Gantner technologies

GAT Vending 6100 BA

RFID Payment Terminal for Vending Machines

Installation, Configuration, Operation
Document Version 1.21

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Contact
For general inquiries of further information on this product, see the contact information below.

Contact address of manufacturer
GANTNER Electronic GmbH
Montafonerstrasse 8
A - 6780 Schruns/Austria
Tel.: +43 5556 73784 - 0
Fax: +43 5556 73784 - 8010
Email: info@gantner.com
Website: www.gantner.com

FCC Label

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.

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.

CONTENTS

1 INTRODUCTION

1.1 About this Manual

This manual describes the mechanical installation, electrical connection, and the configuration and commissioning of the GAT Vending 6100 BA with a vending machine. The basic operation of the GAT Vending 6100 BA for the end user is also described.
The installation and operation of the vending machine to which the GAT Vending 6100 BA is connected is not included in this manual. Please refer to the documentation of the respective vending machine for further information.
A description of the commands required to integrate the GAT Vending 6100 BA with custom software applications is also available in a separate document.

1.2 Chapter Overview

Chapter "1. Introduction" contains general information about this manual and the conventions (terminology and formatting) used therein.

Chapter "2. Device Overview" provides an overview of the GAT Vending 6100 BA. Here is a general functional description, the intended use or application of the device and the components and accessories delivered with the GAT Vending 6100 BA.

Chapter "3. Installation" includes instructions on how the GAT Vending 6100 BA is mounted onto a vending machine. The installation procedure of the device in addition to the important measurement and installation diagrams are available here.

Chapter "4". Electrical Connections" describes how the GAT Vending 6100 BA is connected electrically (data interface, power supply) to the vending machine.

Chapter "5. Startup and Configuration" describes the startup process of the GAT Vending 6100 BA. Also available in this section is a description of the system and configuration settings, which determine how the terminal communicates with the network and how the terminal interacts with the user respectively.

Chapter "6. Operation" describes the general operation of the GAT Vending 6100 BA. The differences between the various operating modes are also explained in this section.

In chapter "7. Technical Information", all the relevant technical information for the GAT Vending 6100 BA is available.

1.3 Document Format

The following format is used in this manual to display important but not safety-critical information:

Information text Information text Information text Information text Information text Information text Information text Information text Information text.

Instructions, which must be executed by the user, and the results of these instructions are formatted as follows:

► Instruction for user Instruction for user Instruction for user Instruction for user Instruction for user Instruction for user Instruction for user.

- Instruction result Instruction result Instruction result Instruction result Instruction result Instruction result Instruction result Instruction result Instruction result.

1.4 Terminology

Several key terms are used in this manual and 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 Vending 6100 BA. 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”.

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 all refer to a person in a facility who uses the vending machine and GAT Vending 6100 BA.

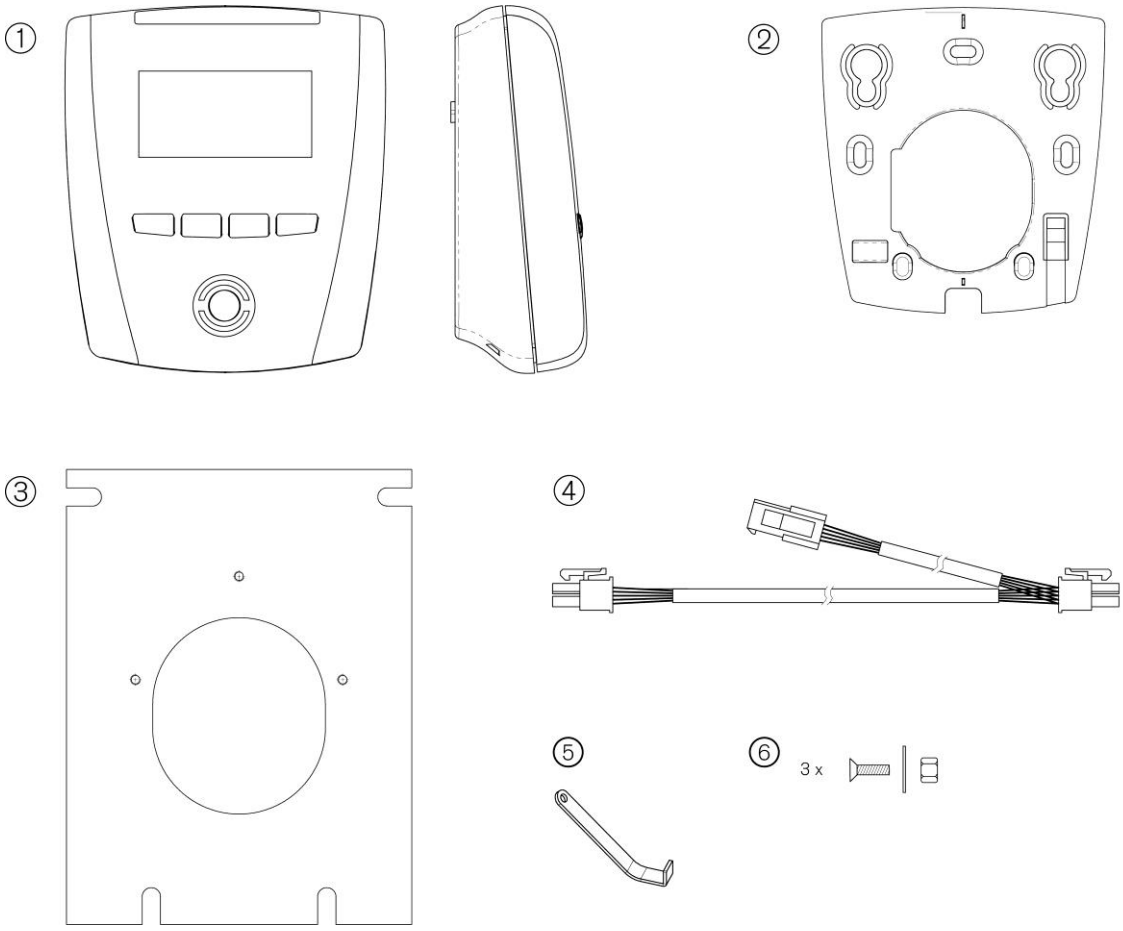
1.5 Contact and Inquiries

For all inquiries concerning the GAT Vending 6100 BA please get in touch with your GANTNER representative / distributor or directly with one of the GANTNER Technology branch offices. The office addresses, phone and fax numbers are listed on the inner side of the cover.

2 DEVICE OVERVIEW

2.1 Components and Accessories

The following components are supplied with the GAT Vending 6100 BA or, where indicated, available to order as an accessory.



1.....GAT Vending 6100 BA
2.....Plastic mounting plate (included with the GAT Vending 6100 BA)
3.....Aluminium mounting plate (available as an accessory – Part No.: 905127)
4.....GAT Vending MDB Kabel (included with the GAT Vending 6100 BA)
5.....GAT Reader WK to open the housing (included with the GAT Vending 6100 BA)
6.....Mounting hardware for plastic mounting plate – 3 x M3 x 8 mm bolts, nuts and washers (included with the GAT Vending 6100 BA)

***Figure 2.1** – GAT Vending 6100 BA components*

2.2 GAT Vending 6100 BA Functional Description

The GAT Vending BA 6100 BA is a read / write terminal for cashless payment at vending machines. The identification of facility guests by the GAT Vending 6100 BA is done using contactless RFID data carriers (Radio Frequency Identification). The cost of the purchased product is either debited directly from the guest's data carrier (offline mode - data carrier operates as an electronic wallet) or from the guest's account (online mode).

Four function keys are provided on the GAT Vending 6100 BA for general operation and product choice. The information display can be configured to show specific application messages and symbols.

Communication between the GAT 6100 Vending BA and the vending machines occurs via the MDB interface (standard interface for vending machines). In addition to the MDB interface, an Ethernet interface is provided by the GAT Vending 6100 BA for connection to the network or where available, directly to the vending machine.

2.3 Supported Data Carriers

To purchase products from the vending machine, facility guests are identified by the GAT Vending 6100 BA using contactless RFID data carriers. A frequency of13.56 MHz is used. The following types of data carrier are supported by the GAT Vending 6100 BA. However, please note that depending on the type of data carrier in use, not all operating modes are available (see section "6. Operation").

- LEGIC Prime (online and offline mode)
- LEGIC Advant (online and offline mode)
- MIFARE® Classic (online mode)
- MIFARE DESFire® (online mode)
- ISO 15693 (online and emergency mode)

In addition to supporting the data carriers listed above, the GAT Vending 6100 BA can also identify NFC-enabled devices such as tags or smartphones.

3 INSTALLATION

3.1 General Information

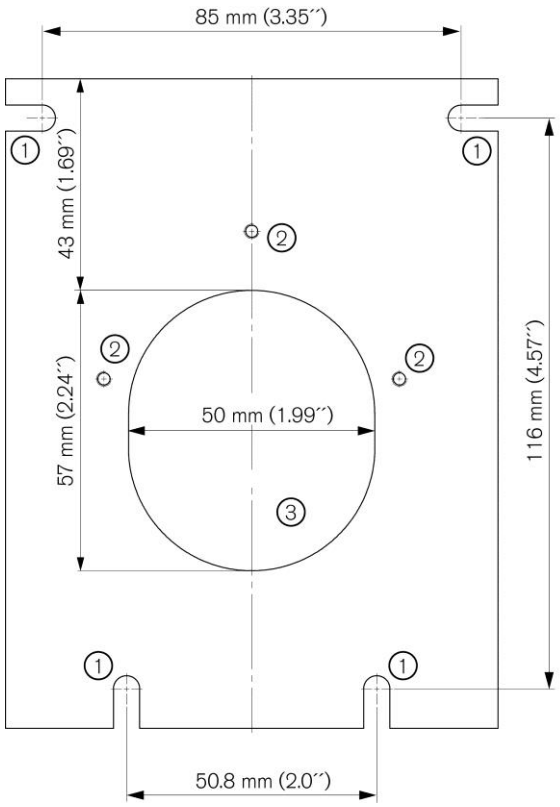
There are two methods for installing the GAT Vending 6100 BA.

- For vending machines with standard EVA cutouts, the aluminum mounting plate can be ordered as an accessory (Part No. 905127) and used to mount the terminal.
- For vending machines without standard EVA cutouts, corresponding holes must be drilled into the front side of the vending machine.

The aluminium mounting plate is not absolutely mandatory for installation.

3.2 Installation in Vending Machines with Standard Cutouts

Vending machines are often provided with a cutout for attaching a payment unit such as the GAT Vending 6100 BA. A standard EVA (European Vending Association) dimension is usually used for this cutout. For vending machines with a standard EVA cutout, the GAT Vending 6100 BA can be mounted using the aluminium mounting plate.

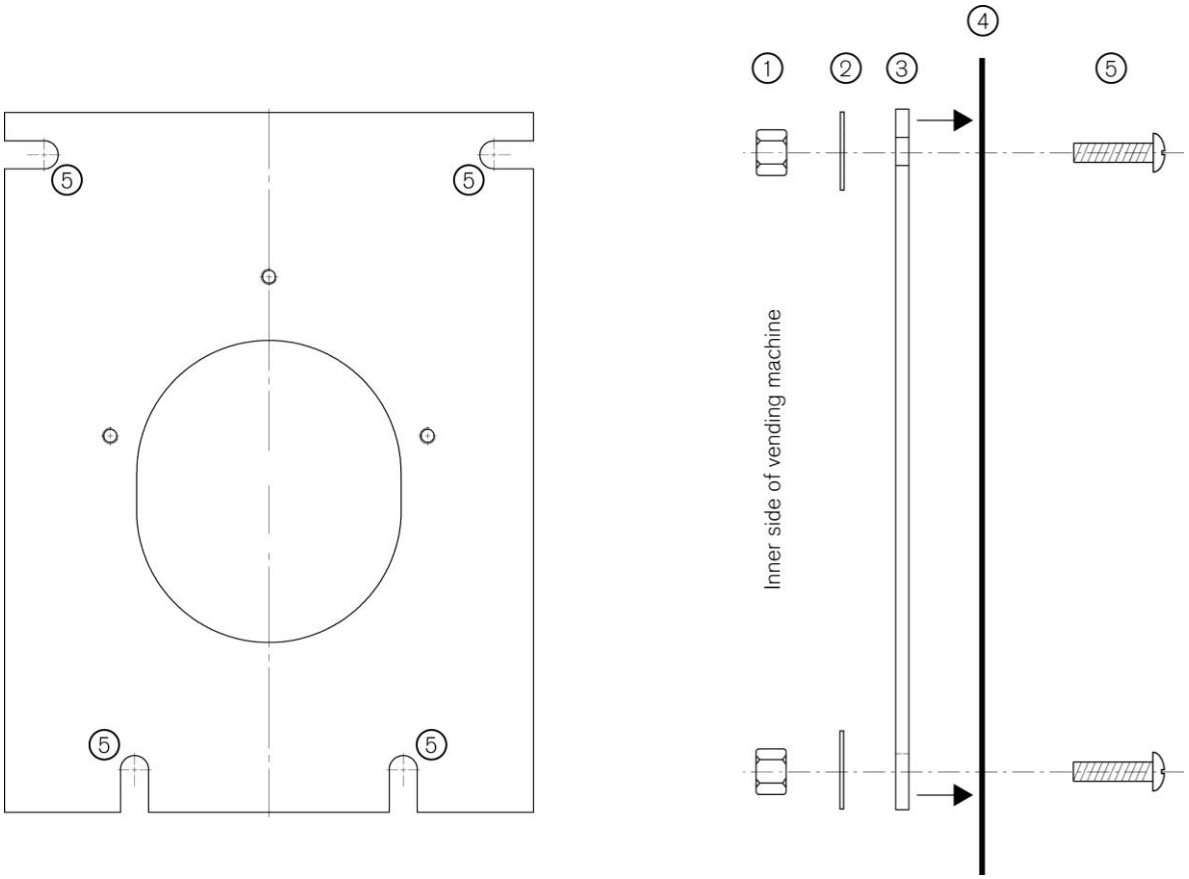


1.....Cutouts for mounting the aluminum mounting plate onto a vending machine
2.....Holes for attaching the plastic mounting plate to the aluminium mounting plate
3.....Opening for cable access

***Figure 3.1** – Aluminium mounting plate*

To install the GAT Vending 6100 BA in vending machines with standard EVA cutouts, proceed with the following instructions and accompanying diagrams.

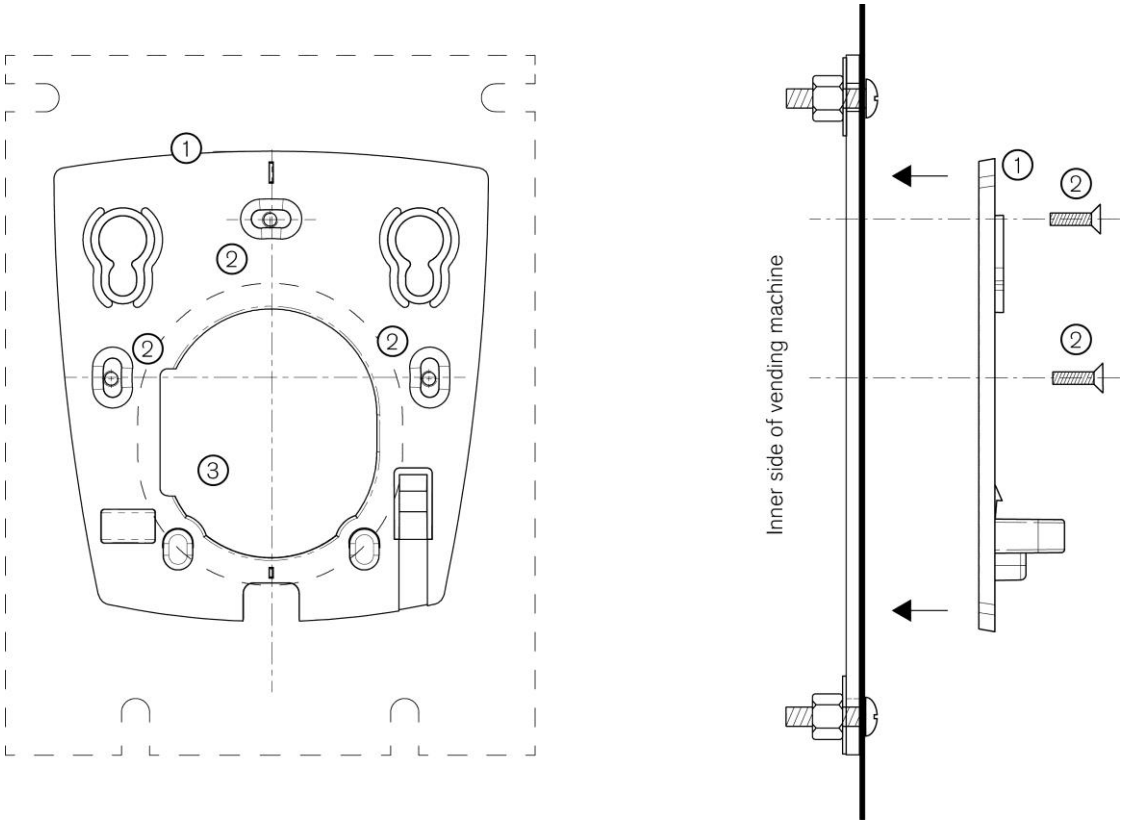
- ► Position the aluminium mounting plate next to the cutout on the inside of the vending machine in the correct orientation as shown in Figure **3.2**.
- ► Attach the aluminium mounting plate to the vending machine using four bolts, washers and nuts (not included with the aluminium mounting plate).



1.....4 x nuts (not included with the aluminum mounting plate)
2.....4 x washers (not included with the aluminum mounting plate)
3.....Aluminum mounting plate
4.....Wall (front side) of the vending machine
5.....4 x bolts (not included with the aluminum mounting plate)

***Figure 3.2** - Installation of the aluminum mounting plate for vending machines with standard EVA cutouts*

- ► Position the plastic mounting plate next to the previously attached aluminum mounting plate on the outside of the vending machine in the correct orientation as shown in Figure **3.3**.
- ► Attach the plastic mounting plate to the aluminium mounting plate on the front of the vending machine using three M3 x 8 mm bolts (included with the plastic mounting plate). The bolts are attached directly to the threaded holes in the aluminium mounting plate (2 in Figure **3.1**).
- ► Ensure the plastic mounting plate is firmly attached and the screws are tightened.

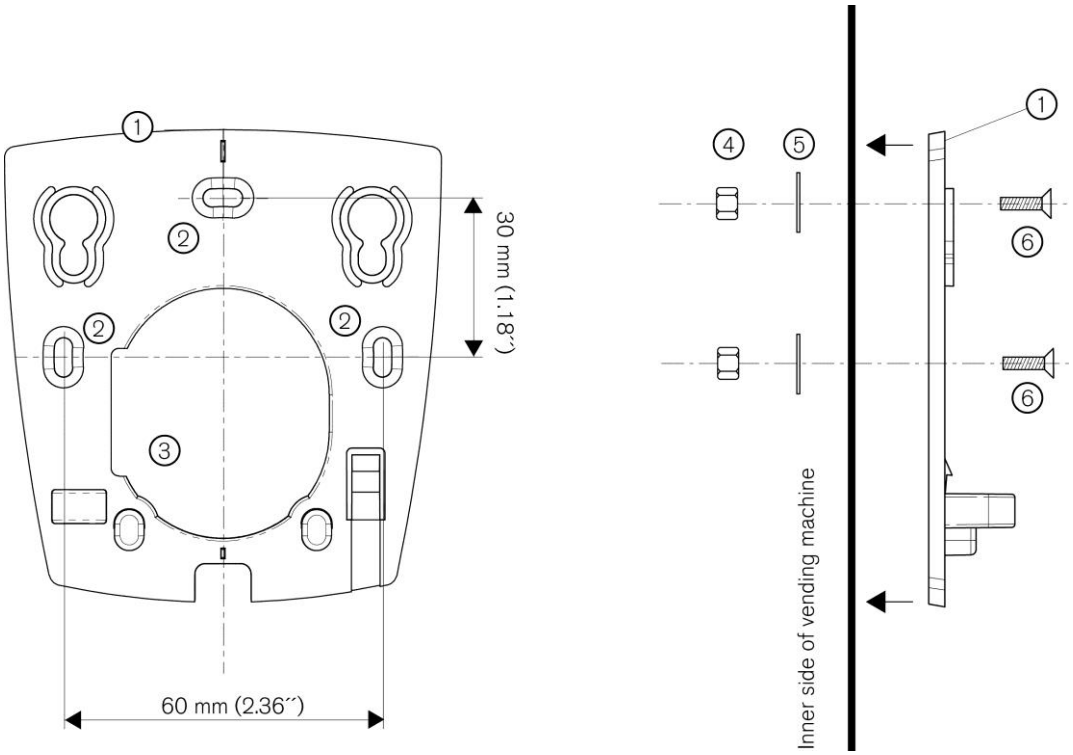


1.....Plastic mounting plate
2.....3 M3 x 8 mm bolts (included with the GAT Vending 6100 BA)
3.....Opening for cable access

***Figure 3.3** – Attaching the plastic mounting plate to the aluminium mounting plate*

3.3 Installation in Vending Machines without Standard Cutouts

- ► Position the plastic mounting plate on the outside of the vending machine in the correct orientation as shown in Figure **3.4**.
- ► Mark the positions of the three mounting holes (2 in Figure **3.4**).
- ► Drill the three mounting holes in the outer wall of the vending machine.
- ► Attach the plastic mounting plate to the front of the vending machine using the three M3 x 8 mm bolts and accompanying nuts and washers that are included with the GAT Vending 6100 BA.
- ► Ensure the plastic mounting plate is firmly attached and the bolts are tightened.



1.....Plastic mounting plate
2.....3 x mounting holes
3.....Opening for cable access
4.....3 x M3 nuts
5.....3 x washers
6.....3 x M3 x 8 mm bolts

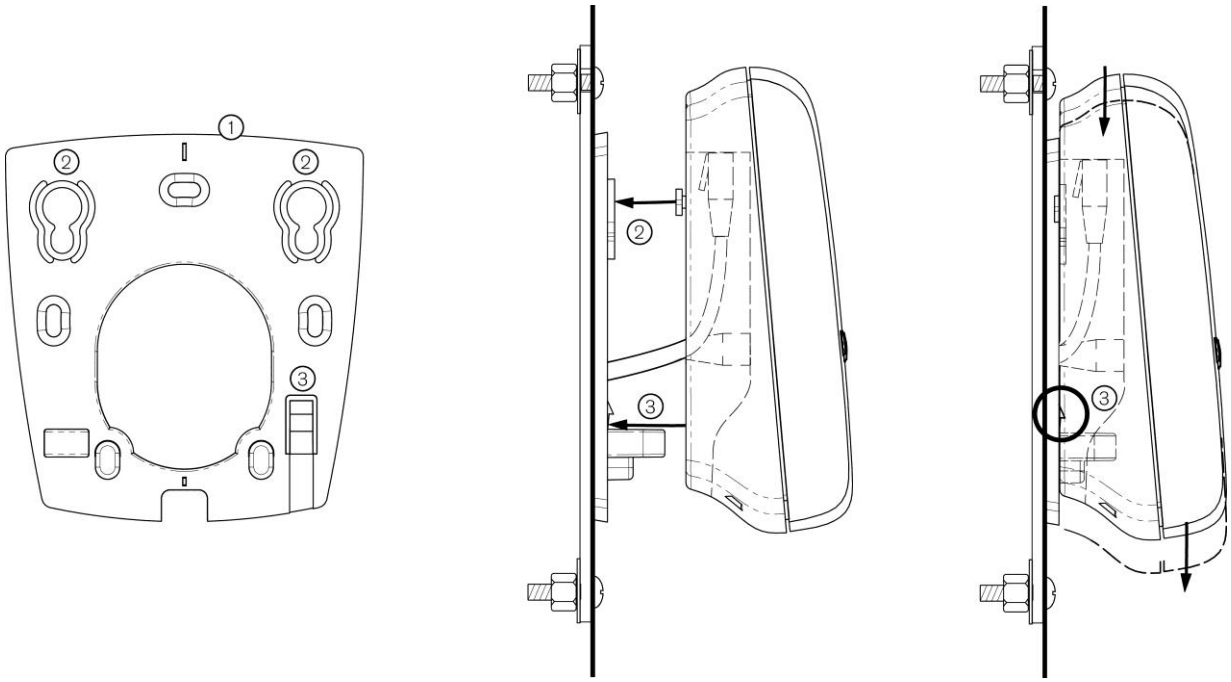
***Figure 3.4** - Installation of the plastic mounting plate for vending machines without standard EVA cutouts*

3.4 Attaching the GAT Vending 6100 BA to the Mounting Plate

After the connection cabling is connected to the GAT Vending 6100 BA (see "4. Electrical Connections"), the GAT Vending 6100 BA is attached to the mounting plate as follows.

- ► Align the GAT Vending 6100 BA onto the mounting plate so that both holding screws (3) go through the openings in the mounting plate and both hooks on the mounting plate also align with the corresponding openings in the GAT Vending 6100 BA.
- ► Slide the GAT Vending 6100 BA downwards until the device sits centered and flush on the mounting plate.
  - When the GAT Vending 6100 BA is attached correctly, the mounting plate security hook (3) locks into place on the GAT Vending 6100 BA and the device is held securely.

When the GAT Vending 6100 BA is correctly attached it can only be removed using the GAT Reader WK special tool (see next section).



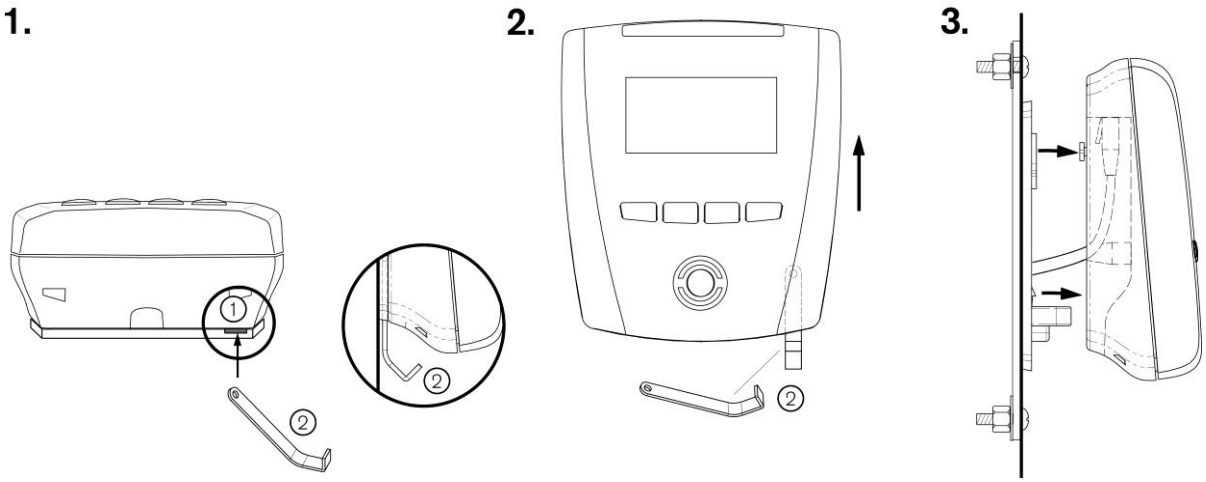
1.....Plastic mounting plate
2.....Holding screws
3.....Security hook

***Figure 3.5** – Attaching the GAT Vending 6100 BA*

3.5 Detaching the GAT Vending 6100 BA from the Mounting Plate

To detach the GAT Vending 6100 BA from the mounting plate, the supplied GAT Reader WK special tool is required. The procedure for detachment is as follows.

- ► Insert the "GAT Reader WK" special tool (2) with its long side from underneath into the opening (1) until the hook is released. Keep the GAT Reader WK in this position.
- ► Slide the GAT Vending 6100 BA upwards.
- ► Lift the GAT Vending 6100 BA away from the plastic mounting plate. Ensure the connection cable is not damaged.
- ► Disconnect the connection cable from the RJ 45 plug.
    - ○ The GAT Vending 6100 BA can now be removed.



1.....Opening for access to the securing hook
2.....GAT Reader WK

***Figure 3.6** – Detaching the GAT Vending 6100 BA from the plastic mounting plate*

4 ELECTRICAL CONNECTIONS

⚠	**Safety Warning for the GAT Vending 6100 BA** Due to its SELV (Safety Extra Low Voltage Supply) design, the GAT Vending 6100 BA provides extra protection against electrical shock. However, be aware that vending machines operate at higher voltages so it is essential to always turn off the power supply of the vending machine before connecting the GAT Vending 6100 BA. Never open the GAT Vending 6100 BA housing when voltage is applied. Please also refer to the documentation of the vending machine and follow the instructions therein.

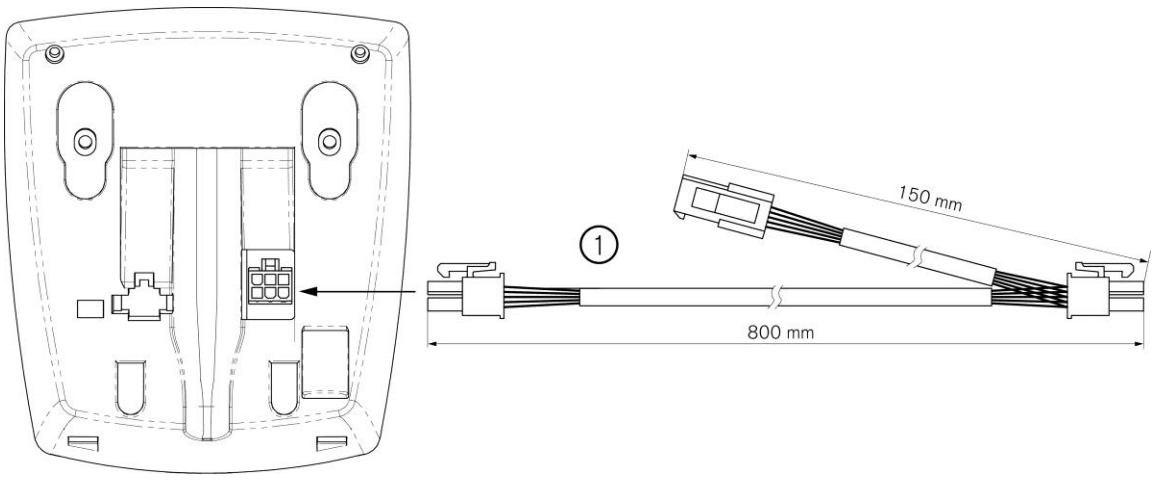
4.1 MDB Connection

The MDB connection is a standardized machine interface that allows the connection of currency changers and validators to the vending machine. The GAT Vending 6100 BA uses the MDB interface to communicate with the vending machine.

► Insert the long end of the MDB connection cable (supplied with the GAT Vending 6100 BA) into the corresponding connector on the back part of the GAT Vending 6100 BA housing.

Attention: Switch off the vending machine before connecting the GAT Vending 6100 BA to the MDB bus.

The MDB plug of the connection cable can only be inserted into the socket in the correct orientation.



1.....MDB connection cable

***Figure 4.1** – Connection of the MDB interface*

The GAT Vending 6100 BA is supplied with a DC power source in the range of 20 to 35 V (according to MDB standard). To ensure that the GAT Vending 6100 BA operates correctly, the LPS that limits the power input is protected by a Surface Mount Fuse (Fast Blow type).

4.2 Ethernet Connection

The GAT Vending 6100 BA has one Ethernet connection, which is available via the RJ45 socket on the rear part of housing. A direct Ethernet connection to the GAT Vending 6100 BA is only required for configuration.

To connect via Ethernet, one network cable with a minimum specification of CAT 5 (STP) is required. The GAT Vending 6100 BA supports data rates of 10 to 100 Mbit/s. It is recommended to provide a separate port at the switch or patch panel for each GAT Vending 6100 BA terminal.

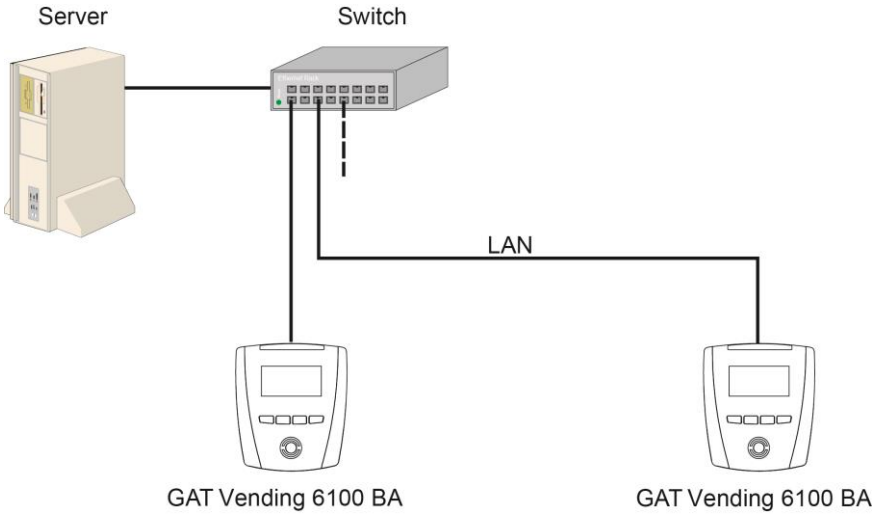
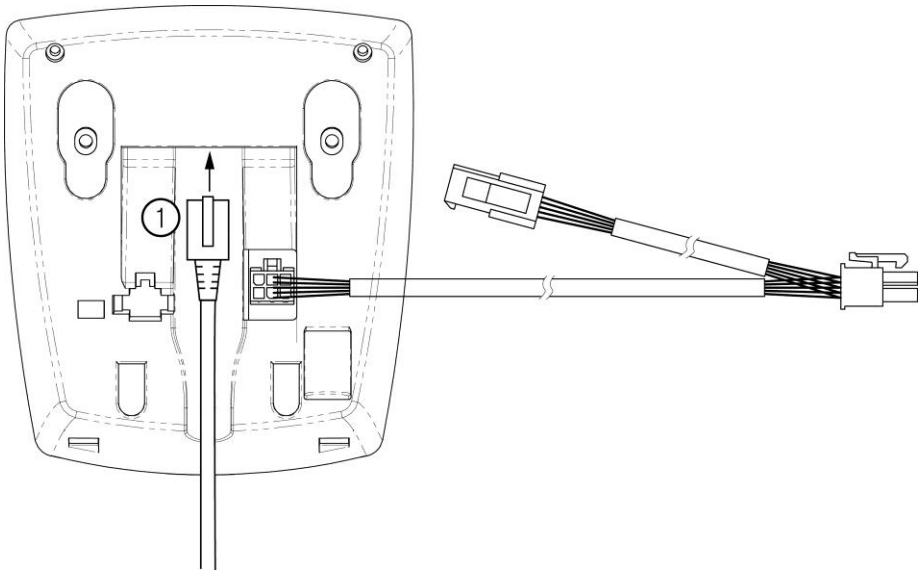


Figure 4.2 *- Ethernet network*

► Connect the Ethernet cable to the RJ 45 port on the back part of the GAT Vending 6100 BA housing.



1.....Ethernet cable

Figure 4.3 *– Ethernet connection*

5 STARTUP AND CONFIGURATION

Ensure the installation process and electrical connections have been carried out as described in the previous chapters. The GAT Vending 6100 BA starts automatically when power is applied to the device.

For the configuration of the GAT Vending 6100 BA, the difference between the **system settings** and the **configuration settings** must be clarified. The system settings affect how the device communicates with the network and the configuration settings affect how the device operates and interacts with the user.

5.1 Starting the GAT Vending 6100 BA

The startup process begins when power is supplied to the GAT Vending 6100 BA. The GANTNER logo and the currently installed software version ("BL-Vers.") is displayed. The status LEDs flash green and red alternately and the terminal searches for a connection to the vending machine and network.

Figure 5.1 *– Start screen of the GAT Vending 6100 BA*

The startup process takes up to one minute after which the terminal displays the current system settings.

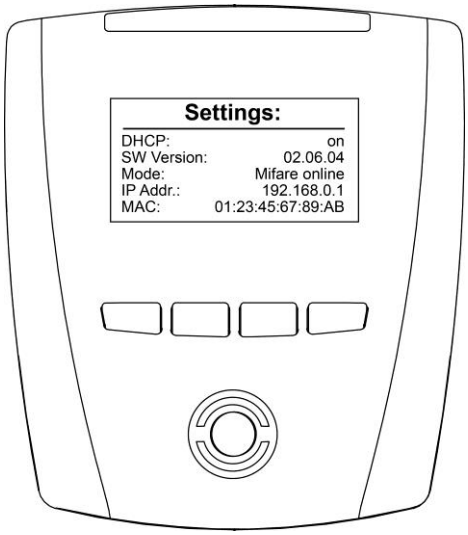


Figure 5.2 *– System settings of the GAT Vending 6100 BA*

The system settings can be accessed and configured via the service menu (see "5.2.1. Service Menu "). If the user does not actively open the service menu at the terminal, the GAT Vending 6100 BA continues to startup before entering into idle mode. The main screen is displayed and the RFID reading field flashes blue.

Figure 5.3 *– Main screen (example)*

5.2 System Settings

The system settings of the GAT Vending 6100 BA can be configured directly on-site via the service menu of the terminal. Alternatively, some of the settings can be defined via the network using GAT Config Manager software.

5.2.1 Service Menu

The service menu can be accessed during startup of the GAT Vending 6100 BA when the device settings (see Figure **5.2**) are shown on the display. While the device settings are displayed, the function keys on the front of the device must be pressed in the following sequence: 1 - 1 - 4 - 4 - 2 - 3.

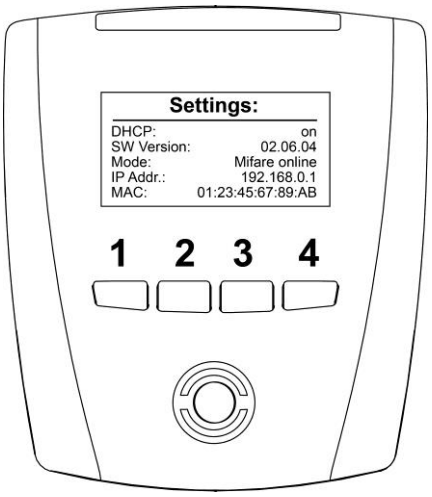


Figure 5.4 *- Keys for activating the service menu*

After pressing the keys in the correct sequence, the service menu is displayed:

Figure 5.5 *- Service menu of the GAT Vending 6100 BA*

Navigation within the service menu is done by pressing the corresponding keys. The current function for each key is shown at the bottom of the display and this can change depending on the menu. However, as a general guide:

- ► Keys 1 and 2 control movement up and down respectively.
- ► Key 3 is the "ESC" key and used to exit the menu.
- ► Key 4 is the "OK" key and used for confirmation.

“ESC” and “OK” are used to return to the previous menu where "ESC" discards changes to the settings and "OK" saves any changes made. To exit the service menu, press Key 3 ("ESC") and confirm in the next screen with "Yes".

5.2.2 Communication Settings

- ► Select the "Communication" menu item in the service menu and press key 4 "OK".
  - o The communication menu opens.

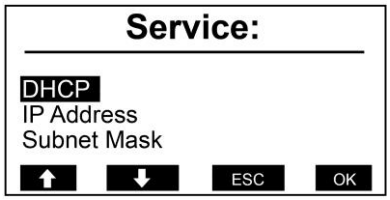


Figure 5.6 *- Communication menu*

Moving the cursor onto a menu item and pressing "OK" displays the settings for the menu item. The DHCP settings are shown below as an example.

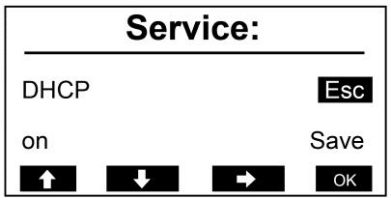


Figure 5.7 *- DHCP settings*

Using key 3 "➔", you can move the cursor to select an option. For example, move the cursor to "on" and you can change from "on" to "off" using keys 1 "🡅" and 2 "🡇". This process applies for all the settings in the service menu.

The following settings can be made:

- DHCP: Set to "on" if a DHCP server is used in the network. In this case, the remaining settings (IP address, subnet mask, gateway, DNS) are set automatically by the DHCP server.
- IP Address: If a DHCP server is not used for automatic IP assignment, enter the IP address of the GAT Vending 6100 BA.
- Subnet Mask: Definition of the network prefix.
- Default Gateway: IP address of the default gateway.
- Primary DNS: IP address of the primary DNS (domain name server).
- Secondary DNS: IP address of the secondary DNS (domain name server).
- Device Name: Network name for the GAT Vending 6100 BA. Standard is "GA" + part number (6 digits) + serial number (7 digits) of the device.

- MAC Address: The hardware MAC address of the GAT Vending 6100 BA. This cannot be changed.

5.2.3 Reader Settings

Different settings for the RFID reader of the GAT Vending 6100 BA are available in this menu.

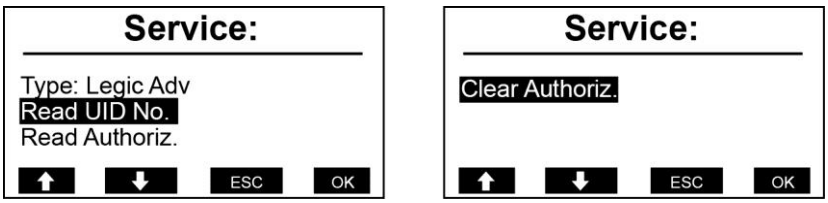


Figure 5.8 *- Reader settings menu*

The RFID reader type of the GAT Vending 6100 BA is shown on the first line (here "Legic Adv"). The following functions are available in this menu:

Read UID No.
Via this function, the unique number (UID) of a data carrier, which is held next to the reading field of the GAT Vending 6100 BA while the function is open, is read and displayed.

Read/Clear Authorization
These functions are only available for LEGIC readers. The functions allow you to view (read) or delete (clear) the authorization data stored in the internal LEGIC reader.

5.2.4 Time and Date Settings

During operation, the GAT Vending 6100 BA displays the current time and date. For accuracy, it is important that these settings are correct. To change the time and date, select the "Date/Time" menu item from the service menu.

Figure 5.9 *- Time and date settings of the GAT Vending 6100 BA*

- ► Select the value to change using key 3 "➔".
- ► Change the number, where the cursor is positioned, using keys 1 "🡅" and 2 "🡇".
- ► Confirm with key 4 "OK".

5.2.5 Display Settings

Different settings for the display of the GAT Vending 6100 BA are available in this menu.

Contrast

The contrast between black and white on the display of the GAT Vending 6100 BA can be adjusted.

► Select "Display" and then the "Contrast" menu item.

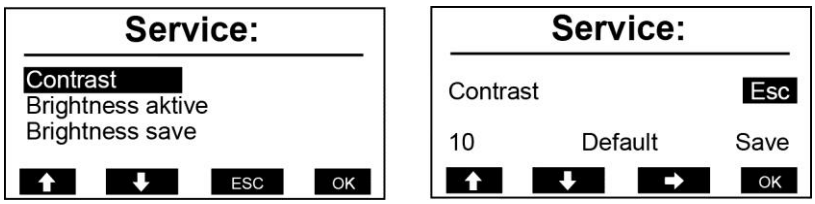


Figure 5.10 *- Setting the contrast of the GAT Vending 6100 BA*

► Change to the contrast value using key 3 "➔".

► Change the value using keys 1 "🡅" and 2 "🡇".

- The contrast is instantly adjusted and can be seen directly while changing the value. Selecting "Default" restores the contrast value to the factory setting.

► Confirm the contrast setting with key 4 "OK".

Brightness active

This function adjusts the brightness of the backlit display for when the device is operating in standard mode. The brightness level ranges from 0 – 80.

Brightness save

This function adjusts the brightness of the backlit display for when the device is operating in energy saving mode. The brightness level ranges from 0 – 80.

5.2.6 Reset Factory Settings

With the "Factory Settings" menu item, the system settings of the GAT Vending 6100 BA can be reset to their default values, as they were upon leaving the factory.

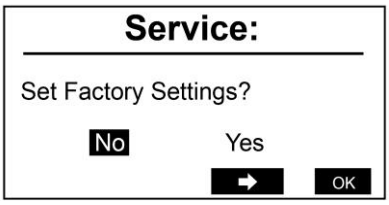


Figure 5.11 *- Factory settings*

After restoring the factory settings, the TCP/IP communication settings must be reconfigured to enable communication with the GAT Vending 6100 BA.

5.3 Configuration Settings

The configuration settings are the device functions that determine how the GAT Vending 6100 BA interacts with the user. These settings can be viewed and modified using "GAT Config Manager" PC software. This section provides an overview on how to define the configuration settings with GAT Config Manager.

A user guide is available when you install GAT Config Manager. The user guide contains detailed information about the functionality and use of the software.

In order to configure a GAT Vending 6100 BA, you must know the communication settings such as the IP address and port number (default 8208) for TCP/IP configuration. To find this information see section "5.2. System Settings".

Configuration Options

There are two ways to configure a GAT Vending 6100 BA with GAT Config Manager.

- Direct configuration: A connection to the GAT Vending 6100 BA must be established by entering all the communication settings required for a manual connection.
- Project configuration: A project is created where the GAT Vending 6100 BA and its communication settings are defined once. Configuring the device is then done simply by clicking on the “Configure device” option in the project. One project can contain multiple devices.

To begin configuring a device first start GAT Config Manager via the start menu within Windows®. The default location of the software is "Programs > Gantner Electronic GmbH > GAT Config Manager".

5.3.1 Direct Configuration

After opening GAT Config Manager, complete the following steps to directly configure a GAT Vending 6100 BA.

► Click on the "Open Device" icon at the top of the program.
  - The device configuration wizard opens.

Figure 5.12 *- Open device for direct configuration*

  - The wizard requests the information required to connect to the GAT Vending 6100 BA.

► Go to the next page of the wizard by clicking “Next”.

To return to a previous page click “Previous” and to close the wizard click “Cancel”. The "Finish" button becomes available when the wizard has received all the necessary information.

► Select the communication type. Choose “TCPIP” for the GAT Vending 6100 BA.

► Click on “Next”.

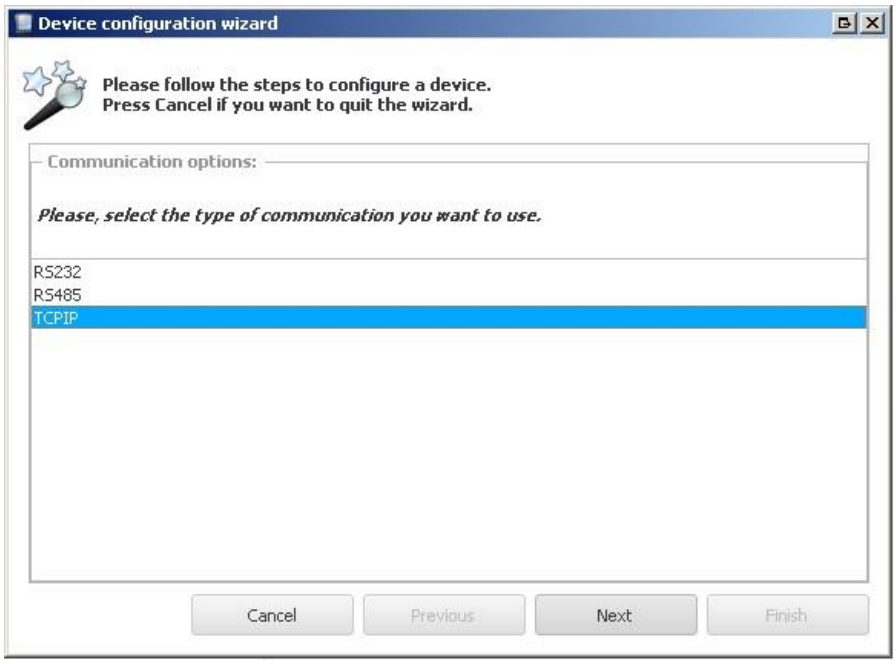


Figure 5.13 *- Open device for direct configuration (Wizard step 1)*

► Enter the IP address and port number of the GAT Vending 6100 BA.

► Click on “Next”.

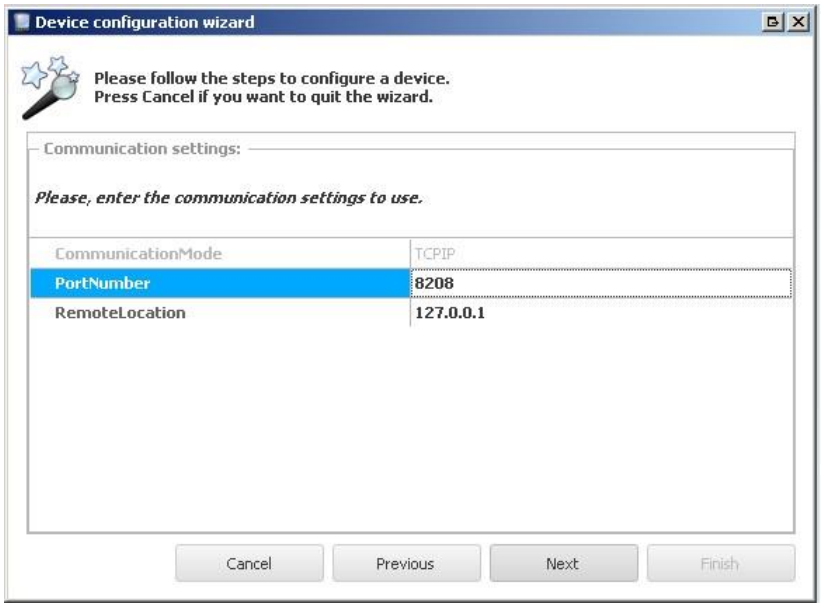


Figure 5.14 *- Open device for direct configuration over TCP/IP (Wizard step 2)*

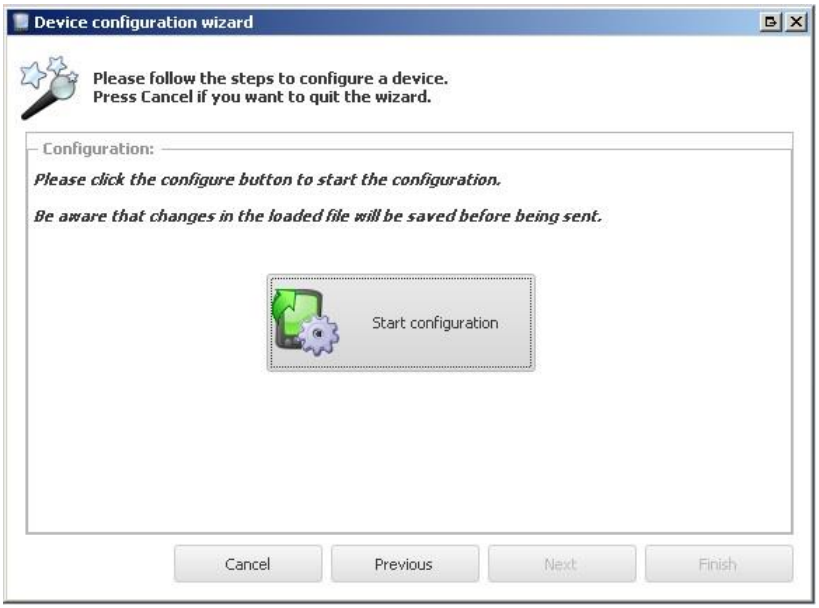


Figure 5.15 *- Ready to start configuration (Wizard step 3)*

► Press "Start configuration".

- GAT Config Manager connects to the GAT Vending 6100 BA and after a short pause, uploads and displays the current configuration of the device.

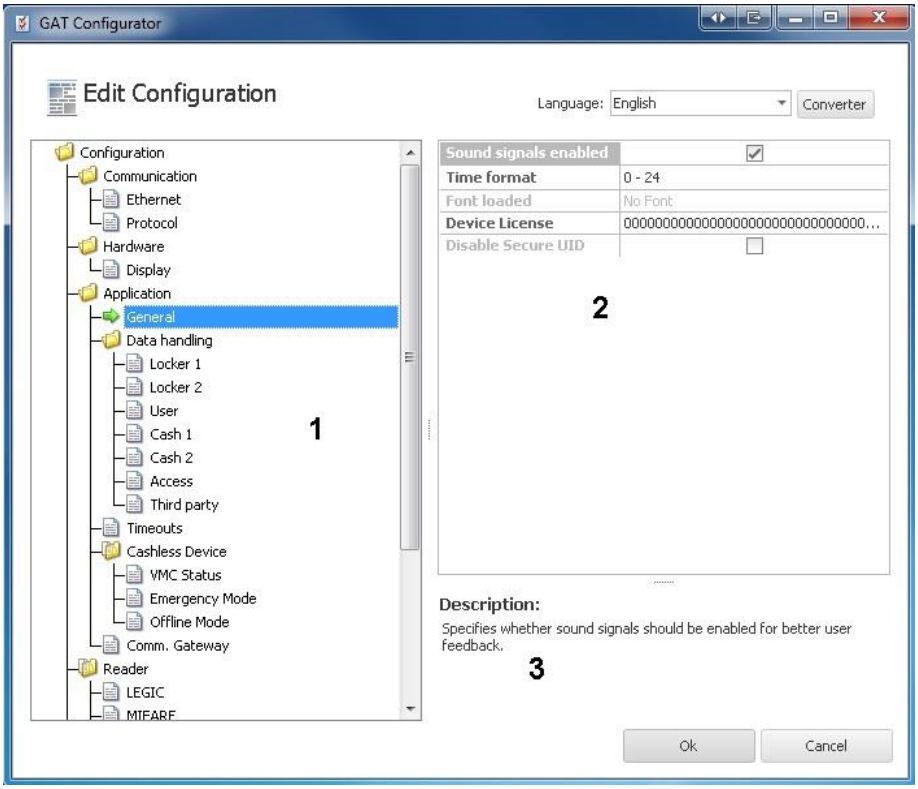


Figure 5.16 *– Configuration window of the GAT Vending 6100 BA*

The configuration settings of the GAT Vending 6100 BA are organized into several categories. The directory on the left (1) lists the different configuration categories.

► Click on a category and the settings for this category can be viewed and adjusted in the field to the right (2).
  - A short description of the setting is shown at the bottom of the window (3).

An overview of all the GAT Vending 6100 BA configuration settings is available in section “5.3.4 List of Configuration Settings”. More information on the operation of GAT Config Manager is available in a separate manual.

5.3.2 Project Configuration

Complete the following steps to configure the GAT Vending 6100 BA via a project in GAT Config Manager.

► Click on the “Create Project” icon (2 in Figure **5.17**) to start a new project.
► When a project for the GAT Vending 6100 BA already exists, click on the “Open Project” icon (1 in Figure **5.17**) to open the existing project.

Figure 5.17 *- GAT Config Manager – project setup*

► Once a project is established, click on the “Scan Device” icon (1 in Figure **5.18**).
  - The software scans the network and displays a list of all connected GANTNER devices.

► Select the GAT Vending 6100 BA requiring configuration from the list. Use information such as the IP and MAC address to identify the correct device.
  - The selected device is highlighted in blue as shown in Figure **5.18**.

► Click on “OK” (2 in Figure **5.18**)
  - The selected device is added to the “Devices” list (3 in Figure **5.18**).

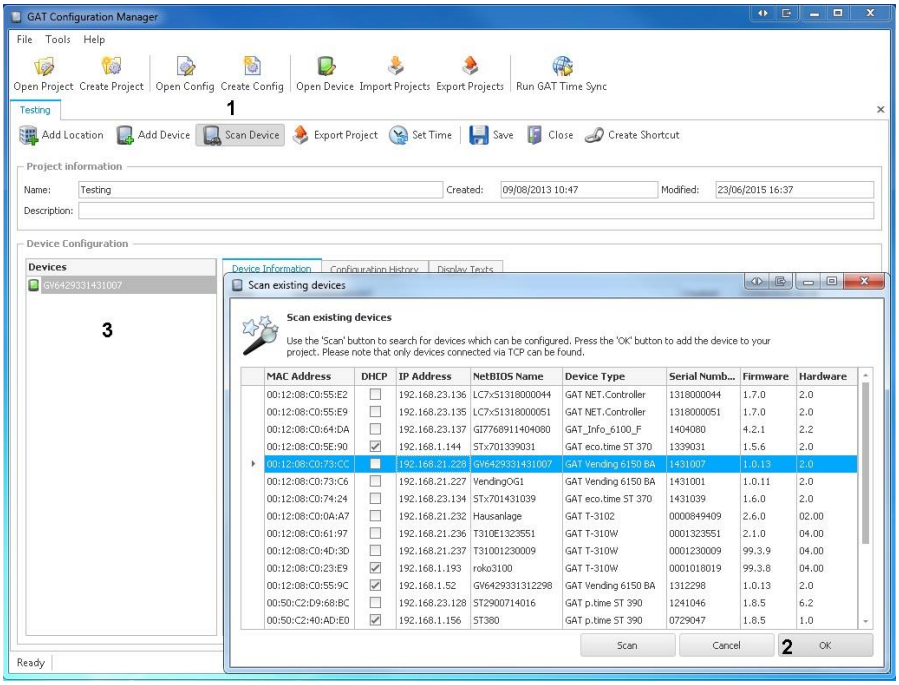


Figure 5.18 *– Network scan to add a device*

The main project window displays all the information that has been entered into GAT Config Manager. Click on the GAT Vending 6100 BA in the “Devices” list and information about the selected device is shown to the right of the project tree. Here you can view the predefined device and network settings.

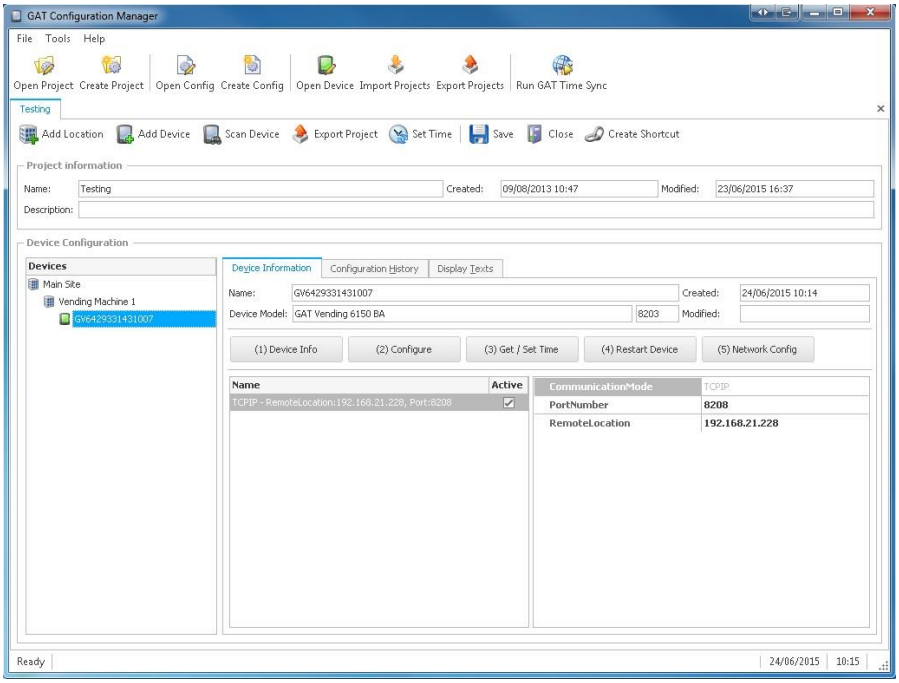


Figure 5.19 *– Project window*

To configure the display texts of the GAT Vending 6100 BA, click on the "Display Texts" tab. Here you can edit each individual message that is displayed on the selected terminal (see "5.3.3. Display Texts").

Click on the "(2) Configure" button to view and adjust the configuration settings of the GAT Vending 6100 BA. The existing configuration is uploaded from the terminal and displayed in the configuration window. See Figure **5.16** in the previous section for more information on the configuration window.

5.3.3 Display Texts

The texts that are shown on the display of a GAT Vending 6100 BA can be edited in GAT Config Manager. Complete the following steps to edit the display texts.

- ► In the project window, select the GAT Vending 6100 BA from the project tree.
- ► Click on the "Display Texts" tab.
  - o GAT Config Manager loads the data from the device and displays them in the project window.

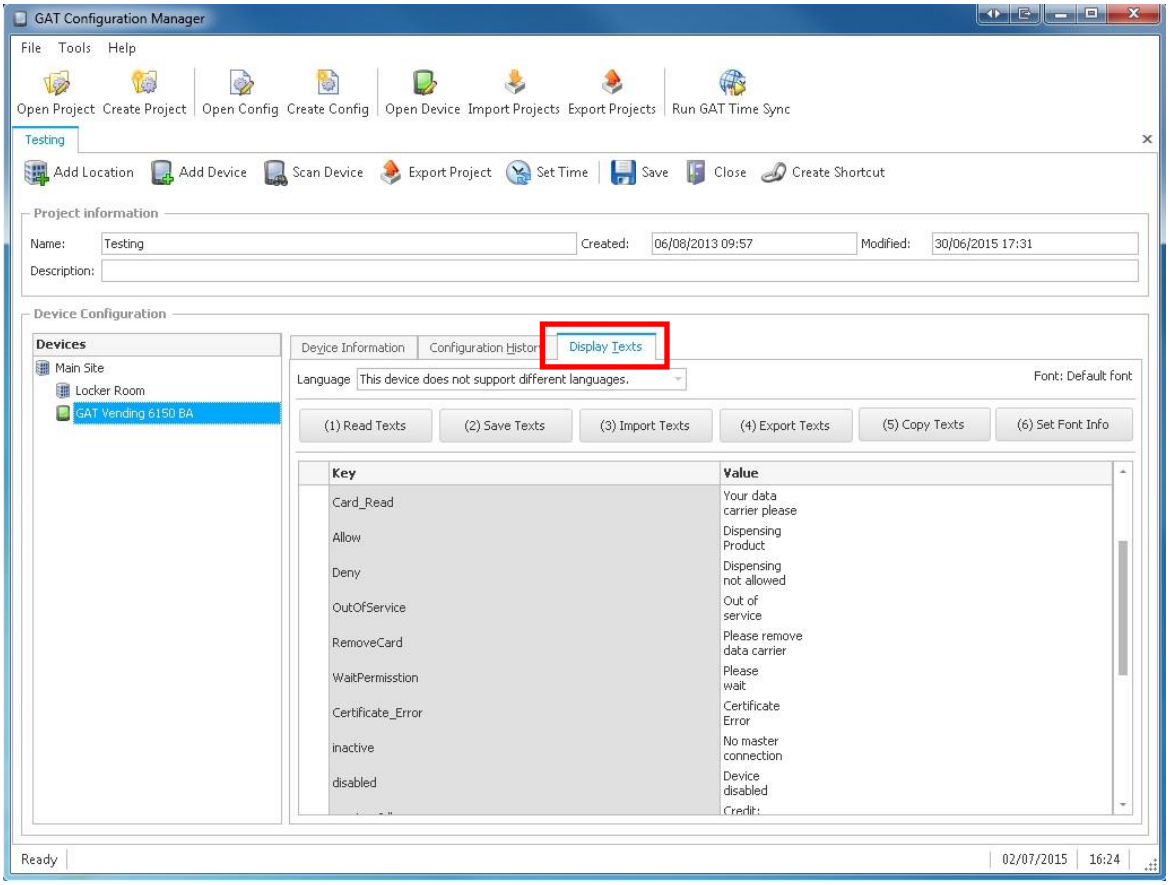


***Figure 5.20** – Display texts*

In the “Key” column of Figure **5.20**, the type of message is identified and in the “Value” column, the text can be entered. Each separate line of text is shown on a separate line of the display. The maximum length of 1 text line is 21 characters. If a line of text does not fit on the display of the GAT Vending 6100 BA using the standard font size, the GAT Vending 6100 BA automatically uses a smaller font size to display the entire text line.

The GAT Vending 6100 BA can only display text from Windows® code page 1252 (Western European), 1251 (Cyrillic), 1257 (Baltic) and 1255 (Hebrew). Text in any other format is shown as "*" on the display.

In the following table, each cell in the “Example” column represents one line of text. A blank cell represents a blank line on the display of the GAT Vending 6100 BA. Examples with two cells mean that only two lines of text can be entered in GAT Config Manager.

Definition of the texts:

Identifier	Definition	Example
Idle	Displayed during standard online operation to instruct the user to hold their data carrier next to the reading field.	 Your data carrier please
ConfigMode	Is shown when the host computer is the communication master, e.g., when a configuration file is loaded from or to the GAT Vending 6100 BA	 Loading configuration
CardAgain	Is shown when the user must present their data carrier to be read by the terminal again.	Again your data carrier please
Card_Read	Is shown when the user must present their data carrier to be read by the terminal.	Your data carrier please
Allow	Is shown when the user’s product selection is allowed and being dispensed.	Dispensing product
Deny	Is shown when the data carrier is not read correctly by the GAT Vending 6100 BA or the data carrier is invalid.	Dispensing not allowed
OutOfService	For online mode, this message is shown when communication to the server/host is interrupted.	Out of service
RemoveCard	Is shown when the GAT Vending 6100 BA reads the same data carrier more than once without it being removed first.	Please remove data carrier
WaitPermission	After the terminal has read a data carrier and sent a request to the host, this message is shown while the terminal waits for a response from the host.	Please wait
Certificate_Error	Is shown when the data carrier is not read correctly by the GAT Vending 6100 BA or the data carrier is invalid.	Certificate error
inactive	Is shown when the GAT Vending 6100 BA does not receive a response from the vending machine.	No master connection
disabled	Is shown when the GAT Vending 6100 BA is deactivated by the vending machine.	Device disabled
session_Idle	Is shown when the GAT Vending 6100 BA displays the user’s account balance.	Credit: Euro
insufficient_Funds	Is shown when the user’s account balance is not enough to meet the price of their product selection.	Insufficient funds

Vend_Failed	Is shown when the vending machine fails to deliver the user's selected product.	Vending failed
Always_Idle	This message is shown while the GAT Vending 6100 BA waits for the user to select a product.	Choose product
Bookings_Lock	For online + emergency mode. Shown when the memory capacity of the GAT Vending 6100 BA is reached.	Booking memory full
offl_cashback	For offline mode. This message is shown when the user must present their data carrier so the GAT Vending 6100 BA can credit money to the user's account.	Card please chargeback
offl_refund_OK	For offline mode. This message is shown when the GAT Vending 6100 BA has credited money to the user's data carrier account.	Credit refund ok

***Table 5.1** – Display texts of the GAT Vending 6100 BA*

5.3.4 List of Configuration Settings

The following table lists all the configuration settings available for the GAT Vending 6100 BA in GAT Config Manager. A brief description and the format (where applicable) for each setting are shown in the table. Make sure to enter data in the indicated format for settings such as time definitions, etc.

Options	Description	Format	Default
Communication			
Ethernet			
Port number	Port used for communication with the device	Integer	8000
MAC address	The MAC address of the device (cannot be changed)	Integer	
DHCP enabled	If enabled, will use the IP settings from a DCHP server	Boolean	True
Static IP address	IP address of the device if DHCP is disabled	IPv4 add.	192.168.1.37
Static subnet mask	Subnet mask of the device (if DHCP is disabled)	IPv4 add.	255.255.255.0
Static primary DNS	Primary DNS address of the device (if DHCP disabled)	IPv4 add.	192.168.1.13
Static secondary DNS	Secondary DNS address of the device (if DHCP disabled)	IPv4 add.	192.168.1.11
Static default gateway	Default gateway of the device (if DHCP is disabled)	IPv4 add.	192.168.1.6
NetBIOS name	NetBIOS name of the device	Text	GW + Part No. + Serial No.
Dynamic IP address	IP address got from the DHCP Server	IPv4 add.	0.0.0.0
Dynamic subnet mask	Subnet mask got from the DHCP Server	IPv4 add.	0.0.0.0
Dynamic default gateway	Default gateway got from the DHCP Server	IPv4 add.	0.0.0.0
100 MBit Ethernet enabled	Option to enable 100 MBit Ethernet link, 10 MBit if disabled	Boolean	true
Port Debug	UDP port to assist service technicians with fault diagnosis	Integer	
Ident Message Timeout	Timeout setting for the commands "Card Ident Request" and "Product Vending Request"	Integer	
Protocol			
Communication mode	Operating mode of the device. Select between “Online”, “Online + Emergency” or “Offline”	Menu	Online
Hardware			
Display			
Contrast	Contrast of the display. Range: 0 – 63. 0: Set to default	Integer	
Brightness active mode	Brightness of the display when the device is in standard operation mode. Range: 0 - 80	Integer	
Brightness active mode	Brightness of the display when the device is in energy saving mode. Range: 0 - 80	Integer	
Energy save delay	Idle time in milliseconds before the device switches to energy saving mode.	Integer	
Application			
General			
Sound signals enabled	Turn on/off sound signals emitted after user activity	Boolean	true
Time format	Format used to display time values on the device. Select “0 – 24”, “AM / PM” or “Disable”	Menu	0 - 24
Use alternative font	Select to use the alternative font for displaying text	Boolean	False
Font loaded	Description of the currently loaded font data		
Device License	License to enable special features of the device	Hex	0000…
Disable Secure UID	Option to disable the Secure UID	Boolean	False
Data handling			
Locker 1			
Read	Option to read data from the first locker segment of the data carrier and send to host	Boolean	False
Locker 2			
Read	Option to read data from the second locker segment of the data carrier and send to host	Boolean	False

	User			
	Read	Option to read data from the user segment of the data carrier and send to host	Boolean	false
	Cash 1			
	Read	Option to read data from the first cash segment of the data carrier and send to host	Boolean	False
	Cash 2			
	Read	Option to read data from the second cash segment of the data carrier and send to host	Boolean	False
	Access			
	Read	Option to read data from the access segment of the data carrier and send to host	Boolean	False
	Third party			
	Read	Option to read data from the third party segment of the data carrier and send to host	Boolean	False
Timeouts				
	Ident timeout	Timeout in milliseconds for input after a data carrier is identified (read)	Integer	30000
	Product draw timeout	Timeout in milliseconds for feedback from vending machine after product selection	Integer	60000
	Idle timeout	Timeout in milliseconds for product selection	Integer	15000
	Feedback screen	Timeout in milliseconds for all feedback screens	Integer	3000
	Cashless Device	Mainly for service technicians.		
	Default currency code	Define the default currency code	Integer	
	Country code	Define the country code	Integer	
	Scale factor	Define the scale factor for cash values	Integer	
	Decimal places	Define the number of decimal places for cash values	Integer	2
	Force single vend	Option to cancel vending session after each transaction. Required for vending machines that start multiple vending transactions	Boolean	False
	Use VMC display	Option to show GAT Vending 6100 BA text on the vending machine's display (where possible)	Boolean	False
	Online request	Option to perform an online request for every product. The host can individually allow special products or send online prices	Boolean	False
	MDB address	Select the cashless device number in use at the vending machine. "Cashless Device 1" or Cashless Device 2"	Menu	Cashless Device 1
	Verify age	Option to activate age checking functionality, as far as the information is available	Boolean	False
	Check card available	Option to end vending session when data carrier is removed from the RFID reading field	Boolean	False
	Auto reset timeout	Reset MDB bus after terminal is set to inactive mode for x seconds. 0 = disable auto reset function	Integer	
	Bus Timeout Factor	Factor to increase the timeout for MDB communication for slow answers (1 = 5 ms, 2 = 10 ms, 3 = 15 ms, 4 = 20 ms, 5 = 25 ms)	Integer	
	VMC Status	Read-only data. Mainly for service technicians. VMC = Vending Machine Controller		
	VMC connection	VMC connection		
	VMC feature level	VMC feature level		
	VMC feature bits	VMC feature bits		
	VMC manufacturer	VMC manufacturer		
	VMC serial number	VMC serial number		
	VMC model number	VMC model number		
	VMC SW version	VMC software version		

	Emergency Mode			
	Funds	Simulated account balance (in cents) for every data carrier in emergency mode	Integer	8000
	Payment type	Select the price setting: “Default Price”, “Price List”, “Discount Group”, “Discount”, “Surcharge”	Menu	Default Price
	Discount/Surcharge [%]	Define a percentage price discount / surcharge	Integer	0
	User group	Define the user group	Integer	0
	Pricelist/Disc grp	Define the pricelist / discount group	Integer	0
	Emergency revalue	Option to allow revaluing in emergency mode	Boolean	False
	Pseudo always idle	Option to simulate a valid card with emergency mode settings. The user must present their data carrier only once per vending transaction.	Boolean	False
	Unknown cash value	Option to send the “Cash value not determined” value when emergency values are used (0xFFFF). Not supported by many vending machines.	Boolean	False
	Offline Mode			
	Cash segment NB	GANTNER cash segment to read account data from	Integer	1
Comm. Gateway				
Enable Comm Gateway		Option to enable the communication gateway	Boolean	False
Reader				
Read Mifare		Option to read MIFARE data carriers	Boolean	True
Read Legic Prime		Option to read LEGIC Prime data carriers	Boolean	True
Read Legic Advant		Option to read LEGIC Advant data carriers	Boolean	False
Read ISO 15693		Option to read ISO 15693 data carriers	Boolean	False
Read FeliCa UID		Option to read the UID of FeliCa data carriers	Boolean	False
Read Inside Secure UID		Option to read the UID of Inside Secure data carriers	Boolean	False
Read ISO 14443B UID		Option to read the UID of ISO 14443B data carriers	Boolean	False
LEGIC		Options for reading LEGIC data carriers.		
Company ID		Company ID for the device. All data carriers must have the same company ID to be used with the device	Hex	9999
Subsite		Additional key for division of site keys	Hex	00
Subsite enabled		Option to check the subsite keys of data carriers	Boolean	False
SSC		Data carrier segment ID for SSC (cash segment)	Hex	1A
MIFARE		Options for reading MIFARE data carriers.		
Site key		Site key of the device. All data carriers must have the same site key to be used at the device	Hex	73E0818B…
Subsite		Additional key for division of site keys	Hex	00
Enable subsite		Option to check the subsite keys of data carriers	Boolean	False
Position Locker 1		Indicates the data carrier segment for locker 1 data	Integer	4
Position Locker 2		Indicates the data carrier segment for locker 2 data	Integer	5
ISO		Options for reading of ISO 15693 data carriers.		
Site key		Site key of the device. All data carriers must have the same site key to be used at the device	Hex	73E0818B…
Subsite		Additional key for division of site keys	Hex	00
Subsite enabled		Option to check the subsite keys of data carriers	Boolean	False
Position FID		Indicates the data carrier segment for general data	Integer	13
Position Locker 2		Indicates the data carrier segment for certificate data	Integer	15
Position Locker 1		Indicates the data carrier segment for locker 1 data	Integer	19
Position Locker 2		Indicates the data carrier segment for locker 2 data	Integer	23
Third Party				
Segment ID		Segment ID for third party data on the data carrier	Integer	
Data start		Start of the third party data segment	Integer	
Data length		Length of the third party data segment	Integer	

	Mifare Classic			
	Sector number	Sector number of the MIFARE Classic third party segment	Integer	1
	Site key	Site key of the MIFARE Classic third party segment	Hex	73E0818B…
	Read key	Read key of the MIFARE Classic third party segment	Menu	Key A
	Mifare DESFire			
	Key set	Number of the read key	Integer	
	Read key number	Number of the write key	Integer	
	Application ID	ID of the target DESFire application	Text	
	Encryption mode	Select the type of encryption mode	Menu	
	FileNum	File number to read data from	Integer	
	FileCommMode	File communication mode: “Plain”, “Maced”, “Enciphered”	Menu	
	FileType	Type of file: “Standard” , “Backup”	Menu	
	ISO			
	Block number	Block number position for ISO data	Integer	13
	LEGIC			
	Search string	“Address” of LEGIC segment on data carrier	Hex	
	Search string length	Length of string for LEGIC data carrier segment	Integer	6
Read only parameter				
	Production			
	Production Data	Production data for the device (set at manufacturer)		
	Hardware Version	Hardware Version of the Device Hardware		
	Serial Number	Serial number of the device		
	Software Version	Software Version of the Application		

Table 5.2 *- Configuration settings for the GAT Vending 6100 BA*

<u>For online mode</u>
If the host computer only requires the unique number of a data carrier, deleting all reading options makes the process faster as the data carrier does not need to be read.

6 OPERATION

Explained in this chapter are the different operating modes of the GAT Vending 6100 BA and the process required to purchase a product from a vending machine. As there are many different types of vending machine available, a range of operating conditions are possible. Therefore, a standard operation is described here and please also refer to the user manual of the vending machine for more detailed information.

6.1 Communication

For configuration and general operation, the GAT Vending 6100 BA communicates with a server/host computer. To enable communication, the terminal uses certain protocols that are described in separate manuals. For standard operation of the device, it is not necessary to know the details of these protocols. The GANTNER developed software package, GAT DIRECT.Connect, provides a convenient method for configuring and operating the GAT Vending 6100 BA. Refer to the GAT DIRECT.Connect documentation for more information on this solution.

6.1.1 Online Mode

Online mode is the standard operating mode for the GAT Vending 6100 BA. In online mode, when a data carrier is read the terminal sends the information over the network to the server/host and waits for a response. The server evaluates the information then sends commands and data back to the GAT Vending 6100 BA to control the vending operation.

Master and Slave
During online operation, the GAT Vending 6100 BA is in master mode and the server/host computer is in slave mode. The GAT Vending 6100 BA periodically asks the host if it needs to switch to master mode (e.g., to upload a configuration to the GAT Vending 6100 BA). If the host changes to master mode, the GAT Vending 6100 BA will change to slave mode. If no commands are received from the host after a certain time, the GAT Vending 6100 BA automatically changes back to master mode.

When the GAT Vending 6100 BA is operating in online mode and communication to the server/host is lost, the GAT Vending 6100 BA automatically switches to out of operation mode. In out of operation mode, the terminal and connected vending machine are not able to be used until communication to the server/host is reestablished.

6.1.2 Online and Emergency Mode

When the GAT Vending 6100 BA is operating in “online and emergency mode” and communication to the server/host is lost, the GAT Vending 6100 BA automatically switches from online mode to emergency mode. There are a range of configurable options that control how the terminal behaves while in emergency mode, and these allow vending operation to continue while communication is interrupted.

For example, the “Funds” configuration setting allows a temporary account balance to be set for every valid data carrier. When a valid data carrier is read by the GAT Vending 6100 BA while the terminal is in emergency mode, the user is able to purchase a product and the price is deducted from the emergency mode account. As soon as communication is restored, the GAT Vending 6100 BA returns to the standard online mode of operation and sends the emergency mode transaction data to the host. Any guest who used the vending machine during emergency mode will have the cost of the purchase(s) debited from their online account.

6.1.3 Offline Mode

In offline mode, the GAT Vending 6100 BA operates autonomously and does not connect to a server/host for data evaluation and control. All information required to complete a vending transaction, such as the user's account balance, is stored on the data carrier.

Offline mode is only valid for LEGIC data carriers with a GANTNER cash segment.

In offline mode, the terminal reads the data carrier and displays the user's account balance. The user selects a product and must present their data carrier again to confirm the selection. The updated account balance is written onto the LEGIC data carrier and displayed on the terminal while the product is being dispensed.

6.2 Control and Display Elements

For user guidance, the GAT Vending 6100 BA is equipped with various control and display elements. This includes an LCD display, LEDs integrated into the RFID reading field and status bar, and a tone generator for acoustic signaling. Four function keys are also provided for menu navigation and product selection.

1.....LED status bar
2 .....Display
3 .....Reading field LED
4 .....Function keys

***Figure 6.1** – Control and display elements of the GAT Vending 6100 BA*

6.2.1 Display

The GAT Vending 6100 BA has a graphical, monochrome display that can display four lines of text. The display is used to show instructions and messages relating to the user's current activity as well as additional information such as the user's account balance. The display texts and the language can be individually configured using GAT Config Manager software (see "5. Startup and Configuration").

6.2.2 LED Status Bar

To indicate the current state of operation or to warn of an error, the LED status bar is designed to emit different colors (red or green) and styles (solid or blinking). The following table defines the LED status bar signaling.

Signal	Definition
Solid red	- No connection to the vending machine. - No connection to server/host. Terminal in out of operation mode.
Solid green	- Data carrier read
Flashing red	- Vending transaction declined - Vending machine failed to dispense product
Flashing green	- Vending transaction approved - Vending machine dispensing product
No LED signal	- Terminal idle - Terminal deactivated

***Table 6.1** – Signals of the LED status bar*

6.2.3 Sound Signals

To indicate the current state of operation or to warn of an error, the tone generator of the GAT Vending 6100 BA emits different sounds. The following table defines the acoustic signaling.

Signal	Definition
1 x beep	- Data carrier read
2 x beeps	- Vending transaction declined - Connection broken - Error
3 x beeps (rising in pitch)	- User account credited (offline mode)
3 x beeps (descending in pitch)	- User account debited (offline mode)

***Table 6.2** – Definition of the sound signals*

6.3 Purchasing a Product

The standard procedure for purchasing and dispensing a product at a vending machine controlled by the GAT Vending 6100 BA is as follows:

- ► The GAT Vending 6100 BA displays a message inviting the user to read their data carrier. The LED status bar illuminates red and the RFID reader illuminates blue.
- ► Hold your data carrier next to the RFID reader.
  - o The GAT Vending 6100 BA displays your current account balance.

For offline mode, the account balance is stored on the LEGIC data carrier and for online mode, the account balance is stored on the server.

- ► Remove your data carrier from the reading field of the GAT Vending 6100 BA.
  - o The default configuration allows you 10 seconds to select a product (see next step).
- ► Now select the product you want to purchase from the vending machine. Refer to the vending machine documentation for more information on this step.
- ► For offline mode, hold the data carrier again next to the RFID reader of the GAT Vending 6100 BA.
  - o The cost of the purchase is deducted from your data carrier account and the updated balance is displayed.
- ► For online mode, your data carrier does not need to be read again by the GAT Vending 6100 BA.
  - o The deduction takes place online and the updated account balance is displayed.
- ► Remove the purchased product from the vending machine.

6.4 Troubleshooting

If an error or a fault occurs with the GAT Vending 6100 BA, the terminal indicates this state via its display, beeper and status LEDs. The following information assists to identify errors.

The text shown on the display can be modified. The texts shown below are the default texts as described in section” 5.3.3 Display Texts”.

6.4.1 Error: Certificate error

Display: "Certificate error"
LED status bar: Flashing red
Beeper: 2 x beeps
Possible causes: Data carrier not read correctly by the GAT Vending 6100 BA, data carrier invalid (site key incorrect)

6.4.2 Error: Out of service

Display: "Out of service"
LED status bar: Solid red
Beeper: 2 x beeps
Possible causes: Occurs when the GAT Vending 6100 BA is operating in online mode and the connection to the host/server is broken.

6.4.3 Error: No connection to vending machine

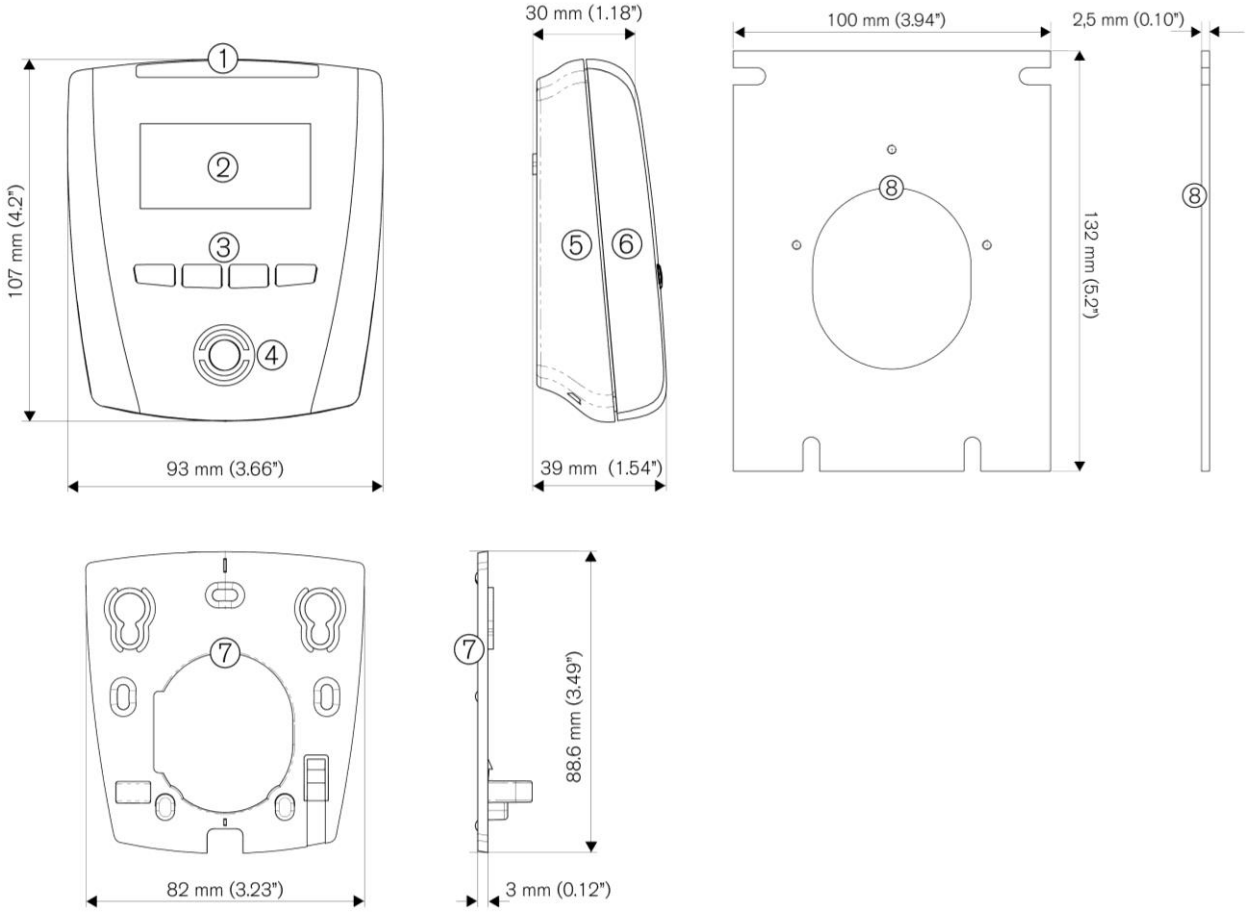
Display: "No master connection"
LED status bar: Solid red
Beeper: 2 x beeps
Possible causes: Occurs when the GAT Vending 6100 BA does not receive any data from the vending machine

7 TECHNICAL INFORMATION

7.1 Technical Data

Permitted input voltage U_{DC}:	20 to 35 V (MDB)
Max. current consumption:	200 mA
Max. transmission power:	200 mW
Protection:	Surface Mount Fuse AVX F0805B2R00FSTR (2A / 63V, Fast Blow type), ensures that the GAT Vending 6100 BA operates within the LPS limits.
Frequency of reading field:	13.56 MHz
Reader type:	LEGIC Advant (reads all LEGIC, MIFARE® und ISO 15693 data carriers)
Supported data carriers:	- LEGIC Prime - LEGIC Advant - MIFARE® Classic - MIFARE DESFire® - ISO 15693
Control elements:	- 4 function keys - RFID reader
Interface elements:	- Graphical black & white display (LCD) with white LED backlight, resolution 128 x 64 pixels, visible display area = 50 mm x 25 mm - RFID reader (illuminated) - Acoustic signal - LED status bar with LED segments in different colors
Host interface:	Ethernet 10/100 MBit/s
Vending machine interface:	MDB with standard 6-pin connector
Housing material:	- Front part: Plastic PMMA - Back part: Plastic PC-ABS
Dimensions:	93 mm x 107 mm x 39 mm (3.66´´ x 4.2´´ x 1.54´´)
Permitted ambient temperature:	0 °C to +50 °C (32 °F to 122 °F)
Permitted storage temperature:	-10 °C to +60 °C (14 °F to 140 °F)
Relative humidity:	20 to 80%, non-condensing
Protection type:	IP 54
Protection class:	III
Weight:	Approx. 200 g (0.44 lbs.)
Environment class based on VdS 2110:	II (conditions in indoor areas)

7.2 Dimensions



1.....LED status bar
2.....Display (LCD)
3.....Function keys
4.....Illuminated, round scan field
5.....Device back part
6.....Device front part
7.....Plastic mounting plate
8.....Aluminium mounting plate (accessory)

This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2004/108/EG.
This product is in conformity with the following EC directives, including all applicable amendments:
- 1999/5/EC (R&TTE directive)
- 2011/65/EU (Restriction of the use of certain hazardous substances in electrical and electronic equipment)

The GAT Vending 6100 BA was developed and fabricated under the quality management standard ISO 9001 and GANTNER Electronic GmbH is also certified according to standard ISO 14001.

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.

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.

FCC INFORMATION (U.S.A.)
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, cause harmful interference to radio communications.
Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

FCC Label
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 fonctionnement.

Note:
This manual is valid from April 18th, 2017. It is subject to change.
Amendments can be made without prior notice at any time.

GANTNER Electronic GmbH
Montafonerstraße 8
6780 Schruns
Austria
T: +43 (0)5556 73784-0
F: +43 (0)5556 73784-8000
info@gantner.com

GANTNER Electronic GmbH Deutschland
Industriestraße 40F
44894 Bochum
Germany
T: +49 (0)234 58896-0
F: +49 (0)234 58896-11
info-de@gantner.com

GANTNER Electronics Pty Ltd Australia
3/105a Vanessa Street, Kingsgrove
NSW 2208 Sydney
Australia
T: +61 (0)2 9011 8114
F: +61 (0)2 8209 1708
info-aus@gantner.com

GANTNER Electronics Ltd. UK
16 The Havens, Ransomes Europark
Ipswich, Suffolk, IP3 9SJ
United Kingdom
T: +44 (0)1245 697588
Tech. Line: +44 (0)1480 212627
info-uk@gantner.com

GANTNER Electronic GmbH Middle East
P.O. Box 62702, Office 1604, Aspect Tower (Executive Towers group)
Business Bay, Sheikh Zayed Road, Dubai, U.A.E.
T: +971 (0)4 451 7794
F: +971 (0)4 451 7795
M: +971 (0)50 6504082
info-me@gantner.com

Part No.: 533625