dLAN® 1000 mini

Manual

devolo

devolo dLAN® 1000 mini

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1 Preface

Thank you for placing your trust in this devolo product.

In just a few easy steps, you can set up your own network with the dLAN 1000 mini. devolo dLAN adapters transmit the Internet data over the household electrical wiring, making every electrical socket a network access point.

1.1 About this manual

Carefully read all safety and operating instructions before setting up the device and store the manual and installation guide for later reference.

After a brief introduction to the dLAN® topic and an introduction to the dLAN 1000 mini in **Chapter 2**, **Chapter 3** will teach you how to start using the adapter effectively in your network. **Chapter 4** describes the configuration options for the integrated configuration interface in detail. Tips for bandwidth optimisation, information about product safety and environmental compatibility of the device, as well as our warranty terms, can be found in **Chapter 5** at the end of the manual.

Icons

This section contains a brief description of the icons used in this manual and/or on the rating plate, the device connector, as well as the icons used on the package:

Icon	Description
	Very important safety symbol that warns you of imminent electrical voltage which if not observed can result in serious injury or death.
	An important safety symbol that warns you of a potentially dangerous situation involving a burn hazard which can result in injuries or damage to property.
	An important note that should be observed which can potentially lead to material damages.
	The device may only be used indoors in dry conditions.

Icon	Description
	The device is a Class I product. All electrically conductive (made of metal) housing parts where a voltage can be applied during operation or maintenance in the event of an error must be continuously connected to the earth wire.
CE	The manufacturer/distributing company uses the CE marking to declare that the product meets all applicable European regulations and has been subjected to the prescribed conformity assessment procedures.

Icon	Description
	It is used to prevent the occurrence of waste electrical and electronic equipment and to reduce this type of waste through reuse, recycling and other forms of utilisation. The European Community WEEE Directive establishes minimum standards for handling waste electrical and electronic equipment in the EU.
i	Additional information, background material and configuration tips for your device.
✓	Indicates a completed course of action

1.1.1 Intended use

Use the adapter as described in these instructions to prevent damage and injuries.

DANGER! Electric shock caused by electricity
Device must be plugged into a power socket with a connected earth wire

CAUTION! Damage to the device caused by ambient conditions
Only use device indoors in dry conditions

1.1.2 CE conformity

CE The product conforms to the basic requirements of **directives 2014/35/EU**, **2014/30/EU, 2011/65/EU** and **2009/125/EC**.

The product is intended for operation in the EU, Switzerland and Norway.

The product is a Class B device.

A printout of the simplified CE declaration is included with the product. You can also find it online at www.devolo.com.

1.1.3 Safety notes

It is essential to have read and understood all safety and operating instructions before the devolo device is used for the first time; keep them safe for future reference.

DANGER! Electrical shock caused by electricity
Do not reach into the electrical socket, do not open the device and do not insert any objects into the electrical socket or into the ventilation openings

Users do not need to carry out any maintenance on devolo devices. In the event of damage, disconnect the devolo device from the mains supply by pulling it or its plug out of the electrical socket. Then contact qualified specialist personnel (after-sales service) exclusively. **Damage** is deemed to have occurred, for example,

- if the power plug is damaged.
- if the devolo device has been showered with liquid (such as rain or other water).
- if the devolo device is inoperable.
- if the housing of the devolo device is damaged.

Do not plug devolo devices directly into each other. Devices that are plugged into each other can experience a decrease in transmission rate.

DANGER! Electric shock caused by electricity
Device must be plugged into a power socket with a connected earth wire

devolo devices may be operated only on a mains power supply as described on the **rating plate**.

To disconnect devolo devices from the mains supply, unplug the device from the electrical socket.

The power socket and all connected network devices should be easily accessible so that you can pull the power plug quickly if needed.

CAUTION! Heat development during operation
Certain housing components can become very hot in certain situations. Attach device so that it is touch-proof, observing optimal positioning

devolo devices should only be installed at locations that guarantee adequate ventilation. Slots and openings on the housing are used for ventilation:

- **Do not cover** devolo devices during operation.
- Do not place **any objects on** devolo devices.
- Do not insert **any objects** into the **openings** of devolo devices.
- devolo devices must **not** be placed directly **next to** a naked **flame** (such as fire or candles).
- devolo devices must **not be exposed to direct heat radiation** (e.g. radiator, direct sunlight).

CAUTION! Damage to housing from cleaning agents containing solvents
Clean only electroless and with dry cloth

1.2 devolo on the Internet

For detailed information on our products and dLAN, visit www.devolo.com. The **Powerline** area not only contains product descriptions and documentation, but also updates of devolo software and your device's firmware.

If you have any further ideas or suggestions related to our products, please don't hesitate to contact us at support@devolo.com!

2 Introduction

dLAN is an intelligent, secure technology that lets you set up a home network easily, quickly and economically via your household electrical wiring, without the need for complex and expensive dedicated cabling.

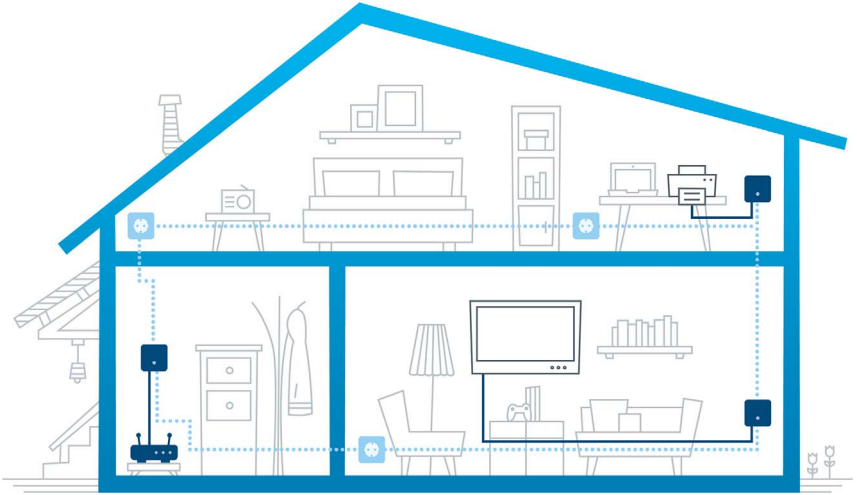

Fig. 1 devolo dLAN throughout the home

2.1 What exactly is dLAN?

The dLAN (**d**irect **L**ocal **A**rea **N**etwork) uses the household power grid to transfer data between computers and other network components equipped with suitable adapters. As a result, any electrical socket can be used as a network access point. The data is modulated prior to transfer and sent as a signal via household power lines. State-of-the-art technology ensures that the power and data networks do not interfere with one another. Networking via dLAN is fast and secure. The data is encrypted using a key to prevent interception by third parties.

2.2 The dLAN 1000 mini

The dLAN 1000 mini is equipped with

- one fast ethernet connector,
- one dLAN indicator light,

> *The LED status display can be deactivated with the devolo Cockpit-Software (see* **4.3 devolo Cockpit***).*

- an encryption button with reset function (button with house symbol).

Fig. 2 dLAN 1000 mini with country-specific connector

2.2.1 Encryption button

This button has the following functions:

Encrypting the dLAN network

- To encrypt your dLAN network individually, press **each encryption button** on the connected devices within 2 minutes, for approximately **1 second** each.
- To remove a dLAN device from your network, press the **encryption button** on the corresponding device and hold **for at least 10 seconds**.

Reading the dLAN indicator light

The integrated indicator light (**LED**) shows the dLAN status for the dLAN 1000 mini by illuminating and/or flashing:

> *Check whether the adapter is connected to the mains supply correctly and whether the encryption process has been carried out successfully. For more information about this, refer to* **3.3 Connecting the dLAN 1000 mini**.

Flashing behaviour of the dLAN LED

LED	Flashing behaviour	Meaning
Red LED	Flashes at intervals of **0.5 sec.** (on/off)	No dLAN connection exists
Red LED	Flashes at intervals of **2 sec.** (on/off)	Data transmission rate not in optimum range *
White LED	Lights up steady	An encrypted dLAN connection exists and the adapter is ready to operate
White LED	Flashes at intervals of **0.5 sec.** (on/off)	dLAN encryption being established
White LED	Flashing at intervals of **0.5/50-60 sec.** (On/off)	Adapter is in PowerSave mode

* For information on improving transmission rate, refer to Chapter **5.2 Bandwidth optimisation**.

2.2.2 Network jack

Using the network connector of the dLAN 1000 mini, you can connect a computer and your television to the dLAN 1000 mini using a commercially available network cable.

3 Initial use

This chapter tells you everything you need to know to set up and use your dLAN 1000 mini. We describe how to connect the adapter and briefly describe the devolo software. Further, detailed information is available at www.devolo.com.

3.1 Package contents

Please ensure that the delivery is complete before beginning with the installation of your dLAN 1000 mini.

- **Starter Kit**:
  - Two dLAN 1000 mini
  - Two network cables
  - Hard copy of installation guide
  - CE declaration

or

- **Extension**:
  - dLAN 1000 mini
  - Network cable
  - Hard copy of installation guide
  - CE declaration

devolo AG reserves the right to change the package contents without prior notice.

3.2 System requirements

- **Supported operating systems of the devolo Cockpit**: Windows 7 (32 bit/64 bit), Windows 8 (32 bit/64 bit), Windows 8 Pro (32 bit/64 bit), Windows 10 (32 bit/64 bit), Windows 10 Pro (32 bit/64 bit), Ubuntu Linux (32 bit/64 bit), Mac (from OS X 10.6)
- **Network connection**

Please note that your computer or other device must have a network adapter with a network port.

To set up a dLAN network, you need at least two dLAN devices (200 Mbps, 500 Mbps, 600 Mbps, 1000 Mbps or 1200 Mbps).

3.3 Connecting the dLAN 1000 mini

CAUTION! Damage to the device caused by ambient conditions
Only use device indoors in dry conditions

In the following sections we describe how to connect the dLAN 1000 mini and integrate it into the network. We clarify the exact procedures based on potential network scenarios.

For the permitted voltage range for operating the device and the power consumption, refer to the label on the rear of the device. For additional technical information on our products, refer to the Service Centre area at www.devolo.com.

3.3.1 Starter Kit – Setting up a new dLAN network

① Connect the dLAN 1000 mini to your Internet access device's network jack (e.g. WiFi router).

CAUTION! Tripping hazard
Lay the network cable in a barrier-free manner and ensure that the electrical socket and the connected network devices are easily accessible

② Plug the dLAN 1000 mini into a wall socket. As soon as the LED indicator light flashes red at regular intervals of **0.5 sec.**, the adapter is ready to operate but not yet integrated into the dLAN network.

Connecting the two dLAN 1000 mini to a dLAN network

Before you can use the adapter in a dLAN network, first you have to connect it as a network. This is accomplished by using a shared dLAN password. This forms a delimited dLAN network. Shared use of the dLAN password serves both as access control to the dLAN network as well as the encryption, and thereby the interception protection, of the transmitted data.

The dLAN password can be set in different ways:

③

dLAN network encryption:

- dLAN network encryption: at the touch of a button: **First** press the encryption button of the first **dLAN 1000 mini** for approx. **1 second,** and **then within 2 minutes** press the encryption button of the second **dLAN 1000 mini** for approx.**1 second**.

or

- dLAN network encryption by entering the dLAN password in the devolo Cockpit: More information can be found in Chapter **4.3 devolo Cockpit**.

✓ As soon as the white LED lights up steady on both devices, your dLAN network is set up and protected from unauthorised access.

3.3.2 Addition – Expanding an additional network

① Plug the dLAN 1000 mini into a wall socket. As soon as the LED indicator light flashes red at regular intervals of **0.5 sec.**, the adapter is ready to operate but not yet integrated into the dLAN network.

Integrating the dLAN 1000 mini into an existing dLAN network

Before you can use the dLAN 1000 mini in your dLAN network, first you have to connect it to your existing dLAN devices as a network. This is accomplished by using a shared dLAN password. The dLAN password can be set in different ways:

②

dLAN network encryption:

- dLAN network encryption: at the touch of a button: **First** press the encryption button on a device in your existing network for approx. **1 second** and **within 2 minutes**, press the encryption button of the new dLAN 1000 mini for approx. **1 second**.

or

- dLAN network encryption by entering the dLAN password in the devolo Cockpit: More information can be found in Chapter **4.3 devolo Cockpit**.

✓ As soon as the white LED lights up steady, the new dLAN 1000 mini is integrated into your existing, encrypted dLAN network.

3.4 Removing a dLAN 1000 mini from the network

To remove a dLAN 1000 mini adapter from an existing network, press the encryption button on the corresponding adapter for **at least 10 seconds**. The adapter will automatically be assigned a new randomly generated password and will thus no longer be able to access the network. To integrate the device into a different network after this, follow the steps described in Chapter **3.3 Connecting the dLAN 1000 mini**, depending on whether you are setting up a new network or adding the device to an existing one.

4 Network configuration

4.1 Security in the dLAN

Before you can use the dLAN 1000 mini in your dLAN network, you must first connect it to other dLAN devices as a network. Two specific pieces of information are especially important for this:

- The joint use of the dLAN password is for access control purposes; it results in a delimited dLAN network.
- The joint use of the dLAN password is for network encryption purposes, protecting against interception of the transmitted data.

The dLAN password can be specified automatically by means of the **encryption button** or manually using the **devolo Cockpit** program. Please note the following basic principle when choosing your encryption method:

- For dLAN networks in which **all associated dLAN devices** are **equipped with an encryption button**, a dLAN password can be easily generated at the **touch of a button**.
- For dLAN networks that include a combination of devices **with and without encryption buttons**, the password **must** be specified with the **devolo Cockpit**.

4.2 dLAN network encryption at the touch of a button

To encrypt a dLAN network in which all associated devices are equipped with an encryption button, simply press the encryption button located on the device. Pressing this button will encrypt your dLAN network with a randomly generated password.

Fig. 3 dLAN encryption by means of an encryption button

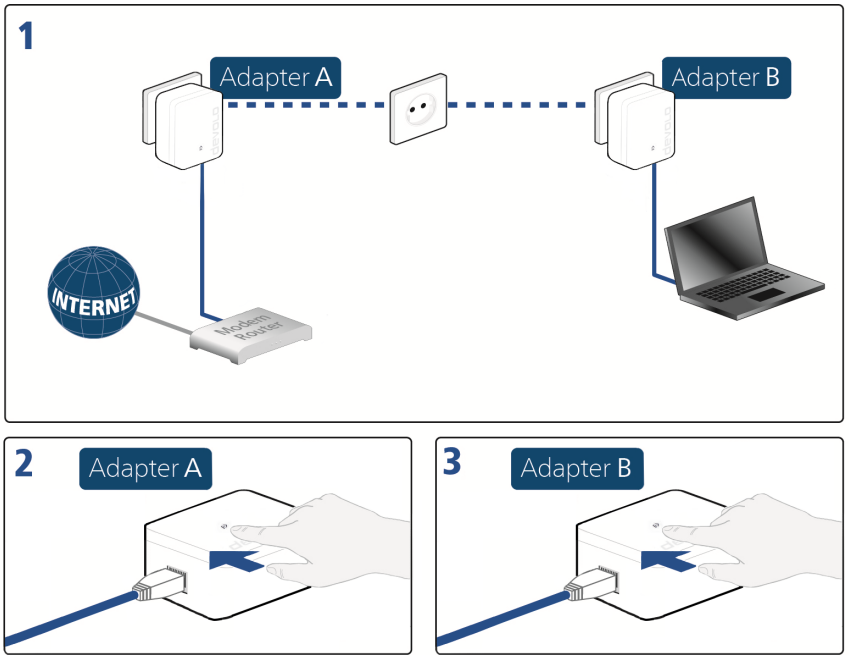

Fig. 4 Setting up dLAN encryption by means of the encryption button

4.3 devolo Cockpit

devolo Cockpit is a program that displays all accessible dLAN devices in your home network and combines them into one secure network.

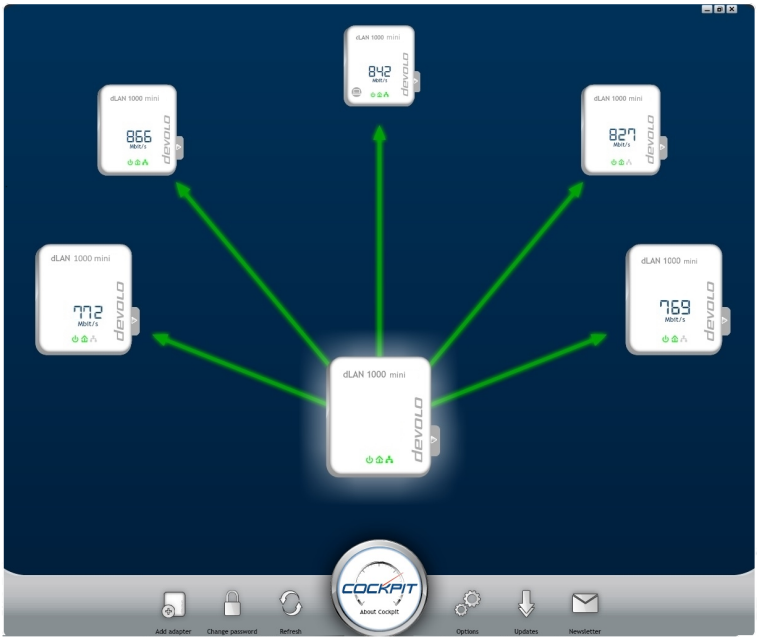

Fig. 5 The devolo Cockpit in action

4.4 Installation of devolo software

Installing devolo Cockpit software

devolo Cockpit finds all accessible dLAN adapters in your dLAN network, displays information about these devices and encrypts your dLAN network individually. For WiFi devices, the software takes you to the configuration interface to configure your **WiFi network** on a computer.

devolo Cockpit is available at www.devolo.com/cockpit for the following operating systems:

- Windows (from Win 7, 32 bit/64 bit)
- Mac (from OS X 10.6)
- Ubuntu Linux (32 bit/64 bit)

You can find more information about the devolo Cockpit software online at www.devolo.com/cockpit.

Downloading my devolo App

The **my devolo App** is devolo's **free app** also for checking and configuring WiFi, dLAN and LAN connections for the dLAN 1000 mini (via smartphone or tablet). The smartphone or tablet connects to the dLAN 1000 mini at home via **WiFi**.

① Download the **my devolo App** to your smartphone or tablet computer from the corresponding store.

The quickest way to find the app is by clicking the magnifying glass in the store and searching directly for **devolo**.

② **my devolo App** is placed in your smartphone's or tablet's app list as usual. Tapping on the **my devolo App** icon brings you to the start menu.

You can find more information about my devolo App online at www.devolo.co.uk/service/my-devolo-app/.

Starting devolo Cockpit

All accessible dLAN devices in your home network appear after starting **devolo Cockpit**. This may take a moment.

All adapters found in the network appear as an icon with a corresponding product name. The adapter displayed in the middle of the dLAN network symbolises the devices connected to the computer. **devolo Cockpit** also offers you the option to centre the display of the adapter connected to the router. If you have multiple dLAN devices connected, you can switch between them. Clicking an adapter icon highlights the corresponding dLAN device.

The coloured connecting lines between the adapters illustrate the current transmission quality:

- **Green**: the network connection is suitable for HD video streaming.
- **Orange**: the network connection is suitable for SD video streaming and online gaming.
- **Red**: the network connection is suitable for simple data transfer and Internet access.

If data transmission from one adapter to another is in fact taking place, the outgoing data rate from the centred adapter is displayed. If a different adapter is selected, the data rate outgoing from this adapter is displayed.

Settings and functions

You can configure settings for the respectively highlighted device or for the network via

- the buttons at the lower edge of the screen (**Network settings**)

and

- using the tabs positioned on the side of each adapter (**Adapter settings**).

devolo Cockpit setting options on the lower edge of the screen:

You can add a new dLAN adapter to your present network using **Add adapter**. Follow the instructions on the screen to connect the dLAN adapters to each other.

You can replace the default password with your own password using **Change password**. This is valid for your entire dLAN network. In addition, you can also generate a secure password here.

The newly integrated dLAN adapter will be detected by means of **Refresh** and displayed in the Cockpit interface.

You can use **Options** to select whether you would like the transmission capacity of the connected dLAN adapter to be recorded and sent to devolo. Here, you can also disable all future updates for your adapter and reset the entire dLAN network to the factory defaults. A troubleshooting guide provides remedies for bandwidth problems. The option to centre the **devolo Cockpit** on the dLAN adapter that is connected to the router results in a clearer arrangement of all dLAN adapters.

The data sent to devolo pertains only to the performance values of your dLAN devices. The information is anonymised, statistically evaluated and used exclusively for the improvement of our products.

The **devolo Cockpit** checks if a new firmware version is available for the integrated dLAN adapter using **Updates.** These can then be installed automatically.

Newsletter takes you to the devolo website, where you can sign up to receive our free newsletter.

Configuration options on the tabs positioned on the side:

The **FAQ display** button takes you to the devolo website. Here you can find useful information, as well as some tips and tricks related to the product.

You can find out device information, such as the firmware version used and the specific MAC address, using the **Display Options** button.

Furthermore, other options are available, such as the following:

- Turn off LEDs,
- Disable data communication,
- Activate/ deactivate power saving mode,
- Assign device names,
- Reset device to factory defaults

and

- View manual for the dLAN device

The selected dLAN adapter can be removed from the available dLAN network using **Remove Device**.

The above-mentioned setting options vary depending on the function and features of your device.

Error states of the adapter are displayed even though the LED is switched off.

4.5 Activate encryption by means of devolo Cockpit

If you are using dLAN devices **without encryption buttons,** encryption can only take place through **devolo Cockpit**.

Before the networking procedure, note the security IDs of all dLAN adapters. This unique identifier of each dLAN device can be found on the rating plate on the housing. It consists of 4 x 4 letters separated by dashes (e.g. ANJR-KMOR-KSHT-QRUV). Ensure that all dLAN adapters are connected to the mains supply and computers or other network components as appropriate.

Scan for local adapter

After **devolo Cockpit** is started, it starts by searching for the dLAN adapter connected directly to your computer.

Adding an adapter

Add all the dLAN devices you want to your dLAN network by selecting the **Add** button. You will need the **16 digit security ID** of the adapter, which can be found on the label on the rear side of the housing. Enter it now into the **Security ID** field and confirm with **OK**. If a security ID is correct and the device can

be reached in the dLAN network, it will be added to your network and displayed in the program.

Changing the network password

After you have added all desired dLAN devices to your dLAN network, select the **Change Password** button to assign a **new** joint network password. All adapters present in your dLAN network are updated with the new password automatically.

You can choose between your own password or a random password. To define your own password, enter it into the **Network password** text field (8 character minimum). Alternatively, you can have a randomly selected and highly secure password assigned using the **Generate secure password** button. All present adapters in your dLAN network will receive the new password automatically.

The entered or automatically created password can be shown in the text field in readable form by activating the option "Show characters".

If **devolo Cockpit** is called up again later after a successful initial installation, for example to **integrate** a **new adapter** into a network, the application finds the devices that were entered earlier. Enter the new device as described in the **Adding an adapter** section.

5 Annex

5.1 Technical data

Security	128 Bit AES
Device port	2x Ethernet RJ45
Power consumption	Maximum: 4.2 W Typical: 3.0 W Stand-by: 0.8 W
Power supply	internal 196-250 V AC 50 Hz
Temperature (Storage/ Operating	-25°C to 70 °C / 0°C to 40°C
Dimensions (in mm, without plug)	83x68x29 (HxWxD)
Ambient conditions	10-90% Humidity, non-condensing
Certifications	CE Class B (EU, CH, NO)

5.2 Bandwidth optimisation

To significantly improve the transmission capacity of the network, we recommend that you comply with the following "connection rules":

- Plug the dLAN 1000 mini directly into a wall socket. Avoid using power strips. This may impair the transmission of the dLAN signals.
- If there are several sockets in the wall directly next to each other, they behave like a power strip. Individual sockets are optimal.

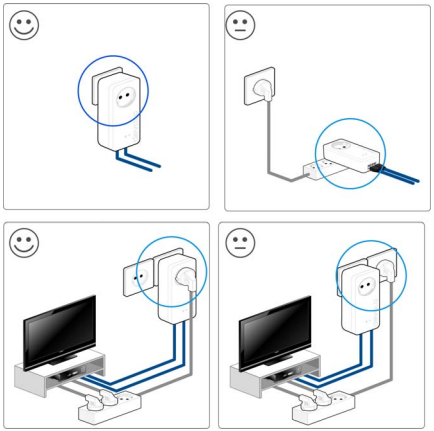

Fig. 6 dLAN bandwidth optimisation

5.3 Disposal of old devices

To be used in the countries of the European Union and other European countries with a separate collecting system:

The icon with crossed-out wastebasket on the device means that this product is an electrical or electronic device that falls within the scope of application of the European Community WEEE Directive. These types of devices may no longer be disposed of with household waste. Rather they can be given to a municipal collection point free of charge. Contact your municipal government to find out the address and hours of the nearest collection point.

5.4 Warranty conditions

If your devolo device is found to be defective during initial installation or within the warranty period, please contact the vendor who sold you the product. The vendor will take care of the repair or warranty claim for you. The complete warranty conditions can be found at www.devolo.com/warranty.

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