



**BOSCH**

# **UHO Camera housings**

UHO-HBPS | UHO-HBGS | UHO-HGS | UHO-HPS

**en**

Installation manual



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# 1 Safety

## 1.1 Safety message explanation

**Danger!**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**Warning!**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution!**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice!**

Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

## 1.2 Safety precautions

**Warning!**

Hazardous voltage

Use caution when working inside the housing. Hazardous voltage is present in the housing when connected to the AC supply. Do not touch the power terminals when the unit is powered.

**Caution!**

Installation should only be performed by qualified service personnel in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local codes.

**Caution!**

This device must be connected to earth (ground).

Safety (power) ground is indicated by the  symbol.

**Caution!**

These units must be properly and securely mounted to a supporting structure capable of sustaining the unit weight. Use care when selecting mounts for installation; the mounting surface and unit's weight should be carefully considered.

**Caution!**

To protect the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with NEC 800 (CEC Section 60).

## 1.3 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.

1. Clean only with a dry cloth. Do not use liquid cleaners or aerosol cleaners.
2. Do not install device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. Never spill liquid of any kind on the device.
4. Take precautions to protect the device from power and lightning surges.
5. Adjust only those controls specified in the operating instructions.
6. Operate the device only from the type of power source indicated on the label.
7. Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
8. Install in accordance with the manufacturer's instructions in accordance with applicable local codes.
9. Use only attachments/accessories specified by the manufacturer.
10. Protect all connection cables from possible damage, particularly at connection points.

**Power disconnect** - Units have power supplied whenever the power cord is inserted into the power source. The power cord is the main power disconnect for all units.

**All-pole power switch** - Incorporate an all-pole power switch, with a contact separation of at least 3 mm, into the electrical installation of the building. If it is needed to open the housing, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

### **Coax grounding:**

- Ground the cable system if connecting an outside cable system to the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its grounding plug connected to a grounded outlet or its ground terminal is properly connected to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding plug or grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

## 1.4 FCC and ICES compliance

### FCC & ICES Information

(U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a **commercial environment**. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

## 2 Short information

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was correct at the time of publication, however, the content can change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness or discrepancies between this manual and the product described.

### **Trademarks**

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

### **More information**

For more information please contact the nearest Bosch Security Systems location or visit [www.boschsecurity.com](http://www.boschsecurity.com)

## 3 System overview

### 3.1 Available models

These outdoor camera housings are available in several versions. The variants are input power supply, fitted connectors and temperature control. All models are equipped with a heater and a sunshield. The maximum camera/lens size (H x W x D) for all models is 91 x 81 x 262 mm (3.6 x 3.2 x 10.3 in).

- UHO-HBGS and UHO-HBPS models have a blower (fan).
- UHO-HGS and UHO-HBGS models have feed-through holes for power and signal cabling.
- UHO-HPS and UHO-HBPS models have a 4-pin power connector and a BNC connector instead of feed-through holes.

The following models are available:

Model	Input voltage	Connection	Temperature control
UHO-HBGS-11	24 VAC	Feed-through	Fan
UHO-HBGS-51	230 VAC	Feed-through	Fan
UHO-HBGS-61	115 VAC	Feed-through	Fan
UHO-HGS-11	24 VAC	Feed-through	Passive
UHO-HGS-51	230 VAC	Feed-through	Passive
UHO-HBPS-11	24 VAC	Power and BNC connectors	Fan
UHO-HBPS-51	230 VAC	Power and BNC connectors	Fan
UHO-HPS-51	230 VAC	Power and BNC connectors	Passive

All models have an internal +12 VDC power supply available for the camera. Alternatively, the input voltage is also available to power the camera.

## 4 Planning information

### 4.1 Parts list

Quantity	Item	Material
1	Housing	Aluminum
1	Spacer, 4 mm	ABS
1	Spacer, 9 mm	ABS
1	Screw, 1/4-20 x 3/8 in.	Stainless Steel
1	Screw, 1/4-20 x 3/4 in.	Stainless Steel
3	Screw, tamper-resistant	M3.5 T15
1	Wrench, tamper-resistant	M3.5 T15
1	Camera clamp	Stainless Steel
1	Camera clamp (for spacer)	ABS
2	Washer, flat	M6 Stainless Steel
2	Washer, spring	M6 Stainless Steel
3	Plug	M4 Silicone

#### UHO-HGS AND UHO-HBGS models

Quantity	Item	Material
2	Cable gland, 3/8-in. NPT with locking nut	Polyamide / neoprene
1	Cable gland, 1/2-in. NPT with locking nut	Polyamide / neoprene
1	Cable gland, M20 x 1.5	Polyamide / neoprene

#### UHO-HBPS-11 model

Quantity	Item	Material
1	4-pin cable connector, Male	ABS

#### UHO-HPS-51 and UHO-HBPS-51 models

Quantity	Item	Material
1	4-pin cable connector, Female	ABS

## 4.2 Unpacking

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper immediately.

Verify that all parts are included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.

The original packaging is the safest container in which to transport the unit and can be used if returning the unit for service.

## 4.3 Tools required

- Small flat blade screwdriver
- Phillips screwdriver (#1)
- Adjustable wrench
- Wire cutter/stripper/crimper tool

## 5 Installation



**Caution!**

Installation should only be performed by qualified service personnel in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local codes.



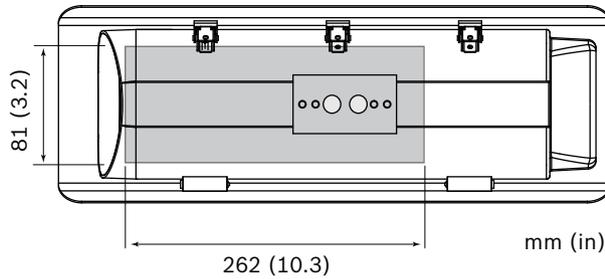
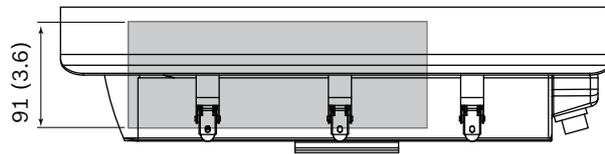
**Caution!**

These units must be properly and securely mounted to a supporting structure capable of sustaining the unit weight. Use care when selecting mounts for installation; the mounting surface and unit's weight should be carefully considered.

### 5.1 Camera/lens requirements

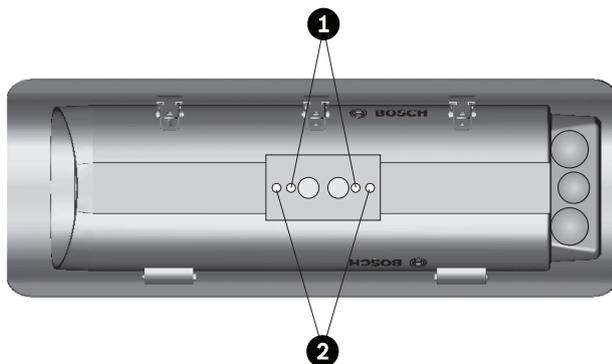
The camera/lens combination to be built into the housing must meet the following requirements:

Maximum power consumption	10 W
Maximum weight	1 kg (2.2 lb)
Maximum size (H x W x D)	91 x 81 x 262 mm (3.6 x 3.2 x 10.3 in)



## 5.2 Housing mounting

1. Use two 1/4-20 x 0.50 in. screws and two 1/4 in. spring washers to mount the housing to a mount or a pan/tilt. The spring washers must be used for a secure connection.
2. The outermost set of 1/4-20 threaded holes (2) are for mounting to feed-through mounts, and the innermost 1/4-20 threaded holes (1) are for mounting to all other mounts and pan/tilts.



## 5.3 Opening the cover



### Caution!

The heater will be hot when in operation.

Do not touch! Always ensure that the heater is off and cool before working on the camera.

Open the cover by unlatching the three latches (1) on the side of the housing. If the optional tamper-resistant screws have been installed, use the supplied wrench to remove the screws before opening the latches.



## 5.4 Feed-through cables

### 5.4.1 Feed-through power cables

Power into the housings must be supplied using type UL Standard SJ cord (or better) acceptable for outdoor use. Installation must conform to NEC 400-4 CEC rule 4-010 and be marked with OUTDOOR, W, or W-A.

The supplied cable glands have the following specifications:

Gland type	Cable clamping range
3/8-in. NPT	4.5 to 7.9 mm Ø
1/2-in. NPT	5.8 to 10 mm Ø
M20 x 1.5	3.5 to 8 mm Ø

### 5.4.2 Feed-through wiring through the base

To feed cabling through the base of the housing:

1. Remove the two dome plugs located at the bottom the housing.
2. Screw the two 3/8-in NPT fittings into the foot of the housing.
3. Attach the foot of the housing to the mount.
4. Feed the power and video cables through separate cable glands into the housing.
5. Ensure that the holes in the rear are covered with the rubber plugs provided.

### 5.4.3 Feed-through wiring through the rear

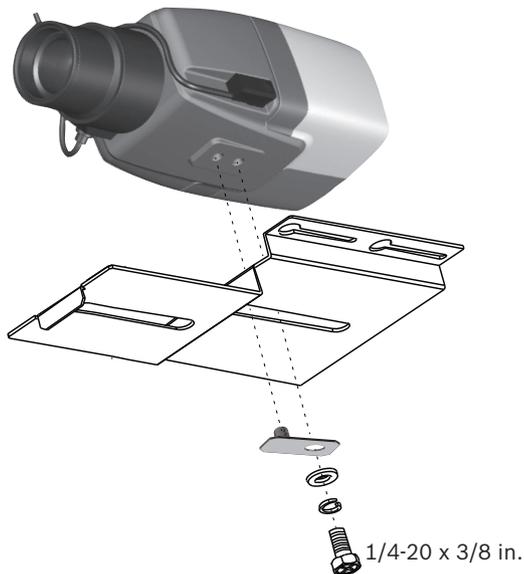
The rear holes allow cable to be fed through the supplied glands or the direct connection of conduit fittings.

1. Remove the dome plugs located at the rear the housing.
2. Screw the cable glands into the holes at the rear of the housing. The holes accept either 3/8-in NPT or 1/2-in NPT cable glands or conduit fittings. (The M20 x 1.5 cable gland can also be used.)
3. Feed the power and video cables through separate cable glands into the housing.
4. Ensure that the holes in the bottom of the housing are covered with the rubber plugs provided.

## 5.5 Camera/Lens installation

### 5.5.1 Camera tray mount

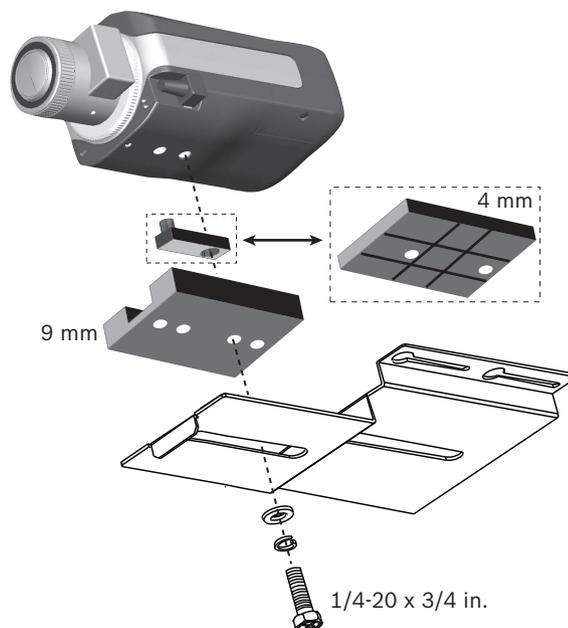
1. Loosen the two screws holding the camera tray in the housing. Slide the tray backwards and remove from the housing.
2. Attach the lens to the camera. (If the lens length can vary, make sure that it is fully extended.)
3. Use the 1/4-20 x 3/8 in. screw, the flat washer and the steel camera clamp to secure the camera to the camera tray.



### Low profile cameras

For low profile camera/lens assemblies use different combinations of the 9 mm and the 4 mm plastic spacers to ensure that the camera lens is in the center of the window.

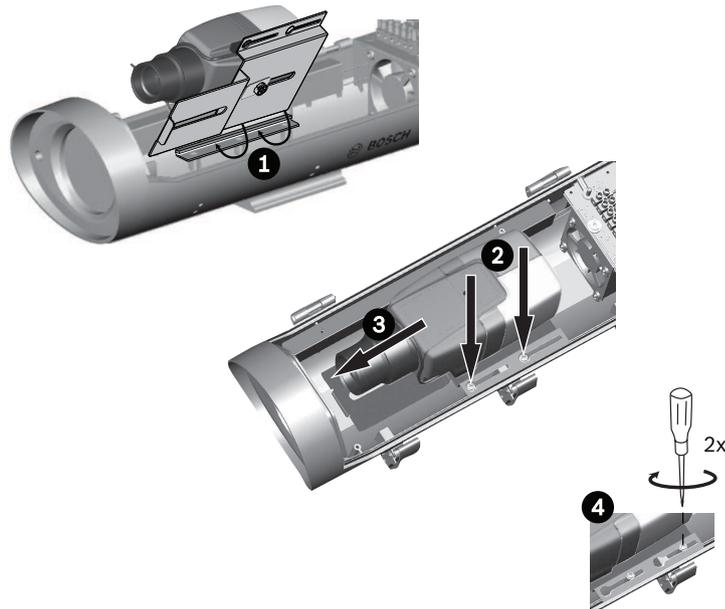
With the spacers, use the 1/4-20 x 3/4 in. screw, the spring washer, and plastic clamp (or second spacer) as necessary to attach the camera/lens to the camera tray.



## 5.5.2

### Mounting the camera/tray in the housing

1. Slightly tilt the camera/lens tray assembly and slide it in under the rail that is located under the heater on the right side of the housing.
2. Lower the tray so that the holes at the side fit over the two screws of the housing.
3. Slide the entire assembly forward approximately 5 mm (0.2 in.) from the front of the window.
4. Tighten the two screws to lock the tray in place.



## 6 Connection

### 6.1 Feed-through power connection



**Caution!**

To protect the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with NEC 800 (CEC Section 60).



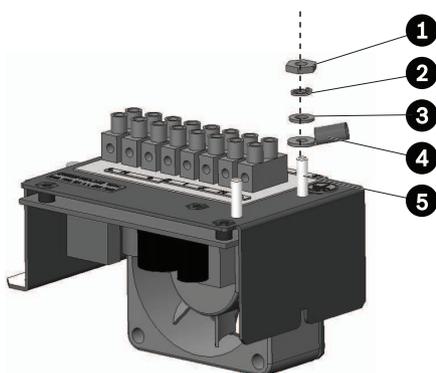
**Caution!**

The external ground wire must always be connected to the main ground post inside the housing.

#### 6.1.1 Incoming power safety earth connection

Connect the incoming power safety earth wire to the grounding post on the PCB bracket assembly as follows:

1. A terminal lug (4) is provided for connecting the incoming power safety earth wire.
2. Remove the nut, the washers, and the ground wire lug from the grounding post (5).
3. Strip the incoming power safety earth wire and crimp into the lug.
4. Reattach the ground connections in the order shown:

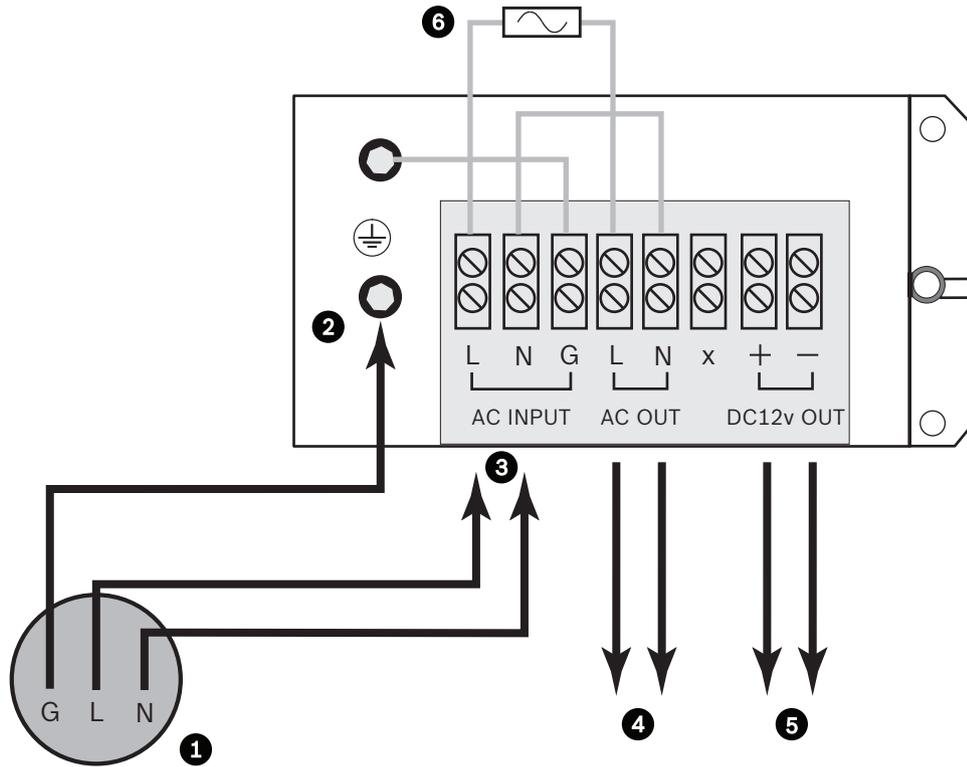


1	Nut
2	Lock washer
3	Flat washer
4	Input power ground lug
5	Grounding post

### 6.1.2 Incoming power wires

The terminal block accepts wire ranging from 0.5 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (20 AWG to 14 AWG). When using larger wire sizes, splice to a smaller size wire at the terminal block end. The splice may need to be enclosed in a junction box if it does not pass through the fittings.

1. Strip no less than 6 mm (0.25 in.) and no more than 8 mm (0.31 in.) of insulation away from the power supply wires. Do not nick the wires.
2. Connect the incoming power wires to the AC input connectors (3) on the terminal block as shown in the following figure:



Callout	Function
1	Power cable input to housing: - G (green/yellow) Earth wire - L (brown) power wire - N (blue) power wire
2	Power input grounding post
3	AC power input terminal block connectors
4	AC power output to camera
5	12 VDC power output to camera
6	Fuse

## 6.2 Camera connections

### 6.2.1 Camera video connections

Connect the video (and data) cable directly to the camera.

### 6.2.2 Camera power connections

Connect power to the camera as follows (refer to wiring diagram):

- For 12 VDC cameras:
  - Connect the DC12V OUT connections on the terminal block (5) to the 12 VDC inputs of the camera.
- For 24 VAC cameras:
  - Connect the 24VAC OUT connections on the terminal block (4) to the 24 VAC inputs of the camera.
- For 120 VAC and 230 VAC cameras:
  - Cut the power cord coming from the camera making sure that there is enough left to reach the terminal block.
  - Strip no less than 6 mm (0.25 in.) and no more than 8 mm (0.31 in.) of insulation away from the power supply wires. Do not nick the wires.
  - Connect the camera power cord wires to the 120VAC OUT (or 230VAC OUT) connections (4) of the terminal block.

## 6.3 Housings with rear connectors

### 6.3.1 Connection – UHO – Rear housing video connection

A BNC connector is provided on the rear of the housing. Connect the analog video cable to this connector.

### 6.3.2 Connection – UHO – Rear housing power connection

The housings with the rear connectors already mounted are supplied with a 4-pin cable connector for the power cable.

- The 230 VAC models have a male panel connector. A female cable connector is provided.
- The 24 VAC models have a female panel connector. A male cable connector is provided.

Mount the 4-pin cable connector onto the power cable:

1. Cable diameter must be between 6 mm (0.24 in) and 12 mm (0.47 in).
2. Strip no less than 6 mm (0.24 in) and no more than 8 mm (0.32 in) of insulation away from the wire. Do not nick the wires.
3. Insert the power cord through the back shell assembly and strain relief.
4. The cable connector terminals accept wire ranging from 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (18 AWG to 14 AWG).
5. Connect the power input wires to the numbered screw terminals on the mating connector according to the table.

Connector terminal number	Function	Wire color
1	AC neutral	Blue
2	AC live	Brown
3	No Connection (do not use)	-
4	Ground	Green/yellow

6. Assemble the cable connector, and plug it into the power receptacle on the housing.

## 6.4 Final assembly

### 6.4.1 Camera operation



#### Warning!

Hazardous voltage

Use caution when working inside the housing. Hazardous voltage is present in the housing when connected to the AC supply. Do not touch the power terminals when the unit is powered.

Verify operation of the camera and lens before final assembly. Adjust the camera orientation, focal length (if applicable) and focus as necessary (refer to the camera installation manual).

### 6.4.2 Closing the housing



#### Caution!

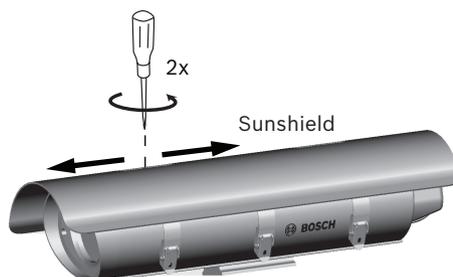
Always securely tighten all fittings to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the units. If a sealant is used, ensure that it is a neutral cure type. Sealants that release acetic acid may harm electronics. Use drip loops on the wiring outside the housing.

- Pull any excess wire out of the housing and tighten the cable glands. The tightening force required is approximately 1 to 1.5 turns past the point where the gland starts to grip the wire. Failure to correctly tighten the glands could result in water ingress.
- Ensure that all holes are covered with the rubber plugs provided.
- Close the cover and secure the latches. Optional tamper-resistant screws are provided with the housing. If desired, secure the latch using these three screws and the provided tamper-resistant wrench.



### 6.4.3 Positioning sunshield

1. Loosen the two screws (M4 x 10) on the top of the housing.
2. Slide the sunshield to the desired position. It has a range of 50 mm (2 in).
3. Tighten the screws to lock the sunshield into position.
4. If the sunshield is not installed, seal the two screw holes with the plugs supplied.



## 7 Maintenance

No special maintenance is required other than occasionally cleaning the window with water or any non-aggressive liquid.

### 7.1 Fuse replacement

1. To replace a fuse, push and twist the fuse holder to open it.
2. Replace the fuse with a fuse that has the same current rating. The fuse is a 5 mm x 20 mm slow blow breaking capacity cartridge-type fuse.
3. Push and twist the fuse holder to close it.

Housing voltage	Fuse rating
24 VAC	4 A, 250 VAC
120 VAC	2 A, 250 VAC
230 VAC	2 A, 250 VAC

There is a spare fuse inside the housing.

## 8 Decommissioning

The device should only be passed on together with this Installation manual.



**Disposal** - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per European Directive 2012/19/EU.









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