GEIGER
ANTRIEBSTECHNIK

Awning controller

(Sun/Wind Automatic controller)
for pre-coded systems

GF0023

Installation and operating instructions

EN

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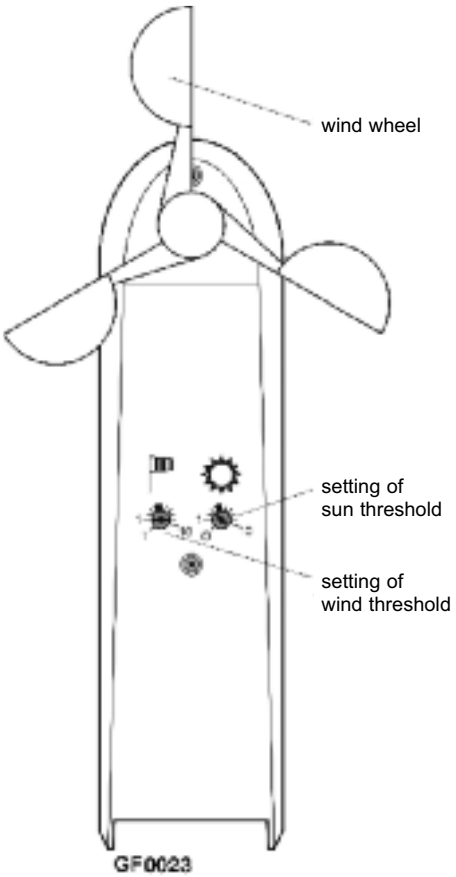
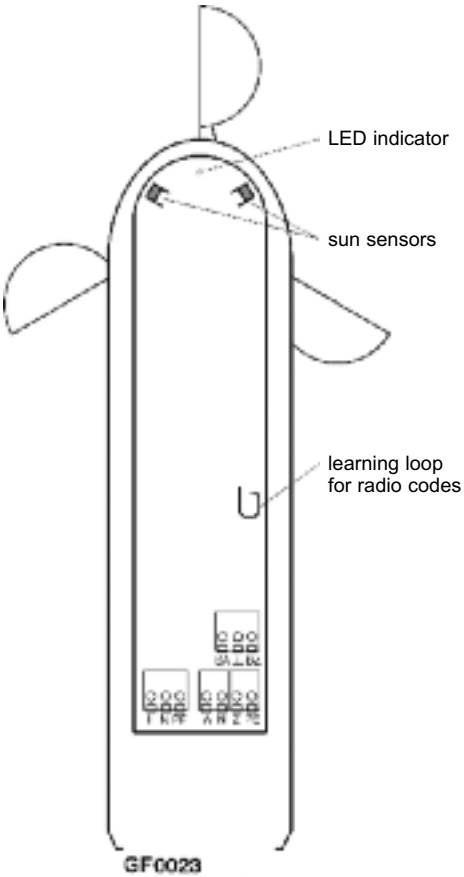


GF0023
view from below



GF0023
view from above

1 Introduction

The purchase of an awning controller **GF0023** was a good decision. You have acquired a high-quality product from the house of GEIGER.

The **GF0023** controller makes it possible to operate your sun screen systems automatically and provides you with comfortable, individual shade that meets your wishes.
It also protects your awnings from being damaged by strong wind.

The following **radio transmitters** can be used with the controller GF0023 as a base unit:

- all radio hand transmitters from the GEIGER radio range GF....
- all radio wall transmitters from the GEIGER radio range GF00..
- all clock transmitters from the GEIGER radio range GF00..

2 Safety Instructions

- The controller is only to be used for its intended purpose as described under Section 3 of the operating instructions. Changes or modifications to the controller void any rights to claims under the guarantee.
- After unpacking the controller, check it right away for any damage. If it is damaged, the unit may absolutely not be put into operation. Shipping damage is to be reported to the supplier immediately.
- When it can be presumed that the controller does not operate faultlessly, it is to be immediately taken out of service and secured against inadvertent use. This presumption exists when the case is damaged or the unit no longer functions.
- According to VDE 0022, the owner himself is responsible for compliance with EVU or VDE regulations as well as for proper installation.
- The transparent cover must be opened to make connections to supply power. Be particularly careful that no moisture (e.g. rainwater) is able to enter the unit while it is being connected.

3 Intended Usage

- The automatic radio controller **GF0023** may only be used to control the operation of sun screen systems (awnings, roll-shutters, etc.).
- Only use the **GF0023** controller together with radio transmitters approved for operation by the manufacturer.

4 Installation

The device is specially suited for the installation on building facade or roof facade surfaces.

Please select the place of installation according to the following criteria:

- Make sure the wind conditions are similar to those that prevail at the place where the to be protected objects are situated.
- Make sure the light conditions are the similar to those at the sunshade installations that need to be controlled.
- Building parts, trees, bushes or the like should not shade the place of installation during the day.
- Check the given possibilities with respect to the laying of the motor power supply cable and, if necessary, also with regard to the installation of an external operating switch.

Regarding the installation of the device, please proceed as follows:

- Mount the **GF0023** horizontally using the elbow holder provided for this purpose. When doing so, make sure that the axis of the wind wheel hangs down vertically and that the cups of the wind wheel can turn freely. The adjustment of the holder can be effected by means of an 4 mm Allen key.
- Remove the device by pulling it out of the holder dovetail guide.
- Fasten the device safely by means of the enclosed screws.

☞ In the event it was impossible to adjust the device in such manner that the axis of the wind wheel points vertically downward, please proceed as follows:

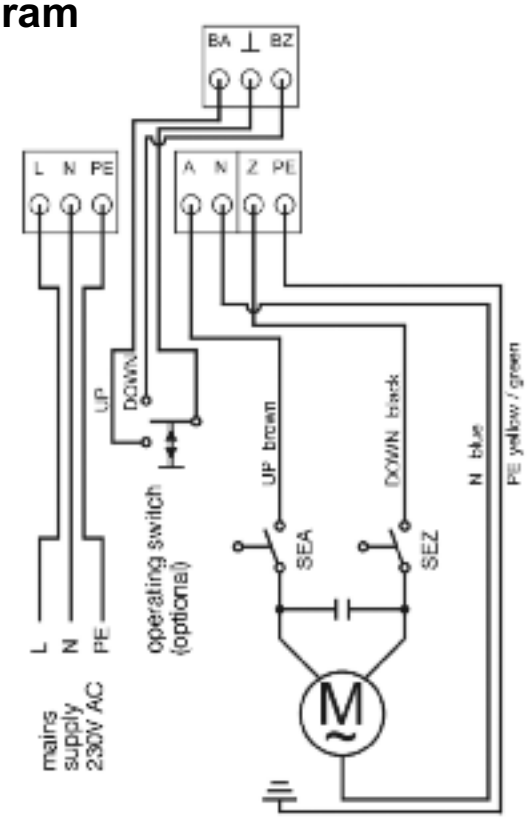
- Loosen the socket head screw (Allen screw) completely and remove it;
- Turn the fixing plate by 180° (the small part of the holder points upwards);
- After that, put the socket head screw through the lower brass bush of the dovetail guide and tighten it slightly.

- Now insert the **GF0023** into the dovetail guide and adjust the wind wheel until it points vertically downwards.
- Tighten the socket head screw softly until the device can no longer be moved.
- Loosen the two cross head screws (Phillips screws) and open the transparent covering.
- After that, connect the motor first in compliance with the connection diagram to the terminals “A” (UP = Auf), “Z” (DOWN = Zu) and to the terminals “N” and “PE” as indicated.
- If required, there exists the option to connect an external operating switch to the terminals “BA” (open), “BZ” (closed) and to the ground potential “ ⏚ ”.
- Reassure yourself again that the mains voltage supply has been turned off. Then connect the device to the 230V / 50Hz mains supply using the terminals “L”, “N” and “PE”.
- If the cables need to be laid in upward direction, always make sure by all means to form a cable loop that points in downward direction, so that the rain water can drip off well.
- Take care to ensure that the cable glands (rubber seals) are fitting tightly in the lower part of the housing and that the lock elements of the covering too snap well into round rubber seals.
- Then press the covering slightly forward towards the wind wheel and, while doing so, take care that both tongue and groove of the housing lock into place over the entire surface.
- After that, use the two cross head screws (Phillips screws) to screw the housing parts together.

5 Connecting Diagram

BA = **open**

BZ = **closed**



6 Set-up

The following work must be complete before starting with the set-up procedure:

- Adjust the drive's limit switches according to manufacturer's instructions.
- Connect the awning controller **GF0023** according to the connecting diagram
- Connect to power supply

Check the sun screen system's directions of rotation / travel directions!

Proceed as follows:

- Hold the wind wheel vanes still (should not turn), set the wind potentiometer to "T" and the sun potentiometer to "1".
- Normal daylight (> 5 klx) will cause subordinate sun screen system/s to move into their shading positions after about 6 seconds.
- Now spin the wind wheel rapidly for at least 3 seconds. If the wind threshold is exceeded, the red LED lights up. The systems must be retracted immediately. A wind lockout time of about 30 seconds will be set for the **GF0023**.
- Conclude onclude the procedure by setting the potentiometer to the desired limit value or the wind limit value recommended by the textile manufacturer. For more information about this, refer to sections 11.1 "Sun sensors" and 11.2 "Wind sensor".

The controller **GF0023** will now operate properly and reliably.

☞ Note: Shading for your rooms will only operate automatically when the receiver function "Sun automat" is enabled!

7 Special features and functional description

The **GF0023** awning control is particularly suited for the manually or automatically controlled operation of awnings. It has been dimensioned for the direct triggering of 230 V AC motors or corresponding auxiliary relays.

Manual operation takes place either via the handheld or via the wall mounted radio transmitter.
The control model GF0023 provides the option to connect a hardwired control key in addition.

In automatic mode, the connected awning motor is triggered and controlled through the integrated sun and wind monitor. The sun monitoring function can be deactivated. The wind monitoring function is of higher priority and is always active.

The radio remote control is equipped with a special memory cell that enables the storage of an individually to be learned radio encoding. The device is delivered pre-coded with the **GEIGER standard radio code** in already learned condition. The operator can, if necessary, change this coding by himself. This may be the case for instance if a neighbour operates a system that uses the same coding.
The changing of the radio code is conceivably simple. Section 10, “Changing of the radio code”, in these instructions contains a detailed description on how to do this.

The radio remote control can, on the basis of the learned radio encoding, execute the radio commands “UP” and “DOWN” and “sun automatic ON” und “sun automatic OFF”.

The motor is, once it is operated, activated for a fixed running time of 140 seconds. Within this motor running time, an **intermediate stop position** can be learned that is approached while operating in both manual and automatic mode. The learning of this intermediate stop position can be effected by means of radio transmitter or an external operating key (see section 9, “Learning of the intermediate stop position”).

The operation via the external operating key (pertains to model GF0023) includes a so-called **service function**. If actuating the key BA for more than 8 seconds, the control system “recognizes” the service state (see also sub-section 8.5, “Service function”).

The integrated **wind monitoring function** of the control system serves to measure the actual wind velocity within a measuring range from 10 to 50 km/h and compares the measured value with the threshold value that has been adjusted at the related potentiometer (see sub-section 11.2, “Wind sensor”).

The **sun monitoring function** of the control system serves to measure the current intensity of the incident light radiation within a measuring range from 10 to 60 klx and compares the measured value with the threshold value that has been adjusted at the related potentiometer (see sub-section 11.1, “Sun sensors”).

8 Manual operating functions

8.1 General

The control system has been equipped with a fixed 140 second motor run time limitation.

An arbitrary intermediate stop position can be learned within this limited motor run time which is then, upon according operation, approached during both manual and automatic awning operating mode.

A “learned” intermediate stop position is approached only during the extension of the related awning. Awnings that, upon “power on”, are not in stop position (retracted position) need, prior to approaching an intermediate stop position, first be homed or synchronized with this position. The awning must, prior to performing any such homing or synchronization operation, have been retracted.

8.2 Operation via hand-held radio transmitter

Actuating the key “DOWN” (Zu) **shortly** (< 1.5 seconds) effectuates that an initially retracted awning is extended up to a “learned” intermediate stop position upon the attaining of which the motion is stopped.
Actuating the key “DOWN” (Zu) for **somewhat longer** (> 2 seconds) effectuates that an initially retracted awning is extended up to its end position (motor runtime = 140 seconds).
Any actuation of the key “DOWN” (Zu) after the attaining of an intermediate stop position effects that the awning is extended over the term of the **remaining runtime**.
Any actuation of the key “UP” (Auf) after the attaining of intermediate stop position effects that the awning is retracted over the term of the **remaining runtime** plus a reserve time of 5 seconds. Every short actuation of the related key needed in order to move the awning into the opposite direction will stop the motion of the awning.

8.3 Activation / deactivation of the sun automatic mode

The automatic, sun sensor triggered operation of the system can be activated or deactivated by radio commands. The activation or deactivation can be effected by means of the special control keys “sun ON” (Sonne EIN) and “sun off” (Sonne AUS) that are available on the hand-held transmitter models GF0004, GF0005, GF0010 and the display transmitters. These commands can be triggered at any time, i.e. even while the awning is moving. The awning that is moved shortly in on and off direction indicates the activation or deactivation of this automatic mode. Any such special commands (scilicet the last triggered command, i.e. either “sun ON” or “sun OFF”) are being stored in a power failure safe manner.

☞ The manual operation of the control system overrides the operation in sun automatic mode.

Any manually triggered operating command which effects that the awning is moved, **interrupts** the sun sensor triggered automatic mode operation.

The operation in automatic mode, however, is reactivated as specified hereafter:

- “Sun ON” (Sonne EIN) commands triggered via the hand-held transmitters do have, apart from those triggered by the wind sensor, highest priority.
- In the event the automatic mode operation was interrupted by a manually triggered command, said automatic mode operation is rendered active again after the complete retraction of the awning and after the expiry of the 145 second motor run time.
- Once the sun threshold value was underrun, the awning is being retracted all automatically after the expiry of a 20 minute term as of the activation of the automatic mode. This is to ensure that the awning will not unintentionally remain extended during night.

8.4 Operation via the external operating keys (BA/BZ)

The operation using the keys BA/BZ is identical with the operation described in above sub-section 8.2. Stop commands can be triggered when actuating the key that is needed to activate a motion opposite to the one of the current travel direction.

8.5 Service functions

With the service function in triggered condition, the motor is **permanently** triggered to move in “retracting” direction. The service function is recognized 8 seconds after the closing of the switch BA and remains active for the time of its actuation, at least however for the duration of the motor runtime (140 seconds). **All** commands concerning the extension of the awning are, after the recognition of the active state of the service function, no longer executed.

9 Learning of the intermediate stop position

Intermediate stop positions can, after power on, only be learned after the complete retraction of the awning and only after the expiry of the 140 second motor runtime.

The “learning” of the intermediate stop position can be effected by means of both the external operating keys BA or BZ or the hand-held radio control. Intermediate stop positions can be learned only during the extension of the awning. An already learned intermediate stop position can be changed at any time by performing a new learning procedure.

9.1 Learning of an intermediate stop position using the ext. operating keys (BA/BZ)

To learn an intermediate position using the keys BA/BZ, please proceed as follows:

- First please retract the awning completely.
- Actuate the key BZ in order to start the awning extension movement.
- Actuate the key BA to stop the awning during its travel at the desired intermediate stop position and keep the key depressed for approx. 5 seconds. Once the learning procedure has been completed successfully, the awning performs a short movement in both moving directions as for confirmation.

  ☞ After that, please let the key go again as, if otherwise, the system would, after the actuation of the key for more than 8 seconds, recognize the activation of the “service function”.
- The desired intermediate stop position is thus learned and stored in a power failure safe manner.

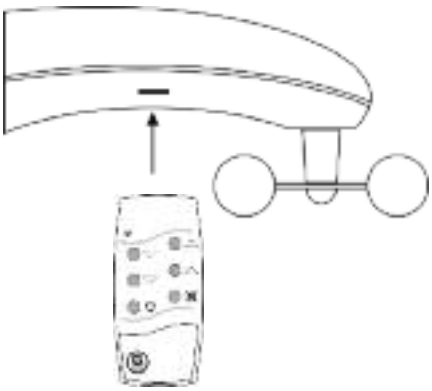
9.2 Learning of an intermediate stop position via the hand-held transmitter

To learn an intermediate stop position via the hand held transmitter, please proceed, subject to the requirements specified in above section 9, as follows:

- First please retract the awning completely.
- Actuate the corresponding key on the hand-held in order to start the awning extension movement.
- Then actuate, upon the attaining of the desired intermediate stop position, the key provided for the triggering of the opposite direction movement in to stop the travel motion of the sunshade and keep the key depressed for approx. 5 seconds. The newly learned intermediate stop position is, after the expiry of this 5 second time, stored in a power failure safe manner.
- Once the learning procedure has been completed successfully, the awning performs a short movement in both travel directions as for confirmation.

10 Changing of the radio code

Set the new coding on the hand-held transmitter as described in the operating instructions. After that, hold the transmitter to the lateral line mark as indicated and actuate the transmit key "UP" (AUF) for approx. 2 seconds. Once the learning procedure has been successful, the LED indicator lights up for about 2 seconds as for confirmation. The new sensor coding is then generated all automatically and stored in a power failure safe manner.



☞ No radio code can be learned while operating in test mode.

11 Changeable automatic control functions

11.1 Sun Sensors

The model **GF0023** has been equipped with two sun sensors (see drawing on page 2). The sun monitoring function serves to measure the intensity of the incident light radiation within a range from approx. 10 to 60 klx. The brightness limit can be modified by means of the “sun” potentiometer (indicated by a sun symbol as shown right hand). One scale division corresponds to a change of 5.6 klx (factory setting 4 to 5).

The sun monitoring function is deactivated if the potentiometer is in “0” position.

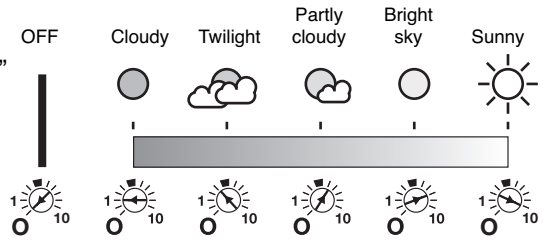
In the event the adjusted threshold value is exceeded permanently for any longer than about 3 minutes, an “extension” command is being transmitted. In the event the threshold value is underrun permanently for any longer than about 20 minutes, a “retraction” command is being transmitted.

In the event the intensity of sensed incident light radiation varies permanently in the course of the aforementioned times, no travel commands will be transmitted. The zone covered within which solar radiation can be detected comes to about 180°.

Programming «sun»

Should the sun protection system move outwards/downwards:

- by increased light intensity
  ➡ Higher brightness threshold: clockwise
- by reduced light intensity
  ➡ Lower brightness threshold: counter clockwise



11.2 Wind sensors

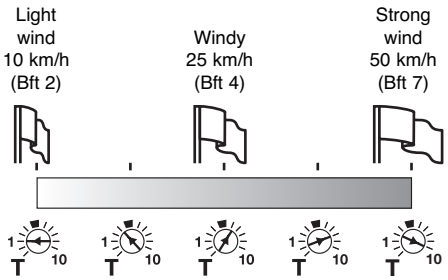
The wind monitoring has been given highest priority over any manually triggered operating functions or sun monitoring functions and cannot be deactivated therefore.

The wind wheel measures the velocity of the wind within a range from approx. 10 to 50 km/h. The “wind” potentiometer (indicated by a flag symbol as shown right hand) enables to change the wind velocity limit as required (factory setting 4 to 5). Each scale division is equivalent to a change of approx. 4.4 km/h.

Programming «wind»

Should the sun protection system move outwards/downwards

- by increased wind velocity
  ➡ Higher wind threshold: clockwise
- by reduced wind velocity
  ➡ Lower wind threshold: counter clockwise



In any event also please pay regard to the instructions and recommendations generated by the manufacturer of the related sunshade installations. Any change of the wind velocity limit can impair the safety of the overall installation!

In the event the wind velocity limit is exceeded permanently for any longer than 3 seconds, a “retraction” command is being transmitted (LED indicator flashes). In the event the limit is underrun, a 20 minute lock wait time starts running (LED indicator flashes). The awning can neither manually nor automatically be extracted during this time.

☞ The motor is, during the above lock wait time, permanently triggered to move in “retracting” direction

This is to ensure that the awning **cannot**, even if relay-switching amplifiers are used, be extended manually.

11.3 Test and demo operation of the control system

The control system has, for setting and testing purposes, been equipped with a special “test” setting within the limits of which changed or shortened system times are being used (for further details, see section 14, “Technical data”).

The test mode is active if the “wind” potentiometer is in the position “T”. At the same time, the “sun” potentiometer must be in the position “1” or higher (do not set to “0”!). The normal operating mode is active if the “wind” potentiometer is again set back to a value within the range from 1 to 10.

☞ No radio code can be learned while operating in test mode.

12 Maintenance and Cleaning

The solar-cell powered automatic radio controller **GF0023** is basically maintenance-free.

However, it is prudent to regularly check the free movement of the wind wheel, e.g. by simply observing that it rotates even in a gentle wind.

☞ Never use oils or greases to improve the wind wheel's freedom of motion.
Dust and insects are best removed with a clean, dry brush.

The transparent cover over the sun sensors must be kept free of contamination to ensure the unit's reliable operation with respect to sunlight.

☞ Clean this transparent cover with a soft cloth. Moisten the cleaning cloth slightly with a mild solution of water and hand-dishwashing liquid to remove stubborn contamination (e.g. bird droppings).

⚠ Never use aggressive cleaning agents or chemical solutions for cleaning because these can react with the plastic housing and may even be detrimental to the unit's functionality.

⚠ Never spray the **GF0023** unit with water, e.g. from a garden hose, because it is only protected from rainwater falling from above – not against spray water from the sides or from below.

13 Disposal

13.1 General

Dispose of the unwanted unit according to the applicable legal regulations.

14 Technical characteristics

GF0023	**Normal operation**	**Test operation**
Operation mode	awning controller	
Motor running time	140 seconds fixed value	
Running time reserve (retraction)	4 seconds fixed value	
Intermediate position (extension)	learnable within motor runtime	
Transmit frequency	434 MHz	
Delivery coding	+ + + + - + - 0 0 for up + + + + - + - 0 - for down	
Trainable code	1	
Integrated wind wheel	1	
Wind threshold value	10 – 50 km/h setting	5 km/h, fixed value
Wind retract delay	3 seconds	
Integrated sun sensors	2	
Detection angle	about 180°	
"Sun" setting range	about 10 – 60 klx	5 klx, fixed value
"Sun bright" extend command	after about 3 minutes	after 6 seconds
"Sun dark" retract command	after about 20 minutes	after 6 seconds
Power supply	230V / 50Hz	
Ingress protection class	IP 43 (for outdoor use)	
Operating temperature	-20 to +60°C	
Relative humidity	max. 95% (non-condensing)	
Housing dimensions (including bracket) without / with wind wheel vanes	length 260 / 295 mm width 72 / 134 mm height 90 / 160 mm	

15 Declaration of Conformity

We herewith declare that this unit complies with the fundamental requirements and relevant regulations set forth by Guideline 1999/5/EU and that it may be used without registration in all EU states and Switzerland.
The declaration of conformity for this unit can be found under: **www.geiger.de**

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For technical questions, please call our service team at: +49 (0) 7142 938 333. They will be happy to assist you.

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