



230VAC MOTOR/S SWING & SLIDE GATE CONTROL UNIT with motor force adjustment STB230VM2

The unit is designed to control automated swing and slide gates with installed 230VAC motor/s allowing bidirectional operation. Functions and features of STB230VM2 are as below:

- Use of hand held remote transmitters with Keeloq® rolling code allowing high security of gate control;
- Operation with up to 448 Elmes Elektronik made remotes for multi user parking application;
- Independent motor force adjustment for each leaf of gate;
- Remote control of gate with one or two buttons remote, or by mono type wired wall switch;
- Manual, auto-close, two types of "parking" functions and walk-in partial opening operation modes;
- Auto-close function after programmable PAUSE time (1 to 255 seconds);
- Operation with end of line (EOL) switches NO or NC type (normally open or normally closed);
- Operation with photocell NC type (normally closed output);
- Automatic gate opening after photocell obstacle detection while gate closing;
- Security input STOP for immediate gate movement blocking;
- Warning (flashing) or courtesy lamp output;
- Universal relay output OUT2 NO/NC type for electric lock control, or any other application, controlled by separate remote transmitter button.

Security input STOP. Activation of input STOP in gate opening as well as closing manoeuvres stops the gate movement. For as long as the input is activated (disconnected from COM input) the gate remains inoperable.

SPECIFICATION

- Power supply 230VAC with maximum power output 6VA;
- Maximum motor leaf power: 500W + 500W;
- Lamp output OUT1 unpowered, galvanic separated NO type, rated 16A/250VAC, pulse timed 1 to 999 seconds;
- Output OUT2 unpowered, NO or NC type jumper selectable, galvanic separated, rated 1A/240V/30VDC, pulse timed 0.5 to 127 seconds, or on/off latched type;
- Photocell fused power output 24VDC, rated 150mA maximum;
- Photocell NC (normally closed) type detection input;
- Emergency input STOP, NC (normally closed) type;
- End of line (EOL) switches inputs, NO or NC type (normally open or normally closed);
- Motor rotation time programmable from 1 to 255 seconds common for open/close;
- Programmable PAUSE time from 1 to 255 seconds;
- Superhet receiver suitable for 433,92MHz radio band;
- Operation temperature range: - 20°C up to +50°C;
- Controller board dimensions (l/w/h): 165/90/45 mm;
- Placement of unit installation holes for screws: 4 x $\varnothing=3\text{mm}$ 153 x 75 mm.

Manufacturer: ELMES ELEKTRONIK, 54-611 Wrocław, Avicenny 2 Str., Poland
tel. (+48)717845961, fax: (+48)717845963.

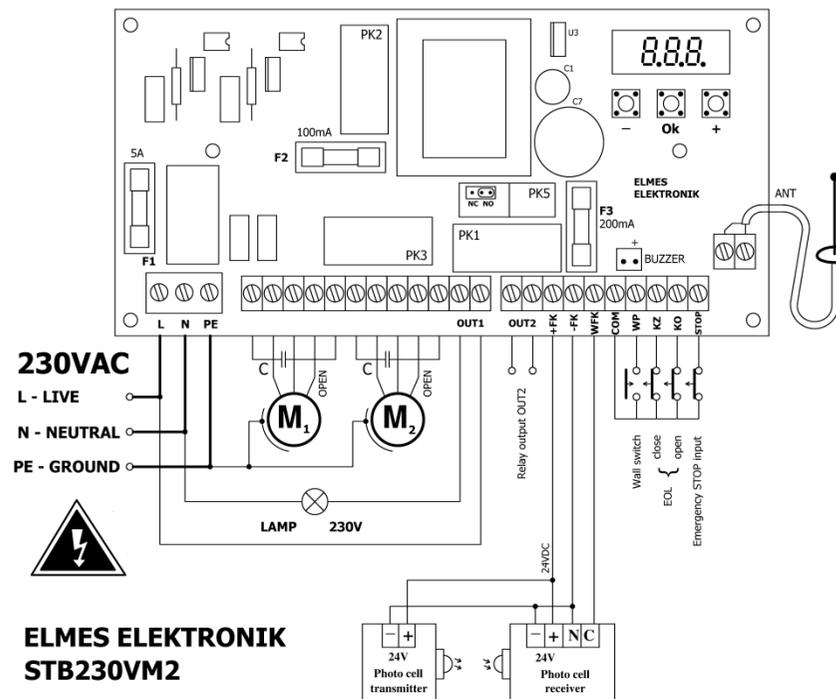
INSTALLATION

The control unit must be installed in hermetic or well sealed case protecting from water, extensive humidity or direct harsh environmental conditions. To extend operation range of hand held remotes, external antenna suitable for 434 MHz band with coaxial cable should be installed to dedicated antenna terminals.

CAUTION! Automatic gate may cause danger to humans or objects within its moving range. Therefore, it is obligatory to install photocell protective barrier/s securing safety of gate operation. Additional safety protection is motor force adjustment that must be maintained at such a level as when moving gate comes across human or obstacle it should stop without making damage.

NOTICE! The control unit is only a part of automatic gate installation and it is the sole responsibility of the installer to complete installation in compliance with EU standards and regulations, in particular: EN 12453, EN 12445, EN12635, EN12604, EN 60204-1, EN60335-1 and machinery directive 98/37/WE. The manufacturer of this controller declares that it complies with respective EU standards (CE declaration is included with the controller).

WARNING! This control unit is 230VAC mains voltage supplied. To avoid danger of electric shock installation must be conducted with mains voltage disconnected.



ELMES ELEKTRONIK STB230VM2

Description of 230VAC mains voltage terminals:

- L** - 230VAC mains voltage LIVE supply terminal,
- N** - 230VAC mains voltage NEUTRAL supply terminal,
- PE** - controller and motors GND protection terminal,
- M1** - first leaf motor connection terminals,
- M2** - second leaf motor connection terminals,
- C** - motor starting capacitors (4 ÷ 8µF/400V),
- OPEN** - motor LIVE supply terminal at opening.

Description of NO MAINS VOLTAGE terminals:

- OUT1** - lamp connection NO type terminals rated 16A/250VAC,
- OUT2** - universal control NO/NC type jumper OUT2 set terminals rated 1A/240VAC/30VDC,
- +/-FK** - photocell power supply terminals (24VDC, max. 150mA),
- COM** - common ground terminal,
- WFK** - photocell signal input (must be shorted to COM, if not used),
- WP** - gate wired control switch,
- KZ** - gate close EOL switch, (if EOL switches are not installed parameter P4 set to ON),
- KO** - gate open EOL switch, (if EOL switches are not installed parameter P4 set to ON),
- STOP** - emergency gate stop terminal (must be shorted to COM, if not used).

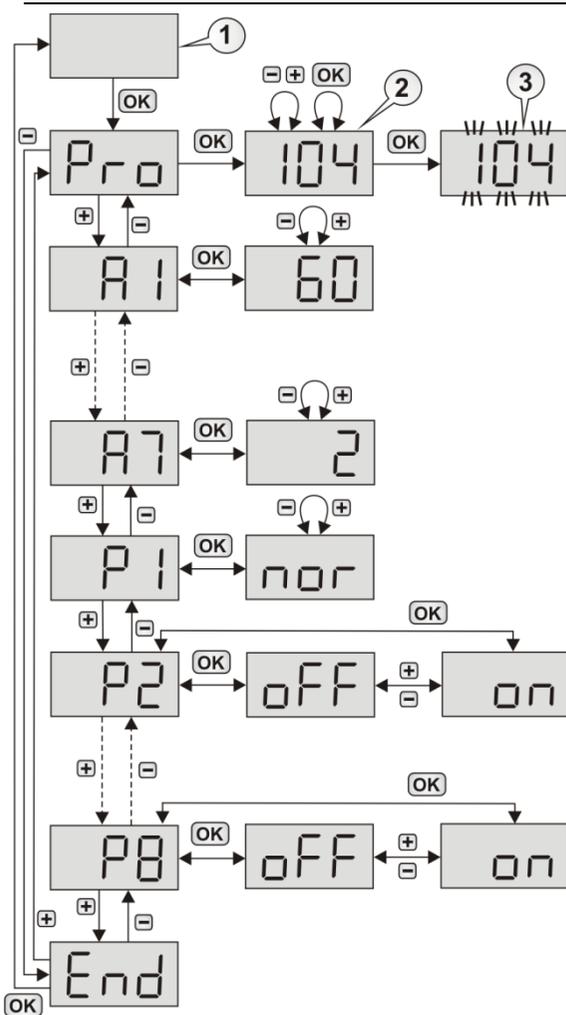
IMPORTANT! Mains live wire must be connected to "L" while neutral wire to "N" screw terminals of the controller.

NOTICE! Input terminals FK and STOP must be shorted to COM, if not used. End of Line switches (EOL) should remain unconnected, if unused, with parameter P4 set to ON.

MANUFACTURER'S LIMITED WARRANTY

This product carries manufacturer's limited warranty for period of 24 months. During the warranty period the manufacturer shall, at its option, repair or replace any defective product upon return of the product to the manufacturer, at no charge for labour and materials. The warranty is limited to the replacement of faulty original parts and repair defects of improper manufacture. Damage due to faulty use, improper handling, unauthorized self repair are not covered by this warranty. Defective product must be dismantled and delivered clean to the point of purchase at buyer's expense along with proof of purchase with confirmed purchase date.

PROGRAMMING



① At standby LED is off. Enter programming procedures by pressing OK. Select programming parameter with **+** and **-** buttons. To exit procedure select End on display and press OK, or wait 16s.

List of programmable parameters:
Learning or deleting remotes (maximum number of served remotes: 448).

② First select a remote cell number in the range of 0...447. If the cell is occupied dots will lit on at all segments of display. In that case pressing OK would delete a remote in the cell and the dots will be off. Pressing OK, if dots are off, enters remote learning procedure and selected cell number will flash.

③ When cell number is flashing it must be decided whether, or not, the remote would control output OUT2. If yes, press OK and third dot will be on. If not, the dot should be off. Now, double press remote transmitter button. First pressing stops display flashing and second restarts display flashing confirming end of procedure. Displayed **[Err]** means that error was made while learning a remote.

NOTICE! Least remote button should be used while learning a multi button remote to the controller. Remaining buttons, if used, will be programmed automatically.

Example: Suppose that button 1 of 4 buttons remote was used at learning, the remote is supposed to control output OUT2, the walk-in function is set on (P6=ON) and that gate will open and close by the use of two buttons (P5=ON).

In that case, button 1 will open the gate, button 2 will close, button 3 will open one leaf (pedestrian walk-in function) and button 4 will control output OUT2.

- A1** First motor force adjustment (15...99%).
- A2** Second motor force adjustment (15...99%).
- A3** Motor work timing (1...255s). Motor work time is set the same for both motors.
- A4** PAUSE timing (1...255s). Pause time to gate auto-close, if the function is on (see parameter P1).
- A5** Lamp on time after end of gate movement (1...999s). Function valid only if parameter P2 is set on.

- A6** Output OUT2 set on timing. Output controlled by remote, intended for electric lock or any other practical use. Output set on time features 0.5s programming step and ranges 0.5...127s. The parameter set to 0 mean that the output will operate in latch on-off mode.
- A7** Second leaf close delay timing (0..7s). This time should not be set to 0 value, if gate leaves overlap. NOTE! Both gate leaves start simultaneously at gate opening.

P1 - Automatic gate operating modes.

nor	Standard Mode – on remote's button use the gate movement starts. Next use of remote's button stops the gate movement. The gate does not auto-close. The gate closes on remote's button use.
CLO	Auto-Close Mode – on remote's button use the gate operates in cycle: OPEN – PAUSE – CLOSE. The gate movement can be stopped any time by the use of remote's button. When the gate opens fully, it will close automatically after programmed PAUSE time. The use of remote's button while in PAUSE stops pause time count down while next button use will force the gate to close.
PA1	Parking Mode 1 – on remote's button use the gate operates in cycle: OPEN – PAUSE – CLOSE. While gate is in open movement the use of remote's button has no action. The use of remote's button in PAUSE starts pause time count down over again. The use of remote's button while gate is in close movement stops the gate and starts to open after 1 second. In this mode gate is controlled by one remote's button only (parameter P5 has no meaning).
PA2	Parking Mode 2 - (with option to stop the gate) - on remote's button use the gate operates in cycle: OPEN – PAUSE – CLOSE however, contrary to PA1 mode, remote's button use while gate is in motion stops it. Next button use starts gate opening over again. Remote's button use while in PAUSE stops pause time count and next button use restarts pause time count over again. In this mode gate is controlled by one remote's button only (parameter P5 has no meaning).

P2 Warning lamp operation modes.

off-warning lamp – flashes slowly at gate opening, flashes fast at gate closing. Also, when auto-close is set on (**CLO**, **PA1** or **PA2** modes in parameter P1) the lamp flashes slowly in PAUSE count and faster at the end of the pause time;
on- courtesy lamp – lights on continuously at gate motion and in PAUSE time as well as by time period set in A5 after end of gate movement.

P3 PAUSE time limited to 5s after photocell obstacle detection.

off- function set off;
on- detection of photocell obstacle in PAUSE time count limits pause time to 5s (refers to **CLO** mode only, in other modes the parameter should be set off).

P4 Type of used EOL switches.

off- switches NC type: normally shorted, i.e. active on their opening;
on- switches NO type: normally opened, i.e. active on their shorting.

P5 Control mode using remote transmitter buttons (inactive in PA1 and PA2 modes).

off-remote's one button control mode in cycle: OPEN-STOP-CLOSE-STOP-OPEN...
on- two buttons control mode - button one: OPEN-STOP-OPEN..., button two: CLOSE-STOP-CLOSE....

P6 Gate walk-in mode.

off- set off;
on- using remote's button learned to operate walk-in function opens gate's second leaf only.

P7 Electric lock function at output OUT2.

off- output OUT2 is controlled by separate remote's button and may be used for any application;
on- output OUT2 activates electric lock: sets on at the beginning of gate's opening for time period set by parameter A6, which must be higher than 0.

P8 Electric lock shut.

off- set off;
on- in order to shut the electric lock full power is applied to motors for 1s at the end of gate closing.

P9 Photocell operations modes.

off- detection of obstacle by photocell while gate closing reverses gate movement. Detection of obstacle at gate opening does not stop the gate but may reduce PAUSE time (see parameter P3).
on- detection of obstacle by photocell while opening or closing of gate stops the gate and after obstacle removal gate opens.

Detection of obstacle in above modes stops time count in PAUSE mode. After obstacle removal PAUSE time count is continued, or pause time is reduced to 5s (see P3) in gate **CLO** mode. In modes **PA1** and **PA2** PAUSE time count is restarted.

P10 Reversing leaves start sequence.

off- at gate closing motor M1 starts first and, after time set in parameter A7, starts motor M2;
on- other way round: motor M2 starts first then M1;

P11 Reversing leaves powering (refers to both motors):

off- at gate opening motors are powered by OPEN terminals and by CLOSE terminals at closing;
on- reversed.

NOTE! Exit from programming procedures is made automatically after 16 seconds of last button use. If entry to remote transmitter learning procedure is made by mistake, to exit the procedure it is necessary to wait 16 seconds.