CDVI

Security to Access

SERSYS



E-LOCK

Motorised Electric Lock With Knurled Handle 2 and 4 Point Kits

RoHS

EN

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2] PRODUCT OVERVIEW

Description

The e-Lock is a high security motorised electric lock designed for swing doors in sensitive environments.

It provides:
- Reinforced multi-point locking
- Automatic motorised operation
- High resistance to intrusion

The e-LOCK is available in 2 or 4 locking point versions, right or left handed.



IP42 IK10 Certification CE
WEEE & RoHS -20°C - 40°C

Key Features

- Reinforced bolt mechanism
- Powerful motorised locking with 15 daN force
- Door misalignment compensation ability (10–15 mm) with Y counterpart
- Up to 2,000,000 cycles
- Made In Europe
- Integrated electronics

Applications

- Industrial sites
- Military facilities
- Banks
- Sensitive commercial buildings
- User type : Personal, employee

Package Content

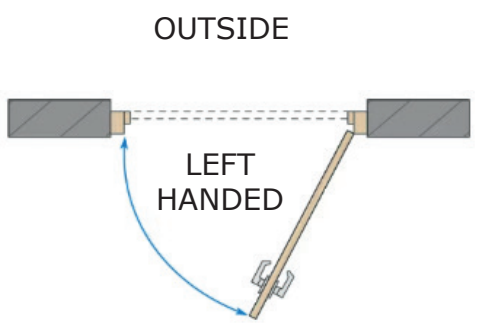
		
Lock	**Centre module**	**Counterpart**
1	1	1

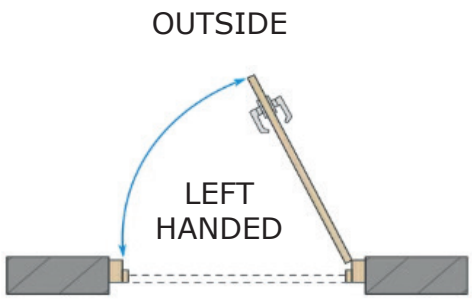
3] TECHNICAL SPECIFICATIONS

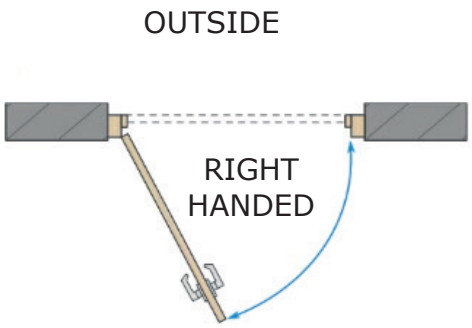
Specification	Feature	Value
Dimensions	2 points	620mm height
	4 points	2,000mm height
Electrical	Power supply	12V DC/ 36W
	Power input	12V DC
	Consumption	125 mA standby
		3 A peak
	Electrical system	Motorised
	Sound signal	Yes
	Output relay	4
	Automatic relock	Yes
	Opening/ closing time	0.5s
	Electrical exit	Push button
	Bus RS485 or TCPIP	Yes
Mechanical	Holding force	1.4T per bolt
	Versions	2 or 4 anti-saw bolts
	Material	Stainless steel/ aluminium
	Mounting	Surface
	Emergency mechanical exit	Round knurled handle
	Mechanical ingress	EU Cylinder compliant
Bolt	Bolt number	2 or 4 bolts
	Bolt displacement	20mm
	Bolt resistance	1 400 daN
	Misalignment compensation counterpart	-10 +15mm
	Bolt thrust	15 daN
Performance	Cycles	2,000,000
	Resistance	High resistance to intrusion
Option	Customisation	Via web browser
Regulation	EN1634	Optional
	EN1522	FB4
	EN1627	CR4 & above
	EN14846	3Y900M712

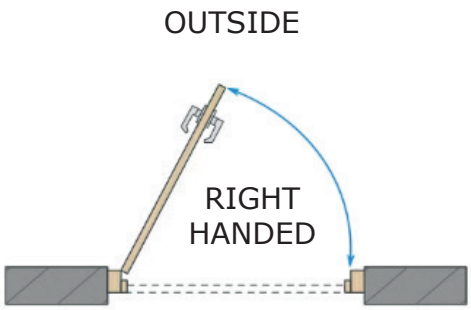
4] PRODUCT RANGE KITS

Reference	Description	Content
F1411000001	KIT e-Lock 2P D	**2-bolt right-handed** motorised lock with exit PB and knurled handle, realignment counterpart
F1411000002	KIT e-Lock 2P G	**2-bolt left-handed** motorised lock with exit PB and knurled handle, realignment counterpart
F1411000003	KIT e-Lock 4P D	**4-bolt right-handed** motorised lock with exit PB and knurled handle, realignment counterpart
F1411000004	KIT e-Lock 4P G	**4-bolt left-handed** motorised lock with exit PB and knurled handle, realignment counterpart









5] SAFETY INSTRUCTIONS

Installation must be performed by qualified personnel.

Mechanical Safety

- Ensure door/frame alignment
- Verify cylinder compatibility
- Avoid mechanical constraints on bolts

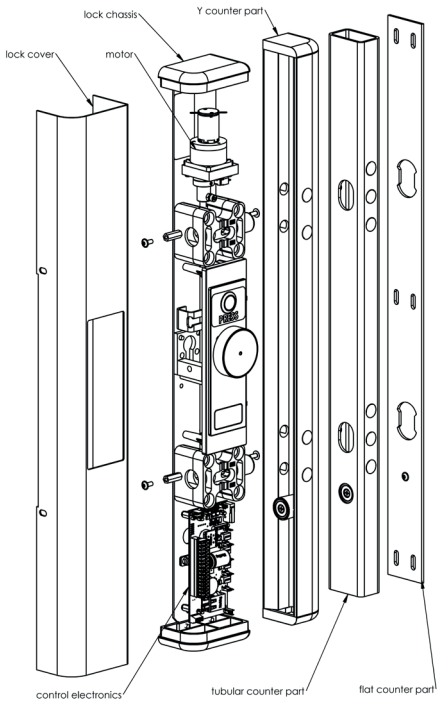
Electrical Safety

- Power OFF during installation
- Use appropriate power supply (12V DC)

6] SYSTEM OVERVIEW

Operating Principle

- Locking is automatic when door is closed
- Unlocking via:
  - o EU Cylinder
  - o Access control
  - o Internal mechanism



Components

- Lock case
- Counterpart
- Motorised bolt system
- Control electronics

7] MECHANICAL INSTALLATION

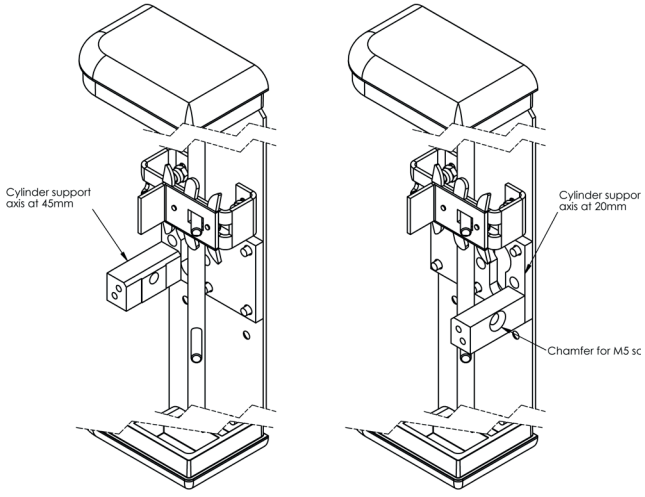
Installation Workflow

1. Install lock
2. Install cylinder
3. Install counterpart
4. Test alignment

Cylinder Installation

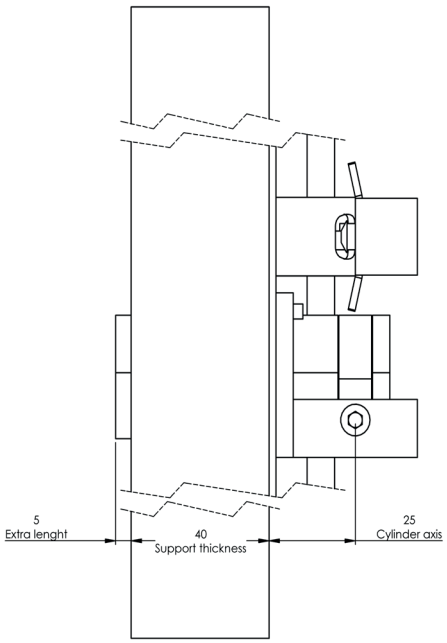
Axis Adjustment

Default: 45 mm
Can be modified on site:
- Remove support
- Disassemble and rotate axis
- Reassemble



VIEWS PRESENTED FOR RIGHT HAND LOCK

Cylinder Length Calculation

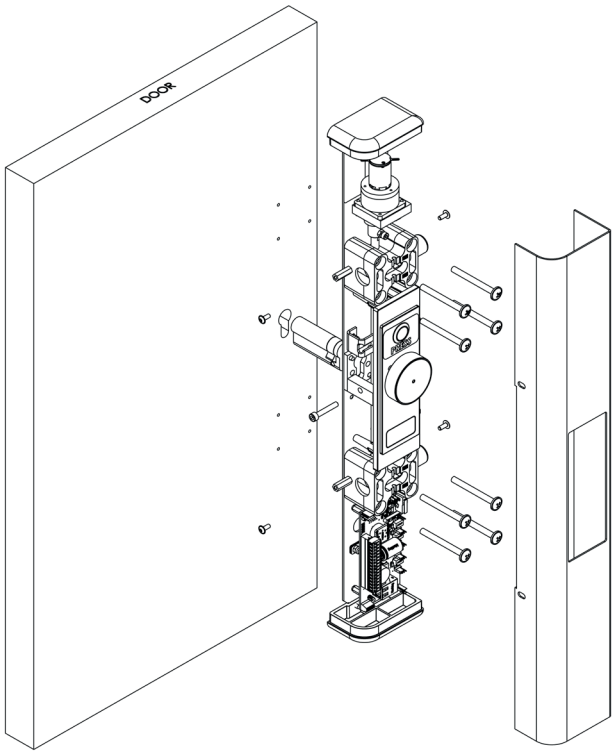


Cylinder length calculation is based on:
- Door thickness
- Fixing position (+25 mm reference)

- Support length = 40mm
- Lock length = 25mm
- Extra length = 5mm
- Total length = 70mm
- 1/2 cylinder 70x10
- Double cylinder 70x30

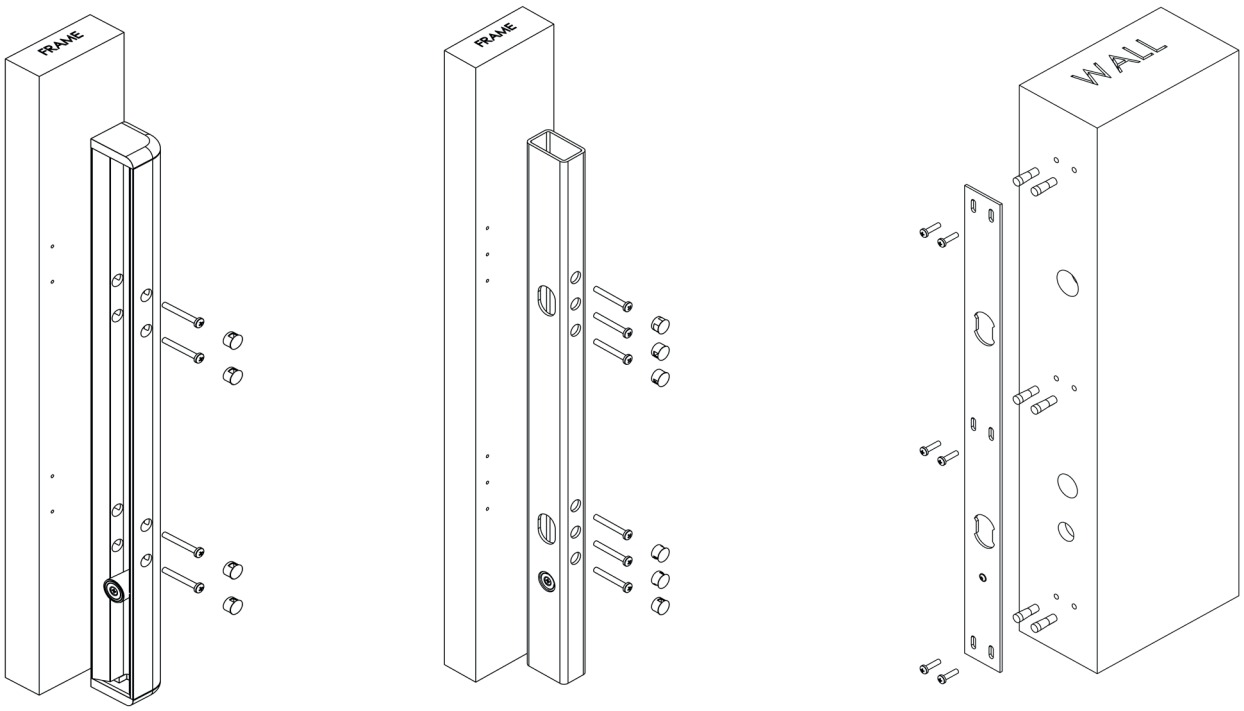
For version with cylinder protection please contact us.

Lock Installation



1. Position lock on door
2. Trace cylinder position
3. Drill cylinder hole
4. Drill fixing holes
5. Fix using M8 max flat head screws
6. Adjust using wedges if necessary to flatten to the frame
7. Secure assembly

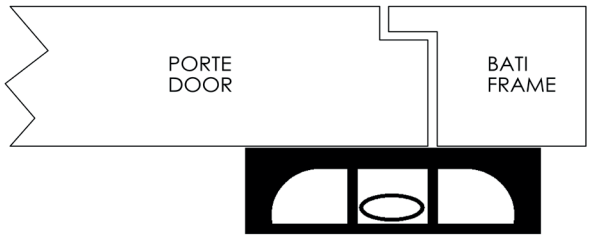
Counterpart Installation



1. Align with bolt axis
2. Fix with M5 flat head screws
3. Ensure smooth bolt movement

Alignment Rules (CRITICAL)

- Bolts must slide without resistance
- Counterpart must be perfectly aligned
- Door must be fully seated before locking



Ensure that the door and frame are aligned; otherwise, use a wedge.

8] ELECTRICAL CONNECTIONS

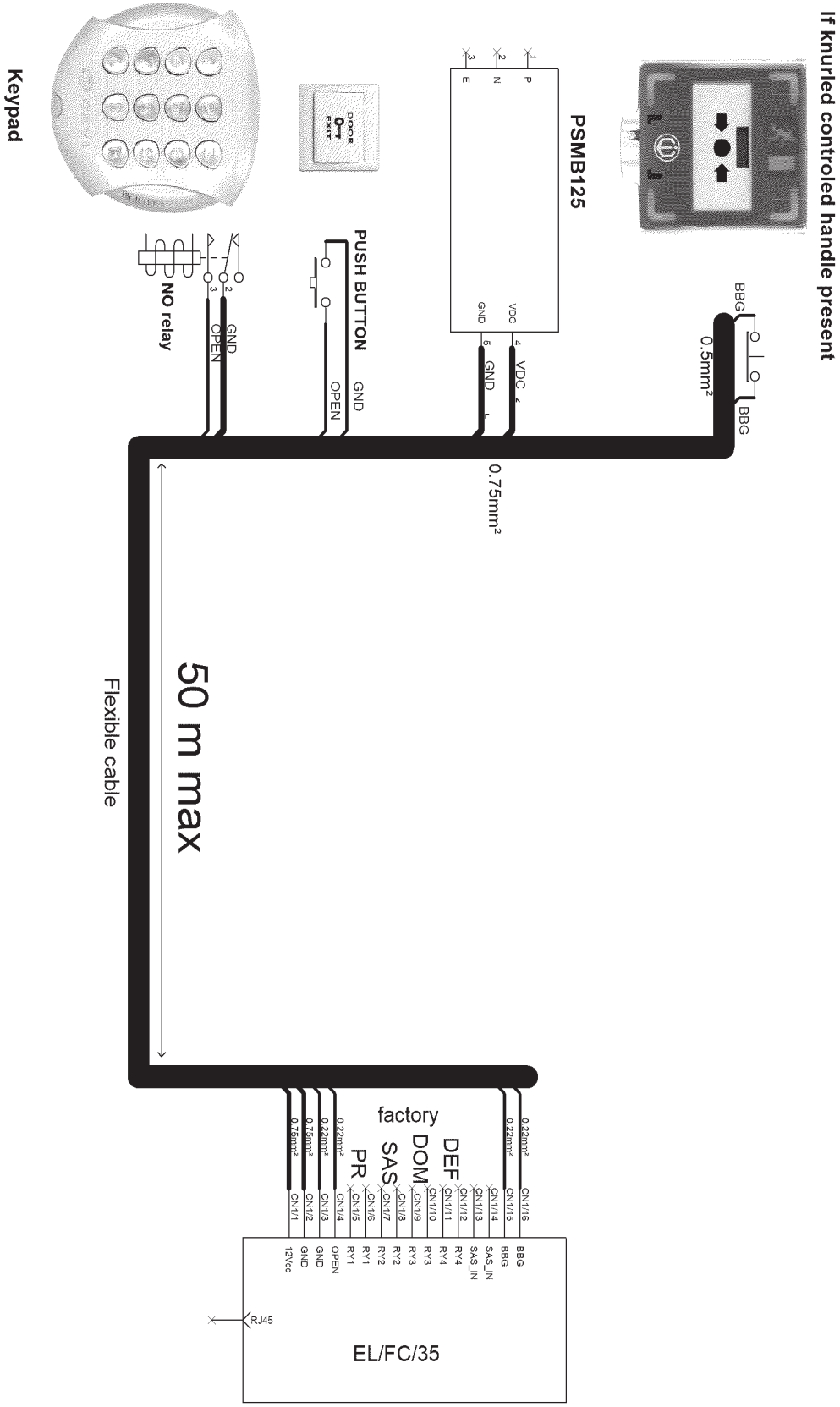
The lock equipped with this card must be connected with a flexible cable.

The position of the straps shown below corresponds to the NC contact of each relay.

A composite cable can be supplied as an option (1p 0.75 mm² + 4p 0.22 mm² flexible shielded).

Wiring

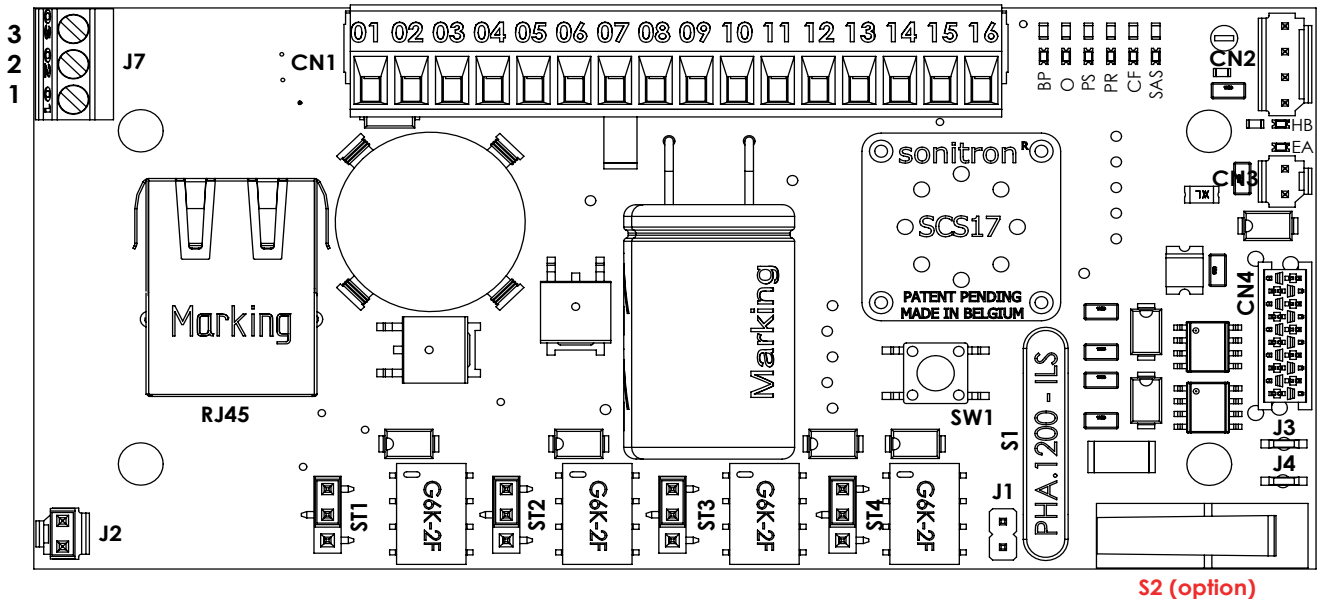
Minimum cable requirements :
1p 0,75mm²
1p 0.5mm² for emergency exit device
1p 0.22mm² open request



Power Supply

- 12V DC regulated ± 15%, 36W recommended
- At rest: 120 mA / 12 Vdc
- Steady state: < 600 mA /12 Vdc
- Transient or forced regime: < 3A /12 Vdc

Functional Inputs / Outputs



Opening request

The opening request is made by closing a dry NO type contact between the ground (0V) and the Opening input on CN1 (3 - 4).
A maintained opening request (free access) is made by keeping the NO dry contact closed between the ground (0V) and the Open input on CN1 (3 – 4).

The opening is carried out if the following conditions are met:
- Lock in position other than retracted bolt (PR not validated)
- SAS_IN function input not enabled

Auto-locking

The auto-locking is wired (at factory) on the CF rebate sensor of the lock (REED).
If the closing is managed by access control, the contact used for the opening request must be held for the desired time and then released to allow closing.
The card performs a lock closing if the following conditions are met:
- Presence of the door (rebate sensor validated)
- Lock in position other than bolt extended (PS not validated)
- SAFE input not activated
- Fault signal absent (DEF not validated)

Information available

• PR: the lock has the bolts in the unlocked position
• DEF: Failure to open or close. The motor was activated beyond the "Max Motor" value or the timeout.
• DOM: indicates a Mechanical Opening Detection
• APOTL: indicates a Door Open Too Long Alarm
• CF: Door position indicator (Rebate REED Contact)
• PS: the lock has the bolts in the locked position
• SAS: logical combination of PS and CF information. Indicates a locked and closed-door state. The information used for SAS inter-locking.
• BP: indicates that the Push Button (if present on the lock) is activated.

Factory assignment of relays

In factory configuration, the relays are positioned by jumpers 1 to 4 on the NO contacts. To change the contact type, change the position of the jumper. The diagram on page 10 shows the NC position of the contact.
The relays are assigned as follows:
• Relay 1 = PR (ST1)
• Relay 2 = SAS (door locked = CF and PS) (ST2)
• Relay 3 = DOM (ST3)
• Relay 4 = DEF (ST4)

The change of assignment is done via the web configuration console on page 15.

Factory value of variables

The card has different adjustable variables.
In factory configuration, the values assigned to the variables are as follows:
• Tempo RA = 4000ms
• Tempo CF = 1000ms
• Tempo DOM = 10000ms
• Max engine = 4000ms
• Engine brake = 250ms
• I max = 1000 mA
• APOTL = 30 s
• Rearme = 3s
• DOM alarm off = 0
• Automatic bolt = 0
• PM/bloc = 1

The value change is done via the web configuration console below.

Variables	Description
Tempo RA	The RA time delay corresponds to the time the door is open before it relocks automatically. At the end of this time, the card automatically closes the lock. This value can be adjusted from 1,000 to 2,0000ms.
Tempo CF	The CF time delay corresponds to the delay in engaging the locking after detection of the door rebate sensor. This value can be adjusted from 1,000 to 4,000ms. This variable helps to overcome problems of poor door closer adjustment (too slow) or door rebound (too fast), or deterioration of the door.
Tempo DOM	The DOM timeout is the duration of the DOM alarm. This value can be adjusted from 10,000 to 50,000ms.
Max engine	The max motor timeout is a protection for the electric motor. This timer shuts down the motor and triggers an alarm if the motor is activated longer than the set time. This value can be adjusted from 3,000 to 6,000ms.
Engine brake	The motor brake delay is the duration of the motor braking before the motor can be activated again. This braking also stops the motor from rotating and protects the spurs and the rest of the lock mechanism from breaking. This value can be adjusted from 250 to 2,000ms.
I max	The I max value defines the maximum current value allowed for the motor. This threshold is analysed during motor activity to cut it off if it is exceeded. This value can be adjusted from 1,000 to 1,400mA to allow more power for the motor to force locking. The board is able to manage a more powerful motor up to 3,000mA. If this value is exceeded after 3 manoeuvring attempts, the engine override fault signal is activated (DEF). Pay attention to this security if you increase the current available.
APOTL	The APOTL value defines the possible duration of keeping the door open before activating the alarm signal. This value can be adjusted from 30 to 300s.
Rearme	This variable defines the duration of the pulse required to reset the DEF alarm. As a reminder, resetting the DEF alarm following an opening failure is automatic with the rebate sensor. Only the DEF alarm following a closing failure must be cleared to restart the electrical operation of the lock.
DOM alarm off	This variable allows you to mute the sound generated during mechanical opening with the cylinder or knurled handle. DOT alarm off = 0: Produces audible feedback at each mechanical opening DOT alarm off = 1: No audible feedback during mechanical opening The DOM alarm signal is not affected by this setting.
Automatic bolt	The lock can be optionally equipped with semi-automatic or latch bolt functions. In this case, the electrical operation must be adapted. Lock with latch bolts: Automatic bolt = 1 Lock with deadbolts: Automatic bolt = 0
PM/bloc	The lock can be optionally equipped with an electro-magnetic blocking system for the knurled handle. For controlled knurled options: PM/bloc = 1 For controlled knurled options with BMR option: PM/bloc = 0
DEF	The electronics of the lock has permanent internal security tests. If a test fails (motor timeout, motor current over consumption, internal cable, or connection damage), the fault signal DEF is activated. To reset DEF signal, an open request has to be done.

I/O information

Variables	Terminal	Description	Features
CN1	1	+ 12VDC	12VDC ± 15% (36W recommended).
	2	GND (0V)	
	3	Opening Mass	For dry NO contact
	4	Request for opening	
	5	Relay contact 1	PR Information (factory) NO or NC contact (depending on ST1 position) Cutting capacity: 3 A / 30 VDC.
	6		
	7	Relay contact 2	SAS Information (factory) NO or NC contact (depending on ST2 position) Cutting capacity: 1 A / 30 VDC.
	8		
	9	Relay contact 3	DOM information (factory) NO or NC contact (depending on ST3 position) Cutting capacity: 1 A / 30 VDC.
	10		
	11	Relay contact 4	DEF Information (factory) NO or NC contact (depending on ST4 position) Cutting capacity: 1 A / 30 VDC.
	12		
	13	SAS_IN input	For dry NO contact
	14		
	15	BBG contact (for controlled handle)	For dry NC contact
	16		
J7	1	DATA+	RS485 BUS
	2	DATA-	
	3	GND	
Tamper option:			
J3	Common		Tamper Contact (S2) Cutting capacity: 1 A / 30 VDC
J4	NC contact (closed cover closed)		

Built-in SAS function

The control card integrates a basic SAS function called "interlocking".
Functioning:
- The open request cannot be processed until the SAS_IN entry is released.
- As soon as the lock leaves its locked position (PS or CF), the SAS output changes state, thereby preventing the opening of another lock equipped with the same card.
- The locks are prioritised at the same level. There is no priority, nor any concept of master-slave.
- Pressing the opening requests of two locks simultaneously allows them to be opened simultaneously. There is no priority management. An external SAS function system must be used if this feature is unacceptable.

NOTE: The ST2 strap for relay 2 contact selection (SAS information) must be positioned in NC contact.

To interlock 2 locks:
• Connect SAS gate 1 with SAS_IN gate 2,
• Connect SAS gate 2 with SAS_IN gate 1.
If you are using SAS with products other than those equipped with this card, please contact your local CDVI Technical Support for the necessary information.

Control of blocking system

The card is designed to enable the control of a knurled handle locking system (if present on the lock) by solenoid.
The input located in CN1 15-16 must be connected to an emergency breakglass exit device on a contact (NC).
This input must be connected with conductors of 0.5mm² min.
The internal locking system is connected to the board at CN3 with a keyed connector.

Illuminated push button

The card is connected to a push button on the lock (factory wiring).
By default, the push button contact requests the opening of the lock.
This contact can be transferred to a relay of your choice to forward the request to an access control system (see paragraph on configuration with the web interface).
The push button equipped with LEDs provides a light feedback on the status of the lock managed by the card:
Steady LED = door locked
Slow flashing LED = door unlocked
Fast flashing LED = alarm or fault.

PCB LED indicators

The card is equipped with LEDs to give different information (see diagram on top).

- HB for system active
- EA for CN3 output under voltage (solenoid if present)
- BP for Push Button contact activated
- O for request opening activated
- PS for Bolts locked activated
- PR for Bolts unlocked activated
- CF for magnetic REED rebate sensor activated
- SAS for SAS_IN input activated

MODBUS communication

The RS485 or RJ45 port allows the card to be connected to a Bus and uses the MODBUS protocol. The card and its lock can then be controlled over a network via a PLC, an access control system, a BMS, or a compatible BMS.
This driver mode is subject of additional documentation.
To set up these features, contact your local CDVI Technical Support.

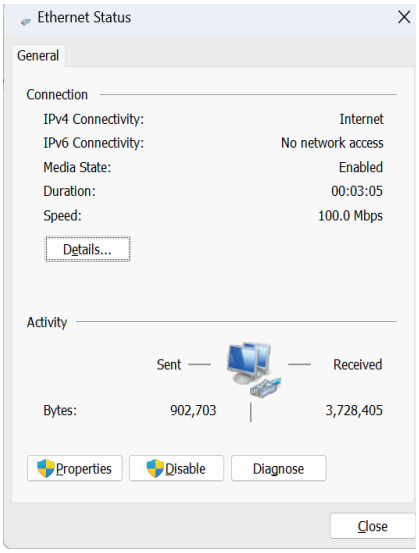
Factory reset

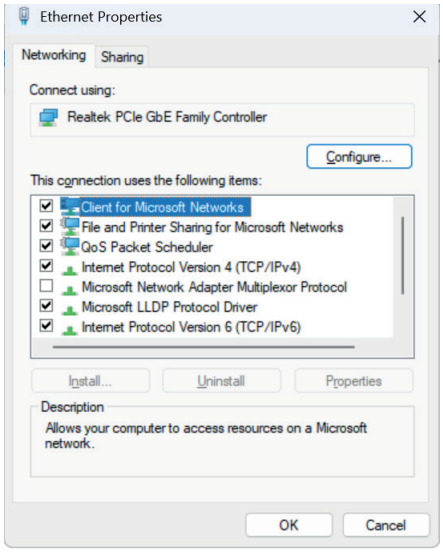
The factory reset function returns the card to its factory settings. All customisation is also erased. All sounds are erased except for the DEF alarm sound, which cannot be deleted.
To perform this action, press the small button (SW1) on the card for 5 seconds.

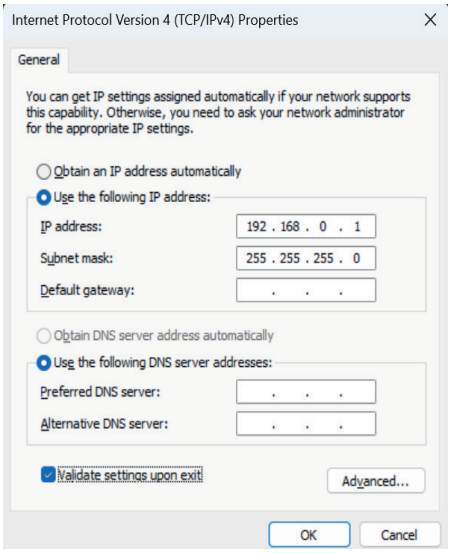
CAUTION: This action also deletes the sounds assigned to the actions. You will need to reload the desired sounds. Samples are available on demand.

Console Settings

The card configuration console is accessible via a browser such as Edge, Mozilla or Chrome.
To access this console, the card must be connected by a straight Ethernet cable in the RJ45 connector to a network or to a PC with a crossover Ethernet cable.
Any change is dynamic. An action on a variable or relay assignment is immediately activated.
If the card is connected to the computer network, it is therefore possible to view the access status in real time from any PC, tablet, or smartphone device.
Only the home page is accessible without identification.
To access the lock's home page, your PC's IP address must be in the same address range as the card, namely 192.168.0.xxx.
To change your PC configuration, go to the network card settings and modify as shown.



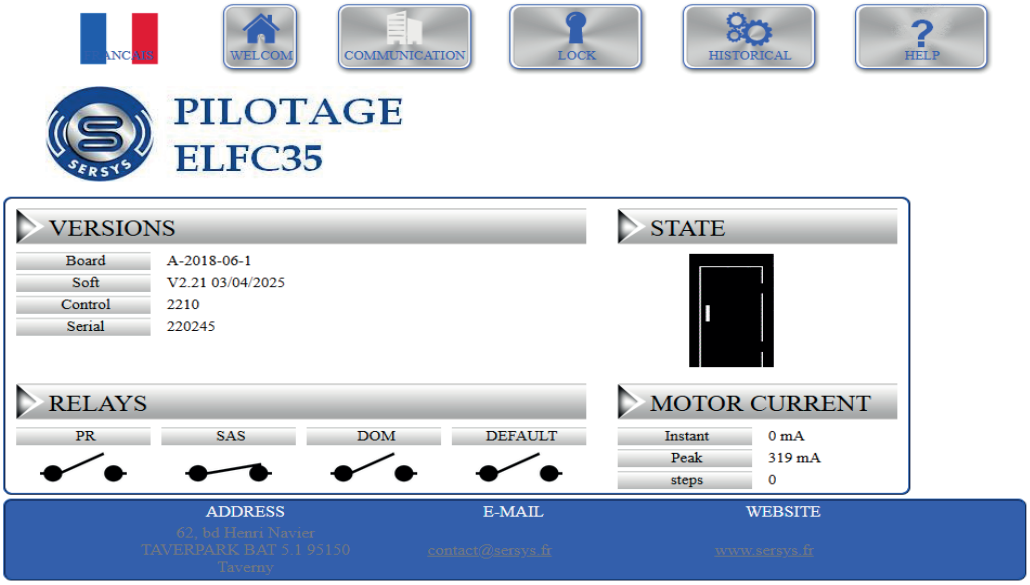




Once you have made these changes, open a browser with the information shown below.

Fixed factory IP address: 192.168.0.115
Factory login: SERSYS
Factory password: EL/FC/35

Home page



The top part indicates the card versioning, control date and serial number of the lock, the door and relay status.
The relay status is shown as a diagram according to how they were assigned.

Communication page

To access this page, login and password are required.



Lock page

This page allows you to customise the lock.

The upper part allows you to change a sound signal assigned to an action.
At the link below, find free software to create custom sounds compatible with the card:

https://sourceforge.net/projects/audacity/

For further information, contact your local CDVI Technical Support to find out about sound customisation options.

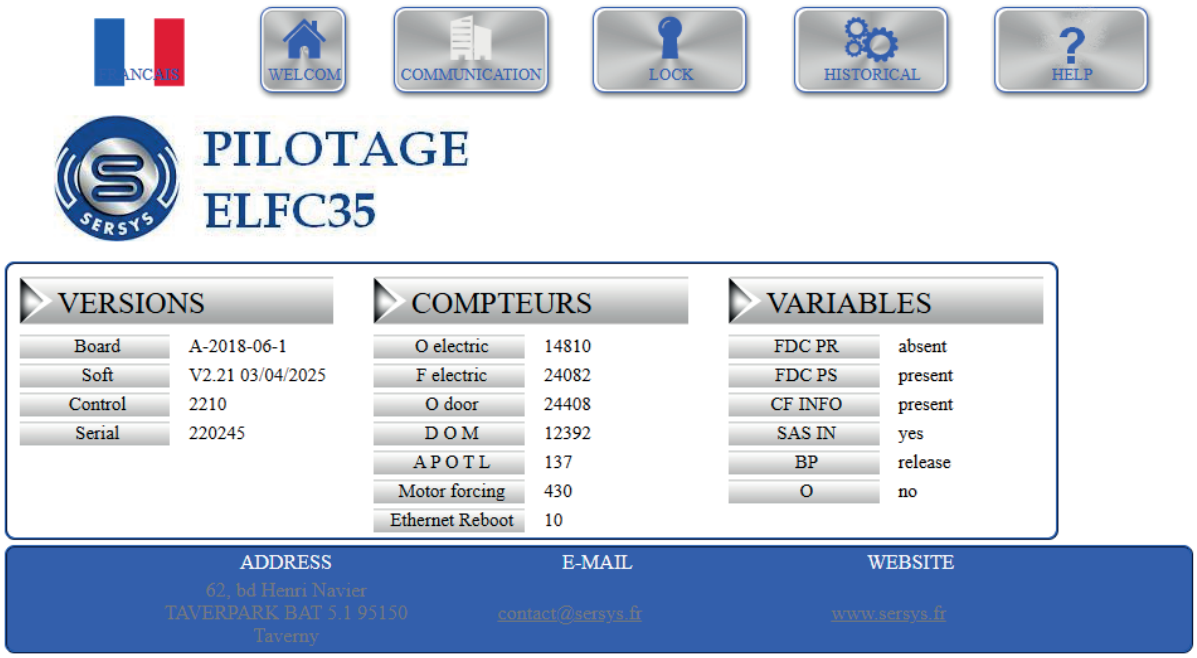
The SETTINGS frame allows you to change variable values according to the site's needs.
The RELAYS frame allows you to change the relay assignment.

The PROHIBITIONS frame allows the administrator to:
• BLOC: Prohibit electrical use of the lock by activating "BLOC" (equivalent to SAS_IN input)
• SAFE: Put access into evacuation or free access mode by activating "SAFE". In this mode, the lock, once opened, can no longer be closed electrically until the case is released.
• OPEN: Allowsremote opening of the lock with a click



Historical page

This page provides status information of the lock.
It includes versioning, operation counters and the state of some variables managed by the card.
Updates are dynamic.



9] COMMISSIONING

MECHANICAL CHECKS

- Lock and counterpart are strongly screwed
- Bolt movement is free
- No friction between the lock or door and the frame
- Proper lock and counterpart alignment
- Open and close the lock with the cylinder (lock powered off) from the outside
- Open the lock with the knurled handle from the inside

ELECTRONIC CHECK

Perform at least 10 cycles
Check:

- Locking
- Unlocking with the push button and access control system

DOOR SENSOR CHECK

Ensure door position triggers locking at correct timing.

10] OPERATION

LOCKING

Automatic when the door is in the closed position.

UNLOCKING

- External cylinder
- Internal mechanism
- Access control and lock push button

SAFETY

Manual override available via cylinder to ingress.
Manual override available via knurled handle to exit.

11] MAINTENANCE

Maintenance level:
- Level 1: To be done by an installer or professional.
- Level 2,3 or 4: Specific training is needed to change internal parts. Contact your local CDVI Technical Support.

Maintenance Frequency

The number of periodic visits is to be determined by the installer and their client based on the frequency of use of the lock. It is expressed in operations per day (operation = back and forth movement of the bolt).

Other points to consider:
- The condition of the door and the frame (flatness, alignment)
- The fitting of the frame
- The proper functioning and adjustment of the door operator
- The correct rotation of the hinges or pivots.

Recommendation:
- 1 visit/year (<100 cycles/day)
- 2 visits/year (>100 cycles/day)
- 4 visits/year (>2,000 cycles/day)

Level 1 Maintenance

Remove the lock cover.

Visual inspection - Lock powered off

- Check the fixing of the lock to its support (correct if necessary).
- Check the fixing of the counterpart to its support (correct if necessary).
- Check the fixing and condition of the electronic cards.
- Triggering of the rebate REED sensor that triggers the bolt to exit.
- No fouling of the bolts (if necessary, strip the cylindrical surface of the bolt with a solvent).
- Check that the levers are correctly glued.

Visual inspection - Lock powered

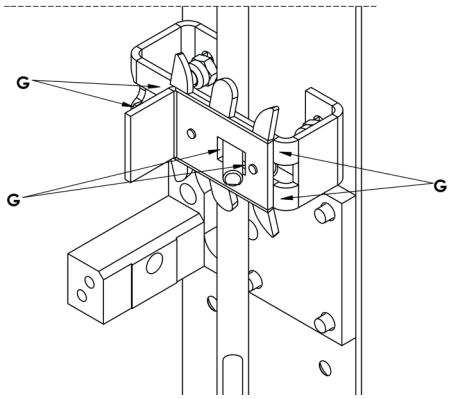
Operate the lock observing the following points:
- Fixing of the motorisation, the motor on its gear box.
- Fixing of cams and limit switches of the motorisation.

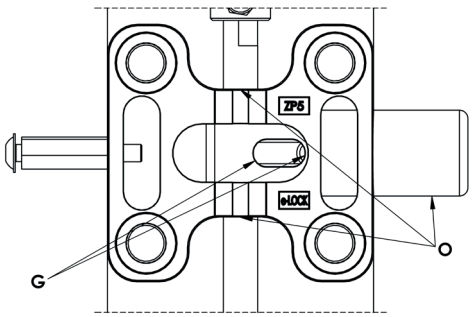
Visual inspection - Electrical check

- Check that the various removable connectors are correctly inserted.
- Check that the conductors are properly tightened in the screw terminals of the connectors.
- Operating time: approximately 0.5s in both directions (locking and unlocking).
- Automatic Relocking Time Delay (relocking after unlocking without opening the leaf) depending on the coding performed.
- Electrical check point to be carried out on the motor power supply terminals during operation (12V).

Lubrification

Ready-to-use kits are available for maintenance.
- Use light **O**il for bolts and lock shaft
- Verify and add if necessary **G**rease between the bolt at its lever and the cylinder mechanism
- Clean bolts regularly with solvent
- **Do not grease the bolts**





Put the cover back on the lock.

12] TROUBLESHOOTING

Issue	Cause	Solution
Bolt blocked	Misalignment	Adjust counterpart, use wedge
No unlocking	Power issue	Check power supply or cable
	No request on the lock	Check the cable or contact
No locking	Power issue	Check power supply or cable
	Door not detected	Adjust conterpart
Hard operation	Mechanical friction	Realign the counterpart

13] END OF LIFE

Dispose of the product according to local recycling regulations.

Extranet : CDVI_e-LOCK_IM_01_EN_A4_C

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