



## A TUBULAR MOTOR CONNECTION AND ADJUSTMENT INSTRUCTION MANUAL

WARNING - FOR THE SAFETY OF PEOPLE, IT IS IMPORTANT TO FOLLOW THIS INSTRUCTION MANUAL. KEEP THIS MANUAL AT ALL TIMES!

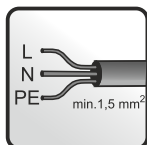
### 1. Technical conditions for connecting tubular motors



- Prior to any installation, connection or adjustment works, read the following instruction manual.



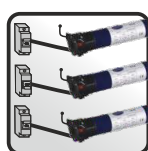
- Installation works must be done only by a properly licensed electrician, in compliance with relevant standards applicable in a given country.



- The minimum size of the wire used in the power supply system must not be under 1.5 mm<sup>2</sup> in cross-section.



- Tubular motors shall be installed in compliance with the applicable standards which set forth the voltage value at 230V 50Hz. Surge protection devices shall be used to optimise the system parameters.



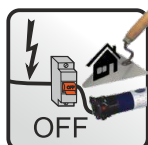
- The way PORTOS-R radio motors are connected to the system shall allow for an option of the voltage shutdown for a given motor in order to respectively program it.



- Motors must never be connected to the system under voltage (use dedicated wires).

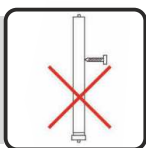


- In case of connecting motors of the total capacity over 1.5 kW, the motors shall be grouped into capacity groups ranging from 1-1,5 kW, and each group shall be provided with a separate power supply, including supply of power from different phases of a 3-phase circuit, if possible.

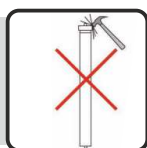
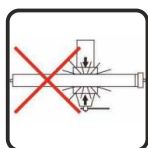


- Tubular motors shall be disconnected from the power supply for the duration of any finishing, construction or renovation works to protect them against any sudden voltage surges.

### 2. Safety measures



- Do not allow any holes to be made along the entire length of the motor.



- Avoid any motor crushing or hitting.



- Avoid contact with liquids.



- Keep the playing children away from motor control devices.



- Any interference in the motor or bad connection may pose hazard for the health or life.



- Always verify the system used for any signs of wear and tear or wire damage. If any damage is found, the system must not be used.

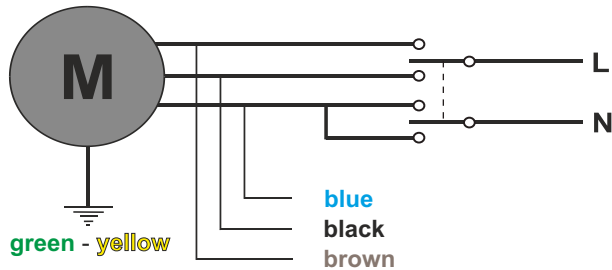
### CASES OF INTERFERENCE THAT ARE OUTSIDE OF ANY GUARANTEE/WARRANTY

**NOTE** - in case of installation works concerning radio motors with an electronic or mechanical limit switch, such works shall be carried out in compliance with the applicable standards which set forth the voltage value at 230V 50Hz. We recommend using surge protection devices to protect the system against any deviations in values.

### 3. Motor connection

A motor with a switch is provided - at the outlet - with a 4-way switch wiring, of the length of about 1.5 m, which extends outside of the roller shutter

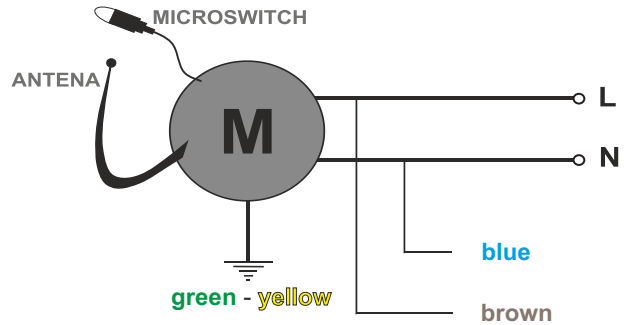
- green - yellow coloured wire is used as the earthing
- blue coloured wire is a neutral wire (N)
- black and brown coloured wires designate the direction of the motor revolutions



It is prohibited to connect more than one motor to one switch

A radio motor - is provided at the outlet - with a 4-way switch wiring, of the length of about 1.5 m, which extends outside of the roller shutter

- green - yellow coloured wire is used as the earthing
- blue coloured wire is a neutral wire (N)
- brown coloured wire designates the phase

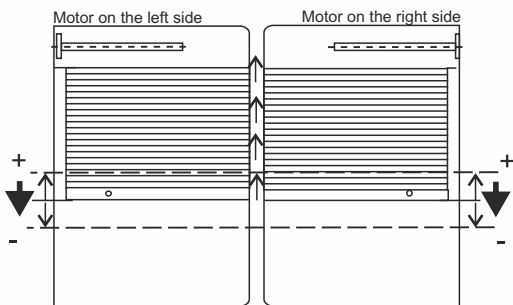


Radio motors shall be programmed in compliance with the instruction manual of the remote control.

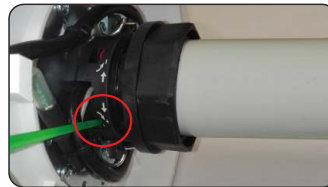
### 4. Adjustment of the end-limit switch positions

The end-limit switch positions shall be adjusted when the motor is cold. Adjustment of the end-limit switch positions requires switching the motor on and off for several times. During the work the motor heats up. The tubular motor is provided with a thermal switch, which stops the motor work if the motor reaches the set limit temperature. The time of continuous operation of the motor is about 4 minutes. After that time, the motor can switch off until it cools down, i.e. for the approximate duration of 30 minutes.

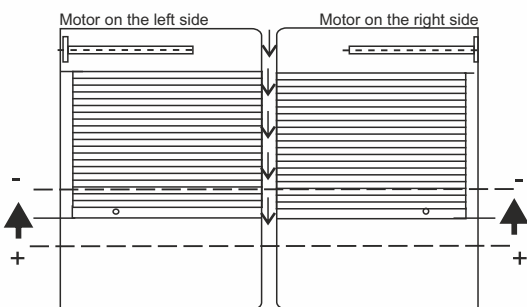
Adjustment of the upper position of the shutter curtain profile



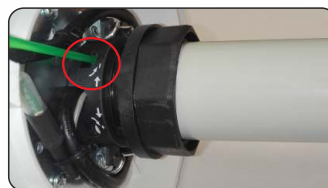
The end-limit switches are in the motor head position. Each is marked with an arrow that indicates the direction of the motor revolutions. The down arrow designates the direction of the motor work that lifts up the shutter curtain profile. Thus, this end switch shall be used to adjust the upper end position of the roller shutter.



Adjustment of the bottom position of the shutter curtain profile

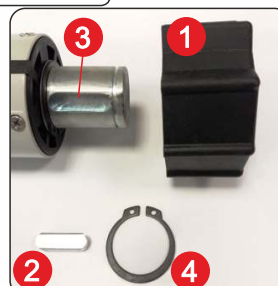


The up arrow designates the direction of the motor work that lowers the shutter curtain profile, thus the knob at this end switch will adjust the bottom end position of the shutter curtain profile. Turning the key in the adjustment jack towards „plus“ (+) will result in increasing the motor work range in a given direction. Turning the key in the opposite direction will decrease the motor work range in a given direction.



### 5. Installation of a lifter in PORTOS motors intended for tubes Ø 70

A lifter (1) is installed in PORTOS motors suitable for winding tubes Ø 70 as follows: first a wedge chock (2) is placed in the groove (3) milled on the mandrel of the lifter. Once the lifter is inserted, it is blocked with the spiral pin (4).



## 6. Most typical complaint issues and motor damage types and their solutions:

### Wired motors:

- PORTOS series  
- mechanical end switches



L.p.	PROBLEM	POSSIBLE CAUSES	SOLUTIONS AND SUGGESTIONS
1.	Electricity supply is switched on and the motor does not work	a. wrong connection b. overloading c. wrong system installation	a. check the wires b. assume the load that is proper for the nominal torque
2.	Sudden motor stoppage	Rated time of operation (4 minutes) is exceeded	<b>After about 30 minutes, the motor will cool down and start working automatically</b>
3.	The motor stops working and the range of its work cannot be increased	The end switch is in the maximum position or has been turned	Take the motor out and turn the adapter several times (as many times as needed) in the opposite direction. Next, insert the motor into the winding tube and adjust the end switch to the desired position
4.	"Buzzing" noise	The motor is short circuited	The motor shall be replaced
5.	The motor stops in the upper end position stretching the shutter curtain profile and "buzzes"	The upper end position has been incorrectly adjusted	Adjust the end position following the instruction manual
6.	The roller shutter does not lift but the motor can be heard working	Most probably holders are broken	Reach to the inside of roller shutter and replace the holders
7.	The motor is dead	Possible burnt parts	The motor shall be replaced
8.	The roller shutter stopped halfway and fails to lower down, while cracking noise is heard.	a. guides are too narrow b. the shutter curtain profile gets blocked inside the box	a. check the distance between the guides at the entire length of the window height b. check if the shutter curtain profile is not blocked inside the box
9.	Noisy motor work	AWD transfer case is damaged	The motor shall be replaced
10.	The roller shutter is self-shutting	The brake is damaged	The motor shall be replaced

### Radio motors:

- PORTOS series R  
- mechanical end switches



L.p.	PROBLEM	POSSIBLE CAUSES	SOLUTIONS AND SUGGESTIONS
1.	The motors does not work, noises and beeps are heard	Radio module is damaged	The motor shall be replaced
2.	The motors does not work, noise of switching transmitters is heard	Electrical system in the motor is damaged	The motor shall be replaced
3.	The motor stops working and the range of its work cannot be increased	The end switch is in the maximum position or has been turned	Take the motor out and turn the adapter several times (as many times as needed) in the opposite direction. Next, insert the motor into the winding tube and adjust the end switch to the desired position
4.	"Buzzing" noise	a. the motor is short circuited b. the radio module is damaged	The motor shall be replaced
5.	The motor stops in the upper end position stretching the shutter curtain profile and "buzzes"	The upper end position has been incorrectly adjusted	Adjust the end position following the instruction manual
6.	The roller shutter does not lift but the motor can be heard working	Most probably holders are broken	Reach to the inside of roller shutter and replace the holders
7.	The motor is dead	a. possible burnt parts b. the radio module is damaged	The motor shall be replaced
8.	The roller shutter stopped halfway and fails to lower down, while cracking noise is heard	a. guides are too narrow b. the shutter curtain profile gets blocked inside the box	a. check the distance between the guides at the entire length of the window height b. check if the shutter curtain profile is not blocked inside the box
9.	Noisy motor work	AWD transfer case is damaged	The motor shall be replaced
10.	The radio motor responds to the remote control signal only at a close distance	a. short distance of the remote control caused with low battery b. damaged antenna in the motor	a. replace the battery in the remote control b. check if there is no break in the antenna signal circuit, in case of a break, fix the antenna to the motor
11.	The roller shutter is self-shutting	The brake is damaged	The motor shall be replaced

## 7. Technical data

	Nominal torque ( Nm)	Nominal speed (obr/min)	Diameter of the winding tube (mm)	Rated voltage (V)	Power consumption (W)	Frequency (Hz)	Intensity (A)	Time of operation (min)	Net weight (kg)	Length of power supply wire (mb)	Protection (IP)	Maximum number of revolutions of the end system (obr)	Total length of the motor (mm)
S 40/10	10	17	35	230	121	50	0,53	4	1,3	2,00	44	41	512
S 40/10 S	10	17	35	230	121	50	0,53	4	1,2	2,00	44	39	370
S 40/10 RM	10	17	35	230	121	50	0,53	4	1,45	2,00	44	41	642
S 60/10	10	15	45	230	112	50	0,49	4	1,79	2,00	44	22	475
S 60/10 S	10	15	45	230	112	50	0,49	4	1,7	2,00	44	25	350
S 60/10 RM	10	15	45	230	112	50	0,49	4	2,1	2,00	44	22	595
S 60/20	20	15	45	230	145	50	0,64	4	2,1	2,00	44	22	475
S 60/20 NHK	20	15	45	230	145	50	0,64	4	2,5	2,00	44	21	555
S 60/20 RM	20	15	45	230	145	50	0,64	4	2,2	2,00	44	22	595
S 60/30	30	15	45	230	191	50	0,83	4	2,3	2,00	44	22	545
S 60/30 NHK	30	15	45	230	191	50	0,83	4	2,9	2,00	44	21	595
S 60/30 RM	30	15	45	230	191	50	0,83	4	2,6	2,00	44	22	645
S 60/40	40	15	45	230	198	50	0,86	4	2,5	2,00	44	22	545
S 60/40 NHK	40	15	45	230	198	50	0,86	4	3	2,00	44	21	595
S 60/50	50	12	45	230	205	50	0,89	4	2,6	2,00	44	22	545
S 60/50 NHK	50	12	45	230	205	50	0,89	4	3,1	2,00	44	21	595
S 70/60	60	15	59	230	300	50	1,28	4	4,8	2,00	44	24	660
S 70/60 NHK	60	15	59	230	300	50	1,28	4	5,9	2,00	44	24	660
S 70/80	80	15	59	230	350	50	1,34	4	5,2	2,00	44	24	660
S 70/80 NHK	80	15	59	230	350	50	1,34	4	6,2	2,00	44	24	660
S 70/100	100	12	59	230	320	50	1,34	4	5,2	2,00	44	24	660
S 70/100 NHK	100	12	59	230	320	50	1,34	4	6,2	2,00	44	24	660

## 8. Tubular motor lifting capacity:

	motor power ( Nm)	Motor lifting capacity at the roller shutter height up to:					Minimum width of the roller shutter			Motor lifting capacity at the roller shutter height up to:				
		ø40		ø60			Front mounted roller shutters	Top Mounted Roller Shutters	Minimum length of the pipe (RKS - rigid corrugated)	motor power ( Nm)	ø40		ø60	
		up to 3 m	up to 4 m	up to 2 m	up to 3 m	up to 4 m					ø40	ø60	ø40	ø60
40/10 S	10 Nm	10 kg	8 kg	-	-	-	52 cm	57 cm	-	60/40	40 Nm	58 kg	-	
40/10	10 Nm	12 kg	10 kg	-	-	-	62 cm	67 cm	-	60/40 NHK#427	40 Nm	58 kg	-	
40/10 RM	10 Nm	12 kg	10 kg	-	-	-	78 cm	83 cm	-	60/50	50 Nm	86 kg	-	
60/10 S	10 Nm	-	-	18 kg	16 kg	14 kg	44 cm **	58 cm	53 cm *	60/50 NHK#427	50 Nm	68 kg	-	
60/10	10 Nm	-	-	18 kg	16 kg	14 kg	68 cm	63 cm *	63 cm	70/60	60 Nm	-	79 kg	
60/10 RM	10 Nm	-	-	18 kg	16 kg	14 kg	83 cm	78 cm *	70 cm	70/60 NHK#427	60 Nm	-	79 kg	
60/20	20 Nm	-	-	36 kg	33 kg	30 kg	68 cm	63 cm *	63 cm	70/100	100 Nm	-	110 kg	
60/20 RM	20 Nm	-	-	36 kg	33 kg	30 kg	83 cm	78 cm *	70 cm	70/100 NHK#427	100 Nm	-	110 kg	
60/30	30 Nm	-	-	54 kg	49 kg	45 kg	75 cm	70 cm *	68 cm					
60/30 RM	30 Nm	-	-	54 kg	49 kg	45 kg	85 cm	80 cm *	75 cm					
60/20 NHK#427	20 Nm	-	-	36 kg	33 kg	30 kg	83 cm	78 cm *	-					
60/30 NHK#427	30 Nm	-	-	54 kg	49 kg	45 kg	85 cm	80 cm *	-					

\* If short RKS holder is used

\*\* OBS-60-S-ALU holder is used