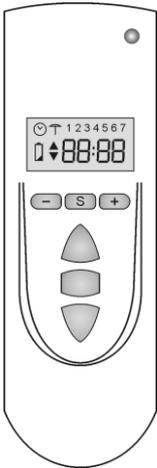


Elmes Electronic STM controller is designed for use in automated window or door roller and shade installations where 230VAC electric tube motors with end position switches are used.

The controller may be installed inside 60mm deep cable box of wall switch or inside roller container. Wired control of the roller is made by two (up/down) pulse operated wall switches. The roller stops either by reaching end position or, by passing programmed set on time or, by pressing any control switch. The controller operates wirelessly with any Elmes Electronic made hand transmitter comprising of at least two control buttons. To operate wirelessly a transmitter must be learned to the STM controller. Most recommended is dedicated STX transmitter with LCD. It features three roller control type switches for manual control of up to 35 rollers inclusive of up to 8 rollers that can be time programmed for auto operation. This function is supported by built in internal real time clock.



Elmes Electronic STM controller can also operate wirelessly with DWB100H, DW200H, CH4H, CH4H200, CH8H and CH23H type hand transmitters. These transmitters can operate in two wireless control modes depending on which control button was used at learning the transmitter to the STM controller (see fig.1 for buttons layout). One button transmitters cannot be used.

Mode 1 (recommended) – when button 1 is used at learning transmitter to STM controller allows roller's upwards movement when button 1 is pressed, whereas button 3 executes roller's downwards movement. But-

tons 2 and 4 stop roller movement.

This operation mode is recommended for many rollers installation controlled by the use of one hand transmitter, as it allows repeated use of buttons in either direction of roller movement when, due to low operation range or radio interference conditions, not all controllers started motor rotation.

This wireless operation mode requires the use of **three or more** control buttons transmitters. Two buttons transmitters cannot be used. This mode is also recommended in operation with STX transmitter (with LCD). Learning STX transmitter to the STM controller "UP" roller movement button should be used.

Mode 2 – when button 2 is used at learning transmitter to the controller allows roller's upwards movement and stop (up-stop-up-stop...) when button 1 of the transmitter is used. The use of button 2 of the transmitter moves roller downwards and stop (down-stop-down-stop...) operation.

This mode is not recommended for use in multi roller installations. Suitable for operation in this mode are Elmes Electronic transmitters comprising of **two and more** buttons.

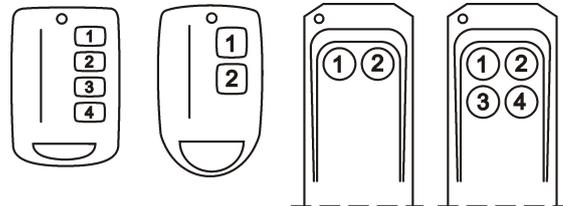
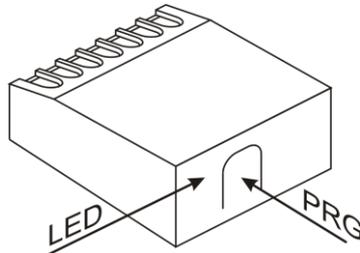


Fig.1. Control buttons layout in Elmes Electronics hand transmitters.

All hand transmitters use **KEELOQ®** hopping code system.

PROGRAMMING PROCEDURES

The STM controller programming is made using PRG button with LED status indication, as shown on side figure. Led's slow flashing speed (one per second) indicates correctly performed procedure. Fast flashing (four per second) indicates procedures made incorrectly or procedure error. Programming procedures, except for programming motor rotation timing, are allowed 16 seconds to be completed. After that time the controller automatically exits programming mode and indicates programming error.



1. LEARNING TRANSMITTER/S to controller's memory (up to 112 max):

- a) press control unit PRG switch for less than 2 seconds (LED lights on). Releasing the switch LED continues to light indicating entering programming mode,
- b) press appropriate transmitter button (depending on selected operation mode – see text above) once - LED switches off. Press the same transmitter button second time - end of procedure.

2. PROGRAMMING MOTOR ROTATION TIME (from 0,5 second up to 4 hours) – factory programmed time is 40 seconds suitable for most roller applications. To change the time follow programming steps below:

- a) move the roller to down end position,

- b) press **and hold** PRG switch for longer than 2 and shorter than 8 seconds. Releasing the switch sets the LED off.
- c) press hand transmitter's upwards movement button once – the LED lights and roller start upward movement,
- d) when the roller hits end of upward movement position and its motor is disconnected by internal end of rotation switch, wait few seconds and press transmitter's upwards movement button again – end of procedure.

IMPORTANT: Performing procedure 2 is possible only with the use of wall switch connected to the controller or hand transmitter learned to controller's memory.

3. DELETING ALL TRANSMITTERS in controller's memory. Procedure suitable in case one of transmitters is stolen or lost:

Press **and hold** PRG switch (LED lights) in controller until LED starts flashing (over 8 seconds) and release. The controller memory is now cleared of transmitters, however programmed motor rotation timing remains unchanged. To operate the controller by hand transmitter/s perform learning operation as in clause 1.

4. DELETING ONE TRANSMITTER in controller's memory. This operation is possible under condition that the transmitter to be deleted is in our possession.

Start the procedure as in sub-clause 1a) and follow steps by pressing **two different buttons** of the transmitter. LED indicating error in this case mean the transmitter is now deleted and will no longer operate the control-

ler. Status of all other transmitters learned to the controller remains unchanged.

INSTALLATION (see connection schematic diagram below):

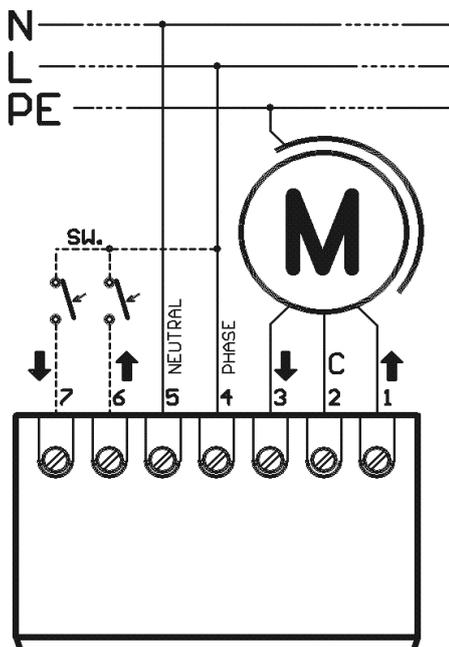
WARNING! Control unit and electric motor connection to 230VAC mains voltage require personal safety precautions to be taken and mains voltage line be in OFF state at installation.

The controller is not water sealed and should be installed in dry place. Antenna wire should be let loose downwards (not glued or fitted to ground), if possible. Care should be taken not to expose the control unit to harsh environmental conditions such as very low/high temperatures or high humidity. The unit includes radio receiver thus any metal screening or interference with other electric/radio equipment operating in close distance should be avoided as may seriously shorten practical operating range in wireless operating mode. When installing the controller in electric junction box (in wall) care should be taken to properly lay connecting wires avoiding crossing with antenna wire. The antenna wire should be laid in circular way and tested for obtaining maximum operating range with the use of hand transmitter/s. If operating range is not satisfactory then the controller should be installed in the roller motor compartment.

Description of STM connection terminals:

- 1 – 230VAC mains **LIVE** output to motor (Upwards rotation),
- 2 – common **NEUTRAL** output to motor,
- 3 – 230VAC mains **LIVE** output to motor (Downwards rotation),
- 4 – 230VAC mains **LIVE** supply input (!),
- 5 – 230VAC mains **NEUTRAL** supply input (!),
- 6 – Upwards rotation wire wall switch input (**LIVE!**),
- 7 – Downwards rotation wire wall switch input (**LIVE!**),

(!!!) WARNING: It is important to connect mains supply LIVE wire to terminal 4 and NEUTRAL wire to terminal 5 of the controller.



SPECIFICATION

- power supply 230VAC (0,3VA standby, 0,5VA on any relay set on),
- output relays rating: 250VAC~ 5A max.,
- superheterodyne receiver to 433,92MHz band,
- controller's memory for up to 112 transmitters,
- control voltage at inputs no 6 and 7: 250VAC~ max.,
- range of motor rotation timing: 0,5s up to 4h,
- operating temperature range -20 up to +55°C,
- external dimensions (l/w/h) 42/35/21mm.

Manufacturer

ELMES ELECTRONIC, 54-611 Wroclaw-PL, Avicenny Str.2, tel. (+4871) 784-59-61, fax 784-59-63

Manufacturer's Limited Warranty:

Elmes Electronic products carry two 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 voids the warranty and all due repair costs will be charged. Elmes Electronic shall not be responsible for any damage human or material caused by its products failure to operate correctly.

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

KEELOQ® is a registered trademark of Microchip Technology Inc.



The use of WEEE symbol indicates that this product cannot be treated as household waste. By ensuring this product is disposed of correctly you will protect the environment. For more detailed information about the recycling of this product, please contact your local authority, your household waste disposal service provider or the shop where you purchased the product.



DECLARATION OF CONFORMITY

Product: Miniature Wireless Roller Controller Elmes Electronic STM
Manufacturer: Elmes Electronic, Avicenny 2, Wroclaw-PL

We, the manufacturer, declare that the product is designed and manufactured in compliance with European Union R&TTE 1999/5/EC directive, in particular in accordance with following harmonized standards:

concerning requirements for electrical equipment:
EN 60730-1:2002 and EN 60950-1:2003

concerning electromagnetic compatibility and radio matters:
ETSI EN 300 220-3 V1.1.1:2003

Wroclaw, 30.12.2011

Director – Mirosław Binkowski