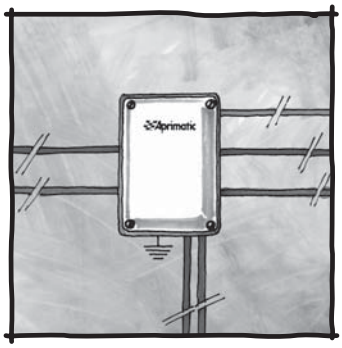

RSK24-2000/2500

Apparecchiatura di controllo per automazione di cancelli battenti a 24 V
Unit for the automatic control of swing gates 24 V
Platine de commande pour l'automatisation de portails battants 24 V
Steuereinheit für Drehflügeltore 24 V
Equipo de control para la automatización de cancelas 24 V

Italiano

English

Français

Deutsch

Español

SCOPO DEL MANUALE
Questo manuale è stato redatto dal costruttore ed è parte integrante del prodotto.
In esso sono contenute tutte le informazioni necessarie per:
• la corretta sensibilizzazione degli installatori alle problematiche della sicurezza;
• la corretta installazione del dispositivo;
• la conoscenza approfondita del suo funzionamento e dei suoi limiti;
• il corretto uso in condizioni di sicurezza;
La costante osservanza delle indicazioni fornite in questo manuale, garantisce la sicurezza dell'uomo, l'economia di esercizio e una più lunga durata di funzionamento del prodotto.
Al f ne di evitare manovre errate con il rischio di incidenti, è importante leggere attentamente questo manuale, rispettando scrupolosamente le informazioni fornite.
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PURPOSE OF THE MANUAL
This manual was drawn up by the manufacturer and is an integral part of the product.
It contains all the necessary information:
• to draw the attention of the installers to safety related problems
• to install the device properly
• to understand how it works and its limits
• to use the device under safe conditions
Strict observance of the instructions in this manual guarantees safe conditions as well as efficient operation and a long life for the product.
To prevent operations that may result in accidents, read this manual and strictly obey the instructions provided.
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BUT DU MANUEL
Ce manuel a été rédigé par le constructeur et fait partie intégrante du produit.
Il contient toutes les informations nécessaires pour :
• sensibiliser les installateurs aux problèmes liés à la sécurité ;
• installer le dispositif de manière correcte ;
• connaître le fonctionnement et les limites du dispositif ;
• utiliser correctement le dispositif dans des conditions de sécurité optimales ;
Le respect des indications fournies dans ce manuel garantit la sécurité personnelle, une économie de fonctionnement et une longue durée de vie du produit.
Afin d'éviter des opérations incorrectes et de ne pas risquer des accidents sérieux, lire attentivement ce manuel et respecter scrupuleusement les informations fournies.
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ZWECK DES HANDBUCHS
Dieses Handbuch wurde vom Hersteller verfasst und ist ein ergänzender Bestandteil des Produkts.
Es enthält alle nötigen Informationen für:
• die Sensibilisierung der Monteure für Fragen der Sicherheit;
• die vorschriftsmäßige Installation der Vorrichtung;
• die umfassende Kenntnis ihrer Funktionsweise und ihrer Grenzen;
• die vorschriftsmäßige und sichere Benutzung.
Die Beachtung der in diesem Handbuch enthaltenen Anweisungen gewährleistet die Sicherheit der Personen, den wirtschaftlichen Betrieb und eine lange Lebensdauer des Produkts.
Zur Vermeidung von Fehlbedienung und somit Unfallgefahr dieses Handbuch aufmerksam durchlesen und die Anweisungen genau befolgen.
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OBJETO DEL MANUAL
Este manual ha sido redactado por el constructor y forma parte integrante del producto.
El mismo contiene todas las informaciones necesarias para:
• la correcta sensibilización de los instaladores hacia los problemas de la seguridad
• la correcta instalación del dispositivo
• el conocimiento en profundidad de su funcionamiento y de sus límites
• el correcto uso en condiciones de seguridad
La constante observación de las indicaciones suministradas en este manual, garantiza la seguridad del hombre, la economía del ejercicio y una mayor duración de funcionamiento del producto.
Con el fin de evitar maniobras equivocadas con riesgo de accidente, es importante leer atentamente este manual, respetando escrupulosamente las informaciones suministradas.
Las instrucciones, los dibujos, las fotografías y la documentación que contiene este manual son propiedad de APRIMATIC S.p.a. y no pueden ser reproducidas en ninguna manera, ni integral ni parcialmente.
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Istruzioni di installazione elettrica Uso e Manutenzione

Electrical installation, Use and Maintenance instructions

Instructions d'installation éléctrique, d'Utilisation et d'Entretien

Anleitung für die elektrische Installation, Gebrauch und Wartung

Instrucciones para la instalación electrica, el uso y el mantenimiento

*cod. LBT0096 - genn.09 - **FW 1.00***

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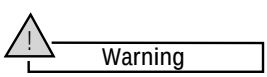
English

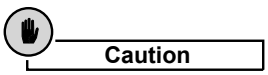
INTRODUCTION

ABBREVIATIONS AND SYMBOLS USED IN THIS MANUAL

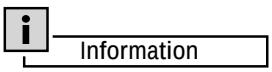
- **Chap.** = Chapter
- **p.** = page
- **min.** = minimum
- **Fig.** = Figure
- **Sect.** = Section
- **Tab.** = Table
- **max.** = maximum



This symbol is used to mark information, instructions and procedures which if ignored could lead to death and serious injury and which could create a long-term health and environmental hazard.



This symbol is used to mark information, instructions and procedures which if ignored can cause serious damage to the machine or to the product.



The symbol is used to mark important information which if ignored could void your warranty.

SAFETY PRECAUTIONS

• Follow the manufacturer's instructions.
• The installation team must check the correct installation and functioning of the equipment.
• Only use the product for the permitted uses specif ed. Do not use the product for purposes other than those specif ed.
• Do not tamper with or modify the product.
• Only use original spare parts.
• Cordon off the working area to prevent the access of unauthorised persons.
• Ensure that the working area is clear of obstacles and the f oor is not slippery.
• All equipment used must be in good working condition.
• Ensure that the work area is well lit. Ensure that the work area is free from obstructions and health and safety hazards.
• Do not allow unauthorised persons into the work area.
• Ensure that someone is present in the work area at all times. Do not leave the area and equipment unattended.

1.1 PRODUCT DESCRIPTION

RSK24 2000/2500 - microprocessor unit for driving one or two motors with total maximum power rating of 100 Watt.
This unit is available in two versions: for the ***Aprimatic RAIDER 2000*** operator and for the **Aprimatic** ***RAIDER 2500*** operator.
The difference between the two versions is that the default settings for some of the operating parameters are different (see ***section 4***).
Both versions can be supplied with a radio receiver already plugged into the board.
Operator functions can be set to match user needs. This is done by modifying the operating parameters as described in ***section 4.1 "Advanced Programming"***.

1.2 PERMITTED USES AND APPLICATIONS

The ***RSK24 2000/2500*** electronic unit has been designed for the automatic control of ***Aprimatic RAIDER 2000*** and ***RAIDER 2500*** operators for single- and double-wing gates.
You should note the operating restrictions specif ed in the installation manual supplied with your operator.

Information

- ***Only use the product for the permitted uses specif ed. Do not use the product for purposes other than those specif ed.***
- ***Do not tamper with or modify the product.***
- ***The product must only be installed using APRIMATIC material.***

Aprimatic S.p.A. declines all liability for damages caused by failure to follow these instructions

1.3 TECHNICAL DATA *(Tab. 1)*

Technical specif cations	**Tab. 1**
Power supply voltage for accessories	230 V AC (+6 % ; -10 %)
Frequency	50/60 Hz
Power consumption (no load)	3 W
Power consumption (Max.)	100 W (with 2 motors and accessories connected up and operating)
Operating temperature	-20°C +55°C
Storage temperature	-20°C +85°C
Relative humidity	<90% non condensing
Protection class	IP44 (only with IP44 housing)
F1 - primary transformer protection fuse	3.15 A fast blow
F2 - external accessories protection fuse (24 V DC)	500 mA fast blow
F3- electronic circuit protection fuse	5 A fast blow

2. ELECTRICAL INSTALLATION AND CONNECTING UP

Complete all mechanical installation before you start the installation of electrical components and connecting up. Installation consists of the following steps:

- FITTING ELECTRICAL EQUIPMENT ***(sect. 2.1)***.
- CONNECTING UP ***(sect. 2.2 and 2.4)***.
- CONNECTING UP TO 230V MAINS POWER SUPPLY ***(sect. 2.3)***.
- STARTING THE SYSTEM with SELF-TEACH ***(sect. 3.1 and 3.2)***.
- RECOGNITION OF REMOTE COMMANDS ***(sect. 3.2A and 3.2B)*** *(before or after self-teach).*
- FUNCTIONAL TESTS AND ADJUSTMENTS ***(sect. 3.3)***.
- ADVANCED PROGRAMMING AND RESET (where necessary) ***(section 4.1 / 4.2)***.

English

2.1 FITTING ELECTRICAL EQUIPMENT

Before you install components you should prepare the electrical connections of the control and safety devices of the system. Follow the instructions given on the "***System installation diagram***" in the ***instruction manual*** supplied with your operator. Follow the instructions given in this manual and the instructions given on components already installed.

Warning ***The system must only be installed by skilled personnel qualif ed in compliance with the regulations of the country of installation*** (CEI 64 - 8 and EN 60335-1 standards).

2.2 CONNECTING UP

Switch OFF the mains power supply before you start connecting up.

• Make the connections as shown in ***Fig.1***, ***sect. 2.4***. Check that the cables are connected to the correct inputs. Check that the minimum cable section is as specif ed.

Warning *Faulty connections can cause equipment operating faults and may seriously damage the equipment. Failure to connect up the equipment correctly will void your guarantee. Do not use intercom or telephone cable.*

IMPORTANT: Complete all connections and checks before you connect up to the 230 V AC mains power supply.

• The equipment must be earthed. Connect the earth to the earth terminals.

2.3 CONNECTING UP TO THE MAINS POWER SUPPLY

POWER SUPPLY - 230 V AC MONOPHASE 50/60 Hz.

• Use a power supply cable with 3 wires and a minimum section of 1.5 mm^2; the cable must comply with current electrical regulations. Choose the section of the cable to match the length of the line.

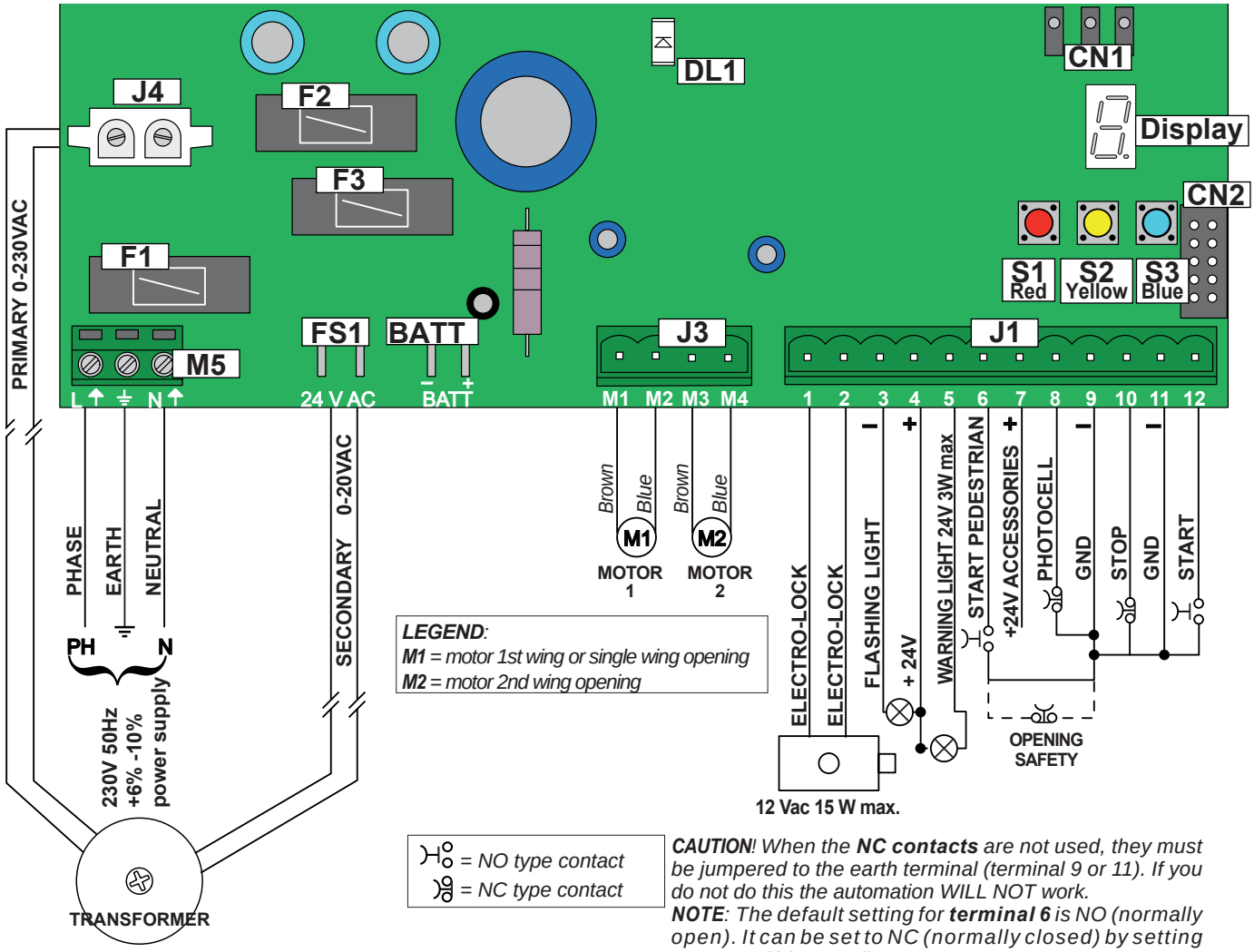
IMPORTANT! Always install, upstream of the line, a mains switch which guarantees a multipole cut-off with minimum contact opening of 3 mm (connect it to a 6 A differential overload switch with sensitivity of 30 mA).

• When you power up the unit for the f rst time, the board display will show the number "1" or "0" for a few seconds depending on the type of operator installed (***RAIDER 2500*** ⇨"1"; ***RAIDER 2000*** ⇨"0").

After this, the f ashing letter "**S**" will appear to indicate that you must perform the self-teach procedure (see ***sect. 3.1***).

Fig.1

2.4 LAYOUT DIAGRAM AND CONNECTIONS



***CAUTION**! When the **NC contacts** are not used, they must be jumpered to the earth terminal (terminal 9 or 11). If you do not do this the automation WILL NOT work.*
***NOTE**: The default setting for **terminal 6** is NO (normally open). It can be set to NC (normally closed) by setting parameter **H** (**sect. 7.1**).*

J1 terminal lock (12 pin):

1-2 Electric lock - *12 V AC output with maximum connectable load of 15W controlling the electric lock for approx. 1.5 seconds in the opening stage.*
3-4 Flashing LED, 24 V DC- two-wire cables with min. section 1 mm^2. DO NOT use other types of f ashing light.
5-4 Warning light - *24 V DC output with maximum load of 3W for gate warning light.*
6-9 Opening safety (NC safety contact) **or pedestrian start** (NO).
7-9 *24 V power supply for accessories*
8-9 Closing photocells input (NC safety contact)
10-9 ***STOP*** *(NC safety contact) to stop wing.*
12-11 ***START*** (NO) starts wing opening and closing.

J3 power terminal block with inputs for two 24 V DC motors - two-wire cable with min. section 1.5 mm^2.

J4 *connector for 230 V AC connection*

M5 230 V AC phase-earth-neutral connection

FS1 *24 V AC connection*

CN1 3-pin *Aprimatic* connector for accessories (UNICO receiver, access control decoder, etc.)

CN2 *10-pin connector for PL-ECO receiver*

BATT 24 V DC battery connection

F1 *fuse for primary transformer protection*

F2 fuse for external accessory protection (24 V DC)

F3 *fuse for electronic circuit protection*

DISPLAY (7 segments and one dot) to display parameters and parameter values

S1 RED button = **Conf rm** (used before self-teach to actuate **motor 1** in the Person Present mode)

S2 YELLOW button = **Exit** (used also to display connections on display)

S3 BLUE button = **Scroll** the values available (used before self-teach to actuate **motor 2** in the Person Present mode).

DL1 LED indicating that the board is powered up

English

English

3.1 SYSTEM START-UP: SELF-TEACH CYCLE

When all the connections have been completed you must run the self-teach cycle before putting the system into service.
If you do not complete the self-teach cycle, the automation will not work.

• The self-teach procedure provides the controller with information about the system so that it can set the following operating parameters:
- Stroke length.
- Opening and closing times.
- Wing opening and closing direction; motor function adjustment.
- Application type: **two-wing or single-wing gate** on the basis of the motor connected up; motor function adjustment.

Warning *During the self-teach cycle the system will ignore all external signals with the exception of those from the closing photocell. If a photocell pulse is received during this cycle, the self-teach procedure will be interrupted and will have to be repeated* .

Warning

You must repeat the SELF-TEACH CYCLE: whenever the "fast" parameter is reprogrammed; whenever the number of powered wings is changed; after a RESET.
Note: *When the letter* ***S f ashes*** *on the board display this indicates that you must run the self-teach procedure.*

3.1.1 SELF-TEACH PROCEDURE

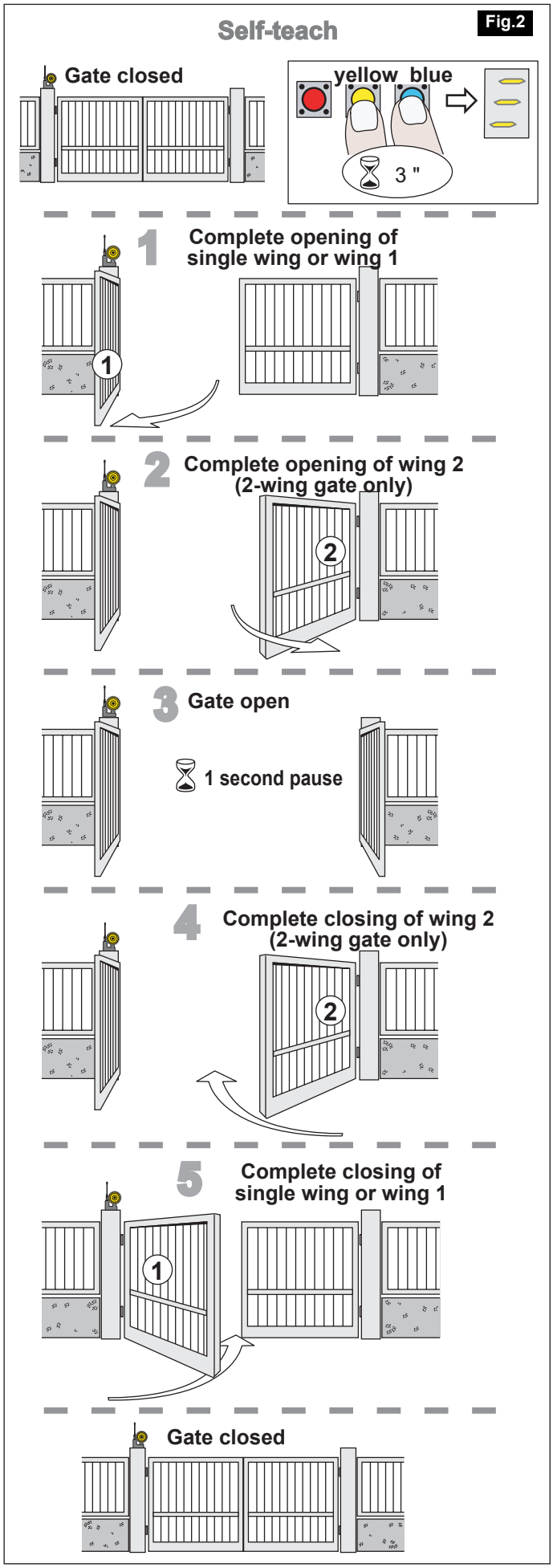
Before you start the self-teach procedure, ensure that the gate is CLOSED and STOPPED ("Person present" operation is enabled as described in ***sect. 3.1.2)*.**
• Press the **YELLOW and BLUE buttons** together for a few seconds until 3 segments start to f ash on the display to indicate that the procedure has started ***(Fig.2)*.** ⇨ The cycle starts; the cycle has f ve steps ***(Fig.2)*.**

• At the end of the procedure the gate is closed and stopped and the display switches off. ⇨ Now test the gate by operating it with the key button or the remote control (if this has already been programmed).

At the end of the self-teach cycle the system will operate in the Automatic mode with the default settings (see *sect. 5.1* and *Tab. 2*).

3.1.2 Person Present operation

Before you start the self-teach procedure it is possible to operate the wings using the PERSON PRESENT control without having to release the mechanical lock on the motors. To use this control proceed as follows:
• To move **wing 1**, press and hold down the **RED button** on the unit.
• To move **wing 2**, press and hold down the **BLUE button**.
To reverse the direction of travel of the wing, release and then press the **RED** or **BLUE** button again.



3.2 PROGRAMMING REMOTE CONTROLS

• To program the remote controls so that they are recognised by the system, follow the procedure in ***sect. 3.2A*** or ***32B*** depending on the type of receiver installed. At the end of programming, **button 1 will give the START command and button 2 will give the PEDESTRIAN START command (*Fig.3*).**

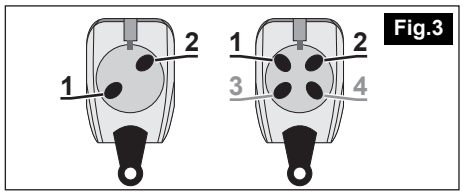
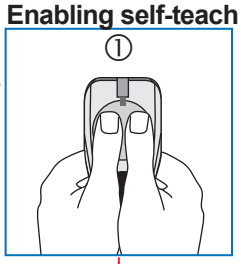


Fig.3

3.2A FOR PL-ECO PLUG-IN TWIN-CHANNEL RECEIVER *(Fig.4)*

Fig.4

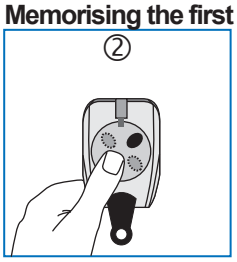
Enabling self-teach



1 Press all the buttons on the first remote control to be memorised if the receiver memory is empty; alternatively, press all the buttons on a remote control already memorised. ⇨ The self-teach mode is enabled for 30 seconds.
- Operation confirmed by: the LED will light up permanently and then switch off at the end of programming time.

30 s

Memorising the first remote control



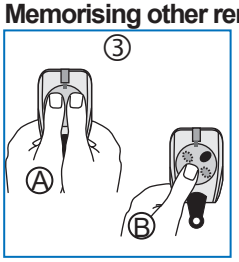
2 Press any button on the remote control.
- Operation confirmed by: the LED switches off and then on again, fixed.

Programming time

During the programming time you can memorise the first remote control and then any other remote controls.

At the end of 30 seconds the self-teach mode finishes.
- Operation confirmed by: the LED switches off.
If you wish to memorise other remote controls at this point you must enable the self-teach once again. To do this, use one of the remote controls already memorised and repeat the step ① above.

Memorising other remote controls



3-A Press all the buttons on the remote control to be memorised.
- Operation confirmed by: the LED switches off and then on again, fixed.
3-B Press any button on the remote control.
- Operation confirmed by: the LED switches off and then on again, fixed.
Memorise each remote control one after the other by repeating steps ③A and ③B within the programming time.

END

IMPORTANT NOTE:

• When you connect up the power supply, the receiver LED will flash for 7 seconds (10 times) and then switch off. You can only program the remote control recognition when the LED is off.

• If you do not perform programming, after a pause of 30 seconds the LED will switch off and the teach procedure is finished.

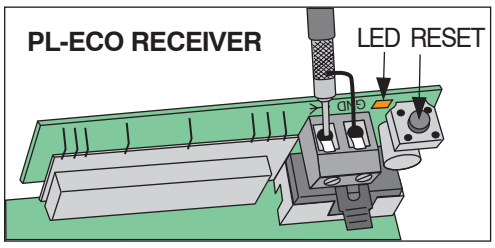
• To leave the programming mode, press the RESET on the receiver. All the data saved to memory and confirmed will be saved. CAUTION. If you press RESET and at the same time press a button of a remote control already in the memory, this action will delete the remote control from the memory.

• To completely DELETE the PL-ECO memory:

- Switch off the power supply to the receiver for at least 30 seconds. - Power up the receiver and at the same time press and hold down RESET until the LED switches off (10 seconds). - After a few seconds the LED will start to flash and then switch off. The remote controls have now all be deleted from the memory. YOU can now reprogram the memory.

• To DELETE a single remote control from the PL-ECO memory:

- With the receiver powered up, press RESET and at the same time any button on the remote control to be deleted from the memory.



3.2B FOR UNICO MEMORY SYSTEM RECEIVER

CAUTION! If you are using the UNICO Memory System receiver you must f rst remove the PL-ECO receiver.

• Plug the ***UNICO*** receiver into the connector ***CN1*** (see the ***layout drawing in Fig.1***).

• Perform the remote control teach procedure following the instructions supplied with the ***UNICO receiver***.

3.3 FUNCTIONAL TESTS AND ADJUSTMENTS

Perform the functional tests after you have connected up the actuators to the electronic unit and after you have completed the self-teach procedure. Implement the safety precautions. You can now adjust the following parameters (see ***sect. 4.1***): ✓wing travel speed; ✓thrust force; ✓approach time; ✓short inversion at end of movement.

English

4. ADVANCED PROGRAMMING

4.1 PROGRAMMING PARAMETERS

IMPORTANT! Before you start programming parameters, make sure that the gate is CLOSED and STOPPED and that the SELF-TEACH procedure has been completed.

To program the parameters, follow the instructions given in ***Fig.5*** and ***Tab. 2*** below.

Warning **All input signals will be ignored during programming.**

• Press and hold down the **RED** button until the letter **P** appears on the display. Release the button ⇨ the initial letter of a programmable parameter will appear on the display.

⇨ To scroll through the parameters, press the **BLUE** button.

⇨ To leave the programming mode and return to normal operation, press the **YELLOW** button.

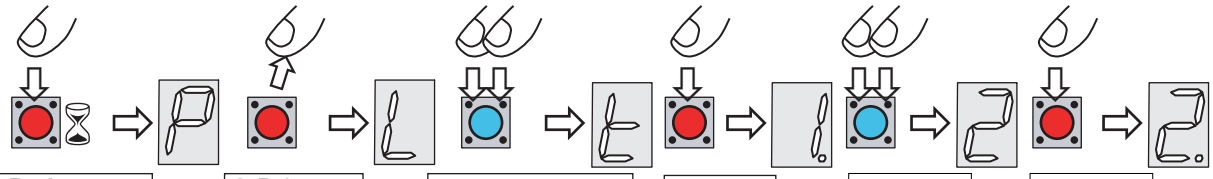
⇨ To display the current parameter value (shown by a bright dot), press the **RED** button; ⇨ to scroll through the values available, press the **BLUE** button.

• To modify a value, press the **RED** (Conf rm) buttonfor 3 seconds when the value required is displayed ⇨ the new value is displayed (conf rmed by 3 f ashes) and the system leaves the programming mode and returns to normal operation.

• If you decide not to modify a value, press the **YELLOW button.** ⇨ The display will return to showing the initial letter of the parameter.

***Note**: The OPERATING MODES and the signal responses are described in **sect. 5.1**.*

Fig.5



Tab. 2

A : wing closing delay

0 = 4 seconds (*)
1 = 8 seconds
2 = 12 seconds
3 = 16 seconds

***Note:** the delay time on opening is fixed at 3 seconds.*

E : thrust force

0 = Low
1 = Medium
2 = High (*)
3 = Very high
4 = Medium wind
5 = Strongly wind

***CAUTION:** any increase in this parameter causes a reduction in obstacle recognition sensitivity. If a value of 3, 4, or 5 is set, use special detection devices on the basis of correct risk assessment.*

L : Operating mode

0 = AUTOMATIC (*)
1 = 4 STEPS
2 = SUPER AUTOMATIC
3 = SEMIAUTOMATIC with STOP
4 = STEP-BY-STEP

C : short inversion (ms.)

0	0
1	30
2 (*)	50
3	80
4	100
5	120
6	150
7	200
8	300
9	400

F :

	pref ashing	reverse stroke	trhust at end of movement
0 (*)	no	no	no
1	no	yes	no
2	yes	no	no
3	yes	yes	no
4	no	no	yes
5	no	yes	yes
6	yes	no	yes
7	yes	yes	yes

S : wing travel speed

0 = 50%
1 = 70% (* *RAIDER2000*)
2 = 85% (* *RAIDER2500*)
3 = 100%

CAUTION** When the **S** (speed) parameter is changed, you must perform the self-teach procedure again. To do this, press and hold down the **YELLOW** and **BLUE** buttons together for a few seconds* (see ***section 3.1).

d : approach time (sec.)

0 = 2
1 = 4 (*)
2 = 5
3 = 6
4 = 7
5 = 8
6 = 10
7 = 12
8 = 14
9 = 16

H :

	Pause time photocell	Input function J1 pin 6-9
0 (*)	NO	PEDESTRIAN START
1	NO	OPENING SAFETY SAFETY EDGE
2	YES	PEDESTRIAN START
3	YES	OPENING SAFETY SAFETY EDGE
4	NO	OPENING SAFETY PHOTOCELL
5	YES	OPENING SAFETY PHOTOCELL

t : pause time (sec.)

0 = 0
1 = 5 (*)
2 = 10
3 = 15
4 = 20
5 = 25
6 = 30
7 = 35
8 = 40
9 = 45

***IMPORTANT NOTE**:*

(*) = *default values*

Blue To select
Red To conf rm
Yellow To exit

4.2 RESET

If you want to return all the programmed parameters to their default settings, you should **RESET** the unit as follows:

- Switch off the power supply.
- Press and hold down the **BLUE** button and at the same time switch the power supply back on again. ⇨ The letter **S** will appear f ashing on the display. This indicates that you must repeat the self-teach cycle.
- Press the **YELLOW** and **BLUE** buttons together for several seconds *(for details see **section 3.1.1**)*.

5.1 OPERATING MODES

During the operating cycle the system handles the following signals:

✓ STOP pulse and START pulse.
✓ Closing safety photocell.
✓ Opening safety device (photocell, safety edge ...).
✓ Detection of any obstacle on the opening and closing strokes.

Operation of the automation functions in response to these signals depends on the operating mode selected.
*The system operates in the automatic mode depending on the default settings. For instructions on changing the operating mode, see **sect. 7.1**.*
The next section describes the operating modes and the signal responses for each operating mode.

AUTOMATIC MODE (default mode) (0)

Starting with the gate closed, the complete operating cycle is as follows:
• The START pulse is given. ⇨ Wing 1 starts to open.
⇨ After 3 seconds, wing 2 starts to open.
When both wings are opened as far as the mechanical stop, the gate will stay open for the programmed pause time.
⇨ Next, wing 2 will start to close.
⇨ After the preset delay time, wing 1 will start to close.
During the opening cycle, START pulses will be ignored and signals from closing photocells will also be ignored.
During the closing cycle, any START pulses or signals from closing photocells will trigger reopening of the wings.
During the pause time with the gate open, the closing photocells will keep the gate stopped and open until they are uncovered.

4-STEP MODE (1)

• Starting with the gate closed, the complete operating cycle is the same as that for the automatic mode.
• If a START pulse is not given within the f rst 3 seconds of the opening pause ⇨ the gate will start to close automatically.
• If a START pulse is given within the f rst 3 seconds of the pause time ⇨ the gate will stay locked in the open position; to close the gate in this case you must give the START pulse again.

SUPER AUTOMATIC MODE (2)

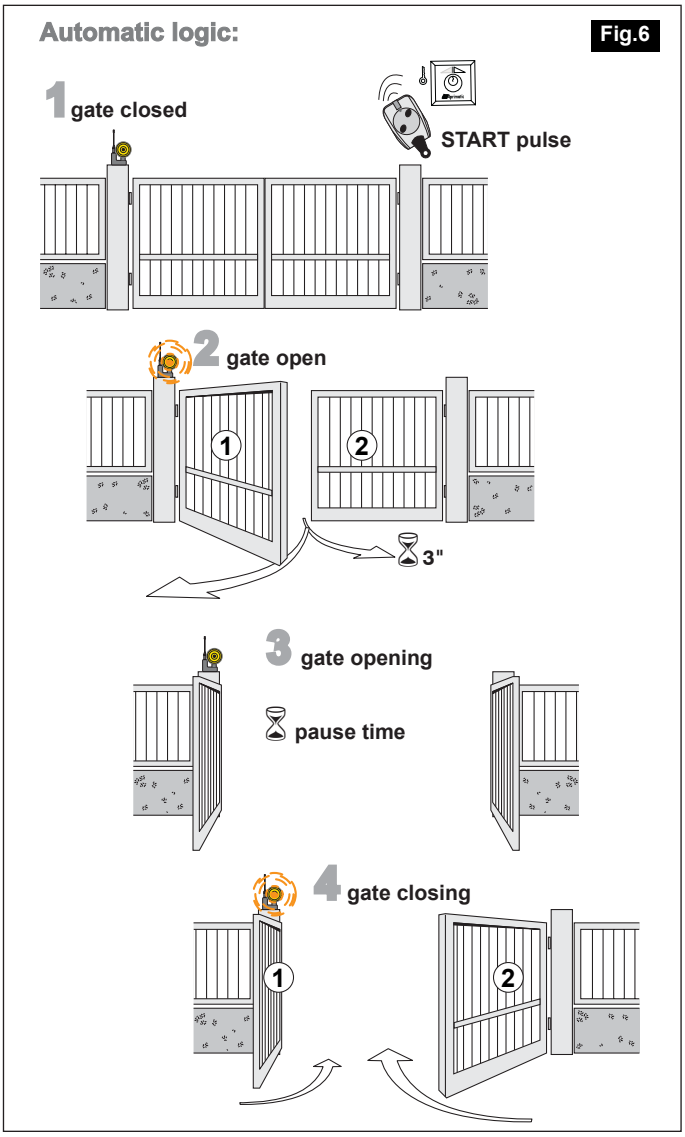
• Starting with the gate closed, the complete operating cycle is the same as that for the automatic mode.
• The START pulse in any stage of a movement ⇨ reverses the direction of movement of the gate; it will be possible to close the gate using the control.

SEMIAUTOMATIC MODE WITH STOP (3)

Starting with the gates closed:
• START pulse ⇨ the wings open and the gate stays stopped in the open position. ⇨ Another START pulse will close the gate.
• The START pulse during opening stops the wings. ⇨ Another START pulse will close the wings.
• The START pulse during closing ⇨ reopens the wings.

STEP-BY-STEP MODE (4)

Starting with the gates closed:
• START pulse ⇨ the wings open and the gate stays stopped in the open position. ⇨ Another START pulse will close the gate.
• The START pulse during opening stops the wings. ⇨ Another START pulse will close the wings.
• The START pulse during closing stops the wings. ⇨ Another START pulse will reopen the wings.



English

0 - AUTOMATIC MODE		pulse/signal					
		START	STOP	closing safety	opening safety edge	opening photocell	obstacle detection
automation state	closed	open	lock[1]	-	-	-	-
	opened	-	lock[3]	lock[4]	-	lock[4]	-
	closing	reopen[2]	lock[2]	reopen[2]	-	lock[7]	reopen[1]
	opening	-	lock[2]	-	reverse and lock	lock[7]	reverse and lock
	locked by STOP while closing	close	-	-	-	-	-
	locked by STOP while opening	close	-	-	-	-	-

1 - 4-STEP		pulse/signal					
		START	STOP	closing safety	opening safety edge	opening photocell	obstacle detection
automation state	closed	open	lock[1]	-	-	-	-
	opened	lock[5]	lock[3]	lock[4]	-	lock[4]	-
	closing	reopen[2]	lock[2]	reopen[2]	-	lock[7]	reopen[1]
	opening	-	lock[2]	-	reverse and lock	lock[7]	reverse and lock
	locked by STOP while closing	close	-	-	-	-	-
	locked by STOP while opening	close	-	-	-	-	-

2 - SUPER AUTOMATIC		pulse/signal					
		START	STOP	closing safety	opening safety edge	opening photocell	obstacle detection
automation state	closed	open	lock[1]	-	-	-	-
	opened	close[1]	lock[3]	lock[4]	-	lock[4]	-
	closing	reopen	lock[2]	reopen[2]	-	lock[7]	reopen[1]
	opening	reclose	lock[2]	-	reverse and lock	lock[7]	reverse and lock
	locked by STOP while closing	close	-	-	-	-	-
	locked by STOP while opening	close	-	-	-	-	-

3 - SEMIAUTOMATIC with STOP		pulse/signal					
		START	STOP	closing safety	opening safety edge	opening photocell	obstacle detection
automation state	closed	open	lock[1]	-	-	-	-
	opened	close	lock[1]	lock[6]	-	lock[6]	-
	closing	reopen	lock[2]	reopen[2]	-	lock[7]	reopen[1]
	opening	lock[2]	lock[2]	-	reverse and lock	lock[7]	reverse and lock
	locked by STOP while closing	close	-	-	-	-	-
	locked by STOP while opening	close	-	-	-	-	-

4 - STEP-BY-STEP		pulse/signal					
		START	STOP	closing safety	opening safety edge	opening photocell	obstacle detection
automation state	closed	open	lock[1]	-	-	-	-
	opened	close	lock[1]	lock[6]	-	lock[6]	-
	closing	lock[8]	lock[2]	reopen[2]	-	lock[7]	reopen[1]
	opening	lock[2]	lock[2]	-	reverse and lock	lock[7]	reverse and lock
	locked by STOP while closing	close	-	-	-	-	-
	locked by STOP while opening	close	-	-	-	-	-

Legend:

lock[1]: locks and inhibits signals until a START command

lock[2]: locks until a START command to close

lock[3]: locks until a START command to close ignoring pause time

lock[4]: locks as long as the photocell is covered, ignoring pause time

lock[5]: if the START command is given within the f rst 3 seconds of the opening pause, will lock until a new START command is given to close

lock[6]: in spite of a START, the gate is locked as long as the photocell is covered, then it will close

lock[7]: locks as long at the photocell is covered; when the photocell is uncovered will complete the movement

lock[8]: locks until a START command to reopen

close[1]: closes ignoring the pause time - **NOTE**: If this occurs after an obstacle is detected during closing, will LOCK until a new START is given to reclose slowly

reopen[1]: reopens slowly

reopen[2]: reopens - **NOTE**: If this occurs after an obstacle is detected during opening, will LOCK until a new START is given to reclose slowly

reverse and lock: reverses the movement for 2 seconds and locks - a START is necessary to reclose slowly

6. CONTROL SYSTEM FUNCTIONS

6.1 MOTOR MANAGEMENT

• The ***RSK24 2000/2500*** has separate outputs for motor control. When **Motor 1** (single-wing version) only is connected, the control system will automatically control this motor.

• On the opening stroke, **Motor 2** has a f xed delay of 3 seconds.

• When the operator approaches the closing and opening stops, the wing travel speed is reduced to 45% of the maximum speed.

6.2 CONTROL DEVICES

• **START button** - controls the operator; starts and stops the automation depending on the current operating mode.

• **STOP button** - stops the wings. This control device has priority in all operating modes and functions. It stops the operator in its current position. To restart the movement you must use the START control.

• **Closing photocells** - these photocells are only enabled on the closing stroke. When triggered they will stop the movement for 1 second and then start to reopen the gate. These photocells will prevent closing as long as they are covered.

• **Safety edge operating on opening stroke -** this is a safety input which is enabled during the opening stroke. The safety edge will trigger if it touches an obstruction during the opening stroke. The wings will reverse for a short distance and then stop. To complete the movement which has been interrupted in this way, you must press START. This will complete the movement in the safe mode, i.e. at slow speed with the warning light permanently lit.

NOTE: *To enable the opening stroke safety edge, program the parameter H.*

• **Opening safety photocells** - these photocells detect obstacles on the opening and closing strokes; they will trigger on detecting an obstruction and stop the wings. The movement will only restart when the photocells are uncovered. After a pause of 1 second, the movement will restart in the original direction.

• **Flashing light** - this indicates the current status of the operator *(**Fig.7**)*.

• **Warning light** - this signals the current status of the operator: light off ⇨ gate closed; light on, f xed ⇨ gate opened or opening; light on, f ashing ⇨ gate closing.

6.3 PROGRAMMED FUNCTIONS *(see **sect. 4.1**)*

• **Pref ashing** - when this function is enabled, the f ashing light will light up for 3 seconds before opening or closing starts.

IMPORTANT: *If you are not using the flashing light, disable the preflashing function.*

• **Pedestrian start** - this function enables opening of a single wing only from a pushbutton or a remote control (button 2).

• **Short inversion at the end of movement** - at the end of the wing closing stroke, the motors are reversed for a short time in order to take the load off the wings and thereby facilitate release.

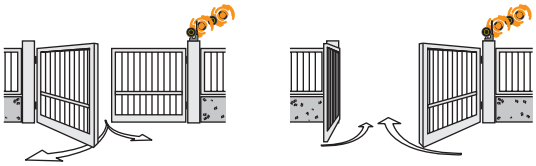
• **Pause time photocell** - with this parameter set to **Yes**,

Fig.7

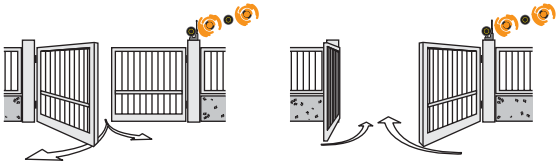
FLASHING LIGHT OPERATION

OFF = gate closed or open and paused

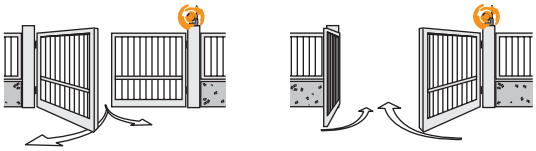
ON flashing = preflashing (where selected) or gate moving (opening or closing)



ON slow flashing = gate moving in black-out mode (battery powered)



ON fixed = gate moving in emergency mode (after obstacle detection)



Tab. 3

PROGRAMMABLE PARAMETERS

L	**Operating mode**
t	**Pause time**
A	**Wing closing delay**
S	**Wing travel speed**
d	**Approach time**
F	**Preflashing / Reverse stroke / Trhust at end of movement**
C	**Short inversion at end of movement**
H	**Pause time photocell / Opening safety with photocell / with safety edge / Pedestrian start**
E	**Thrust force**

English

the automation will ignore the pause time; with the wings open, covering and uncovering the photocell beam will have the effect of operating pref ashing for 3 seconds (if the parameter F is enabled) and will start closing even if the pause time has not been f nished.
With this parameter set to **No**, the closing will only start when the pause time has elapsed.

• **Pause time** - this is the time that the automation waits before automatically reclosing the wings (in the operating modes with this function).

• **Wing closing delay**: this is the time delay between starting the closing stroke of wing 2 and starting the closing stroke of wing 1.

• **Wing travel speed**

• **Approach time** needed to prevent impact against the stop.

• **Short reverse stroke**: opening is preceded by a brief movement in the opposite direction; this is to take the load off the wings and thereby facilitate release.
IMPORTANT: *You must enable the short reverse stroke if the gate is fitted with an electric lock.*

• **Thrust force** (obstacle recognition threshold)

Warning ***If you need to set the thrust force to the maximum value in order to move the wing, you must also f t additional devices for detecting obstructions and obstacles. Examples of such devices are photocell systems and safety edges. You should choose the additional obstacle detection device on the basis of a risk analysis.***

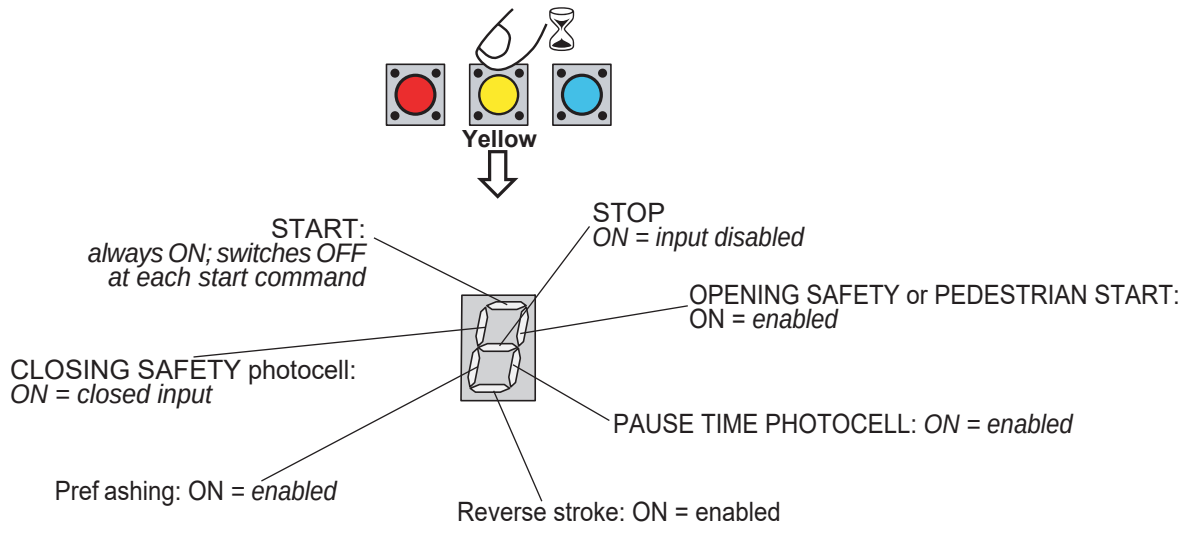
6.4 SAFETY FUNCTION

When triggered, an obstacle detection device (safety edge or obstacle recognition threshold) will stop the gate. To restart the gate, give the START command. The f ashing light will light up permanently AND the gate will start to close at SLOW SPEED and will complete the closing stroke at this speed. This will enable the gate to realign to a known position.

6.5 CHECKING CONNECTIONS ON THE DISPLAY

The system displays the status of inputs for some accessories and functions.
• Press the **YELLOW button** to switch on the display: the **segments will light up** to indicate the **connections** and the **functions enabled** as shown in ***Fig.8***.

Fig.8



7.1 NOTE FOR INSTALLER AND MAINTENANCE TECHNICIAN

• ***Compliance with Machinery Directive 89/392/EC.*** When you have installed the equipment, you must complete a ***Declaration of Conformity*** and a ***Scheduled Maintenance Plan*** in compliance with the directive and then hand over copies of these documents to the user.

7.2 SCHEDULE MAINTENANCE

You should ask the company that installs the automation to provide a scheduled maintenance plan in compliance with the regulations for this type of equipment.

Batteries are consumables and as such are not covered by the guarantee.

Do not throw away old batteries with household waste. Dispose of old batteries using the old battery containers provided at sales outlets.

The maintenance operations recommended by ***Aprimatic S.p.A.*** for the electrical equipment is listed in ***Tab. 4***.

Tab. 4

Operation	*Interval*
• Check the eff ciency of the photocells and the electronic anti-crushing device. Check that they are operating at the values set by the installer.	... every 6 months
• Check the inside of the electronic equipment housing and clean out any insects, dirt or dampness.	... every 6 months
• Check that the optional emergency batteries are working eff ciently (where installed). Change spent batteries.	... every 6 months
• Check the eff ciency of the remote control batteries. Change spent batteries.	... every 6 months
• Remove branches, bushes or other obstacles which might be permanently blocking the photocell beam.	... every 6 months
• Test the eff ciency of the automatic differential overload switch protecting the electrical system.	... every 6 months

English

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Aprimatic

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