

The panel is designed to control operation of 12V Direct Current motor in automatic gate installation in which opposite motor rotation (gate movement) is achieved by reverse of power supply polarity. Below listed are features of the STB12VM1 panel:

- **highest security KEELOQ® dynamic code** with the use of key-fob hand transmitters,
- superheterodyne receiver allowing better signal selectivity as well as better operation range with up to 112 Elmes made hand transmitters,
- **motor soft start and stop function** guaranteeing protection against mechanical overload thus extending operation life of the gate,
- mechanical tension reduction by short pulsing the motor in reverse direction,
- motor sensitivity to overload level adjustable in both movement directions of the gate,
- parking mode of operation with hand transmitter command opening gate only,
- terminals for installation of NC (normally closed) type photo cell,
- terminals for connection of end of line (EOL) contacts type NC (normally closed) or NO (normally opened),
- terminals for installation of flashing warning lamp or courtesy lamp,
- **additional functions extending operation security of automatic gate:** STOP input (NO type) for connection of miscellaneous protective devices, auto close function with three seconds warning lamp flashing, programmed motor rotation time allowing additional protection in case of EOL contact failure.

Operation modes and functions of the control panel are selected by on board jumpers JP1...JP10 (where CLOSE meaning jumper shorted).

JP1 – gate's lamp functioning:

CLOSE – warning lamp, flashing at gate's movement – slower in opening direction and faster in closing direction,

OPEN – courtesy lamp lighting continuously at gate's movement;

Functioning of the gate's lamp depends on selection made by JP1 and JP2:

Gate's auto closing	Warning lamp: JP1 – CLOSE	Courtesy lamp: JP1 – OPEN
Set ON: JP2 – OPEN	opening-slow flashing, PAUSE-lights cont., end of PAUSE –slow flashing, gate's closing–flashing fast, gate's closed–lamp off	Lamp lights at gate movement, at PAUSE and 60s after gate stop
Set OFF: JP2 – CLOSE	opening – slow flashing, closing – flashing fast, on gate's stop lights for programmed time span	Lamp lights at gate's movement and after gate's stop at time equal to PAUSE time

JP2 – automatic gate closure. After gate opening PAUSE time starts and the gate will automatically close on pause time lapse. Functioning of the control panel in PAUSE time depends on settings made with jumpers JP3 and JP4.

CLOSE – auto closure off – after opening the gate's panel is awaiting signal command to close from hand transmitter or WR switch,

OPEN – auto closure on – after gate opening PAUSE time starts and the gate will automatically close on pause time lapse.

JP3 – parking mode of operation.

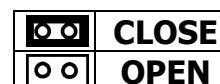
CLOSE – standard mode: hand transmitter or WR switch commands consecutive open-stop-close-stop-open... operation of gate;

OPEN – parking mode: hand transmitter or WR switch commands opening of gate only. Command made at gate closed will start opening. Command made at gate opening would have no reaction. Command made at PAUSE would repeat the pause time. Command made at gate's closing would stop the gate and start opening. This mode requires gate's auto close function set off (JP2 – OPEN).

JP4 – response mode to photo cell signaling at PAUSE. Photo cell signaling at gate's opening would have no response from control panel while signaling at gate's closing would reverse movement and open the gate. At PAUSE time (with auto close function on) signal from photo cell would stop pause time count. With photo cell signal disappearance, the control unit response would depend on JP4 settings:

CLOSE – PAUSE time count will restart,

OPEN – the gate will close after 5 seconds.



JP5 - define EOL contacts type:

CLOSE - EOL contacts NO (normally open) type,

OPEN - EOL contacts NC (normally closed) type.

JP6 – gate's soft stop. Gate's stop commanded by EOL contact, hand transmitter or photo cell is preceded by motor's 1-2s slowdown rotation.

Advice: To secure gate's proper functioning in case of power supply failure or power cut off, the control panel records current gate's position (opened, partly opened, closed) in non-volatile memory. Therefore, manual opening of gate at power failure requires also its manual closing so, that its original position at failure is restored. If the original position is unknown, the gate should be manually positioned in middle of moving way and then commanded from hand transmitter or wall switch.

CLOSE – function set OFF

OPEN – function set ON

JP7 – slowdown rotation timing at EOL:

CLOSE – ca 1 second; OPEN – ca 2 seconds.

JP8 – soft start. With this function set on gate's start is accelerated in one second time span protecting against violent pull out.

CLOSE – soft start off; OPEN – soft start on.

JP9 – mechanical tension loosening - is obtained by applied short pulse command in opening direction, after closing the gate.

CLOSE – set off; OPEN – set on.

JP10 – Reaction to overload. Potentiometers marked „OTWIER.” (OPEN) and „ZAMYK.” (CLOSE) installed on controller's board adjust overload detection sensitivity level in both directions of gate's movement. The sensitivity should be practically adjusted at gate's installation to level protecting humans or objects that may collide with moving gate against personal injury or damage. Too sensitive level may stop and reverse gate's movement even at slightest obstruction on gate's way such as snow. Jumper JP10 defines the way panel reacts to overload:

CLOSE – detected overload at closing would fully open the gate while at opening would reverse to close direction for 1 second.

OPEN – detected overload stops the moving gate only.

PROGRAMMING PROCEDURES

1. Learning transmitter(s) to controller's memory – maximum 112:

- press control unit **PRG** switch for less than 2 seconds (PRG LED lights on),
- press transmitter button - LED in controller switches off,
- press again the same transmitter's button – blinking controller LED confirms end of procedure.

2. Programming motor rotation time and PAUSE time: this procedure can be performed with transmitter learned to controller's memory or using wall switch connected to WR input.

- press control unit **PRG** switch for more than 2 and less than 8 seconds (PRG LED lights on). Releasing the switch PRG LED sets off,
- press any hand transmitter button or wired wall switch (LED lights on) to start motor rotation,
- after required motor rotation time has lapsed (max. 60 minutes) press the transmitter button or WR switch again - motor stops, courtesy lamp will switch on,
- after required PAUSE time has lapsed press transmitter button or WR switch again - the lamp switches off and the controller's LED starts blinking confirming end of the procedure.

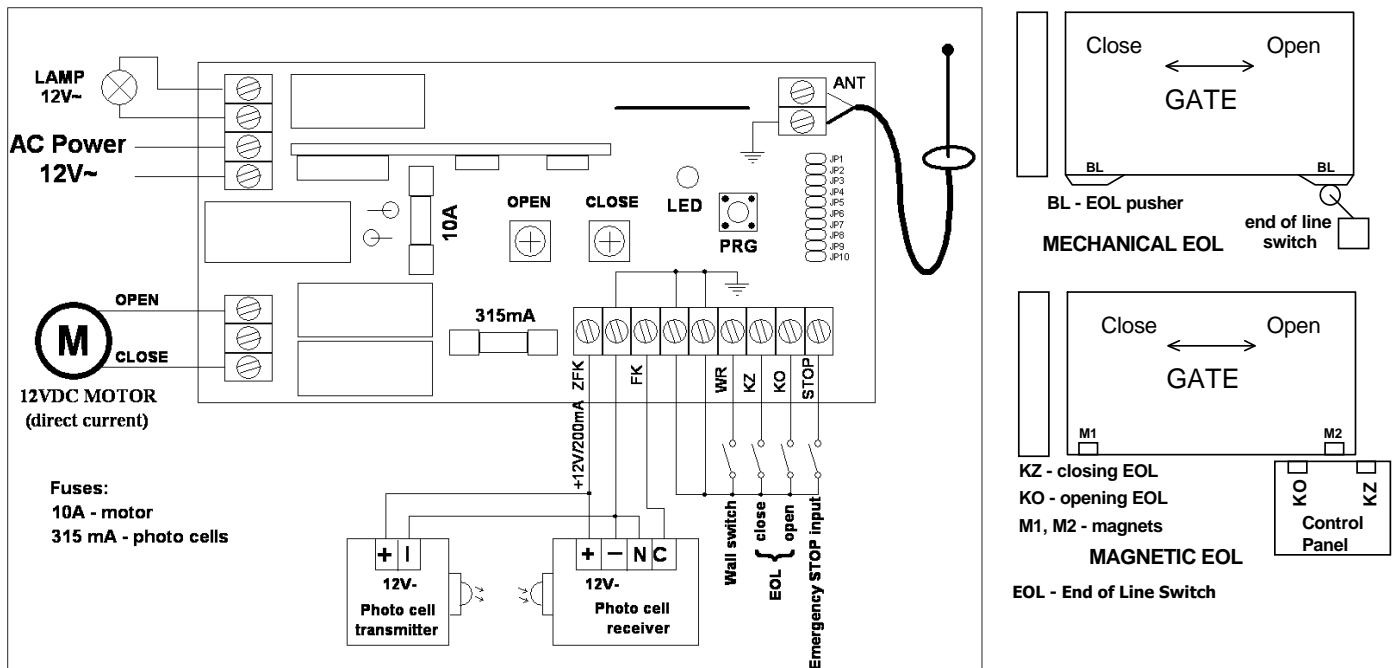
3. Deleting all transmitters from control unit memory (procedure performed when transmitter is stolen or lost):

press controller's **PRG** switch (PRG LED lights on) and hold pressed for more than 8 seconds, until the LED starts blinking confirming end of the procedure. Transmitter memory in the controller is cleared while programmed timings remain unchanged.

Installation: The control panel with integral radio receiver should be installed so as to avoid harsh environmental conditions like high or low temperatures, high humidity or radio and electric interference. Antenna should be externally installed and connected to the controller by coaxial cable as shown on connection diagram below. Simple wire antenna, as delivered with the controller, can also be used however practical operating range of hand transmitters may not be satisfactory compared to dedicated external antenna.

Installation of the controller should be made with power supply OFF and according to schematic diagram below.

If photo cells are not used, connection terminals 2 and 3 (counted from the left) must be shorted.



Technical Specification

- control panel supply 12VAC, motor 10A fused, receiver band 433,92MHz,
- courtesy/warning lamp 40W max., photo cell supply output 12VDC-240mA max., motor operating time 1s...60min.,
- regulated overload sensitivity level 3,5...10A, PAUSE time or lamp ON after motor stops programmable 1...255 seconds.

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Elmes Electronic declares that the product has been manufactured and tested to comply with the following standards:
 EN 60950-1 :2001 electric safety, EN 301 489-1 V1.4.1 (2002-08) EMC for radio equipment, EN 301 489-3 V1.2.1 (2002-08) EMC for Short Range Devices, EN 300 220-3 V1.1.1 (2000-09) EMC and Radio Spectrum Matters.

Manufacturer's Limited Warranty:

Elmes Electronic remote control sets carry one-year manufacturer's warranty as from date of purchase. The warranty is limited to the replacement of faulty original parts or repair defects of improper manufacture. Damage, faulty use or improper handling by the user or installer as well as any changes in product's hardware or software caused by the user violates the warranty and all due repair costs will be charged. Elmes Electronic shall not be responsible for any direct or indirect personal or material damage caused by its products failure to operate correctly.

Elmes Electronic reserves the right to change product specification without prior notice.

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