

Vitogate 300

Communication from heating system via BACnet or Modbus

VITOGATE 300



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1 General information

The Vitogate 300 gateway links the Viessmann LON with BACnet or Modbus. For further information, see the Vitogate 300 assembly and service manual or www.vitogate.info (<http://www.vitogate.info>).

1.1 System requirements

PC/laptop with following features

- Minimum screen resolution 1024 x 768
- Supported web browsers:
 - MS Internet Explorer version 7 or higher
 - Firefox version 2 or higher
 - Mobile Safari version 3.1 or higher
 - Google chrome version 18.0 or higher

1.2 Logging into the Vitogate 300 as a user

To log on as a user, carry out the following steps in the given order:

1. Enter the **User name** and **Password**.
User name: vitogate
Password: viessmann
2. Press **Login** . The **Vitogate overview** screen appears.

We recommend you issue a **New password** (see chapter 3.6) after logging into Vitogate 300 for the first time.

The **password** must have at least 8 characters.



To ensure that unauthorised persons cannot access the Vitogate settings, never give out the password.

Logging off from Vitogate 300

Click on  in the main menu. The start screen will be displayed.

1.3 Supported devices

The supported devices are listed in **Info about** (see chapter 7.2) in the main **Help** menu. For more information, see www.vitogate.info (<http://www.vitogate.info>)

2 Operating information

The operating information summarises all important information on running Vitogate.



2.1 Select language

The list field for selecting the language in which the software is displayed is located in the right-hand section of the main menu. Use ▼ to open the list field and select the desired language. The entire display will change into the selected language.

2.2 Menu overview

Main menu and submenu


The main menu contains the following menu options:

General (see chapter 3)	<ul style="list-style-type: none"> ■ General setting options that are required for Vitogate 300 operation or the software screen. ■ Network settings ■ Data backup ■ Change password ■ Update management ■ Restart operation
VI LON (see chapter 4)	Contains all settings for the Viessmann LON
BACnet (see chapter 5) or Modbus (see chapter 6)	Contains the settings for BACnet
Help (see chapter 7)	The Help menu contains a help section with various informative materials and a diagnostic section.
User (see chapter 3.6): 	Indicates the user name of the logged-on user.
[Language] (see chapter 2.1) 	Exit the program (see chapter 1.2) The desired language can be selected here.
Restart required!	Calling up online help Position of the display in the grey bar under the main menu. After configuration changes, this message indicates that a Restart (see chapter 3.8) is necessary.

Depending on which main menu is open and the system's features, the submenus include various vertically arranged menu options with system-specific functions of Vitogate 300.





Workspace

The currently selected screen is displayed here.

A status bar is located in the upper area. The currently selected main menu, followed by the currently selected submenu, is displayed in the left-hand section of the status bar. The information "**Status on:**" with the weekday, date, and time, as well as the update button , is located in the right-hand section of the status bar. The **Date and time format (see chapter 3.4)** is adjustable.

2.3 Operation symbols

The following operation symbols may occur:

	Display help topics Opens the online help for the Vitogate 300.
	Update Updates the content of the current screen.
	Highlight Within the tables, this symbol means: Highlight all table entries or remove all highlights
	Edit To further edit the element, the program switches to another screen or opens a separate window.

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Open calendar

A dialogue opens, where the date can be set.



Delete

Removes the highlighted element from the current screen. Prior to execution, a confirmation prompt must be answered in the affirmative.



Save settings

Saves the table settings made.



Log off from the current session

Ends the current Vitogate 300 session.

3 General settings

The **General** main menu contains the following submenus:

Overview (see chapter 3.1)	Overview of Vitogate functions
Vitogate (see chapter 3.2)	Vitogate settings
IP network (see chapter 3.3)	IP network settings
System time (see chapter 3.4)	Settings for system time to synchronise the various systems
Data backup (see chapter 3.5)	Vitogate settings can be backed up in the file system or onto a USB stick and can then be reloaded.
Password (see chapter 3.6)	Change password
Update (see chapter 3.7)	Option to implement a software update
Restart (see chapter 3.8)	After a change to the configuration, restart the Vitogate's communication software


3.1 Overview

The overview contains a basic summary of the most important information about the Vitogate, the Viessmann LON, and BACnet or Modbus.

3.2 Vitogate settings

The following parameters for Vitogate are adjustable:

Name:	To identify the device: Enter "Vitogate 300".
Installation location:	Specify the installation site.
Description:	Space for individual text and notes about the system
Vitogate type::	Set which BUS system the Vitogate is to be used with in the list field: <ul style="list-style-type: none"> ■ Vitogate 300 BN (BACnet) For additional information, see BACnet documentation ■ Vitogate 300 MB (Modbus) For additional information, see BACnet documentation
Language data points:	Select the desired language for data points: <ul style="list-style-type: none"> ■ Deutsch ■ English
Measurements:	Select the desired system for units of measurement: <ul style="list-style-type: none"> ■ SI units ■ English units

After completing the table fields, press  **Save** . The settings are saved.

3.3 Set IP network

The following settings are needed for the IP network:

Network adaptor	Communication with BACnet via IP network: Request data from network administrator
	Communication with BACnet via serial interface: The data is required solely for configuring the Vitogate. Retain standard setting: Standard setting: <ul style="list-style-type: none"> ■ IP address: 169.254.0.1 ■ Netmask: 255.255.0.0 ■ Standard gateway: none ■ Host name: A separate device name must be assigned for each Vitogate in the network. Each Host name may exist
Network name	

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only once in a network.

Services

- **Name server 1:** Fill out only if using a name server for **Time synchronisation** (see chapter 3.4).
- **Name server 2:** Fill out only if using a name server for **Time synchronisation** (see chapter 3.4).
- **Webserver access:**
 - Delivered condition: **http (port 80)**
 - **https (port 443)**
 - **http and https (port 80/443)**
- **Diagnostics port (ssh 22):** Deselect only if, for IP security reasons, only http/https is permitted.

After completion, press  **save** . The settings are saved.

3.4 Set system time

The Vitogate has a battery-protected real-time clock.

The Vitogate has various time setting options to choose from:

- Use VI LON time** The time sent by VI LON will be used for the Vitogate communication software.
- Manual time setting** The date and time set here will be used for the Vitogate communication software. After entering, press **Set time** .
- NTP synchronisation** The time stipulated by an **NTP server** will be used for the Vitogate communication software. This requires that the NTP server is present in the IP network. Enter the desired server (if necessary, inquire with the network administrator).

 With a with **Time synchronisation to VI LON** , the time on the VI LON will be sent.

- Use BACnet time synchronisation** The time sent by BACnet will be used for the Vitogate communication software.


 With a with **Time synchronisation to VI LON** , the time on the VI LON will be sent.

Time synchronisation with VI LON: With a , the time stipulated by the **NTP Server** or BACnet will be sent to VI LON.

Time zone: Setting the time zone for the Vitogate location

Time display: Setting the **Time display** to 12 or 24 hours


Date format: Setting the date format

1. Choose and set the desired time setting.
2. Press  **Save** . The time setting is saved.
3. To activate the saved time setting, restart the Vitogate software with **Restart** (see chapter 3.8). The saved time setting is now active.


3.5 Backing up Vitogate data

By using this function, the Vitogate's configurations can be saved as a file on a PC or a USB stick. In addition, these configuration files can be restored to the Vitogate.

Saving configuration files

1. Select **Save Vitogate configuration**.
2. Select **Destination / Medium**.
3. Press  **Start** . The configuration file will be saved.

Load configuration file

1. Select the configuration file in the file system.
2. Press  **Start** . The configuration file will be loaded.

3.6 Change password

We recommend that you assign a new password after logging into Vitogate 300 for the first time.

The table for **Change password** contains the following content:

User name: The user name reads: **vitogate**
The user name cannot be changed.

Current password: Compulsory field: Enter the current **Password** here.

Password for the initial login: **viessmann**



If you have forgotten your password, please contact Viessmann technical service.

New password: Compulsory field: Enter the new **Password** here.

Requirements of a new password:

- The password must have at least 8 characters.
- The password can consist of numbers, letters, and special characters.
- Pay attention to lower and upper case letters.



We recommend using a combination of letters, numbers and special characters.

Repeat password: Compulsory field: Enter the new **Password** here once more.
The **password** must have at least 8 characters.



To ensure that unauthorised persons cannot access the Vitogate settings, never give out the password.

After completing the table fields, press  **Save** . The new password is immediately active.

3.7 Perform an update

When Viessmann provides an update file, it can be transferred to the Vitogate with this function.


Only a file designated as **update.ugw** can be transferred. The update will not change the Vitogate configuration.

1. Select file in the file system and transfer.
2. Restart the Vitogate communication software with the **Restart (see chapter 3.8)** function. The update will now be performed.

3.8 Carry out a restart

After most changes to the configuration, a **Restart** of the Vitogate communication software is required. The corresponding prompt to this effect is found under the language selection menu in the grey bar: **Restart required!**

- Complete system restart Always select when a **Restart** prompt occurs.
- Delete historical data Select if desired.

1. Select the desired functions.
2. Press  **Restart** . The **Restart** occurs.


4 Setting VI LON


The VI LON main menu contains the following submenus:

Configuration (see chapter 4.1)	Configure VI LON
Subscriber scans (see chapter 4.2)	Setting and running subscriber scans
Subscriber (see chapter 4.3)	Settings for the data points of individual LON subscribers. For LON subscriber designation explanations, see Supported devices (see chapter 1.3) .
<input type="radio"/> 1.1 V.....	LON subscriber
<input type="radio"/> 1.2 V.....	LON subscriber



4.1 Configure VI LON

1. Implement the required settings in the table.

 For large networks, set the query speed to **Reduced**.



2. Press  **Save** . The settings are saved.
3. Continue with **Subscriber scan (see chapter 4.2)**.

4.2 Implement a VI LON subscriber scan

1. Set the **System number**.
2. Limit the sector to be scanned with **Subscriber numbers**. For fairly large networks, failing to set limits can cause the scan to take a substantially longer time.
3. Press  **Start** . The subscriber scan starts. A currently running subscriber scan can be stopped at any time.
4. After the scan, use to select the devices whose parameters are to be transferred to BACnet.
5. Press  **Save** . The devices are saved and appear in the **Subscriber** submenu on the left of the screen.
6. Continue with the settings of individual devices under **Subscribers (see chapter 4.3)**.

4.3 Select the subscribers' VI LON data points

Choose data points for transfer to BACnet

1. Under **Subscribers**, select a LON subscriber. The 1st number is the LON system number. The 2. number (after the decimal) is the LON subscriber number.
2. Select a data point sector above the table heading and a grouping in the first table column.
3. Using , select the desired data points that are to be transferred to BACnet or Modbus.
4. When all data points have been selected, press  **Save** . The selected LON subscriber's data points are now activated and will be transferred to BACnet.
5. Select data points for additional LON subscribers and use  **Save** to activate them.

5 Set BACnet

The **General** main menu contains the following submenus:

Configuration (see chapter 5.1) Configure BACnet

Device (see chapter 5.2) Vitogate software settings

Objects (see chapter 5.3) Set BACnet objects (data points)

5.1 Configure BACnet

The following configuration must be entered:

Start delay: Set start delay

Password DCC/RD: The password protects the DCC (device communication control) and RD (reinitialise device) functions.

Password for the initial login: **viessmann**

The password can be (no suggestions).

Requirements of a new password:


- The password must have at least 8 characters.
- The password can consist of numbers, letters, and special characters.
- Pay attention to lower and upper case letters.



We recommend using a combination of letters, numbers and special characters.

Data links: Select the connection to be used.

Depending on the desired connection, the required adjustments must be made to the settings in the tab.

After completing the table fields press  **Save** . The settings are saved.

5.2 Set BACnet device

This table is where you carry out communication settings.

Device instance: The number may be assigned only once within the BACnet.

Device name: The device name may be assigned only once within the BACnet.

Description: Free description of the device

Location: Information regarding where the device is installed.

Vendor identifier: Identification number of the BACnet operator

Vendor name: Name of the BACnet operator

Firmware Revision: The revision of the firmware used

Application software version: BACnet version used

APDU max length accepted: Applicable for APDU settings: The BACnet administrator must implement the same settings here as those on the central BACnet computer.

APDU timeout:

APDU retries:

APDU segmentation supported:

APDU max

segments accepted:

APDU segment

timeout:

After completing the table fields press  **Save** . The settings are saved.

5.3 Set BACnet objects


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The displayed table contains all of the possible BACnet objects (data points). In the table heading, the objects displayed under **All** can be filtered to produce specific screens.

The table is divided into the following columns:

Object ID	Designation of the object assigned internally in BACnet
Object name	Viessmann's designation: The 1st figure indicates the LON system number. The 2nd figure (after the decimal) indicates the LON subscriber number. This is followed by the designation of the LON data point.
Description	Additional data point description field

Edit object

1. Select the object name field after the desired object ID.
2. Enter the desired LON data point in the text field. In doing so, first enter the LON system number, then a decimal point, followed by the LON device number. After this, enter the description.
for example, "1.1 boiler water temperature"
3. Press **OK** . The **Object name** will be displayed in the table and is saved.
4. If desired, enter an additional description for the object in the **Description** field.
5. Press **OK** . The description will be displayed in the table and is saved.
6.  Press. The dialogue for editing the properties of the BACnet object opens.
7. Enter the desired settings.
8. Press **OK** . The dialogue closes. The properties are saved.

6 Set Modbus

The **General** main menu contains the following submenus:


Configuration (see [Configure Modbus chapter 5.1](#))

Objects (see [chapter 5.3](#)) Set Modbus objects (data points)

6.1 Configure Modbus

The following configuration must be entered:

- Slave address:** Select a number between 1 and 254 for the Vitogate. The address may be assigned only once in the entire Modbus.
- Modbus TCP/IP** Select the connection to the Modbus via TCP/IP. **Port** 502 is the standard Modbus port. Acceleration of port and serial packets to be adjusted only by the Modbus administrator.
- Modbus RS485** Connection to the Modbus via RS485. The individual data must conform to the settings of the entire Modbus. To be adjusted only by the Modbus administrator.

After completing the table fields press  **Save** . The settings are saved.

6.2 Set Modbus objects

The displayed table contains all of the possible Modbus objects (data points). In the table heading, the objects displayed under **All** can be filtered to produce specific screens.

The table is divided into the following columns:

Tab	Object designation assigned internally in the Modbus
Name	Viessmann's designation: The 1st figure indicates the LON system number. The 2nd figure (after the decimal) indicates the LON subscriber number. This is followed by the designation of the LON data point.
Unit	Unit used for the numerical values
Format	Information about how the numerical value should be assessed. <ul style="list-style-type: none"> ■ u: Numerical value without prefix ■ s: Numerical value with prefix ■ t: Numerical value is one tenth of the value displayed ■ h: Numerical value is one hundredth of the value displayed ■ m: Numerical value is one thousandth of the value displayed

7 Help and diagnoses

The **General** main menu contains the following submenus:

Help

Vitogate Handbook The Vitogate handbook and the complete online help can be displayed.
(see chapter 7.1)

Info about (see Information about the Vitogate 300 device
chapter 7.2)

Diagnostics

Device info (see Information on Vitogate 300
chapter 7.3)

System diagram (see Shows the device data points
chapter 7.4)

Log files (see chapter Display log files
7.5)

Ping (see chapter Conduct ping test
7.6)

Traceroute (see Conduct traceroute test
chapter 7.7)

Process information Displays current process information.
(see chapter 7.8)

7.1 Display Vitogate online help

Complete online help for Vitogate 300 as a PDF, e.g. to print.

7.2 Display Vitogate information

Displays information about the Vitogate 300 device.

Vitogate version: The first two digits are the version of the communication software. The last two digits are the version of the Vitogate hardware.

Supported languages: Display of the languages supported by the software

Supported devices: Devices supported by Vitogate 300. For more information on this, see www.vitogate.info (<http://www.vitogate.info/>)

7.3 Display Vitogate information

The following **Device information** will be displayed:

Type of Vitogate: This must read: **Vitogate 300 BN (BACnet)**

Data points: Number of configured data points / Number of possible data points

System start: Date and time of system start

Working memory (RAM): Used space / Free space

Operating system: Available operating system

Version: The first two digits are the version of the communication software. The last two digits are the version of the Vitogate hardware.

Most recent update: Date and time of the last completed update

Status: **OK:** System is error-free.

Not OK: System has an error.

7.4 Display system diagram

Current diagram of the data point manager.


Internally displays data on the drivers, the active data points/objects, and on Vitogate.

7.5 Display log files

Protocols are logged and displayed here. These protocols are used for diagnostics and troubleshooting.


7.6 Ping

Ping is a special diagnostic tool used to test whether a particular host in an IP network can be reached.

1. Enter the IP address to be tested into the **pin -c3** field (see **IP address** in the main menu **General (see chapter 3.3)**).
2. Press  **Start** . The test starts.

7.7 Traceroute

Traceroute is a special computer program through which routers and internet nodes reach the IP data points all the way to the queried computer.

1. Enter the IP address to be tested in the **traceroute** field (see **IP address** in the main menu **General (see chapter 3.3)**).
2. Press  **Start** . The test starts.

7.8 Display process information

The list shows the operating system's current **Process information**. For more information about this, see www.linuxfoundation.org (<http://www.linuxfoundation.org/>) or www.linux.com (<http://www.linux.com/>)

8 Glossary

A

Appliance

Appliances are heat sources including control units, boiler circuit and heat pump control units, cascade and heating circuit control units and communication equipment.

B

BACnet

Building Automation and Control Networks is a network protocol for building automation

D

Data point

A data point groups together all the information on a technical variable required for the respective application, e.g. the data point of a control parameter includes not only the parameter name but also a setting value, the setting range and the physical unit

E

English unit

English units of measurement consist mainly of either 'Imperial units' in the UK or 'United States Customary Units' in the USA. These do not relate directly to the decimal system.

L

LON

A Local Operating Network is a fieldbus via which Viessmann appliances can communicate with one another.

M

Modbus

A communication protocol developed by Gould Modicon that is based on master/slave or client/server architecture.

O

Object

Objects represent the properties of the building automation's data.

P

Parameter

A factor that is used to define a technical attribute. The parameter data includes the setting value, the physical unit and the possible setting range.

S

System

Complete heating system comprising heat source, control unit, accessories and other heating components.

SI unit

The International System of Units or SI is the most widely used system of measurement for physical values. It is a metric system.