, which is sufficient to control electromagnetic signaling relays. The output has a common GND terminal.

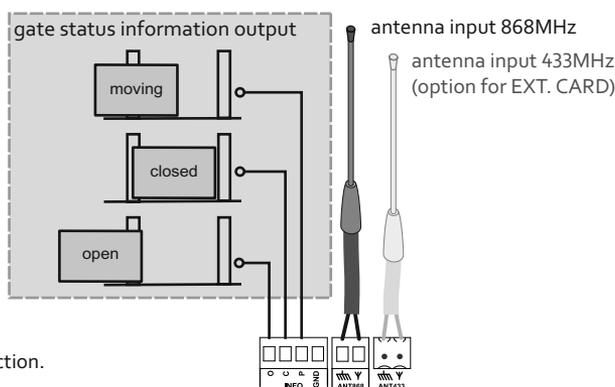


Fig.5. Controller terminals connection.

3.3.13. Remote control antenna terminals

The controller has two terminal sections for connecting an 868MHz antenna and an optional 433MHz antenna. An 868MHz wire antenna is installed as standard.

3.3.14. Radio card connector EXT. CARD

The controller has a connector for a radio remote control module operating at 433MHz. When installing the module, remember to connect the 433MHz antenna to the appropriate antenna socket of the controller.

3.3.15. MEMO programmer connector

Connecting the MEMO service programmer allows you to update the controller software. **In case of problems with updating the software, you can force the bootloader mode. To do this, press the "CL" button with the power off and, while still pressing the button, turn on the controller's power supply.** Manually forced bootloader mode is active for 10s. After this time, the controller returns to normal operation unless the program memory has been previously modified.

3.3.16. Energy saving – stand-by limited power consumption mode.

To increase energy efficiency under Directive 2009/125/EC, the controller automatically switches to limited power consumption mode 15 minutes after the end of the last work cycle. All 24V power outputs are switched off in this mode, reducing energy consumption. In situations where accessories require wake-up time from standby mode or a continuous power supply for external devices is necessary, the mode can be additionally adjusted using the "LP" function in the controller menu. The user can set a delay time in the range of 1 to 15 seconds or completely disable the standby mode.

4. Description of the controller's operation

After turning on the controller's power supply, it automatically switches to OPERATING MODE. In the operating mode, the current status of the controller and any errors are indicated by the LED display. The list of possible messages for an uncalibrated gate and a calibrated gate is presented in the table below.

No.	Gate calibrated	gate NOT CALIBRATED	Description of the drive / gate status
1		In	Drive inactive, gate learning required
2		o1 - blink	Learning in progress – Leaf 1 Opening
3		o1	Learning completed – Leaf 1 Opening
4		o2 - blink	Learning in progress – Leaf 2 Opening
5		o2	Learning completed – Leaf 2 Opening
6		c1 - blink	Learning in progress – Leaf 1 Closing
7		c1	Learning completed – Leaf 1 Closing
8		c2 - blink	Learning in progress – Leaf 2 Closing
9		c2	Learning completed – Leaf 2 Closing
10	CL	cL	The gate is closed
11	CL - blink		Gate dosing in progress
12	CL - blink L		The gate is closing - slowdown
13	CH		Gate stopped while closing
14	OP		The gate is open
15	OP - blink		Gate opening in progress
16	OP - blink P		The gate is opening - slowdown
17	OH		Gate stopped while opening
18	Fr		The gate is partially open - a wicket
19	E1		Drive inactive, short circuit in the motor circuit
20	E2		Drive inactive, STOP switch circuit interrupted
21	E2 - mruga		Gate stopped due to violation of the STOP switch circuit
22	E3		Drive inactive, check the operation of photocells/phototest
23	E3 - mruga		Gate stopped after photocell activation
24	E4		Drive inactive, protection circuit 8k2 violated
25	Er		During calibration, the engine operation time exceeded 5 minutes or the gate resistance was too high
26	PU		Drive inactive, gate position unknown(only effective during closing)

v.0.2

Tab.2. Possible indications on the controller display.

5. Controller programming

The drive is programmed using the "ESC", "v", "^", "OK" buttons located on the drive controller and the digital LED display.

5.1. Access to the controller menu and navigate through it

Access to the controller menu is obtained after entering the four-digit service code. The code must be entered from "left to right". Input begins by pressing any button. Then, change the digit values using the "^" or "v" button. To move to the next position to the right using the 'OK' button, and to the left (to the previous digit) using the 'ESC' button. After entering the code, confirm it with the 'OK' button, the first item in the controller menu should appear on the display. The factory service code is 1234.

Access to the controller menu is possible for another 5 minutes after the last exit from the menu. After this time, you will need to enter the service code again.

When in the controller menu, switching between functions is done using the "^"/"v" buttons. To enter the next menu level or to edit a parameter, press the "OK" button and confirm the changes with the same button. You can go back in the menu or exit without changes by pressing the "ESC" button.

5.2. First start-up - analysis of needs and efficient adjustment of drive settings

In order to efficiently carry out the controller programming process, the following sequence should be followed:

Step 1: Analyze the tables with individual controller settings and select the appropriate functions.

Step 2: Calibrate the gateway.

Step 3: Check correct operation and repeat programming if necessary.

No.	Controller function			Parameter	Factory settings	Definition	Description
	Grade 1	Grade 2	Grade 3				
1	cr/Cr				cr	<i>Calibration</i>	Gate uncalibrated - cr, gate calibrated - Cr, calibration reset 5x "OK"
2	Fr			oF, 1..40	40	<i>Wicket</i>	Gate tilting - wicket function: oF - disabled, 1..40% of full gate opening
3	bA				-	<i>Photocells</i>	Infrared barrier settings
4		F1/F2		F1, F2	-		Select photocell settings F1 or F2
5			oP	br/st/re	br	<i>opening</i>	Reaction when opening F1/F2: br - no reaction, st - stop, re - reverse
6			cL	br/st/re	br	<i>closing</i>	Reaction when closing F1/F2: br - no reaction, st - stop, re - reverse
7			Ft	on/oF	oF	<i>photo-test</i>	F1/F2 photocell phototest: on - turned on, oF - turned off
8			AF	oF, 0,1..9,9	oF	<i>auto-photo</i>	Auto closing after photo F1/F2: oF - disabled, 0,1...9,9 minutes from releasing the barrier to starting closing

Tab.3a. View of the functions available in the controller menu.

No.	Controller function			Parameter	Factory settings	Definition	Description
	Grade 1	Grade 2	Grade 3				
9	Ac			1..35	-	<i>motors</i>	Actuator settings
10		A1/A2			-		Selection of actuator A1 or A2
11			Po	30..100	30	<i>force</i>	Force
12			oE	0..10	4	<i>start op A1</i>	Opening delay (A1 only)
13			cE	0..10	4	<i>start cl A1</i>	Closing delay (A1 only)
9	PP			1..35	-	<i>Remote controls</i>	Programming the remote control (programming: function – button). At the end, the position number in which the remote control is saved is displayed.
10		op			-	<i>open</i>	Programming for the open function
11		cl			-	<i>close</i>	Programming for the close function
12		Sb			Sb	<i>in sequence</i>	Programming for the function step by step, open - stop - close - stop
13		Fr			-	<i>wicket</i>	Programming for the function: open the wicket, partial opening of the gate
14		St			-	<i>stop</i>	Programming for the stop function - stopping the gate
15		Cc			-	<i>out c</i>	Programowanie dla funkcji out c - dodatkowe wyjście przekaźnikowe
16	UP			1..35	-	<i>Delete remote</i>	Deleting a remote control from the indicated record in the controller memory
17	PF				-	<i>Remotes' memory</i>	Displays free positions in the remote controls' memory. After confirming 5x "OK", the remote control memory is deleted.
18	Au			oF, 0,1..9,9	oF	<i>Auto - closing</i>	Automatic gate / wicket closing time in minutes
19	SE				-	<i>Inputs</i>	Control sequence for controller inputs
20		St		on/oF/rE	oF	<i>stop</i>	Behavior of the STOP input in the controller: on - enabled, oF - disabled, rE - reverse and stop
21		Sb		oS/oc/or	oS	<i>sbs</i>	SBS control operation diagram: oS - open-stop-close-stop, oc - open-close, or - open-stop-close-revers
22	bL				-	<i>Blockages</i>	Blockages settings
23		Pd		on/oF	oF	<i>simple</i>	Blocking the function of simple adding remote controls
24		Zd		on/oF	oF	<i>remote</i>	Blocking the function of remote adding of remote controls
25	rG			oF/12/24	oF	<i>Signaling</i>	Function activates an electric lock before gate opening (12V or 24V supply)
26	Sr			of, 1...10	oF	<i>Sygnalizacja</i>	Signaling before gate movement: of - disabled, 1..10 signaling time in seconds
27	cC			bi/0,1..9,9	0	<i>out C</i>	Output C: bi - bistable, 0.1..9.9min. - monostable with specified duration
28	LC			0..9999	0	<i>Cycles</i>	Cycle counter. After exceeding the max. displayed, a dot also lights up. Clearing the counter - 5x "OK"
29	CP			of, 1...10	oF	<i>Service</i>	Service signaling threshold in thousands of cycles. Clearing the counter - 5x "OK"
30	Lo				-	<i>Slowdowns</i>	Correction of slowdown areas
31		L1/L2			-		A1 or A2
32			tc	-5..0.5	0	<i>closing</i>	Correction when closing: value x10cm
33			to	-5..0.5	0	<i>opening</i>	Correction when opening: value x10cm
34	Pn	0000	Pn (miga)	0000..9999	1234	<i>PIN</i>	Changing the installer code - entering the code twice to prevent mistakes
35	FA				-	<i>Settings reset</i>	Restoring factory settings without deleting the remote control memory - 5x "OK"
36	LP			oF/1..15	on	<i>Power</i>	Turn on/off Stand-by mode

v.1

Tab.3b. View of the functions available in the controller menu.

5.3. Adding remote controls to the controller

Remote control programming can be done in three ways.

1. Simple adding of remote controls using the controller buttons:

- press and hold the appropriate button on the controller: OP - open, CL - close, SBS - step by step, PO - gate;
- after 3 seconds, the appropriate message will start flashing on the display: "oP"/"CL"/"Sb"/"Fr";
- during this time (controller button still pressed), press the button of the added remote control;
- the selected function will be assigned to the selected remote control button;
- the remote control number in the controller memory will be displayed.

The procedure for simply adding remote controls will end after the remote control has been successfully added or after releasing the controller button. A given remote control button can be programmed multiple times, changing its function.

2. Remotely adding remote controls within the controller's radio range without viewing the controller:

- press and hold any button of the previously added remote control for 15 seconds;
- then, within 3 seconds, press any button on the remote control to be added for 15 seconds;
- if everything went correctly, the new remote control will have the settings of the remote control previously used in the remote adding procedure.

The procedure only works within the radio range of the controller to which we want to add the remote control!

3. Procedure for adding a remote control via the controller menu:

- enter the menu using the service code;
- go to the "PP" function;
- then select the function that the remote control button is to perform (OP - open, CL - close, SBS - step by step, PO - gate);
- press the selected remote control button;
- correct addition of the remote control is indicated by displaying the position in which it was saved and then by blinking the dot three times on the display;
- then the controller will return to the previously selected function, allowing you to add another remote control.

5.4. Changing or deleting remote control button settings

To change the button settings on the remote control, add the buttons to the newly selected functions again. If you do not want to use a previously added button, you should delete the remote control from the controller memory and, if necessary, re-add selected buttons of such a remote control in an appropriate way.

5.5. Deleting a remote control, erasing the remote control memory

Deleting a remote control can be done in two ways.

1. Deleting a single, selected remote control from the controller menu:

- enter the menu using the service code;
- go to the "UP" function;
- select the memory location where the remote control to be deleted is saved;
- press the "OK" button 5 times to confirm the remote control removal function.

2. Deleting all remote controls from the controller menu, deleting the remote control memory:

- enter the menu using the service code;
- go to the "PF" function;
- press the "OK" button 5 times to confirm the removal of the remote control.

5.6. Method of reaction of photocell inputs

Photocell operating mode settings:

- after entering the service code, go to the "bA" function in the controller menu;
- then select the input for which you want to make changes: F1 or F2;
- select the operating mode for opening: br - no reaction, st - stop, re - reverse, closing;
- select the operating mode for closing: br - no reaction, st - stop, re - reverse, opening;

Additionally, in the photocell settings you can: enable/disable the photo-test function and activate auto-photo closing (automatic closing of the gate if there are no barrier violations for a set period of time). Default photocell settings: F1 - disabled, F2 - disabled.

5.7. Programming the "width" of the wicket

Wicket function - after entering the service code, go to the "Fr" function in the controller menu. Select the percentage value of the opening width, assuming full gate opening as 100%. The adjustment range for opening in wicket mode is from 1% to 40%.

5.8. Programming the automatic gate closing function

Automatic closing - after entering the service code, go to the "Au" function in the controller menu. Select the time, in minutes, after which the gate will automatically close.

5.9. Gate calibration when the drive is first started

Before starting calibration, make sure that there are no obstacles in the gate's path. During calibration, the actuator operating times for opening and closing must be set. Be especially careful during calibration - all controller protections are inactive. A properly performed calibration procedure guarantees reliable and safe operation of the gate.

To calibrate the gate after complete drive installation:

Step 1: Turn on the power.

Step 2: Add a transmitter to the drive or connect an accessory to one of the control inputs, necessary to control the gate during the calibration process.

Step 3: Unlock the drive with the key. Set the gate leaf in an intermediate position. Then lock the drive.

Step 4: Use the transmitter or a connected accessory to initiate the movement of gate leaf 1. The leaf will start moving in the opening direction, and the LED display will show "o1" blinking. Then, each time one of the leaves reaches its end position, trigger the next gate reaction according to the sequence: o1 - blinking o2 - o2 - blinking c2 - c2 - blinking c1 - c1

Step 5: Calibration is complete when the gate is closed and the display shows „CL“.

Step 6: Check the selection of slowdown areas. The gate should move slowly before reaching its end positions. Correct slow areas if necessary.

Step 7: Check the proper operation of the photocells. Measure the force on the closing edge. Check whether the force limitation is consistent with the specifications given in Annex A of the PN-EN 12453 standard. The dynamic force of the main closing edge cannot exceed 400N in the area 50 cm from the post, 1400N in the remaining area, the dynamic time cannot exceed 750 [ms] according to the PN standard -EN12453. A significant improvement in the parameters in terms of dynamic forces can be achieved by using a special shock-absorbing rubber profile on the edge of the gate leaf.

5.10. Clearing automatic calibration. Recalibration of the drive.

Before performing this step, place the gate in an intermediate position or make sure you have the key.

If it is necessary to recalibrate the drive, first delete the previous calibration settings. After entering the service code, go to the "Cr" function in the controller menu. To delete the calibration, press "OK" 5 times. After deleting the calibration, the next start of the gate will start the calibration process, which should be carried out as in the case of the first start of the drive.

5.11. Additional slowdown correction

Correction of slowdown areas - after entering the service code, go to the "Lo" function in the controller menu. Then you need to select between leaf L1/L2, and then continue choose between correcting the slowdown area when opening - "to" or correcting the slowdown area when closing - "tc". Both areas can be adjusted from -5 (shortening) to 5 (lengthening). A single change in the "tc" or "to" parameters changes the slowdown area by approximately 10 cm. After each change of the slowdown area, the controller clears the calibration settings. It is necessary to perform automatic calibration again, starting with the gate in an intermediate position.

5.12. Factory settings of the controller

Restoring factory settings - after entering the service code, go to the "FA" function in the controller menu. To restore factory settings, press "OK" 5x. The factory setting values are shown in the function table. The function does **not erase** the remote control memory.

5.13. Menu protection code

Changing the service code: go to the "Pn" function in the controller menu. Then enter the new service code twice. Loss of the code will require sending the controller to the manufacturer's service center.

5.14. Drive diagnostics - irregularities during drive use

The drive controller is equipped with a number of diagnostic mechanisms that allow you to determine whether the drive requires technical inspection or repair. After properly configuring the controller, the need for service or repair will be automatically signaled.

The maximum value of the counters indicated on the display is 9999. After exceeding this value, if the indication is not cleared, a dot will be displayed next to the indication. To delete counters, enter the menu and select the appropriate counter and then press "OK." 5x.

The following diagnostic functions are available:

- **work cycle counter** - the work cycle includes the complete movement of the gate from closing to opening and back to closing;
- **service counter** - after how many cycles in thousands the drive should report the need to perform automation maintenance work at the signal lamp output.
- **signaling of drive errors via signaling output and LED display**- the meaning of individual messages is described in the table showing how the lamp works and the controller's message table. ***In such a case, the intervention of a qualified person is required if the cause of the automation failure cannot be clearly identified or resolved by the user.***

6. Checking the correct operation of the automation

After installing the controller and all associated devices, especially safety ones, final tests should be performed to check the entire automation. These tests should be performed by competent personnel who are aware of the existing hazards! Final tests are the most important phase in the implementation of automation. Individual components such as the motor, photocells, etc. may require specific inspections and it is therefore recommended to follow the inspection procedures contained in the instructions for the components concerned.

CAUTION! The gate, both when opening and closing, should provide the same resistance to the actuator. The plane of the gate should be positioned relative to the ground in such a way that there is no variation in resistance due to gravity forces when opening and closing the gate.

7. Automation unit maintenance

Activities that can be performed by a trained user after carefully reading the instructions provided with the product. For gates with electric drive, at least once every 3 months:

- check the correct adjustment of the limit switches,
- check the correct operation of electrical safety devices by simulating working conditions,
- check photocells - by simulating the conditions,\
- check the manual unlocking mechanism of the drive,
- check if the electrical cables show any signs of wear,
- regularly clean the photocell housing and the signal lamp cover,
- the batteries powering the transmitters should be checked/replaced at least once every 12 months.

DISPOSAL

Electrical or electronic devices cannot be disposed of with household waste. Proper disposal of the device allows you to preserve the Earth's natural resources for longer and prevents environmental degradation.

WARRANTY CONDITIONS

DTM System delivers 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 any defects occur during the warranty period due to the fault of the introducer. The defective device should be delivered to the place of purchase, including a copy of the proof of purchase, a correctly completed warranty card and a short, clear description of the damage. The cost of dismantling and assembling the device is borne by the user. The warranty does not cover batteries in remote controls, any damage resulting from improper use, unauthorized adjustments, modifications and repairs, or damage resulting from lightning, overvoltage or short circuit in the power supply network. Detailed conditions for granting guarantees are regulated by relevant legal acts.

DTM System hereby declares that the device complies with Directives 2014/53/EU, 2006/42/EC, 2014/30/EU, 2014/35/EU, 2009/125/EC. The full text of the EU declaration of conformity is available at the following internet address: www.dtm.pl





**PROJEKTOWANIE I PRODUKCJA
URZĄDZEŃ ELEKTRONICZNYCH**

DTM System

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