

ENGLISH

Instructions translated from Italian

1 - Warnings

• **CAUTION! IMPORTANT INSTRUCTIONS: for personal safety it is important to read and follow these instructions, and store them in a safe place. In case of doubt, contact Nice Support Service. Incorrect installation is a safety hazard and can lead to faulty operation.**

• Installation, wiring, programming and maintenance must be performed by qualified technicians, in compliance with the applicable laws, standards, local regulations and these instructions. • Each element of the device must be anchored permanently to a vertical surface, which must be made of sturdy material and must not transmit vibrations to the photocells. **Warning! – The surfaces for anchoring the device and the reflector must lie perfectly parallel to one another; a slight error can be corrected with the orientation system.** • The chosen mounting position must protect the photocell against impact; it must also allow easy access for maintenance. • To increase the level of safety against faults, the photocell must be connected to a control unit having the "Phototest" function, using the relevant photocell input (Fig. 4). • The product is protected against rain and dust infiltrations, and is suitable for outdoor use but not for particularly salty, acidic or potentially explosive atmospheres. Do not install the equipment in areas subject to flooding or water stagnation. • The power cables must enter the photocell through one of the holes on the lower section of its support and must be inserted from below to prevent water from penetrating inside.

2 - Description and intended use

EPMOR devices are presence sensors for automations of doors, gates, garage doors and similar equipment (Type D according to the EN 12453 standard), via direct interpolation with a relay output. **Any use other than that described is to be considered improper and prohibited!**

EPMOR devices are a receiver-transmitter element (photocell) and a reflector; they are able to detect obstacles along the line of sight between the two elements. It features the "Phototest" function that can increase the level of safety against faults, by verifying whether the device operates correctly, at every manoeuvre.

3 - Installation and electrical connections

Correct operation can be influenced by several factors: the position of the devices and their closeness to systems lacking interference suppressors; other similar devices may interfere during adverse weather conditions. Do not install the device too close to the ground or near large-size metal objects. The maximum length of any connecting cables must not exceed 20 mm. Contact the Nice technical assistance service in case of malfunctions.

01. Check that the installation conditions are compatible with the data appearing in Chapters 1 and 7.

02. Shut off power to the automation.

03. Perform the operations shown in Fig. 1.

04. Read points "A, B and C" below and only complete the steps that refer to your automation:

A – Opening of the access point to be measured exceeding 4 m: it is necessary to remove jumper **J1** on the board, as indicated in Fig. 2.

B – Resolving any interference between multiple pairs of photocells: if two devices are installed close to one another, the transmitter (TX) beam of one device could be captured by the receiver (RX) of the other device and vice-versa, with the risk of no detection occurring. In such case, solve the problem by activating "synchronised operation" and power the photocells with alternating current as shown in Fig. 3, power one photocell with the wires inverted with respect to the other photocell.

C – If the "Phototest" function is not used: jumper **J3** must be inserted as shown in Fig. 2.

05. Perform the electrical connections as shown in Fig. 4.

- For use as a "safety device", connect the cables to terminals 5 and 6 and set jumper J2 to the NC position (Figs. 3 and 4);
- For use as a "control device", connect the cables to terminals 5 and 6 and set jumper J2 to the NO position (Figs. 3 and 4).

06. Perform the testing procedures described in Chapter 4.

07. Close the photocells (Fig. 5).

4 - Testing

01. Power the automation and check the status of the led (Fig. 6) on the photocell: if it flashes rapidly or remains steady lit, consult **Table 1** for the relevant meaning. If necessary, improve the alignment by carrying out the operations indicated in Fig. 7, 8, 9. **Note to Fig. 8** - Point the photocell towards the reflector: optimal alignment will be signalled by the led switching off or flashing very slowly. The procedure can be carried out on the photocell and by aligning the reflector.

02. Check the detection efficiency by blocking the line of sight between the photocell and the reflector using a cylinder (Ø = 5 cm; L = 30 cm): first pass the object near the photocell then near the reflector and, lastly, halfway between the two elements (Fig. 10). Make sure that in each case the output switches from "Active" to "Alarm" and vice-versa, and that the automation responds accordingly to the photocell's intervention.

03. Verify correct obstacle detection as envisaged in the EN 12453 standard, using a parallelepiped (700 x 300 x 200 mm) with three faces (one for each dimension) with matt black surface and the remaining faces with glossy reflective surface (Fig. 11).

5 - Maintenance

Service the photocells at least every 6 months as follows: **1)** release the gearmotor as described in the user manual to prevent involuntary activation of the automation during maintenance; **2)** check for humidity, oxidation and foreign bodies (insects, etc.) and remove them. In case of doubt, replace the equipment; **3)** clean the housing – especially the lenses and glass panels –

photocell with its filaments inverted with respect to the other photocell.

C – Se non viene utilizzata la funzione "Phototest": è necessario inserire il ponticello **J3** come mostrato nella Fig. 2

05. Eseguire i collegamenti elettrici come indicato nella fig. 4:

- Per uso come "dispositivo di sicurezza", collegare i cavi ai morsetti 5 e 6 ed impostare il ponticello J2 in posizione NC (fig. 3 e 4);

- Per uso come "dispositivo di comando", collegare i cavi ai morsetti 5 e 6 ed impostare il ponticello J2 in posizione NO (fig. 3 e 4).

06. Effettuare le procedure di collaudo descritte nel capitolo 4.

07. Chiudere le fotocellule (fig. 5).

4 - Collaudo

01. Alimentare l'automazione e verificare lo stato del led (fig. 6) sulla fotocellula: se questo lampeggia velocemente o resta acceso con luce fissa, consultare la **Tabella 1** per vedere il significato. Se è necessario migliorare l'allineamento eseguendo le operazioni indicate nelle fig. 7, 8, 9. **Nota alla fig. 8** - Orientare la fotocellula in direzione del catadiottero: l'allineamento sarà ottimale quando il led si spegne o inizia a lampeggiare molto lentamente. La procedura può essere eseguita sulla fotocellula ed almeno il catadiottero.

02. Verificare l'efficienza della rilevazione interrompendo l'asse ottico tra fotocellula e catadiottero con l'ausilio di un cilindro (Ø = 5 cm; L = 30 cm); passare l'oggetto prima vicino alla fotocellula, poi vicino al catadiottero e, infine, a una distanza intermedia tra i due (fig. 10). Durante ogni passaggio accertarsi che l'uscita passi dallo stato di "Attivo" a quello di "Allarme" e viceversa, inoltre che l'automazione esegua l'azione prevista, conseguente all'intervento della fotocellula.

03. Verificare il corretto rilevamento dell'ostacolo come richiesto dalla norma EN 12453, utilizzando un parallelepipedo (700 x 300 x 200 mm) con tre facce (una per ogni dimensione) di materiale nero opaco e le restanti facce in materiale lucido riflettente (fig. 11).

courant alternatif, comme illustré dans la fig. 3; alimenter une photocellule avec les fils inversés par rapport à l'autre photocellule.

C – Si la fonction "Phototest" n'est pas utilisée : il faut insérer le cavalier **J3** comme illustré dans la fig. 2

05. Effectuer les raccordements électriques comme illustré dans la fig. 4 :
- Pour une utilisation en tant que « dispositif de sécurité », raccorder les câbles aux bornes 5 et 6 et placer le cavalier J2 en position NF (fig. 3 et 4);
- Pour une utilisation en tant que « Appareil de commande » raccorder les câbles aux bornes 5 et 6 et placer le cavalier J2 sur NO (fig. 3 et 4).

06. Effectuer les procédures d'essai décrites au chapitre 4.

07. Fermer les photocellules (fig. 5).

4 - Essai

01. Alimentar l'automatisme et vérifier l'état de la led (fig. 6) sur la photocellule : si elle clignote rapidement ou reste allumée avec une lumière fixe, consulter le **Tableau 1** pour voir la signification. S'il faut améliorer l'alignement en effectuant les opérations indiquées dans les fig. 7, 8 et 9. **Remarque à la fig. 8** - Orienter la photocellule en direction de l'autre catadiottere : l'alignement est optimal lorsque la led s'éteint ou se met à clignoter très lentement. La procédure peut être effectuée sur la photocellule et en alignant le catadiottere.

02. Vérifier l'efficacité de la détection en interrompant l'axe optique entre la photocellule et le catadiottere à l'aide d'un cylindre (Ø = 5 cm, L = 30 cm) : passer l'objet tout d'abord à proximité de la photocellule, puis près du catadiottere et, enfin, à une distance intermédiaire entre les deux (fig. 10). Lors de chaque passage, s'assurer que la sortie passe de l'état de « Actif » à « Alarme », et vice-versa, et que l'automatisme effectue l'action prévue suite à l'intervention de la photocellule.

03. Vérifier la bonne détection de l'obstacle comme l'exige la norme EN 12453, en utilisant un parallépipède (700 x 300 x 200 mm) avec trois faces (une pour chaque dimension) de matériau noir mat et les autres faces en matériau brillant réfléchissant (fig. 11).

with a soft, slightly damp cloth. Do not use detergents containing alcohol, benzene, abrasives or similar cleaning products; these may dull polished surfaces and hinder the operation of the photocells; 4) run the functional test as described in Chapter 4 - Testing; 5) the product is designed to work for at least 10 years in normal conditions; we recommend increasing the frequency of maintenance thereafter.

6 - Disposal

This product is an integral part of the automation system and must therefore be disposed of together with it, in the same manner described in the automation's user manual.

7 - Technical specifications

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 sensor for gate and garage door automation systems (Type D according to the EN 12453 standard) • **Technology adopted:** indirect optical interpolation by means of a photocell and reflector, with modulated opto beam • **Power supply/output:** 12/24 V~V~/V~ (limits: 10-35 V~/~ and 9-28 V~V~) • **Maximum power input:** approx. 50 mA • **Angle of the RX detection area:** +/-5° (±25%) • **Output relay contact:** Max 500 mA and 48 V~V~/~ • **Electrical life:** over 600,000 cycles AC11 or DC11 • **Response time:** less than 30 ms • **Range:** working range 8 m;

Table 1				
Led status (Fig. 7)	Meaning 1	Meaning 2	Output status	Actions to be performed
Always off	Excellent reception	No obstacle	Active	None
Slow flashing	Low reception	No obstacle	Active	Improve alignment between lenses
Quick flash	Poor reception	No obstacle	Active	Clean the lenses / Eliminate any reflective surfaces in the vicinity / Realign the lenses
Always lit	No reception	Obstacle present	Alarm	Remove the obstacle

5 - Manutenzione

Eseguire la manutenzione delle fotocellule almeno ogni 6 mesi, effettuando le seguenti operazioni: **1)** sbloccare manualmente il motoriduttore come descritto nel rispettivo manuale istruzioni, per impedire l'azionamento involontario dell'automazione durante la manutenzione; **2)** controllare l'eventuale presenza di umidità, ossidazioni e corpi estranei (insetti, ecc) ed eliminarne la presenza. In caso di dubbi sostituire il dispositivo; **3)** pulire l'involucro esterno, - in particolare, le lenti e i vetri, -, utilizzando un panno morbido leggermente umido. Non usare sostanze detergenti a base di alcol, benzene, abrasivi o similari; queste possono opacizzare le superfici lucide e pregiudicare il funzionamento delle fotocellule; **4)** eseguire il controllo funzionale come descritto nel capitolo 4 - Collaudo; **5)** il prodotto è progettato per funzionare almeno 10 anni in condizioni normali; trascorso questo periodo si consiglia di intensificare la frequenza degli interventi di manutenzione.

6 - Smaltimento

Questo prodotto è parte integrante dell'automazione e deve essere smaltito con essa, applicando gli stessi criteri riportati nel manuale istruzioni dell'automazione.

7 - Caratteristiche tecniche

Avvertenze: le caratteristiche tecniche sono riferite alla temperatura ambientale di 20°C. Nice S.p.A. si riserva il diritto di modificare i prodotti mantenendone comunque la destinazione d'uso e le funzionalità essenziali.

Tabella 1				
Stato del led (fig. 6)	Significato 1	Significato 2	Stato dell'uscita	Azione da eseguire
Sempre spento	Ricezione ottima	Nessun ostacolo	Attiva	Nessuna
Lampeggio lento	Ricezione mediocre	Nessun ostacolo	Attiva	Migliorare l'allineamento tra le lenti
Lampeggio veloce	Ricezione pessima	Nessun ostacolo	Attiva	Pulire le lenti / Eliminare eventuali superfici riflettenti nelle vicinanze / Eseguire di nuovo l'allineamento tra le lenti
Sempre acceso	Ricezione inesistente	Ostacolo presente	Allarme	Rimuovere l'ostacolo

5 - Entretien

Effectuer l'entretien des photocellules, au moins tous les 6 mois, en procédant comme suit : **1)** débrayer le motoréducteur manuellement comme décrit dans sa notice d'instructions pour éviter toute manipulation involontaire de l'automatisme pendant les travaux d'entretien; **2)** vérifier la présence éventuelle d'humidité, d'oxydation et de corps étrangers (insectes, etc.), et les éliminer le cas échéant. En cas de doute, remplacer l'appareil; **3)** nettoyer le boîtier et notamment les lentilles et les vitres. Utiliser un chiffon doux imbibé d'un peu d'eau. Ne pas utiliser de produits de nettoyage contenant de l'alcool, du benzène, des abrasifs ou autres produits similaires; ils risquent d'opacifier les surfaces brillantes et de compromettre le fonctionnement de la photocellule; **4)** effectuer le contrôle du fonctionnement comme décrit dans le chapitre 4 - Essais; **5)** le produit est conçu pour fonctionner au moins 10 ans dans des conditions normales, après quoi nous conseillons d'augmenter la fréquence des interventions d'entretien.

6 - Mise au rebut

Ce produit est partie intégrante de l'automatisme et doit être éliminé avec ce dernier, en appliquant les mêmes critères indiqués dans la notice d'instruction de l'automatisme.

7 - Caractéristiques techniques

Avvertissements: les caractéristiques techniques se réfèrent à une tempé-

Tableau 1				
Etat de la led (fig. 6)	Signification 1	Signification 2	Etat de la sortie	Action à effectuer
Toujours éteinte	Excellente réception	Aucun obstacle	Active	Aucune
Clignotement lent	Réception médiocre	Aucun obstacle	Active	Améliorer l'alignement entre les lentilles
Clignotement rapide	Mauvaise réception	Aucun obstacle	Active	Nettoyer les lentilles / Eliminer les éventuelles surfaces réfléchissantes situées à proximité / Exécuter de nouveau l'alignement des lentilles
Toujours allumée	Réception inexistante	Obstacle présent	Alarme	Enlever l'obstacle

maximum range, in optimal conditions, 15 m (with jumper J1 disengaged). The maximum range may drop by 50% in adverse weather conditions (fog, rain, dust, etc.) • **Detection capacity:** opaque objects larger than 50 mm on the line of sight between the photocell and the reflector (maximum speed 1.6 m/s) • **Protection rating:** IP 44 • **Operating temperature:** -20°C to +50°C • **Assembly:** elements facing one another, anchored to two vertical surfaces parallel to one another or to an appropriate column support • **System for adjusting the alignment between the photocell and the reflector:** yes • **Dimensions** (single component): 105 x 50 x 40 h mm • **Weight** (sum of the two components): 83 g

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