GAT ECO.Lock 7xxx F/ISO

Battery-Powered Electronic Lock MIFARE® and ISO 15693

Installation, Configuration, Operation
Document Version 1.2

Liability
Any claims against the manufacturer based on the hardware or software products described in this manual shall depend exclusively on the conditions of the guarantee. Any further-reaching claims are excluded, and in particular the manufacturer accepts no liability for the completeness or accuracy of the contents of this manual. The right is reserved to make alterations, and alterations may be made at any time without prior notice being given.

Trademarks
Attention is drawn at this point to markings and registered trademarks used in this manual. All product and company names, which are mentioned in this manual, are only used for identification and explanation purposes. Some of these names may be trademarks or registered trademarks of the corresponding company.

Contact
The contact information for questions regarding this product or for general enquiries is listed below:

Contact address of manufacturer:
GANTNER Electronic GmbH
Montafonerstrasse 8
6780 Schruns, Austria
Phone: +43 5556 73784 - 0
Fax: +43 5556 73784 - 8020
Email: info@gantner.com
Website: www.gantner.com

General Warning and Safety Instructions

Dear Customer,

We congratulate you on selecting a product (appliance or software) from GANTNER Electronic GmbH. Our aim is to ensure our product operates with safety and to your complete satisfaction. To achieve this aim, please take this opportunity to familiarize yourself with the following guidelines:

1. The installation, commissioning, operation, and maintenance of the product must be carried out in accordance with the technical conditions of operation as described in the corresponding product documentation.

2. Before installing, commissioning, operating, or maintaining the product, it is essential to read the corresponding chapter of this manual and observe the instructions and information therein.

3. If there are some points which are not entirely clear, please do not take a chance. All queries can be clarified by your GANTNER representative or by ringing the GANTNER support hotline.

4. Where not otherwise specifically documented, the appropriate installation, commissioning, operation and maintenance of the product is the customer's responsibility.

5. Directly on receipt of the goods, inspect both the packaging and the product itself for any signs of damage. Also check that the delivery is complete and includes all accessories, documentation, auxiliary devices, etc.

6. If the packaging or product has been damaged in transport, or should you suspect that it may have a fault, the product must not be put into service. Contact your GANTNER representative who will resolve the problem as quickly as possible.

7. The installation, commissioning, and servicing of our products must be performed by suitably trained personnel. In particular, electrical connections must only be made by correspondingly qualified specialists. Always observe the relevant installation regulations in accordance with the national Electrical Engineers Association (e.g., ÖVE [Austrian], VDE [Germany]).

8. Where not otherwise stated, installation and maintenance work on our products must be carried out when disconnected from the power supply. This applies in particular to appliances that are normally supplied by low-voltage current.

9. It is prohibited to alter the products or remove protective shields and covers.

10. Do not attempt to repair a product after a defect, failure, or damage is detected. In addition, do not put the product back into operation. In such cases, it is essential to contact your GANTNER representative or the GANTNER support hotline.

11. GANTNER Electronic GmbH accepts no responsibility for any injuries or damage caused as a result of improper use.

12. Although care is taken and we are continuously aiming for improvement, we cannot completely exclude the possibility of errors appearing in our documentation. GANTNER Electronic GmbH therefore accepts no responsibility for the completeness or the accuracy of this manual. The right is reserved to make alterations at any time without prior notice.

13. Should you discover any fault with the product or in its accompanying documentation, or you have any suggestions for improvement, you may confidently inform your GANTNER representative or GANTNER Electronic GmbH directly.

14. We especially look forward to hearing from you if you just want to tell us that everything is functioning perfectly.

We wish you a successful experience with our product and look forward to welcoming you again as a customer soon.

The GAT ECO.Lock 7xxx (NW) F/ISO locks were developed and fabricated under the quality management standard ISO 9001 and GANTNER Electronic GmbH is also certified according to standard ISO 14001.

CE

This product is in conformity with the following EC directives, including all applicable amendments:
- 1999/5/EC (Radio equipment and telecommunication terminal equipment)
The complete text of the CE Declaration of Conformity is available on the following internet link:
http://www.gantner.com/en/downloads-gat-ecolock7xxx_hh74dol985

RoHS

GANTNER is committed to meeting or exceeding the requirements of the RoHS directive (2011/65/EU). The RoHS directive requires that manufacturers eliminate or minimize the use of lead, mercury, hexavalent chromium, cadmium, polybrominated biphenyls and polybrominated diphenyl ethers in electrical and electronic equipment sold in the EU after July 1, 2006.

The WEEE symbol on GANTNER products and their packaging indicates that the corresponding material must not be disposed of with normal household waste. Instead such marked waste equipment must be disposed of by handing it over to a designated electronic waste recycling facility. Separating and recycling this waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. Please contact your local authority for further details of your nearest electronic waste recycling facility.

WARNING!

This is a Class A device. This device can cause radio interference in the home. In this case, the operator may be required to take appropriate measures.

FCC INFORMATION (U.S.A.)

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that of which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning Statement:

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Compliance Statement:

FCC ID: XYZ-ABCDEFGH

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA INFORMATION

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) l'appareil ne doit pas produire de brouillage;
2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le onctionnement.

ICES Statement (Canada)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

TABLE OF CONTENTS

1 INTRODUCTION

1.1 About this Manual

This manual provides information on the functionality of the GAT ECO.Lock 7xxx F/ISO and includes an overview of how to configure the lock using GAT Config Manager configuration software. There is a separate manual available for GAT Config Manager that explains in greater detail all functions associated with the software.

In chapter 2 "GENERAL INFORMATION", a functional description of the GAT ECO.Lock 7xxx F/ISO, the RFID technologies supported by the device, key terms used in this manual, and a summary of system components can be found.

Chapter 3 "INSTALLATION" contains the measurement diagrams and information required to install the GAT ECO.Lock 7xxx F/ISO into lockers with metallic and non-metallic doors.

Chapter 4 "START-UP" describes how to put the GAT ECO.Lock 7xxx F/ISO into operation and includes information on the batteries used to power the lock and the USB connection used for PC connection and configuration.

Chapter 5 "OPERATION" describes the different operating modes of the GAT ECO.Lock 7xxx F/ISO. The system data carriers required to maintain the locker system and the LED signaling are also explained in this section.

In chapter 6 "CONFIGURATION", you will find information on how to configure the GAT ECO.Lock 7xxx F/ISO using GAT Config Manager. The main configuration settings for the lock are explained and a table listing every setting is available here.

Chapter “7 TECHNICAL DATA" contains all the relevant technical information for the GAT ECO.Lock 7xxx F/ISO.

1.2 Terminology

Several key terms that are used often in this manual are defined below.

Computer / PC
These terms refer to all desktop and laptop computers running a Microsoft® Windows® operating system.

Data Carrier
A data carrier is a form of identification media that is used by staff and visitors in a facility for identification. Data carriers are available in a variety of different forms such as plastic wristbands and chip cards. Data carriers are also available to suit different RFID technologies (LEGIC, MIFARE®, ISO 15693).

FID (Company ID) and Site Key
The FID and site key are unique numbers assigned to every facility installation. The site key is a combination of the FID and the read and write keys. The site key is used in MIFARE® and ISO 15693 systems and is encoded in every data carrier and device used in the facility thereby ensuring that data carriers from one installation cannot be used in other installations.

GAT Config Manager
GANTNER developed PC software that is used to configure GANTNER devices such as the GAT ECO.Lock 7xxx F/ISO. A separate manual is available and integrated into the software. While the software is open, click on the “Help” drop-down menu and select “How Do I”.

Lock
General term for the GAT ECO.Lock 7xxx F/ISO.

Locker
The term "locker" is used to describe all possible locker applications that can be fitted with a GANTNER electronic lock. Typical applications include a changing room locker, a deposit box, or a private box.

RFID (Radio-Frequency Identification)
Identification over a short distance using radio frequency. An RFID data carrier is used to identify users in GANTNER systems.

User / Guest / Visitor
These general terms refer to the people in a facility who use the locker system, i.e., the GAT ECO.Lock 7xxx F/ISO, data carriers and other GANTNER devices.

1.3 Formatting

Important, function-critical information is displayed in this manual using the following formatting (with sample text). These instructions must be read and followed.

NOTE! This signal word is used to indicate important information, relating to the current topic, which must be read and followed in order to complete a task.

Important, but not safety-critical, information and helpful tips are formatted as follows (with sample text).

The text next to this symbol contains interesting information relating to the current topic. The information will help you better understand the description in this section or provide interesting tips for using the software.

Action steps, to be performed by the reader, and the results of these actions are formatted as follows.

- ► This symbol represents an action or instruction that you must follow.
  - ○ This symbol represents the result after executing the previous action.

1.4 Contact & Inquiries

For all inquiries concerning the GAT ECO.Lock 7xxx F/ISO please get in touch with your local GANTNER representative/distributor or directly with one of the GANTNER Technology branch offices. The addresses, phone and fax numbers are listed on the inner side of the manual cover.

2 GENERAL INFORMATION

2.1 Functional Description

The GAT ECO.Lock 7xxx F/ISO is the ideal solution for the convenient electronic locking of lockers in facilities such as leisure facilities, universities, companies, depots, and other individual company applications. The GAT ECO.Lock 7xxx F/ISO is locked / unlocked using contactless RFID (Radio Frequency Identification) data carriers. Data carriers that use MIFARE® and ISO 15693 RFID technology are supported by the GAT ECO.Lock 7xxx F/ISO.

The GAT ECO.Lock 7xxx F/ISO is installed on the inner side of the locker door and is suitable for most types of locker material, e.g., sheet metal, wood, HPL, and solid plastic. The GAT ECO.Lock 7xxx F/ISO can be used with left- and right-hinged locker doors alike. Due to its mechanical compatibility with the GAT Lock 6xxx series locks and identical locks from other manufacturers, existing locker installations can be effortlessly updated using the GAT ECO.Lock 7xxx F/ISO.

The GAT ECO.Lock 7xxx F/ISO is powered by three 1.5 V AA batteries, which provide an operating life of up to five years* (at room temperature) before requiring replacement. The lock connects to a computer via USB and configured using GAT Config Manager configuration software. The lock can operate in one of five operating modes thereby providing flexibility for different locking requirements within a facility.

Using a locker
To use a locker, the user closes the door of their locker and while holding the door shut, presses the button of the GAT ECO.Lock 7xxx F/ISO in using their data carrier. The GAT ECO.Lock 7xxx F/ISO reads the data carrier information and determines whether the user is authorized to use the locker. When the user is authorized, the GAT ECO.Lock 7xxx F/ISO locks the locker door. The LED ring surrounding the button signals the locking action and the button remains in the pressed-in position.

To unlock a previously locked locker, the user presses their data carrier onto the lock button. The GAT ECO.Lock 7xxx F/ISO reads the data carrier and checks that it has valid authorization before automatically unlocking the locker door.

* *Different operating modes or configurations can reduce the battery lifespan.*

2.2 Highlights

- Status displayed via the button position
- Operation displayed via multi-colored, circular LED
- Free locker selection, assigned lockers, or rental locker function configurable
- Time-controlled use
- Automatic unlocking function
- Configuration via PC/computer, data carrier, or NFC
- Recording of the last 150 bookings
- Secure data transmission between RFID reader and data carrier
- NFC ready
- Mechanical locking and unlocking with motorized locking catch for highest reliability
- Existing lockers easily retrofitted (compatible with GAT Lock 6010 locks)

- One model for left and right-hinged locker doors and various locker materials
- Vandal-proof installation
- Optional wireless network
- Emergency power supply when the batteries become empty

2.3 RFID Technology

Identification of users by GANTNER devices within a facility is achieved via RFID (radio-frequency identification) technology using a frequency of 13.56 MHz. Various types of RFID technologies are available with a letter(s) added to the GANTNER model identifier to indicate the type of technology the device supports:

- "B": LEGIC
- "F": MIFARE®
- "ISO": ISO 15693

The GAT ECO.Lock 7xxx F/ISO can operate with data carriers using MIFARE® and ISO 15693 technologies. It is necessary for all devices and data carriers in a facility to use the same technology. The information in this manual is applicable for the following RFID technologies that can be used with the GAT ECO.Lock 7xxx F/ISO.

MIFARE® (manufacturer NXP/Infineon)

- MIFARE® Classic (1k and 4k)
- DESFire EV1 and EV2®
- MIFARE Ultralight®

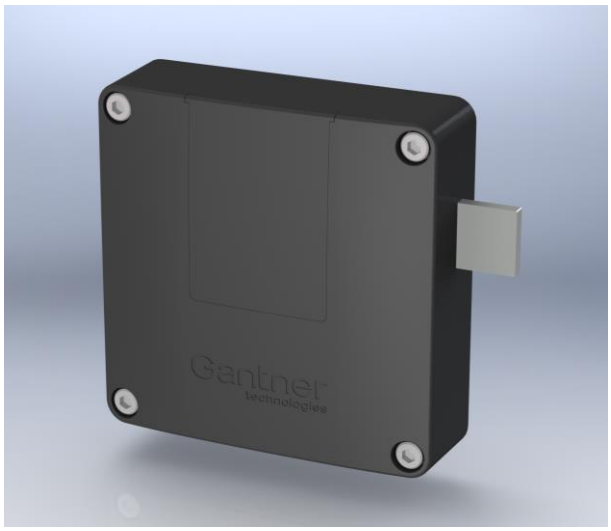
ISO 15693

- The GAT ECO.Lock 7xxx F/ISO functions with all currently known ISO 15693 data carriers.

In addition to the different RFID technologies, data carriers are available in a variety of shapes and sizes. The GAT ECO.Lock 7xxx F/ISO is designed to operate with all different types of data carrier media.

2.4 System Components

The GAT ECO.Lock 7xxx F/ISO system consists of the following components. See the following page for a description of each component.



For indoor lockers

1. GAT ECO.Lock 7100 F/ISO
2. GAT ECO.Lock 7100 NW F/ISO

For outdoor lockers (ext. temp. range, IP 64)

3. GAT ECO.Lock 7150 F/ISO
4. GAT ECO.Lock 7150 NW F/ISO

For metallic lockers

5. GAT ECO.Lock 7200 Adapter

8. GAT Lock Door Handle

7. GAT ECO.Lock 7000
   - Battery Key GEA

6. GAT ECO.Basic Set F/ISO

9. 1.5V Alkaline Battery

10. GAT Lock 6010 GANTNER Front Label

11. GAT Lock 6010 BED Front Label

***Figure 2.1** – Components of the GAT ECO.Lock 7xxx F/ISO system*

1. GAT ECO.Lock 7100 F/ISO (Part No. 728429)
   Battery-powered RFID locker lock for MIFARE® and ISO 15693 data carriers, 22 mm locker door hole, without door label, without batteries.

2. GAT ECO.Lock 7100 NW F/ISO (Part No. 728227)
   Battery-powered RFID locker lock for MIFARE® and ISO 15693 data carriers, 22 mm locker door hole, with wireless interface, without door label, without batteries.

3. GAT ECO.Lock 7150 F/ISO (Part No. 728328)
   Battery-powered RFID locker lock for MIFARE® and ISO 15693 data carriers, 22 mm locker door hole, extended temperature range, IP 64 (locked door), without door label, without batteries.

4. GAT ECO.Lock 7150 NW F/ISO (Part No. 728126)
   Battery-powered RFID locker lock for MIFARE® and ISO 15693 data carriers, 22 mm locker door hole, extended temperature range, IP 64 (locked door), with wireless interface, without door label, without batteries.

5. GAT ECO.Lock 7200 Adapter (Part No. 614322)
   Adapter for GAT ECO.Lock 7100 to cover a 38 mm drilling in metal doors. No screws required.

6. GAT ECO.Basic Set F/ISO (Part No. 812528)
   Accessory set for configuring and maintaining the GAT ECO.Lock 7xxx F/ISO system. Contains system data carriers, 3 m USB cable, configuration software and GANTNER lanyard.

7. GAT ECO.Lock 7000 – Battery Key GEA (Part No. 832122)
   Tool to open the battery compartment.

8. GAT Lock Door Handle (Part No. 610217)
   Optional door handle for the GAT ECO.Lock 7xxx F/ISO with placeholder for an additional label, anthracite gray.

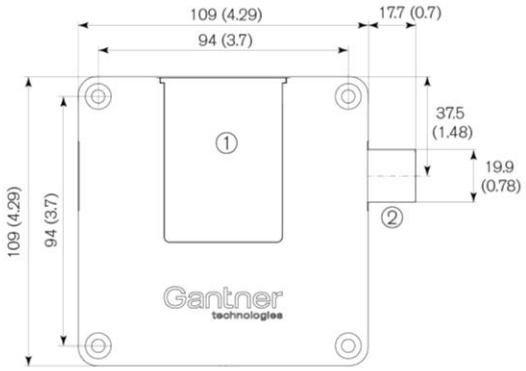
9. Batterie 1.5V Alkali (Part No. 308819)
   GANTNER-approved battery for the GAT ECO.Lock 7xxx F/ISO. Three batteries required for operation. Batteries supplied per battery.

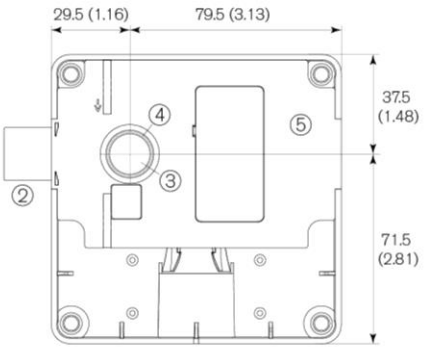
10. Front label for the GAT Lock 6010
    Self-adhesive locker door labels in GANTNER design available with or without printed locker numbers:
    - Frontfolie GAT Lock 6010 GANTNER o.Nr (Part No. 666834)
      Front label without numbering
    - Frontfolie GAT Lock 6010 GANTNER m.Nr (Part No. 666329)
      Front label with numbering

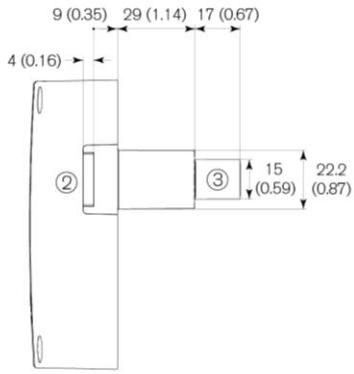
11. Front Label GAT Lock 6010 BED (Part No. 666430)
    Self-adhesive locker door label with graphical operating instructions.

2.5 GAT ECO.Lock 7xxx F/ISO Dimensions and Components

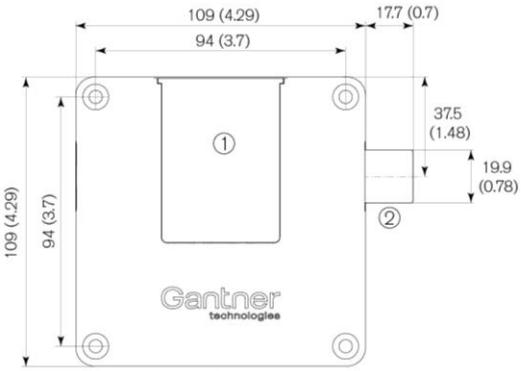
Non-metallic door

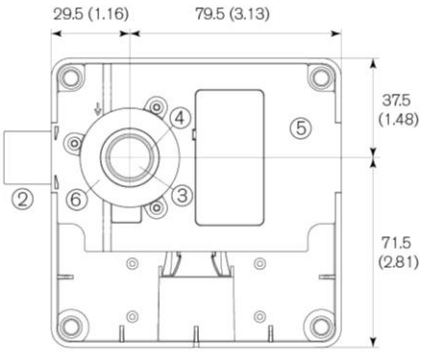


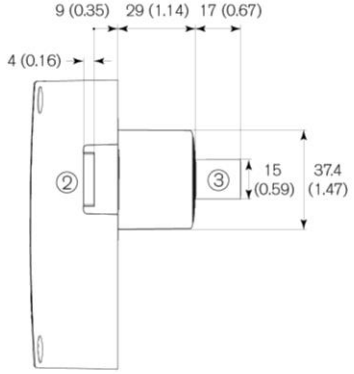




Metallic door







1. Battery cover
2. Locking bolt
3. Button
4. LED ring
5. Lock electronics
6. Booster

***Figure 2.2** – GAT ECO.Lock 7xxx F/ISO dimensions and components (dimensions in mm – inches shown in brackets)*

3 INSTALLATION

NOTE! These installation instructions describe how to install the GAT ECO.Lock 7xxx F/ISO electronic lock. Please read this section carefully prior to working on the lockers or installing the locks.

3.1 Test Installation

As the GAT ECO.Lock 7xxx F/ISO is suitable for a wide range of installation applications, always perform a test installation including functional testing of the GAT ECO.Lock 7xxx F/ISO in a sample locker from the facility before starting with the mass production of lockers.

Ensure that the door shackle slides easily in and out of the opening in the locker body. Also test that the GAT ECO.Lock 7xxx F/ISO locks and unlocks as required, ideally using a data carrier of the same type to be used with the locker system to ensure that the data carrier functions as required.

3.2 Replacement after a Burglary Attempt

If a burglary (forced opening) is attempted or occurs at a locker, the entire GAT ECO.Lock 7xxx F/ISO must be replaced with a new one.

3.3 Metallic and Non-Metallic Doors

The GAT ECO.Lock 7xxx F/ISO is suitable for locker doors made of metal and non-metallic materials, and is also suitable for indoor and outdoor installations. GANTNER provides six different models to suit these varying installation applications. See section “2.4 System Components” for more information.

The installation procedure is different for lockers with metallic doors and lockers with non-metallic doors. See section “3.7 Installation in Lockers with Non-Metallic Doors” or “3.8 Installation in Lockers with Metallic Doors” for the relevant installation instructions.

3.4 Door Width and Thickness

The GAT ECO.Lock 7xxx F/ISO is suitable for locker doors with a maximum door leaf thickness of 28 mm (1.1´´).

When installing the GAT ECO.Lock 7xxx F/ISO into lockers with narrow doors, ensure that the lock housing does not contact the locker body when opening and closing the door (see below).

***Figure 3.1** – Width and thickness of the locker door*

3.5 Definition of the Door Hinge (Right of Left-Hinged Door)

For installation, it is important to determine whether the locked door is hinged on the left or right side, which is defined as follows:

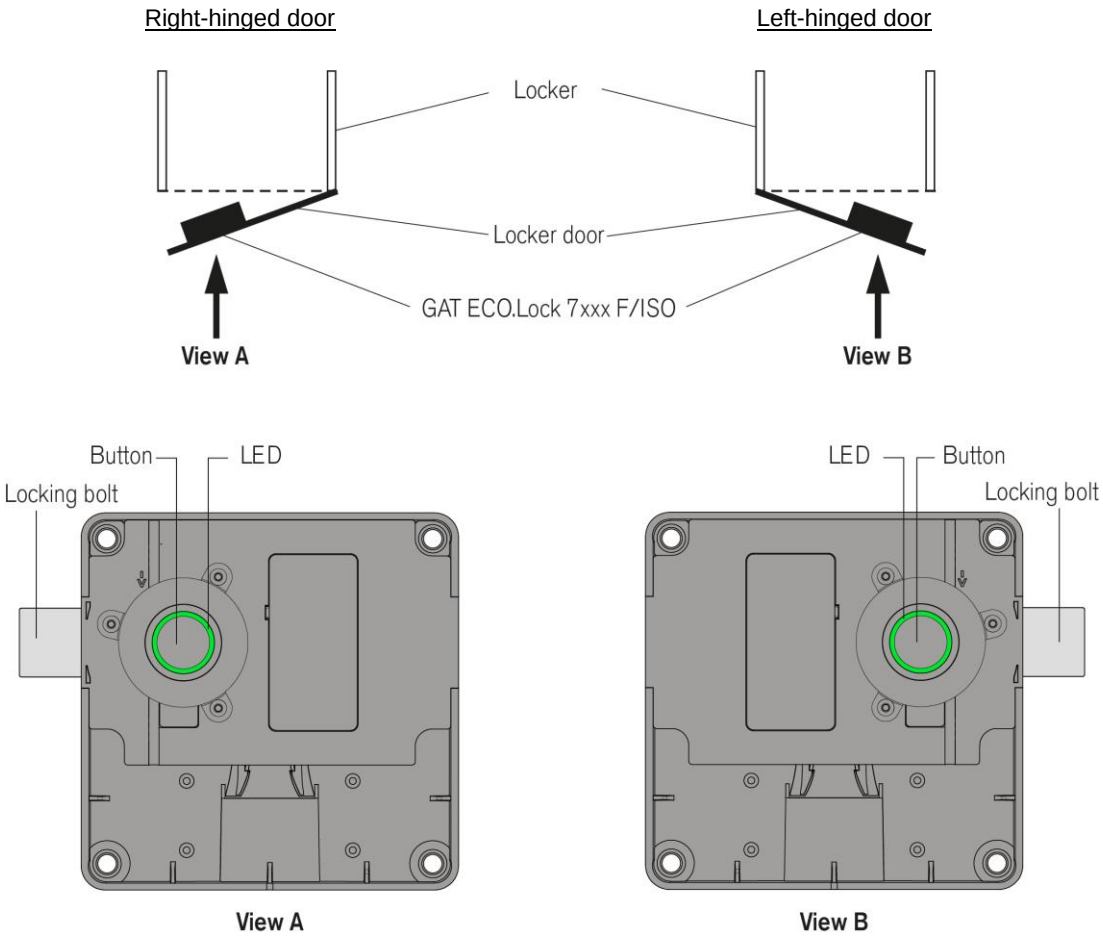


***Figure 3.2** – Locker door hinge definition (left/right)*

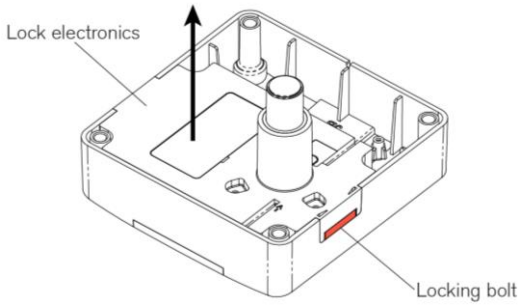
The position of the locking bolt and button of the GAT ECO.Lock 7xxx F/ISO is different for right and left-hinged doors. You can make this change yourself (see next section).

The installation for right-hinged doors is described in the following pages. The installation process for left-hinged doors is the same as for right-hinged doors, only with the GAT ECO.Lock 7xxx F/ISO and locker door rotated180°.

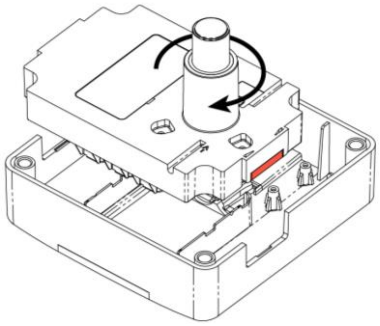
3.6 Conversion for Right or Left-Hinged Door

Converting the GAT ECO.Lock 7xxx F/ISO to suit a right or left-hinged locker door can be carried out easily by completing the following steps.

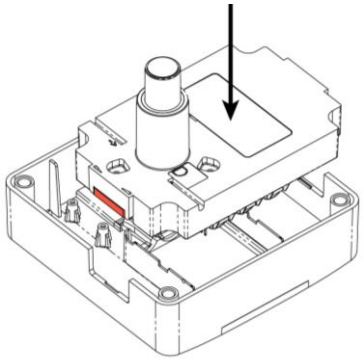
► Lift the lock electronics out of the lock housing.



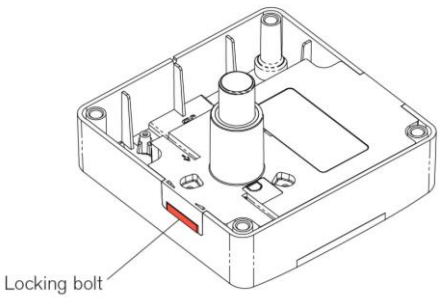
► Rotate the lock electronics 180°.



► Reinsert the lock electronics into the lock housing.



- The GAT ECO.Lock 7xxx F/ISO is now converted to the opposing locker hinge type.



3.7 Installation in Lockers with Non-Metallic Doors

For lockers with non-metallic doors, the GAT ECO.Lock 7xxx F/ISO is mounted on the left or right inner-side of the locker door depending on whether the door is right or left-hinged. A drill hole is required in the locker door for the button of the GAT ECO.Lock 7xxx F/ISO.

NOTE! Before installing all locks in a new locker system, a test installation of one lock into a completed locker and a function check must be performed. See section “3.1. Test Installation”.

3.7.1 Measurements for the Button Drill Hole

A hole must be drilled into the locker door for the button. For non-metallic locker doors, the diameter of the button hole is 23 mm (0.9´´).

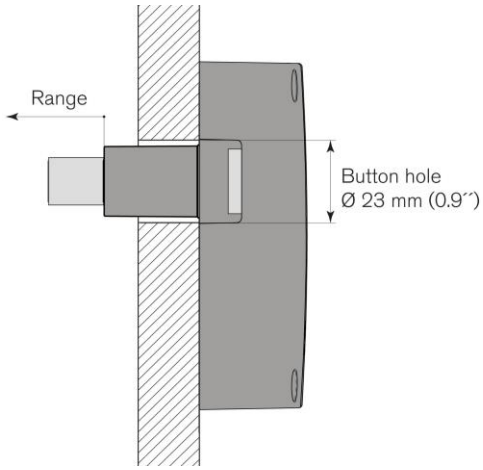


***Figure 3.3** – Diameter of the button drill hole for non-metallic doors*

The following diagram shows the position of the button drill hole in relation to the housing mounting holes.

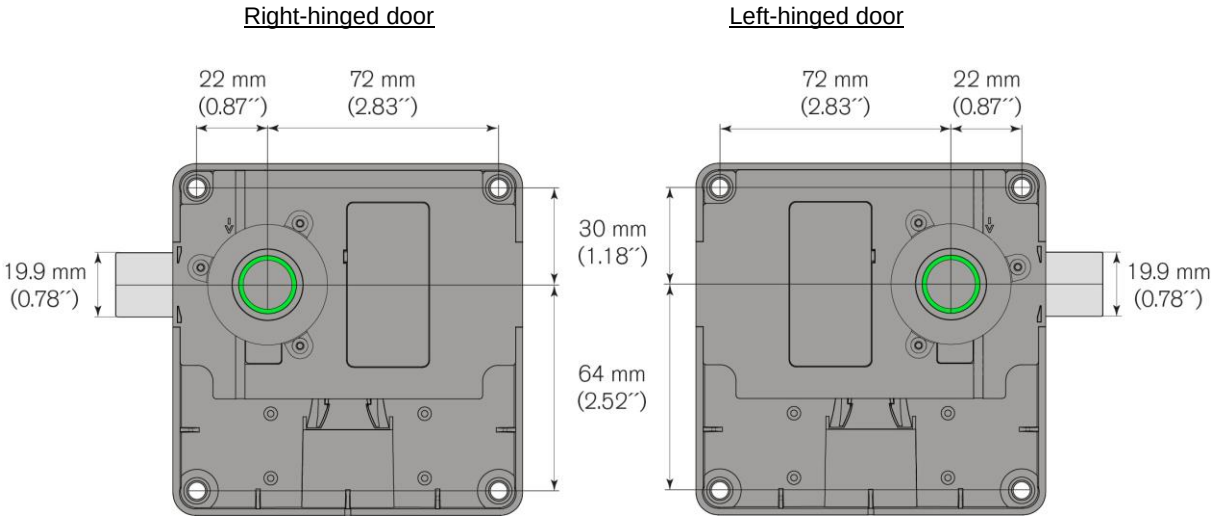


***Figure 3.4** - Position of the button drill hole for non-metallic doors*

3.7.2 Measurements for the Button Drill Hole

NOTE! (A)

During installation, it is important to ensure that the GAT ECO.Lock 7xxx F/ISO does not brush against the locker body when the locker door is opened. The distance of 4 mm (0.16 inch) indicated between the lock housing and the locker body is valid for locker doors that are wider than 240 mm (9.45´´) and with a maximum door leaf thickness of 28 mm (1.1´´). For locker doors that do not adhere to these measurements, or for doors with an unfixed pivot point (depending on the type of hinge used), the distance between the lock and the body of the locker must be recalculated.

NOTE! (B)

To increase break-in protection, a security bolt can be installed on the locker body that inserts into the locker door when the door is closed.

Use the following measurements to position the button drill hole depending on whether the locker door is left or right-hinged.

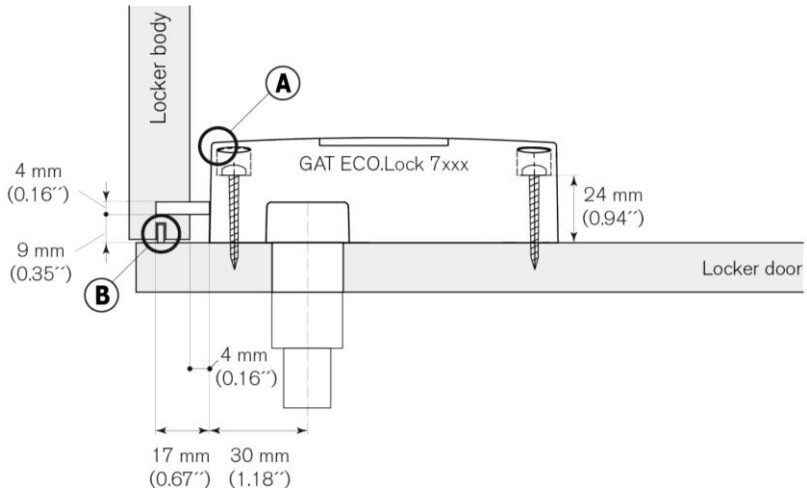


***Figure 3.5** – Installation measurements for right-hinged doors*

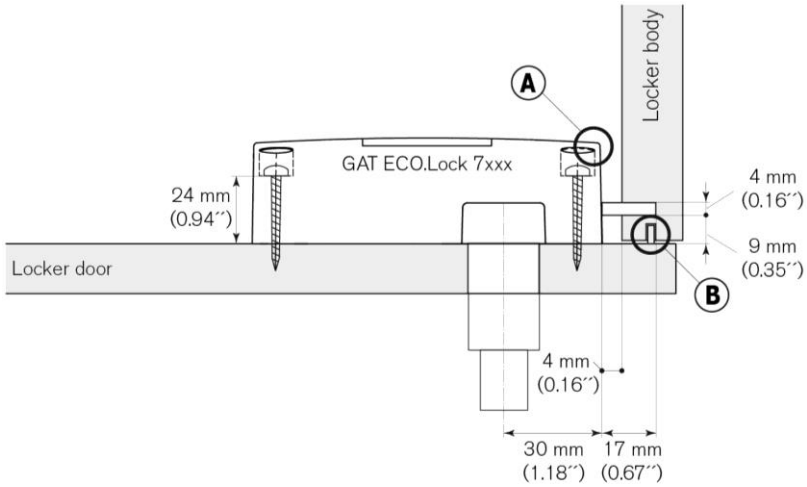


***Figure 3.6** – Installation measurements for left-hinged doors*

3.7.3 Installation Instructions for Non-Metallic Doors

Complete the following steps to install the GAT ECO.Lock 7xxx F/ISO into lockers with non-metallic doors.

- ► Drill 1 hole into the locker door for the lock button. Position the button hole according to the measurements in Figure 3.4 and Figure 3.5 (for right-hinged doors) or Figure 3.6 (for left-hinged doors).
- ► Mark out 4 mounting holes on the inside of the locker door for the lock housing. Position the holes according to the measurements in Figure 3.4 and Figure 3.5 (for right-hinged doors) or Figure 3.6 (for left-hinged doors).
- ► For harder doors, where the screws cannot be screwed in easily, the holes must be pre-drilled. If necessary, pre-drill the mounting holes for the lock housing.

  NOTE! Do not drill the holes for the screws completely through the door.
- ► If you are also using the optional GAT Lock Door Handle, this must be installed before the GAT ECO.Lock 7xxx F/ISO. See "3.10 Door Handle Installation (Optional)" for more information.
- ► Mount the GAT ECO.Lock 7xxx F/ISO onto the inside locker door using 4 screws. Hardware recommendation:
  - For wooden or HPL doors: ABC Spax 5 x 35 mm (0.2´´ x 1.38´´) wood screws.
  - For wooden or HPL doors under heavy load or in public areas: screw-in or glue-in M5 threaded sleeves with 5 x 35 mm (0.2´´ x 1.38´´) cylinder head screws.
  - The maximum allowed tightening torque of the screws is 2 Nm (1.47 lb-ft).
- ► Attach the door label(s) to the door front as shown in section “3.9 Attaching the Door Labels”.

Testing

- ► Check that there is no pressure applied to the button shaft of the GAT ECO.Lock 7xxx F/ISO in its assembled state, e.g., by a part of the locker door, as this could lead to malfunction.
- ► Ensure that the lock button is centrally aligned in the drill hole.
- ► Ensure that the GAT ECO.Lock 7xxx F/ISO housing does not contact the inside of the locker body when opening/closing the locker door.
- ► Ensure that the battery cover can open and is not hindered by other components.

See section “4 START-UP” for instructions on inserting the batteries and putting the GAT ECO.Lock 7xxx F/ISO into operation.

3.8 Installation in Lockers with Metallic Doors

For lockers with non-metallic doors, the GAT ECO.Lock 7xxx F/ISO is mounted on the left or right inner-side of the locker door depending whether the door is right or left-hinged. A drill hole is required in the locker door for the button of the GAT ECO.Lock 7xxx F/ISO.

NOTE! Before installing all locks in a new locker system, a test installation of one lock into a completed locker and a function check must be performed. See section “3.1. Test Installation”.

3.8.1 Measurements for the Button Drill Hole

A hole must be drilled into the locker door for the button. For metallic locker doors, the diameter of the button hole is 38 mm (1.5´´).

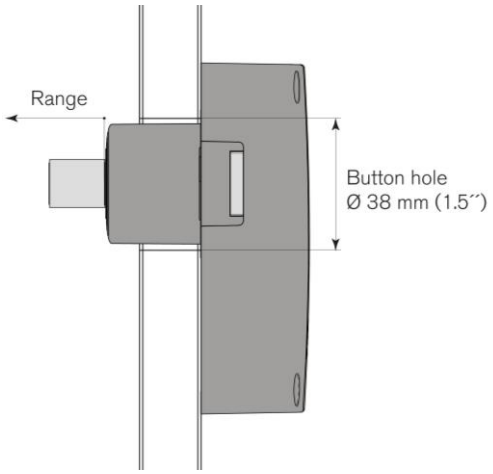


Figure 3.7 *– Diameter of the button drill hole for metallic doors*

The following diagrams show the position of the button drill hole in relation to the housing mounting holes.

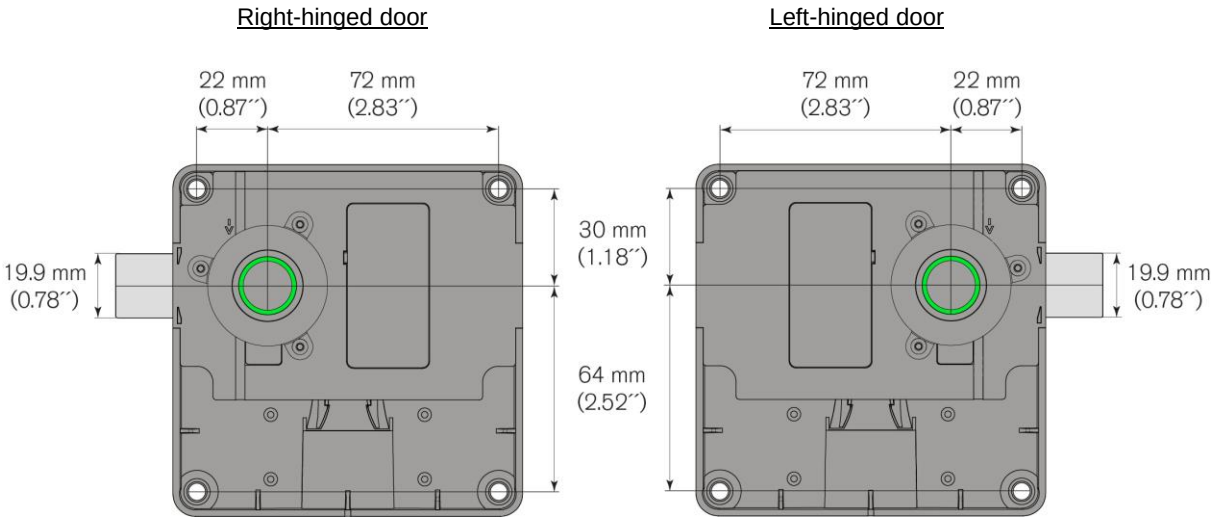


Figure 3.8 *- Position of the button drill hole for metallic doors*

3.8.2 Measurements for Installation

When the GAT ECO.Lock 7xxx F/ISO is mounted on a single-wall metallic door, it is recommended to install the lock a corresponding distance away from the locker door, e.g. using a mounting bracket, as shown below in Figure 3.9 . This installation method allows the lock to be mounted on the inside of the locker wall without the need to drill through the outside of the locker door.

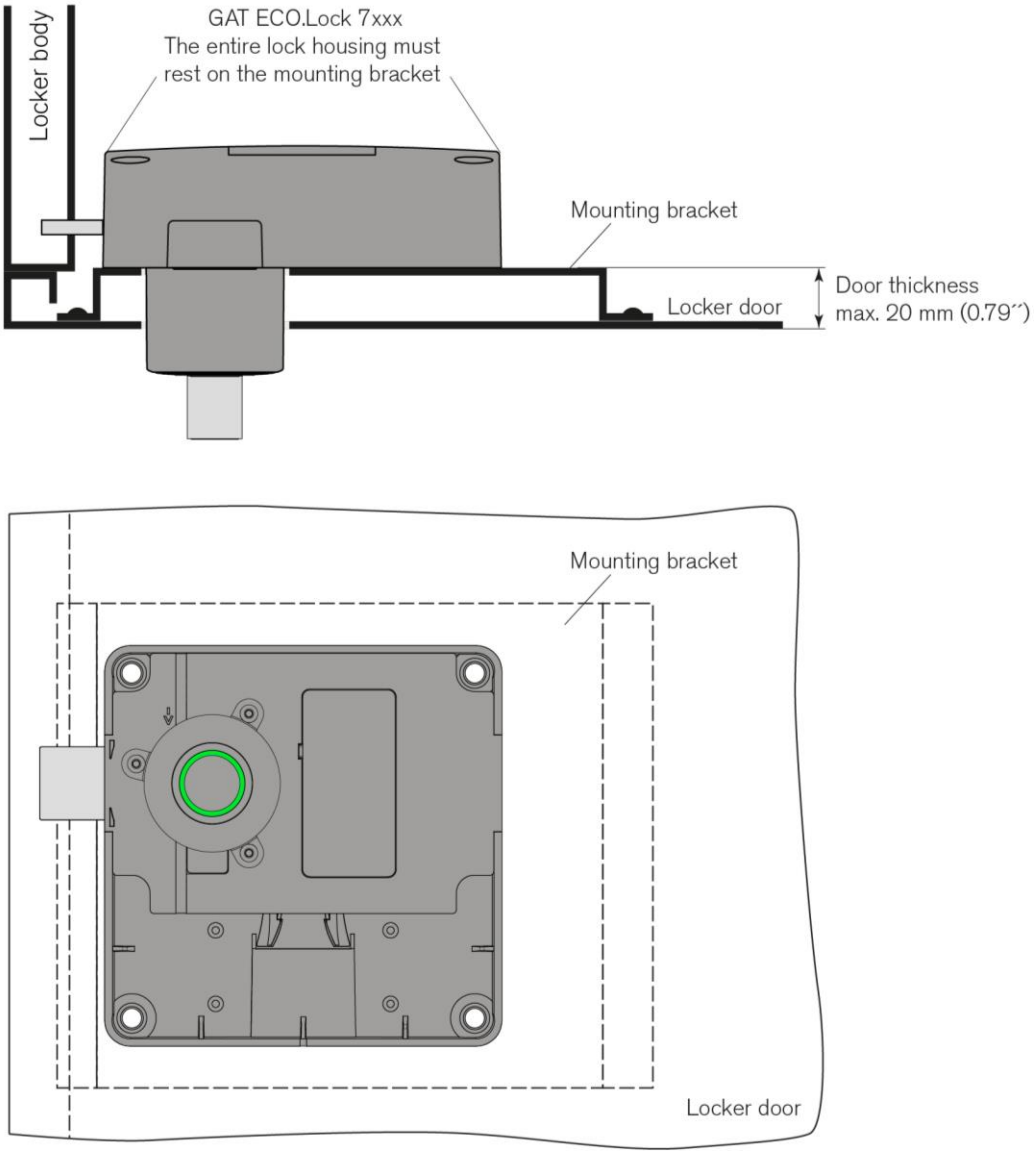


***Figure 3.9** – Installation of the GAT ECO.Lock 7xxx F/ISO on a single-wall metallic door*

When the GAT ECO.Lock 7xxx F/ISO is mounted on a double-wall metallic door, it can be mounted directly onto the door.

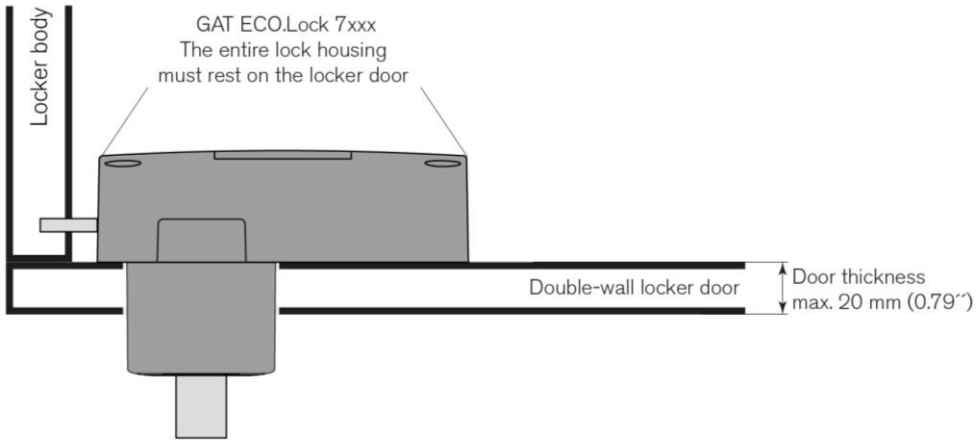


***Figure 3.10** – Installation of the GAT ECO.Lock 7xxx F/ISO on a double-wall metallic door*

NOTE! The door leaf thickness (see previous diagram) must not exceed 20 mm (0.79´´). Thicker doors can reduce the reading range especially with larger data carriers, e.g., cards, so that they can no longer be read reliably.

3.8.3 Installation Instructions for Metallic Doors

Complete the following steps to install the GAT ECO.Lock 7xxx F/ISO into lockers with metallic doors.

- ► Mark out and drill 1 hole into the locker door for the lock button. Position the button hole according to the measurements in Figure 3.8 and Figure 3.5 (for right-hinged doors) or Figure 3.6 (for left-hinged doors).
- ► Mark out 4 mounting holes on the inside of the locker door for the lock housing. Position the holes according to the measurements in Figure 3.8 and Figure 3.5 (for right-hinged doors) or Figure 3.6 (for left-hinged doors).
- ► If you are also using the optional GAT Lock Door Handle, this must be installed before the GAT ECO.Lock 7xxx F/ISO. See "3.10 Door Handle Installation (Optional)" for more information.
- ► Mount the GAT ECO.Lock 7xxx F/ISO onto the inside locker door using 4 screws. Use the correct screws according to the type of locker material, max. Ø 5 mm (0.2´´). The maximum allowed tightening torque of the screws is 2 Nm (1.47 lb-ft).
- ► Attach the door label(s) to the door front as shown in section “3.9 Attaching the Door Labels”.

Testing

- ► Check that there is no pressure applied to the button shaft of the GAT ECO.Lock 7xxx F/ISO in its assembled state, e.g., by a part of the locker door, as this could lead to malfunction.
- ► Ensure that the lock button is centrally aligned in the drill hole.
- ► Ensure that the GAT ECO.Lock 7xxx F/ISO housing does not contact the inside of the locker body when opening/closing the locker door.
- ► Ensure that the battery cover can open and is not hindered by other components.

See section “4 START-UP” for instructions on inserting the batteries and putting the GAT ECO.Lock 7xxx F/ISO into operation.

3.9 Attaching the Door Labels

Door labels can be attached to the front of the locker door to display the locker number or provide instructions for use.

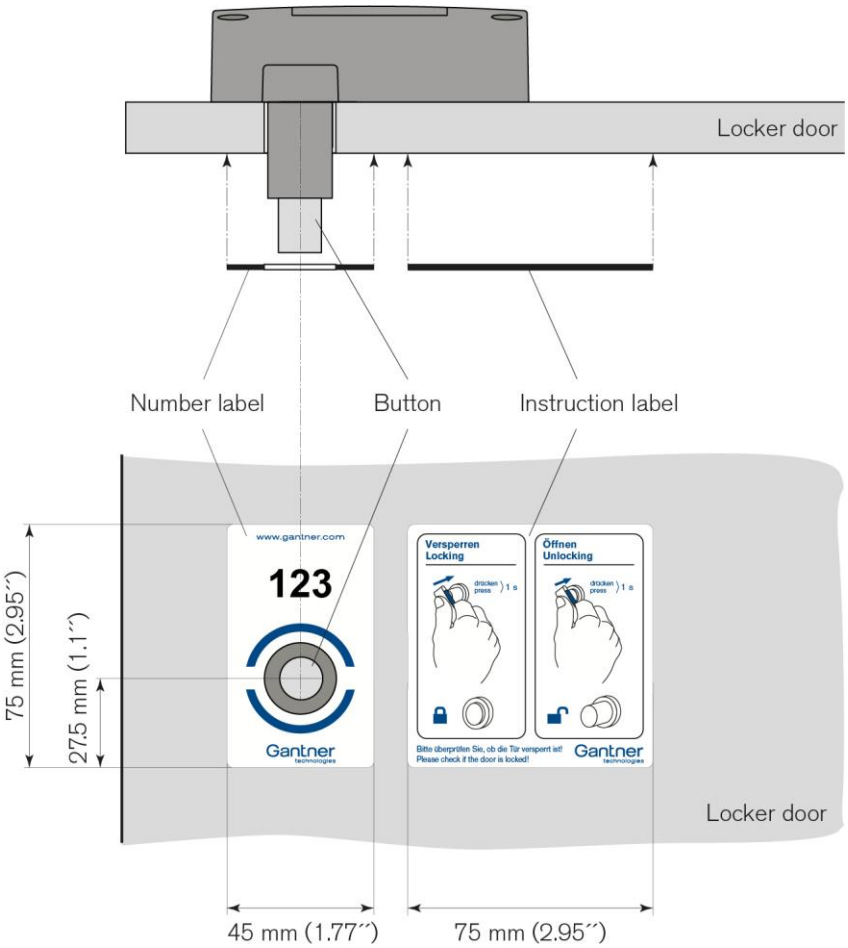


***Figure 3.11** – Label attachment for a right-hinged door*

GANTNER provides the following labels:

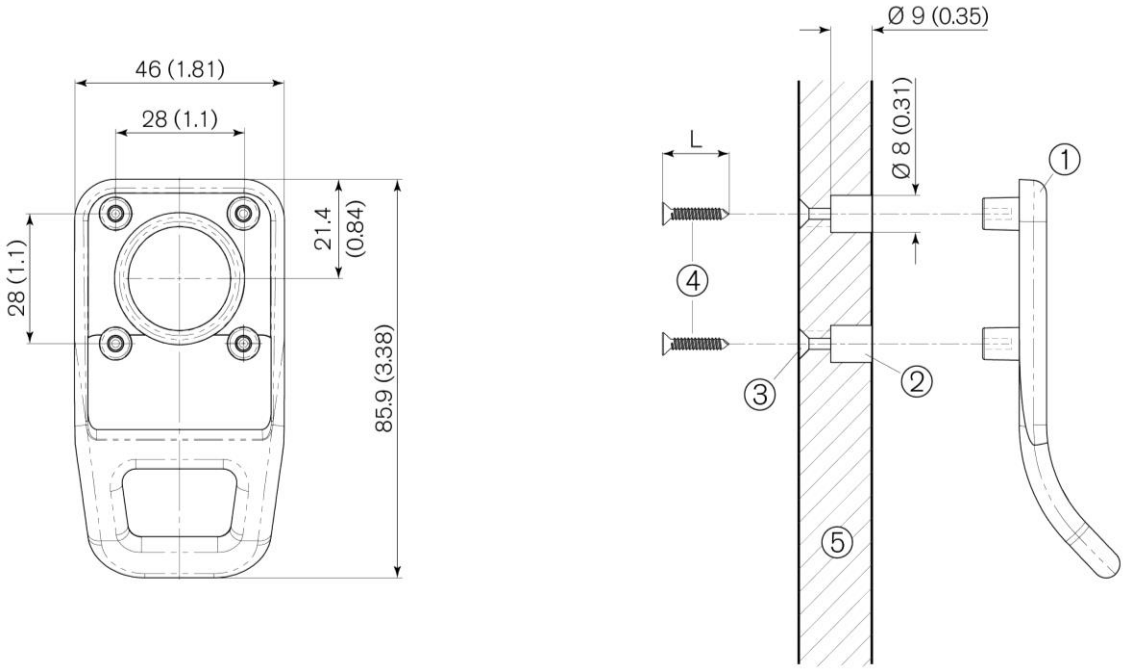
- Frontfolie GAT Lock 6010 GANTNER o.Nr (Part No. 666834)
  Self-adhesive locker door label in GANTNER design without numbering.
- Frontfolie GAT Lock 6010 GANTNER m.Nr (Part No. 666329)
  Front label with numbering.
- Frontfolie GAT Lock 6010 BED (Part No. 666430)
  Self-adhesive locker door label with graphical operating instructions.

GANTNER can also design and print customer-specific labels. Contact your GANTNER representative for more information.

3.10Door Handle Installation (Optional)

The optional “GAT Lock Door Handle” (Part No. 610217, see also "2.4. System Components") can be mounted onto the locker door to assist door opening. There is space on the door handle for a number label.

The door handle is installed over the button of the GAT ECO.Lock 7xxx F/ISO using four screws



1. GAT Lock Door Handle
2. Door outer side blind hole (4x)
3. Door inner side mounting screw hole (4x)
4. Mounting screws (Ø 3.5 mm sheet metal screws)
5. Locker door

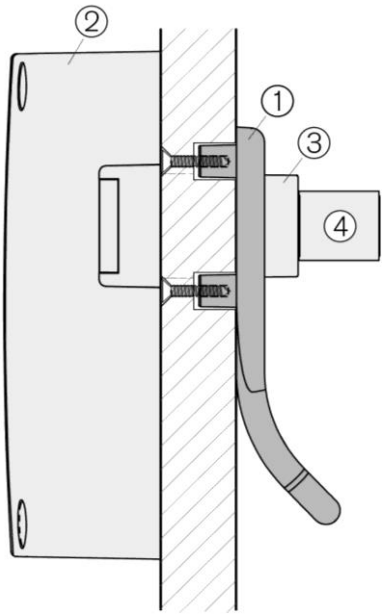
***Figure 3.12** – Installation of the GAT Lock Door Handle (dimensions in mm, inches in brackets)*

Complete the following steps to install the GAT Lock Door Handle:

- ► On the door outer side, drill 4 blind holes (2), diameter 8 mm and depth 9 mm, around the lock button hole according to the measurements in Figure 3.12.
- ► On the door inner side, drill 4 countersunk holes for the mounting screws. These holes must be located centrally in the blind holes.
- ► Insert the GAT Lock Door Handle into the drilled holes on the door outer side.
- ► Fasten the GAT Lock Door Handle with the mounting screws (Ø 3.5 mm sheet metal screws).

  NOTE! The screw length (L) must be 2 mm shorter than the door thickness.
- ► If desired, a label with the locker number can be attached to the GAT Lock Door Handle (see example). The label can be printed with a customer-specific number, font, and color. The dimensions of the label are 37.7 x 15.7 mm, corner radius 1 mm (1.48´´ x 0.62´´, corner radius 0.04´´).
  Please contact GANTNER Electronic GmbH or your sales partner to organize label printing.

► The GAT ECO.Lock 7xxx F/ISO can now be mounted onto the door inner side. The installation instructions for metallic or non-metallic doors are provided in the previous chapters.



1. GAT Lock Door Handle
2. GAT ECO.Lock 7xxx F/ISO
3. GAT ECO.Lock 7xxx F/ISO button shaft
4. GAT ECO.Lock 7xxx F/ISO button

Figure 3.13 *– Installed GAT Lock Door Handle and GAT ECO.Lock 7xxx F/ISO*

4 START-UP

4.1 Power Supply

4.1.1 Battery Information

The GAT ECO.Lock 7xxx F/ISO is powered by three 1.5 V AA batteries (see “7. TECHNICAL DATA”). The battery lifespan is designed around a defined number of locking cycles. The actual lifespan depends upon the number of locking cycles (usage frequency of the lock) and the environmental conditions. All three batteries must be replaced when the predefined number of locking cycles is reached or when the battery voltage becomes weak. If the battery voltage becomes too weak, the locker can no longer be locked. The GAT ECO.Lock 7xxxx F/ISO indicates a weak battery state with five red flashes of the LED ring and five acoustic signals during a locking attempt.

NOTE! For optimal battery lifespan, use the approved battery available from GANTER (Batterie 1.5V Alkali AA, Part No. 308819).

4.1.2 Inserting the Batteries

Before putting the GAT ECO.Lock 7xxx F/ISO into operation, the batteries must be inserted into the battery compartment. In order to access the battery compartment, the battery cover on the back of the housing must be removed, which is done using the supplied battery key.

NOTE! To avoid unnecessary battery usage, insert the batteries directly before the GAT ECO.Lock 7xxx F/ISO is installed.

► Insert the battery cover key into the slot on the underside of the GAT ECO.Lock 7xxx F/ISO.

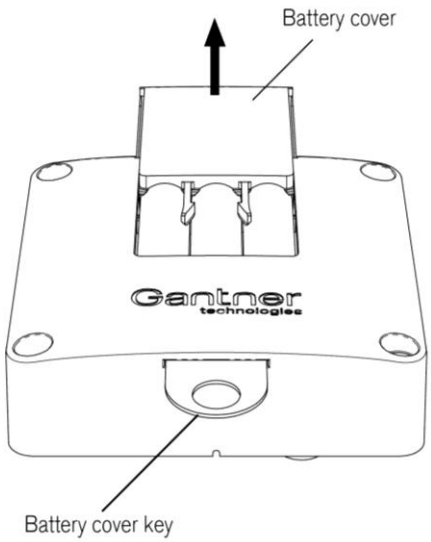


Figure 4.1 *- GAT ECO.Lock 7xxx F/ISO battery compartment*

- ► Push the battery cover key into the slot until the battery cover is released.
- ► Remove the battery cover.
- ► Ensure that the battery polarity is correct. The polarity differs depending on whether the lock is mounted on a left or right-hinged door (see following diagram).

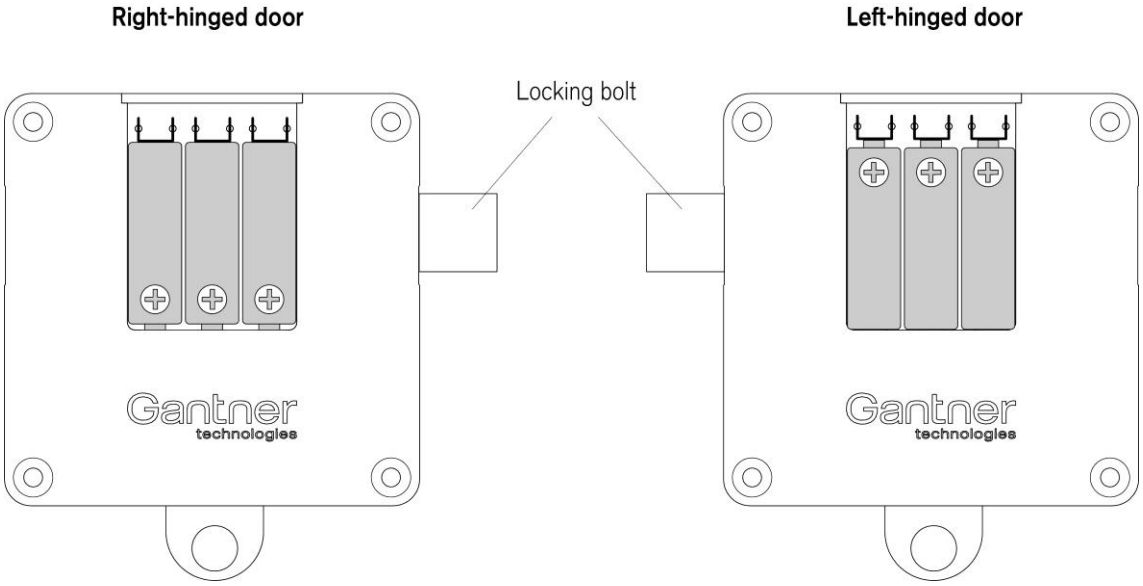


***Figure 4.2** – Correct battery polarity*

- ► Press the batteries down into the compartment until they lock into place.
- ► Slide the battery cover back onto the battery compartment until it clicks into place.
    - When installing the batteries in the GAT ECO.Lock 7xxx F / ISO for the first time, the process is now complete.
    - When the lock has already been used and the batteries are being replaced, the lock must be activated using the battery cover key (see “4.1.3 Replacing the Batteries). Press the lock button in using the battery cover key in order to activate the lock.

4.1.3 Replacing the Batteries

The batteries of the GAT ECO.Lock 7xxx F/ISO must be replaced when the LED ring flashes red 5 times and 5 acoustic signals are emitted during a locking attempt. In this state, the GAT ECO.Lock 7xxx F/ISO can no longer be locked until the batteries are replaced.

Always dispose of used batteries in an environmentally friendly way, e.g., at an electronic waste recycling facility.

Following battery replacement, the time and date must be reset using a computer and GAT Config Manager (see section "6. CONFIGURATION"). The GAT ECO.Lock 7xxx F/ISO may not be operated while replacing the batteries.

Following battery replacement, the GAT ECO.Lock 7xxx F/ISO must be returned to its normal operating mode using the “Battery” data carrier (= battery cover key) (see section “5.4.3. Battery Data Carrier”).

- ► Complete the instructions described in section “4.1.2. Inserting the Batteries”.
- ► Press the locker door shut with one hand and hold it shut.
- ► Press the lock button of the GAT ECO.Lock 7xxx F/ISO in using the “Battery” data carrier.
    - The LED ring flashes green briefly and a signal tone is emitted. The lock returns to its normal operating mode.

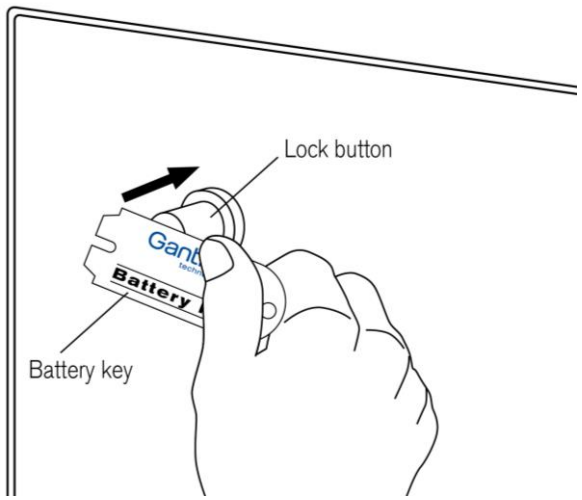


***Figure 4.3** – Activating the GAT ECO.Lock 7xxx F/ISO with the battery cover key*

4.2 USB Connection

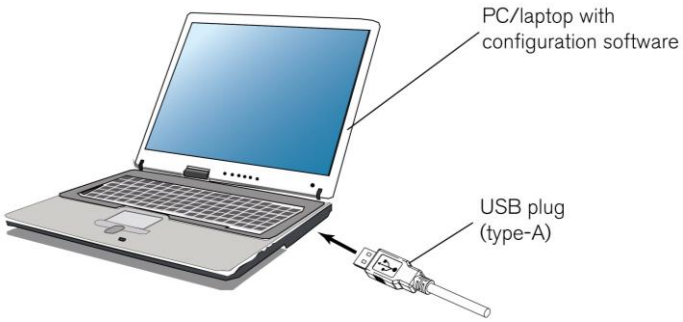
A Micro-B USB port is located on the opposite side of the GAT ECO.Lock 7xxx F/ISO to the locking bolt. The USB port location on the side of the lock allows configuration to occur even while the lock is installed in a locker.

NOTE! The maximum USB cable length between the GAT ECO.Lock 7xxx F/ISO and a computer is 5m.

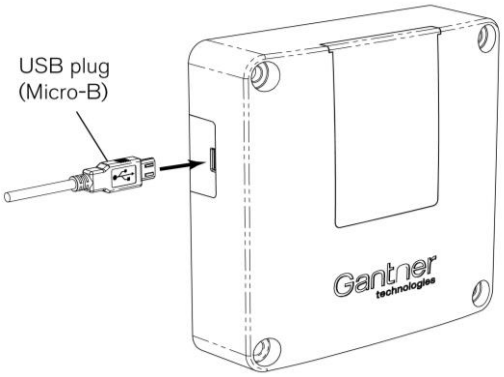
The service data carrier (see “5.4.5 Service Data Carrier”) is used to put the GAT ECO.Lock 7xxx F/ISO into configuration mode after the USB cable is connected. A 3m USB cable, the service data carrier, and GAT Config Manager configuration software are included in the GAT ECO.Basic Set F/ISO (Part No. 812528). See section “5.3. GAT ECO.Basic Set F/ISO”.

To configure the GAT ECO.Lock 7xxx F/ISO via PC/laptop:

- ► Start GAT Config Manager on the PC/laptop.
- ► Plug the USB cable (type-A end) into a spare USB port on the PC/laptop.



► Plug the Micro-B connector of the USB cable into the USB port on the GAT ECO.Lock 7xxx F/ISO.

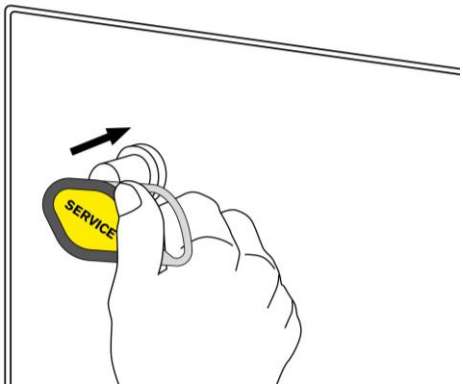


- After connecting the GAT ECO.Lock 7xxx F/ISO to the computer for the first time, the lock drivers are installed and the lock is automatically recognized.

If a driver is requested, they are available on the "Leisure Software" USB stick, which is included in the GAT ECO.Basic Set F/ISO.

► The LED ring flashes alternating red/green after connecting to the computer.

► To activate configuration mode, press the lock button in using the "Service" data carrier.



- The GAT ECO.Lock 7xxx F/ISO enters into configuration mode. The LED ring slowly pulses green to indicate this state.

► Click on "Configure" in GAT Config Manager to open the configuration settings.

Further information regarding configuring the GAT ECO.Lock 7xxx F/ISO is available in "6. CONFIGURATION".

5 OPERATION

5.1 General

The GAT ECO.Lock 7xxx F/ISO can operate in "free locker" mode or "personal locker" mode. In free locker mode, the user is allowed to choose any unoccupied locker they want to use. In personal locker mode, the user is assigned a specific locker and only they have access to use the locker.

When free lockers and personal lockers are used together in one system, it is recommended that the locker numbers are unique for both functions. This means that the same locker number should not be used for both a personal locker and a free locker.

To save battery power, the GAT ECO.Lock 7xxx F/ISO is deactivated in its normal state. For this reason, the electronics must be activated before identification or operation can occur using a data carrier, which is done by pressing the button completely in.

5.2 Operating Modes

The GAT ECO.Lock 7xxx F/ISO can function in one of the following operating modes:

- Free locker (with or without duration of use function)
- Free locker universal
- Free locker unique number
- Personal locker programming card
- Personal locker expiry date

Requirements for MIFARE and ISO 15693 data carriers

All MIFARE and ISO 15693 data carriers that are used in the system must meet the operating mode requirements as specified in the following table.

Operating Mode	Requirements for Data Carriers
Free locker	Data carriers must be coded accordingly
Free locker universal	The locker segment must be unused (encoded with all zeros) and the access keys must be correct
Free locker unique number	All MIFARE and ISO 15693 data carriers are possible
Personal locker programming card	All MIFARE and ISO 15693 data carriers are possible
Personal locker expiry date	Data carrier must be coded accordingly

Figure 5.1 – *Requirements for data carriers*

5.2.1 Free Locker Mode (with or without Duration of Use Function)

In "free locker" operating mode, the user has the option of selecting a free locker and locking it using their data carrier. After the locker has been locked, the user cannot occupy any additional lockers within the same locker group. Only once the original locker has been unlocked can the user lock another locker in the locker group.

Locker groups are used to organize the locks within a system into certain functional blocks, e.g., changing room lockers, safe-deposit boxes, etc. Different sector numbers are used on the data carriers to distinguish between the locker groups, which allows two or more lockers from different groups to be used with the same data carrier, depending on the data carrier storage space.

For data carriers that are configured with an expiry date, the date is checked by the GAT ECO.Lock 7xxx F/ISO. If the date has passed, the locker cannot be used.

NOTE! The GAT ECO.Lock 7xxx F/ISO does not automatically adjust to summer/winter time changes. This must be taken into account when defining the validity or expiry date.

Duration of Use function
Free locker mode also offers the possibility to define a duration of use for each locker. If a locker with this function is locked with a data carrier, the current time is written onto the data carrier and the time subsequently checked when the user attempts to open the locker again.

The locker can be locked/unlocked as often as required during the duration of use period. If the duration of use period is exceeded, the data carrier can no longer unlock the locker. In this case, the user must recode their data carrier at a central station, e.g., a GAT Info 6800 F with additional coding license (Part No. 193732).

The data carrier must be coded accordingly for the duration of use function (the corresponding config bits on the data carrier must be set). In addition, the GAT ECO.Lock 7xxx F/ISO must be configured in GAT Config Manager for the function (see section “6.5.4. Duration of Use”). There are two configuration modes for the function:

Absolute duration of use (“Duration” function)
In this mode, a usage period (depending on the “Time limit” parameter in minutes or hours, see "6.5.8 Configuration Settings Table") is configured. After locking a locker, the user must unlock the locker again within the defined period. The period begins from when the locker was first locked.
Example:
The time is set to 360 minutes. If the locker is locked at 17:00, it can be unlocked until 23:00. If the locker is locked at 21:00, it can be unlocked until 03:00 of the next day. The duration of use time is reset after the locker remains open for 60 minutes.

Use up to a specific time after midnight (“Point of time” function)
In this mode, a time is configured up to which the locker can be used every day. After locking a locker, the locker must be unlocked before the defined time. The usage period starts from the configured time after midnight.
Example:
The time is set to 120 minutes. As the calculation begins at midnight, the locker can be used until 02:00 the following day regardless of when the locker was locked. If the locker is locked, e.g., at 01:00, it can be unlocked until 02:00 of the following day. If the locker remains locked past this time, the data carrier can no longer unlock the locker. In this case, the user must recode the data carrier at a central station.

Locking and unlocking lockers

► Close the locker door and hold it shut.
► Press the button of the GAT ECO.Lock 7xxx F/ISO in using a data carrier for approximately 1 second.
    - The information on the data carrier is read.
► a) Valid data carriers: The LED flashes green briefly and the locking action is carried out. If the duration of use function is enabled, the time on the data carrier is checked and the current time written onto the data carrier.
   b) Invalid data carriers: The LED flashes red briefly and the GAT ECO.Lock 7xxx F/ISO does not complete the locking action. Possible reasons for this include:
    - Another locker has already been locked using the data carrier. In this case, the first locker must be unlocked before the data carrier can be used with the new locker.
    - The duration of use period has been exceeded and the locker cannot be opened anymore. In this case, the data carrier must be reset at a central station.
► Release the locker door.

5.2.2 Free Locker Universal Mode

“Free locker universal” operating mode differs from the standard free locker mode in the following ways:

- Free locker universal mode allows the use of data carriers that are also used for other applications
- No validity date with free locker universal mode
- Not possible to use a duration of use time with free locker universal mode
- The following requirements for the data carriers apply:
    1. The locker segment must be unused and "empty", i.e., coded with all zeros.
    2. The Access Keys must be correct.

Locking and unlocking lockers

► Close the locker door and hold it shut.
► Press the button of the GAT ECO.Lock 7xxx F/ISO in using a data carrier for approximately 1 second.
    - The information on the data carrier is read.
► a) Valid data carriers: The LED flashes green briefly and the locking action is carried out.
   b) Invalid data carriers: The LED flashes red briefly and the GAT ECO.Lock 7xxx F/ISO does not complete the locking action.
► Release the locker door.

5.2.3 Free Locker Unique Number Mode

"Free locker unique number" operating mode differs from the standard free locker mode in the following ways:

- All MIFARE and ISO 15693 data carriers can operate with the lock.
- The data carrier can have a GANTNER locker segment, however the segment is not used for this mode.
- When a locker is locked with a data carrier, the locker number is not written onto the data carrier.
- Every data carrier can use (lock) any number of lockers at the same time.

Locking and unlocking lockers

► Close the locker door and hold it shut.
► Press the button of the GAT ECO.Lock 7xxx F/ISO in using a data carrier for approximately 1 second.
  - The information on the data carrier is read.
► a) Valid data carriers: The LED flashes green briefly and the locking action is carried out.
  b) Invalid data carriers: The LED flashes red briefly and the GAT ECO.Lock 7xxx F/ISO does not complete the locking action.
► Release the locker door.

5.2.4 Personal Locker Programming Card Mode

For lockers operating in "personal locker programming card" mode, up to 32 data carriers per GAT ECO.Lock 7xxx F/ISO can be authorized for use. The data carriers can be used with the locker as often as required and share the same authorization access, e.g., family cards.
The data carriers are authorized for use with the personal locker using the "program" data carrier (included in the GAT ECO.Basic Set F/ISO, see section "5.3. GAT ECO.Basic Set F/ISO").

Authorizing data carriers

► Close the locker door and hold it shut.
► Press the button of the GAT ECO.Lock 7xxx F/ISO in using the program data carrier for approximately 1 second.
  - The information on the data carrier is read.
► The GAT ECO.Lock 7xxx F/ISO enters into programming mode.
  - The LED ring flashes red until the program data carrier is removed. As soon as the program data carrier has been removed, the LED ring flashes red/green and the lock is ready to program data carriers.
► Within 5 seconds, press the button of the GAT ECO.Lock 7xxx F/ISO in for approximately 1 second using the data carrier to be authorized.
► a) Successful authorization: The LED flashes green for approximately 3 seconds. When the data carrier is removed, the LED flashes green and red alternately again and another data carrier can be authorized in the same way. Repeat this process until all the data carriers are authorized.
  b) Unsuccessful authorization: The LED flashes red three times then the GAT ECO.Lock 7xxx F/ISO switches off. Possible reasons for this include:
    - The maximum of 32 data carriers are already authorized for use with the lock.
    - The data carrier was not read by the lock correctly, e.g., the button was not pressed in for long enough or the data carrier is damaged.

You can repeat the last step using different data carriers to program these data carriers successively. To do this, press the button in again with each data carrier within 5 seconds after removing the previous data carrier. If you wait longer than 5 seconds, the reading process is terminated and the read data carriers are saved in the lock.

Deleting (removing authorization) data carriers

When deleting data carriers authorized to use a personal locker, it is only possible to delete all data carriers in the GAT ECO.Lock 7xxx F/ISO at once.

- ► Close the locker door and hold it shut.
- ► Press the button of the GAT ECO.Lock 7xxx F/ISO in using the program data carrier for approximately 1 second.
    - The information on the data carrier is read.
- ► The GAT ECO.Lock 7xxx F/ISO enters into programming mode.
    - The LED ring flashes red until the program data carrier is removed. As soon as the program data carrier has been removed, the LED ring flashes red/green and the lock is ready for the next step.
- ► Within 5 seconds, press the button of the GAT ECO.Lock 7xxx F/ISO in using the program data carrier for approximately 1 second.
- ► When the action is successful, the LED ring flashes red 3 times and the GAT ECO.Lock 7xxx F/ISO switches off.
    - All data carriers are now deleted from the GAT ECO.Lock 7xxx F/ISO and no longer have the authorization to use the locker any more.

5.2.5 Personal Locker Expiry Date Mode

During check-in, the user receives a data carrier encoded with GANTNER data blocks. The FID is written onto the “general” data block and the guest’s personal locker number together with the expiry date ("valid from" and "valid to") are written onto the “locker” data block of the data carrier. Furthermore, an index value is written onto the “locker” data block. The "valid from" date must always be valid, i.e., newer or equal to the date set in the GAT ECO.Lock 7xxx F/ISO.

Upon first use of a locker, the expiry date ("valid to" date) and the current index value of the data carrier are stored in the lock. The guest can lock and unlock the locker as required, starting from the "valid from" date and for as long as the expiry date is not reached or exceeded.

NOTE! GAT ECO.Lock 7xxx F/ISO does not adjust to daylight saving time automatically. This must be considered when evaluating events and authorizing data carriers with an expiry date.

An unlimited number of data carriers (people) can use the same locker. The following conditions apply to the data carriers in this mode:

- The same locker number must be stored on the data carriers.
- The same expiry date must be stored on the data carriers.
- The same index value must be stored on the data carriers.

When one of the data carriers assigned to a guest is used at the locker for the first time, the expiry date and the index value of the data carrier are transferred to the GAT ECO.Lock 7xxx F/ISO.

Locking and unlocking lockers

- ► Close the locker door and hold it shut.
- ► Press the button of the GAT ECO.Lock 7xxx F/ISO in using the data carrier for approximately 1 second.
  - o The information on the data carrier is read. The locker number on the data carrier must correspond with the locker number in the lock
- ► The following situations are possible. The data carrier…
  1) …is the first data carrier used at the locker:
     - o The index value and the "valid to" date of the data carrier are saved in the lock. The data carrier can lock and unlock the locker until the end of the validity period.
  2) …has the same index value and "valid to" date as stored in the lock:
     - o The data carrier is now authorized to lock and unlock the locker like the previously authorized data carriers.
  3) …has a higher index value than in the lock:
     - o The new index value and the "valid to" date of the data carrier are saved in the lock. The previously authorized data carriers are no longer authorized to use the locker.
  4) …has the same index value and a newer "valid to" date than in the lock:
     - o The index value and the new "valid to" date of the data carrier are saved in the lock. The previously authorized data carriers are no longer authorized to use the locker.

NOTE! Situation 2) is possible when the locker is locked or unlocked. Situations 3) and 4) are possible with a locked or unlocked locker except when the "PersonalLockerSecureFlag" option is set (see "6.5.8. Configuration Settings Table"). With this option set, the procedure is only possible with an open (unlocked) locker.

- ► Release the locker door.
- ► a) Valid data carriers: The information on the data carrier is saved in the lock. The locker state will switch, i.e., the locker will open when it was locked or will lock when it was open.
  b) Invalid data carriers: The LED flashes red briefly and the GAT ECO.Lock 7xxx F/ISO switches off without carrying out an action.

There is also no unlimited usage period for the locker, i.e., the expiry date must be a valid date (not "0"). If the "valid to" date is exceeded, the locker can no longer be opened using the data carrier except when the "LastOpenAtExpiredDate" option is set (see "6.5.8. Configuration Settings Table"). With this option set, the locker can be opened one more time using the data carrier.

5.3 GAT ECO.Basic Set F/ISO

The following items are included in the GAT ECO.Basic Set F/ISO (Part No. 812528).

System data carriers:
- Master data carrier (3 pieces, red)
- Program data carrier (black)
- Battery data carrier (blue)
- Battery cover key for the GAT ECO.Lock 7xxx with battery data carrier function.
- Reset data carrier (green)
- Service data carrier (yellow)

Additional items:
- 3 m USB programming cable
- GANTNER USB stick with configuration software
- GANTNER lanyard

5.4 Summary of System Data Carriers

The data carriers included in the GAT ECO.Basic Set F/ISO are required to configure and maintain a GAT ECO.Lock 7xxx F/ISO equipped locker system.

The system data carriers are coded to function with specific installations and will only function with the respective system.

5.4.1 Master Data Carrier

The master data carriers can lock and unlock any GAT ECO.Lock 7xxx F/ISO in a system. If a user's data carrier is lost, an emergency opening of the corresponding locker can be carried out using a master data carrier. Three master data carriers are included in the basic set and they are only valid for the respective system.

NOTE! The system operator must ensure that the master data carriers are stored in a safe and secure location.

If a master data carrier is lost, a new master data carrier can be ordered from GANTNER Electronic GmbH. Before the new master data carrier is used, the original master data carriers must be deleted from the GAT ECO.Lock 7xxx F/ISO (the number of a master data carrier is stored in the lock the first time the master data carrier is used). This is carried out using the reset data carrier. Complete the following procedure:

► Press the locker door shut with one hand.
► Press the button of the GAT ECO.Lock 7xxx F/ISO in using the reset data carrier for approximately 1 second.
  - The information on the data carrier is read and the LED ring flashes red until the reset data carrier is removed.
► Remove the reset data carrier from the button.
  - All master data carriers are now deleted from the lock. Next, the LED flashes green and red alternately and the new master data carriers can be programmed.

- ► Within 5 seconds, press the button of the GAT ECO.Lock 7xxx F/ISO in using the first master data carrier for approximately 1 second.
    - o When the data carrier is read correctly, the LED is green for 2 seconds.
- ► Remove the master data carrier from the button.
    - o The LED flashes green and red alternately. The second master data carrier can now be programmed.
- ► Repeat the process until all master data carriers are programmed.
- ► If a master data carrier is read for longer than 5 seconds during programming, the GAT ECO.Lock 7xxx F/ISO automatically returns to the normal operating mode and the new master data carriers are saved in the lock.

5.4.2 Program Data Carrier

For lockers operating in personal locker mode, the program data carrier is used to authorize data carriers so that they can be used with the locker. The program data carrier is also used to delete the existing authorizations of personal lockers. See section “5.2.4. Personal Locker Programming Card Mode”.

5.4.3 Battery Data Carrier

After the batteries are replaced in the GAT ECO.Lock 7xxx F/ISO, the lock must be set back to the normal operating mode using the battery data carrier. The internal action counter is reset to zero when the battery data carrier is used. See section “4.1.3. Replacing the Batteries” for more information.

After replacing the batteries of a GAT ECO.Lock 7xxx F/ISO in personal locker mode, all settings stored in the lock remain as previously configured.

5.4.4 Reset Data Carrier

The reset data carrier is used to delete all the master data carriers stored in a GAT ECO.Lock 7xxx F/ISO. See section “5.4.1. Master Data Carrier”.

5.4.5 Service Data Carrier

The service data carrier is used to put the GAT ECO.Lock 7xxx F/ISO into configuration mode after the lock is connected to a computer via USB (see section “4.2 USB Connection”). The settings of the GAT ECO.Lock 7xxx F/ISO are configured using GAT Config Manager while the lock is in configuration mode (see “6. CONFIGURATION”).
When the GAT ECO.Lock 7xxx F/ISO reads the service data carrier without being connected to a PC via USB cable, an antenna calibration is performed, which locks the lock for a few seconds. After locking, the LED ring flashes red and the service data carrier must be removed. The antenna is calibrated and the LED flashes green. Finally, a green LED ring and a sound signal are emitted to indicate that the antenna calibration has been completed successfully. The locker is then unlocked if it was locked before the calibration.

NOTE! The service data carrier must be available for service employees who are required to configure the locker system. Without the service data carrier, system configuration is not possible!

5.5 Summary of LED Signals

The electronics of the GAT ECO.Lock 7xxx F/ISO are activated when the lock button is pressed in. The activation is signaled by the status LED (LED ring flashes blue) that encircles the button. Additionally, the following lock states are signaled by the status LED.

LED Ring	Meaning
Blue flash	Lock ready to read a data carrier
Red flash	- No authorization - Error
Green flash	- Data carrier accepted - Operation successful
Green flash and ascending signal tone	Battery replacement successfully completed and lock again in the normal operating mode
Flashing red/green	Only in configuration mode: lock waiting to read a data carrier
5 x red flashes and 5 x signal tones	Battery change required

Figure 5.2 - *Summary of the LED signals*

6 CONFIGURATION

6.1 General Information

The GAT ECO.Lock 7xxx F/ISO is configured using a PC/laptop and GAT Config Manager software. The configuration file must only be uploaded to the GAT ECO.Lock 7xxx F/ISO once. The configuration file of the first lock in the system is saved in GAT Config Manager after which the file is uploaded to each lock that requires the same configuration. Locks that require a different configuration need a separate configuration file to be made in GAT Config Manager.

NOTE! After importing the configuration file to the first lock, complete an operational test to ensure the data carriers (master and standard) and general lock functionality perform as expected.

The following data is imported into the GAT ECO.Lock 7xxx F/ISO during configuration:

- Site key
- Sub-site number
- Locker number
- Lock operating mode (“free locker”, “free locker universal”, “free locker unique number”, “personal locker programming card”, or “personal locker expiry date”. See section “5.2 Operating Modes”)
- Free locker: Sector number of the data on the data carrier and the time setting for the "duration of use" function
- Date and time (set automatically)
- Unique numbers of the master data carriers

The master data carriers can also be directly programmed into the GAT ECO.Lock 7xxx F/ISO (see section “5.4.1 Master Data Carrier”). However, the most efficient way to program the data carrier numbers into multiple locks is via PC and GAT Config Manager.

NOTE! The GAT ECO.Lock 7xxx F/ISO does not set the daylight saving time automatically. Time changes due to daylight saving must be considered when evaluating bookings and also when authorizing data carriers with expiry dates/times.

6.2 Setup for Configuration in GAT Config Manager

Once the batteries are installed in the GAT ECO.Lock 7xxx F/ISO (see “4.1.2. Inserting the Batteries”), the USB cable connected from the lock to the computer (see “4.2. USB Connection”), and the service data carrier used to activate configuration mode (see “5.4.5 Service Data Carrier”), the settings can be viewed and configured using GAT Config Manager.

There is a separate manual with detailed information on each function available in GAT Config Manager. To access the manual while the software is open, click on the “Help” drop-down menu and select “How Do I”.

Complete the following steps to setup the GAT ECO.Lock 7xxx F/ISO for configuration in GAT Config Manager.

► After installing the software, open GAT Configuration Manager via "Start" -> "All Programs" -> "GANTNER Electronic GmbH" -> "GAT Config Manager" -> "GAT Config Manager".
  - The default start window of GAT Config Manager is displayed.

► Click on the “Open Project” icon (1 in Figure 6.1) to find an existing project.

► Alternatively, click on the “Create Project” icon (2 in Figure 6.1) to start a new project.

***Figure 6.1** – GAT Config Manager - Project setup*

► Once a project is established, locations and sub-locations for the project can be added to the “Devices” directory (2 in Figure 6.2) by clicking on the “Add location” button (1 in Figure 6.2).

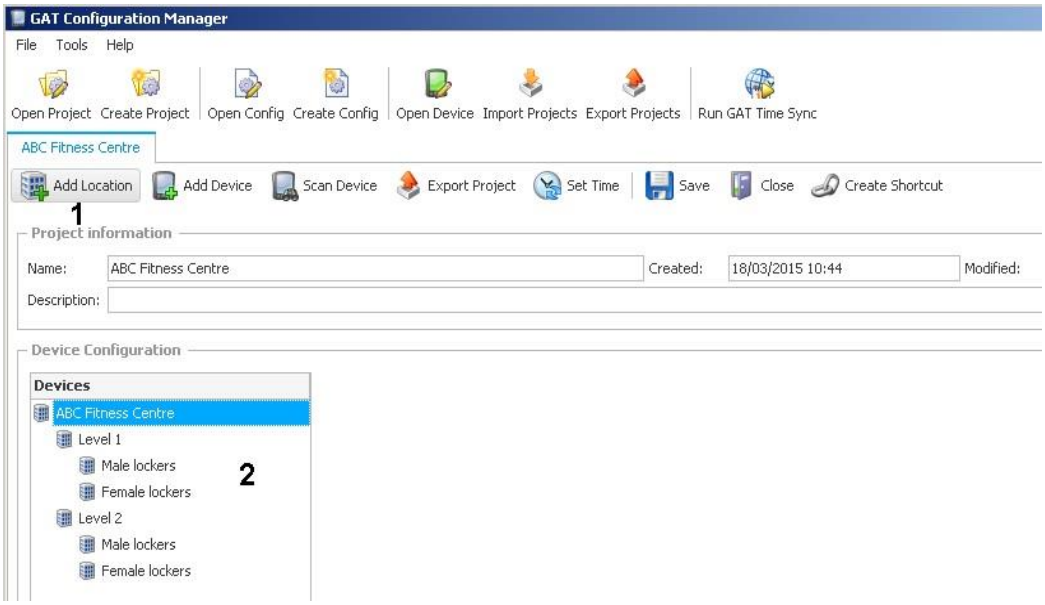


***Figure 6.2** – GAT Config Manager – Add location*

► To add a GAT ECO.Lock 7xxx F/ISO to a location, right-click on the location and select “Add ECO.Side Lock 7000” from the “Add Device” menu (Figure 6.3).
  - The GAT ECO.Lock 7xxx F/ISO is added to the selected location and is labelled “GAT ECO.Side Lock 7000”.

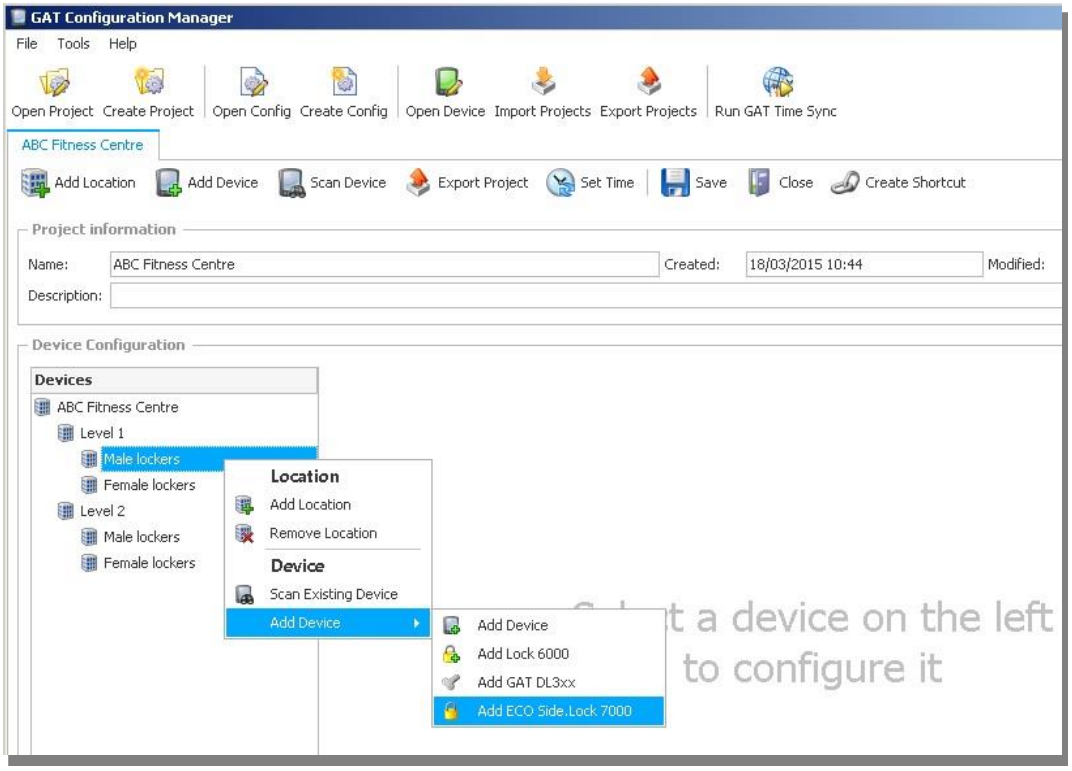


***Figure 6.3** – GAT Config Manager – Adding a GAT ECO.Lock 7xxx F/ISO*

6.3 View and Edit the GAT ECO.Lock 7xxx F/ISO Configuration Settings

Once the connected GAT ECO.Lock 7xxx F/ISO has been added to the “Devices” directory, you can now view and adjust the lock configuration settings. Complete the following steps to view the configuration settings.

► Select the GAT ECO.Lock 7xxx F/ISO from the “Devices” list (1 in Figure 6.4), which is displayed here as "GAT ECO.Side Lock 7000".

- The GAT ECO.Lock 7xxx F/ISO is highlighted in blue.

***Figure 6.4** – GAT Config Manager – View configuration settings*

► Click on the “(2) Configure” button (2 in Figure 6.4).
  - The “GAT Configurator” window opens (Figure 6.5).

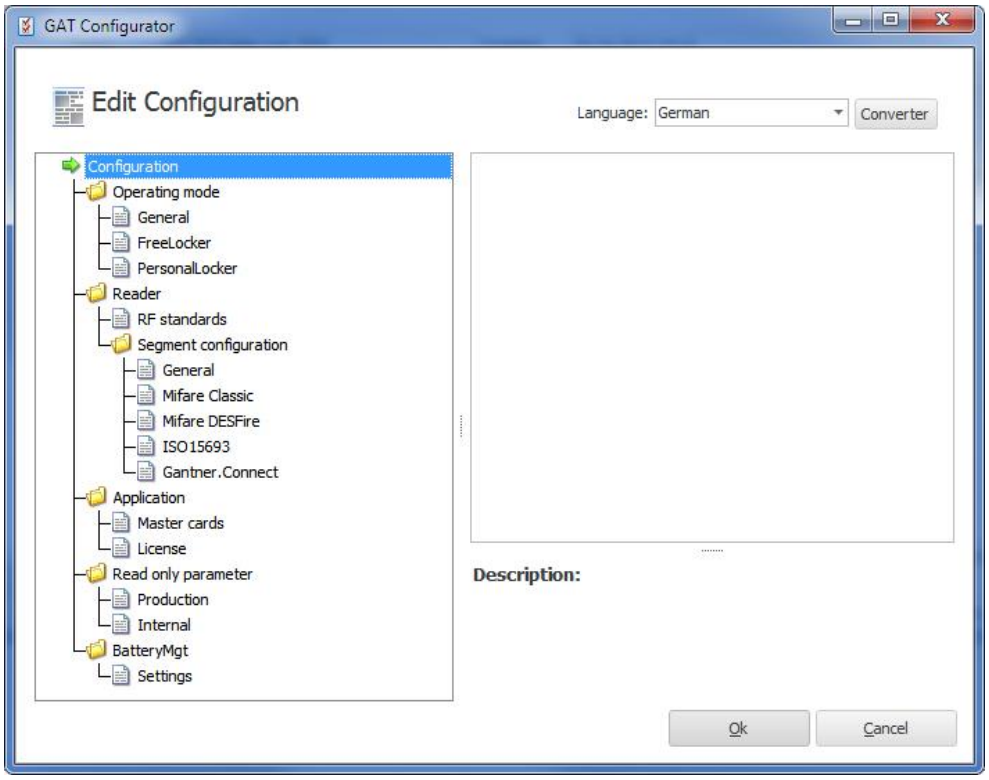


Figure 6.5 *– GAT Configurator window*

6.4 Upload Configuration Settings to the GAT ECO.Lock 7xxx F/ISO

When you are finished configuring the GAT ECO.Lock 7xxx F/ISO settings in GAT Config Manager, it is important to finalize the configuration by uploading the file to the GAT ECO.Lock 7xxx F/ISO. Complete the following steps to finalize the configuration.

► Click on “OK” in the GAT Configurator Window (Figure 6.5).
  - The confirm upload window opens.

► Click “Yes” to apply the configuration to the lock.
  - The configuration settings are uploaded to the GAT ECO.Lock 7xxx F/ISO.

6.5 Configuration Settings of the GAT ECO.Lock 7xxx F/ISO

The important configuration settings of the GAT ECO.Lock 7xxx F/ISO that can be adjusted in GAT Config Manager are explained in this section. A list and brief explanation of every configuration setting available for the GAT ECO.Lock 7xxx F/ISO is provided in section “6.5.8. Configuration Settings Table”.

6.5.1 Operating Mode

The GAT ECO.Lock 7xxx F/ISO can operate in one of five different operating modes. See “5.2 Operating Modes” for a detailed description of each mode. The operating mode setting is found here:

Configuration > Operating mode > General > Operating mode

► From the “Operating mode” drop-down menu, select either:
- “Free locker”,
- “Free locker universal”,
- “Personal locker programming card”,
- “Personal locker expiry date”, or,
- “Free locker unique number”

6.5.2 Locker Number

The number of the locker where the GAT ECO.Lock 7xxx F/ISO is installed can be defined. The locker number setting is found here:

Configuration > Operating mode > General > Locker number

► Enter the locker number for the GAT ECO.Lock 7xxx F/ISO into the “Locker number” field.

6.5.3 Auto-Unlock

The auto-unlock function automatically unlocks the GAT ECO.Lock 7xxx F/ISO at a defined point in time.

NOTE! When this function is activated, the lock will always unlock at the defined point of time regardless of the operating mode (see “5.2 Operating Modes”).

The auto-unlock function is found here:

Configuration > Operating mode > General > AutoUnlock [min]

► Enter a value representing the number of minutes into the field. The countdown time for unlocking begins at 00:00 (24 h). For example, a value of “300” means that the lock will unlock at 05:00 am. A value of “0” means that the function is inactive.

The time must be set correctly once via software.

6.5.4 Duration of Use

Lockers operating in free locker mode can be configured to limit the user to a defined period of use. See section “5.2.1. Free Locker Mode (with or without Duration of Use Function)” for detailed information. The duration of use function is found here:

Configuration > Operating mode > Free Locker

- ► Select either “Duration” or “Point of time” from the “Use time limit” menu for the type of time limit.
- ► Define the time limit in minutes in the “Time limit (min)” field.

6.5.5 Pre-Lock Personal Locker

The pre-lock function for personal lockers allows the locker to lock automatically when the locker door is pushed shut, without needing to use a data carrier. The locker can be unlocked again using the data carrier(s) authorized to use the personal locker. The function is found here:

Configuration > Operating mode > Personal Locker > PreLock Personal Locker

- ► Select / deselect the “PreLock Personal Locker” option to turn the function on / off.

6.5.6 RF Standards

The GAT ECO.Lock 7xxx F/ISO can operate with data carriers that use ISO 15693 and ISO 14443A (MIFARE) technology.

The default setting for the GAT ECO.Lock 7xxx F/ISO is to operate with ISO 14443A (MIFARE) data carriers.

The setting for the GAT ECO.Lock 7xxx F/ISO to operate with ISO 14443A (MIFARE) data carriers cannot be changed. The setting for the GAT ECO.Lock 7xxx F/ISO to operate with ISO 15693 data carriers can be adjusted and is found here:

Configuration > Reader > RF Standards > ISO 15693

- ► Select / deselect the “ISO 15693” option to turn the setting on / off.

6.5.7 Master Cards

Up to 10 master cards can be assigned to the GAT ECO.Lock 7xxx F/ISO to allow the locker to be opened in special circumstances, e.g., when a user has lost their data carrier. For this functionality, the master cards must be first assigned to the GAT ECO.Lock 7xxx F/ISO, which is done here:

Configuration > Application > Master cards > Master Card 1 - 10

- ► Enter the number of each master card (data carrier) into the respective fields.

  NOTE! The master card numbers must be entered in hexadecimal format.

6.5.8 Configuration Settings Table

The following table lists all the configuration information available for the GAT ECO.Lock 7xxx F/ISO in GAT Config Manager.

Options	Description	Format	Default
Operating mode			
General			
Operating mode	Select the operating mode of the lock: - "FreeLocker" - "PersonalLocker_ProgrammingCard" - "PersonalLocker_ExpiryDate" - "FreeLocker_UniqueNumber" - "FreeLockerUniversal"	List option	Free Locker
Locker number	Define the locker number	Integer	65535
Beeper mode	Switch on/off the lock sound signal function	Boolean	True
AutoUnlock [min]	Unlock locker at a defined point in time. 0 = inactive	Integer	0
CardValidityDateRequired	When this option is activated, a valid expiration date must be set on the data carriers so that they can be used (default value of 1.1.2007 is not valid)	Boolean	False
LastOpenAtExpiredDate	When this option is activated, a locker can be unlocked one more time using the data carrier that locked it (see "5.2.5 Personal Locker Expiry Date Mode").	Boolean	False
Free Locker			
Use TimeLimit	Select the type of time limit for the locker (see "5.2.1. Free Locker Mode (with or without Duration of Use Function)") "Duration" or "Point of time"	List option	Duration
TimeLimit (min)	Define the time limit in minutes	Integer	60
TimeLimit Interrupt Timeout [min]	Minimum waiting time from the end of a locker usage period until the next usage period can begin.	Integer	60
Personal Locker			
Index PersonalLocker	Define the index of the personal locker	Integer	0
PreLock PersonalLocker	Switch on/off the automatic pre-lock function for personal lockers	Boolean	False
PersonalLockerSecureFlag	When this option is activated, a new index or validity date can only be transferred from a data carrier to the lock when the locker is open. When this option is deactivated, transferal is possible even when the locker is locked (see "5.2.5 Personal Locker Expiry Date Mode")	Boolean	False
Reader			
RF Standards			
ISO 15693	When set to "True", ISO 15693 data carriers can be read by the lock.	Boolean	False
ISO 14443A	When set to "True", ISO 14443 (MIFARE) data carriers can be read by the lock. This setting is not configurable	Boolean	True

Options		Description	Format	Default
Segment configuration				
	General			
	Site key	Site key of the device. All data carriers must have the same site key to be used with the device.	Hex	9999
	Key Set	DESFire AES Keys, encrypted	Hex	
	MIFARE Classic	Options for reading MIFARE Classic data carriers		
	Sector Num	The segment where UID data is stored	Integer	4
	Read Key	Select the Read Key (Key A or Key B)	List option	
	Write Key	Select the Write Key (Key A or Key B)	List option	
	MIFARE DESFire	Options for reading MIFARE DESFire data carriers		
	Read Key Num	Number of the read key	Integer	
	Write Key Num	Number of the write key	Integer	
	Application ID	ID of the target DESFire application	Text	
	Encryption Mode	Select the type of encryption mode	List option	
	File Num	File number to read data from	Integer	
	File Comm Mode	File communication mode: “Plain”, “Maced”, “Enciphered”	List option	
	File Type	Type of file: “Standard” , “Backup”	List option	
	ISO 15693	Options for reading ISO 15693 data carriers		
	General Block Num	The segment where general data is stored	Integer	13
	Certificate Block Num	The segment where certificate data is stored	Integer	15
	Locker Block Num	The segment where locker data is stored	Integer	19
	Gantner.Connect			
	FileId	ID number for Gantner.Connect.	Integer	1
Application				
	Master cards			
	Master Card 1 - 10	Fields to enter number for master card 1 to 10	Integer	
	License			
	License CertificateCheck	When "installed" is displayed here, the certificate check can be switched on/off	Info	
	CertificateCheck enabled	Switch on/off the certificate check for data carriers	Boolean	False
Read only parameter				
	Production			
	Article Num	Article number of the device	Integer	
	Serial Num	Serial number of the device	Integer	
	Manufacturer Num	Manufacturer number of the device	Integer	
	Production Year	Production year of the device	Integer	
	Production Week	Production week of the device	Integer	
	HardwareUIDNum	Unique ID number of the hardware	Integer	
	Controller Type	Controller type of the device		
	Hardware Vers	Hardware version of the device	Integer	
	Bootloader Vers	Bootloader version of the device	Integer	
	Firmware Vers	Firmware version of the device	Integer	
	LockEngineVers	Lock logic version of the device	Integer	

Table 6.1 *– Configuration settings for the GAT ECO.Lock 7xxx F/ISO in GAT Config Manager*

7 TECHNICAL DATA

7.1 Power Supply

Power supply:	3 x 1.5 V alkaline* batteries, type AA *lithium batteries can also be used
GANTNER approved battery:	Batterie 1.5V Alkali AA (Part No. 308819)
Battery lifetime:	Up to 5 years* or 30,000 cycles with alkaline batteries at room temperature * depending on usage, configuration, and ambient conditions

7.2 Reading Field

Reader type:	MIFARE® supported types: - MIFARE® Classic (1k and 4k) - MIFARE Ultralight® - DESFire EV1® and EV2® - ISO 15693 Note: It is recommended to have customer-specific data carriers approved by GANTNER before use
Reading field frequency:	13.56 MHz
Reading field range:	5 to 35 mm (0.2´´ to 1.38´´)* *depending on the installation and type of data carrier

7.3 Memory and Time Management

Data storage:	EEPROM with capacity for 150 bookings, data retained during battery change
Internal clock:	Quartz-controlled, real-time clock

7.4 Control and Display Elements

Control element:	Button
Display element:	LED ring (multi-colored) for status indication

7.5 Interface

Interface type:	USB 2.0
Interface connection:	USB type Micro-B

7.6 Housing

Material:	Plastic (PC), halogen-free, V0
Color:	Dark gray
Weight:	Approx. 400 g (14.1 oz.)
Dimensions:	109 mm x 109 mm x 33 mm (4.3´´ x 4.3´´ x 1.3´´)
Break-in resistance capability:	DIN 4547-2 class C

7.7 Environmental Conditions

Permitted ambient temperature

- Indoor model:	0 °C to 55 °C (32 °F to 131 °F)
- Outdoor model:	-25 °C to 55 °C (-13 °F to 131 °F)

Protection type

- Indoor model:	IP 52 (when installed)
- Outdoor model:	IP 64 (when installed and locked)

Environment class based on VdS 2110

- Indoor model:	II (conditions in indoor areas)
- Outdoor model:	III (conditions in outdoor areas)

Compliance: CE

Note:
This manual is valid from June 4th, 2018. It is subject to change.
Amendments can be made without prior notice at any time.

Schruns, Österreich
T +43 5556 73784-0
info@gantner.com

Houten, Niederlande
T+31 33 43 284 16
info@syx.nl

Sydney, Australien
T +61 29011 8114
info-aus@gantner.com

London, UK
T +44 178 249 9195
info@syxautomations.co.uk

Bochum, Deutschland
T +49 234 58896-0
info-de@gantner.com

Los Angeles, USA
T +1 844 703 1139
info-us@gantner.com

Ieper, Belgien
T +32 57 22 44 00
info@syx.be

Dubai, Middle East
T +971 4 3333 466
info-me@gantner.com

Ahmedabad, India
info@syxautomations.co.in

Part No: 837329