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l'apricancello
Made in Italy

I

LIBRETTO DI ISTRUZIONI

Elpro · S40

PROGRAMMATORE A MICROPROCESSORE
PER DISSUASORI A SCOMPARSA

- FINO A 4 DISSUASORI A SCOMPARSA
- APERTURA PEDONALE
- PREDISPOSTO PER SEMAFORO A 3 LUCI
- AUTOMATICO O SEMIAUTOMATICO
- COLLEGAMENTI SEPARATI PER ELETTROVALVOLA
- SISTEMA DI SUPERVISIONE INTEGRITÀ C.S.I.

- PREDISPOSIZIONE
  PER OROLOGIO ESTERNO
- FUNZIONE PASSO-PASSO
- UOMO PRESENTE

pag. 1,2,3,4,5

GB

INSTRUCTIONS

Elpro · S40

ELECTRONIC PROGRAMMER WITH
MICROPROCESSOR FOR RISING BOLLARDS

- UP TO 4 BOLLARDS
- STEP-BY-STEP FUNCTION
- PEDESTRIAN OPENING
- PREPARED FOR 3 LAMPS TRAFFIC LIGHTS
- AUTOMATIC OR SEMI- AUTOMATIC
- SEPARATE CONNECTIONS FOR ELECTRIC VALVE

- EXTERNAL TIME CLOCK
- DEADMAN CONTROL
- ISC SYSTEM i.e. INTEGRITY SUPERVISION

page 1,6,7,8,9

F

NOTICES D'INSTRUCTION

Elpro · S40

PROGRAMMATEUR A MICROPROCESSEUR
POUR BORNES ESCAMOTABLES

- JUSQU'A 4 BORNES ESCAMOTABLES
- OUVERTURE PIETONS
- PREPARE POUR FEU DE CIRCULATION A 3 AMPOULES
- AUTOMATIQUE OU SEMIAUTOMATIQUE
- RACCORDEMENTS SEPARES POUR ELECTROVANNE
- CIRCUIT DE SUPERVISION D'INTEGRITE C.S.I.

- PREPARE POUR HORLOGE EXTERNE
- FONCTION PAS-PAS
- HOMME MORT

page 1,10,11,12,13

D

ANLEITUNG

Elpro · S40

MIKROPROZESSORSTEUERUNG
FÜR VERSENKBARE ABSPERRPOLLER

- BIS ZU 4 VERSENKBAREN ABSPERRPOLLERN
- GEHTÜRFUNKTION
- FÜR AMPEL MIT 3 LICHTERN VORGESEHEN
- AUTOMATIK- ODER HALBAUTOMATIKBETRIEB
- GETRENNTE ANSCHLÜSSE FÜR ELEKTROVENTIL
- SYSTEM ZUR KONTROLLE DER INTEGRITÄT (I.Ü.S.)

- FÜR EXTERNE UHR VORGESEHEN
- IMPULSBETRIEB
- TOTMANN-BETRIEB

Seite 1,14,15,16,17

E

FOLLETO DE INSTRUCCIONES

Elpro · S40

PROGRAMADOR DE MICROPROCESADOR
PARA BARRERAS ESCAMOTEABLES

- HASTA 4 BARRERAS ESCAMOTEABLES
- ABERTURA PEATONAL
- PREDISPUESTO PARA SEMÁFORO DE 3 LUCES
- AUTOMÁTICO O SEMIAUTOMÁTICO
- CONEXIONES SEPARADAS PARA ELECTROVÁLVULA
- SISTEMA DE SUPERVISIÓN INTEGRIDAD C.S.I.

- PREDISPOSICIÓN PARA RELOJ EXTERNO
- FUNCIÓN PASO-PASO
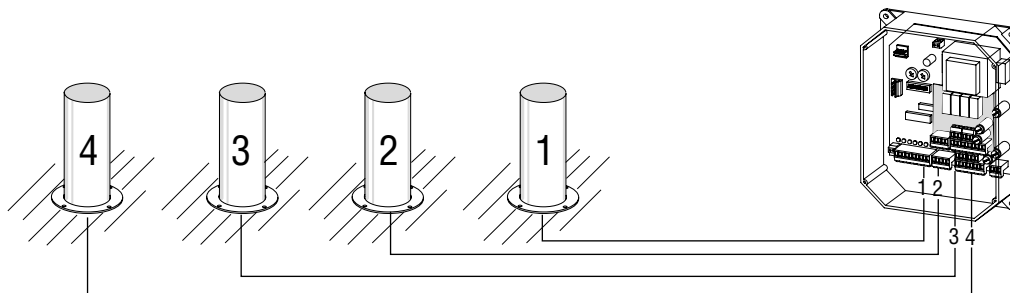- HOMBRE PRESENTE

pág. 1,18,19,20,21
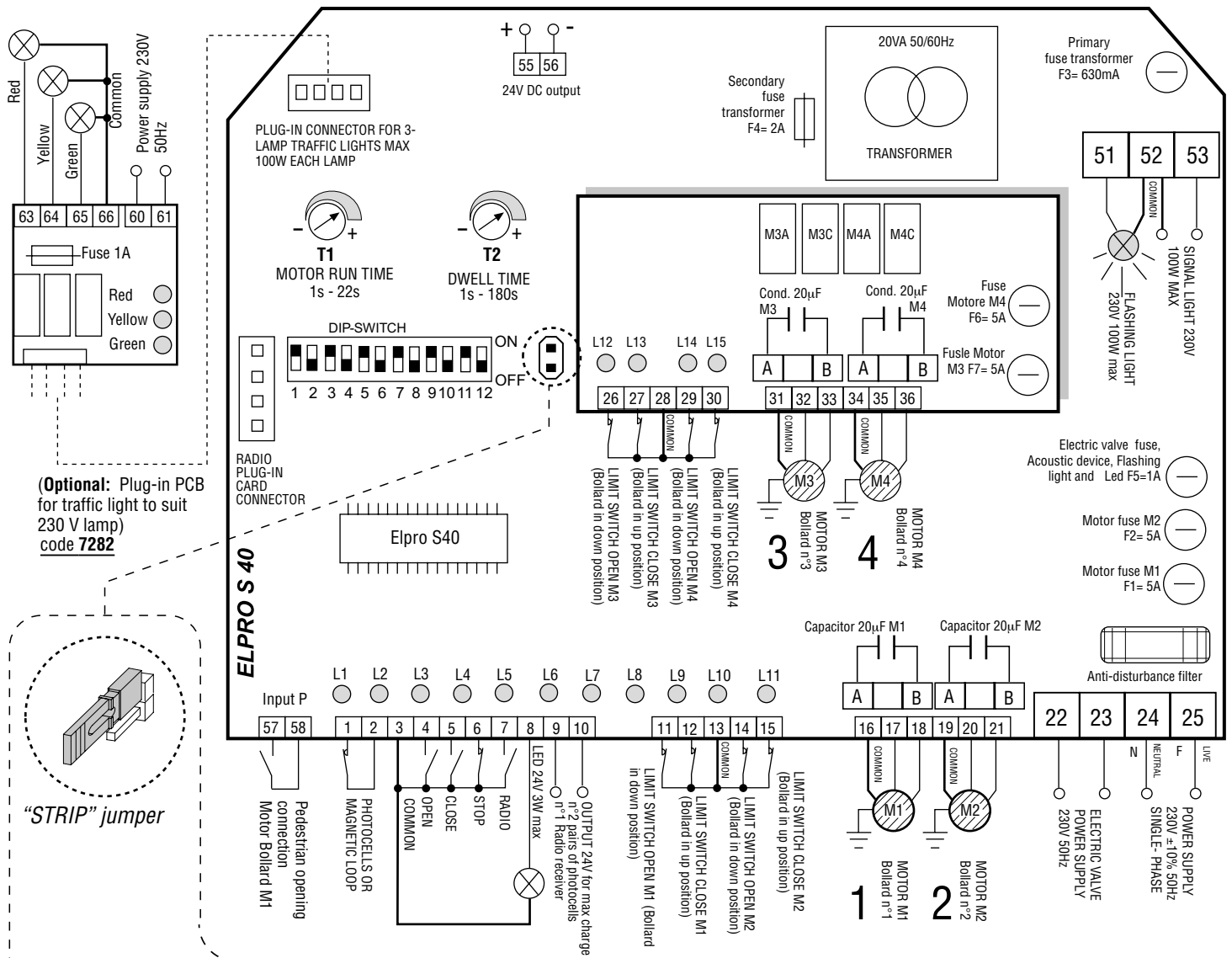
NL

HANDLEIDING

Elpro · S40

PROGRAMMEERINRICHTING MET
MICROPROCESSOR VOOR VERZINKBARE PALEN

- MAXIMAAL 4 VERZINKBARE PALEN
- VOETGANGERSDOORGANG
- VOORBEREID VOOR STOPLICHT MET 3 LICHTEN
- AUTOMATISCH OF HALFAUTOMATISCH
- GESCHEIDEN VERBINDINGEN VOOR MAGNEETKLEP
- BEWAKINGSSYSTEEM INTEGRITEIT C.S.I.

- VOORBEREIDING VOOR EXTERNE KLOK
- STAP-VOOR-STAP FUNCTIE
- DODEMANSFUNCTIE

pag. 1,22,23,24,25

CE

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ELECTRONIC PROGRAMMER UP TO 4 BOLLARDS
WITH OR WITHOUT LIMIT SWITCHES

Red
Yellow
Green
Common
Power supply 230V
50Hz

63 64 65 66 60 61

Fuse 1A

Red
Yellow
Green

(**Optional:** Plug-in PCB
for traffic light to suit
230 V lamp)
code **7282**

PLUG-IN CONNECTOR FOR 3-
LAMP TRAFFIC LIGHTS MAX
100W EACH LAMP

+ 55 56 −
24V DC output

T1
MOTOR RUN TIME
1s - 22s

T2
DWELL TIME
1s - 180s

DIP-SWITCH
ON
OFF
1 2 3 4 5 6 7 8 9 10 11 12

RADIO
PLUG-IN
CARD
CONNECTOR

Elpro S40

ELPRO S 40

"STRIP" jumper

20VA 50/60Hz

Secondary
fuse
transformer
F4= 2A

TRANSFORMER

Primary fuse transformer
F3= 630mA

51 52 53

COMMON

FLASHING LIGHT
230V 100w max

SIGNAL LIGHT 230V
100W MAX

M3A M3C M4A M4C

Cond. 20μF
M3
Cond. 20μF
M4
Fuse
Motore M4
F6= 5A

Fusle Motor
M3 F7= 5A

L12 L13 L14 L15

26 27 28 29 30
A B A B
31 32 33 34 35 36

COMMON
COMMON

LIMIT SWITCH OPEN M3 (Bollard in down position)
LIMIT SWITCH CLOSE M3 (Bollard in up position)
LIMIT SWITCH OPEN M4 (Bollard in down position)
LIMIT SWITCH CLOSE M4 (Bollard in up position)

M3
MOTOR M3
Bollard n°3
3

M4
MOTOR M4
Bollard n°4
4

Electric valve fuse,
Acoustic device, Flashing
light and Led F5=1A

Motor fuse M2
F2= 5A

Motor fuse M1
F1= 5A

Anti-disturbance filter

Capacitor 20μF M1
Capacitor 20μF M2

Input P

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11

57 58

Pedestrian opening
connection
Motor Bollard M1

1 2 3 4 5 6 7 8 9 10

PHOTOCELLS OR
MAGNETIC LOOP
COMMON
OPEN
COMMON
CLOSE
STOP
RADIO

LED 24V 3W max

OUTPUT 24V for max charge
n°2 pairs of photocells
n°1 Radio receiver

11 12 13 14 15

LIMIT SWITCH OPEN M1 (Bollard in down position)
LIMIT SWITCH CLOSE M1 (Bollard in up position)
LIMIT SWITCH OPEN M2 (Bollard in down position)
LIMIT SWITCH CLOSE M2 (Bollard in up position)

COMMON

A B A B
16 17 18 19 20 21

COMMON
COMMON

M1
MOTOR M1
Bollard n°1
1

M2
MOTOR M2
Bollard n°2
2

22 23 24 25
N NEUTRAL F LIVE

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

LIMIT SWITCH DIAGNOSTIC:

Strabuc 918, Strabuc 930 Heavy Armoured, Strabuc 930 Opinat range of bollards:
With the "STRIP" jumper inserted (as in the picture), Elpro S40 checks cyclically every
10 minutes that the closing limit switches (post raised) are in the correct position;
should any of them fail to be such, only the motor of the post not in position is
operated until this is fully up as required.

Coral and Vigilo range of posts:
For the posts that are fitted only with the
opening limit switch, position the "STRIP"
jumper as in the picture to achieve a correct
performance of the system.

Note well: Whenever **Elpro S40** is re-powered, wait 10 seconds for the logic to become fully operating again.

The electronic control panel Elpro S40, new generation, is designed to operate the Strabuc, Coral and Vigilo. Power supply is 230V single-phase. Built in full compliance with 2006/95/CE Low Voltage Directive and 2004/108/CEE & 92/31/CEE Electro-Magnetic Compatibility Directive. Fitting operations are recommended by a qualified technician in conformity to the existing safety standards.
Elpro S40 is capable of monitoring damages or malfunctioning with the system (ISC)
I.S.C.= **I**ntegrity and **S**upervision **C**ircuit, is a special function of Elpro S40 which can self control the electronic PCB and detect any damages occurring with any components or accessories. In this case, provided that the post is fitted with a release electric valve, lowering is allowed automatically.
The manufacturing company declines any responsability for incorrect handling and application; also, it reserves the right to change or update the control panel any time.

PLEASE NOTE:
- The control panel must be installed in a sheltered, dry place, inside the box provided with it.
- Fit the mains to the control panel with a 0.03A high performance circuit breaker.
- Use 1.5mm^2 section wires for voltage supply, electric motor and flashing lamp. Maximum recommended distance 50m.
- Use 1mm^2 section wires for limit switches, photocells, push-buttons/key- switch and accessories.
- N.W: To fit extra accessories such as lights, CCTV etc. use only solid state relays to prevent damages to the microprocessor.

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ELECTRONIC PROGRAMMER UP TO 4 BOLLARDS
WITH OR WITHOUT LIMIT SWITCHES

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IN CASE OF FAILURE OF THE PANEL:
- Check the electronic PCB voltage supply is 230V ±10%
- Check the electric motor power supply is 230 V ±10%
- For longer distances increase wire section
- Check power supply 230V single-phase
- Check fuses
- Check all NC contacts
- Check that no voltage drop has occurred from the control board to the electric motor
- In case the electric valve is fitted, check integrity with all fuses
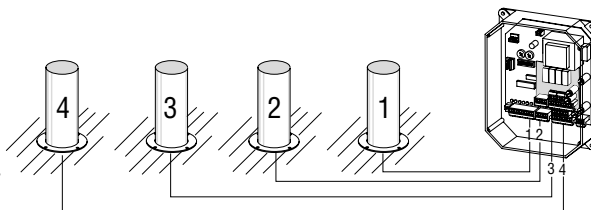
LED STATUS INDICATION

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
L12= Limit switch open M3, normally **ON**, it goes off when the post is in down position
L13= Limit switch close M3, normally **ON**, it goes off when the post is in up position
L14= Limit switch open M4, normally **ON**, it goes off when the post is in down position
L15= Limit switch close M4, normally **ON**, it goes off when the post is in up position

DIP-SWITCHES

1= ON Photocells or loop stop while opening
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 M1only 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 90s. OFF= 18s

LOW VOLTAGE ELECTRICAL CONNECTIONS

Photocells or Loop Detectors:

| 1 | 2 | | 9 | 10 |

PHOTOCELLS OR LOOP DETECTORS

24V OUTPUT (MAX. LOAD: 2 PAIRS PHOTOCELLS 1 RADIO RECEIVER)
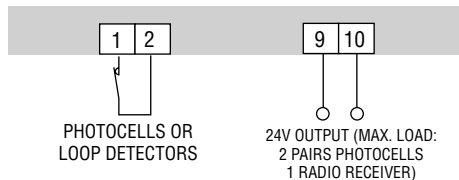
DIP-SWITCH 1:
- ON: Photocells or loop stop while opening, reverse on closing once obstacle is removed
- OFF: Photocells or loop do not stop while opening, reverse on closing in case of an obstacle
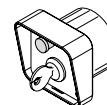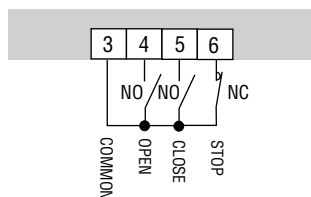
DIP-SWITCH 11:
- ON: During dwell time, Automatic mode (Dip-Switch 3=ON) after engaging the photocells or loop, it closes 5s later
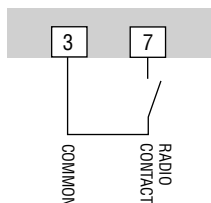- OFF: It does not close after engaging the photocells or loop

Key switch:

| 3 | 4 | 5 | 6 |

NO / NO / NC
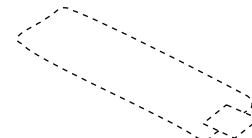
COMMON OPEN CLOSE STOP

Radio Contact:

- Open/Close (standard mode)
- It reverses at any pulse
- Step by step
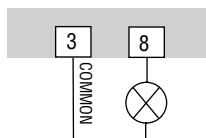
| 3 | | 7 |

COMMON RADIO CONTACT

DIP-SWITCH 2:
- ON: It does not reverse on opening
- OFF: It reverses at any pulse

DIP-SWITCH 5:
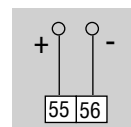- ON: Step by step with stop in between
- OFF: Standard operation

24V 3W Movement Indication Light:

Light **ON**= Post in down position, free passage
Light **OFF**= Post in up position, closed passage
Flashing **0,5s (fast)**= rising post
Flashing **1s (normally)**= lowering post
With external clock: **2 short flashes** followed by a longer pause

| 3 | | 8 |

COMMON

24V DC Output:

Output for 24V D.C. applications

+ −

| 55 | 56 |

200mA for accessories

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ELECTRONIC PROGRAMMER UP TO 4 BOLLARDS
WITH OR WITHOUT LIMIT SWITCHES

ELECTRICAL POWER CONNECTIONS

Motors:

Important: when doing the electric power connections it is better to connect only one motor and its respective limit switches. Put the posts into phase one by one.
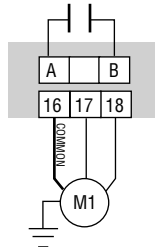
T1
MOTOR RUN TIME
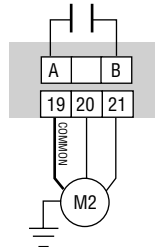1s - 22s

T2
DWELL TIME
1s - 180s

DIP-SWITCH 12:

ON:	Motor run time max 90s
12 OFF:	Motor run time max 18s

20μF additional capacitor in case of power shortage for Motor M1

A	B
16	17	18

COMMON

M1

MOTOR M1
Post n°1

20μF additional capacitor in case of power shortage for Motor M2

A	B
19	20	21

COMMON

M2

MOTOR M2
Post n°2

20μF additional capacitor in case of power shortage for Motor M3

A	B
31	32	33

COMMON

M3
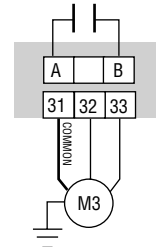
MOTOR M3
Post n°3

20μF additional capacitor in case of power shortage for Motor M4

A	B
34	35	36

COMMON

M4
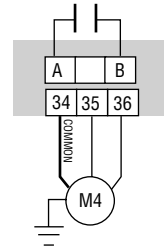
MOTOR M4
Post n°4

Limit switch:

There is no need to bridge the limit switch inputs of the posts which are not present in the installation

IMPORTANT: For **Coral** and **Vigilo:**
1) place the "STRIP" as indicated on page 6
2) bridge the closing limit switches inputs 12 and 15 (which are not used) with the common 13 and the inputs 27 and 30 (which are not used) with the common 28

11	12	13	14	15

LIMIT SWITCH OPEN **M1** (Post in down position)
LIMIT SWITCH CLOSE **M1** (Post in up position)
COMMON LIMIT SWITCH
LIMIT SWITCH CLOSE **M2** (Post in up position)
LIMIT SWITCH OPEN **M2** (Post in down position)

26	27	28	29	30

LIMIT SWITCH OPEN **M3** (Post in down position)
LIMIT SWITCH CLOSE **M3** (Post in up position)
COMMON LIMIT SWITCH
LIMIT SWITCH CLOSE **M4** (Post in up position)
LIMIT SWITCH OPEN **M4** (Post in down position)

Electric valve power supply:

In case of power failure, electronic programmer malfunctionning, or a burnt fuse, should an electric valve be installed, the bollard lowers automatically
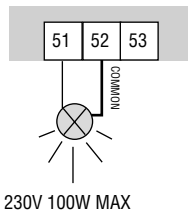
22	23	24	25
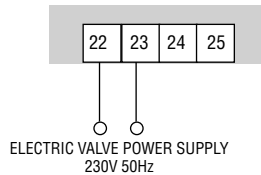
ELECTRIC VALVE POWER SUPPLY
230V 50Hz
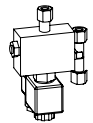
External flashing light:

It is possible to connect both the external Flashing light and the intermittent signal led lights which are on only during the rising and lowering movement. The cable for the connection is the one labelled as flashing lights cable

| 51	52	53

COMMON

230V 100W MAX

DIP-SWITCH 4 and 10:

ON:	Pre-flashing
4 OFF:	No pre-flashing

|	
ON:	Flashing light out of service on Dwell Time. Automatic mode
10 OFF:	Light flashes on Dwell Time. Automatic mode
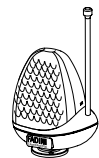
Signal led lights (for the "Strabuc" range only):

Output for intermittent signal led lights during the movement both rising and lowering and also on dwell in up position: the lights are off only when the bollard is in down position.
Connect the **Blue-Common** wire and the **Brown** wire of the bollard flashing light cable.
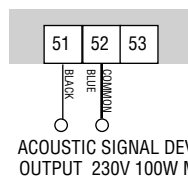
51	52	53

BLUE
COMMON
BROWN
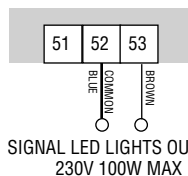
SIGNAL LED LIGHTS OUTPUT
230V 100W MAX
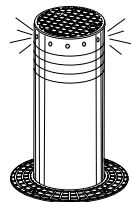
Acoustic signal "Beeper" during movement (optional accessory for the "Strabuc" range only):

The acoustic signal device inside the bollard is active during rising and lowering. The connection wires are the **Blue-Common** and the **Black** one of the flashing light cable
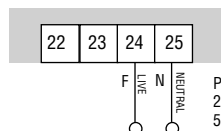
51	52	53

BLACK
BLUE
COMMON

ACOUSTIC SIGNAL DEVICE
OUTPUT 230V 100W MAX
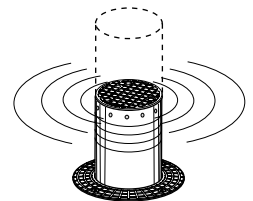
PCB power supply:

Electronic programmer power supply

22	23	24	25

F LIVE   N NEUTRAL

PCB POWER SUPPLY
230V ±10%
50Hz SINGLE PHASE

FUNCTIONS

Automatic / Semi-automatic:

Automatic cycle: after an opening pulse, the bollard goes down, it stops for dwell time pre-set in trimmer T2, after the pre-set time it closes automatically

Semi-Automatic: after an opening pulse, the bollard goes down.
A closing pulse is needed to close.

T2
Dwell time
from 1 to 180s

DIP-SWITCH 3
ON= Automatic closing
OFF= No automatic closing.
3   Semi-automatic function

Pedestrian Opening:

This command is separate from the standard opening command. When all the posts are in up position, on pulsing input P Dip-Switch 6= On, and 3=On , post n°1 (Motor M1) goes down for pedestrian opening, for the time pre-set in Trimmer T2, after this time it closes automatically

Input P
57 | 58

Pedestrian opening contact terminals Post Motor M1
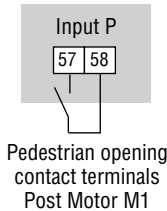
DIP-SWITCH 3 - 6 both on ON
ON= Automatic closing
OFF= No automatic closing
3   semi-automatic closing

ON= Pedestrian opening Motor M1
OFF= Standard operation
6

T2
Dwell time
from 1 to 180s
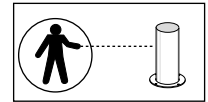
M1   M2   M3   M4
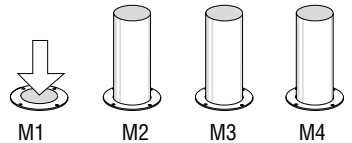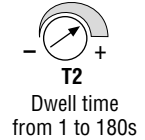
Hold on switched (Deadman) control:

Open and Close operations are achieved "by holding a switch on" (no relay self-holding is involved) therefore a physical attendance is required to keep the post opening or closing until either the button or key is released.
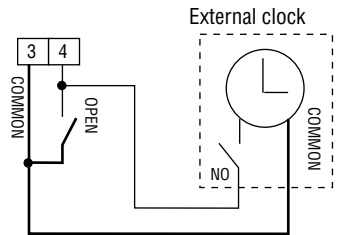
DIP-SWITCH 7
ON= Deadman control
OFF= Standard operations
7

External Clock (Optional):

CLOCK: The electronic programmer Elpro S 40 can be connected to a clock for the post opening and closing
Connection: connect in parallel the NO clock contact to the 4 OPEN and 3 COMMON terminals, automatic closing is by Dip-Switch n°3=On
How it works: Set the clock to the required time. On the pre-set time the post is automatically opened (the post goes down) and held open (the flashing light goes off and the led flahes twice and dwells). Any further pulsing (even by remote control) is not accepted by the system until the time pre-set by the clock has expired. On expiring and after the pre-set dwell time the post rises automatically.

External clock

3 | 4
COMMON | OPEN
COMMON
NO

T2   Dwell time
from 1 to 180s

DIP-SWITCH N°3=ON Automatic closing
ON= Automatic closing
OFF= No automatic closing.
3   Semi-automatic function

Plug-in traffic lights interface (Optional):

The interface power supply (230V 50Hz 100W output per lamp) is independent from the one of the programmer.
It can work also with the 2 lamps, Red and Green traffic lights (Dip Switch 8=OFF and 9=OFF)
Working logic:
- **GREEN** Light= Post in **down position**, **OPEN** passage
- **RED** Light= Moving post or in **up position**, **CLOSED** passage
- **YELLOW** Light= it lights before the switching from the Green light to the Red light
Note: During **Pedestrian mode** the traffic light is always **RED**.

RED
YELLOW
GREEN

DIP-SWITCHES 8 and 9
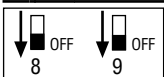
OFF 8 | OFF 9
Dip-Switch **8=OFF** and **9=OFF**
The yellow light turns on for the time of **0s** and after **0s** the Red light turns on **and the post starts rising immediately**
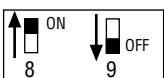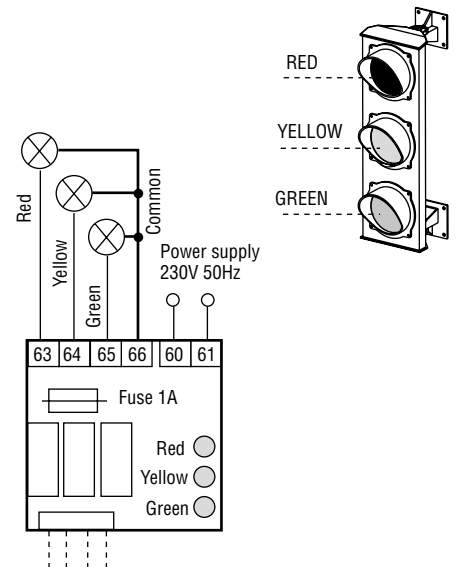
ON 8 | OFF 9
Dip-Switch **8=ON** and **9=OFF**
The yellow light turns on for the time of **2s** then the Red light turns on and **after 2s the post starts rising**

OFF 8 | ON 9
Dip-Switch **8=OFF** and **9=ON**
The yellow light turns on for the time of **6s** then the Red light turns on and **after 5s the post starts rising**
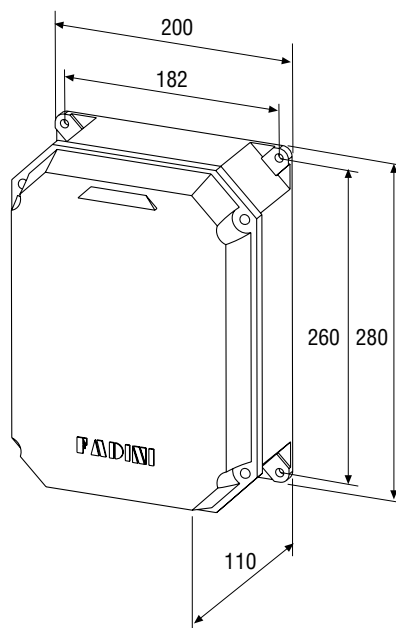
ON 8 | ON 9
Dip-Switch **8=ON** and **9=ON**
The yellow light turns on for the time of **10s** then the Red light turns on and **after 7s the post starts rising**

Red | Yellow | Green | Common
Power supply
230V 50Hz
63 | 64 | 65 | 66 | 60 | 61
Fuse 1A
Red ○
Yellow ○
Green ○

(**Optional:** Plug-in PCB for 230V traffic lights)   code **7282**

200

182

280

260

110

$C \in$

I - Prima dell'installazione da parte di personale tecnico qualificato, si consiglia di prendere visione del Libretto Normative di Sicurezza che la Meccanica Fadini mette a disposizione.
GB - Please note that installation must be carried out by qualified technicians following Meccanica Fadini's Safety Norms Manual.
F - L'installation doit être effectuée par un technicien qualifié suivant le manuel des Normes de Sécurité de Meccanica Fadini.
D - Vor der Montage durch einen Fachmann, wird es empfohlen die Anleitung zur Sicherheitsnormen, die Meccanica Fadini zur Verfügung stellt, nachzulesen.
E - Antes de la instalación por el personal técnico calificado, se recomienda leer detenidamente el Folleto de la Reglamentación de Seguridad que la empresa Meccanica Fadini pone a su disposición.
NL - Voordat de installatie door gekwalificeerd technisch personeel wordt uitgevoerd, wordt geadviseerd om het boekje met veiligheidsvoorschriften dat Meccanica Fadini ter beschikking stelt door te lezen.

I   Direttiva **2003/108/CE**
Smaltimento dei materiali
elettrici ed elettronici

**VIETATO GETTARE NEI RIFIUTI
MATERIALI NOCIVI PER L'AMBIENTE**

GB   **2003/108/CE** Directive
for waste electrical and
electronic equipments

**DISPOSE OF PROPERLY
ENVIRONMENT-NOXIOUS MATERIALS**

**meccanica
FADINI** s.n.c.

**Via Mantova, 177/A - 37053 Cerea (Verona) Italy - Tel. +39 0442 330422 r.a. - Fax +39 0442 331054
e-mail: info@fadini.net - www.fadini.net**

La ditta costruttrice si riserva di apportare modifiche al presente libretto senza preavviso