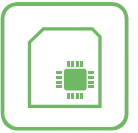


Elpro S50-T2.EFO



IT

PROGRAMMATORE ELETTRONICO MONOFASE/TRIFASE
PER DUE DISSUASORI A SCOMPARSA ANTITERRORISMO TALOS M50.EFO

GB

SINGLE-PHASE/THREE-PHASE ELECTRONIC CONTROLLER
FOR TWO TALOS M50.EFO ANTI-TERRORISM RETRACTABLE BOLLARDS

FR

PROGRAMMATEUR ÉLECTRONIQUE MONOPHASÉ-TRIPHASÉ
POUR DEUX BORNES ESCAMOTABLES ANTI-TERRORISME TALOS M50.EFO

DE

EINPHASIGE-DREIPHASIGE ELEKTRONISCHE STEUERUNG
FÜR ZWEI TALOS M50.EFO ANTI-TERROR VERSENKBARE POLLER

IT

- DISPOSITIVO DI EMERGENZA EFO (EMERGENCY FAST OPERATION)
- PREDISPOSTO PER SEMAFORO A 3 LUCI
- AUTOMATICO O SEMIAUTOMATICO
- PREDISPOSIZIONE PER OROLOGIO ESTERNO
- FUNZIONE PASSO-PASSO
- UOMO PRESENTE

GB

- EFO EMERGENCY DEVICE (EMERGENCY FAST OPERATION)
- PRE-SET FOR A TRAFFIC LIGHT WITH 3 LAMPS
- AUTOMATIC OR SEMI-AUTOMATIC
- PRE-SET FOR EXTERNAL TIME CLOCK
- STEP BY STEP FUNCTION
- DEADMAN (HOLD-ON-SWITCHED) CONTROL

FR

- DISPOSITIF D'URGENCE EFO (EMERGENCY FAST OPERATION)
- PREPARE POUR FEU DE CIRCULATION A 3 VOYANTS
- AUTOMATIQUE OU SEMI-AUTOMATIQUE
- PREPARE POUR HORLOGE EXTERNE
- FONCTION PAS-PAS
- HOMME MORT

DE

- EFO-NOTFALLGERÄT (EMERGENCY FAST OPERATION)
- FÜR AMPEL MIT 3 LICHTERN VORGESEHEN
- AUTOMATISCH ODER HALBAUTOMATISCH
- FÜR EXTERNE UHR VORGESEHEN
- SCHRITT FÜR SCHRITT FUNKTION (IMPULSBETRIEB)
- TOTMANN-BETRIEB

GENERAL WARNINGS FOR PEOPLE SAFETY**THANK YOU**

Thank you for purchasing a Fadini product. Please read these instructions carefully before using this appliance. The instructions contain important information which will help you get the best out of the appliance and ensure safe and proper installation, use and maintenance. Keep this manual in a convenient place so that you can always refer to it for the safe and proper use of the appliance.

INTRODUCTION

This operator is designed for a specific scope of applications as indicated in this manual, including safety, control and signaling accessories as minimum required with Fadini equipment. □ Any applications not explicitly included in this manual may cause operation problems or damages to properties and people. □ Meccanica Fadini S.r.l. is not liable for damages caused by the incorrect use of the equipment, or for applications not included in this manual or for malfunctioning resulting from the use of materials or accessories not recommended by the manufacturer. □ The manufacturer reserves the right to make changes to its products without prior notice. □ All that is not explicitly indicated in this manual is to be considered not allowed.

BEFORE INSTALLATION

Before commencing operator installation assess the suitability of the access, its general condition and the structure. □ Make sure that there is no risk of impact, crushing, shearing, conveying, cutting, entangling and lifting situations, which may prejudice people safety. □ Do not install near any source of heat and avoid contacts with flammable substances. □ Keep all the accessories able to turn on the operator (transmitters, proximity readers, key-switches, etc) out of the reach of the children. □ Transit through the access only with stationary operator. □ Do not allow children and/or people to stand in the proximity of a working operator. □ To ensure safety in the whole movement area of a gate it is advisable to install photocells, sensitive edges, magnetic loops and detectors. □ Use yellow-black strips or proper signals to identify dangerous spots. □ Before cleaning and maintenance operations, disconnect the appliance from the mains by switching off the master switch. □ If removing the actuator, do not cut the electric wires, but disconnect them from the terminal box by loosening the screws inside the junction box.

INSTALLATION

All installation operations must be performed by a qualified technician, in observance of the Machinery Directive 2006/42/CE and safety regulations EN 12453 - EN 12445. □ Verify the presence of a thermal-magnetic circuit breaker 0,03 A - 230 V - 50 Hz upstream the installation. □ Use appropriate objects to test the correct functionality of the safety accessories, such as photocells, sensitive edges, etc. □ Carry out a risk analysis by means of appropriate instruments measuring the crushing and impact force of the main opening and closing edge in compliance with EN 12445. □ Identify the appropriate solution necessary to eliminate and reduce such risks. □ In case where the gate to automate is equipped with a pedestrian entrance, it is appropriate to prepare the system in such a way to prohibit the operation of the engine when the pedestrian entrance is used. □ Apply safety nameplates with CE marking on the gate warning about the presence of an automated installation. □ The installer must inform and instruct the end user about the proper use of the system by releasing him a technical dossier, including: layout and components of the installation, risk analysis, verification of safety accessories, verification of impact forces and reporting of residual risks.

INFORMATION FOR END-USERS

The end-user is required to read carefully and to receive information concerning only the operation of the installation so that he becomes himself responsible for the correct use of it.

- The end-user shall establish a written maintenance contract with the installer/maintenance technician (on -call).
- Any maintenance operation must be done by qualified technicians.
- Keep these instructions carefully.

WARNINGS FOR THE CORRECT OPERATION OF THE INSTALLATION

For optimum performance of system over time according to safety regulations, it is necessary to perform proper maintenance and monitoring of the entire installation: the automation, the electronic equipment and the cables connected to these. □ The entire installation must be carried out by qualified technical personnel, filling in the Maintenance Manual indicated in the Safety Regulation Book (to be requested or downloaded from the site www.fadini.net/supporto/downloads).

□ Operator: maintenance inspection at least every 6 months, while for the electronic equipment and safety systems an inspection at least once every month is required. □ The manufacturer, Meccanica Fadini S.r.l., is not responsible for non-observance of good installation practice and incorrect maintenance of the installation.

DISPOSAL OF MATERIALS

Dispose properly of the packaging materials such as cardboard, nylon, polystyrene etc. through specializing companies (after verification of the regulations in force at the place of installation in the field of waste disposal). Disposal of electrical and electronic materials: to remove and dispose through specializing companies, as per Directive 2012/19/UE. Disposal of substances hazardous for the environment is prohibited.

**UE DECLARATION OF CONFORMITY (DoC)**

Manufacturer: Meccanica Fadini S.r.l.
Address: Via Mantova, 177/A - 37053 Cerea - VR - Italy

declare that the DoC is issued under our sole responsibility and belongs to the following product:

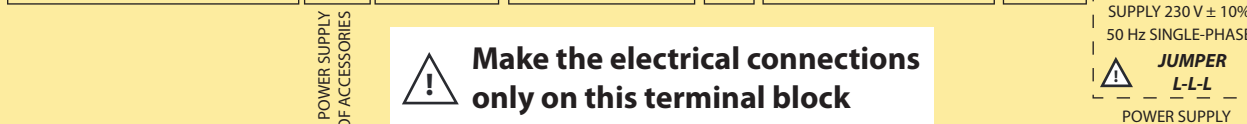
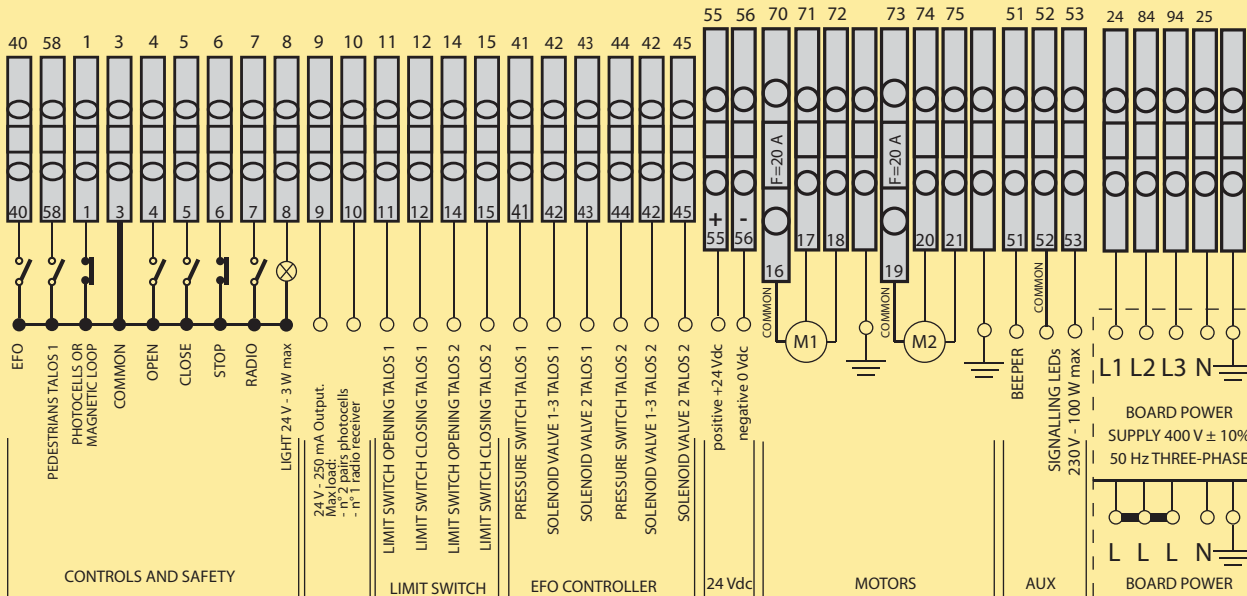
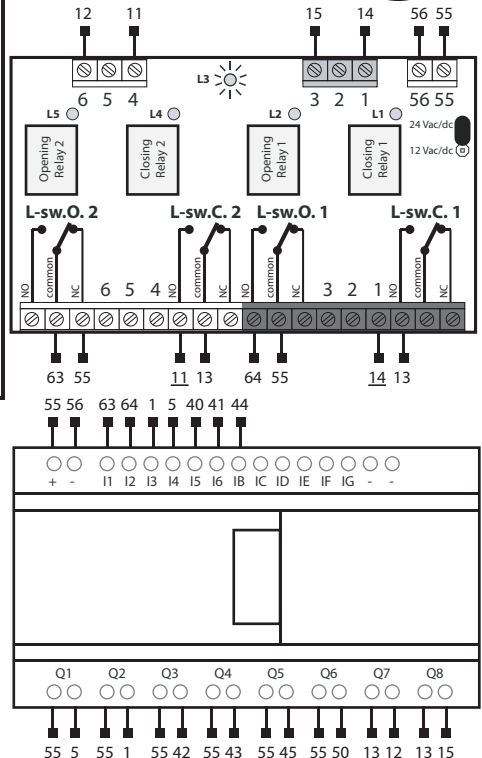
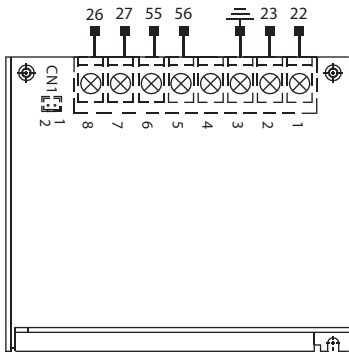
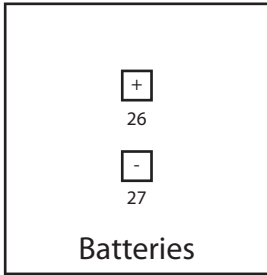
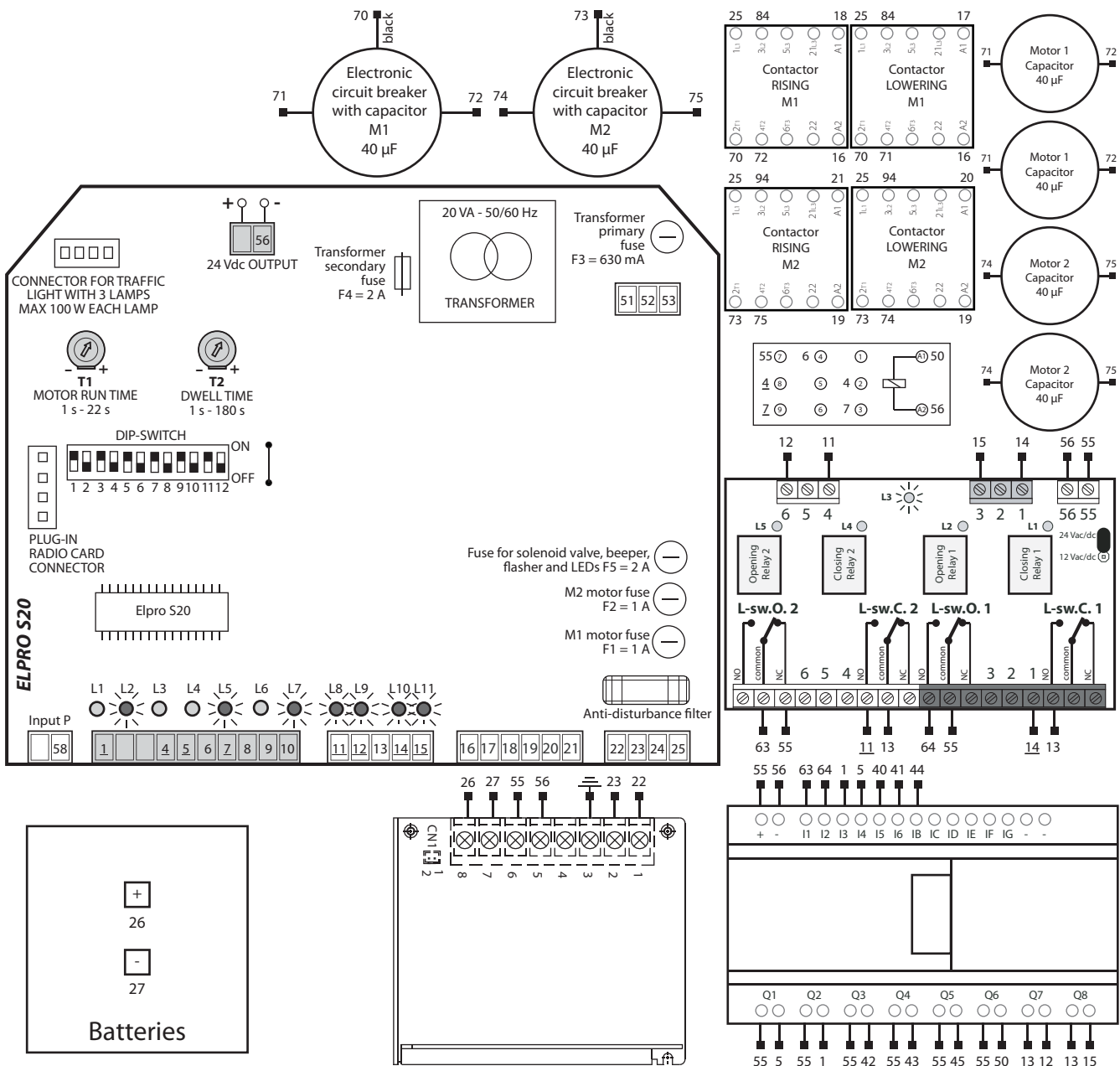
Control unit model **ELPRO S50-T2.EFO**

is in conformity with the relevant Union harmonisation legislation:
- Electromagnetic Compatibility Directive 2014/30/UE
- Low Voltage Directive 2014/35/UE

Cerea, 13/10/2017

Meccanica Fadini S.r.l.
Responsible Manager





Make the electrical connections only on this terminal block

BOARD POWER SUPPLY 400 V ± 10% 50 Hz THREE-PHASE

BOARD POWER SUPPLY 230 V ± 10% 50 Hz SINGLE-PHASE

JUMPER L-L-L

POWER SUPPLY

Note well: whenever **Elpro S50-T2.EFO** is re-powered, wait 10 seconds for the logic to become fully operating again.

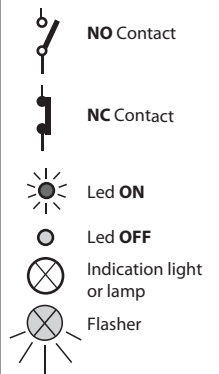
NOTE WELL:

- The control panel must be installed in a sheltered, dry place.
- Fit the mains to the control panel with a 0,03 A high sensitivity magneto-thermal circuit breaker.
- Use a multipole cable type BUT FLESSIBILE FG 70R 12x1,5 mm², up to a recommended distance of 20 m maximum between TALOS M50.EFO and ELPRO S50-T2.EFO.
- For distances longer than 20 m use cables having an adequate section in compliance with the rules of good installation praxis.
- Use 1 mm² section wires for command and safety accessories.
- N.W: To fit extra accessories such as lights, CCTV etc. use only solid state relays to prevent interference with the microprocessor.

IN CASE OF FAILURE OF THE CONTROL BOARD:

- Make sure voltage supply to the electronic board is 230 V ±10% - 50 Hz
- Make sure voltage supply to the electric motor is 230 V ±10% - 50 Hz
- For distances beyond 20 meters increase wire section
- Check power supply 230 V single-phase
- Check fuses
- Check all NC contacts of the control board
- Check that no voltage drop has occurred from the control board to the electric motor

Symbols



DIAGNOSTIC LEDS

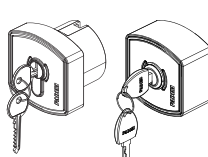
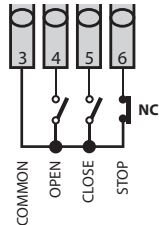
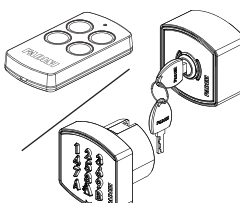
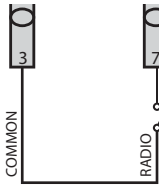
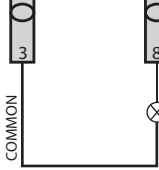
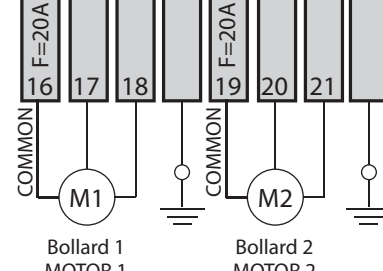


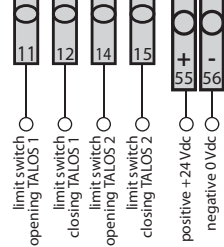
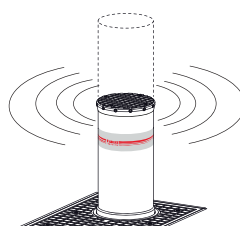
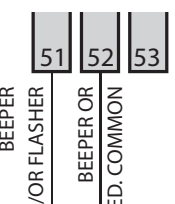
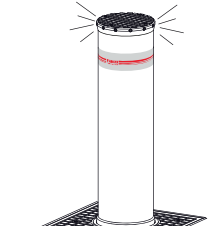
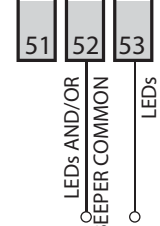
- L1** = pedestrian opening, normally **OFF**, alight when a pedestrian open pulse is given
- L2** = photocells or loop, normally **ALIGHT**, if obstructed light goes off
- L3** = open, normally **OFF**, alight when an open pulse is given
- L4** = close, normally **OFF**, alight when a close pulse is given
- L5** = stop, normally **ON**, it goes off when a stop pulse is given
- L6** = radio, normally **OFF**, alight when a radio pulse is given
- L7** = normally **ON**, mains voltage and fuse integrity F1, F2, F3, F4
- L8** = limit switch open M1, normally **ON**, it goes off when the post is in down position
- L9** = limit switch close M1, normally **ON**, it goes off when the post is in up position
- L10** = limit switch open M2, normally **ON**, it goes off when the post is in down position
- L11** = limit switch close M2, normally **ON**, it goes off when the post is in up position

DIP-SWITCHES

- 1 = ON** Photocells or loop stop while opening **ON**
- 2 = ON** Radio no reversing while opening
- 3 = ON** Automatic closing
- 4 = ON** Pre flashing activated
- 5 = ON** Radio step by step stop in between
- 6 = ON** Pedestrian opening motor M1 only one post operating
- 7 = ON** Deadman control
- 8 =** Traffic lights (see functions)
- 9 =** Traffic lights (see functions)
- 10 = ON** No lamp on during dwell time
- 11 = ON** Close on dwell time after passage through photocells or over the loop
- 12 = ON** Max working time 90 s. OFF = 18 s



Accessory	Electrical connections	Dip-switches and LED status of the various functions
Board power supply:	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>BOARD POWER SUPPLY 400 V ± 10% 50 Hz THREE-PHASE</p> <p>L1 L2 L3 N</p> </div> <div style="text-align: center;"> <p>BOARD POWER SUPPLY 230 V ± 10% 50 Hz SINGLE-PHASE</p> <p>L L L N JUMPER L-L-L</p> </div> </div>	
Photocells or loop detectors:	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1 3</p> <p>Photocells or loop detectors</p> </div> <div style="text-align: center;"> <p>9 10</p> <p>24 Vac - 250 mA Output max load: - n° 2 pairs of photocells - n° 1 radio receiver</p> </div> </div>	<p>DIP-SWITCH N° 1:</p> <ul style="list-style-type: none"> ON: Photocells. Stop while opening, reverse in closing once obstacle is removed OFF: Photocells. No stop while opening, reverse in closing in case of an obstacle <p>DIP-SWITCH N° 11:</p> <ul style="list-style-type: none"> ON: During dwell time, automatic mode, (Dip-Switch 3 = ON) after engaging the photocells, it closes after 5 s OFF: no closing after engaging the photocells <p> L2 ON = no obstruction. It goes off in case of an obstacle</p>
Pedestrian opening:	<div style="display: flex; align-items: center;"> <div style="margin-left: 20px;"> <p>By a pedestrian command only the bollard connected to M1 is lowered. The pedestrian opening function cannot be performed during the first operating cycle after a power failure.</p> </div> </div>	<p>DIP-SWITCH N° 3 and N° 6 both on ON:</p> <ul style="list-style-type: none"> ON: automatic closing OFF: No automatic closing. Semi-automatic closing <ul style="list-style-type: none"> ON: pedestrian opening motor M1 OFF: standard operation <p> T2 DWELL TIME from 1 to 180 s</p>

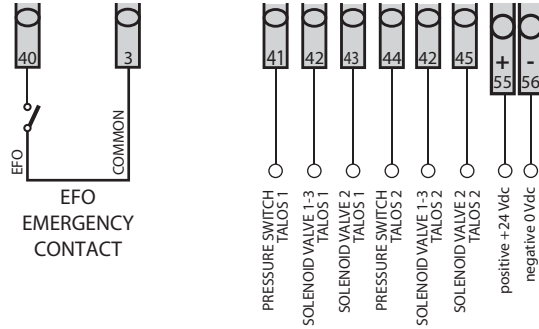
Accessory	Electrical connections	Dip-switches and LED status of the various functions
<p>Key-switch:</p> 	 <p>NO and NC contacts to be connected to the respective terminals of the key-switches or push-buttons. All possible configurations are described in the instructions attached to the respective control accessory</p>	<ul style="list-style-type: none"> <input type="radio"/> L3 OFF = no contact to open, it goes on whenever a pulse to open is given <input type="radio"/> L4 OFF = no contact to close, it goes on whenever a pulse to close is given <input type="radio"/> L5 ON = stop contact closed, it goes off whenever a pulse to stop is given
<p>Radio contact:</p> 	 <p>With any NO contact to the two terminals, the following is performed on each pulse: - Opening only: Dip 2 = ON and Dip 5 = OFF - Travel reversing Dip 2 = OFF and Dip 5 = OFF - Step by step: open - stop - close - stop Dip 2 = OFF and Dip 5 = ON - No further command accepted on opening. Stop and reversing performed on dwell time and closing: Dip 2 = ON and Dip 5 = ON</p>	<p>DIP-SWITCH N° 2:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ON: No reversing in opening <input type="checkbox"/> 2 OFF: Travel reversing on each pulse <p>DIP-SWITCH N° 5:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ON: Step by step mode with stop in between <input type="checkbox"/> 5 OFF: Standard functioning <ul style="list-style-type: none"> <input type="radio"/> L7 OFF = no RADIO contact, it goes on whenever a radio pulse is given
<p>24 V - 3 W max Light indicating bollard in motion:</p>	 <p>Light on = post down, gateway cleared Light off = post up, gateway closed Flashing 0,5 s (fast) = post moving up Flashing 1 s (normal) = post moving down With an external time clock: 2 short flashes followed by a longer pause</p>	
<p>Motors:</p>		<p>DIP-SWITCH N° 12:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ON: Motor run time max 90 s <input type="checkbox"/> 12 OFF: Motor run time max 18 s <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>T1 MOTOR RUN TIME 1 s - 22 s</p> </div> <div style="text-align: center;">  <p>T2 DWELL TIME 1 s - 180 s</p> </div> </div>
<p>Limit switches:</p>		<ul style="list-style-type: none"> <input type="radio"/> L8 ON = it goes off with post 1 down <input type="radio"/> L9 ON = it goes off with post 1 up <input type="radio"/> L10 ON = it goes off with post 2 down <input type="radio"/> L11 ON = it goes off with post 2 up
<p>Beeper, post in motion and/or external flasher:</p> 	 <p>The acoustic device is inside the post and is on only during the rising and lowering movements of the post.</p> <p>It is possible to connect an external flashing lamp to the bollard in addition to the incorporated LED lights. The flasher will be on during the rising and lowering movements and during the dwell time (if pre-selected).</p> <p>230 V - 100 W max</p>	<p>DIP-SWITCH N° 4:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ON: Pre-flashing with beeper <input type="checkbox"/> 4 OFF: No pre-flashing with beeper <p>DIP-SWITCH N° 10:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ON: Flasher and/or beeper. Deactivated during dwell time, automatic mode <input type="checkbox"/> 10 OFF: Flasher and/or beeper. Activated during dwell time, automatic mode
<p>Signalling LED lights:</p> 	 <p>Output for the LED lights that are always on blinking during the rising and lowering movements of the post and with the post in standing position. They go off with post in down position.</p>	

EFO: Emergency Fast Operation

The EFO emergency device allows for the bollard to rise quickly in no more than 1,5 seconds and ensures maximum protection in situations of extreme necessity and danger. Being an emergency device, it should be used only in case of real need; in fact, when it is activated, all the safety devices present in the system and installed with it are deactivated, potentially causing a situation where damage to people and things may occur in the immediate proximity of the bollard.

Meccanica Fadini does not take any responsibility for the improper use of this device and the possible damage caused to people and properties during the use of it. The activation of EFO is by means of an emergency button (not supplied with the equipment) and in case of power failure its operation, ascent rate higher than the standard one, is guaranteed for a short period (about an hour). Once activated, the EFO device is able to reset itself for a possible next activation (no external action of a physical operator is required). It should be noted that, when the bollard reaches the deterrent position (cylinder fully raised), the hydraulic unit continues to work for a few seconds: this is a correct operation as, in this circumstance, the device is resetting.

EFO electrical connections



FUNCTIONS

Description

Automatic / semiautomatic:

Automatic cycle: after a pulse to open, the bollard goes down, it stays stopped as long as the dwell time lasts, as pre-set by T2 trimmer, and on expiring of such time it goes up automatically.
Semi-Automatic cycle: after a pulse to open, the bollard goes down. Another pulse is needed to close the gateway.

Dip-switches and LED status of the various functions

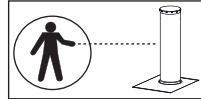
DIP-SWITCH N° 3:

- ON:** Automatic closing
- 3 OFF:** No automatic closing. Semi-automatic mode



Deadman control:

Open and Close operations are achieved "by holding a switch on" (no relay self-holding is involved). Therefore, a physical attendance is required during the entire cycle of movements until either the button or key is released.



DIP-SWITCH N° 7:

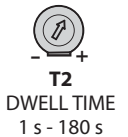
- ON:** Deadman control
- 7 OFF:** Standard operating mode

External time clock (optional):

CLOCK: the Elpro S50-T2.EFO controller allows for a normal clock to be connected to it commanding the post to rise and lower.
Connections: parallel connect the NO contact of the clock to the terminals No. 4 open and No. 3 common, and set the controller to automatic mode by Dip-Switch n° 3 = ON.
How it works: set the clock to the required opening time. On the pre-set time the post is automatically lowered (the indication light emits 2 short flashes followed by a longer pause). Any further command/pulsing (even by remote control) is not accepted by the system until the time pre-set on the clock is expired. On expiring of it, and after the pre-set dwell time, the post rises automatically.

DIP-SWITCH N° 3:

- ON:** Automatic closing
- 3 OFF:** No automatic closing. Semi-automatic operating mode

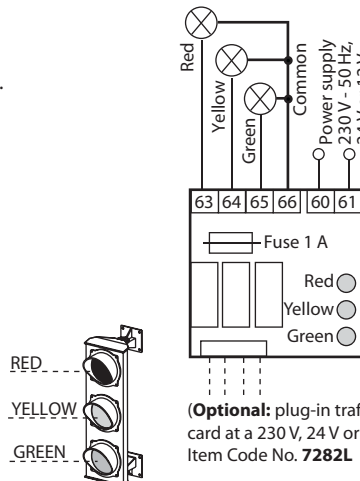


Plug-in traffic lights card (optional):

The power supply of the traffic lights card is independent from that of the electronic control board:
- **230 V - 50 Hz** with an output of 100 W at 230 V ea. lamp.
- **24 V** with an output of 25 W each lamp.
- **12 V** with an output of 22 W each lamp.
Functioning applies also to traffic lights with 2 lamps, red and green (Dip Switch 8 = OFF and 9 = OFF).

Functioning logic:

- **GREEN** Light = post down, gateway **OPEN**
- **RED** Light = post moving or standing, gateway **CLOSED**
- **YELLOW** Light = it switches on before green turns to red light.



DIP-SWITCHES N° 8 and N° 9:

- 8 OFF** **9 OFF**
Yellow turns on for **0 s** and after **0 s** red turns on and **the post starts rising immediately**
- 8 ON** **9 OFF**
Yellow turns on for **2 s**, then red turns on and **after 2 s the post starts rising**
- 8 OFF** **9 ON**
Yellow turns on for **6 s**, then red turns on and **after 5 s the post starts rising**
- 8 ON** **9 ON**
Yellow turns on for **10 s**, then red turns on and **after 7 s the post starts rising**