Elpro S20





GB ELECTRONIC CONTROLLER UP TO 2 AUTOMATIC BOLLARDS, WITH OR WITHOUT LIMIT SWITCH

F PROGRAMMATEUR ELECTRONIQUE POUR LE CONTROLE JUSQU'À DEUX BORNES ESCAMOTABLES, AVEC OU SANS LE FIN DE COURSE

D ELEKTRONISCHE STEUERUNG ZUR KONTROLLE BIS ZU 2 AUTOMATISCH VERSENKBAREN POLLER, MIT ODER OHNE ENDSCHALTER

PROGRAMADOR ELECTRÓNICO PARA LA GESTIÓN DE HASTA DOS BOLARDOS RETRÁCTIL, CON SIN FINAL DE CARRERA

L ELEKTRONISCHE PROGRAMMEERINRICHTING VOOR HET BEHEER VAN MAXIMAAL TWEE VERZINKBARE PALEN, MET OF ZONDER EINDSCHAKELAARS

- FINO A 2 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

- GB
- UP TO 2 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

- F
- JUSQU'A 2 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

- D
- BIS ZU 2 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

- Е
- HASTA 2 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

NL

- MAXIMAAL 2 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







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GENERAL WARNINGS FOR PEOPLE SAFETY

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 snc 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 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 - ÉN 12445. \square 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 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 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 snc, 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 snc

Via Mantova, 177/A - 37053 Cerea - VR - Italy Address:

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

Control unit model **ELPRO S20**

is in conformity with the relevant Union harmonisation legislation:

- Electromagnetic Compatibility Directive 2014/30/UE
- Low Voltage Directive 2014/35/UE

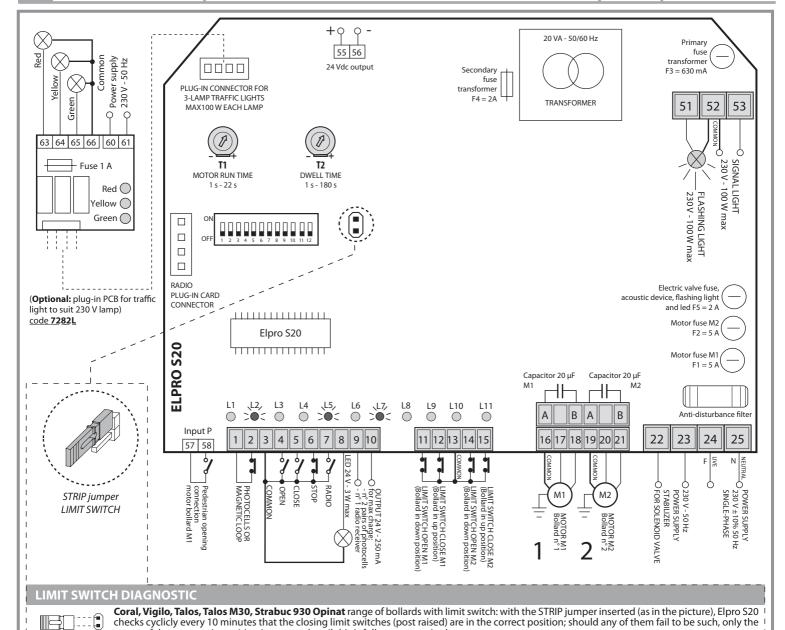
Cerea, 19/04/2017

Meccani¢a Fadini s.n.c. Responsible Manager

ELECTRONIC CONTROLLER UP TO 2 AUTOMATIC BOLLARDS, WITH OR WITHOUT LIMIT SWITCH







Note well: whenever Elpro S20 is re-powered, wait 10 seconds for the logic to become fully operating again.

motor of the post not in position is operated until this is fully up as required.

The electronic control panel Elpro S20 is designed to operate the Talos, Talos M30, Strabuc 930 Opinat, Coral and Vigilo; power supply is 230 V single-phase.

Elpro S20 is capable of monitoring damages or malfunctioning with the system (ISC).

Ins.c. = Integrity and **S**upervision **C**ircuit, is a special function of Elpro S20 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.

IMPORTANT FOR THE INSTALLATION AND THE CORRECT FUNCTIONING:

- -The control box must be installed in a dry and sheltered place; suitable holes are provided with the FADINI universal box for fitting purpose and in case any commercial box is used, this must be adequate to the job.
- Make sure that power supply to the control board be 230 V $\pm 10\%$.
- Make sure that power supply to the electric motor be 230 V $\pm 10\%$.
- For distances longer than 50 metres increase the section of the wires.
- Fit the mains to the control box with a high sensitivity, 0,03 A, differential, magnetic-thermal circuit breaker.
- Cables with 1,5 mm² section wires are to be used for the power supply, electric motor and flasher for distances up to 50 m.
- Cables with 1 mm² section wires are to be used for the limit switches, photocells, push buttons and accessories.

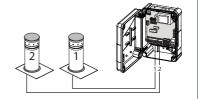
N.W.: for applications such as light switching, CCTV, etc. use solid state relays to prevent the microprocessor from being affected.

IN CASE OF FAILURE OF THE PANEL:

- Check the electronic PCB voltage supply is 230 V $\pm 10\%$.
- Check the electric motor power supply is 230 V $\pm 10^{\circ}$.
- For longer distances increase wire section.
- Check fuses.
- The photocell contacts are closed.
- Check all NC contacts.
- The limit switches are properly connected and work correctly.
- In case the electric valve is fitted, check integrity with all fuses.
- Check that no voltage drop has occurred from the control board to the electric motor.



SYMBOLS:



ELECTRONIC CONTROLLER UP TO 2 AUTOMATIC BOLLARDS, WITH OR WITHOUT LIMIT SWITCH



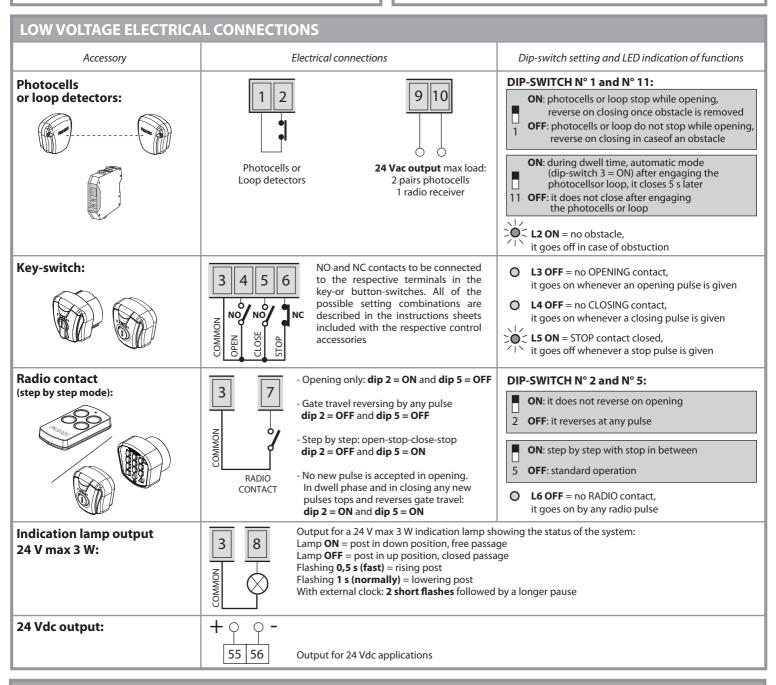


DIAGNOSTIC LEDS

- 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
- 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



ELECTRICAL POWER CONNECTIONS		
Accessory	Electrical connections	Dip-switch setting and LED indication of functions
Electric valve power supply:	22 23 24 25 230 V power supply for 24 Vdc solenoid valve stabilizer	

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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.

N.W.: the limit switches for not in

Do not bridge them.

use bollards are to stay blank.



ELECTRICAL POWER CONNECTIONS Dip-switch setting and LED indication of functions Flectrical connections Accessory Important: when doing the electric power connections it is better to **DIP-SWITCH N° 12: Motors:** connect only one motor and its respective limit switches. ON: motor run time max 90 s Put the posts into phase one by one. 12 OFF: motor run time max 18 s 20 µF additional capacitor 20 µF additional capacitor in case of power shortage for Motor M1 in case of power shortage for Motor M2 T1 MOTOR RUN TIME В В T2 DWELL TIME 1 s - 180 s 16||17 18 19 20 21 MOTOR M1 MOTOR M2 Post n° 2 Post nº 1 Standard limit switch: • Talos range - Talos M30 12 13 15 14 · Coral - Vigilo with LEDs range · Strabuc 930 Opinat With the STRIP jumper inserted (as in the picture), Elpro S20 checks cyclicly every 10 minutes that the closing limit switches (post raised) are in the (Post in up position) (Post in down position) (Post in down position) (Post in up position) 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. N.W.: the limit switches for not in use bollards are to stay blank. Do not bridge them. New limit switches hall effect 55 56 11 12 13 14 15 as standard from 2018 • Talos range - Talos M30 With the STRIP jumper inserted (as in the picture), Ċ Q Q Q Elpro S20 checks cyclicly every 10 minutes that the LIMIT SWITCH +24 Vdc blue and gray cables - brown wires LIMIT SWITCH OPEN M'gray cable - white wire LIMIT SWITCH CLOSE M1 blue cable - white wire LIMIT SWITCH OPEN M2 gray cable - white wire LIMIT SWITCH CLOSE M2 blue cable - white wire GROUND LIMIT SWITCH blue and gray cables - green wires closing limit switches (post raised) are in the

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ELECTRICAL POWER CONNECTIONS			
Accessory	Electrical connections		Dip-switch setting and LED indication of functions
External flashing lamp:	51 52 53	It is possible to connect both the external flashing lamp 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.	ON: pre-flashing ON: flashing light out of service on dwell time. Automatic mode OFF: light flashes on dwell time. Automatic mode
Signal led lights:	51 52 53 Signal led lights output 230 V - 100 W max	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.	
Acoustic signal "beeper" during movement:	51 52 53 YOUNG Acoustic signal device 230 V - 100 W max	The acoustic signal device inside the bollard is active duringrising and lowering. The connection wires are the blue-common and the black one of the flashing light cable.	
PCB power supply:	22 23 24 25 F RED CONTROL OF THE PROPERTY OF	N) pply	



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FUNCTIONS

Description

Dip-switch setting and LED indication of 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.

DIP-SWITCH N° 3:

ON: automatic closing

OFF: no automatic closing. Semi-automatic function

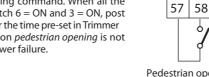


Dwell time: from 1 to 180 s

3

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. The function pedestrian opening is not in service during the first operation cycle, after a power failure.



Pedestrian opening contact terminals post motor M1

Input P

DIP-SWITCH N° 3 and N° 6 both on ON:

ON: automatic closing

OFF: No automatic closing. Semi-automatic closing

ON: pedestrian opening motor M1

OFF: standard operation

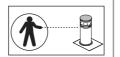


Dwell time: from 1 to 180 s

T2

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 N° 7:

ON: deadman control

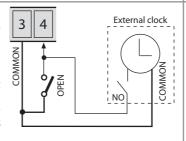
OFF: standard operations

External clock (optional):

The electronic programmer Elpro S20 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

How it works: program the opening time on the clock. At the preset time, the post goes down and remain open (the flashing light will turn off) and will not accept any other command (not even radio commands) until the time set on the clock expires. When this time expires the gates close automatically after the pause time. While the posts are held open by the time set on the clock, the indication light keeps giving out two consecutive flashes followed by a long pause.



DIP-SWITCH N° 3:

ON: automatic closing

OFF: No automatic closing. Semi-automatic function



3

Trimmer pausa: da 1 s fino a 180 s

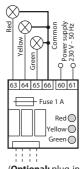
T2

Plug-in traffic lights interface (optional - code 7282L):

The interface power supply (230 V - 50 Hz 100 W 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.



(Optional: plug-in PCB for 230V traffic lights) code 7282L

DIP-SWITCHES:



Dip-switch 8 = ON and 9 = ONThe yellow light turns on for the time of 10 s after the red light turns on and after 7 s the post starts rising



Dip-switch 8 = OFF and 9 = OFF The yellow light turns on for the time of **0** s and after **0** s the red light turns on and the post starts rising immediately



Dip-switch 8 = ON and 9 = OFFThe yellow light turns on for the time of 2 s after the red light turns on and after 2 s the post starts rising



Dip-switch 8 = OFF and 9 = ONThe yellow light turns on for the time of 6 s after the red light turns on and after 5 s the post starts rising





DATITECNICI	
Alimentazione scheda monofase	230 V ±10% 50 Hz
Alimentazione scheda trifase	-
Potenza max. motori	1.200 W
Uscita luce di cortesia	-
Uscita fotocellule/selettore/radio ricevente	24 Vdc max 250 mA
Uscita spia di segnalazione	24 V - 3 W max
Uscita per controllo DSA	-
Uscita lampeggiante	230 V - 100 W max
Tempo di lavoro	1 - 22 s
Tempo di pausa	1 - 180 s
Tempo ritardo anta in chiusura	-
Tempo apertura pedonale	-
Dimensioni contenitore	210x295x110 mm
Grado di protezione	IP 64
Temperatura di esercizio	-20 °C +55 °C
Alimentazione elettrovalvola	230 V - 50 Hz
Uscita per cicalino di movimento	230 V - 100 W max

GB TECHNICAL SPECIFICATIONS		
C: 1 1 DCD	2201/ - 100/ 5011	
Single-phase PCB power supply	230 V ±10% 50 Hz	
Three-phase PCB power supply	-	
Max. power of motors	1.200 W	
Courtesy light output	-	
Photocells/keyswitch/radio receiver output	24 Vdc max 250 mA	
Pilot light output	24 V - 3 W max	
DSA control output	-	
Flasher output	230 V - 100 W max	
Motor run time	1 - 22 s	
Dwell time	1 - 180 s	
Closing gate delay time	-	
Pedestrian opening time	-	
Box dimensions	210x295x110 mm	
Protection standards	IP 64	
Working temperature	-20 °C +55 °C	
Solenoid valve power supply	230 V - 50 Hz	
Beeper output	230 V - 100 W max	

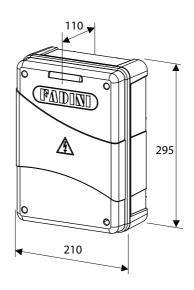
CARACTERISTIQUES TECHNIQUES 230 V ±10% 50 Hz Alimentation carte monophasée Alimentation carte triphasée Puissance max. moteurs 1.200 W Sortie lumière de courtoisie Sortie photocellules/sélecteur/récepteur radio 24 Vdc max 250 mA 24 V - 3 W max Sortie voyant de signalisation Sortie pour contrôle DSA 230 V - 100 W max Sortie lampe clignotante Temps de travail 1 - 22 s Temps de pause 1 - 180 s Temps de retard vantailà la fermeture Temps d'ouverture piétons Dimensions boîte 210x295x110 mm IP 64 Degré de protection -20 °C +55 °C 230 V - 50 Hz Température de service Alimentation électrovanne Sortie avertisseur sonore de mouvement 230 V - 100 W max

D TECHNISCHE DATEN	
Einphasige Karte Stromversorgung	230 V ±10% 50 Hz
Dreiphasige Karte Stromversorgung	-
Max. Leistung von Motoren	1.200 W
Courtesy Licht Ausgang	-
Lichtschranken/Schlusselschalter/Empfänger Ausgang	24 Vdc max 250 mA
Anzeighelicht Ausgang	24 V - 3 W max
DSA Steuerausgang	-
Blinkleuchte Ausgang	230 V - 100 W max
Motorlaufzeit	1 - 22 s
Pausezeit	1 - 180 s
Torflügelverzögerung beim Schließen	-
Fußgänger Öffnungszeit	-
Kastenmaße	210x295x110 mm
Schutzgrad	IP 64
Betriebstemperatur	-20 °C +55 °C
Magnetventil Stromversorgung	230 V - 50 Hz
Piepser Ausgang	230 V - 100 W max

E CARACTERÍSTICAS TÉCNICAS	
Alimentación monofásica	230 V ±10% 50 Hz
Alimentación tarjeta trifásica	-
Potencia máx. motor	1.200 W
Salida luz de cortesía	-
Salida fotocélulas/selector/receptor de radio	24 Vdc max 250 mA
Salida luz señalización	24 V - 3 W max
Salida para el control DSA	-
Salida destellador	230 V - 100 W max
Tiempo de trabajo	1 - 22 s
Tiempo de pausa	1 - 180 s
Tiempo de retardo de cierre de la puerta	-
Tiempo de apertura peatones	-
Dimensiones contenedor	210x295x110 mm
Grado de protección	IP 64
Temperatura de funcionamiento	-20 °C +55 °C
Alimentación electroválvula	230 V - 50 Hz
Salida para timbre de movimiento	230 V - 100 W max

NII		
TECHNISCHE GEGEVENS		
Eenfase stroomtoevoer kaart	230 V ±10% 50 Hz	
Driefasige kaartvoeding	-	
Max. motorvermogen	1.200 W	
Courtesy lichtopbrengst	-	
Fotocellen uitgang/keuzeschakelaarmet sleutel/radio-ontvanger	24 Vdc max 250 mA	
Controlelampaje uitgang	24 V - 3 W max	
DSA voor besturingsuitgang	-	
Knipperlicht uitgan	230 V - 100 W max	
Werktijd uitgan	1 - 22 s	
Pauzetijd uitgan	1 - 180 s	
Tijdsvertraging sluitende deur	-	
Voetganger openingstijd	-	
Containergrootte	210x295x110 mm	
Beveiligingsgraad	IP 64	
Bedrijfstemperatuur	-20 °C +55 °C	
Magneetventiel voeding	230 V - 50 Hz	
Uitgang voor bewegingszoemer	230 V - 100 W max	







2018/01

