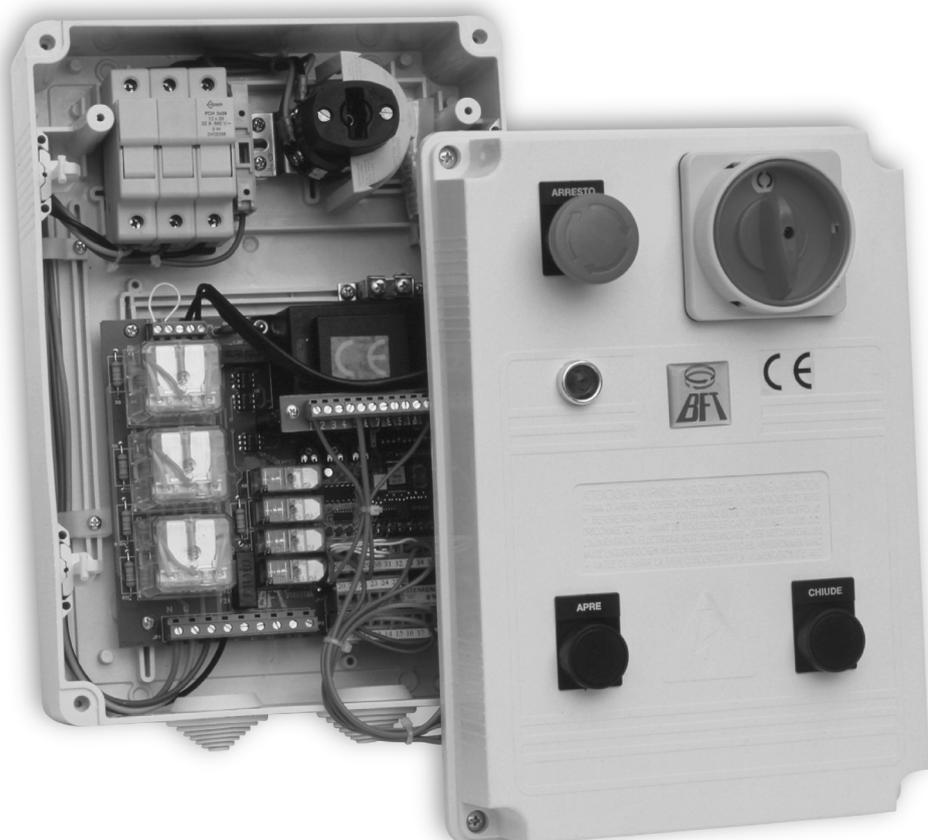


# SIRIO FR-TMA

D811231 02-12-02 Vers. 09



## CONTROL UNIT



Thank you for buying this product, our company is sure that you will be more than satisfied with its performance. This product is supplied with an "Instruction Manual" which should be read carefully as it provides important information about safety, installation, operation and maintenance.

This product complies with recognised technical standards and safety regulations. This product complies with the recognised technical standards and safety regulations. We declare that this product is in conformity with the following European Directives: 89/336/EEC and 73/23/EEC, 98/37/CEE (and subsequent amendments), with the following Technical Standards EN60335-1, PrEN12453 and PrEN12445.

## WARNINGS

When carrying out wiring and installation work, always refer to current standards and good technical principles.

## WARNINGS

Any assistance required on automation components must be carried out by a qualified technician (installer).

### 1) GENERAL OUTLINE (Fig.1)

The control panel, equipped with a microprocessor control unit, is used to operate single-phase or three-phase controllers fitted on sliding gates and sectional doors. It is provided with a lockable switch, open/close/stop buttons and a warning light for anomalies (e.g. release activated, overstroke). A series of LEDs allows to check or detect any operating anomalies in the control unit or on the connected devices. The control unit is supplied with Dip-switches and Trimmers which provide configuration and calibration, respectively. Self-diagnosis: the control unit allows a check to be carried out on operating relays and safety devices (photocells, rubber edge etc.) before any manoeuvre takes place.

### 2) GENERAL SAFETY

**WARNING! An incorrect installation or improper use of the product can cause damage to persons, animals or things.**

- The "Warnings" leaflet and "Instruction booklet" supplied with this product should be read carefully as they provide important information about safety, installation, use and maintenance.
- Scrap packing materials (plastic, cardboard, polystyrene etc) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
- Keep the instructions together with the technical brochure for future reference.
- This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
- The Company declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
- Do not install the product in explosive atmosphere.
- The Company declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation which might occur during use.
- The installation must comply with the provisions set out by the following European Directives: 89/336/EEC, 73/23/EEC, 98/37/ECC and subsequent amendments.
- Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
- Fit an omnipolar or magnetothermal switch on the mains power supply, having a contact opening distance equal to or greater than 3mm.
- Check that a differential switch with a 0.03A threshold is fitted just before the power supply mains.
- Check that earthing is carried out correctly: connect all metal parts for closure (doors, gates etc.) and all system components provided with an earth terminal.
- The Company declines all responsibility with respect to the automation safety and correct operation when other manufacturers' components are used.
- Only use original parts for any maintenance or repair operation.
- Do not modify the automation components, unless explicitly authorised by the company.
- Instruct the product user about the control systems provided and the manual opening operation in case of emergency.
- Do not allow persons or children to remain in the automation operation area.
- Keep radio control or other control devices out of children's reach, in order to avoid unintentional automation activation.
- The user must avoid any attempt to carry out work or repair on the automation system, and always request the assistance of qualified personnel.

- Anything which is not expressly provided for in the present instructions, is not allowed.

### 3) TECHNICAL SPECIFICATIONS

Power supply (*)	400 vac three-phase 230 vac single-phase
Motor output current	2A 4A
Motor output comm. current	8A 12A
Mains - low voltage insulation	> 2MΩhm 500Vdc
Mains - low voltage dielectric strength	3750Vac 1'
Maximum motor power	750W 375W
Power supply to accessories	24Vac/0,5A 24Vac/0,5A
Gate-open warning light	24V/3W 24/3W
Blinker	230V/40W 230V/40W
Dimensions	see fig.1
(*) (other voltages on request)	

### 4) CONNECTIONS (Fig.3)

**WARNINGS** - For wiring and installation operations, refer to the current standards and good technical principles.

Wires powered at different voltages must be physically separated, or suitably insulated with at least 1 mm extra insulation. The wires must be clamped by an extra fastener near the terminals, for example by bands.

**WARNING! For connection to the mains, use a multipolar cable with a minimum of 3x1.5mm<sup>2</sup> cross section and complying with the previously mentioned regulations. For example, if the cable is out side (in the open), it has to be at least equal to H07RN-F, but if it is on the inside (or outside but placed in a plastic cable channel) it has to be or at least equal to H05VV-F with section 3x1.5mm<sup>2</sup>.**

**N.B.:** Before connecting the control unit to the mains voltage, check that the JP5 (voltage change) terminal is preset for the correct working voltage. The board is supplied with a series of previously bridged terminals. The jumpers refer to the following terminals: 26-29, 26-30, 26-31, 26-35. If these terminals are not used, leave them bridged. In the additional terminal board SSBB1, the terminals 6-7, 8-9 and 10-11 are bridged. If these terminals are not used, leave them bridged.

### PANEL

Caution: the panel power supply must be connected to the "S" breaker.

#### S - THREE-PHASE

R-S-T-N.....Three-phase 400V ±10% 50Hz + Neutral.

**CAUTION!** (voltage change JP5/39-40).

#### S - SINGLE-PHASE

R-N.....Single-phase 230V ±10% 50Hz.

**CAUTION!** (voltage change JP5/40-41).

### CONTROL UNIT

#### JP1 - THREE-PHASE

1-2-3-4 Three-phase power supply+neutral 400V.  
(1 Neutral, 2-3-4 phase)(Note: JP5 jumper between 39-40).

5-6-7 Three-phase motor connection.

8-9 230Vac output for blinker.

#### JP1 - SINGLE-PHASE

1-2 Single-phase power supply 230V.  
(1 Neutral, 2 phase) (N.B.: JP5 jumper between 40-41).

5-6-7 Single-phase motor connection (5-7 motor and capacitor operation, 6 common terminal).

8-9 230Vac output for blinker.

#### JP2

10-11 24Vac (3W) output for light indicating motor and/or pedestrian access release. The light switches on when the motor is released (manual operation) or the pedestrian access is open.

11-12 24Vac power supply to accessories and safety devices which are not checked.

12-13 24VTx power supply only for safety device transmitters which are checked.

14 LOOP1 input for safety device check ring (see fig.5).

15 LOOP2 input for safety device check ring (see fig.5).

16-17 Second radio channel output for two-channel receiver board (n.o.).

18-19 Antenna input for radio receiver board (18 signal, 19 braid).

#### JP7

20-21-22

23-24-25 Outputs for the connection of safety devices which are to be checked (see fig.5).

#### JP4

26-27 START button (n.o.).

- 26-28 Block button (n.c.). Additional buttons to be connected in series with one another.
- 26-29 Photocell contact input (n.c.). If not used, leave on. If used while checking, observe wiring diagram in fig.5.
- 26-30 Opening limit switch (n.c.). If not used, leave bridged.
- 26-31 Closing limit switch (n.c.). If not used, leave bridged.
- 26-32 Pedestrian access button (n.o.).
- 26-33 Open button (n.o.).
- 26-34 Close button (n.o.).
- 26-35 IR edge contact input (n.c.). If not used, leave bridged.
- 26-36 Individual passage micro input (pedestrian access control).

## JP5

- 37-38 **CAUTION!** mains voltage across terminals. Emergency button connection (n.c.). Use a hold-to-run button with two n.c. contacts having a distance of at least 8mm between the two contacts. When not used, leave bridged.
- 39-40 Change of voltage to 400Vac three-phase.
- 40-41 Change of voltage to 230Vac single-phase.

## JP6

- 1-2 channel radio receiver board connector.
- ### -SSBB1 TERMINAL BOARD
- 1 Connected to terminal 26 of control board.
  - 2-3-4 Auxiliary common connection.
  - 4-5 Stop.
  - 6-7 N.C. contact of pedestrian access micro. If not used, leave bridged.
  - 8-9 (N.C.) contact for SPRING 1 breakage. If not used, leave bridged.
  - 10-11 (N.C.) contact for SPRING 2 breakage. If not used, leave bridged.
  - 12 Connected to terminal 28 of control board.

## 5) CONNECTION TO SAFETY DEVICES

- In case of standard devices with 4 terminals and without self-diagnostic function, the connection can be carried out without verification as indicated in point 5.1.
- In case of devices featuring internal self-diagnostic function, refer to point 5.2.
- The standard devices with 5 terminals and without self-diagnostic function can be included in the control and self-diagnostic cycle observing the instructions given in point 5.3.

### 5.1) Safety devices WITHOUT SELF-DIAGNOSIS

Connections must be carried out as shown in fig. 4. Keep the Dip-switches 9 and 10 in the ON position (standard setting). The tripping contacts of a group of devices of the same type, must be connected in series with one another.

### 5.2) Safety devices WITH INTERNAL SELF-DIAGNOSIS

Connections must be carried out as shown in fig.4. Keep the Dip-switches 9 and 10 in the ON position (standard setting). The tripping contacts of several devices of the same type, must be connected in series.

### 5.3) Safety devices WITHOUT SELF-DIAGNOSIS but with voltage-free EX-CHANGE CONTACTS.

We conventionally make reference to a receiving device (RCS- fig.5) with 5 terminals which have the following functions: terminals 1 and 2 are for 24Vac power supply, terminal 3 is a common terminal, terminal 4 is a normally closed contact not in use, terminal 5 is a normally open contact not in use.

- A) Fig. 5 "A" shows the wiring diagram for connecting the power supply to those receivers and transmitters for which a self-diagnosis is required.
- B) Fig. 5 "B". Connection of one or more receivers (photocell) of the same type up to a maximum of four (Dip 9 OFF/Dip 10 ON, photocells only, leave jumped 35-26). For example, if there are two photocells, connect F1 and F2, then interrupt the connection chain by connecting the terminal 4 of F2 to LOOP1 and the terminal 5 of F2 to COM. If only one receiver has to be connected, connection must be made as shown in fig.5 ref.1. If the receivers to be connected are less than four, it is necessary to interrupt the connection chain by performing the connections as shown in fig.5 ref. 2 or 3. If rubber edges instead of photocells have to be connected, use terminal 35-BAR of the control unit. If the devices concerned are rubber edges instead of photocells, use terminal 35-BAR in the control unit (Dip 9 ON/Dip 10 OFF, leave jumped 29-26).
- C) Connection of one photocell and one rubber edge.(Dip 9 OFF/Dip 10 OFF)
- D) Connection of two photocells and one rubber edge.(Dip 9 OFF/Dip 10 OFF)

When connecting two rubber edges and one photocell, F1 and F2 in fig.5 "D" become 2 rubber edges, and C1 one photocell; invert the connections PHOT and BAR of the control unit with one another.(Dip 9 OFF/Dip 10 OFF)

- E) Connection of three photocells and one rubber edge. When connecting three rubber edges and one photocell, F1, F2 and F3 (fig.5 "E") become 3 rubber edges and C1 one photocell; invert the connections PHOT and BAR of the control unit with one another.(Dip 9 OFF/Dip 10 OFF)
- F) Connection of three photocells and two rubber edges. When connecting three rubber edges and two photocells, F1, F2 and F3 (fig.5 "F") become three rubber edges, C1 and C2 two photocells; invert the connections PHOT and BAR of the control unit with one another.(Dip 9 OFF/Dip 10 OFF)
- G) Connection of four photocells and one rubber edge. When connecting four rubber edges and one photocell, F1, F2, F3 and F4 (fig.5 "G") become four rubber edges and C1 one photocell; invert the connections PHOT and BAR of the control unit with one another.(Dip 9 OFF/Dip 10 OFF)

## 6) OPERATION LOGIC

### 6.1) Dip-switch

#### Dip 1 and 2 ..... Photocells (FCH)

**ON** - Excludes photocell operation during gate opening, and immediately reverses movement during the closing phase when the photocell is obscured.  
**OFF** - In the case where the photocell is obscured by an obstacle during the closing manoeuvre, the gate is stopped; when the obstacle is removed, the gate reopens. In the case where the photocell is obscured by an obstacle during the opening manoeuvre, the gate is stopped; when the obstacle is removed, the gate continues to open.

#### Dip 3 ..... Impulse blocking (IBL)

**ON** - The Start / Start pedestrian impulse has no effect during the opening phase.  
**OFF** - The Start / Start pedestrian impulse during the opening phase causes the gate to stop.

#### Dip 4 ..... Automatic closing (TCA)

**ON** - Automatically closes the gate after a dwell time set by the TCA trimmer. The automatic closing manoeuvre is activated after the gate has reached the opening end-of-stroke position, after the gate opening time has ended, or after the gate has stopped in the opening phase due to a Start impulse.

**OFF** - Excludes automatic closing.

Dip 5 2 or 4 step logic (2P/4P)

**ON** - A Start impulse given during the closing phase reverses the direction of movement, during the opening phase it stops the gate. (Dip-switch OFF).

**OFF** - A Start impulse given while the gate is moving, causes it to stop; the following impulse reverses the running direction. (4-step logic).

**N.B.:** The Start impulse in the opening phase has no effect when Dip-switch 3 is ON.

#### Dip 6 ..... Pre-alarm (PREALL)

**ON** - The blinker comes on about 3 seconds before the motor starts.

**OFF** - The blinker comes on at the same time as the motor starts.

#### Dip 7 ..... Open/Close command (U.P.)

Activates the signals connected to terminals 33-34.

**ON** - Hold-to-run operation: the manoeuvre continues as long as pressure is maintained on the command button.

**OFF** - Separate automatic Open/Close operation: by means of an impulse, it opens the gate if closed and vice versa.

#### Dip 8 ..... Reduced or normal operation time range (S.TW)

**ON** - TW operation time ranging between 1-90 seconds (TW.PED pedestrian operation time from 1 to 20 seconds).

**OFF** - TW operation time ranging between 3-210 seconds (TW.PED pedestrian operation time from 5 to 60 seconds).

#### Dip 9 ..... Unchecked photocells (FNV)

Activates the photocell control logic.

**ON** - The photocells are excluded from the safety check cycle which is carried out before each manoeuvre; however their logic state is analysed (for connection, refer to the typical method of connecting photocells with continuously active beams). This is used to connect photocells which have not been checked or have internal self-diagnosing systems, and always provide a voltage-free output contact.

**OFF** - The photocells are included in the Ok safety check cycle which is carried out before each manoeuvre. For connection, refer to the enclosed diagrams.

#### Dip 10 ..... Unchecked edge (BAR)

Activates the rubber edge device control logic.

**ON** - The edge devices are excluded from the safety check cycle which is carried out before each manoeuvre; however their logic state is analysed (for connection, refer to the typical method of connecting infrared edges

with continuously active beams). This is used to connect IR edges which have not been checked or have internal self-diagnosing system, and always provide a voltage-free output contact.

**OFF** - The IR edge devices are included in the Ok safety check cycle which is carried out before each manoeuvre. For connection, refer to the enclosed diagrams.

## 6.2) Trimmer-set functions

**TW.PED** Sets the partial operation time of a sliding gate which is being used for both vehicles and pedestrians.

**TW** Sets the operation time during both the opening and closing phases (adjustable from 3 to 210 seconds).

**TCA** Sets the dwell time, after which the gate closes automatically (from 1 to 120 seconds).

## 6.3) LED functions

The **SIRIOTMA** control unit is provided with leds which are useful in identifying any anomalies in the system.

**(DL1)** Stays on when supplied with mains power and with F1 fuse intact.

**(DL2)** Comes on when the motor is activated during closing.

**(DL3)** Comes on when the motor is activated during opening.

**(DL4)** Comes on following the Start command or the activation of the first radio-receiver channel.

**(DL5)** Goes off when the block command is activated.

**(DL6)** Goes off when photocells are not aligned, i.e. when obstacles are present. When Dip-switch 9 is OFF, the photocells and related leds are only activated during manoeuvring.

**(DL7)** Goes off when the gate is in the completely open position, if provided with end-of-stroke device.

**(DL8)** Goes off when the gate is in the completely closed position, if provided with end-of-stroke device.

**(DL9)** Comes on at the Start command for pedestrian gate.

**(DL10)** Comes on with manual opening command.

**(DL11)** Comes on with manual closing command.

**(DL12)** Goes off when the pneumatic edge is activated. When Dip-switch 10 is OFF, the edge and its related LED are only activated during manoeuvring.

**(DL13)** Comes on when the safety ring is closed.

**(DL14)** Comes on when the safety micro has stepped in.

## 7) MAINTENANCE AND DEMOLITION

**The maintenance of the system should only be carried out by qualified personnel regularly.** The materials making up the set and its packing must be disposed of according to the regulations in force. **Batteries must be properly disposed of.**

**The descriptions and illustrations contained in this manual are not binding. The Company reserves the right to make any alterations deemed appropriate for the technical, manufacturing and commercial improvement of the product, while leaving the essential product features unchanged, at any time and without undertaking to update the present publication.**

# SIRIO FR-TMA

Fig. 1

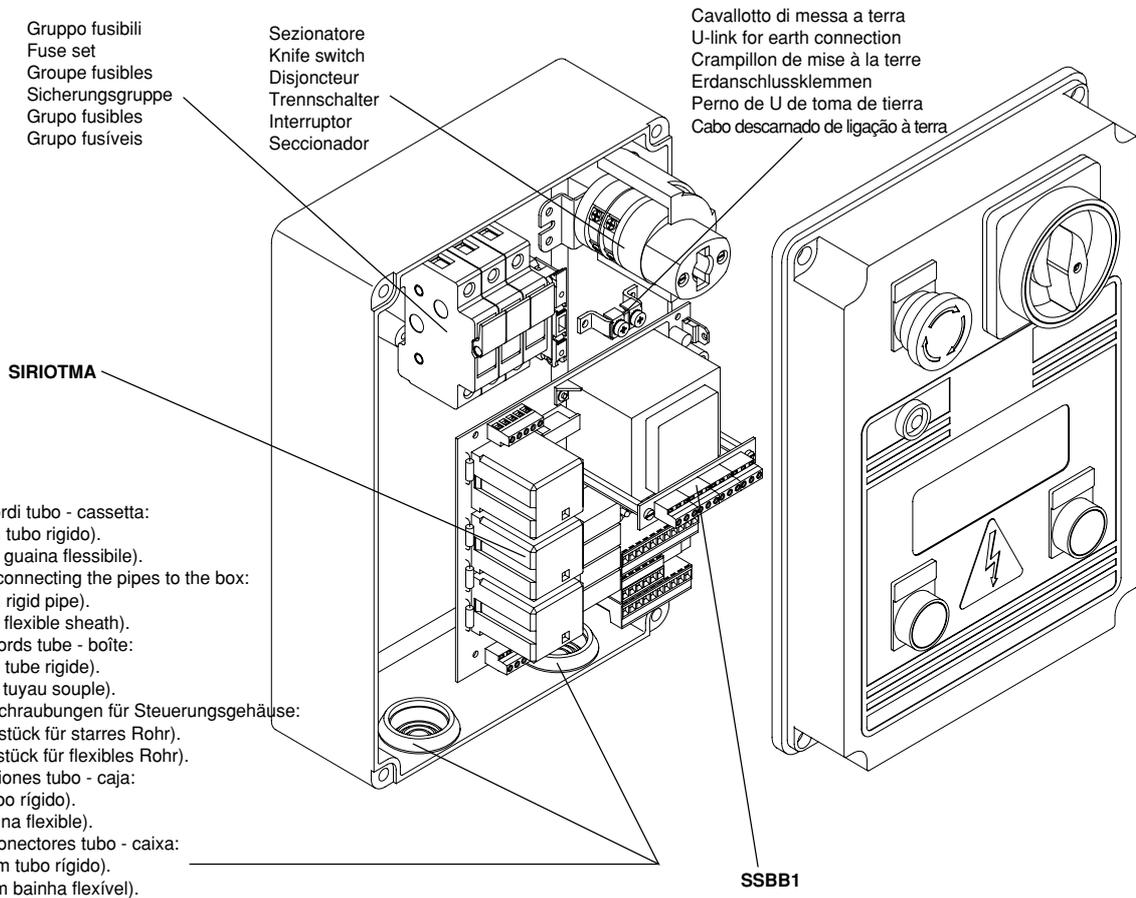
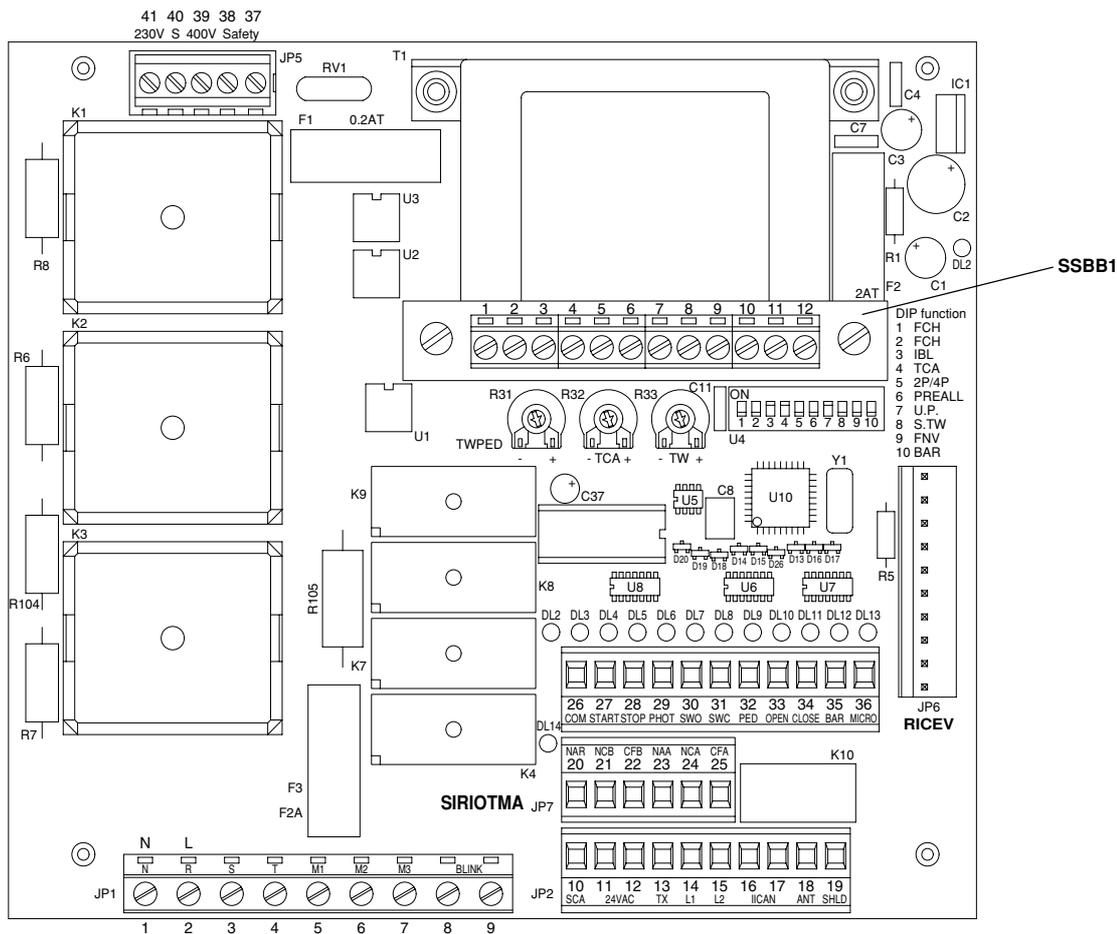
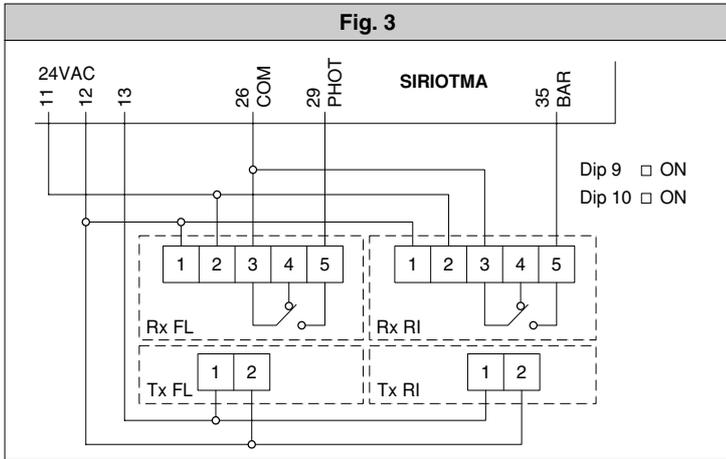


Fig. 2



# SIRIO FR-TMA

**Fig. 3**



**Fig. 4**

**Legenda**

P1: Pulsante arresto a bordo quadro  
 MPU: Micro controllo porta passo uomo  
 M1-M2: Micro controllo rottura molle

**Key**

P1: Stop button on panel  
 MPU: Check micro for pedestrian access  
 M1-M2: Check micro for spring failure

**Légende**

P1: Bouton d'arrêt sur le tableau  
 MPU: Micro de contrôle de la porte pas d'homme  
 M1-M2: Micro de contrôle de la rupture des ressorts

**Zeichenerklärung**

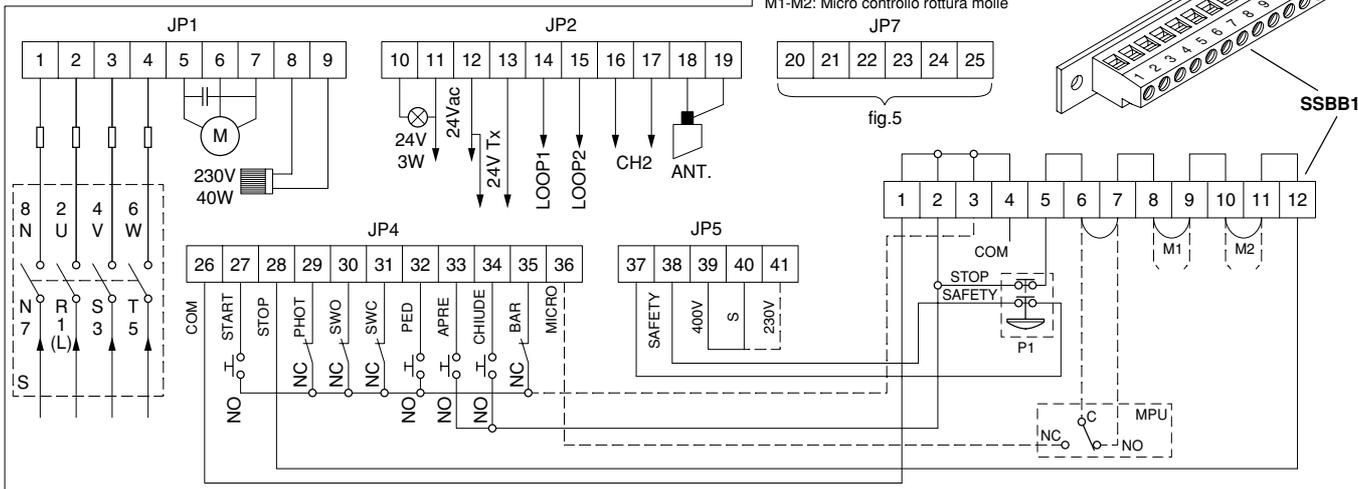
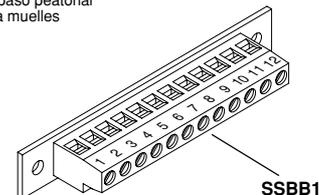
P1: Stopknopf auf der Tafel  
 MPU: Mikroschalter zur Kontrolle der Durchgangstür  
 M1-M2: Mikroschalter zur Feststellung von Federbrüchen

**Legenda**

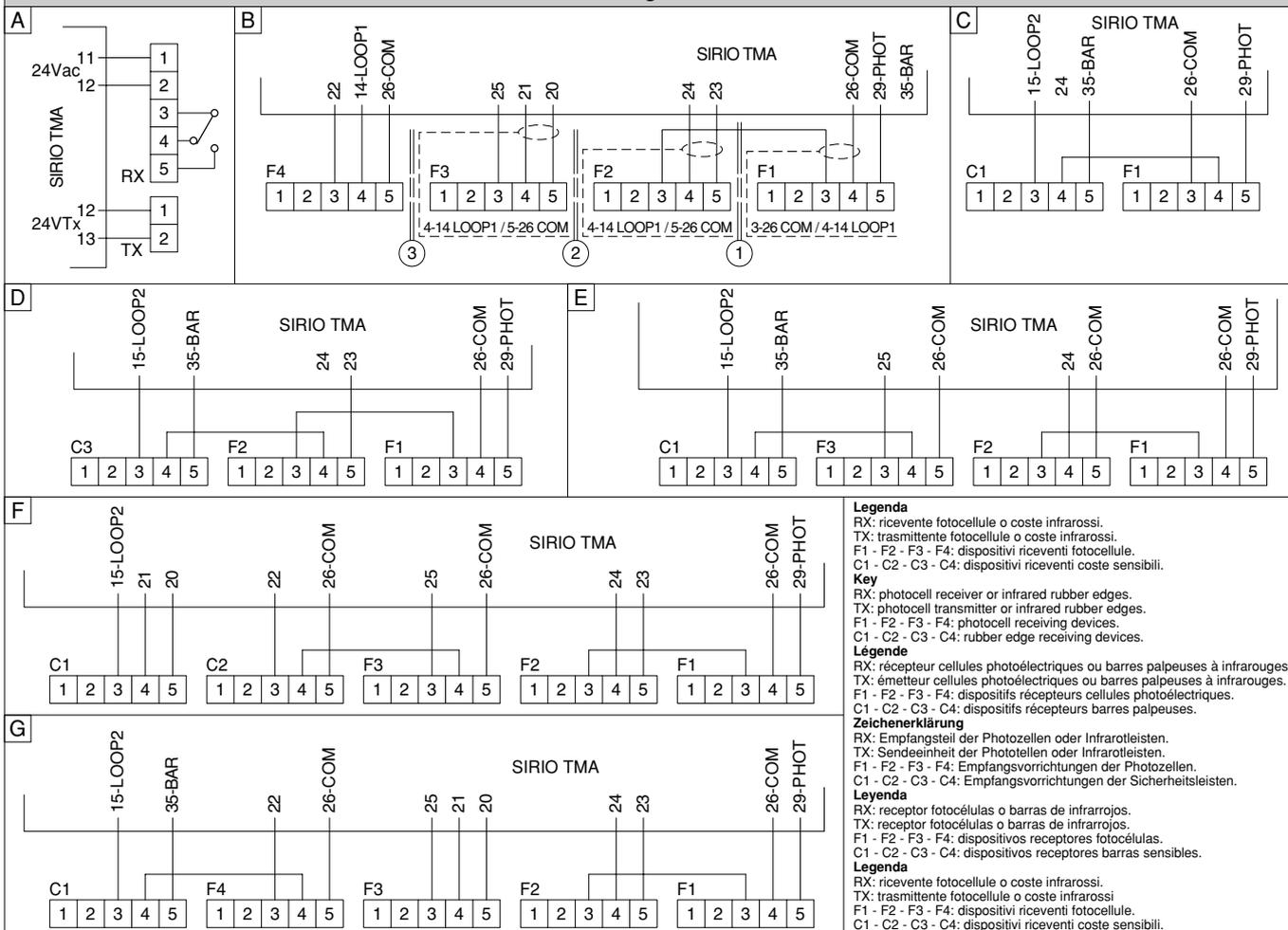
P1: Botón de parada colocado en el cuadro  
 MPU: Microinterruptor de control puerta paso peatonal  
 M1-M2: Microinterruptor de control rotura muelles

**Legenda**

P1: Pulsante arresto a bordo quadro  
 MPU: Micro controllo porta passo uomo  
 M1-M2: Micro controllo rottura molle



**Fig. 5**



**Legenda**

RX: ricevente fotocellule o coste infrarossi.  
 TX: trasmittente fotocellule o coste infrarouges.  
 F1 - F2 - F3 - F4: dispositivi riceventi fotocellule.  
 C1 - C2 - C3 - C4: dispositivi riceventi coste sensibili.

**Key**

RX: photocell receiver or infrared rubber edges.  
 TX: photocell transmitter or infrared rubber edges.  
 F1 - F2 - F3 - F4: photocell receiving devices.  
 C1 - C2 - C3 - C4: rubber edge receiving devices.

**Légende**

RX: récepteur cellules photoélectriques ou barres palpeuses à infrarouges.  
 TX: émetteur cellules photoélectriques ou barres palpeuses à infrarouges.  
 F1 - F2 - F3 - F4: dispositifs récepteurs cellules photoélectriques.  
 C1 - C2 - C3 - C4: dispositifs récepteurs barres palpeuses.

**Zeichenerklärung**

RX: Empfangsteil der Photozellen oder Infrarotleisten.  
 TX: Sendeeinheit der Photellen oder Infrarotleisten.  
 F1 - F2 - F3 - F4: Empfangsvorrichtungen der Photozellen.  
 C1 - C2 - C3 - C4: Empfangsvorrichtungen der Sicherheitsleisten.

**Legenda**

RX: receptor fotocélulas o barras de infrarrojos.  
 TX: receptor fotocélulas o barras de infrarrojos.  
 F1 - F2 - F3 - F4: dispositivos receptores fotocélulas.  
 C1 - C2 - C3 - C4: dispositivos receptores barras sensibles.

**Legenda**

RX: ricevente fotocellule o coste infrarossi.  
 TX: trasmittente fotocellule o coste infrarouges.  
 F1 - F2 - F3 - F4: dispositivi riceventi fotocellule.  
 C1 - C2 - C3 - C4: dispositivi riceventi coste sensibili.