

## USER MANUAL

Ø 45 mm and Ø55 mm tubular motor with mechanic limit switch and integrated radio receiver 433,42MHz

Dear customer, thank you for purchasing this product.

This manual describe the operations for a correct installation of V6<sub>RX.2</sub>, VM6<sub>RX.2</sub> and V7<sub>RX.2</sub>. The tubular motors with electronic limit switch are suitable to command awnings, roller shutters and screens. The technical characteristics are provided on the label stuck on motor. These devices have not been studied to a continuous working. Any other use is improper and forbidden and it could void manufacturer's warranty. The manufacturer cannot be considered responsible for any damage due to improper, wrong or unreasonable use.

The installation of the product must be done by a qualified technician. At the end of the installation, all manuals must be given to the end user.

Keep this manual for future reference and download any updated documents from [www.stafer.com](http://www.stafer.com).

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### Environmental conservation!!

#### Environmental conservation is an everyone's duty!

We use packaging recyclable materials. Dispose materials on the proper containers, complying with the law in force in your locality.

If you are an installer and you use many motors, please ask for cavaties box packaging to your retailer or to the manufacturer, this is an environmental respectful choice, that limits waste and considerably reduce the packaging materials.

This product may have substances that are polluting for the environment and dangerous for the health. At the end of the product life cycle, carefully comply with the waste disposal rules. It is strickly forbidden to dispose the product on the domestic waste.

### Notes on radio system

It is advisable **to avoid using radio systems in areas with strong interference** (for example, near police stations, airports, ports, hospital, etc.). A technical inspection is in any case advisable before installing any radio system in order to identify sources of interference.

Radio systems can be used where possible disturbances or malfunctioning of the transmitter or the receiver do not cause a risk factor, or if the risk factor is cancelled by suitable safety systems. The presence of radio device operating on the same transmission frequency (**433,42 MHz**) can interfere with the radio receiver of the motor and so reduce the range of the system and limit the functionality of the installation.

## 01. TECHNICAL SPECIFICATIONS

The technical characteristics of the motor are shown in the label applied to the motor tube. Before installing the motor, it is recommended to copy the technical data (including the full name of the product) and store them in a safe place. These data may be useful in the event of subsequent maintenance or technical assistance. In addition to the technical data on the motor tube (depending on the specific power of the engine), the common characteristics of the engine family RX.2 are:

Power supply	: 230 Vac 50 Hz	IP insulation	: Ip44	Working frequency	: 433.42 MHz
Stand-by consumption	: < 1W	Insulation class V6/VM6 <sub>RX.2</sub>	: H	Memorable transmitters	: 40
Min roller diameter V6/VM6 <sub>RX.2</sub>	: 50 x 1.5 mm	Insulation class V7 <sub>RX.2</sub>	: F	Memorable sun/wind radio sensors	: 1
Min roller diameter V7 <sub>RX.2</sub>	: 60 x 1.5 mm	Max limit switch turns	: 28		
		Continuous working time	: 4 minuti		

## 02. WARNINGS

### 02.1 Warnings for safety

Incorrect installation can cause serious injuries. ● Keep these instructions for future maintenance work and disposal of the product. ● All the product installation, connection, programming and maintenance operations must be carried out only by a qualified and skilled technician, who must comply with laws, provisions, local regulations and the instructions given in this manual. ● The wiring must comply with current IEC standards. ● Some applications require hold-to-run operation and can exclude the use of radio controls or require particular safety devices. ● To prevent potentially dangerous situations, check the operating condition of the roller shutter/awning regularly.

### 02.2 Warnings for the installation

Check that the package is intact and has not been damaged in transit. ● A heavy knock and the use of unsuitable tools can cause the damage of the external or internal parts of the motor. ● Do not pierce or tamper with the motor in any way. Do not modify or replace parts without the manufacturer's permission. ● Do not carry the motor by the power cable. The product may not be used if the power cable is damaged. Do not try to replace the power cable. ● Any screws needed to complete the installation must not come into contact with the motor. ● The power of the motor must be sufficient for the applied load (check the rated data shown on the motor). ● Some stages of programming and/or normal operation make use of the mechanical stops of the roller shutter/awning. It is essential to choose a motor with the most suitable torque for the application, considering the actual traction of the roller shutter/awning, and to avoid motors that are too powerful. ● Use winding rollers that are at least 1mm thick. ● Leave 1-2 mm of right/left play on the winding roller. ● Check that the shape and size of the drive pulley and adapter crown correspond to the winding roller used. Adapters, supports and sundry accessories related to the motor must be chosen exclusively from the catalogue. ● If the product is installed at a height of less than 2.5 m from the floor or from another support surface, the moving parts must be protected with a cover to prevent accidental access. In any case, ensure access for maintenance work. ● The power cable must be positioned in such a way that it does not come into contact with moving parts. ● The power cable of the product is suitable for indoor installation only. If installed outside, place the cable in a protective tube. ● If there are several radio appliances in the same system, they must not be less than 1.5 m apart. ● Do not install the product near metal surfaces. ● Position the buttons within sight of the roller shutter/awning but a long way from its moving parts. Position the buttons more than 1.5 m from the floor. ● The motors are designed for residential use; the maximum continuous operating time is 4 minutes. ● During operation, the motor body becomes very hot, so be careful. ● The motor contains a self-resetting thermal cut-out, which stops the motor if it overheats. The motor returns to normal operation when its temperature drops below the safety limit (normally after 5 to 10 minutes). ● The motor must be installed so that it cannot come into contact with liquids and in any case in a position protected from atmospheric agents. ● The antenna cable carries line voltage. Do not cut the antenna cable as this would be dangerous. If the antenna cable is damaged, replace the product. ● For your safety, do not work near the winding roller while the motor is powered.

### 02.3 Warnings for use

The product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or given instructions on how to use the product by a person responsible for their safety. ● Before operating the roller shutter/awning, make sure there are no people or objects in the area involved in its movement. Check the automation during movement and keep people at a safe distance, until the movement ends. ● Do not allow children to play with the appliance or with the fixed control devices. Also, keep the portable control devices (remote controls) out of the reach of children. ● Do not operate the roller shutter/awning when maintenance operations are being carried out (e.g. window cleaning). If the control device is automatic, disconnect the motor from the power line.

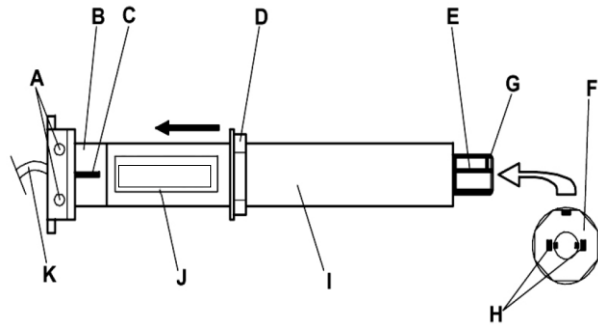


### 03. CAPACITY TABLES AND MOTOR COMPONENTS

#### V6RX.2

Model	Torque Nm	rpm	Power W
V6RX.2 15/13	15	13	125
V6RX.2 27/13	27	13	190
V6RX.2 35/13	35	13	230
V6RX.2 45/13	45	13	290

Model	Torque Nm	rpm	Power W
V6RX.2 8/17	8	17	105
V6RX.2 12/17	12	17	125
V6RX.2 22/17	22	17	190
V6RX.2 28/17	28	17	230
V6RX.2 38/17	38	17	290

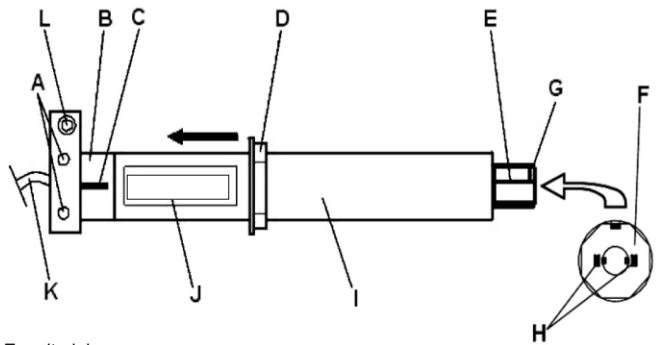


A=end-stroke adjustment screws / B=base ring / C=insertion key / D=adaptor ring / E=exit pinion  
 F=drive pulley / G=hooking tooth / H=hooking clips (to remove the pulley open the clips and pull slightly)  
 I=motor body / J=technical data plate / K=supply cable

#### VM6RX.2

Model	Torque Nm	rpm	Power W
VM6RX.2 15/13	15	13	125
VM6RX.2 27/13	27	13	190
VM6RX.2 35/13	35	13	230
VM6RX.2 45/13	45	13	290

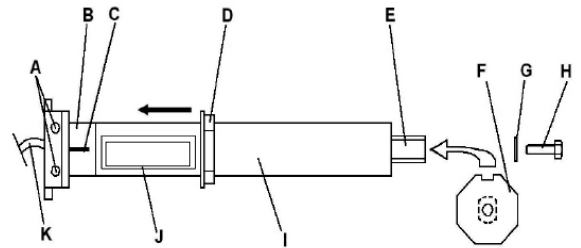
Model	Torque Nm	rpm	Power W
VM6RX.2 8/17	8	17	105
VM6RX.2 12/17	12	17	125
VM6RX.2 22/17	22	17	190
VM6RX.2 28/17	28	17	230
VM6RX.2 38/17	38	17	290



A=end-stroke adjustment screws / B=base ring / C=insertion key / D=adaptor ring / E=exit pinion  
 F=drive pulley / G=hooking tooth / H=hooking clips (to remove the pulley open the clips and pull slightly)  
 I=motor body / J=technical data plate / K=supply cable / L=manual override operation's hole

#### V7RX.2

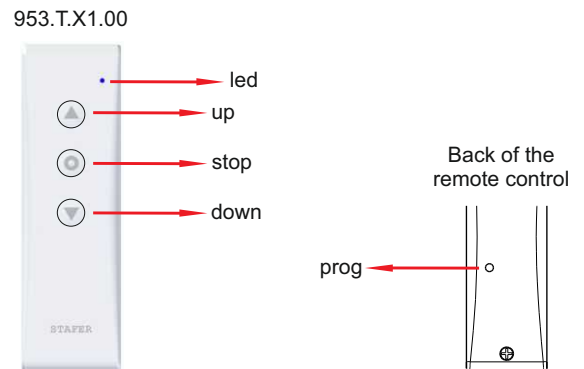
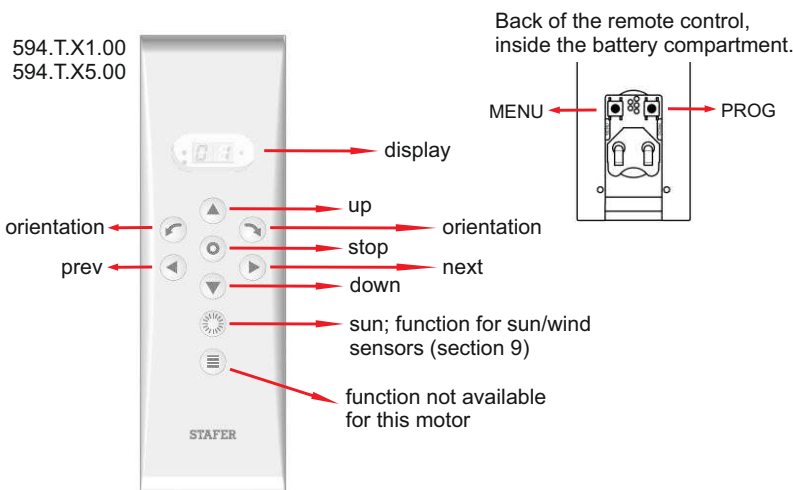
Model	Torque Nm	rpm	Power W
V7RX.2 80/12	80	12	375
V7RX.2 100/12	100	12	410
V7RX.2 130/9	130	9	410



A=end-stroke adjustment screws / B=base ring / C=insertion key / D=adaptor ring / E=exit pinion  
 F=drive pulley / G=washer / H=blocking screw  
 I=motor body / J=technical data plate / K=supply cable

### 04. COMPATIBLE TRANSMITTERS

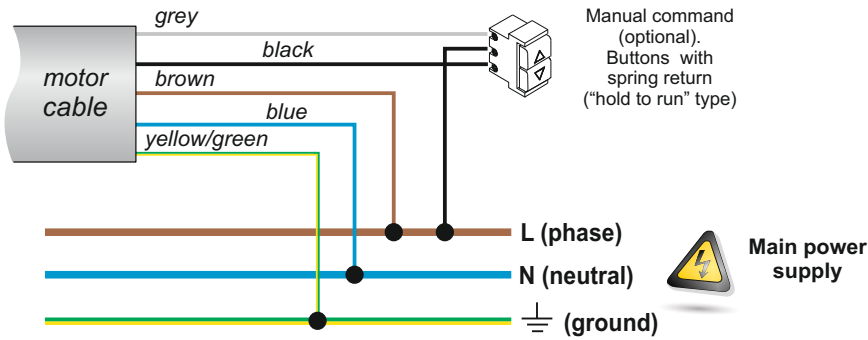
The motors of the series RX.2 are compatible with the transmitters of the series 594.T.X1.00, 594.T.X5.00 and 593.T.X1.00 (frequency 433,42MHz).



### 05. FITTING THE ADAPTORS

- 1) Fit the adaptor ring and, centring the insertion key, push it to the bottom of the base ring.
- 2) Fit the drive pulley, so the clips coincide with the hooking teeth of the pinion until a "click" is heard.

## 06. ELECTRICAL CONNECTION



### 06.1 Warnings

Make connections with power supply disconnected. ● Check that the power supply line doesn't depend from electrical circuits for lighting. ● The supply line must be equipped with a circuit breaker. The installer must fit an isolation device (with 3 mm minimum opening on the contacts) upstream of the system. ● The section of the connecting cables must be proportionate to their length and to the absorption of the load, and in any case not less than 1.5 mm. ● The product doesn't provide any protection against overloads or short circuits. You must provide, on the supply line, an adequate protection to the load, for example a rapid fuse of maximum value 3.15 A. ● You must use buttons with spring return ("hold-to-run" type), do not use buttons with maintained position. ● Command buttons are connected to the main voltage, so they must be properly insulated and protected.

### 06.2 Power supply

The supply voltage must be applied to the brown (PHASE) and blue (NEUTRAL) wires. Connect the green / yellow wire to the grounding system. The electrical specifications for motor operation are shown in the label applied to the tube of the motor.

### 06.3 Command buttons

The control buttons are optional if motor is equipped with radio receiver.

The command buttons must be connected to the black and gray wires and they must close on brown wire. **You must use buttons with spring return ("hold to run" type)**, do not use buttons with maintained position. More command buttons can be connected via a parallel connection. The control buttons are subject to the mains voltage and therefore should be properly insulated and protected. In the case where the command buttons are not used, it is necessary to ensure the isolation of black and gray wires.

### 06.4 Motor connection to a home automation control unit

There are different types of home automation control unit (following H.A.C.U.). Some H.A.C.U. allow you to program the time of closing of the output contacts, while others do not allow it; some H.A.C.U. measure the current consumption of the devices applied to the output contacts, while others do not; some H.A.C.U. work with proprietary protocols, while others work with "standard" protocols (eg KNX, Modbus, ...). Because of the diversity of the characteristics of the H.A.C.U. on market, the motor manufacturer can not know if the motor is compatible with the installed H.A.C.U. The control outputs of the H.A.C.U. must be connected to the command inputs of the motor (GREY and BLACK wires), replacing the manual buttons. Consequently, the H.A.C.U. must comply with the rules of operation of the command buttons, depending on whether the command buttons work in PULSE mode (factory setting) or in HOLD TO RUN mode.

#### Rules that the H.A.C.U. must comply to control the motors operating with buttons in PULSE mode.

- The H.A.C.U. must not measure the current drawn by the command inputs of the motor (which absorb less than 1 mA).
- The H.A.C.U. must be connected to the motor as shown, substituting the command buttons with the outputs of the H.A.C.U..
- To operate the motor, the H.A.C.U. must close contact (up or down) for more than 0.5 seconds (typically using a pulse duration of 1 second).
- To stop the motor, the H.A.C.U. must close contact (up or down) for 0.5 seconds or less (typically using a pulse duration of 0.2 seconds).

#### Rules that the H.A.C.U. must comply to control the motors operating with buttons in HOLD TO RUN mode.

- The H.A.C.U. must not measure the current drawn by the command inputs of the motor (which absorb less than 1 mA).
- The H.A.C.U. must be connected to the motor as shown, substituting the command buttons with the outputs of the H.A.C.U..
- To allow the conclusion of the entire opening / closing, the H.A.C.U. must be able to close the contact UP / DOWN to the time required for the motor to perform the complete operation.
- To stop the motor, the H.A.C.U. must be able to re-open the contacts UP / DOWN at any time.

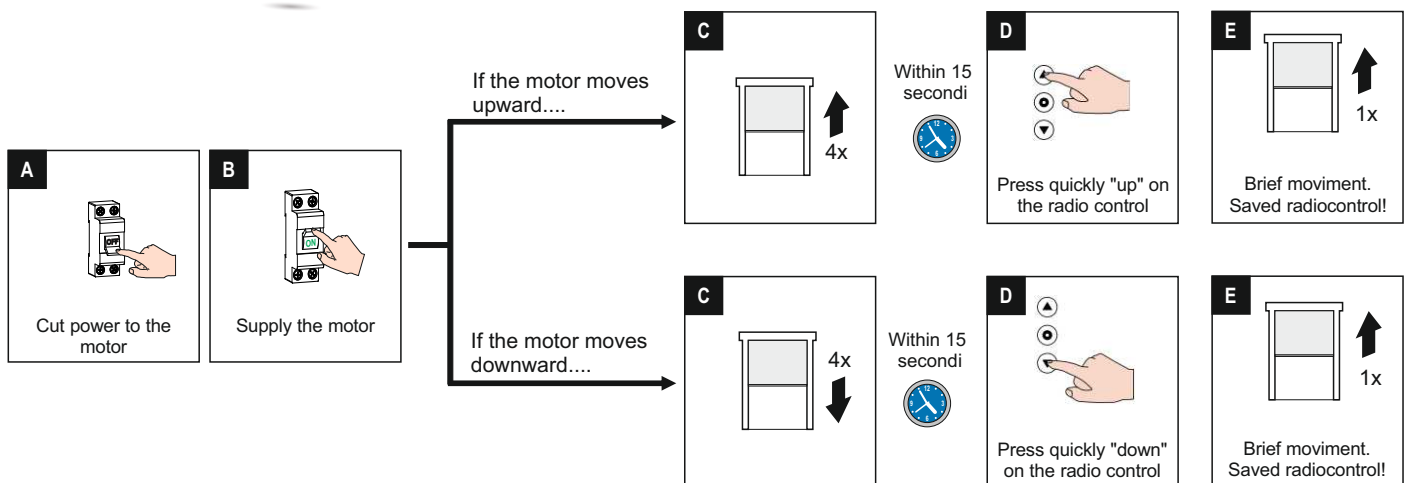
At the time of this document printing, specific issues related to the connection between these products and H.A.C.U. are not known (if you follow the rules above). However disclaims any responsibility concerning the non-compatibility (even partial) with any H.A.C.U.. If the H.A.C.U. uses KNX protocols or similar, contact the vendors of home automation controller informing them of the rules above. Probably the manufacturer of H.A.C.U. can provide appropriate interfaces to connect the motor to the H.A.C.U. In the case in which the connection between the H.A.C.U. and motor is not possible or there is some problems, it may be convenient to apply to the control outputs of the H.A.C.U. a suitable transmitting device that will be tuned subsequently to the motor to be controlled. For more information, contact your dealer.

## 07. FIRST INSTALLATION (WITH HAND-HELD TRANSMITTER)

We recommend that you read the entire procedure before performing these steps, in such a way as to make the execution of the procedure easier and with less chance of error.



The installation must be performed by a qualified technician. If in doubt contact your supplier.

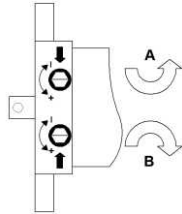


IF IN POINT "E" MOTOR MAKE 4 MOVEMENTS MEAN THAT THE STORE IS FAILED. PROBABLY YOU HAVE PUSHED THE BUTTON MORE THAN 15 SECONDS FROM MOTOR MOVEMENTS. RESUME THE POINT "A" CUTTING OFF THE POWER AND REDO THE PROCEDURE.

IF THE MOTOR MOVES CONTRARIWISE TO THE BUTTON YOU PUSH ON THE TRANSMITTER, YOU HAVE TO CARRY OUT A RESET (SEE SECTION 13) AND REDO THE PROCEDURE.

## 08. SETTING THE END-STROKE POSITIONS

- A. stroke is extended (anticlockwise)
- B. stroke is shortened (clockwise)



The end-strokes are integrated in the motor. They restrict the stroke of the shutter, awning, etc. with at most 28 turns. Their correct adjustment is necessary to ensure perfect and lasting operation both of the motor and the driven part installed. The factory setting allows about 3 turns for each direction of operation.

**When handling the manual override (with the motor VM6.RX2), don't exceed the end limit positions (do not open or close completely the rolling shutter).**

### Roller shutter

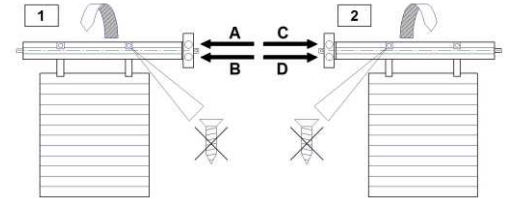
Mind the moving rolling shutter and keep away until the shutter is completely lowered.

Figure 1: motor installed on right (seen from inside)

- A. high end-stroke
- B. low end stroke

Figure 2: motor installed on left (seen from inside)

- C. high end-stroke
- D. low end-stroke



**Do not use manual safety bolts on the roller shutters (when this motor is installed)**

### Awning

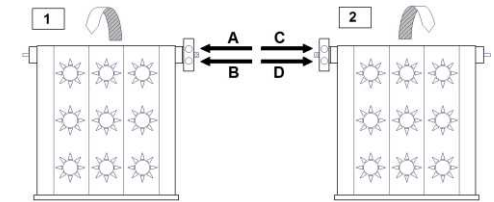
Do not operate the awning when maintenance jobs are being performed nearby, such as window cleaning. Disconnect the motor in such cases, if an automatic control is installed.

Figure 1: motor installed on right (seen from outside)

- A. low end-stroke
- B. high end-stroke

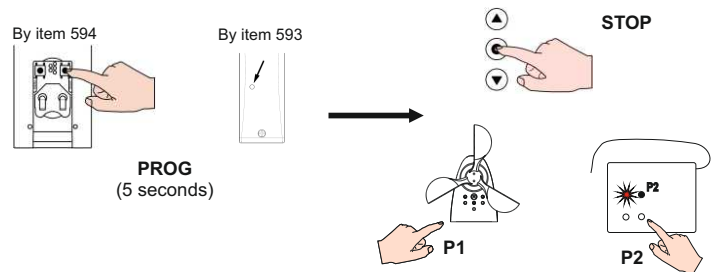
Figure 2: motor installed on left (seen from outside)

- C. low end-stroke
- D. high end-stroke



## 09. MEMORIZATION / DELETION OF A RADIO DEVICE (RADIO TRANSMITTER, SUN/WIND SENSOR, RAIN SENSOR)

01. Bring the motor in the intermediate position.
02. Press and hold PROG of a transmitter already memorized for about 5 sec. The motor makes 2 small upward movements
03. Within 15 seconds, to store/delete:
  - a transmitter: press **STOP** in the transmitter to store/delete
  - a sun-wind sensor: press **P1** on the sensor to store/delete
  - a rain sensor: press **P2** on the sensor to store/delete
04. 1 movement upward: device stored!!  
 1 movement downward: device deleted!!  
 2 movements downward: error!!



### Notes:

point 3: in a battery powered sensor you may need to hold the button up to 10 seconds.

point 4: is reported "error" if the radio code does not prevent in time, if the memory is full, if you try to delete the only transmitter in memory, if you try to store more than one sun sensor or more than 4 wind sensors.

## 10. SUN/WIND SENSOR , RAIN SENSOR

The sensors generate automatic manoeuvres without notice of any source of danger. The installer must inform the end user and possibly integrate the installation with adequate security systems.

In some situations (eg loss of motor voltage or sensor, failure of motor or sensor, radio interference...) it is possible that the command sent from the sensor is not detected by the motor. The sensor must therefore not be understood as a safety device which ensures the integrity of the roller blind in every condition, but a means to limit the probability that the roller blind can be damaged by adverse weather conditions.

### Compatible sensors with motors RX.2

The motors RX.2 have built-in radio receiver and require the use of radio sensors. Use 593.K.XS.00 sensor (sun-wind sensor) or 593.K.XB.00 sensor (sun-wind sensor with battery) or 593.K.SP.R0 (rain sensor). When the sensor detects the presence of wind, a "wind alarm" message is sent and tuned motors move in upward direction and manual controls are disabled until the end of the alarm. When the sensor detects the presence of the sun, it sends a "presence of sun" message and the tuned motors move in downward direction. When the sensor detects the absence of the sun, a "sun absent" message is sent: the tuned motors move in upward direction.

When the sensor detects the presence of rain, it sends the message "presence of rain": the tuned motors move in upward or downward direction depending on the rain sensor setup. Each motor can store only one sun sensor. For more information, please refer to the instruction manual of the sensors.

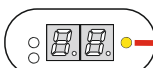
### Sun function (with wind-sun sensor) with item 594



Select the motor channel  
(excluded «SE» sequencer channel)



Press SUN on transmitter (about 2 seconds) until the state of the YELLOW LED varies. The motor moves up/down to confirm the change.



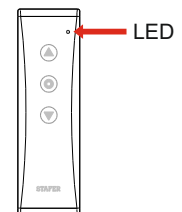
YELLOW LED LIGHT **ON/OFF**:  
«sun» function **active / off**

For clarifications, consult the manual of your wind-sun sensor.

### Sun function (with wind-sun sensor) with item 593

If the LED flashes during transmission, the "sun function" is inactive. If the LED stays ON during transmission, the "sun function" is active.

To enable/disable the "sun function" press STOP and UP together for 3 seconds.



For clarifications, consult the manual of your wind-sun sensor.

## 11. ORIENTATION

This function allows you to move the motor with small steps. Function useful for situations in which the roller blind is composed of orientable elements. The function is active for application Orientable roller shutter (set to level 3), while inactive (but activable) for other supported applications. You can set the duration of the movements of orientation (see Tab.). The factory sets the function at 1 (000 msec = inactive). To modify this parameter see below.

### 11.1 How to set the orientation function using the transmitter item 594

01. Bring the motor in an intermediate position.
02. Press MENU for about 5 sec, until «rS» appears on display.
03. Press 1 time PREV / 2 times NEXT. «12» appears on display.
04. Press STOP. The motor signals the current value (1 to 5 movements).
05. Press NEXT the number of times equal to the desired setting (1 to 5).
06. Press STOP. The motor signals the new value (1 to 5 movements).

### 11.2 How to set the orientation function using the transmitter item 593

01. Bring the motor in an intermediate position
02. While press STOP also press PROG for about 1 sec., until the LED lights up.
03. Press STOP. The motor signals the current value (1 to 5 movements)
04. Press DOWN the number of times equal to the desired setting (1 to 5)
05. Press STOP. The motor signals the new value (1 to 5 movements)

Moviments number	Setting
1	Function inactive
2	50 msec
3	100 msec
4	150 msec
5	200 msec

### 11.3 How to command orientation

#### With transmitter item 594

Push «orientation» buttons LEFT and RIGHT (see section 4).

#### With transmitter item 593

Press briefly twice STOP than press UP or DOWN until the desired position.

#### With command buttons

Push briefly a button (less than 0,5 seconds) than push it immediatly again and hold down until the desired position.

## 12. TEST RADIO function FOR SUN-WIND SENSOR

As soon as the motor stores a wind radio sensor or a sun / wind radio sensor, automatically activates a communication control between the radio sensor and itself. If communication is lost for more than 60 minutes, the motor performs an upward movement to protect the blind. This manoeuvre is performed automatically every 60 minutes until the restoration of radio communication. The factory recommends to keep active the "radio test" in order to identify in good time any malfunction of the sensor radio. For set this function see below.

### 12.1 USING A TRANSMITTER ITEM 594

01. Select the correct radio channel and bring the motor on the intermediate position.
02. Press MENU for about 5 seconds. «rS» appears on the display.
03. Press 1 TIME PREV and 7 times NEXT. 17 appears on the display.
04. Press 1 time STOP. The receiver signals the current value.  
Function active: ▲ 1 (1 short upward movement)  
Function not active: ▼ 1 (1 short descent movement)
05. Press PREV to disable the function (Of appears on the display) or NEXT to enable the function (On appears on the display).  
Factory set is On.
06. Press 1 time STOP. The receiver signals the new value.  
Function active: ▲ 1 - Function not active: ▼ 1

### 12.2 USING A TRANSMITTER ITEM 593

01. Bring the motor on the intermediate position.
02. While press STOP also press PROG for about 1 sec., until the LED lights up.
03. Press 1 time UP and 7 times DOWN.
04. Press 1 time STOP. The receiver signals the current value.  
Function active: ▲ 1 (1 short upward movement)  
Function not active: ▼ 1 (1 short descent movement)
05. Press DOWN to disable the function.  
Press UP to enable the function.
06. Press 1 time STOP. The receiver signals the new value.  
Function active: ▲ 1 - Function not active: ▼ 1

## 13. RESET

### 13.1 USING A TRANSMITTER ITEM 594

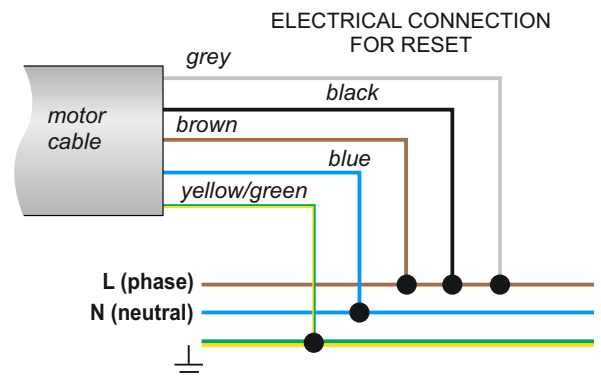
01. Bring the motor in an intermediate position.
02. Press MENU for about 5 sec, until «rS» appears on display.
03. Press 2 time PREV and 9 times NEXT. «29» appears on display
04. Press STOP. The display flashes, the motor performs some movement.
05. Press together PREV and NEXT for about 2 seconds until the motor indicates that the reset was performed (1 moving up / down).
06. Reinstall the motor (see section 7).

### 13.2 USING A TRANSMITTER ITEM 593

01. Bring the motor in an intermediate position.
02. While press STOP also press PROG for about 1 sec., until the LED lights up.
03. Press 2 time UP and 9 times DOWN.
04. Press STOP. The display flashes, the motor performs 8 movements.
05. Press together UP and DOWN for about 2 seconds until the motor indicates that the reset was performed (2 moving up / down).
06. Reinstall the motor (see section 6 and 7 of this manual).

### 13.3 USING POWER CABLES

01. If possible, bring the motor to the intermediate position.
02. Disconnect the power supply.
03. Connect as on the diagram.
04. Connect the power supply. Wait 30 seconds, the motor makes a signal: «Limit switch deleted».
05. Disconnect the power supply.
06. Restore the connections (see diagram on section 6).
07. Reinstall the module (see section 7).



### DECLARATION OF CONFORMITY 'SIMPLIFIED

The manufacturer declares that the product complies with the directive 2014/53/UE , 2014/35/UE , 2014/30/UE.



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All products and technical specifications given in this document are subject to variation without notice. Unless previously and specifically authorised by STAFER, the device must be used exclusively with transmitters produced by STAFER.

STAFER cannot be consider responsible for damage caused by improper, incorrect or unreasonable uses.