

EMI-Lock

Type VI HID iClass

No.: 925-477-00

For handle software version 5.5 or later
For display software version 5.1 or later
v. 2.5



Description

A brand-new electronic access control system by apra-optinet makes it possible to increase the safety level of server cabinets and IT hardware while retaining full flexibility for the customer's needs.

Main characteristics

- A stand-alone access control system is based on a new handle and a dedicated LCD display with a touch panel,
- Authentication with a PIN code assigned to one of 30 user accounts,
- An electronic cabinet label function,
- Information about alarms currently active in a cabinet,
- Temperature and humidity measurement in two points at handle level,
- Locally recorded system event log with a capacity of 100 entries,
- Opening time configuration independent for front and back of a cabinet,
- Can be reconfigured and expanded in the future without the need to replace handles,
- Mechanical compatibility with most commonly used opening types: 150x25 and 200x25 mm,

- Both 1-point and 3-point locking can be used,
- Built-in optical opening sensor that guarantees reliability,
- Insert with a standard key that fulfils the role of an emergency opening,
- Opening system based on a servomechanism makes it possible to reduce generated electromagnetic interference,
- Lock code configuration options: individual, group, master key,

Technical data

Power supply	12-24 V DC, type 12 V DC
Power consumption	420 mA
Electrical connectors	Handle: 7-pin WE, 4-pin WE LCD panel: 4-pin JST
Built-in RFID reader	Yes, 13.56 MHz
Supported card types	HID iClass, MIFARE: ULTRALIGHT C, DESFIRE EV1, FELICA, other compliant with ISO14443A, ISO14443B, ISO18092, ISO15693
Memory capacity	30 user accounts
Built-in touch panel	Yes, capacitive
Casing	plastic
Permissible temp. range	0°C to 40°C
Permissible hum. range	10% to 90%, non-condensing
Dimensions	Handle: 215x37.5x51 mm, LCD panel: 140x90x15 mm
Weight	420 g net (set)
Casing colour	Handle: black LCD panel: black, other colours available on demand
Accessories	power supply harness, communication harness, user's manual, set of mounting brackets, 12 V 1.25 A regulated power supply unit
Cable parameters	Power supply cable: LiYY 7x0.13 mm ² , grey, length: 5.0 m, plug: 4-pin WE Communication cable: LiYY 4x0.25 mm ² and LiYY 4x0.14 mm ² , black, length: 6 m and 0.5 m, plugs: 2x4-pin WE, 1x 4-pin JST
Certifications	CE, RoHS

Connection description

Before the first start-up of the system, mechanical and electrical installation must be performed. Please follow steps below:

1. Perform mechanical installation of handles, paying special attention to following the correct location as indicated by the markings (stickers) at the back side of the handle casing: FRONT – front doors, REAR – rear doors and LCD panel (on front doors), using the hole pattern drawings at the end of this document.
2. Perform electrical connection between the handles and the panel using a communication harness (black). The longer end of the harness must be connected to the rear doors handle and the shorter end to the front doors handle.

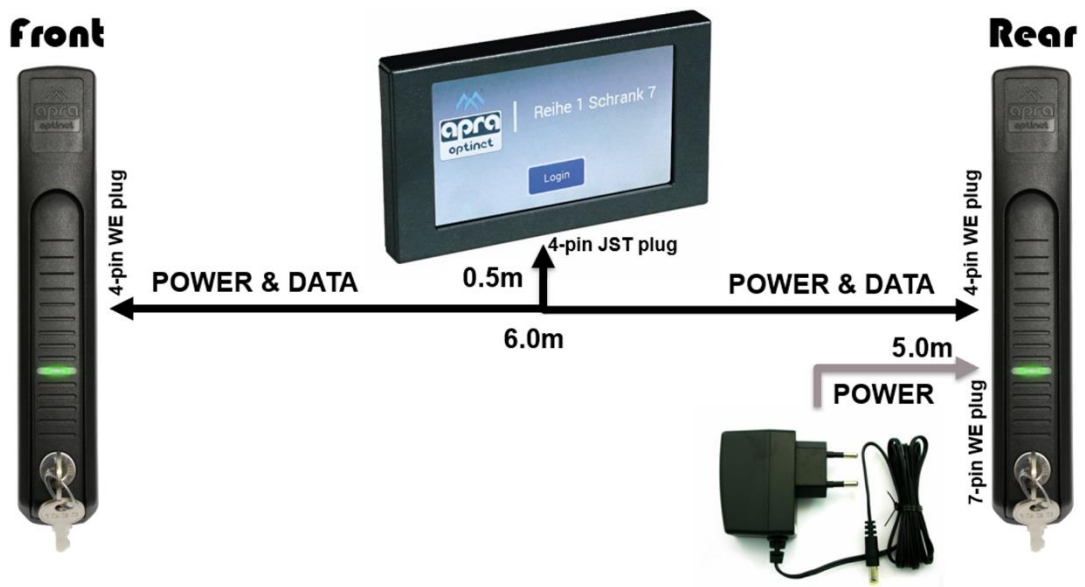


Figure 1

3. When the harness has been placed in a correct location so that it is not exposed to bending or tension, the JST plug must be installed at the harness contacts, in a location of the connection to the LCD panel, as shown in Figure 2:

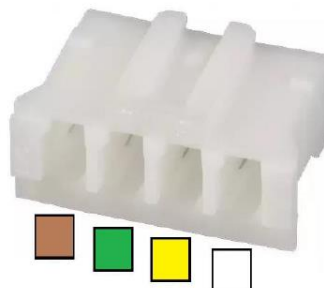
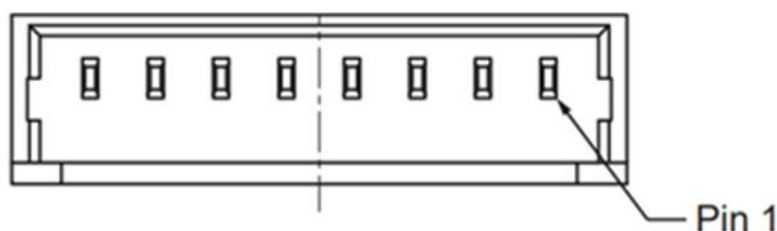


Figure 2

4. Perform electrical power supply connection between the **rear handle** and the source of 12 V power supply (e.g. power supply unit included in the set), using the grey harness. Within this harness **only 2 wires must be used**: blue (positive 12 V power supply) and brown (ground, GND). Other wires must be isolated from one another, e.g. with heat-shrink bands. Description of the other lines of the power supply harness is presented below:

No.	Colour		Signal	Comments
1	blue		Power supply	Permissible power supply voltage in the 12-24 V DC range
2	yellow		Control signal (opening)	Do not use / keep insulated
3	grey		Handle position sensor	Do not use / keep insulated
4	green		EMI Module Line 1	Do not use / keep insulated
5	pink		EMI Module Line 2	Do not use / keep insulated
6	white		EMI Module Line 3	Do not use / keep insulated
7	brown		Ground (GND)	



Description of system operation and configuration

The LCD panel is the main component of the VI type access control set. It is used to authorise the opening of a cabinet and to configure all operating parameters.

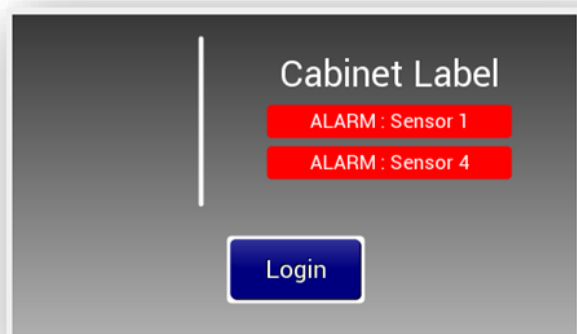


Figure 3

Following the start-up of the system the start screen is displayed (shown in Fig. 3). The start screen contains the name of a specific cabinet and information about any currently active alarms.

Pressing the Login button moves you to the login screen (shown in Fig. 4) on which you will have to enter the PIN code.

Apart from the numeric keyboard buttons visible here users also have 4 function keys at their disposal:

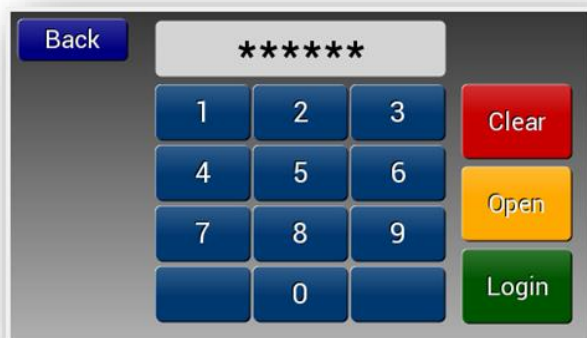


Figure 4

Default configuration of the access PIN codes: 112233 (ADMIN – logging in and opening the door); 1111 (USER – only opening the door). **It is recommended to change the default PIN codes using the functions described in details later in this manual.**

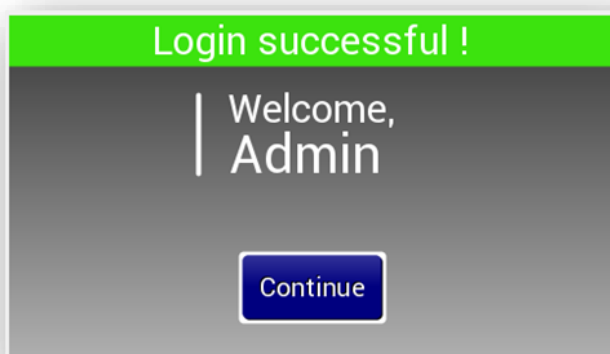


Figure 5

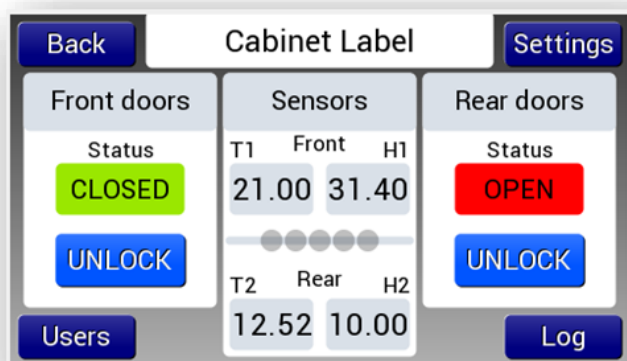


Figure 6

- **Clear** – causes the entered PIN code to be cleared,
- **Open** – causes the handles on the front and rear of a cabinet to open and then automatically moves you to the start screen (Fig. 3) after the handle opening time has elapsed,
- **Login** – moves you to the status screen (depending on the privileges) shown in Fig 6.
- **Back** – moves you back to the previous screen

Each attempt to log in or to open the doors is indicated by an “access denied” message if the invalid PIN code has been entered or by a message confirming that logging in is successful (shown in Fig. 5).

In case of the previously selected “Login” function the use of the “Continue” button will move you to the status screen shown in Fig. 6.

Administrator’s status screen contains a detailed presentation of all the current data from the handles and makes it possible to go to configuration subpages.

The fields on the left, indicated as “Front doors”, show current state of the opening of the front doors handle with an option to open with the “UNLOCK” button. The fields indicated as “Rear doors” show the corresponding functions of the rear doors handle.

The middle section of the screen contains current data from temperature and humidity sensors installed inside the handles. If the alarm function has been enabled and configured, the values exceeding the set alarm trigger threshold will be marked in red.

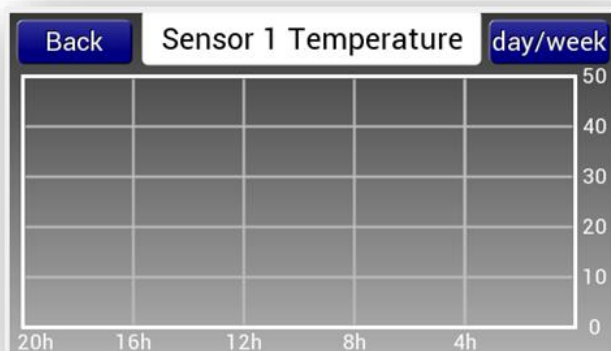


Figure 7

Clicking on any of the 4 ambient values fields results in a chart being drawn what shows the trend of the value against time (shown in Fig. 7).

The system can display the chart for the last 20 hours, 7 or 31 days, with the data for the weekly and monthly chart are saved in the non-volatile memory, whereas the hour data are deleted upon the power supply being switched off. Switching between time ranges is done with the “day/week” button.

From the status screen level, the administrator can use the “Settings” button to go to the settings section, which consists of 2 subpages shown in Fig. 8, 9 and 10.

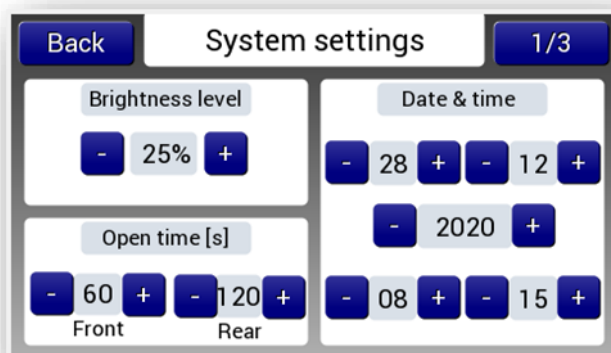


Figure 8

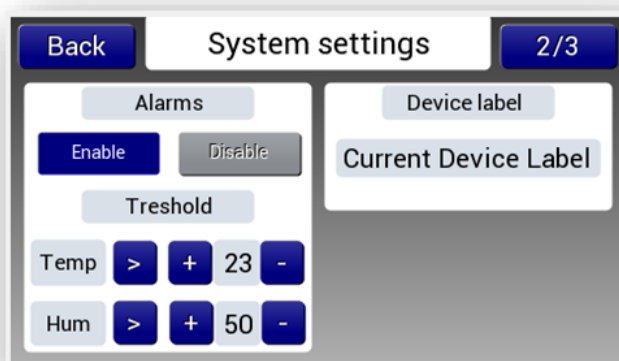


Figure 9

- Brightness level – setting the screen brightness within the range of 25-100%;
- Open time[s] – setting the individual opening time for each handle. This allows for a comfortable access to the rear doors from the front of a cabinet if a cabinet is in a multiple-cabinet row.
- Date & time – setting of current date and time – used for highlighting events in the system log.
- Alarms – the system alarms section in which the Enable button is used for enabling and the Disable button for disabling this function. Following the activation, the information will be displayed upon:
 - Opening the doors
 - Exceeding the set temperature threshold
 - Exceeding the set humidity threshold

The configuration of alarm thresholds must be done by changing the values in the *Threshold* section, setting the desired value with the “+” and “-” buttons, as well as by setting the proper logical condition: “>” means that the upper threshold was exceeded while “<” means that the lower threshold was exceeded.

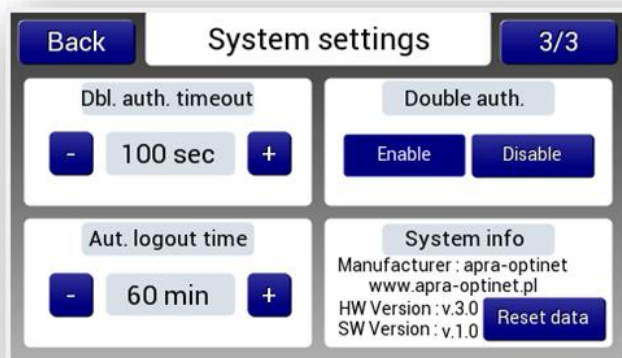


Figure 10

- *Device label* – this field shows current name of a device which is simultaneously displayed on the start screen as a digital label of a cabinet. In order to change it, you must press the field with a name and then use the displayed keyboard to enter a new name.
- *Aut. Logout time* – After taking no action, the logged in user will be logged out automatically. The automatical logout time can be set from 5 to

240 minutes.

- *Double auth.* – Logging in is only possible after entering the PIN number and reading the assigned RFID card

Enabling the double autentification function requires at least one Admin account which has both PIN number and a RFID access card assigned. If this condition cannot be fulfilled, it is not possible to enable this function in the settings menu.

- *System info* – information about current software and hardware version. The “Reset data” button is used for resetting current configuration, data, temperature, humidity, system log and for reverting to the system default settings.

Figure 11 shows the user account settings section which is referred to by the “Users” button on the start page (Fig. 6). The following fields can be configured for each of the 30 available accounts:

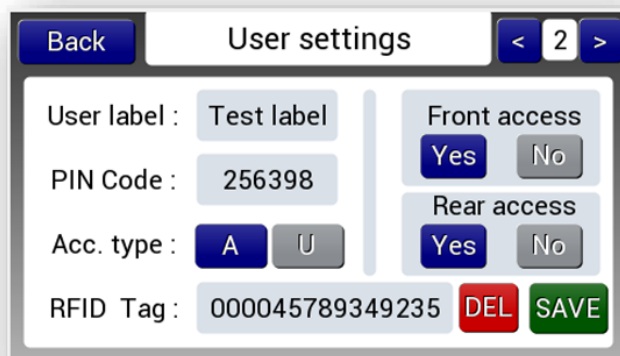


Figure 11

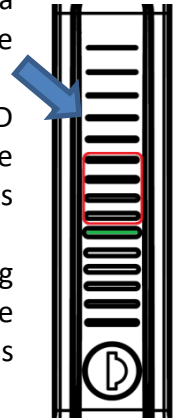
- *User label* – a name of an individual user that should be the user’s unique identifier (e.g. initials, combination of a given name and surname). The maximum length of the field is 10 characters.
- *PIN Code* – the code assigned to an individual user, used for logging in and opening the doors. In order to change the

code, you must press on the field and then edit the number using the displayed numeric keyboard. The maximum length is 4-6 characters. PIN codes must be unique!

- **Acc. Type** – selection of account type: A (ADMIN) – administrator – can both open a cabinet and log in to the administration and status panel. It is recommended to restrict the access to this function only to facility/server room administrators;
U (USER) – basic user – has access only to the lock opening function – an attempt to log in to the administration panel results in the denial of access.
- **RFID Tag** – (only for type VI sets) optionally the system allows to assign a unique RFID tag number to each of user accounts, so when it's put on the reader inside the handle, will cause handle to unlock.

To edit or assign a new tag number you must enter the card UID using the numeric keyboard. UID numbers are often printed on the surface of a card. Optionally, you can use the "READ" button, that allows to copy and use the last used (read by handle reader) RFID tag number.

Access authentication using RFID comes down to putting the tag for 3-5 s in a place marked with an arrow. Single-beep signalizes the correct card read into the system whereas 3-times means that card is correctly read and assigned (matched) to user account.



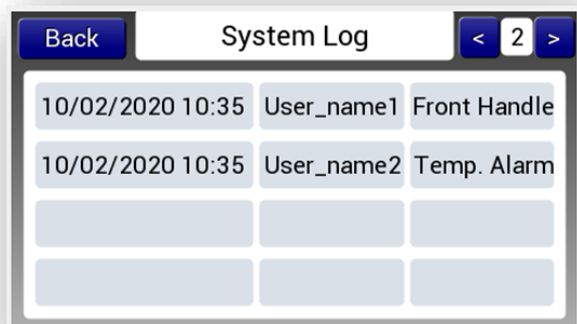
- **Front access** – configuration of the right to access the front doors; Choose "Yes" to grant access or "No" to deny access.
- **Rear access** – configuration of the right to access the rear doors; Choose "Yes" to grant access or "No" to deny access.
- **DEL** – this button is used to delete an account completely from the system memory
- **SAVE** – this button must be used to confirm the changes made to be saved in the device memory

Using the "<" and ">" arrows the user can switch between individual accounts, whereas when reaching the final entry, the screen for adding a new user is displayed (shown in Fig. 12).

Figure 12

To add a new user account, you must fill in the User label, PIN Code and, optionally, RFID Tag fields, choose the account type and then assign the access rights to individual doors. Following the verification of the data entered you must use the "ADD" button to save the data to the device memory.

The EMI - Lock system is equipped with an internal event log with a capacity of 100 entries, which is saved in the non-volatile memory of the device. The access to the log card, shown in Fig. 13, is possible using the “Log” button on the status page (Fig. 6).



The screenshot shows a web interface titled 'System Log'. At the top left is a 'Back' button. At the top right are navigation arrows and a page number '2'. The main content is a table with three columns: date and time, user name, and description. The first two rows contain data, while the last two rows are empty.

Date and Time	User Name	Description
10/02/2020 10:35	User_name1	Front Handle
10/02/2020 10:35	User_name2	Temp. Alarm

Figure 13

The “<” and „>” arrows are used for switching between the 25 cards, where each card contains 4 events that are displayed in an order from the oldest to the latest. Each entry consists of 3 fields: date and time, user name (“System” in case of alarms) and the description. The description contains detailed information identifying the opening of the doors (Rear Doors or Front Doors) or, in case of an alarm, a precise location of a sensor (Fr. T Alarm – front door temperature alarm).

LCD panel mounting holes pitch pattern

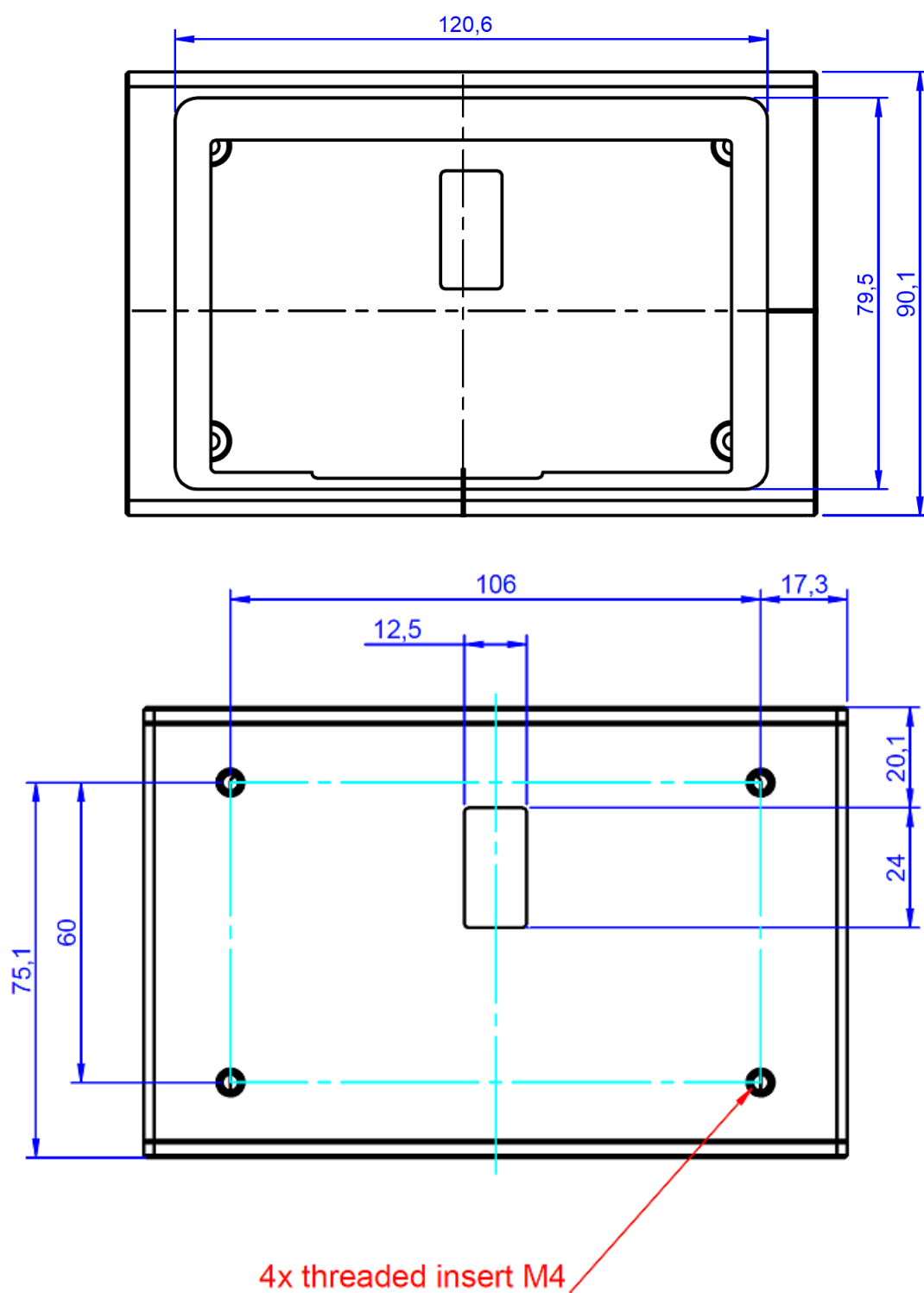
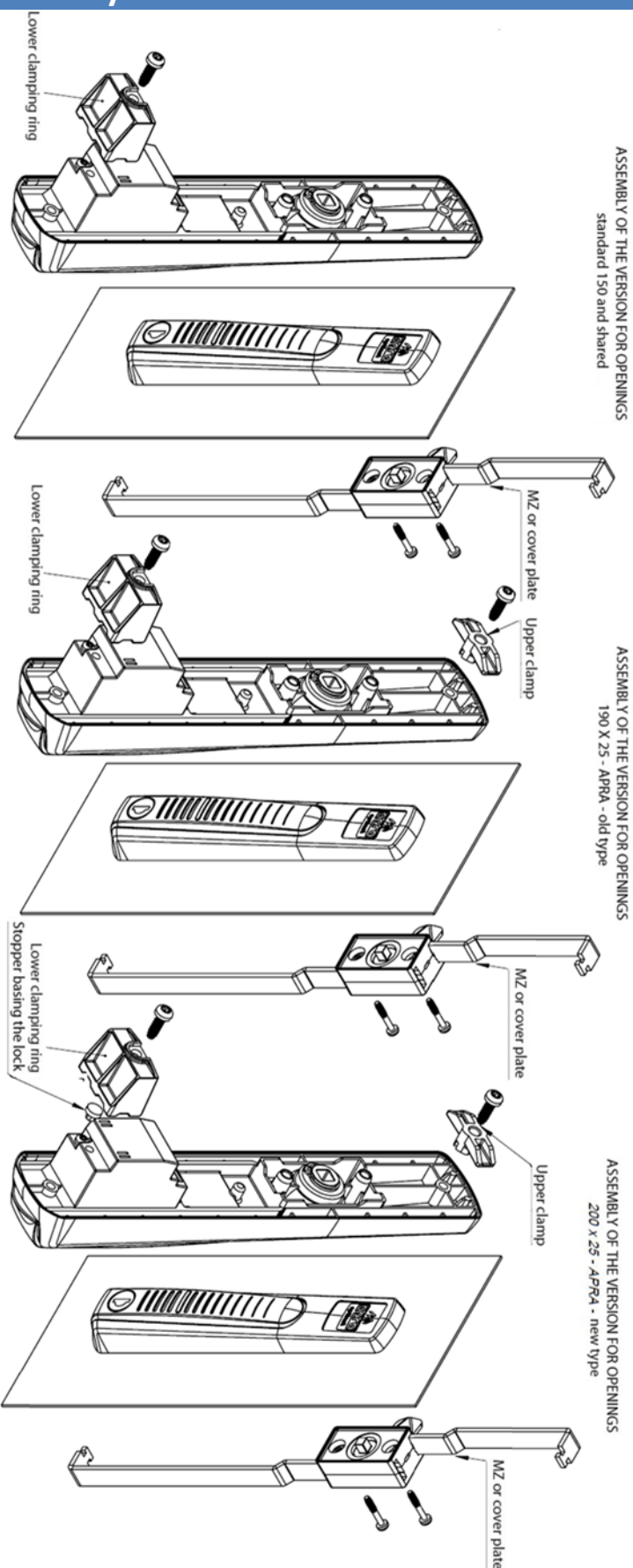


Figure 14

Mechanical assembly variants



Notes

[illegible]

