

PH200

Photocells

Instructions and warnings for installation and use

ISO476A00MM_20-12-2016

Instructions translated from Italian

Warnings

- The installation, testing and commissioning of automation devices for gates and garage doors must be performed by qualified and experienced personnel who must also determine the type of tests required based on the risks involved, and ensure compliance with applicable laws, standards and regulations.
- Nice declines all liability for damage or injury resulting from improper use of the product and any other use not specified in this manual.
- All packaging materials must be disposed of in accordance with local regulations.
- The photocell must not be immersed in water or any other liquid substance. If liquid substances should penetrate inside the device, disconnect the power supply immediately and contact NICE customer service; using the component under these conditions could cause hazardous situations.
- Do not place the photocells near strong heat sources or open flames; doing so may damage the components and cause malfunctions, fire, hazards or other dangers.

Description and intended use

This set of PHR200 is a presence detection sensor for gate and garage door automation systems (type D according to EN 12453); designed to detect obstacles which are on the optical axis between the transmitter (TX) and receiver (RX). It may only be used in combination with Nice Home control units equipped with and ECsBus type connection.

The photocells may be wall mounted as described below (Fig. 1) or inside the FILO 400C/600C gear reducer (Fig. 2, also referring to the relevant instruction manual).

Installation

Warning: disconnect the power supply to the system before performing any installation operations; if the system is equipped with a battery, the latter must be disconnected.

• position each photocell 40/60 cm above the ground • position them on the opposite sides of the zone to be protected • position them as close as possible to the gate (maximum distance = 15 cm) • a tube for passing the cables must be present in the fastening point • orient the TX transmitter towards the central zone of the RX receiver (maximum 5° misalignment).

Proceed with installation of the photocells as shown in Fig. 1.

01. Remove the glass front (Phase 01 - Fig. 1)
02. Remove the upper casing then the internal casing of the photocell (Phase 02 - Fig. 1)
03. Perforate the lower casing in the point where the cables should pass (Phase 03 - Fig. 1)
04. - Position the lower casing in the point where the tube for the passage of the cables arrives and mark the perforation points (Phase 04 - Fig. 1)
- Use a percussion drill to drill the wall with a 5 mm bit. Insert the 5 mm wall plugs (Phase 04 - Fig. 1)
- Pass the electrical cables through the relevant holes and fasten the lower casing with the screws (Phase 04 - Fig. 1)
05. - Connect the electrical cable to the terminals of the TX and RX, which must be connected in parallel to each other then connected to the ECsBus terminal on the control unit. It is not necessary to observe any polarity.
- Replace, in order, the inner casing followed by the upper casing to be fastened with the two screws and, lastly, insert the cover and press down to close (phase 05 - Fig. 1)
06. Connect the wires to the ECsBus terminal located in the control unit. It is not necessary to observe any polarity (Phase 06 - Fig. 1)

Addressing and Recognition (Table 1)

In order for the control unit to correctly recognise the photocells they must be assigned with addresses using special electric jumpers. Addressing not only ensures their correct recognition in the ECsBus, but also serves to assign the detection function. The addressing operation must be done both on TX and RX (setting the jumpers in the same way), while making sure there are no other pairs of photocells with the same address.

- If the photocell is used to replace an existing one, the bridges will be positioned exactly as they were in the photocell which is to be replaced.
- Any unused jumpers are to be stored their dedicated compartment, so they can be reused at a later time.
- Each type of automation has its own particular features meaning the photocells may be placed in different positions in order to perform various detection functions. Check Fig. 3, 4, 5, 6, 7 the positions provided and place the electrical jumpers according to table 1.

If the photocell is used to replace a pre-existing one, the recognition procedure is not required.

When a device is connected to the ECsBus, or disconnected, it is necessary to re-perform the recognition procedure: see the instruction manual for the control unit used.

Testing

Warning: after adding or replacing any photocells, the entire automation system must be re-tested according to the instructions provided in the "Testing and commissioning" section of the relevant installation manuals.

- To check the photocells and make sure that there is no interference with other devices, pass a 5 cm diameter, 30 cm long cylinder (Fig. 10) on the optical axis, first near TX, then near RX and finally at the mid-point between them and make sure that in all these cases the device is triggered, switching from active status to alarm status and vice versa; finally, make sure that it causes the intended action in the control unit; i.e.: when gate or door is closing, the device causes the gate or door to open.

- Verification of the correct obstacle detection is performed with the 700x300x200 mm parallelepiped test with 3 black sides and 3 polished white or mirrored sides, according to the EN 12445 standard (Fig. 11).

Photocell signals

The photocells have a **SAFE Led** (Fig. 9) which allows their operating status to be checked at any time (see Table 2).

Warnings and use

Attention! – The photocells do not constitute actual safety devices. They are only auxiliary safety devices. Although constructed for maximum reliability, in extreme conditions they may malfunction or fail, and this may not be immediately evident. For this reason, and as a matter of good practice, observe the following instructions: • Transit can only occur if the gate or the garage door is completely open and stationary. • Transit IS STRICTLY PROHIBITED while the gate or the garage door is closing or about to close. • If you note any sign of malfunction, shut off power to the automation immediately and use manual mode only (refer to the automation instruction manual). Contact your maintenance staff/person.

Maintenance

Service the photocells at least every 6 months as follows:

01. Unlock the motor as described in the instruction manual to prevent involuntary activation of the automation system during maintenance
02. Check for damp, oxidation and foreign bodies (such as insects), and remove them if present. In case of doubt, replace the device
03. Clean the external housing – specifically the lenses and glass panels – with a slightly damp, soft cloth. Do not use alcohol, benzene, abrasive or other cleaning products; these can affect the polished surfaces and compromise the operation of the photocells
04. Perform the operational test described in the section, "Testing"
05. The product is designed to work for at least 10 years under normal conditions; after this time, more frequent maintenance is recommended.

Disposal

This product is an integral part of the automation system and must therefore be sent for disposal with it, in the same way as indicated in the automation system instruction manual.

Technical Characteristics

Please note: the technical features refer to an ambient temperature of 20°C. Nice S.p.A. reserves the right to modify its products without altering their intended use and essential functions.

■ **Product type:** presence detection sensor for gate and garage door automation systems (type D according to EN 12453 standard) ■ **Technology adopted:** direct optical interpolation between TX and RX with a modulated infrared beam ■ **Power supply/output:** the device may only be connected to a control unit (or interface) equipped with ECsBus technology. The electrical power is drawn from this device, where the output signals are sent. ■ **Maximum absorbed current:** 1 ECsBus unit ■ **Beam angle from TX:** 20° (± 25%) ■ **Angle of detection in the area of RX:** 8° (± 25%) ■ **Range:** useful range 15 m; maximum range 30 m. The range may be further reduced by 50% in the presence of atmospheric conditions (fog, rain, snow, dust, etc.) ■ **Detection range:** opaque objects with a dimension greater than 50 mm on the optical axis between TX and RX (maximum speed of 1.6 m/s) ■ **Number of pho-tocell connections:** Up to 7 pairs of photocells with a safety function and 2 pairs with an opening command function (automatic synchronisation avoids interference among the different detectors) ■ **Maximum cable length:** all components must be connected in parallel. The sum of the lengths of all of the wires used to connect the different components, including the wire coming from the control unit shall not be greater than 50 m ■ **Protection rating:** IP44 ■ **Ambient operating temperature:** -20°C ... +50°C ■ **Assembly:** components ■ **TX/RX alignment adjustment:** no ■ **Dimensions / weight:** 105 x 50 x h 40 mm / 70 g

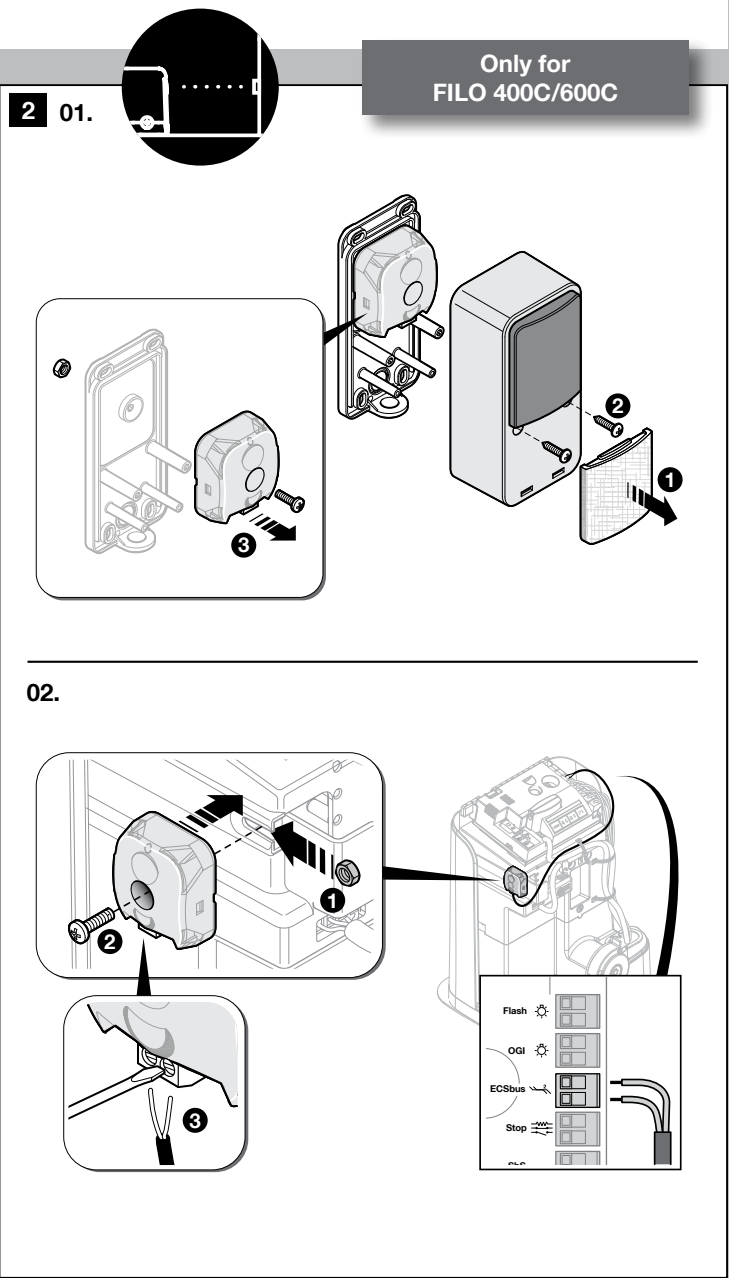
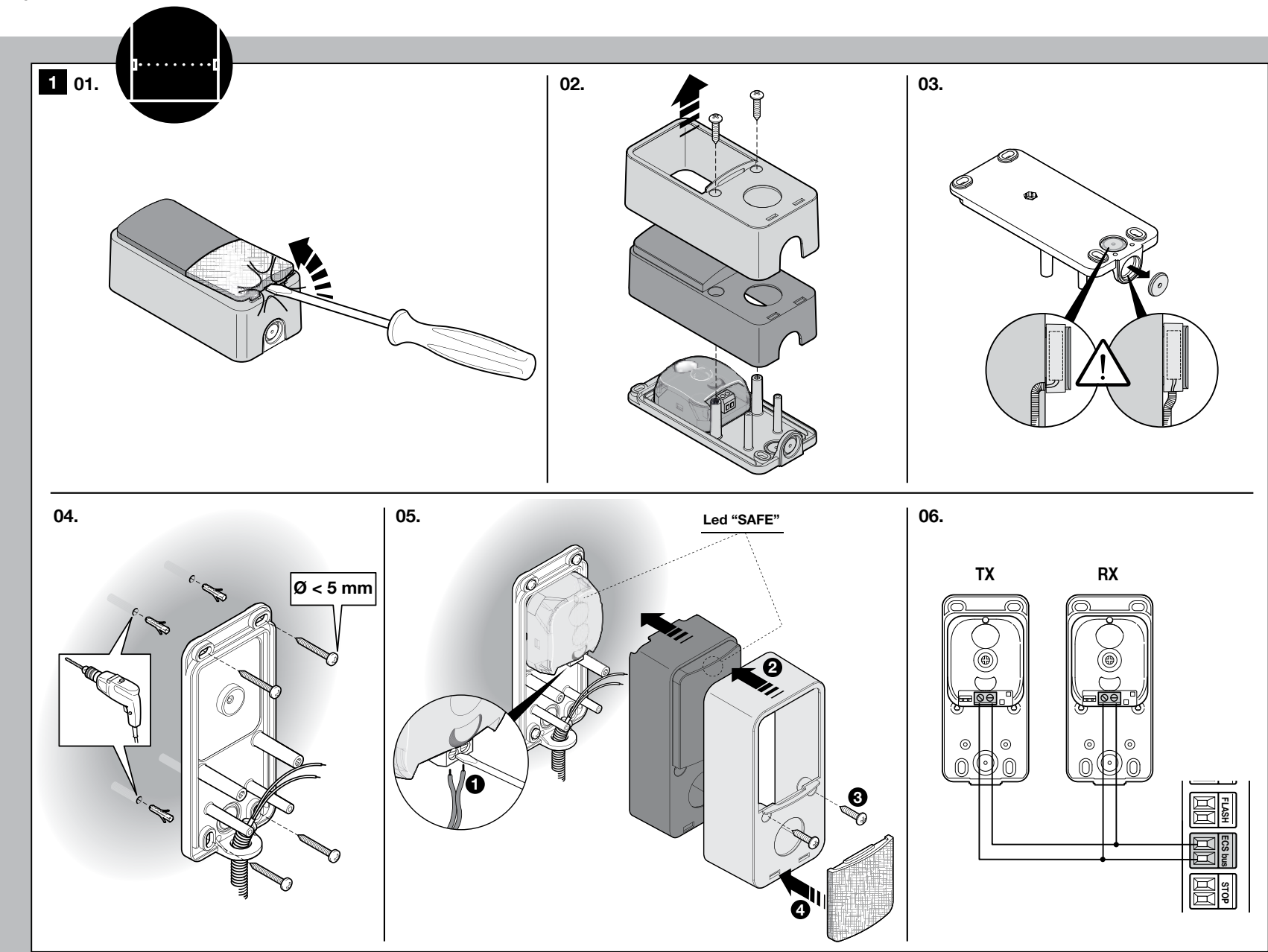
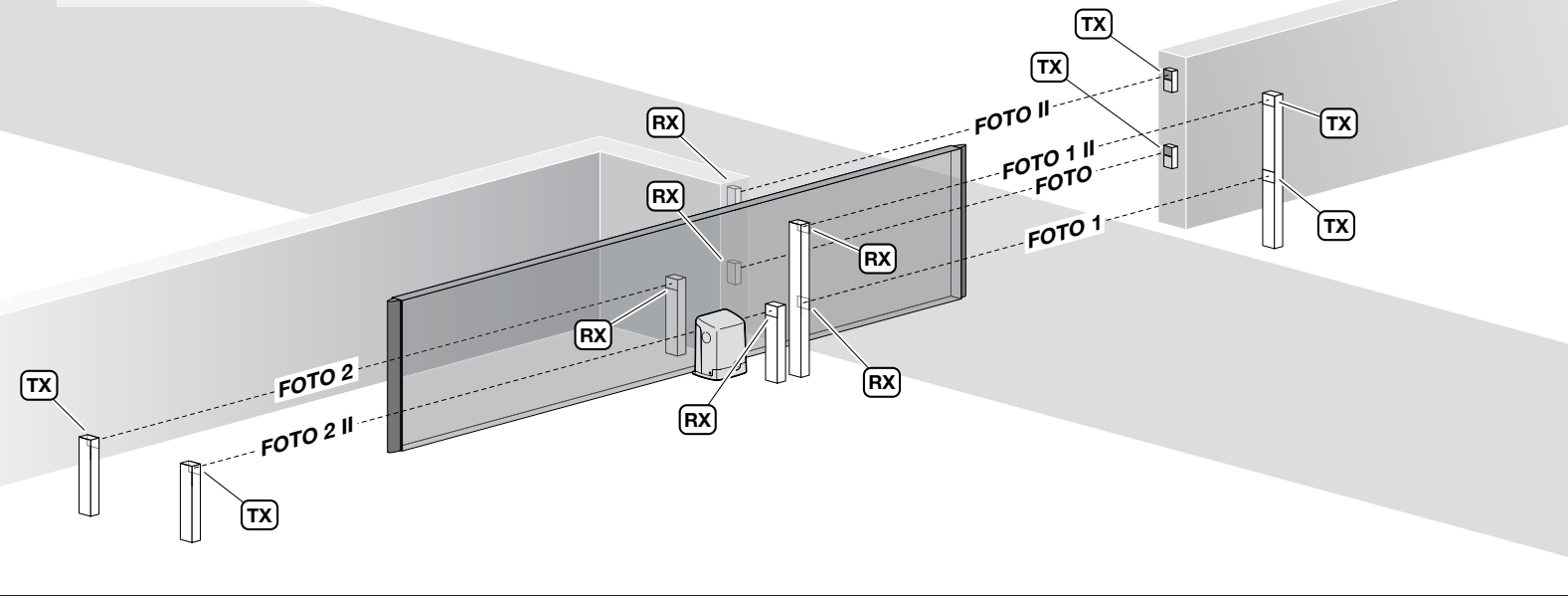


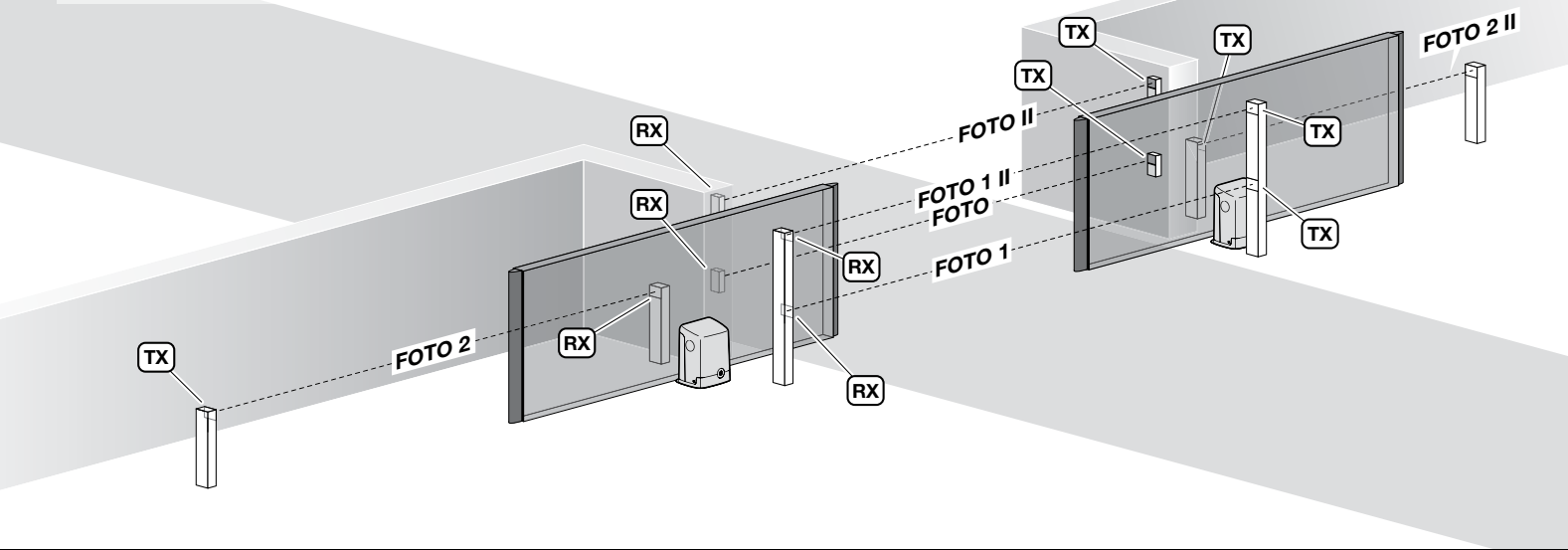
Table 1							
Photocells positions	FOTO	FOTO II	FOTO 1	FOTO 1 II	FOTO 2	FOTO 2 II	FOTO 3
Jumpers positions							

Table 2		
LED STATUS	MEANING	ACTION
Always off	(TX, RX) – The photocell has no power supply or is faulty	Check that on the terminals of the photocell there is a voltage of approximately 8 to 12 V DC. If the voltage is correct, it is likely that the photocell is faulty
3 quick flashes, (pause), ...	(TX, RX) – The pair of photocells has not been memorised in the control unit (or the interface)	Make sure that each pair of photocells has a different jumper configuration than the others. Perform the device learning procedure
Very slow flashing	(TX, RX) – The TX is transmitting properly. The RX is receiving an optimum signal	None; optimum TX - RX alignment
Slow flashing	(RX) – The RX is receiving a good signal	None; good operation
Fast flashing	(RX) – The RX is receiving a weak signal	Fair operation; the photocell glass should be cleaned
Very fast flashing	(RX) – The RX is receiving a poor signal	Barely operational; clean the photocell glass and realign the TX and RX photocells
Always on	(TX, RX) –The RX is receiving no signal	Check if there is an obstacle between the TX and the RX; clean the photocell glass and realign the TX and RX photocells

- Single leaf sliding gate



- Synchronised sliding gates



- Swing gate

