

Obstacle detection motor with electronic limit switches

YYGL35E-10/17
YYGL45E-20/15



1. SAFETY GUIDELINES

1.1 Basic guidelines

The obstacle detection motor is delivered in a condition allowing for safe installation and operation, provided that all guidelines herein as well as relevant safety and accident prevention regulations are observed. Only qualified and licenced personnel is allowed to install and repair electrical devices. It is prohibited to make any changes or modifications to the drive. Warranty repairs may be conducted only by the manufacturer. Use only original spare parts and accessories during post-warranty repairs. Operational safety of the drive can only be ensured if it is used for its intended purpose. Do not exceed limit values given in technical information.

1.2 Additional safety regulations

Observe relevant safety and accident prevention regulations when installing, commissioning and maintaining the drive. The following must be given special consideration:

1. Fire safety regulations.
2. Accident prevention regulations.



1.3 General notes on risks and safety measures

These notes are general guidelines for the use of INEL devices in combination with other devices. These guidelines must be strictly observed when installing and operating the devices.



Warning - against possible damage to the drive, roller blind, roller blind cassette, elevation etc. if no relevant safety measures are taken:

- Check if all screw connections are secure before installing the drive and setting limit switches



Danger - means that there is a threat to life and limb of the user if no relevant safety measures are taken:

- Check the compatibility of the permissible voltage of the device with the local power supply before connecting.
- Observe applicable safety and accident prevention regulations.
- Use an isolation switch allowing for safe power supply disconnection (e.g. fuse cut-off switch) installed in such a way that all connections can easily be cut out.
- Inspect wires and cables regularly for damaged insulation and conductor continuity.
- If any damage is identified, cut off power immediately and replace the damaged wiring.

1.4 Warning

- Do not allow children to play with control devices.
- Keep the remote control out of reach of children.
- Observe the moving roller blind and keep people away until it fully opens or closes.
- The users of the roller blind must be instructed in its operation and existing risks related to its usage. Persons are deemed to have been trained if the employer,

administrator or owner allowed them to use the roller blind and instructed them in its operation.

2. INSTALLATION INSTRUCTIONS

2.1 Safety regulations

- Only persons with appropriate authorisation may install the drive.
- The weight of the roller blind may not exceed the maximum load of the drive specified in the selection table (see the end of the instructions)
- Routing the cable properly (loop aimed downwards) will protect the drive against any water damage.
- Do not drill holes in motor housing.
- Protect the motor against contact with any liquids.
- Avoid crushing and impacting the motor, protect the motor against shock.
- Do not connect more than one on/off switch to a single motor.
- Do not connect more than one motor to a single on/off switch.

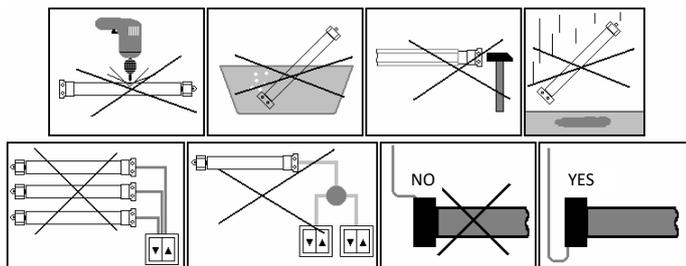


Figure 1

2.2 Installing the motor

- Fix the mounting bracket (A) to the side of the roller blind cassette, connect the adapter (D) to the thrust ring of the motor (C).
- Place an appropriate driver provided with the motor (E) on the motor axis, secure it with a pin (F), and slide the entire motor to the roller tube (G).

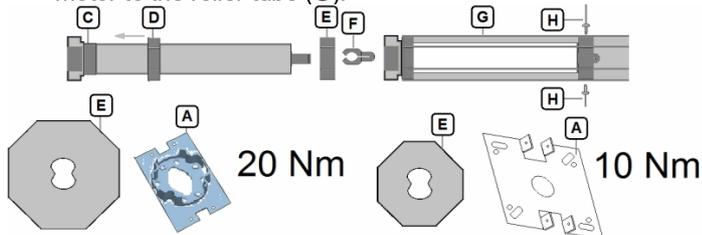


Figure 2

WARNING: The motor is fitted with an internal thermal cut-out which allows the roller blind to work continuously for ca. 4 min. After this time the temperature inside the motor will exceed the permissible value, which will cause power cut-out. Subsequent vertical movement of the roller blind will only be possible after the motor cools down (it can take up to twenty minutes). Using this cut-out greatly increases the life of the drive

ENTERING PROGRAMMING MODE

2.3 "Electrical connections

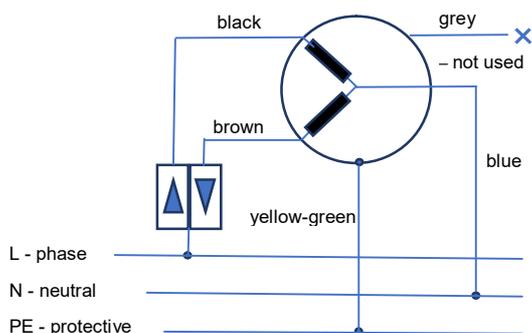


Figure 3



DISCONNECT POWER SUPPLY BEFORE MAKING ANY CONNECTIONS!



Improper roller blind installation will cause the motor to stop unexpectedly.

In order for the obstacle detection drive to function properly, the following is required:

1. Use a special driver provided with the motor (diagram 2-E)
2. Ensure that the curtain can move freely in the guides and the cassette. This movement may not be obstructed (e.g. by increase of the roller blind cassette temperature, mosquito net etc.)

3. PROGRAMMING

Before drive startup/programming check the condition of the curtain, guides and roller blind cassette and whether there is a sill mounted in the window!

The roller blind cassette and guides should be free from any contaminants and ensure unrestricted curtain movement throughout the entire length. If the guides are contaminated with building materials or are too tight, they can cause damage to the drive and the roller blind, which is not covered by the warranty.

WARNING: The drive is initially in factory mode which does not allow the programming of limit positions. In order to set limit positions you must switch into programming mode by using service cable or blind switch.

In the factory mode and during limit position set-up the drive will move with a 1-second pause immediately after start - this means that no limit positions have been set.

BEFORE PROGRAMMING

- A. Check whether the direction of roller blind movement is consistent with the switch directional buttons (if they are opposite, switch around the wires on the switch).
- B. Place the lower edge of the curtain at half the height of the guides. Starting the programming procedure too near the roller blind cassette may damage it.

3.1 With a service cable

When using a service cable, press and hold the  and  buttons at the same time for at least 3 seconds. The roller blind will confirm by moving up-down-up-down.

OR

3.2 With a blind switch

Press the buttons of the switch in the following order, making the roller blind perform a short move each time:



Figure 4

The presses should not be longer than 1 second counted from the start of movement. The last press will confirm the entered sequence - it should last at least 2 seconds. The roller blind will confirm the start of programming by moving up-down-up-down.

WARNING! Programming always starts with the set-up of the upper limit.

AUTOMATIC LIMIT PROGRAMMING

The programming procedure may be performed automatically only if blocking hangers and stoppers are used. The window must be fitted with a sill. The length of the curtain must be adjusted to the length of the guides.

1. Press and hold the "↑" button for the duration of the entire programming procedure.
2. The drive will stop on stoppers, after 3 seconds it will set the upper limit and then switch the movement direction. At the bottom the drive will stop as soon as it reaches the sill and set the lower limit, after which it will return to the upper limit and confirm that programming is finished.

When using a service cable, the entire programming may be performed by setting the switch  to 'I'.

WARNING! Releasing the button during automatic programming will automatically enter the SEMI-AUTOMATIC programming mode.

SEMI-AUTOMATIC LIMIT PROGRAMMING

UPPER LIMIT

Upper limit in the desired position (if no stoppers are present):

- a. Press and hold the "↑" button.
- b. Release the button in the desired upper limit position. Fine tune the position by short pressing the "↑" or "↓" buttons.
- c. Press and hold the "↓" to confirm the upper limit. The roller blind will make a short movement, and then confirm that the upper limit position has been saved by two down-up sequences. It will then start moving down. At this point release the button and start programming the lower limit.

OR

Upper limit by overload (if stoppers are used):

- a. Press and hold the "↑" button.
- b. Release the button after the drive stops (if the button is not released within 3 s the drive will enter automatic programming mode). Fine tune the position by short pressing the "↑" or "↓" buttons.
- c. Press and hold the "↓" to confirm the upper limit. The roller blind will make a short movement, and then confirm that the upper limit position has been saved by two down-up sequences. It will then start moving down. At this point release the button and start programming the lower limit.

LOWER LIMIT

Lower limit in the desired position:

- a. Press and hold the "↓" button.
- b. Release the button in the desired lower limit position. Fine tune the position by short pressing the "↑" or "↓" buttons.
- c. Press and hold the "↑" button to confirm the lower limit. The roller blind will make a short movement, and then confirm that the lower limit position has been saved by three up-down sequences. It will then start moving up until it reaches the upper limit, where it will confirm that programming is finished.

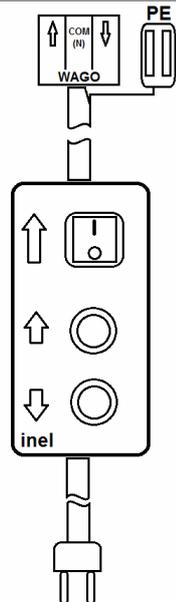
OR

Lower limit on sill:

- a. Press and hold the "↓" button.
- b. Release the button after the drive stops on the sill. Fine tune the position by short pressing the "↑" or "↓" buttons.
- c. Press and hold the "↑" button to confirm the lower limit. The roller blind will make a short movement, and then confirm that the lower limit position has been saved by three up-down sequences. It will then start moving up until it reaches the upper limit, where it will confirm that programming is finished.

In the semiautomatic lower limit programming phase (on sill), the motor will attempt to detect the type of hangers used. After the drive detects the sill, it will make another 1/4 revolution. If no overload is detected at this point (lower RPM), it will move back by 1/4 revolution (no blocking hangers detected). If overload is detected during the 1/4 revolution, the motor will stop at the position of overload (blocking hangers detected). Press the "↑" to set the limit.

3. SERVICE CABLE



(2-position, bistable) – applies voltage to the 'up' direction only.

(monostable) – allows for applying voltage to the 'up' direction.

(monostable) – allows for applying voltage to the 'down' direction.

Previously used service cable



The monostable "Program" button allows for applying voltage to the 'up' direction.

The tristable switch allows for applying voltage to the 'up' and 'down' directions.

Applying voltage to both directions at the same time is possible after pressing both the "Program" and "Down" switch.

4. RETURN TO FACTORY MODE

You can return to the factory mode at any time - however, this will erase limit positions.

4.1 With a service cable

When using a service cable, press and hold the and buttons at the same time for at least 3 seconds.

The roller blind will confirm by moving up-down-up-down.

OR

4.2 With a blind switch

Press the buttons of the switch in the following order, making the roller blind perform a short move each time:



The last press will confirm the entered sequence - it should last at least 2 seconds.

The return to the factory mode will be confirmed by a short up-down movement of the roller blind.

5. OBSTACLE DETECTION OPERATING PRINCIPLE

Before limit positions are set (factory mode), the motor will only detect decreased rpm caused by overload. The obstacle detection function will be activated only after both limit positions are set.

Obstacle detection works only for downward movement. During upward movement, the drive will stop if decreased rpm are detected.

If the roller blind stops unexpectedly (an obstacle appears), the drive will move in the opposite direction in order to release curtain tension, allowing you to remove the obstacle.

6. TROUBLESHOOTING

Problem: The motor does not react to commands

Cause: Thermal cut-out was activated

Solution: Wait for 10-20 minutes

Problem: Curtain fins do not close fully

Cause: The curtain is blocked in the guides

Solution: Check the roller blind guides and curtain slats

Problem: The motor stops on its own

Cause: The curtain is blocked in the guides

Solution: Check the roller blind guides and curtain slats

Problem: Blocking hangers were not detected in semi-automatic programming

Cause: Roller blind curtain too long.

Solution: Shorten the curtain to appropriate size.

Problem: The motor does not detect obstacles when moving down.

Cause: Limits programmed wrong way.

Solution: Reset the drive to factory mode, then repeat the programming procedure, starting from the upper limit.

WARNING! Pauses between individual presses of the blind switch buttons should be at least 1 second long! This applies both to the programming and operating mode (after programming limit positions).

7. MOTOR SELECTION TABLE

TORQUE		ROLLER BLIND LENGTH			
		1,5m	2m	2,5m	3m
N-10Nm	Φ=40mm	20kg	19kg	18kg	17kg
N-20Nm	Φ=60mm	42kg	40kg	38kg	36kg