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BLUEMARK LED

User Manual

UM EN BLUEMARK LED

Order No.: —

UV LED printer for printing plastic labels for labeling terminal blocks, conductors, and devices

PHŒNIX CONTACT

INSPIRING INNOVATIONS

User manual

UV LED printer for printing plastic labels
for labeling terminal blocks, conductors, and devices

Designation: UM EN BLUEMARK LED

Revision: 01

Order No.:   —

This user manual is valid for:

Designation	Firmware	Order No.
BLUEMARK LED	$\geq$ 2.31	5147888

Please observe the following notes

In order to ensure the safe use of the product described, you have to read and understand this manual. The following notes provide information on how to use this manual.

User group of this manual

The use of products described in this manual is oriented exclusively to qualified electricians or persons instructed by them, who are familiar with applicable standards and other regulations regarding electrical engineering and, in particular, the relevant safety concepts.

Phoenix Contact accepts no liability for erroneous handling or damage to products from Phoenix Contact or third-party products resulting from disregard of information contained in this manual.

Explanation of symbols used and signal words

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

This indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

This indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

This indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

The following types of messages provide information about possible property damage and general information concerning proper operation and ease-of-use.

NOTE

This symbol and the accompanying text alerts the reader to a situation which may cause damage or malfunction to the device, either hardware or software, or surrounding property.

This symbol and the accompanying text provides additional information to the reader. It is also used as a reference to other sources of information (manuals, data sheets, literature) on the subject matter, product, etc.

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Should you have any suggestions or recommendations for improvement of the contents and layout of our manuals, please send your comments to

tecdoc@phoenixcontact.com.

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1 Safety and the environment

1.1 Description of the BLUEMARK LED

The BLUEMARK LED is a UV printer for labeling marking elements used in the field of electrical engineering. These include in particular plastic injection-molded parts and plastic plates. The printing method is based on a printhead with a UV Unit for hardening the fluid.

The printer is controlled via a PC. A printer driver for Windows XP, Windows 2000, Windows Vista and Windows 7 is supplied with the printer.

CLIP PROJECT advanced special planning and marking software from Phoenix Contact is also supplied as standard with the printer. In addition, the sheets can be labeled using popular Microsoft Office products.

1.2 Intended use

The BLUEMARK LED is a state-of-the-art device which complies with the recognized safety-related rules and regulations. Despite this, danger to the user or third parties could arise and the BLUEMARK LED or other property could be damaged while operating the device.

WARNING: Danger to health due to incorrect usage

The BLUEMARK LED may only be used while in proper working order and for the intended purpose. Users must act safely and must comply with the operating instructions. Errors, in particular those which affect safety, must be removed immediately.

Unauthorized modifications, which exceed the scope of replacing the Fluid Cartridge or Cleaning Cartridge, and changes to the BLUEMARK LED are not permitted for reasons of safety.

Only carry out the actions described in these operating instructions. Other tasks may only be performed by trained personnel or service engineers.

NOTE: The BLUEMARK LED is solely intended to print suitable media approved by Phoenix Contact.

Only print on media with complete rows, as missing rows can damage the printhead.

In addition, only use consumables from Phoenix Contact. For the order numbers of the Fluid Cartridge and Cleaning Cartridge, please refer to page A-2.

Intended use includes observing the operating instructions.

1.3 Please observe the following notes

1.3.1 Dangers to health

WARNING: Danger - mains voltage

Never open the printer forcibly and do not carry out any repairs yourself.

WARNING: Danger due to incorrect operation

Normally, the printer may only be opened via the menu. Prior to opening, it must be ensured that the UV Unit is switched off and has cooled down, and that the fluid valves are closed. Otherwise UV light, heat or moving parts could pose a danger to health.

WARNING: Danger of crushing

There are moving parts inside the printer. Never operate the BLUEMARK LED without its cover in place and do not attempt to access the inside of the device through the device openings during operation.

Irritation due to the fluid

The fluid that is used contains substances which can cause irritation and inflammation of the skin, eyes, and respiratory system.

Do not inhale vapor and avoid contact with the skin and eyes.

If your skin comes into direct contact with the fluid, wash the affected area thoroughly with water and soap.

1.3.2 Risk of damage to the device

> **NOTE: Damage to the device: Observe the capacity**
>
> Observe the maximum capacity when loading sheets. If too many sheets are loaded, the transport module may be unable to start up and this can result in damage to the printer.

> **NOTE: Do not touch printhead**
>
> Make sure that you do not touch the printhead. This can damage the printhead or adversely affect the print image quality.

> **NOTE: Do not touch surface of UV Unit**
>
> Make sure that you do not touch the surface of the UV Unit. This can damage the UV Unit.

> **NOTE: Notes on power supply connection**
>
> The BLUEMARK LED is designed for power supplies with an AC mains voltage of 100 V to 240 V. Only connect the BLUEMARK LED to sockets with a ground conductor contact.
>
> Only connect the BLUEMARK LED to devices that have a SELV.
>
> Before establishing or disconnecting connections, switch off all affected devices (computer, printer, accessories).

> **NOTE: Protect the BLUEMARK LED against moisture**
>
> Only operate the BLUEMARK LED in a dry environment and do not expose it to any moisture (splash water, mist, etc.).

> **NOTE: Always secure the printer prior to transport**
>
> If you want to transport the printer, secure the printhead first so that it is not damaged.
>
> You will also need to replace the Fluid Cartridge with an empty dummy Fluid Cartridge. Ensure that the Cleaning-Cartridge is inserted. Otherwise, fluid can leak from the printhead and contaminate the printer or render it unusable.
>
> Use the original packaging when transporting or sending the printer over long distances.

Notes on use

> **NOTE: Limited durability of the fluid**
>
> The UV-hardening fluid has limited durability. Once the expiry date is reached, the Fluid Cartridge must be changed. The printer will notify you that the durability period is about to expire (see page 3-5).
>
> The Fluid Cartridge is designed for single use and cannot be refilled.

Notes on storage

> **NOTE:** For optimum durability, store the Fluid Cartridge at 0°C ... 20°C.

1.4   Notes on disposal

Dispose of the Fluid Cartridge correctly

Empty Fluid Cartridges can be disposed of with domestic waste. Used Fluid Cartridges that are not empty must be disposed of as hazardous waste, in the same way as ink residue, for example. Please observe the local regulations.

Dispose of the Cleaning Cartridge correctly

The Cleaning Cartridge must be disposed of as hazardous waste, in the same way as ink residue, for example. Please observe the local regulations.

Dispose of used devices correctly

The BLUEMARK printer contains valuable recyclable materials, which should be utilized after the useful life (lifecycle) of the printer has ended.

The PCB of the BLUEMARK is equipped with a lithium battery. Please dispose this battery according to the local regulations.

Please support us in this and contact your Phoenix Contact sales office to determine the best way of returning the old device. Phoenix Contact will then handle the necessary recycling and disposal measures.

2 Setting up and connecting the printer

2.1 Checking the scope of supply

Check the scope of supply.

The following should be supplied in the box with the BLUEMARK LED:
– Mains cable (Europe and US)
– CD-ROM with driver and these operating instructions
– USB cable
– CLIP PROJECT advanced planning and marking software
– Hexagonal screwdriver

Retain the packaging for subsequent transport. The original packaging can also be ordered separately (see "Ordering data" on page A-2).

2.2 Removing the transportation safeguard and inserting the Fluid Cartridge

A transportation safeguard is fitted inside the BLUEMARK LED when supplied. For safety reasons, the printer is also delivered with an empty Fluid Cartridge.

The first step is to remove the transportation safeguard and replace the empty Fluid Cartridge with a full Fluid Cartridge (BLUEMARK FLUID-CARTRIDGE, Order No. 5147421).

Removing the transportation safeguard

• Connect the printer to the mains using the corresponding mains cable.
The printer has a wide-range power supply unit (100 V AC ... 240 V AC), which means that no voltage switch-over is required on the device.
• Switch on the printer.
"**Fluid Cartridge Missing**" appears in the display.
Press the ● key (2 in Figure 2-1) to unlock the cover.
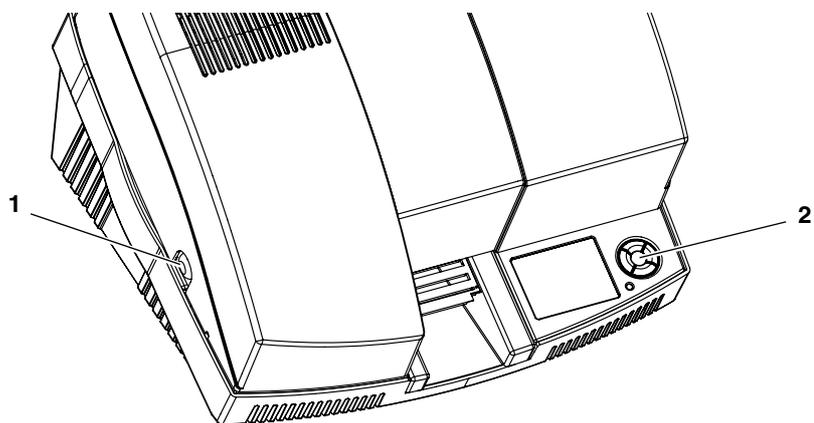

Figure 2-1   Opening the cover

• Press the pushbuttons (1) on both sides of the printer and open the cover.
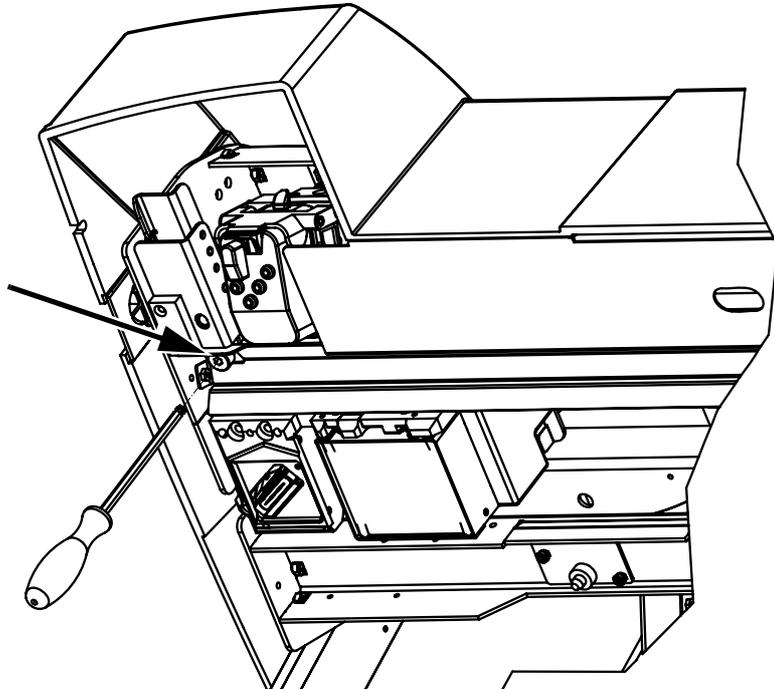
Figure 2-2   Unscrewing the transportation safeguard screw

When the cover is opened, you will see the head of an Allen screw in the middle on the left-hand side.

• Unscrew this Allen screw completely using the hexagonal screwdriver provided.

The screw cannot be removed and can remain in the holder after being unscrewed.

Notes on transport

> **NOTE:** If you want to transport the BLUEMARK LED again following initial startup, the transportation safeguard must be locked again.
>
> You will also need to replace the Fluid Cartridge with the dummy Fluid Cartridge (see page 2-3) and use the original packaging.
>
> The dummy Fluid Cartridge and the original packaging can also be ordered as replacement parts (see "Ordering data" on page A-2).
>
> For additional notes, see "Preparing the printer for transport" on page 4-5.

Inserting the Fluid Cartridge

For safety reasons, the BLUEMARK LED is delivered with an empty fluid cartridge ("dummy fluid cartridge"). Replace this with a BLUEMARK FLUID-CARTRIDGE (Order No. 5147421).
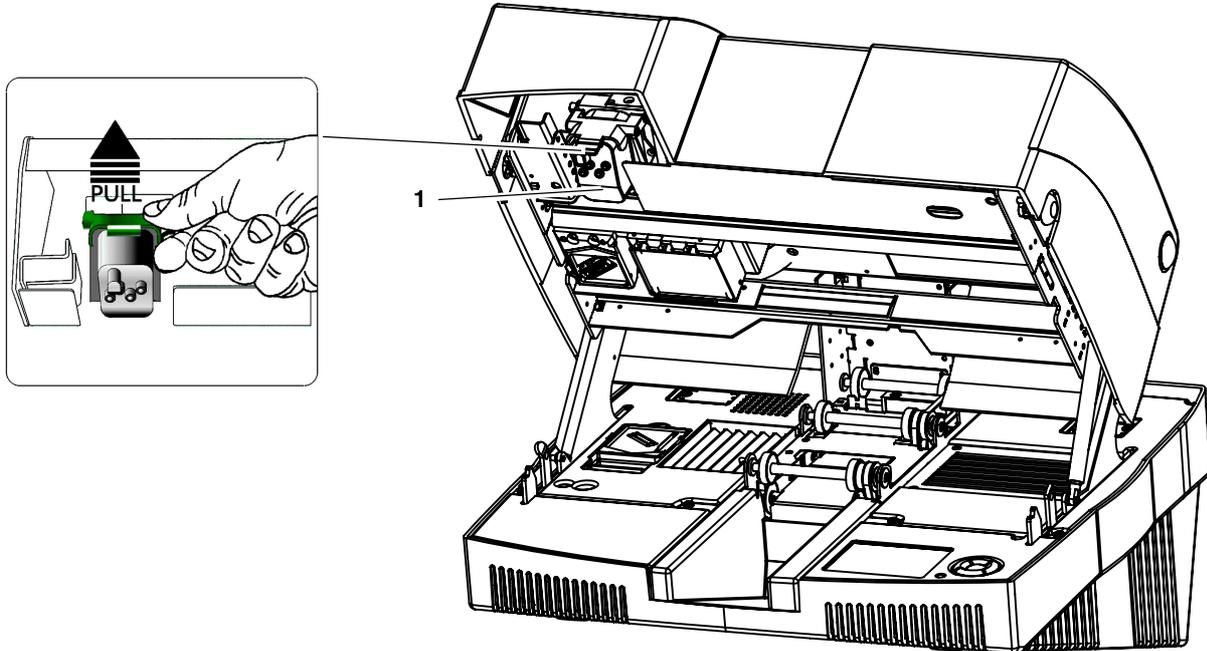
Figure 2-3   View of the Fluid Cartridge (1)

- Release the green locking latch and remove the empty Fluid Cartridge by pulling it slightly away from and upwards out of the guide.
- Insert the new Fluid Cartridge as a reverse of the above, press it down firmly into the diagonal guide rail until it engages with a click. Now press it upwards and lock the green latch again until this engages with a click.
- Close the cover again.

Retain the empty Fluid Cartridge. It is clearly marked "DUMMY". It should be inserted before the device is shipped.

The fluid system is filled automatically. This takes around 1 minute. The drivers must then be installed (see "Connecting the printer" on page 2-6).

2.3   About the printer
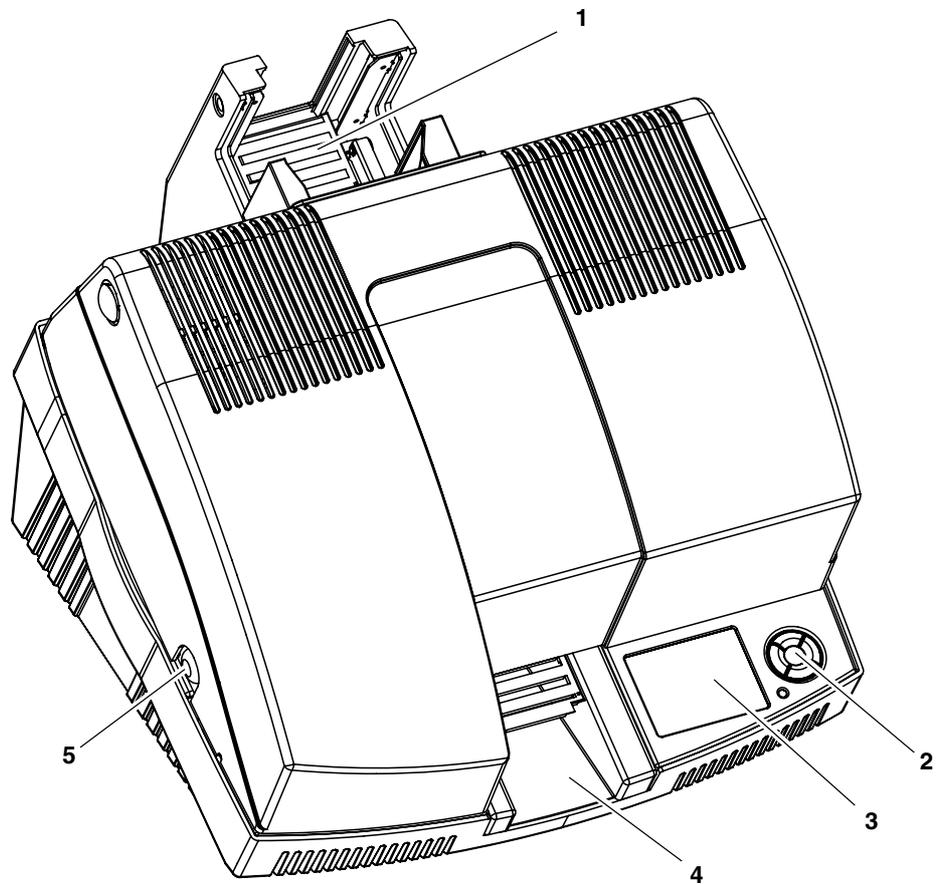
Figure 2-4   Operating elements of the printer

1   Transport module for holding sheets
2   Keypad
3   Display
4   Output tray
5   Unlocking the cover (pushbutton on both sides of the printer)

Normally the cover can only be opened if the printer has already been unlocked via the menu (see page 5-7).
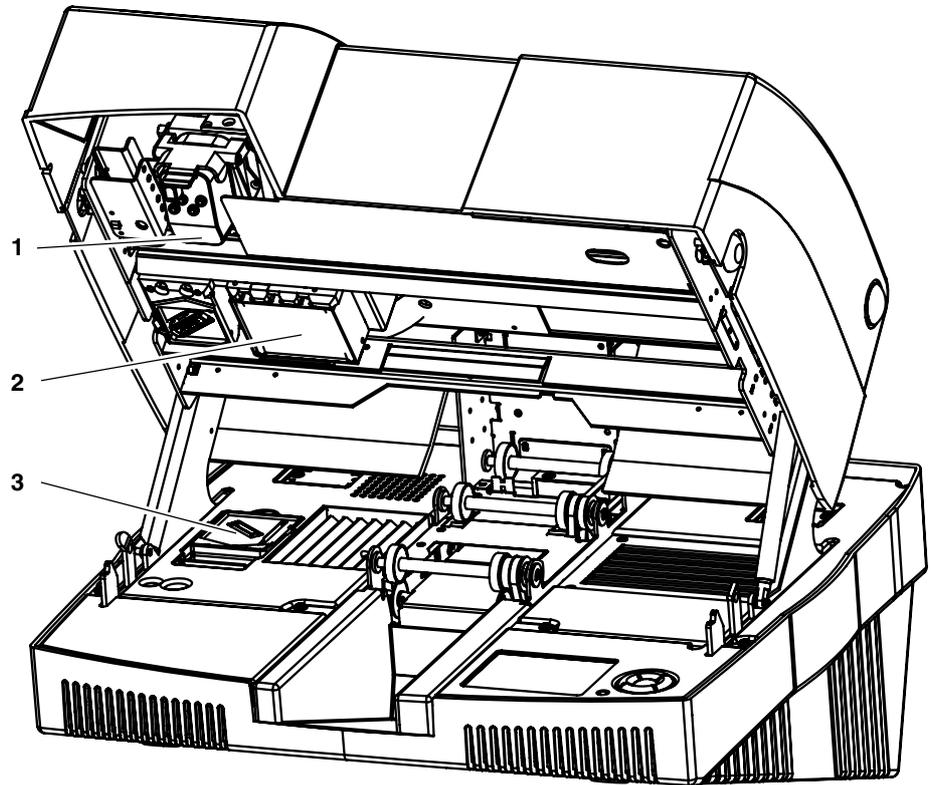
Figure 2-5   View inside

1   Fluid Cartridge
2   UV Unit
3   Cleaning Cartridge

2.4   Setting up the printer

	NOTE: Set up the printer in a clean, dry location. The following are not suitable: – Damp or dusty locations – Locations exposed to high levels of heat, direct sunlight or low temperatures (operating range: 5°C to 35°C)

	To ensure excellent print quality, the device must be set up on a completely level surface.

•   Unpack the printer and set it up in a suitable location on a solid and level surface.

2.5 Connecting the printer
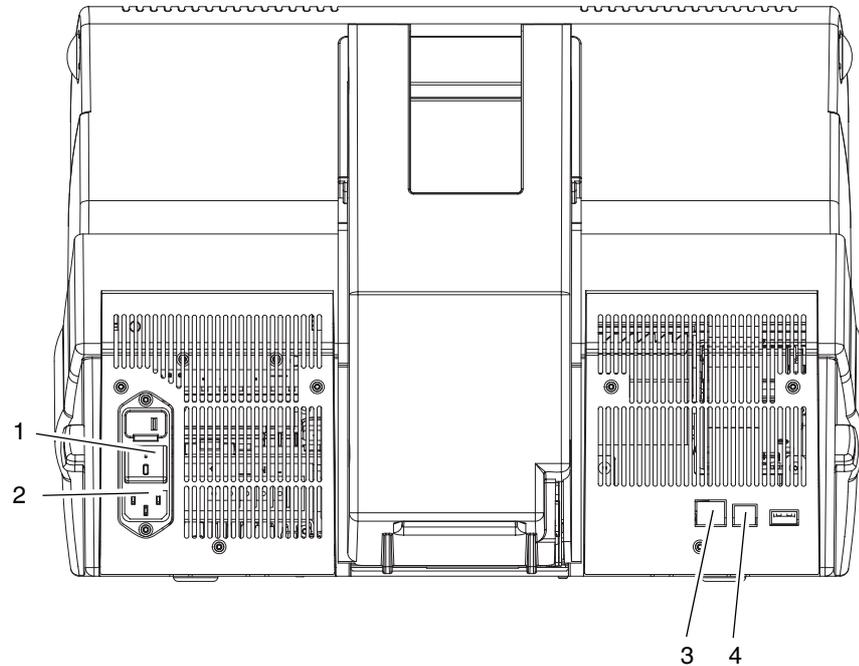
Figure 2-6   Connections on the back of the printer

1 On/off switch

2 Mains connection

3 Ethernet connection (LAN)

4 USB connection

2.5.1   Mains connection

• Connect the printer to the mains using the corresponding mains cable.
  The printer has a wide-range power supply unit (100 V AC ... 240 V AC), which means that no voltage switch-over is required on the device.

The BLUEMARK LED can be connected to the computer via USB, Ethernet (LAN) or Bluetooth.

The BLUEMARK LED automatically selects the interface via which it receives data.

The interface can also be preset via the menu (see "Setting the interface" on page 3-10).

2.5.2 USB connection

Requirements

Prior to driver installation, the following points must be met:

– The transportation safeguard has been removed.

– The dummy Fluid Cartridge has been replaced with a normal Fluid Cartridge.

– The BLUEMARK LED is installed in a suitable location.

– The BLUEMARK LED is connected to the power supply, but is switched off.

– The BLUEMARK LED is **not** yet connected to the PC.

Start driver installation with the supplied installation program, which uninstalls any existing older BLUEMARK LED drivers and copies the new drivers.

• Insert the supplied CD-ROM and start the
   "[Drive]:\Bluemark Installer\setup.exe" file.

The following window appears:
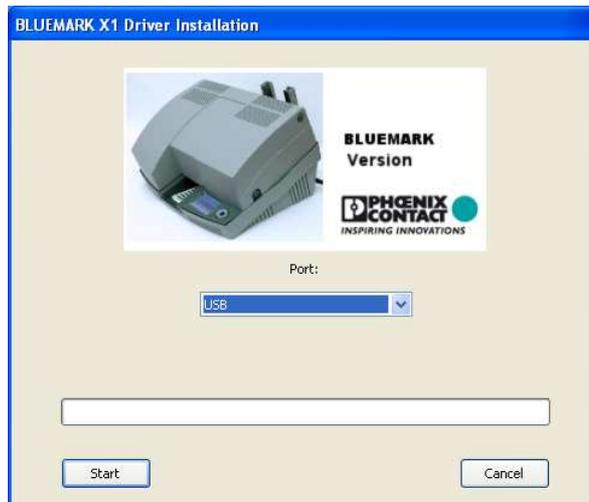
Figure 2-7   BLUEMARK LED driver installation (USB)

• Select "USB" from the drop-down menu and click on "Start".

Any older BLUEMARK LED drivers are uninstalled and the new drivers are copied. Once this is done, a message window appears.

• Confirm the message with "OK".

• Connect the printer to the PC using the USB cable supplied.
   The smaller USB connector (USB B, bottom connector in the figure) is connected to the printer and the wider connector (top connector in the figure) is connected to the PC.

Figure 2-8   USB cable

- Switch on the printer.
  After a few seconds the message "`Initialisation`" appears in the display followed by "`Ready`".
  The PC then responds with "Found New Hardware" and prompts driver installation.
  New hardware (a BLUEMARK DFU device) is detected first and a corresponding driver is installed automatically. The BLUEMARK DFU device is required for future firmware updates (firmware updates are available at www.phoenixcontact.net/catalog).

ℹ️ The following applies to Windows XP.

① **Found New Hardware Wizard**

Welcome to the Found New Hardware Wizard

Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).

Read our privacy policy

Can Windows connect to Windows Update to search for software?

○ Yes, this time only
○ Yes, now and every time I connect a device
● No, not this time

Click Next to continue.

[< Back] [Next >] [Cancel]

② **Found New Hardware Wizard**

This wizard helps you install software for:

Bluemark DFU device

💿 **If your hardware came with an installation CD or floppy disk, insert it now.**

What do you want the wizard to do?

● Install the software automatically (Recommended)
○ Install from a list or specific location (Advanced)

Click Next to continue.

[< Back] [Next >] [Cancel]

③ **Found New Hardware Wizard**

Completing the Found New Hardware Wizard

The wizard has finished installing the software for:

Bluemark DFU device

Click Finish to close the wizard.
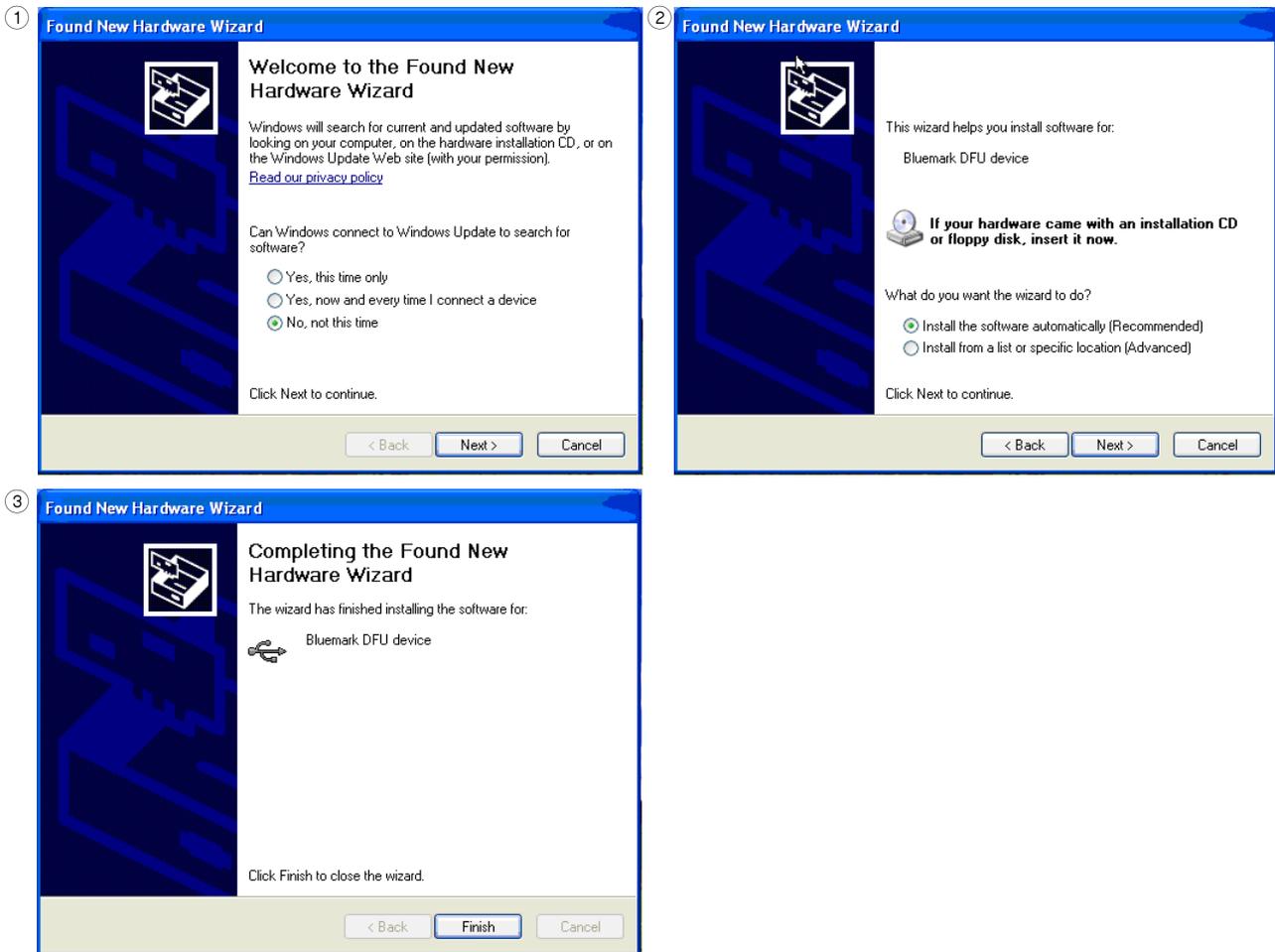
[< Back] [Finish] [Cancel]

Figure 2-9   USB installation under Windows XP (1)

- Select "No, not this time" and click "Next" to start the installation.
- The "Install the software automatically (Recommended)" item is already selected. Click "Next".
- Click "Finish"

The PC then responds again with "Found New Hardware" and a Windows Installation wizard opens. This time the actual driver is installed.

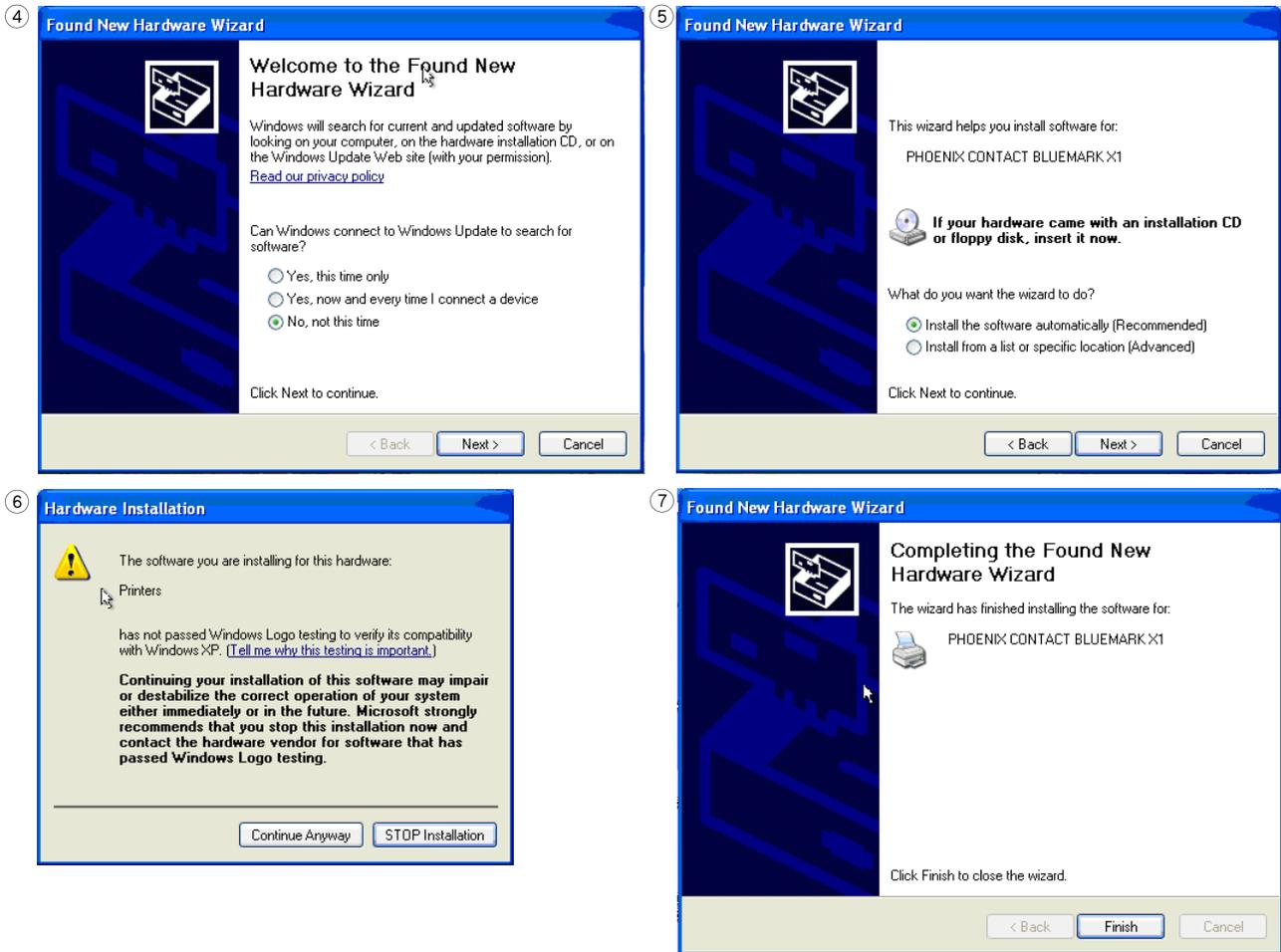• Follow the instructions to install the software.

Figure 2-10   USB installation under Windows XP (2)

• Select "No, not this time" and click "Next".
• The "Install the software automatically (Recommended)" item is already selected. Click "Next".
• If a message appears indicating that the printer has not passed Windows logo testing, click on "Continue Anyway".
• Click "Finish" to complete the installation.

The printer and the printer driver are installed and the printer is ready to operate.

2.5.3 Ethernet connection (LAN)

Use this connection type if you wish to connect the device to your network via an Ethernet cable.

Requirements

Prior to driver installation, the following points must be met:
– The transportation safeguard has been removed.
– The dummy Fluid Cartridge has been replaced with a normal Fluid Cartridge.
– The BLUEMARK LED is installed in a suitable location.
– The BLUEMARK LED is connected to the power supply, but is switched off.
– Equipment required: Hub/router/switch and an Ethernet cable.

Connecting the Ethernet cable

• Connect one end of the Ethernet cable to the Ethernet connection on the back of the printer.
• Connect the other end of the Ethernet cable to the hub/router/switch.

> **i** Do not connect the Ethernet cable to a cable modem. You must have an operational network.

• Switch on the BLUEMARK LED.

Start driver installation with the supplied installation program, which uninstalls any existing older BLUEMARK LED drivers and copies the new drivers.
• Insert the supplied CD-ROM and start the "[Drive]:\Bluemark Installer\setup.exe" file.

The following window appears:

Figure 2-11   BLUEMARK LED Driver Installation (LAN)

• Select "LAN" from the drop-down menu.
• Enter the IP address that has been assigned to your printer.
  The IP address can be read on the printer (see "Reading the IP Address" on page 2-11).
  Enter the IP address in 3-digit format or separate the numbers with a dot.
  Example: IP address 172.24.20.109 or 172024020109.

- Once you have entered the IP address, click on "Start".

The printer driver is installed and the printer is then ready for operation.

The display language is set to English by default. You can switch to a different language (see "Changing the language setting" on page 3-7).

Reading the IP Address

If your network has DHCP, the IP address can be called via the BLUEMARK LED display.
- Press the ▶ key to access the menu.
  The printer switches to offline mode, i.e., printing is no longer possible.
- Confirm the **Settings** item by pressing the ● key.
- Select **Interfaces** via ▼. Confirm by pressing the ● key.
- Select **LAN Parameter** via ▼. Confirm by pressing the ● key.
- Select **Info IP Config** via ▼. Confirm by pressing the ● key.

IP Address Assignment

The Ethernet interface is in DHCP mode by default. This means that the IP address is assigned automatically.

The menu can be used to set DHCP mode to "Not active" and to manually assign an IP address.

Your system administrator should inform you of the IP address, subnet mask, and standard gateway to be set.

Exiting DHCP mode
- Press the ▶ key to access the menu.
  The printer switches to offline mode, i.e., printing is no longer possible.
- Confirm the **Settings** item by pressing the ● key.
- Select **Interfaces** via ▼. Confirm by pressing the ● key.
- Select **LAN Parameter** via ▼. Confirm by pressing the ● key.
- Select **DHCP Mode** via ▼. Confirm by pressing the ● key.
- Select **Not active** via ▲▼. Confirm by pressing the ● key.

Manually assigning an IP address
- Go back one level by pressing the ◀ key.
- Select **TCP/IP IP Address** via ▼. Confirm by pressing the ● key.
- Set the IP address using the arrow and cursor keys. Confirm by pressing the ● key. This IP address must match the IP address specified at driver installation.
- Select **TCP/IP Subnetmask** via ▼. Confirm by pressing the ● key.
- Set the subnet mask using the arrow and cursor keys. Confirm by pressing the ● key.
- Select **TCP/IP Standardgateway** via ▼. Confirm by pressing the ● key.
- Set the standard gateway using the arrow and cursor keys. Confirm by pressing the ● key.
- The ▶ key can be used to return directly to the start screen (**Ready**).

2.5.4   Bluetooth connection

The printer has a Bluetooth interface, which enables wireless data transmission. For the technical data for the Bluetooth interface, please refer to page A-1.

Basics of wireless printing via Bluetooth

With Bluetooth technology for wireless communication, devices such as printers and computers can communicate with one another via radio waves in the 2.400 GHz band over distances of up to 100 m.

For Bluetooth compatibility, the BLUEMARK LED has an integrated Bluetooth wireless module.

Unlike infrared communication, Bluetooth technology does not require a direct line of sight between the transmitter and receiver.

Only one computer

The printer can only establish a wireless Bluetooth connection with one computer. The printer ignores all other computers that attempt to establish a connection. These computers must wait until the original connection has been terminated. Only then can they establish a new connection.

Bluetooth detection

Detection refers to the process where a Bluetooth-compatible device detects other Bluetooth-compatible devices within range.

If a device has detected the printer, it displays the Bluetooth device name of the printer. For the BLUEMARK LED this is `BLUEMARK_xxxx`. xxxx represents an internal code, which differentiates between several BLUEMARK LED printers. The Bluetooth device name can be read via the menu (see page 2-15).

The detection method varies according to the type of Bluetooth software used.

Installation on the PC

In order to use the printer, the PC must be equipped with Bluetooth technology.

It is important that the "Secure connection" checkbox is **not** activated in the Bluetooth interface properties on your PC.

Prior to printer installation, the Bluetooth interface must be installed and a virtual interface (COM port) set up here.

If your PC has an internal Bluetooth wireless module, refer to the user manual for your computer for information about the Bluetooth function of the PC.

If your PC does not have an internal Bluetooth wireless module, you must use a Bluetooth PC card or an adapter in order to use Bluetooth technology.

Setting up the BLUEMARK LED

Requirements

Prior to driver installation, the following points must be met:
– The transportation safeguard has been removed.
– The dummy Fluid Cartridge has been replaced with a normal Fluid Cartridge.
– The BLUEMARK LED is installed in a suitable location.
– The BLUEMARK LED is connected to the power supply and switched on.
– A Bluetooth interface is installed on your PC and a virtual interface (COM port) has been set up here.

Start driver installation with the supplied installation program, which uninstalls any existing older BLUEMARK LED drivers and copies the new drivers.

•   Insert the supplied CD-ROM and start the
    "[Drive]:\Bluemark Installer\setup.exe" file.

The following window appears:

Figure 2-12   BLUEMARK LED Driver Installation (Bluetooth)

•   Select "Bluetooth" from the drop-down menu.
•   Select your Bluetooth interface under "Bluetooth COM port" (COM2 in the example).
•   Click on "Start".
•   If installation has been completed successfully, a message is displayed. Confirm this message with "OK".

The printer and the printer driver are installed and the printer is ready to operate.