

devolo MAGIC

Manual
devolo Magic 1 WiFi²⁻¹



devolo Magic 1 WiFi ²⁻¹



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devolo AG

Charlottenburger Allee 67

52068 Aachen

Deutschland

www.devolo.com

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1 Preface

Welcome to the fantastic world of devolo Magic!

In no time at all, devolo Magic transforms your house into a multimedia home that is ready for the future today. devolo Magic gives you noticeably higher speeds, more stability and greater range, providing the perfect Internet experience as a result!

1.1 About this manual

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





After a brief introduction to „devolo Magic“ and to the devolo Magic 1 WiFi in **Chapter 2**, **Chapter 3** tells you how to successfully start using the adapter in your network.





Chapter 4 describes in detail the setting options of the built-in devolo Magic configuration interface.

Tips for bandwidth optimisation, information about environmental compatibility of the device, as well as our warranty terms, can be found in **Chapter 5** at the end of the manual.

Description of the 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 minor 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 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.
	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.
	Additional information, background material and configuration tips for your device.
	Indicates a completed course of action

1.2 Intended use

Use devolo products, devolo software and the provided accessories as described to prevent damage and injury.

Products

devolo products are communication devices designed for indoors.* Depending on the product, they are equipped with a **PLC-** (PowerLine Communication) and/or a Wi-Fi module. Computers, laptops, smartphones, tablets, smart TVs and other devices connected this way are integrated into a home network over the existing electrical wiring and/or Wi-Fi without any complicated wiring. devolo devices must never be used outdoors because the high temperature fluctuations and moisture can damage both the product and the power line. devolo products may not be installed at a height above **two metres** unless an additional fastening mechanism is available. The products are intended for operation in the EU, Switzerland and Norway.

* The only exceptions are devolo outdoor products, which are suited for the outdoor use thanks to their IP certification.

Software

devolo devices can be used only with the free, downloadable programs approved and available on devolo AG's website (www.devolo.com) and in app stores (iOS and Google Play). Any modifications to the product-specific firmware

or software could damage the products and, in the worst-case scenario, render them unusable and negatively affect conformity.

Always use the most up-to-date software version to make sure you have the latest security functions and device updates. The installed devolo software notifies you automatically if a new software version is available.

Accessories

Use only the provided accessories:

- Network cable: **RJ45-RJ45 Cat-5e UTP**

1.3 CE Conformity

CE This product complies with the technical requirements of the directives **2014/35/EU, 2014/30/EU, 2011/65/EU** und **2009/125/EC**.

This product is designed for use in the EU, Switzerland and Norway.

A printout of the simplified CE declaration of this product is separately included and can also be found under www.devolo.com/support/ce.

1.4 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.
- I** 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

1.5 devolo on the Internet

For detailed information on our products and devolo Magic, visit www.devolo.com.

There you will find product descriptions and documentation, and 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

2.1 devolo Magic

Home is where devolo Magic is – in no time at all, devolo Magic transforms your house or flat into a multimedia home of the future with noticeably higher speed, more

stability and greater range, providing the perfect Internet experience as a result!

Be inspired by products that are astonishingly easy to install, with impressive, innovative technology and unbeatable performance.

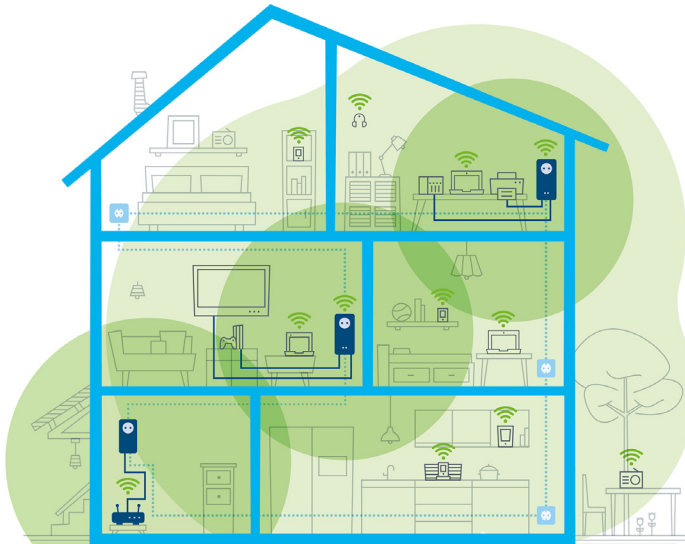


Fig. 1 devolo Magic throughout the home

The product name concept

The devolo Magic name concept has the following structure:

Product family	devolo Magic
Performance category	1
Transmission type	WiFi
Number of sockets	2
Integrated electrical socket	1 (= yes)

Be ready for the technology of the future today

devolo Magic embodies the new generation of the tried-and-tested Powerline technology (PLC) based on the cutting-edge G.hn architecture. G.hn was developed by the International Telecommunication Union (ITU) with ongoing development provided primarily by the HomeGrid Forum industry association. devolo Magic products are certified according to HomeGrid standards and are compatible with other HomeGrid-certified products.

Like the HomePlug AV technology used in established devolo dLAN devices, devolo Magic uses the household mains supply for data transmission and secures ideal performance and stability in locations where network cables

are not viable or desired and/or the WiFi frequently falls short due to ceilings and walls.

- To set up a devolo Magic network, you need at least two devolo Magic devices. For technical reasons, devices from the devolo Magic series are not compatible with dLAN devices.

2.2 The devolo Magic 1 WiFi

A brief introduction to the devolo Magic adapter:

Unpack – plug in – get started and be prepared for the new generation of the tried-and-tested Powerline technology and innovative mesh WiFi with swiftness and stability:

Powerline

- At speeds up to **1200 Mbps**
- Over distances **up to 400 metres**
- **Security** – with **128-bit AES** Powerline encryption

Mesh WiFi

- At speeds up to **1200 Mbps**
- Four antennas cover the 2.4 and 5 GHz WiFi frequencies at the same time and use the full extent of the entire 5 GHz frequency band (**Dynamic Frequency Selection, DFS**).

- **Air-time fairness** – Quicker WiFi devices take priority in the network.
- **Band steering** – Use of the optimum frequency band (2.4 and 5 GHz frequency band)
- **Roaming** – Quickly and seamlessly connect to the strongest WiFi access point
- **Security** – with **WPA2 for wireless ac** ("IEEE 802.11a/b/g/n/ac" WiFi high-speed standards)
- **Convenient additional functions** such as parental controls, guest WiFi, time control and Config Sync are integrated in the devolo Magic 1 WiFi.
- **Efficiency**– The integrated PowerSave mode reduces energy consumption automatically **at low data traffic**.
- The **2 network connectors** on the devolo Magic 1 WiFi let you connect stationary network devices—such as a game console, TV or media receiver—to your Internet access point over the Powerline network (e.g. Internet router).
- Its **integrated electrical socket** can be used like a normal wall socket to supply power to an additional network device or a power strip.

The devolo Magic 1 WiFi features

- An integrated electrical socket,
- A PLC button with LED status display,
- A WiFi button with LED status display,
- Four internal WiFi antennas,
- Two network connectors,
- A reset button (next to the network connectors).
 - The LED status displays can be disabled. You can find more information about this in Chapter **4 Network configuration** or in the product manual for the devolo Cockpit software available online at www.devolo.com/cockpit.



Fig. 2: devolo Magic 1 WiFi with country-specific connector and power socket



Fig. 3 Network connectors

2.3 Pairing – Establishing a PLC connection

devolo Magic adapters that are in the factory default condition, i.e. have been recently purchased or successfully reset (see Chapter 3.5 **Removing the devolo Magic adapter from a PLC network**), automatically start to attempt to pair (establish a PLC connection) with another devolo Magic adapter when reconnected to the mains supply.

Starting up a new devolo Magic PLC network

After plugging the devolo Magic adapters into available power sockets, a new devolo Magic network is established automatically within 3 minutes.

Expanding an existing devolo Magic PLC network by adding another devolo Magic adapter

In order to use a new devolo Magic 1 WiFi in your devolo Magic- network, first you have to connect it to your existing devolo Magic adapters devices as a network. This is accomplished by using a shared PLC password, which can be assigned in various ways:

- Using **devolo Cockpit** or the **devolo app** (see Chapter 3.4 **Installation of devolo software**)
 - Using the **web interface** (see Chapter 4.5 **Powerline**)
 - Using the **PLC button** as described below.
- 1 To do so, plug the new devolo Magic adapter into an available power socket and, for approximately 1 second, press the PLC button on a devolo Magic adapter in your existing devolo Magic network.
 - For each pairing operation, only one additional devolo Magic adapter can be added at a time.

- 2 Within 3 minutes, press the PLC button on the devolo Magic adapter that you want to add to your existing devolo Magic network. The LED of this adapter now also flashes white.



After a short time, the flashing LED becomes a steady white light. The devolo Magic adapter has been successfully integrated into your existing devolo Magic network.

- You can find detailed information about installing devolo Magic adapters in Chapter 3.3 **Connecting the devolo Magic 1 WiFi**.

2.3.1 Reading the PLC indicator light

The integrated PLC indicator light (**LED**) shows the status for the devolo Magic 1 WiFi by illuminating and/or flashing:

	LED	Flashing behaviour	Meaning	LED status display (web interface*)
1	Red LED	Lights up for up to 2 sec.	Start-up process	Cannot be disabled

	LED	Flashing behaviour	Meaning	LED status display (web interface*)
2	Red LED	Flashes at intervals of 0.5 sec. (on/off)	<p>Status 1: The reset of the devolo Magic adapter was successful. The PLC/reset button has been pressed and held for 10 seconds.</p> <p>Status 2: The devolo Magic adapter (once again) has the factory default settings. Since the last reset, no pairing with another devolo Magic adapter has taken place. Connect the adapter with another devolo Magic adapter to create a full-fledged PLC network as described in Chapter 2.3 Pairing – Establishing a PLC connection.</p>	Cannot be disabled
3	Red LED	Lights up steady	<p>Status 1: The other network nodes are in standby mode and cannot currently be accessed over the mains supply. The PLC LEDs of the other devolo Magic adapters flash white only for a short time.</p> <p>Status 2: The connection to the other network nodes has been interrupted. There may be electromagnetic or radio frequency interference on the power line. In this case, put the devolo Magic adapters closer to each other or try to shut off the source of interference.</p>	Can be disabled

	LED	Flashing behaviour	Meaning	LED status display (web interface*)
4	Red and white LED	Flashes at intervals of 0.1 sec. red/2 sec. white	Data transmission rate not in optimum range **	Can be disabled
5	White LED	Status 1: Flashes at intervals of 0.5 sec. Status 2: Flashes at intervals of 1 sec.	Status 1: This devolo Magic adapter is in pairing mode and the system is searching for new devolo Magic adapters. Status 2: Someone has triggered the "Identify device" function on the web interface or in the devolo app. This function identifies the devolo Magic adapter being sought.	Cannot be disabled
6	White LED	Lights up steady	The devolo Magic connection does not have any issues and the devolo Magic adapter is ready to operate.	Can be disabled
7	White LED	Flashes at intervals of 0.1 sec. on / 5 sec. off	The devolo Magic adapter is in standby mode.***	Can be disabled
8	Red and white LED	Flashes at intervals of 0.5 sec. red/0.5 sec. white	The devolo Magic adapter is carrying out a firmware update.	Cannot be disabled

Before the networking procedure, write down the WiFi key of the devolo Magic 1 WiFi. You can find the device's unique key on the label on the rear side of the housing.

In order to connect the devolo Magic 1 WiFi with your laptop, tablet or smartphone later via WiFi, enter the noted WiFi key as the network security key.

- In order to **switch WiFi off**, press and hold the WiFi button **longer than 3 seconds**.
- In order to **switch WiFi back on**, **briefly tap** the WiFi button.

Connecting WiFi devices via WPS

- If the device is still on **factory defaults**, **tap the WiFi button** in order to activate **WPS**.
- If the **WiFi connection was switched off** and **you would like to activate WPS**, press the **WiFi button**

twice; once to switch WiFi on, and again to activate WPS.

- If the **WiFi connection is switched on** and **you want to copy** these settings to another devolo Magic adapter, continue reading with the *Chapter 4.7.5 Config Sync*.

WPS is one of the encryption standards developed by the WiFi Alliance. The objective of WPS is to make it easier to add devices to an existing network. For more detailed information, refer to Chapter 4.4.6 **WiFi Protected Setup (WPS)**.

2.3.3 Reading the WiFi indicator light

The integrated WiFi indicator light (**LED**) shows the status of the devolo Magic 1 WiFi by illuminating and/or flashing

	WiFi-LED	Flashing behavior	Meaning	LED status display (web interface*)
1	White LED	Flashes at intervals of 0,1 sec. on /5 sec. off	The devolo Magic adapter is in WPS mode to integrate WiFi-enabled devices via WPS.	Cannot be disabled

	WiFi-LED	Flashing behavior	Meaning	LED status display (web interface*)
2	White LED	Lights up steady	WiFi is switched on and active.	Can be disabled
3	White LED	Off	<p>Status 1: Someone has set the "WiFi LED" function in the LED settings on the web interface or in the devolo app to off. The WiFi LED is switched off and the devolo magic adapter is still ready for use.</p> <p>Status 2: Someone has set the "WiFi network mode" function in the WiFi networks settings on the web interface or in the devolo app to off. The WiFi function is disabled.</p>	Can be disabled

2.3.4 Reset button

The **reset** button (next to the network jacks) has two different functions:

Restart

The device restarts if you press the Reset button for less than 10 seconds.

Factory default settings

- 1 To remove a devolo Magic adapter from your devolo Magic network and successfully restore its entire configuration to the factory defaults, press and hold the reset button longer than 10 seconds.

Keep in mind that all settings that have already been made will be lost!

- 2 Wait until the LED flashes white and then disconnect the devolo Magic adapter from the mains supply.



The devolo Magic adapter has been successfully removed from your existing devolo Magic network.

2.3.5 Network jacks

You can use the network jacks on the devolo Magic adapter to connect it to stationary devices such as computers, game consoles, etc. using a standard network cable.

2.3.6 WiFi antennas

The internal WiFi antennas are for connecting to other network devices wirelessly.

2.3.7 Integrated electrical socket

Always use the integrated electrical socket on the devolo Magic adapter when connecting other consumers to the mains supply. In particular, electronic devices with mains adapter can negatively affect PLC performance.

The integrated mains filter in the devolo Magic adapter filters any such external interference and reduces any impairment of PLC performance.

3 Initial use

This chapter tells you everything you need to know to set up and use your devolo Magic 1 WiFi. We describe how to connect the device and briefly describe the devolo software that comes with it.

3.1 Package contents

Please ensure that the delivery is complete before beginning with the installation of your devolo Magic 1 WiFi:

- Single Kit:**
 - devolo Magic 1 WiFi
 - Hard copy of installation guide
 - Printed security flyer
 - Simplified CE declaration
 - Online documentation

or

- Starter Kit:**
 - devolo Magic 1 WiFi
 - devolo Magic 1 LAN 1-1
 - 1 network cable
 - Hard copy of installation guide
 - Printed security flyer
 - Simplified CE declaration

- Online documentation

or

- Multiroom Kit:**
 - 2 devolo Magic 1 WiFi
 - 1 devolo Magic 1 LAN 1-1
 - 1 network cable
 - Hard copy of installation guide
 - Printed security flyer
 - Simplified CE declaration
 - Online documentation

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

3.2 System requirements

- Operating systems supported by devolo Cockpit from:**
 - Windows 7 (32-bit/64-bit),
 - Ubuntu 13.10 (32-bit/64-bit),
 - Mac (OS X 10.9)
- Network connection**

- Please note that your computer or other device must have a network card or network adapter with a network interface.

To set up a devolo Magic network, you need at least two devolo Magic adapters.

3.3 Connecting the devolo Magic 1 WiFi



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 devolo Magic 1 WiFi and integrate it into a 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 type plate on the rear of the device. For additional technical information on our products, refer to the product area at www.devolo.com*

3.3.1 Starter Kit – Automatic set-up for a new devolo Magic PLC network

- 1 Connect one devolo Magic 1 LAN 1-1 to your Internet access device's network connection (e.g. your Internet 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 both devolo Magic adapters into available power sockets within 3 minutes. As soon as the LEDs on both adapters flash white at regular intervals of 0.5 sec., they are ready to operate and automatically start the process of establishing an encrypted connection to each other (see Chapter 2.3.1 **Reading the PLC indicator light**).




If the LEDs on both devolo Magic adapters light up in white, then your devolo Magic network has been set up according to your individual specifications and is protected from unauthorised access.

3.3.2 Addition – Expanding an existing PLC network by adding another devolo Magic 1 WiFi

Before you can use the devolo Magic 1 WiFi in your devolo Magic network, first you have to connect it to your existing devolo Magic adapters as a network. This is accomplished by using a shared password.

- 1 Plug the devolo Magic 1 WiFi into an available power socket. As soon as the LED flashes white at regular intervals of 0.5 seconds, the adapter is ready to operate but not yet integrated into a devolo Magic network (see Chapter 2.3.1 **Reading the PLC indicator light**).
- 2 Within 3 minutes, press the PLC button on a devolo Magic adapter in your existing devolo Magic network for approximately 1 sec.

 If the LEDs light up white on both devolo Magic adapters, the new adapter has been successfully integrated into your existing devolo Magic network.

- For each pairing operation, only one additional adapter can be added at a time.

3.3.3 Changing the network password

A network password can also be changed in the following ways:

- Using the **web interface** of the devolo Magic adapter (see Chapter 4.5 **Powerline**)

or

- Using **devolo Cockpit** or the **devolo app**. For more information, refer to the following chapter.

3.3.4 Integrating the devolo Magic 1 WiFi into an existing WiFi network

- 1 Establish the WiFi connection with your laptop, tablet or smartphone by entering the previously noted WiFi key as the network security key (see Chapter **WiFi on/off**).
- 2 To ensure that the devolo Magic 1 WiFi has the same WiFi configuration as your WiFi router, you can apply the WiFi access data at the touch of a button using the **WiFi Clone** function. This can be enabled in different ways:

Activating WiFi Clone:

- Activating WiFi Clone by pressing a button: First press the **WiFi button** with the **WiFi** icon on the front side of the devolo Magic 1 WiFi and then press the WPS button of the WiFi router with the access data you want to apply.

or

- Activating WiFi Clone from the web interface. More information about this function can be found in Chapter 4.4.6 WiFi Protected Setup (WPS).
- More information about the web interface can be found in Chapter 4 Network configuration.

Connecting devices to the WiFi network

- 3 Establish the WiFi connection with your laptop, tablet or smartphone by entering the previously noted WiFi key as the network security key (see Chapter WiFi on/off).

3.4 Installation of devolo software

Installing devolo Cockpit software

devolo Cockpit finds all accessible devolo Magic adapters in your devolo Magic network, displays information about these devices and encrypts your devolo Magic network individually. You can use the software to navigate to the integrated web interface.

Operating systems supported by devolo Cockpit (Version 5.0 or later) from:

- Windows 7 (32-bit/64-bit) or later,
- Ubuntu 13.10 (32-bit/64-bit),
- Mac (OS X 10.9)

- You can find the product manual, software and additional information on devolo Cockpit online at www.devolo.com/cockpit.

Downloading the devolo App

The devolo App is devolo's **free app** also for checking and configuring WiFi, Magic and LAN connections for the devolo Magic adapter (using a smartphone or tablet). The smartphone or tablet connects to the devolo Magic adapter at home over WiFi.

- 1 Download the devolo App to your smartphone or tablet computer from the corresponding store.
- 2 The devolo App is placed in your smartphone's or tablet's app list as usual. Tapping on the devolo App icon brings you to the start menu.

- *You can find more information about the devolo App online at www.devolo.com/devolo-app.*

3.5 Removing the devolo Magic adapter from a PLC network

To remove a devolo Magic adapter from your network and successfully restore its entire configuration to the factory default settings, press the reset button longer than 10 seconds. Wait until the LED flashes white and then disconnect the adapter from the mains supply.

Keep in mind that all settings that have already been made will be lost!

To integrate the mains supply into another network, proceed as described in Chapter 3.3.2 **Addition – Expanding an existing PLC network by adding another devolo Magic 1 WiFi.**

4 Network configuration

The devolo Magic 1 WiFi has a built-in web interface that can be called up using a standard web browser. All settings for operating the device can be modified here.

4.1 Calling up the built-in web interface

You can access the built-in online web interface for the devolo Magic 1 WiFi in different ways:

- Using the **devolo App** on your smartphone or tablet, you can access the device's web interface by going to the devolo App **overview page** and tapping on the **gear/arrow**.
- *You can find more information on devolo App in Chapter 3.4 Installation of devolo software.*

or

- Using the **Cockpit software** under **Start → All Programs → devolo → devolo Cockpit**, you can get to the device's web interface by clicking on the corresponding tab for the devolo Magic 1 WiFi. Then the program determines the current IP address and starts the configuration in the web browser.

■ *By default, the web interface will open directly. However, if an access password has been set via the option **System → Management**, you have to enter that password first. Read more about this under 4.7 System.*

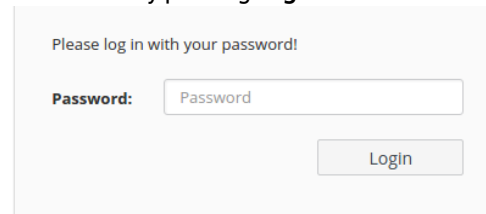
4.2 General information about the menu

All menu functions are described in the corresponding interface as well as in the associated chapter in the manual. The sequence of the description in the manual follows the structure of the menu. The figures for the device interface serve as examples.

Logging in

The web interface is not password protected. Assigning a login password is mandatory when logging in for the first time to prevent unauthorised access by third parties.

Enter your existing password each time you login again and confirm by pressing **Log in**.



Please log in with your password!

Password:

Logging out



Log out of the web interface by clicking **Log out**.

Language selection



Select the desired language in the language selection list.

The central areas of the web interface and their sub-categories are listed on the left edge. Click the entry for an area to move directly into it.

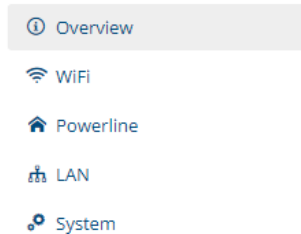


Fig. 5: Overview

Making changes

As soon as a change is made, an asterisk (*) is displayed in the header of the corresponding menu page.

Required fields

Fields with a red border are required fields. This means entries must be made in these fields to continue with the configuration.

Help text blank fields

Fields that have not been filled in yet contain greyed out help text, which indicates the required content for the field. This help text disappears immediately once content has been entered.

Default settings

Some fields contain default settings which ensure the greatest amount of compatibility and ease of use. Default settings are identified with an * in drop-down menus.

Default settings can of course be replaced with customised information.

Recommended settings

Some fields include recommended settings.

Recommended settings can of course be replaced with customised information.

Tables

You can make changes within a table by clicking the corresponding table row. In edit mode, the corresponding table rows have a blue background.

Tables have a filter function to make them easier to work with. The search function can be limited even further using special characters like ! or " ".

Invalid entries

Entry errors are either highlighted by a red border or error messages are shown.

Buttons

Click **Save** to save the settings for the respective web interface area.

Click **Back** or use the **Menu path** above the buttons to exit the respective web interface area.

Click the **Recycle bin** icon to delete an entry.

Click the **Arrow** icon to refresh a list.

4.3 Overview

The **Overview** area shows the status of the devolo Magic 1 WiFi and the connected LAN, PLC and WiFi devices.

System

You can see status information for your device here.

System	
Information	
Name:	devolo-183
Serial number:	1701120520001183
Firmware version:	5.0.0 (2018-08-06)

WiFi

You can view status information for a wireless network such as frequency channels in use, SSIDs in use and connected WiFi devices here.

WiFi	
2.4 GHz	
Current channel:	11 (auto)
Enabled SSIDs:	devolo-183
Connected WiFi clients:	0
5 GHz	
Current channel:	52 (auto)
Enabled SSIDs:	devolo-183
Connected WiFi clients:	0

Powerline

You can view status information for your devolo Magic network and connected devices here.

Powerline	
Local Device	
Verschlüsselung:	Secured
Network	
Connected clients:	4

LAN

You can see status information for a cable-based network such as protocol information or the connection speed of both Ethernet ports, etc. here.

LAN / Status	
Ethernet	
Port 1:	Not connected
Port 2:	Not connected
Ethernet	30:D3:2D:AF:8B:B9
IPv4	
Protocol:	DHCP
Address:	172.25.201.89
Subnet mask:	255.255.0.0
DNS server:	172.25.1.12
IPv6	
Protocol:	DHCPv6
Address:	2a00:fe0:313:25:32d3:2dff:feaf:8bb9
Subnet mask:	64

4.4 WiFi


Make all changes to your wireless network in the **WiFi** area.

4.4.1 Status

You can see the current status of your WiFi network configuration here. In addition to the connected WiFi stations with detailed basic information, such as the MAC address, the selected frequency band, the SSID, the transfer rates and the connection duration, information about whether


you have configured a bridge or a RADIUS server is displayed. Additionally, you can see the newly added SSIDs with possible VLAN configurations. You can display details about the respective frequency band using the search function.

Connected WiFi Clients



MAC Address ▾	Frequency band	Network name	Tx rate (Mbps)	Rx rate (Mbps)	Connected since
No clients are connected					

WiFi Network








Active ▾	Network name	Encryption	Frequency band	Current channel	Connected clients
	devolo-183	WPA2 Personal	5 GHz	52 (auto)	0
	devolo-183	WPA2 Personal	2.4 GHz	11 (auto)	0
	devolo-guest-183	WPA2 Personal	5 GHz	52 (auto)	n/a
	devolo-guest-183	WPA2 Personal	2.4 GHz	11 (auto)	n/a

Fig. 6: WiFi status

4.4.2 WiFi networks

You can make all necessary changes to your WiFi network here.

 WiFi / WiFi networks

WiFi network mode:

2.4 GHz + 5 GHz 2.4 GHz 5 GHz off

Use common settings

2.4 GHz + 5 GHz

Network name 2.4 + 5 GHz


Channel 2.4 GHz:

Channel 5 GHz:

Hide SSID:

Encryption:

WPA2 WPA/WPA2 none



A pre-shared key is required (8 – 63 characters)!

Fig. 7: WiFi networks

WiFi network mode

The devolo Magic 1 WiFi supports both the parallel operation of the WiFi frequency bands and their separate use.

The **WiFi network mode** field lets you define your preferred setting by clicking the respective field:

WiFi network mode:

2.4 GHz + 5 GHz 2.4 GHz 5 GHz off

- 2.4 GHz + 5 GHz** – Both frequency bands are used
- 2.4 GHz** – Only the 2.4 GHz frequency band is used
- 5 GHz** – Only the 5 GHz frequency band is used
- Off** – If desired, you can completely switch off the WiFi section of your devolo Magic 1 WiFi here.



Keep in mind that after saving this setting, you will be disconnected from any existing wireless connection to the devolo Magic 1 WiFi. In this case, configure the device over Ethernet.

Network name

The network name (SSID) determines the name of your wireless network. You can see this name when logging onto the WiFi, allowing you to identify the correct WiFi network.

Channel

There are 13 channels available in the **2.4 GHz** frequency band. The channels recommended for Europe are channels 1, 6 and 11. This ensures the frequency bands of the channels do not overlap and any connection problems are avoided.

There are 11 channels available in the **5 GHz** frequency band.

The channel selection default setting is **Automatic**. The devolo Magic 1 WiFi regularly and automatically executes the channel selection in this setting. In other words, if the last connected station logs out, a search for a suitable channel is carried out immediately. If no stations are connected, the device automatically selects a channel every 15 minutes.

It is worth noting that connected devices also have to support the increased frequency band of 5 GHz. From channel 52 onward you go into the radar range. When accessing the device for the first time, a radar detection phase (DFS) starts automatically, during which time the devolo Magic 1 WiFi cannot be accessed via WiFi.

Channels

In the **Channel** field, you can manually select a 2.4 GHz and a 5 GHz channel. If you are not sure which wireless chan-

nels are used by nearby devices, select the **Automatic** option.

Hide SSID:

The **SSID** specifies the name of your wireless network. You can see this name when logging onto the WiFi, allowing you to identify the correct subnet.

If the **Hide SSID** option is disabled, your network name is visible. If this option is disabled, potential network users must know the exact SSID and enter it manually to be able to set up a connection.

■ *Some WiFi stations have difficulty connecting to hidden wireless networks. If the connection to a hidden SSID poses problems, first try to set up the connection with a visible SSID and only then try to hide it.*

Security

The **WPA2 Personal (WiFi Protected Access)** security standard is available for securing data transmission in your wireless network. This method allows for individualised keys consisting of **letters and numbers and the depicted special characters with a length of up to 63 characters**. You can simply enter them into the **Key** field via the keyboard.

In addition, the devolo Magic also supports the **WPA/WPA2 Enterprise Mode** encryption key. As a central au-

thentication and accounting server, a RADIUS server handles the registration and management of user information for multiple WiFi access points.

4.4.3 Guest network

If you have friends or acquaintances visiting and you want to provide them with Internet access but without giving away the password for your WiFi, you can set up a separate guest account in addition to the main Internet connection. The guest account can have its own network name, time limit and WiFi password. This way your visitors can browse the Internet without having access to your local network.

Guest WiFi Configuration

Enable

The guest network does only allow access to the internet.

Frequency band:	<input type="text" value="2.4 GHz + 5 GHz"/>
Network name:	<input type="text" value="devolo-guest-183"/>
Key:	<input type="password" value="....."/>

Fig. 8: WiFi guest network

To set up a guest account, activate the **Enable** option.

■ *You can also enable or disable the guest account in the devolo App using the **Guest account** button.*

Frequency band

In the **Frequency band** field, you select the frequency band mode you are using (see Chapter **WiFi network mode**).

Network name

Define the name of the guest network in the **Network name** field.

Key

You should also encrypt the guest account to prevent anyone in signal range from intruding into your network and, for example, sharing your Internet connection. The **WPA/WPA2 (WiFi Protected Access)** security standard is available for this.

This method allows for individualised keys consisting of **letters and numbers with a length of up to 63 characters**. You can simply enter them via the keyboard.

To do so, enter a corresponding number of characters into the **Key** field.

QR code

Using the QR code, you can conveniently set up the connection to the guest network for mobile devices. Scanning the QR code automatically transfers the credentials for the guest network to the respective mobile device.

4.4.4 Mesh

Mesh

All devolo Magic series WiFi adapters offer mesh WiFi, which entails completely new and improved WiFi functions:

- **Fast roaming** ensures that all WiFi clients, such as smartphones and tablets, are always connected to the strongest WiFi hotspot. This is especially important when people move from room to room with their mobile devices.
- In addition, the new **air-time fairness** feature processes the requests of high-speed WiFi clients at higher priority. This prevents older devices, which may require more time for a download, from creating WiFi bottlenecks.
- Integrated **band steering** ensures that all WiFi stations automatically switch to the optimum frequency band (2.4 and 5 GHz frequency band) in order to use the best WiFi connection at all times.

In order to turn the mesh functions on, activate the **Enable** option.

The mesh function of the devolo Magic 1 WiFi is switched on by default.

Smart WiFi

Enabling the Smart WiFi features will optimize your inhome WiFi network experience while using your mobile devices. Inhome roaming solves your sticky client problem, Band Steering and Dynamic Frequency Selection provides WiFi access even with many clients and Airtime Fairness optimizes your bandwidth.

Enable

WiFi Clone

WiFi Clone allows you to apply the WiFi access data (network name and WiFi password) of another WiFi access point to this device automatically. This requires that you start the configuration process and then press the WPS button on the device containing the WiFi access data (SSID and WiFi password) to be applied.

Start Configuration

Fig. 9: Mesh WiFi

WiFi Clone

WiFi Clone makes it possible to simply copy the WiFi configuration data of an existing WiFi access point (e.g. your WiFi router) to all WiFi access points (Single SSID). Start the procedure with the **Start setup** option and then press the WPS button of the device with the WiFi access data (SSID and WiFi password) to be applied.

4.4.5 Schedule control

The **Schedule control** area lets you define when and if your WiFi is switched on and off.

WiFi schedule control

Enable

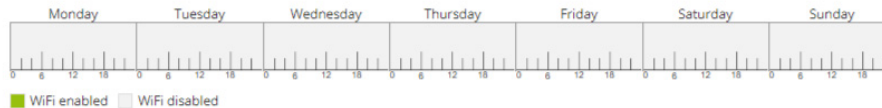
WiFi convenience function

Enable

When the WiFi convenience function is activated, the time control setting waits to switch off the WiFi until after the last WiFi device has disconnected from the WiFi.

Please note that many tablets/smartphones maintain their WiFi connection indefinitely!

Overview of the wifi schedule settings



Configuration

Here you can define the time intervals for when you want your WiFi to be activated.



Interval	From	to
Please click the + button to add a new rule.		



Fig. 10: WiFi schedule control

Enabling WiFi schedule control

In order to be able to use time control, activate the **Enable** option.

Configuration

You can define multiple time periods during which your wireless network is to be enabled for each weekday. Then the time control automatically switches the wireless network on or off.

Automatic disconnection

If you enable the **Automatic disconnection** option, the wireless network is not switched off until the last station has logged off.

- *Manually switching the device on and off (using a button) always has priority over automatic time control. The configured time control then takes effect automatically during the next defined time period.*

4.4.6 WiFi Protected Setup (WPS)

WiFi Protected Setup (WPS) is one of the international encryption standards developed by the WiFi Alliance for easily and quickly setting up a secure wireless network. The encryption keys of the respective WiFi devices are transmitted automatically and continuously to the other WiFi device(s) in the wireless network.

Enabling WPS encryption

In order to be able to use WPS encryption, activate the **Enable** option.

Wi-Fi Protected Setup (WPS) - Configuration

Enable

Network name:

WPS Mode: WPS Pushbutton

Add devices to the WiFi network using the soft push button.
Now press the WPS button on the device being added to your WiFi network.

WPS PIN

Add devices to the WiFi network using your PIN.
Enter the PIN of the device to be added to your WiFi network.

Fig. 11: WPS

The devolo Magic 1 WiFi offers two different variants for transmitting these encryption keys:

WPS using WPS pushbutton

- 1 Start the encryption process on the devolo Magic 1 WiFi
 - By pressing the **WiFi button** on the **front side of the device** or

- By pressing the corresponding **Start** button on the user interface under **WiFi → WPS Pushbutton**.

- 2 Then either press the WPS key of the WiFi device you are adding or enable the WPS mechanism in the WiFi settings of the WiFi device. Now the devices exchange their encryption keys and establish a secure WiFi connection. The WiFi LED on the front panel indicates the synchronisation process by flashing.

WPS via PIN

- 1 To interconnect WiFi devices in your wireless network securely via PIN variant, enter an individualised key on the web interface under **WiFi → WPS → WPS PIN** and start the encryption process by pressing the corresponding **Start** button.
- 2 Open the web interface of the WiFi client to be added and transmit the PIN selected on the devolo Magic 1 WiFi. Confirm the encryption process as described there. Now the devices exchange their encryption keys and establish a secure WiFi connection. The WiFi LED on the front panel indicates the synchronisation process by flashing.

Use of the **WPS** method implies the use of the **WPA/WPA2** encryption standard. Therefore take note of the following automatic settings:

- If under **WiFi → WiFi networks**, the **No encryption** option is selected in advance, **WPA2** is set automatically. The newly generated password is displayed under **WiFi → WiFi networks** in the **Key** field.
- If under **WiFi → WiFi networks**, the **WPA/WPA2** option is selected in advance, this setting **remains** with the previously assigned password.

4.4.7 Neighbour networks

The **Neighbour networks** area displays visible wireless networks in your surroundings.

Network name	Channel	Signal quality (%)
devolo-183	100	94
DVT-3490-5	124	94
devolo-183	11	94
NETGEAR70_jonas_r	6	94
Loft TV.b	6	94
DVT-3490-2	1	94
devilo24	1	94
devolo-159	1	94
ASUS_7437b8fde68	9	94
NETGEAR-2	2	94

Fig. 12: Neighbour networks

4.5 Powerline

Make all changes to your PLC network in the **Powerline** area.

Powerline

Pairing

Instead of pressing the physical button, click this "PAIR" button to initiate the pairing. Also start the pairing on another Powerline device. The second device is integrated into the first device's network.

PAIR UNPAIR

Network password

Instead of using automatic configuration above, set a custom password on all devices to create a network.

Network password

Advanced settings

PLC Domain Name

Force Node Type

* indicates default option

Fig. 13: Powerline overview

Pairing – Establishing a PLC connection

In order to use a new devolo Magic 1 WiFi in your devolo Magic network, first you have to connect it to your existing devolo Magic adapters devices as a network. This is accomplished by using a shared password. This can be assigned in different ways:

- Using **dLAN Cockpit** or the **devolo app** (see Chapter 3.4 Installation of devolo software),

- Only using the **PLC button** (see Chapter 2.3 Pairing – Establishing a PLC connection and 3.3 Connecting the devolo Magic 1 WiFi)
- Using the web interface, in the **PLC** menu; as described below:

Pairing – Using physical button and on-screen button

- 1 First, press the PLC button on a devolo Magic adapter in your existing network.
- 2 Then, click **Pairing** to start the pairing operation. This may take some time.

As soon as the new devolo Magic adapter is integrated into your existing network, it appears in a list of available and established connections (see Chapter **PLC connections**).

Pairing – Using custom password

You can also assign your network a custom PLC password you pick yourself. Enter this password for each devolo Magic adapter in the **Network password** field and confirm your settings by clicking the **diskette** icon.

Note that the custom password is not assigned to the whole PLC network automatically. Instead, you must assign it separately to each of your devolo Magic adapters.

Unpairing – Resetting or removing an adapter from a network

- 1 To remove a devolo Magic adapter from your devolo Magic network, click **Unpair**.
- 2 Wait until the LED flashes red and then disconnect the devolo Magic adapter from the mains supply.

Advanced settings

You will find the following options in the advanced settings:

PLC domain name: Network name

Force node type:

- Domain master
- Automatic*: Recommended default setting
- End node

Confirm your settings by clicking the **diskette** icon.

PLC connections

The table lists all available and connected devolo Magic adapters for your network along with displaying the following details:

Device ID: Device ID (number) of the respective devolo Magic adapter in the devolo Magic network

MAC address: MAC address of the respective devolo Magic adapter

Send (Mbps): Rate for sending data

Receive (Mbps): Rate for receiving data

Role: Role of the respective devolo Magic adapter on the network

* indicates the local devolo Magic adapter

4.6 LAN

You make changes to the network settings in the **LAN** area.

Ethernet	
Port 1:	Not connected
Port 2:	Not connected
Ethernet	30:D3:2D:AF:8B:B9
IPv4	
Protocol:	DHCP
Address:	172.25.201.89
Subnet mask:	255.255.0.0
DNS server:	172.25.1.12
IPv6	
Protocol:	DHCPv6
Address:	2a00:fe0:313:25:32d3:2dff:feaf:8bb9
Subnet mask:	64

Fig. 14: LAN status

You can access the web interface for the devolo Magic 1 WiFi using its current IP address. This may be an IPv4 and/or IPv6 address, which is either entered manually as a static address or automatically retrieved from a DHCP server.

4.6.1 Status

You can see the current LAN status of the devolo Magic adapters here. The **Ethernet** area shows the network devices connected to the two network connectors **Port 1** and **Port 2** (e.g. PC, NAS, etc.).

IPv4/IPv6

Depending on how the devolo Magic 1 WiFi is connected to the Internet (IPv4 or IPv6), current network information is displayed, such as **Address**, **Subnet mask**, **Standard gateway** and **DNS server**.

4.6.2 IPv4/IPv6 configuration

In the factory default settings, only the **Retrieve network settings from a DHCP server** option for **IPv4** is enabled. This means that the IPv4 address is retrieved automatically from a DHCP server. The currently assigned network data are visible (greyed out).

If a DHCP server is already present on the network for assigning IP addresses (e.g. your Internet router), you should leave the **Retrieve network settings from a DHCP server** option enabled so that the devolo Magic 1 WiFi automatically receives an address from it.

If you want to assign a static IP address, make entries accordingly for the **Address**, **Subnet mask**, **Default gateway** and **DNS server** fields.

Confirm your settings by clicking the **diskette** icon.

Then, restart the devolo Magic adapter (see Chapter 4.7.3 **Configuration**) to ensure that your changes take effect.

IPv6 configuration

If you want automatic IP address assignment and there is already a DHCP server present on the network for assigning IP addresses (e.g. your Internet router), enable the **Retrieve network settings from a DHCP server** option to ensure that the devolo Magic 1 WiFi automatically receives an address from it.

If you want to assign a static IP address, make entries accordingly for the **Address**, **Subnet mask**, **Default gateway** and **DNS server** fields.

Confirm your settings by clicking the **diskette** icon.

Then, restart the devolo Magic adapter (see Chapter 4.7.3 **Configuration**) to ensure that your changes take effect.

4.7 System

In the **System** area, you can configure the settings for security and other devolo Magic adapter device functions.

System / Status	
Date and Time	
Local time:	10.09.2018 14:51
Time zone:	Europe/Aachen
Time server 1:	europe.pool.ntp.org
MAC Addresses	
Ethernet	30D32DAP:8B:89
LEDs	
WiFi LED:	Enabled
Powerline LED:	Enabled
Buttons	
PLC button:	Enabled
WiFi button:	Enabled

Fig. 15: System status

4.7.1 Status

Here you can view the most important information on the devolo Magic adapter, including the current date and time, time zone, MAC address of the adapter, status of the WiFi and Powerline LEDs and the two operating buttons (PLC button and WiFi button).

4.7.2 Management

System information lets you enter user-defined names in the **Device name (hostname)** and **Device location** fields. Both pieces of information are particularly helpful if multiple devolo Magic adapters are to be used and identified in the network.

Under **Change access password**, a login password can be set for accessing the web interface.

By default, the built-in web interface of the devolo Magic 1 WiFi is not protected by a password. We recommend assigning a password when the installation of the devolo Magic 1 WiFi is complete to protect it against tampering by third parties.

■ *To do so, enter the desired new password twice. Now the web interface is protected against unauthorised access with your custom password!*

The **Powerline standby settings** let you enable PowerSave mode for the devolo Magic adapter.

If the **Permit PowerSave mode** option is enabled, the devolo Magic 1 WiFi automatically switches to standby mode after approximately 10 minutes if no Ethernet connection is active, meaning that there is no active network device (e.g. computer) connected to the network interface.

In this mode, the devolo Magic adapter is not accessible over the Powerline network. As soon as the network device (e.g. computer) connected to the network interface is switched on again, your devolo Magic adapter can also be accessed over the electrical wiring again.

PowerSave mode is enabled in the devolo Magic adapter's factory default condition.

The **LED settings** let you disable the LED status display of the **WiFi** and **Powerline** LEDs. The brightness of the WiFi LED can also be reduced so that the devolo Magic adapter can act as a night light.

An error status is indicated by corresponding flashing behaviour regardless of this setting (see Chapter 2.3.1 **Reading the PLC indicator light**).

■ *For information on the LED behaviour of the devolo Magic adapter in standby mode, refer to Chapter 2.3.1 **Reading the PLC indicator light**.*

You can completely disable the **operating buttons** on the devolo Magic adapter in order to protect yourself against possible changes. Simply disable the **Enable PLC button** or **Enable WiFi button** option.

The operating buttons are enabled in the devolo Magic adapter's factory default condition.

Under **Time zone**, you can select the current time zone, e.g. Europe/Berlin. The **Time server (NTP)** option lets you

specify a time server. A time server is a server on the Internet whose task consists of providing the exact time. Most time servers are coupled with a radio clock. Select your time zone and time server; the devolo Magic 1 WiFi adapter automatically switches between standard time and summer time.

4.7.3 Configuration

Saving the device configuration

To save the enabled configuration to your computer as a file, select the corresponding button in the **Management** → **System** → **Save device configuration as file** area. Then enter a storage location and name for the settings file.

Restoring the device configuration

An existing configuration file can be sent to the devolo Magic 1 WiFi in the **System** → **Configuration** area and enabled there. Select a suitable file via the **Select file ...** button and start the operation by clicking the **Restore** button.

Resetting the device configuration

The devolo Magic 1 WiFi is reset to the original factory defaults in the **Management** → **System** area with the **Reset device configuration** option.

■ *Doing so causes you to lose your personal WiFi and PLC settings. The last-assigned passwords for the devolo Magic 1 WiFi are also reset.*

For backup purposes, all active configuration settings can be transmitted to your computer, stored there as a file and reloaded into the devolo Magic 1 WiFi. This function can be useful for creating a variety of configurations that will let you quickly and easily set up the device for use in different network environments.

Restart device

In order to restart the devolo Magic 1 WiFi, select the **Restart** button in the **System** → **Configuration** area.

4.7.4 Firmware

Current firmware

The currently installed firmware of the devolo Magic 1 WiFi is displayed here.

Download updated firmware

The firmware of the devolo Magic 1 WiFi includes the software for operating the device. If necessary, devolo offers new versions on the Internet as a file download, for example to modify existing functions.

1 In order to update the firmware, click on the setting **here**. The link takes you to the devolo website where

you can download the appropriate file for the devolo Magic 1 WiFi to your computer.

- 2 Then, navigate to the **System** → **Firmware** → **Run update** area. Click **Select file...** and select the downloaded file.
- 3 Confirm the update procedure with **Run update**. After a successful update, the devolo Magic 1 WiFi restarts automatically.



Ensure that the update procedure is not interrupted.

4.7.5 Config Sync

Config Sync makes it possible to copy the entire WiFi configuration of a devolo Magic 1 WiFi adapter to a new devolo Magic adapter. This includes the following settings:

- WiFi network
- Guest network
- Mesh WiFi
- Time control and time server settings.

In order to switch Config Sync on, activate the **Enable** option.

■ *Please note that the WiFi is always switched on or off for the entire network. Therefore, stop Config Sync first on a device that you want to configure or switch separately.*

5 Appendix

5.1 Technical specifications

Security	128 Bit AES
Device port	2x RJ45 (network connectors)
Power consumption	Maximum: 7.6 W Typical: 5.1 W Stand-by: 2.0 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)	152x76x40 (HxWxD)
Ambient conditions	10-90% Humidity, non-condensing
Certifications	CE

5.2 Frequency range and transmitting power

Technical specifications in the 5 GHz frequency range

Frequency range	5 GHz
IEEE standard	802.11 a/h 802.11 n 802.11 ac
Indoor frequency range	5150 – 5350 MHz
Indoor & outdoor frequency range	5150 – 5725 MHz (802.11 a/h, n) 5150 – 5350 MHz / 5470 – 5725 MHz (802.11 ac)
Channel bandwidth	20 MHz (802.11 a/h) 20, 40 MHz (802.11 n) 20 MHz, 40 MHz, 80 MHz, 160 MHz (802.11 ac)
Max. indoor transmission power (EIRP)	200 mW (channel 36 – 64) / 23 dBm
Max. transmitting power	1,000 mW (channel 100 – 140) / 30 dBm

Technical specifications in the 2.4-GHz frequency range

Frequency range	2.4 GHz
IEEE standard	802.11 b 802.11 g 802.11 n
Indoor frequency range	–
Indoor & outdoor frequency range	2399.5 – 2484.5 MHz
Channel bandwidth	20 MHz (802.11 b/g) 20, 40 MHz (802.11 n)
Max. indoor transmission power (EIRP)	100 mW / 20 dBm
Max. transmitting power	100 mW / 20 dBm

5.3 Channels and carrier frequencies

Channels and frequencies in the 5-GHz band

Channel	Carrier frequency
36	5180 MHz
40	5200 MHz
44	5220 MHz
48	5240 MHz

Channel	Carrier frequency
52	5260 MHz
56	5280 MHz
60	5300 MHz
64	5320 MHz
100	5500 MHz
104	5520 MHz
108	5540 MHz
112	5560 MHz
116	5580 MHz
120	5600 MHz
124	5620 MHz
128	5600 MHz
132	5660 MHz
136	5680 MHz
140	5700 MHz

Channels and frequencies in the 2.4 GHz band

Channel	Carrier frequency
1	2412 MHz
2	2417 MHz

Channel	Carrier frequency
3	2422 MHz
4	2427 MHz
5	2432 MHz
6	2437 MHz
7	2442 MHz
8	2447 MHz
9	2452 MHz
10	2457 MHz
11	2462 MHz
12	2467 MHz
13	2472 MHz

5.4 Bandwidth optimization

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

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

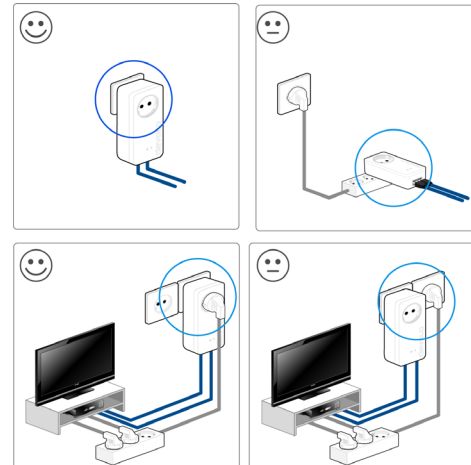


Fig. 16: Bandwidth optimization

5.5 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.

5.6 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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