devolo Magic 2 WiFi $^{2-1}$
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**devolo AG**

Charlottenburger Allee 67
52068 Aachen
Deutschland

[www.devolo.com](http://www.devolo.com)

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### 5.2 Frequency range and transmitting power

### 5.3 Channels and carrier frequencies

### 5.4 Bandwidth optimization

### 5.5 Disposal of old devices

### 5.6 Warranty conditions
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 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:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>Very important safety symbol that warns you of imminent electrical voltage which if not observed can result in serious injury or death.</td>
</tr>
<tr>
<td>⚠️</td>
<td>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.</td>
</tr>
<tr>
<td>⚠️</td>
<td>An important note that should be observed which can potentially lead to material damages.</td>
</tr>
<tr>
<td>🏡</td>
<td>The device may only be used indoors in dry conditions.</td>
</tr>
</tbody>
</table>
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**

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.

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:

<table>
<thead>
<tr>
<th>Product family</th>
<th>devolo Magic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance category</td>
<td>2</td>
</tr>
<tr>
<td>Transmission type</td>
<td>WiFi</td>
</tr>
<tr>
<td>Number of sockets</td>
<td>2</td>
</tr>
<tr>
<td>Integrated electrical socket</td>
<td>1 (= yes)</td>
</tr>
</tbody>
</table>

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 2 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 2400 Mbps
- Over distances up to 500 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 2 WiFi.

Efficiency – The integrated PowerSave mode reduces energy consumption automatically at low data traffic.

The 2 gigabit network connectors on the devolo Magic 2 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 2 WiFi features

- An integrated electrical socket,
- A PLC button with LED status display,
- A WiFi button with LED status display,
- Two gigabit 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.
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 2 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 2 WiFi.

2.3.1 Reading the PLC indicator light

The integrated PLC indicator light (LED) shows the status for the devolo Magic 2 WiFi by illuminating and/or flashing:

<table>
<thead>
<tr>
<th>LED</th>
<th>Flashing behaviour</th>
<th>Meaning</th>
<th>LED status display (web interface*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red LED</td>
<td>Lights up for up to 2 sec.</td>
<td>Start-up process</td>
<td>Cannot be disabled</td>
</tr>
</tbody>
</table>
devolo Magic 2 WiFi

### LED Flashing behaviour

<table>
<thead>
<tr>
<th>LED</th>
<th>Flashing behaviour</th>
<th>Meaning</th>
<th>LED status display (web interface*)</th>
</tr>
</thead>
</table>
| 2   | Red LED           | **Status 1**: The reset of the devolo Magic adapter was successful. The PLC/reset button has been pressed and held for 10 seconds.  
**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. | Cannot be disabled |
| 3   | Red LED           | **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.  
**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. | Can be disabled |
<table>
<thead>
<tr>
<th></th>
<th>LED</th>
<th>Flashing behaviour</th>
<th>Meaning</th>
<th>LED status display (web interface*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Red and white LED</td>
<td>Flashes at intervals of <em>0.1 sec. red/2 sec. white</em></td>
<td>Data transmission rate not in optimum range **</td>
<td>Can be disabled</td>
</tr>
<tr>
<td>5</td>
<td>White LED</td>
<td><strong>Status 1:</strong> Flashes at intervals of <em>0.5 sec.</em></td>
<td><strong>Status 1:</strong> This devolo Magic adapter is in pairing mode and the system is searching for new devolo Magic adapters.</td>
<td>Cannot be disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Status 2:</strong> Flashes at intervals of <em>1 sec.</em></td>
<td><strong>Status 2:</strong> Someone has triggered the &quot;Identify device&quot; function on the web interface or in the devolo app. This function identifies the devolo Magic adapter being sought.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>White LED</td>
<td>Lights up steady</td>
<td>The devolo Magic connection does not have any issues and the devolo Magic adapter is ready to operate.</td>
<td>Can be disabled</td>
</tr>
<tr>
<td>7</td>
<td>White LED</td>
<td>Flashes at intervals of <em>0.1 sec. on / 5 sec. off</em></td>
<td>The devolo Magic adapter is in standby mode.***</td>
<td>Can be disabled</td>
</tr>
<tr>
<td>8</td>
<td>Red and white LED</td>
<td>Flashes at intervals of <em>0.5 sec. red/0.5 sec. white</em></td>
<td>The devolo Magic adapter is carrying out a firmware update.</td>
<td>Cannot be disabled</td>
</tr>
</tbody>
</table>
* Information about the web interface can be found in Chapter 4 Network configuration.

** Information on improving the transmission rate can be found in Chapter 5.4 Bandwidth optimization.

***A devolo Magic adapter switches to standby mode after approximately 10 minutes if no active network device (e.g. computer) is connected to the network interface and the WiFi is switched off. In this mode, the devolo Magic adapter cannot be accessed over the electrical wiring. 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.

Check whether the adapter is connected to the mains supply correctly and whether the pairing operation has been carried out successfully. For more information about this, refer to 3.3 Connecting the devolo Magic 2 WiFi.

2.3.2 WiFi button

This button controls the following functions:

**WiFi on/off**

In the factory default settings, the WiFi setting is already enabled and the WiFi encryption is set to WPA2. The default WiFi key for the initial installation of the devolo Magic 2 WiFi is the device's WiFi key. You will find the unique key on the label on the back of the housing.

---

![Type plate](image-url)
Before the networking procedure, write down the WiFi key of the devolo Magic 2 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 2 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 2 WiFi by illuminating and/or flashing.

<table>
<thead>
<tr>
<th>WiFi-LED</th>
<th>Flashing behavior</th>
<th>Meaning</th>
<th>LED status display (web interface*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White LED</td>
<td>Flashes at intervals of 0,1 sec. on / 5 sec. off</td>
<td>The devolo Magic adapter is in WPS mode to integrate WiFi-enabled devices via WPS.</td>
</tr>
</tbody>
</table>
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!

<table>
<thead>
<tr>
<th>WiFi-LED</th>
<th>Flashing behavior</th>
<th>Meaning</th>
<th>LED status display (web interface*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>White LED</td>
<td>Lights up steady</td>
<td>WiFi is switched on and active.</td>
</tr>
<tr>
<td>3</td>
<td>White LED</td>
<td>Off</td>
<td><strong>Status 1</strong>: Someone has set the &quot;WiFi LED&quot; 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. <strong>Status 2</strong>: Someone has set the &quot;WiFi network mode&quot; function in the WiFi networks settings on the web interface or in the devolo app to off. The WiFi function ist disabled.</td>
</tr>
</tbody>
</table>
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 2 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 2 WiFi:

- **Single Kit:**
  - devolo Magic 2 WiFi
  - Hard copy of installation guide
  - Printed security flyer
  - Simplified CE declaration
  - Online documentation

- **Starter Kit:**
  - devolo Magic 2 WiFi
  - devolo Magic 2 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 2 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 2 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 2 LAN 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 2 WiFi

Before you can use the devolo Magic 2 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 2 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)
- Using devolo Cockpit or the devolo app. For more information, refer to the following chapter.

3.3.4 Integrating the devolo Magic 2 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 2 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 2 WiFi and then press the WPS button of the WiFi router with the access data you want to apply.
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 2 WiFi.
4 Network configuration

The devolo Magic 2 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 2 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 2 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**.
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.

**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 2 WiFi and the connected LAN, PLC and WiFi devices.

**System**
You can see status information for your device here.

<table>
<thead>
<tr>
<th>Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>devolo-183</td>
</tr>
<tr>
<td>Serial number:</td>
<td>1701120520001183</td>
</tr>
<tr>
<td>Firmware version:</td>
<td>5.0.0 (2018-08-06)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>2.4 GHz</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current channel:</td>
<td>11 (auto)</td>
</tr>
<tr>
<td>Enabled SSIDs:</td>
<td>devolo-183</td>
</tr>
<tr>
<td>Connected WiFi clients:</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5 GHz</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current channel:</td>
<td>52 (auto)</td>
</tr>
<tr>
<td>Enabled SSIDs:</td>
<td>devolo-183</td>
</tr>
<tr>
<td>Connected WiFi clients:</td>
<td>0</td>
</tr>
</tbody>
</table>
29 Network configuration

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

**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.

<table>
<thead>
<tr>
<th>Ethernet</th>
<th>Port 1: Not connected</th>
<th>Port 2: Not connected</th>
<th>Ethernet: 30:13:26:7A:88:1B</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4</td>
<td>Protocol: DHCP</td>
<td>Address: 172.25.201.89</td>
<td>Subnet mask: 255.255.0.0</td>
</tr>
<tr>
<td></td>
<td>DNS server: 172.25.1.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| IPv6     | Protocol: DHCPv6       | Address: 2a00:fe00:313:25:323:2d7: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](image)

### Connected WiFi Clients

<table>
<thead>
<tr>
<th>MAC Address</th>
<th>Frequency band</th>
<th>Network name</th>
<th>Tx rate (Mbps)</th>
<th>Rx rate (Mbps)</th>
<th>Connected since</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No clients are connected</td>
</tr>
</tbody>
</table>

![WiFi Network](image)

### WiFi Network

<table>
<thead>
<tr>
<th>Active</th>
<th>Network name</th>
<th>Encryption</th>
<th>Frequency band</th>
<th>Current channel</th>
<th>Connected clients</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="devolo-183" /></td>
<td>devolo-183</td>
<td>WPA2 Personal</td>
<td>5 GHz</td>
<td>52 (auto)</td>
<td>0</td>
</tr>
<tr>
<td><img src="image" alt="devolo-183" /></td>
<td>devolo-183</td>
<td>WPA2 Personal</td>
<td>2.4 GHz</td>
<td>11 (auto)</td>
<td>0</td>
</tr>
<tr>
<td><img src="image" alt="devolo-guest-183" /></td>
<td>devolo-guest-183</td>
<td>WPA2 Personal</td>
<td>5 GHz</td>
<td>52 (auto)</td>
<td>n/a</td>
</tr>
<tr>
<td><img src="image" alt="devolo-guest-183" /></td>
<td>devolo-guest-183</td>
<td>WPA2 Personal</td>
<td>2.4 GHz</td>
<td>11 (auto)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Fig. 6: WiFi status
4.4.2 WiFi networks

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

Fig. 7: WiFi networks
WiFi network mode

The devolo Magic 2 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:

- **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 2 WiFi here.

Keep in mind that after saving this setting, you will be disconnected from any existing wireless connection to the devolo Magic 2 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 2 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 2 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-
channels 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 authentication 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.

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.
Network configuration

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 2 WiFi is switched on by default.
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.

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.

The devolo Magic 2 WiFi offers two different variants for transmitting these encryption keys:

**WPS using WPS pushbutton**

1. Start the encryption process on the devolo Magic 2 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 2 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.
4.5 Powerline

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

---

**Fig. 12: Neighbour networks**

<table>
<thead>
<tr>
<th>Network name</th>
<th>Channel</th>
<th>Signal quality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>devolo-183</td>
<td>100</td>
<td>94</td>
</tr>
<tr>
<td>DVT-3490-5</td>
<td>124</td>
<td>94</td>
</tr>
<tr>
<td>devolo-183</td>
<td>11</td>
<td>94</td>
</tr>
<tr>
<td>NETGEAR70_jonas_r</td>
<td>6</td>
<td>94</td>
</tr>
<tr>
<td>Loft TV.b</td>
<td>6</td>
<td>94</td>
</tr>
<tr>
<td>DVT-3490-2</td>
<td>1</td>
<td>94</td>
</tr>
<tr>
<td>devilo24</td>
<td>1</td>
<td>94</td>
</tr>
<tr>
<td>devolo-159</td>
<td>1</td>
<td>94</td>
</tr>
<tr>
<td>ASUS_7437b8fde68</td>
<td>9</td>
<td>94</td>
</tr>
<tr>
<td>NETGEAR-2</td>
<td>2</td>
<td>94</td>
</tr>
</tbody>
</table>
41 Network configuration

In order to use a new devolo Magic 2 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 2 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

Profiles:
- Default mode*: Recommended default setting
- Compatibility mode: Compatibility mode is a special mode of the devolo Magic Powerline adapter, which resolves rare connection issues which can result from interaction with other technologies such as DSL. This mode reduces the transmission speed of the Powerline adapter.

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.

You can access the web interface for the devolo Magic 2 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 2 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 2 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 2 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.

#### 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 2 WiFi is not protected by a password. We recommend assigning a password when the installation of the devolo Magic 2 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 2 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 2 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 2 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 2 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 2 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 2 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 2 WiFi, select the Restart button in the System ➔ Configuration area.

4.7.4 Firmware

**Current firmware**

The currently installed firmware of the devolo Magic 2 WiFi is displayed here.

**Download updated firmware**

The firmware of the devolo Magic 2 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.

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 2 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 2 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 2 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

<table>
<thead>
<tr>
<th>Security</th>
<th>128 Bit AES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device port</td>
<td>2x RJ45 (Gigabit Ethernet port)</td>
</tr>
</tbody>
</table>
| Power consumption | Maximum: 12.0 W  
Typical: 9.0 W  
Stand-by: 3.4 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

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>5 GHz</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>2.4 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE standard</td>
<td>802.11 b</td>
</tr>
<tr>
<td>Indoor frequency range</td>
<td>–</td>
</tr>
<tr>
<td>Indoor &amp; outdoor frequency range</td>
<td>2399.5 – 2484.5 MHz</td>
</tr>
<tr>
<td>Channel bandwidth</td>
<td>20 MHz (802.11 b/g)</td>
</tr>
<tr>
<td>Max. indoor transmission power (EIRP)</td>
<td>100 mW / 20 dBm</td>
</tr>
<tr>
<td>Max. transmitting power</td>
<td>100 mW / 20 dBm</td>
</tr>
</tbody>
</table>

### 5.3 Channels and carrier frequencies

#### Channels and frequencies in the 5-GHz band

<table>
<thead>
<tr>
<th>Channel</th>
<th>Carrier frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>5260 MHz</td>
</tr>
<tr>
<td>56</td>
<td>5280 MHz</td>
</tr>
<tr>
<td>60</td>
<td>5300 MHz</td>
</tr>
<tr>
<td>64</td>
<td>5320 MHz</td>
</tr>
<tr>
<td>100</td>
<td>5500 MHz</td>
</tr>
<tr>
<td>104</td>
<td>5520 MHz</td>
</tr>
<tr>
<td>108</td>
<td>5540 MHz</td>
</tr>
<tr>
<td>112</td>
<td>5560 MHz</td>
</tr>
<tr>
<td>116</td>
<td>5580 MHz</td>
</tr>
<tr>
<td>120</td>
<td>5600 MHz</td>
</tr>
<tr>
<td>124</td>
<td>5620 MHz</td>
</tr>
<tr>
<td>128</td>
<td>5600 MHz</td>
</tr>
<tr>
<td>132</td>
<td>5660 MHz</td>
</tr>
<tr>
<td>136</td>
<td>5680 MHz</td>
</tr>
<tr>
<td>140</td>
<td>5700 MHz</td>
</tr>
</tbody>
</table>

#### Channels and frequencies in the 2.4 GHz band

<table>
<thead>
<tr>
<th>Channel</th>
<th>Carrier frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2412 MHz</td>
</tr>
<tr>
<td>2</td>
<td>2417 MHz</td>
</tr>
</tbody>
</table>
## 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.

### 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

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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