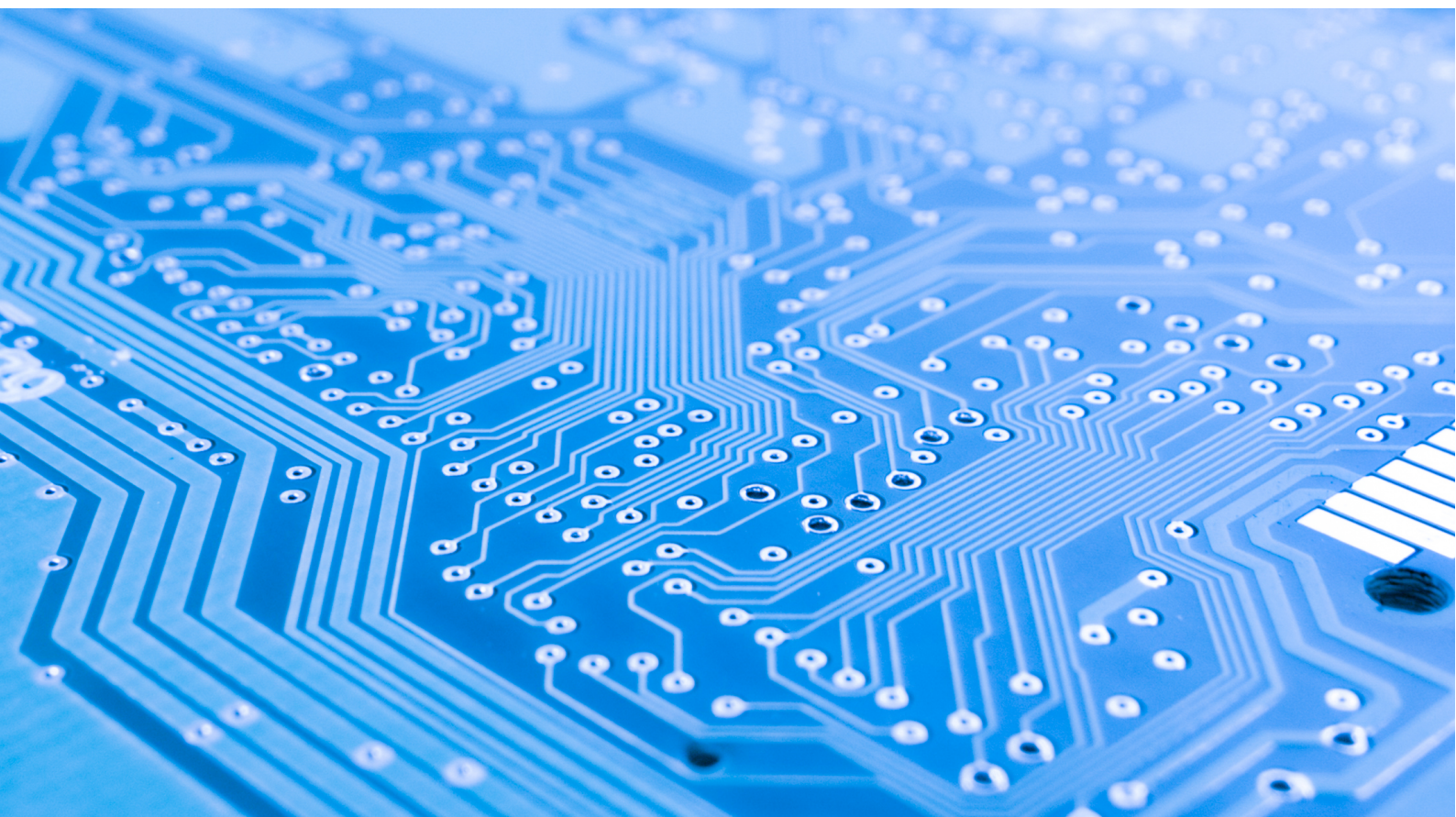




CONTROL MODULE

User's Manual

SG/BA3/BR2/GA SERIES DEVICES



EN

Complete documentation:

- GENERAL INFORMATION
- PEDESTRIAN TRAFFIC CONTROL
- DEVICE
- CONTROL MODULE
- MONTAGE
- MAINTENANCE AND SERVICE
- TECHNICAL DRAWINGS

Control Module User Manual

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MODULE'S SOFTWARE

Device's control logic is controlled by the device manufacturer's software. The manufacturer grants licence to using the software only in cooperation with the purchased device and in order to control it. The abovementioned licence is granted by the manufacturer for products purchased at the authorised distributors only. The licence is granted for:

1. The time of one month from the devices sales date (on the base of a trade credit).
2. An indefinite time – after the payment for the device has been made.

Changes or modifications to the software of whatever kind may be introduced by a detailed and written consent of the device manufacturer only. Making changes or modifications to the software without the manufacturer's consent are not covered by the licence regarding using the software. The manufacturer bears no responsibility for proper and safe operation of the device if changes of whatever kind have been made to the device's controlling software, without the device manufacturer's consent.

The manufacturer reserves the right to introduce changes or updates to the software. All devices are supplied with a stored standard software described in the manual herein.

TECHNICAL PARAMETERS

Supply power	24VDC / 24VAC
Storage humidity	10 - 90 %RH
Storage temperature	104 - 185 °F (-40 - 85 °C)
Operation humidity	10 - 90 %RH
Operation temperature	-4 - 94 °F (-20 - 70 °C)
Power output load	max 120W
Fuse	5A

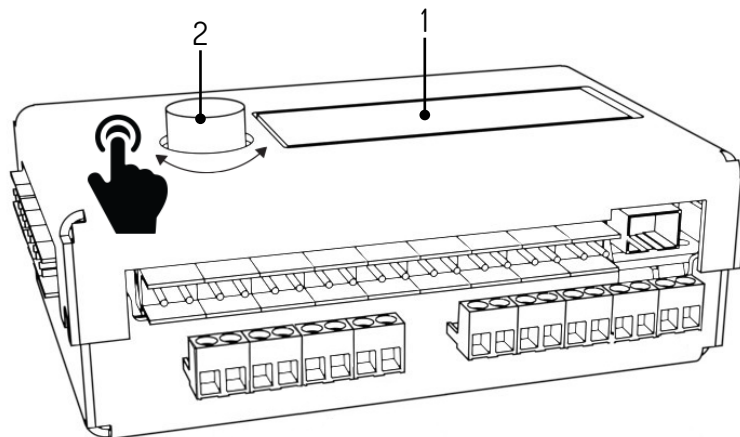
- Module's input signals- Short circuit to ground of an appropriate input pin with potential of 5V. Duration should be MIN: 0.2s, MAX: 1s.
- Module's output signals- Relay signals. Depending on which pair of pins is used, output signals can be normal opened or normal closed. Duration of the output signal can be configured in the driver's menu.

GLOBAL FUNCTIONS

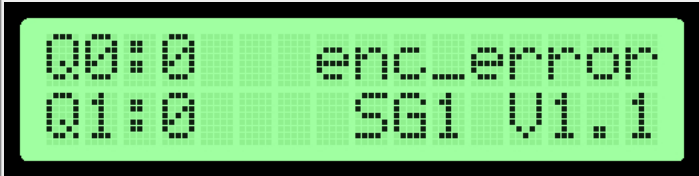
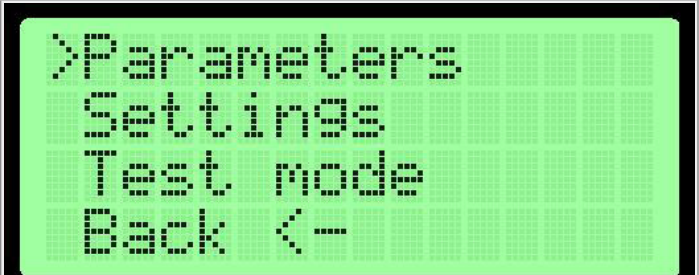
Global functions are functions that are common to all types of devices. Functions specific to a given device series are described in sections referring to a particular series of devices.

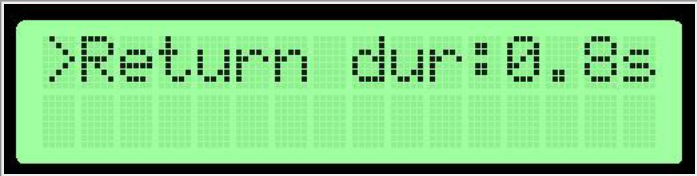
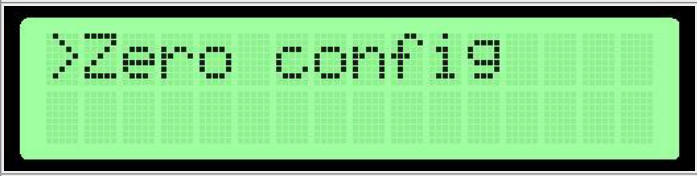
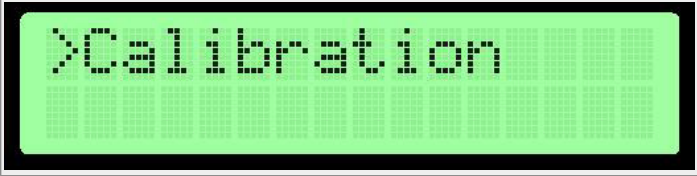
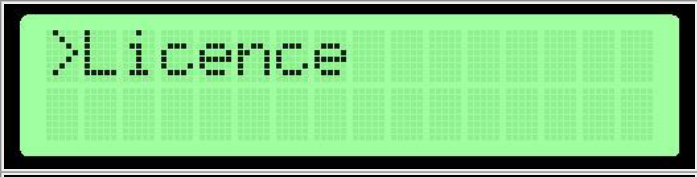
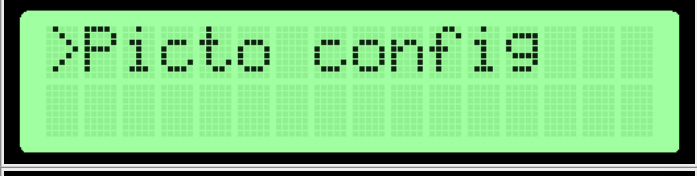
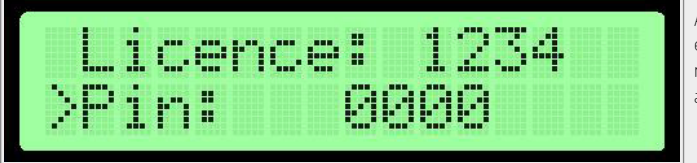
NAVIGATION

Use the rotary encoder to navigate through the menu. Turn it left or right to switch between menu positions. Press the encoder to enter the submenu or edit settings values.

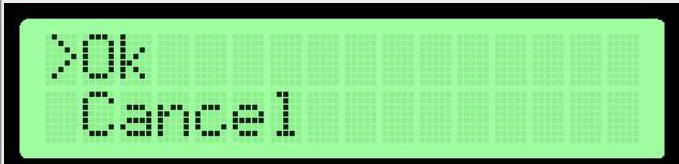


1. Display, 2. Encoder

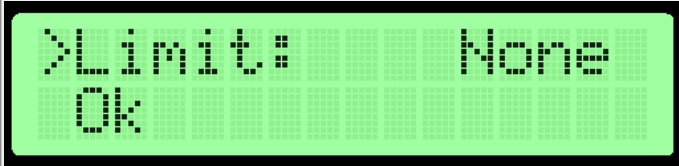
MAIN SCREEN 	The main led screen is displayed when the power supply is on. On the left, the queue status is displayed (Q0 – queue for left direction, Q1 – queue for right direction). Errors are displayed in the upper right corner. Possible errors are: • Enc_error – encoder error, not connected or damaged • Lic_error – inactive license • Default_sett – memory read incorrectly – factory settings loaded In the bottom right corner the current version of software is displayed. Press the encoder to continue to the main menu.
MAIN MENU 	Currently chosen position is pointed by an arrow. Pressing the encoder confirms the choice. Main menu positions: • Parameters – current parameters preview • Settings – configuration of the device • Test mode • Back – return to the main screen
PARAMETERS MENU 	Items displayed in the parameters menu: • Cycles – quantity of cycles completed by the device • Motor I – motor measured current value • Enc – the position of the rotor encoder • Vel – current velocity of the rotor • Back – return to the main menu
SETTINGS MENU 	Language configuration Choose the interface language. Default setting: PL Free entrance function Set the free entrance in desired direction. Possible settings: • OFF – free entrance off. Passage possible only after receiving an external signal. • ON – free entrance on. Device is unlocked in the desired direction Default setting: OFF Queue size Queue length is the maximum number of release signals sent at short intervals that can be stored in the device's memory. Values to choose from: 1-99 Default setting: 3 Opening time The time is counted from the moment of receiving the release signal. After the expiration of the time the passage is blocked again. Possible values to choose from: 3-60 seconds. Default settings: 6s Input signals configuration In. 1-4 setting defines the function of IN 1-2 and IN 3-4 inputs. Possible configurations: • open – short circuit results in releasing the rotor blockade • free – short circuit triggers the free entrance function • lock – short circuit results in blocking the external signals Default setting: open

SETTINGS MENU	
	Feedback signal type This setting defines the type of feedback signal emitted by the device. Possible configurations: • OPN/REC – a feedback signal is sent immediately after the passage is unlocked • CLS/END – a feedback signal is sent after the passage is locked • PAS – a feedback signal is sent after a correct passage detection in a given direction • STR – a feedback signal is sent after initiating the rotor's movement
	Feedback signal duration Values to choose from: 0,5 – 1,5 s. Default setting: 0.8s
	Position zero Selecting the Zero config option triggers the position zero configuration mode. This mode, along with the calibration mode is described in the sections below.
	Calibration Calibration submenu allows to set the engine movement necessary parameters. They are described in the following points. This option is not available in gates of the following series: GA, BASIC
	License This menu allows you to insert the license key to unlock the license. Submitting an incorrect key results in a temporary blockade of this menu item.
	Pictograms configuration Pictograms configuration submenu allows to configure information pictograms. It is described in the following points.
	Saving of the configuration • Save & Exit – saves the changed settings and returns to the main menu • Cancel – discards the changed settings and returns to the main menu
PICTOGRAMS CONFIGURATION	
	When you enter the pictograms configuration menu, you can choose two options: • Standard – standard pictograms • RGB – gives a possibility to choose from amongst 16 pictogram option signaling an open passage (for the left and right side separately) and from amongst 4 pictogram options signaling a closed passage (for the left and right side)
LICENSE MENU	
	After choosing the License menu, the license number is shown on the screen. Use the encoder to enter a pin number. Rotate the encoder to change the number, and press to move the cursor to the next position. After entering the last digit, press the encoder to be able to navigate through the menu again.

LICENSE MENU



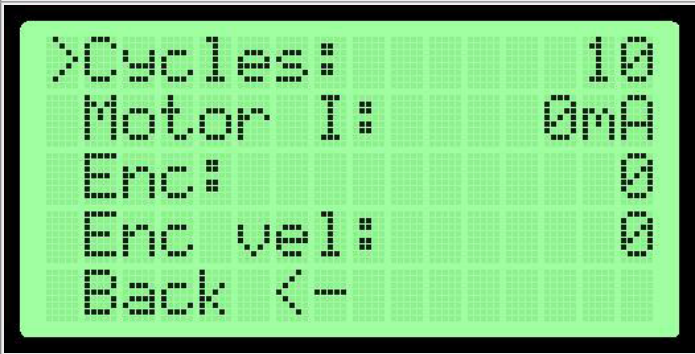
If the submitted pin is correct, after choosing OK option the license settings menu will be displayed. Choose the Back option to return to the settings menu.



In the license settings menu you can define a limit of cycles. When the limit of cycles is reached, the device will not react to external signals and test mode, and the relevant information will be displayed on the screen. Possible values to choose from:

- None – no limit
- 1k, 10k, 50k 100k and 200k – limit in thousands

TEST MODE



In the test mode the device is working independently. It performs 5 cycles alternately in both directions. During the test, all the mechanisms connected to the controller are being used. Work parameters are shown on the screen. To cancel the test mode choose Back option.

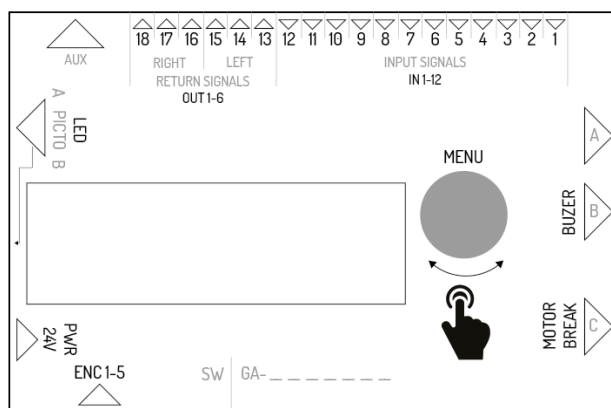
In devices of the BA3, BR2 and GA series the mode is used only in devices equipped in the rotor's movement support system.



Caution: While starting the test mode no person can be found within the device moving elements range.

SG SERIES DEVICES

DESCRIPTION OF THE CONTROL MODULE TERMINALS



Symbol	Function in the master driver	Function in the slave driver
IN1	input of the optical sensor 1	input of the settable signal in the left direction
IN2	mass – not used	mass of the input signal
IN3	input of the optical sensor 2	input of the settable signal in the right direction
IN4	mass – not used	mass of the input signal
IN5	input of the optical sensor 3	input of the trigger signal in the left direction
IN6	mass – not used	mass of the input signal
IN7	input of the optical sensor 4	input of the trigger signal in the right direction
IN8	mass – not used	mass of the input signal
IN9	input of the optical sensor 5	input of the fire-fighting signal (normally short circuited)

Symbol	Function in the master driver	Function in the slave driver
INI0	mass - not used	mass of the fire-fighting signal
INI1	input of the optical sensor 6	not used
INI2	mass - not used	not used
OUT 1-2	not used	NO feedback signal for the left direction
OUT 2-3	not used	NO feedback signal for the left direction
OUT 4-5	not used	NO feedback signal for the right direction
OUT 5-6	not used	NO feedback signal for the right direction
AUX	communication connector between master - slave controllers	communication connector between master - slave controllers
LED 1-6	connector controlling pictograms on the master side	connector controlling pictograms on the slave side
PwR	24VDC or 24VAC supply	24VDC or 24VAC supply
ENC	connector of the master module arm position encoder	connector of the slave module arm position encoder
BREAK 1-2	connector controlling the master module electromagnetic coil	connector controlling the slave module electromagnetic coil
MOTOR 1-2	connector controlling the master module engine	connector controlling the slave module engine
BEEPER 1-2	connector controlling an alarm buzzer	not used
FUSE	connector of a 5A time fuse	connector of a 5A time fuse

SETTINGS MENU	
	Arm position in a standby mode Arm position in a standby mode (waiting for a trigger signal). If this setting is different than the central one, it is recommended to use this setting in combination with the free passage in that direction. Default setting: cen
	Fire alarm configuration Set the direction in which the device opens in case of receiving a fire alarm signal. Default setting: L

ZERO POSITION CONFIGURATION	
	After entering the configuration mode zero, the display shows the stage of configuration. 1. Open position- set up arms in the open position (the side does not matter) and confirm by pressing the encoder. 2. Closed position- set up arms in the closed position and confirm by pressing the encoder. 3. Open position- set up arms in the open position opposite to that set in step 1. And then confirm by pressing the encoder.
	In the fourth step, zero positions are being validated. After pressing the encoder, you will be moved to the settings menu. Note: To save changes, use the Save and Exit. This only applies to the master controller. Zero position in the slave controller is saved immediately after proper verification.

This mode is for defining an open and closed position of gate arms.

	Warning: When setting the zero position the motor connector and an electromagnetic break should be disconnected from the controller. This applies to both sides (master and slave) because their zero positions are set at the same time!
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Setting the zero position takes place at the same time for the master and slave controller if communication between them is correct.

CALIBRATION



After entering the calibration submenu, we can change certain operating parameters of the control algorithm. To edit an item, press the encoder knob. Then, by turning it, increase or decrease the edited value.

- k – influences the general movement speed. If the arm has a tendency to pass the locked position and then to reverse, the parameter needs to be reduced; if the arm moves too slow, it needs to be increased.
- u min – influences the tightening speed. If the arm does not reach the position set, what is signaled by starting the buzzer and a temporary locking of the arm, the parameter needs to be increased. Reducing the parameter should be done if the arm has a tendency to pass the set position.

Save the set values by using save and exit option when leaving settings menu.

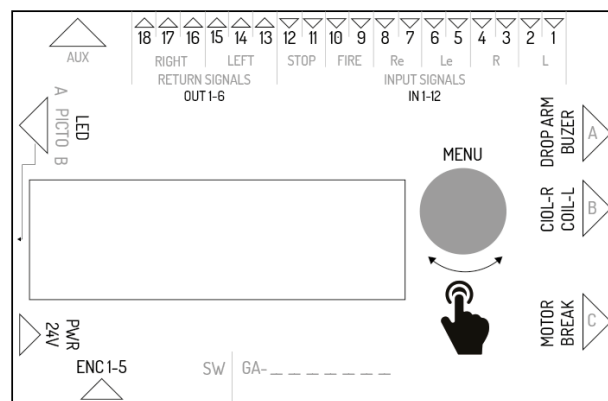
FIRST RUN

In order to provide safety during first run, follow the following rules:

1. Before applying power to the device make sure that all cables are connected properly.
2. Connect an electromagnetic break and motor after checking the encoder operation (menu – parameters – encoder – the value should change when manually moving the arm)
3. Check the connection of optical sensors (menu parameters). A '0' digit means that the barrier is interrupted, while 1 means that the barrier is not interrupted.
4. The zero positions are factory-set. In case you need to re-set them, disconnect the electric break and motor from the driver.
5. Wrong connection of the encoder may cause the device to behave in an unpredictable way. Take extra safety precautions.

BA3/BR2/GA SERIES DEVICES

DESCRIPTION OF THE CONTROL MODULE TERMINALS

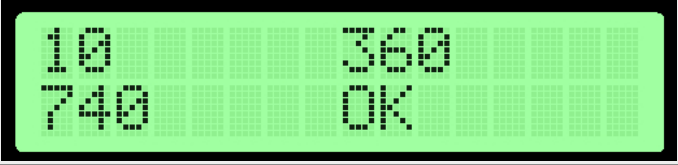


Symbol	Description
IN 1-2	External signal input for right direction (NO). This input's function is configurable. By default it's configured as permission to pass (see the software documentation).
IN 3-4	External signal input for left direction (NO). This input's function is configurable. By default it's configured as permission to pass (see the software documentation).
IN 5-6	Permission signal input for left passage direction (NO).
IN 7-8	Permission signal input for right passage direction (NO).
IN 9-10	Fire alarm signal input. The signal can be configured NO or NC in the driver's settings. After receiving a fire alarm signal the device turns on free passage mode for both passage directions.
IN 11-12	Blockade signal input. Short circuit triggers the blockade – the device doesn't react to release signals.

Symbol	Description
OUT1-3	Feedback signal output for left direction. The output consists of 3 pins that offer NO and NC signal. Duration of the signal and moment of it's occurrence can be configured in the driver's settings
OUT 4-6	Feedback signal output for right direction. The output consists of 3 pins that offer NO and NC signal. Duration of the signal and moment of it's occurrence can be configured in the driver's settings
AUX	Output destined for extension modules use
LED	Light signals output (diode pictograms)
PWR	Power connector- 24VAC
FUSE	Fuse- 5A slow type
ENC	Rotor's position encoder (5 pins)
BREAK	Electromagnetic brake control voltage output
MOTOR	Engine control voltage output
COIL_L	Left direction coil control voltage output
COIL_R	Right direction coil control voltage output
DROP ARM	Arm dropping control voltage output connector
ENC_MEN	Rotary encoder with button for menu navigation

SETTINGS MENU	
	Coils type There are two options for each coil: - NOR – normal coil, during power failure the rotor stays blocked. - REV – reverse coil, during power failure the rotor stays unblocked Default setting: NOR
	Rotor speed This setting defines the power of the engine that supports the movement of the rotor. Possible values to choose from: 1-9 Default setting: 5 This option is not available in GA and BASIC series gates.
	Fire alarm signal function Fire alarm signal can function in normal closed mode or normal opened mode. - NO – normal opened - NC – normal closed Default setting: NO
	Initiating movement This setting defines if the device should perform the initiating move. Possible configurations: - L – movement in the left direction - R – movement in the right direction - none – no initiating movement Default setting: none This option is not available in GA and BASIC series gates.

ZERO POSITION CONFIGURATION	
	After entering the configuration mode, set each of the arms in blocked position. Each of the three positions has to be confirmed by pressing the encoder. Display shows the number of zero position which is currently being modified (0, 1 or 2).

ZERO POSITION CONFIGURATION	
	After all three zero positions are set, the display shows saved values. If the values are correct, "OK" message is displayed. If the values are not correct, "Error" message is displayed. This means that the values of zero positions are not saved and the procedure shall be repeated. Regardless of the result of the configuration, after pressing the encoder, settings menu will be displayed. To save changes, choose the Save & Exit option.

CALIBRATION	
	After choosing the calibration option in the bottom row of the screen the rotor speed is shown. The controller will try to slowly move the device's motor to identify it's parameters. Notice: During the calibration nothing shall interrupt the rotor's movement. Otherwise the procedure has to be repeated. This option is not available in GA and BASIC series gates.
	After the calibration procedure is finished, the identified parameters are displayed. After pressing the encoder, controller returns to the Settings menu. To save changes, choose the Save & Exit option. This option is not available in GA and BASIC series gates.

FIRST RUN

- In order to provide safety during first run, follow these rules:
1. Before applying power to the device make sure that all cables are connected properly.
 2. Wrong connection of the encoder may cause the device to behave in an unpredictable way. Take extra safety precautions.



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