Renkforce
PL500D duo

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Contents

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 "PLC" basics and a presentation of the PL500D duo in Chapter 2, Chapter 3 will cover successfully setting up your PL500D duo. Chapter 4 explains how to configure your PLC network. Tips for bandwidth optimization, information of environmental compatibility of the device and our warranty conditions can be found in Chapter 5 and conclude the manual.

1.1   Intended use

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

1.2   CE conformity

This product complies with the technical requirements of the EMC directive 2004/108/EC and the other relevant provisions of the FTEG, and it is designed for use in the EU, Switzerland and Norway. The product is class B equipment.

For the CE declaration for this product, refer to the accompanying product CD.

1.3   Safety notes

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

DANGER due to electricity

Users should never open devices. Opening the device poses a risk of electric shock!

Users do not need to carry out any maintenance on devices. In the event of damage, disconnect the device from the mains supply by pulling it or its plug

out of the power outlet. Then contact qualified specialist personnel (after-sales service) exclusively. **Damage** is deemed to have occurred, for example,

• if the power cable or plug is damaged

• if the device has been showered with liquid (e.g. rain or water).

• if the device is inoperable.

• if the housing of the device is damaged.

Devices may only be operated using a **mains power supply**, as described on the **nameplate**.

To disconnect devices from the mains supply, pull the device itself or its mains plug from the power outlet. **The power outlet and all connected network devices should be easily accessible so that you can pull the mains plug quickly if needed.**

Devices are designed for indoor use only.

Only use devices at a dry location.

Disconnect devices from the mains supply to clean! Avoid solvent cleaning agents since they can cause damage to the housing. Only use a dry towel for cleaning.

DANGER due to overheating

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

• Do not **cover** devices when operating.

• Do not place **any objects on** devices.

• Do not insert **any objects** into the **openings** of devices.

• Devices must **not** be placed directly **next to** an open **flame** (such as fire or candles).

• Devices must **not be exposed to direct heat radiation** (e.g. radiator, direct sunlight).

2 Introduction

This chapter gives an overview of Powerline and briefly introduces the adapter. Practical examples are listed at the end of the chapter.

2.1 What does Inhouse Powerline stand for?

"Inhouse Powerline" (PLC, HomePlug) is an intelligent, secure technology that lets you set up a home network easily, quickly and economically via your electrical wiring, without the need for complex and expensive dedicated cabling. The available performance and effort required for the installation also compares favourably to traditional methods—PLC now attains speeds you would expect from other LAN technologies.
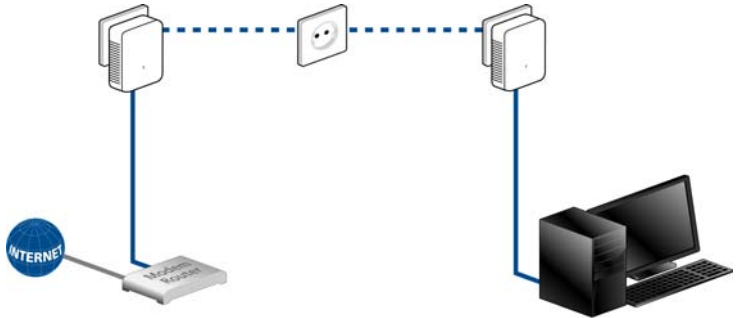
2.2 PL500D duo

The adapter provides a transmission rate of up to 500 Mbps via the electrical wiring in the building. It also facilitates larger data transfer between the computers in your network via the electrical wiring. The range of 300 meters creates a high degree of flexibility. The two LAN ports allow for two devices to be connected directly—especially practical for computers and network printers in the home office or Smart TV and a game console in the living room.
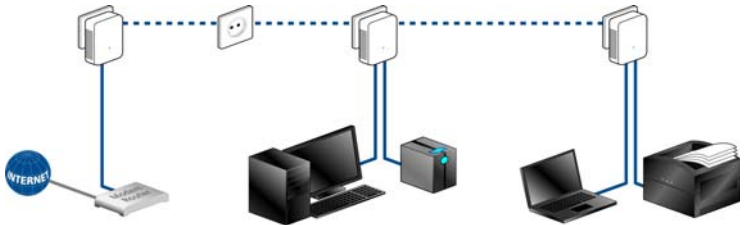
Simple Installation

- Connect the adapter via the network cable to the computer or the respective network device.
- Connect the adapter to the electrical wiring
- As an option: for individual password allocation simply press the encryption button or install the configuration software on your computer
- That's it!

2.3 Practical examples

Internet solution for a single-user

Internet solution for multi-users

3   Installation

This chapter describes the connection and display elements of the adapter
and how to connect it.

3.1   System requirements

- **Operating systems**: Windows Vista Home Premium (32 bit/64 bit),
- Windows 7 (32 bit/64 bit), Windows 8 (32 bit/64 bit), Windows 8 Pro (32 bit/
  64 bit) or any other operating system with network support
- **Network connection**

*Please note that your computer or other device must feature a network
adapter with an Ethernet port.*

3.2   Connection and display elements

The adapter is fitted with one control lamp (LED) as well as two network con-
nection and an encryption button. The LED shows all of the statuses for the
PL500D duo by illuminating and/or flashing in different ways:

	PL500D duo
Power	The LED flashes at uniform intervals (of 2 s) if the adapter is connected to the mains supply but there is no PLC connection.
	The LED lights up if the adapter is ready to operate and there is a PLC connection.
	The LED flashes quickly if the encryption process (pairing) is being performed in the PLC network.
	The LED flashes at irregular intervals (1 s/15 s) if the adapter is in PowerSave mode.

- Ethernet connections
  These are the connection points on the adapter for connecting it to a com-
  puter and/or another network device with the network cable.
- PLC button
  Data encryption at the touch of a button; For more information on the func-
  tions of the encryption button, please see the chapter 'Encrypting the PLC
  network at the touch of a button'.

Please note that all adapters which are connected to the electrical wiring, switch to energy-saving mode after approx. 11 minutes, if no active network device is connected to the Ethernet port. In energy-saving mode, the adapter cannot be accessed via the electrical wiring.

3.3   Connecting the adapter

❶ Use the included network cable to connect the adapter to the network port of your running computer.

❷ Plug the adapter into a free electrical outlet.

In order to connect multiple PLC devices into a self-contained, secure network, now continue with the installation of the configuration. For more information, refer to the chapter 'Encrypting the PLC network at the touch of a button'.

4   Configuring the PLC network

To set up custom encryption for your network—either using the **PLC button** or the **Configuration Wizard**.

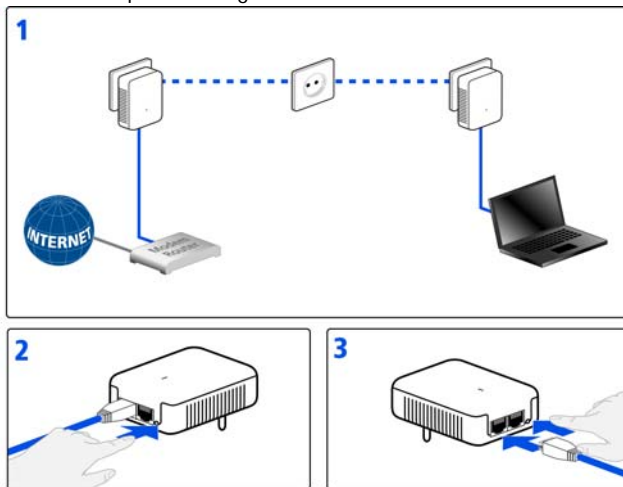## 4.1   Encrypting the PLC network at the touch of a button

To encrypt a PLC network simply press the PLC button that is located on the device. Pressing this button will encrypt your network with a randomly generated password.

Adapters cannot be configured while in Standby mode.

The following section contains exact instructions on the basis of possible network scenarios:
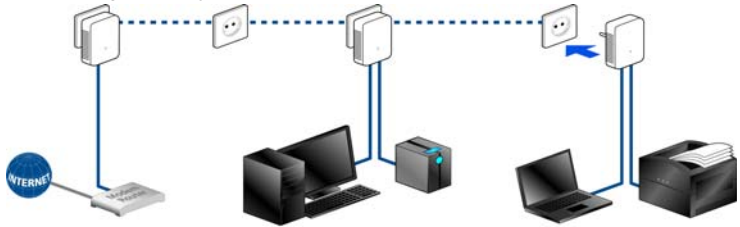
Encrypting a new PLC network consisting of two adapters

Once both adapters have been successfully connected, press each PLC button for **one second within two minutes of one another**. That's it! Your PLC network is now protected against unauthorized access.

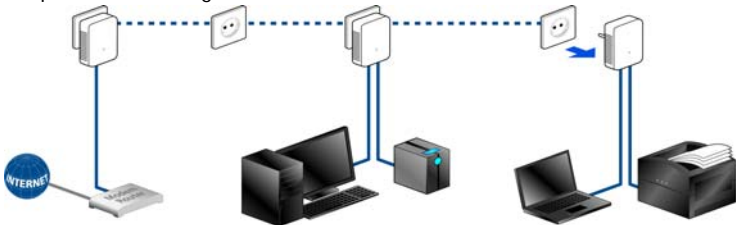### Expanding an existing PLC network with a new adapter

If you have already secured your existing PLC network using the PLC button, use the same method to integrate other adapters. Once you have successfully connected the new adapter, first press the PLC button of one of your network's existing adapters (**one second**), then press the PLC button of your new adapter (**one second**) **within two minutes**. That's it! The new adapter is now integrated in your network.

To integrate additional adapters in your network, repeat the above steps.

Excluding a adapter from your network

To exclude a adapter from an existing network, press its encryption button **for at least ten seconds**. The device will be assigned a new randomly generated password and will thus no longer be able to access the network. To integrate the adapter in a different PLC network, follow the steps described above, depending on whether you are setting up a new network or adding the adapter to an existing one.

4.2   Encrypting the PLC network via the configuration software

To install the software, insert the included CD-ROM in the CD drive of your computer. If autoplay is installed on your computer, the installation will start automatically. Otherwise, open the folder with the Windows Explorer by right-clicking on **Start** (or the Windows logo) and selecting **Explorer** from the context menu. Double-click to start the installation wizard manually.

Upon successful installation, the configuration software can be found under **Start** --> **All programs** --> **PLC** --> **Password Manager**.

Please note: You must connect every PLC device that you intend to integrate securely in your network directly to your computer for configuration.

• **Assign a network password**
  In this step, select a network password that will apply to all adapters in your home network. The password must be used by all devices.

*The factory default password is **HomePlugAV**. For security reasons, we recommend overwriting it and assigning a password of your own.*
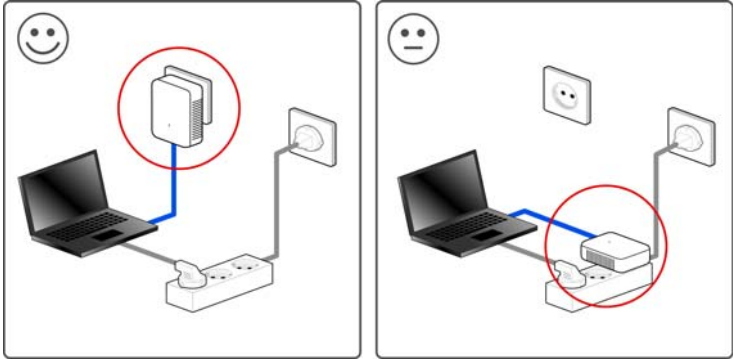
• **Add further adapters**
  To add a new adapter to your network, first connect it directly to your computer and launch the wizard again. Then assign the password that will apply to all adapters in your home network.

5   Appendix

5.1   Bandwidth optimization

- Plug the device directly into a wall socket. Avoid multiple sockets. This may impair the transmission of the PLC signals.
- Plug the devices into different outlets and avoid using the same extension strip.

5.2   Disposal of old devices

The icon with crossed-out wastebasket on the device means that this adapter is an electrical or electronic device that falls within the scope of application of the German Electrical and Electronic Equipment Act. Since 24 March 2006, these types of devices may no longer be disposed of with household waste. Rather, in Germany, 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.

5.3 Warranty conditions

The warranty is given to purchasers of the manufacturer's products in addition to the warranty conditions provided by law and in accordance with the following conditions:

1   Warranty coverage

a)   The warranty covers the equipment delivered and all its parts. Parts will, at the manufacturer's sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Alternatively, the manufacturer reserves the right to replace the defective product with a comparable product with the same specifications and features. Operating manuals and possibly supplied software are excluded from the warranty.

b)   Material and service charges shall be covered by the manufacturer, but not shipping and handling costs involved in transport from the buyer to the service station and/or to the manufacturer.

c)   Replaced parts become property of the manufacturer.

d)   The manufacturer is authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

2   Warranty period
The warranty period for this product is two years. This period begins at the day of delivery from the manufacturer's dealer. Warranty services carried out by the manufacturer do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

3   Warranty procedure

a)   If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.

b)   In the case of any externally visible damage arising from transport (e.g. damage to the housing), the person carrying out the transportation and the sender should be informed immediately. On discovery of damage which is not externally visible, the transport company and the sender are to be immediately informed in writing, at the latest within 3 days of delivery.

c)   Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.

d)   Warranty claims are only valid if a copy of the original purchase receipt is returned with the device. The manufacturer reserves the right to require the submission of the original purchase receipt.

4   Suspension of the warranty
All warranty claims will be deemed invalid

a)   if the label with the serial number has been removed from the device,

b)   if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),

c)   if the device was stored or operated under conditions not in compliance with the technical specifications,

d)   if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,

e)   if the device was opened, repaired or modified by persons not contracted by the manufacturer,

f)   if the device shows any kind of mechanical damage, or

g)   if the warranty claim has not been reported in accordance with 3a) or 3b).

5   Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable hardware, software, installation or operation, the manufacturer reserves the right to charge the purchaser for the resulting testing costs.

6   Additional regulations

a)   The above conditions define the complete scope of the manufacturer's legal liability.

b)   The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.

c)   Claims for compensation of lost profits, indirect or consequential detriments, are excluded.

d)   The manufacturer is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.

e)   In the case that the intentional or culpable negligence of the manufacturer's employees has caused a loss of data, the manufacturer will be liable for those costs typical to the recovery of data where periodic security data back-ups have been made.

f)   The warranty is valid only for the first purchaser and is not transferable.

g)   The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, the manufacturer's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.

h)   The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between the manufacturer and the purchaser.