User manual
edding portable

www.edding.tech

elried
technology partner

Table of contents

Congratulations on the buying of a user-friendly, environmentally friendly and high quality "made in Germany" product.

Now you own a powerful device allowing you to increase your production efficiency, eliminate coding errors and ultimately enter the industry 4.0 era.

And even better: With an edding-printer, you are eligible for firmware upgrades that will improve your system every single day.

1 Technical data

1.1 Description

Print process	High-res TIJ printing technology with 600 dpi Printing distance to surface up to 8 mm
Print height	portable 12: Up to 11 lines, between 1.0 mm and 12.7 mm (0.5 inch) portable 25: Up to 22 lines, between 1.0 mm and 25,4 mm (1 inch)
Print speed	76 m (197 feet) per minute with horizontal resolution of 300 dpi Greater speed at lower resolution
Print surfaces	Wide range of inks for almost all materials and surfaces in several colours
Print options	Alphanumeric characters and logos, date/time, counter, batch/box number, 1D and 2D barcodes
Memory capacity	Internal memory (8GB) for more than 1,000,000 messages.
Network connectivity	Communication interfaces MQTT, OPC UA, http request and TCP-Server Web server for access from every workstation
User interface	Intuitive user interface with real WYSIWYG print preview Automatic wizards for printer set-up Step-by-step graphic tutorials for set-up and maintenance on the printer display
Input devices	Wireless compact keyboard (included), any tablet, smartphone or PC
Display	Capacitive colour LCD touchscreen with 4.3 inch display and LED technology
Indicator lights	6 LED lights (On/Off, printing, low ink, alarm, right/left print direction)
Input / Output	RJ 45 Ethernet connection including DHCP 2 high-speed USB 2.0 inputs
Language selection	German, English, French, Polish, Portuguese, Romanian, Russian, Spanish, Turkish, Korean, Chinese, Danish
Housing / Body	Ultra-robust and impact-resistant aluminium housing Stainless steel deflector on the front of the printer for food environments 4-in-1 sandwich design (controller, screen, push-button and ink cartridge) Independent unit, can be used without PC
Battery	Metabo LIHD premium industrial battery (4000 mAh) Charger AC 100-240 V, 50/60 Hz, 3 A Works for 6 hours and only needs 35 minutes to charge Can be used for other Metabo power tools
Dimensions (L/W/H)	297 x 152 x 104 mm
Weight	1.8 kg incl. battery, without ink cartridge
Operating environment	5–40 °C (41–104 °F) at 10–90 % humidity (non-condensing)
Quality	Made in Germany Following ISO 9001, CIG 023, IEC 62368 (US)

1.2 Operating instructions

1. Operate the device only with original Metabo LiHD batteries

2. Charge the battery before first use

3. Insert and remove the cartridge at an angle of 15 degrees

4. To ensure optimal print quality maintain a printing distance of max.
   6 - 8 mm to the print object.

5. Should excessive dust and ink accumulate on the print head (which causes the print image deteriorates), clean the nozzle surface using the cleaning cloth supplied with the cartridge.

6. If the printing position on the product is incorrect, the print delay for the text must be adjusted under Settings - Messages.

7. In the event of functional printer errors that cannot be corrected autonomously, please contact your on-site/local distribution partner.

2 Introduction

This chapter describes the printer, the input and the menu structure.

2.1 Device overview
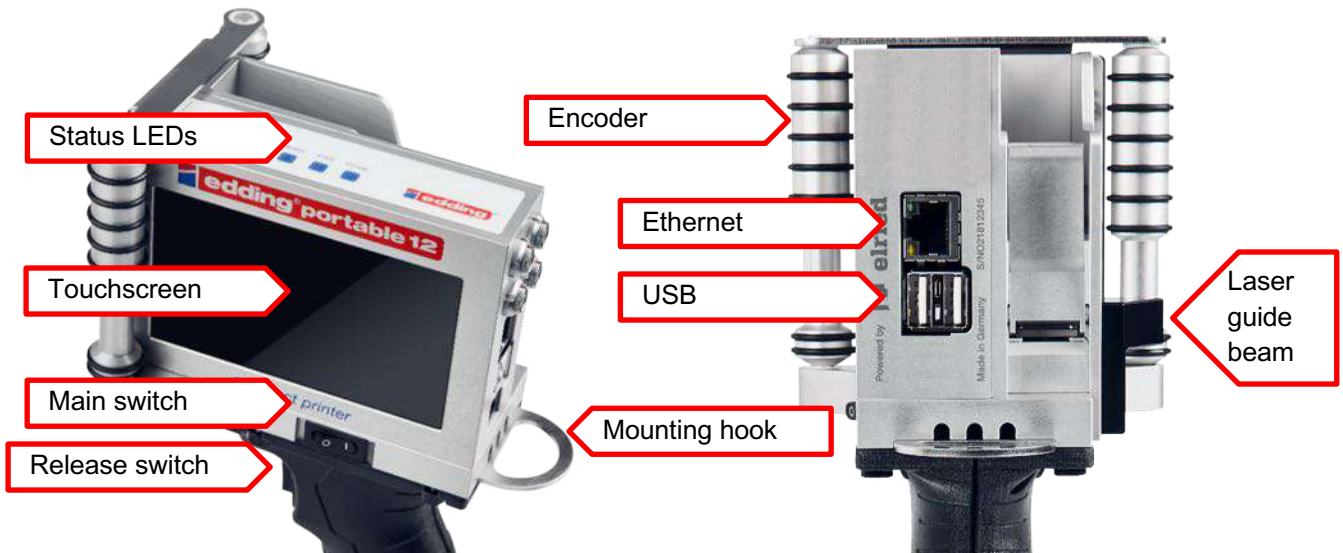
Status LEDs

Power: Printer is supplied with voltage and powered-up
Print: Printer is in print mode; printing is performed when triggered
Ink low: When remaining cartridge volume is <10%; cartridge should be replaced soon
Alarm: Warning/error; the printer is not currently ready to print
Printing direction: Current print direction, viewed from the rear of the printer

Touchscreen

Central control panel of the printer; can be operated by touch or using the wireless keyboard supplied.

Ethernet

Gigabit Ethernet port for integrating the printer into an existing network. As a default, the printer will have the IP address 192.168.0.200.

USB

2x high-speed USB ports for external accessories such as keyboards or USB data carriers.

Encoder

Rollers that must be in contact with the surface during printing in order to measure the hand speed of the printer and automatically adjust the printing speed.

Laser guide beam

Laser marking of the lowest edge of the pressure field. Is displayed on the printing surface after pressing the release switch. To do this, the front of the printer must be facing the surface with the opening for the cartridge.

2.2 External keyboard

A wireless keyboard is part of the printer's scope of delivery and is required above all for entering new texts. It communicates wirelessly with the printer by plugging the small USB receiver (2.4 GHz Wireless Technology) into the left USB port on the back of the printer. Requires 2x AAA batteries (included).

Keyboard, USB receiver und 2x AAA batteries.

The USB receiver is located in the battery compartment on the back. Open the lid, remove the USB receiver from the compartment, insert the AAA batteries in the compartment provided and close the lid again.

Plug the USB receiver into the left USB port of the printer (marked green).

To turn the keyboard on and off, slide the Off/On switch on the back of the keyboard in the "On" direction (marked blue).

Any other USB keyboard can also be used.

2.3 Battery and battery status

A CAS-compatible 18V LiHD battery (4Ah) incl. the corresponding charger is included in the scope of delivery of the edding portable. A larger battery with 8Ah for a longer working time can also be purchased.

The status of the battery pack can be checked using the LEDs on the battery. For testing, press the red button.

Power LEDs — Press to check

The industrial battery of the edding portable is part of the Cordless Alliance System (CAS) founded by Metabo. The CAS partners are an association of leading generalists and specialists with a clear focus on power tools for professional applications. It combines a spirit of innovation with high product performance.

With CAS, you can experience wireless freedom across manufacturers. You can easily combine machines, battery packs and chargers from a wide range of manufacturers. This means that a wide range of professional applications are now possible even in rechargeable batteries - from standard to special tasks.

The multiple use of existing batteries gives you clear cost advantages. More information about the partners and their 100% compatibility can be found at www.cordless-alliance-system.de.

2.4 Start-Wizard

When the printer is first powered-up, use the "Basic Settings" assistant (under "Preferences") for setting up the printer:

Selection of the language for operating the printer. Selection is made using the red left or right arrows. Confirm with "Next".

Selection of the current date and time.

Selection of the print direction is defined from the rear of the printer. "From right" means the products move from right to left on the printer.

2.5   Main screen

🟢 Prints 52	∞/1 NP 98% 🔋	16.11.2021 11:06 ⏻	Printer and Cartridge status

Welcome

Name: Welcome   Delay: 0 mm

Edit text   ▶ Start Print   Preferences

Print preview

Control area

Central control panel for all important print functions:

🟢	General print status: green when the printer is ready to print and red when there is an error and printing is suspended. Clicking on this button will show further details on the ink and the device.
Prints 38	Number of actual prints performed.
∞/1	Indication of the current printer mode.
NP	Type of ink cartridge currently used. Colour of the dot indicates the colour of the ink.
98% 🔋	Remaining volume of current cartridge in %. From <10% the warning "low ink" is displayed on the status LED.
14.10.2020 16:15	Actual date (dd/mm/yy) and time (hh:mm).
⏻	The printer can be shut down by pressing the button. Then disconnect the main plug.
Edit text	Press field to open the menu to create new text, edit existing text, and select the text to be printed.
Preferences	Press field to open the printer settings menu. This also includes step-by-step graphic tutorials and settings wizards.

Switch to print mode. The image currently in the preview is sent to the print processor and printing starts. Press again to pause the print mode.

Name: Welcome   The name of the current message.

Delay: 0 mm   The print delay of the current message in mm.

By touching the print status ● in the control panel, the printer status display opens:

Products:	Number of products recognized by the photocell.
Cartridge type:	Type of ink cartridge (e.g. NP black, SP blue, etc.)
Cartridge capacity:	Max. filling level of the inserted cartridge in milliliter (ml)
Ink remaining:	Current fill level of the inserted cartridge
Total prints per cartridge:	Number of possible prints with inserted cartridge (can only be displayed during printing)
Prints remaining:	Number of remaining prints with the inserted cartridge (can only be displayed during printing)
Cartridge code:	Internal serial number of the inserted cartridge
Firmware version:	Name/number of the currently embedded firmware
Hardware version:	Name/number of the installed hardware

The following only affects the portable 25:

The portable system detects and selects the cartridge by itself. Therefore, the following section is not relevant for the portable 12. Only on 25 mm printer models, you select the right cartridge type manually by the below menu:
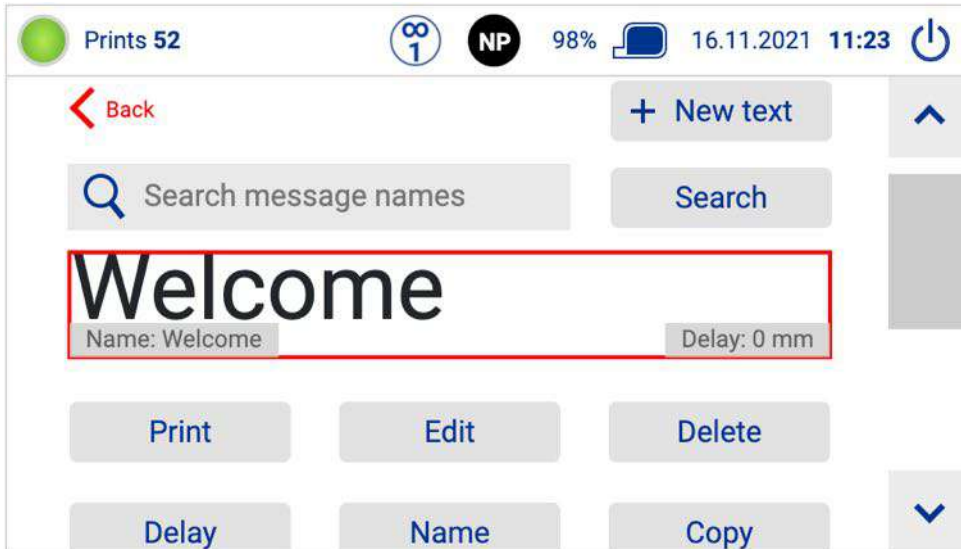
By touching the ink cartridge type **NP** or the cartridge content 98% in the control panel, the cartridge settings menu opens:
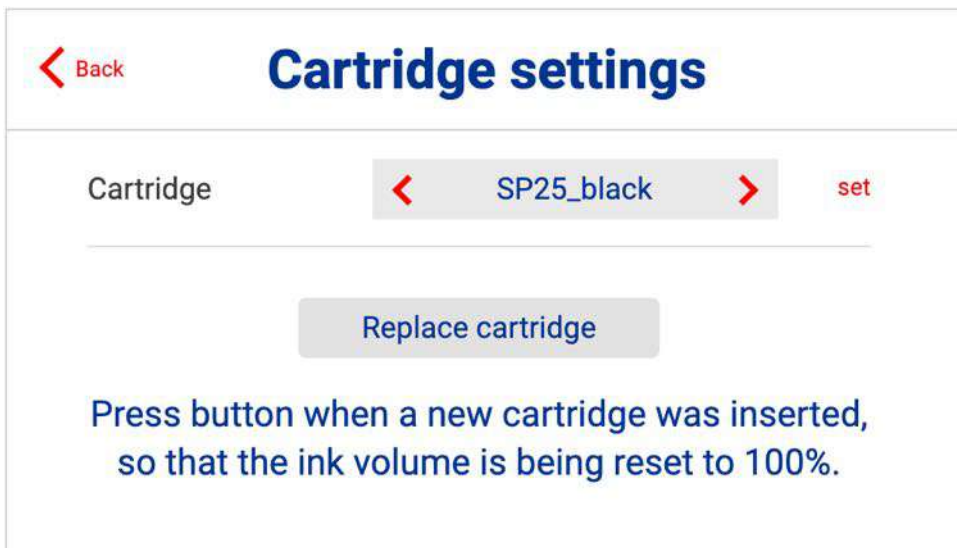
Cartridge:	Choose the cartridge type (SP25 black, SPX25 black, SP25 blue, NP25 black, NPX25 black)
Set:	Confirm the selection of the cartridge
Replace cartridge:	Reset the ink volume to 100% when a new cartridge was inserted

2.6   Key combinations & Hotkeys

Key combinations in text/message creation and display:

Key combination	Description
Shift + Mousewheel	Scroll the displayed message in the text field (see chapter 2.5 and 3.2). Only possible in the browser!
Shift + Arrow keys	Change the position of the message field when creating the text by 10 (see chapter 3.2)

Hotkeys

Name	Description
F1	Start Print
F2	Stop Print
F3	Edit text
F4	Open Preferences

3 Selection and creation of texts

3.1 Overview of all saved texts

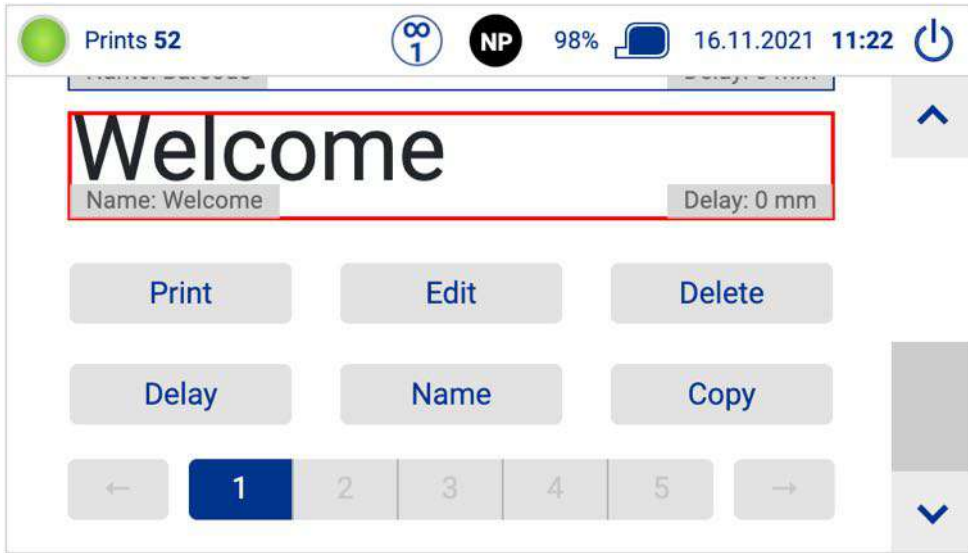|	
	Create new print text
	Search field for searching a print text/message by name incl. start search. Also partial matches will be displayed.
	Preview screen of a created print text
	Select text as new text to be printed
	Edit text
	Delete print text
	Set print delay for the current text in mm
	Rename print text/message
	Print text/message content will be copied and pasted into a new message.
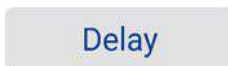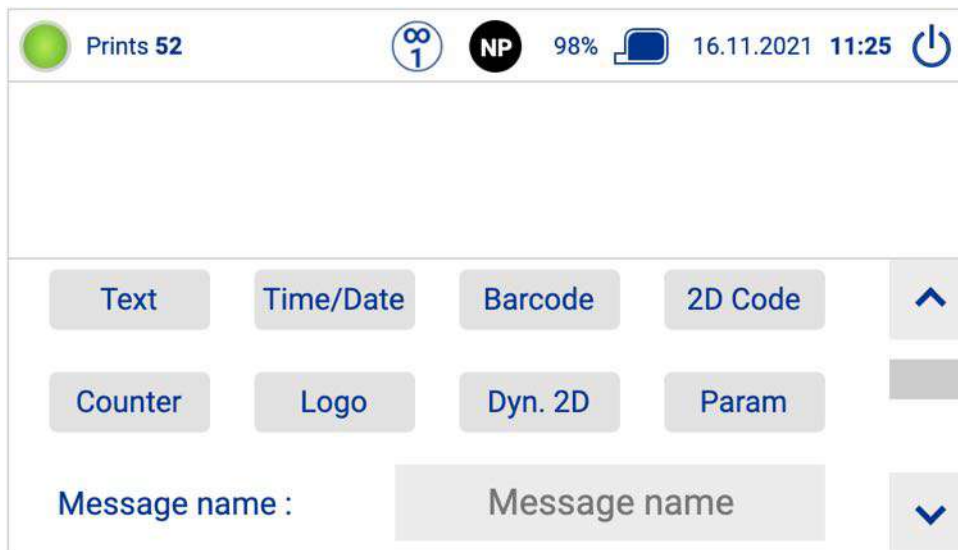
| Prints 52 | ∞1 | NP | 98% | 16.11.2021 | 11:22 | ⏻ |

Welcome

Name: Welcome   Delay: 0 mm

| Print | Edit | Delete |
| Delay | Name | Copy |

| ← | **1** | 2 | 3 | 4 | 5 | → |

| ← | 1 | **2** | 3 | 4 | 5 | → |

Page display/selection for the messages. There are always 30 messages displayed per page. They are sorted by the message name (alphanumeric).

3.2   Creating a new print message

Select one of the field types above:

Text: Static text field comprising characters and letters

Time/Date: Dynamic text field to print the current date, time or "Best Before" date

Barcode: Prints any type of barcode

2D Code: Datamatrix Code or QR Code generated from static text

Counter: Counts up by value X per product triggering

Logo: Prints an image from the printer memory. A new image is uploaded in the "Logo assistant"

Dyn. 2D: Dynamic 2D codes that can be filled with any combination of static text, date/time, counters and the variable data mentioned above. From these, a data matrix code is automatically generated live before each print.

Param: Text fields that consist of the contents of a predefined placeholder. This placeholder is then printed in the specified font, size and section.

Message Name   A name for the message by which it can be identified
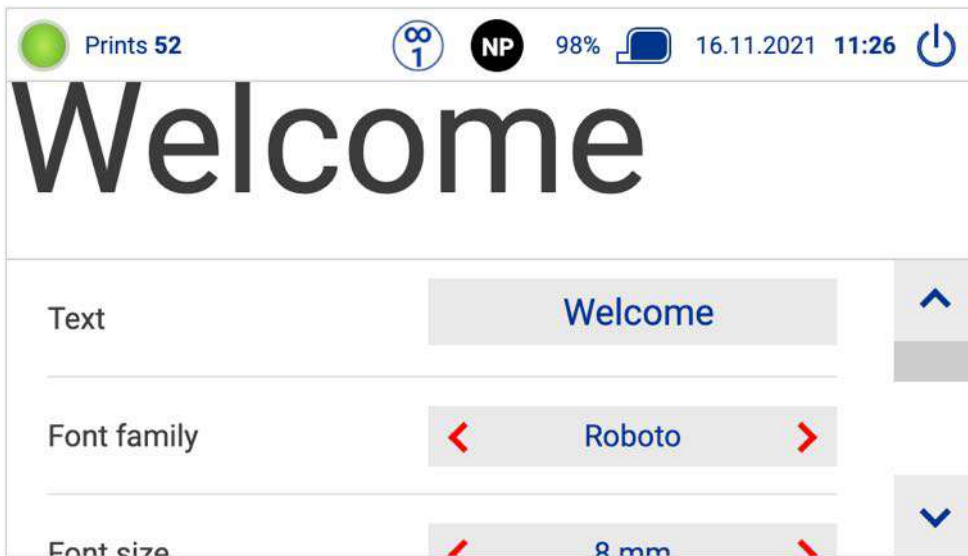
After the field type is selected the field content is prompted and diverse parameters such as font and size are displayed depending on field type. An external keyboard or the printer's on-screen keyboard can be used for input. After input is complete, confirm with ENTER.

Then each field can be freely positioned within the message (the element to be positioned is pulsing/blinking gray-black). Press and hold the shift key to move faster. Confirm the final position with ENTER.

Once the last field is positioned, complete the text creation process by pressing ENTER again.

4   Settings

4.1   Assistants

Installation assistants configure the most important settings using simple questions:

Basic settings: Prompts the most important basic printer settings, which suffice for the majority of applications. Starts automatically when the printer is powered-up for the first time (see 2.4).

Logo assistant: Upload logos to your printer, that can be used in new messages. On the printer, upload is only possible using the included USB stick, which must be formatted in FAT32. On an external browser (PC connection or smart phone/tablet with the printer) logos can be uploaded from the file system. Logos must be created in .**bmp** format. The full print height of 12.7 mm corresponds to an image height of 300 pixels, therefore this is also the maximum image height.

Firmware Update: Update the firmware of the printer mainboard via ethernet or USB. The USB stick must be formatted in FAT32 format. The USB stick should only contain the update files without subfolders.

To execute the update, insert the USB stick with the update file into the right USB port (marked green) and then start the update. The device must be connected to the power supply during the update! You will not see a progress bar during the update. The update takes up to 20 minutes.

Backup / Restore: Backup: Copy all messages and logos to an USB stick (.dmp format). Restore: Restore the messages and logos from the .dmp file. It is recommended that the printer is empty. Existing messages and logos are not restored and causes an error message, even if other messages and logos are restored.

Export / Import: Export: Copy all message to an USB stick (.txt format). Import: Import the messages from the .txt file. Existing messages are overwritten.

External Parameters: The system is delivered with 5 placeholders for variable data: Param_01, Param_02,… until Param_05, which can be processed in print messages using the following 2 field types: "Dyn. 2D" and "Param".

4.2   General

General system settings, as well as network configuration.

Language: Selection of display language

Onscreen Keyboard: Selection whether the virtual onscreen keyboard is displayed and used or not

Keyboard layout: Selection of the keyboard layout for the virtual onscreen keyboard

Units (of measurement): Choice between metric (mm, cm, m) and imperial (inch)

Ruler: Ruler for simplified orientation during text/message creation

Decap notification (does not apply to portable 25): Activates a notification that shows if a cartridge is in the printer and no print happens for over 60 minutes.

Network/Wifi: Menu for setting the network type (LAN or Wifi) and settings

Set Date/Time: Adjustment of the current date (dd/mm/yy) and current time (hh:mm)

User Management: Additional settings with three different user roles:

- Admin (has access to all printer functionality

- Editor (has access to messages and print functionality)

- Operator (has access to print functionality)

User management is switched off by default. To switch user management on, the admin password is required. The main screen then shows the user management symbol. 👤 (A: Admin, E: Editor, O: Operator).

Pressing the user management symbol activates user role switching.

The printer stores the admin and editor passwords in an unencrypted format. **Please do not use security relevant passwords.**

Expert mode: Additional settings for trained engineers.

4.2.1 Configuration menu for the network (network/wifi)

Ethernet settings

|	
DHCP:	Automatic assignment of a network address via DHCP
Static IP:	Enter a fixed IP address
Subnet:	Enter the subnet mask for a fixed IP address
DNS:	Enter the DNS server for name resolution
Gateway:	Enter a gateway for network configuration if necessary
Validate:	Must be executed once before saving (input validation)

Ethernet status

State:	Shows the current state (UP or DOWN)
DNS:	Display of the DNS server for name resolution
Gateway:	Display of the gateway of the configured network
Hostname:	Identification name in the network if required

Followed by list of ethernet connections:

IP:	Shows the current IP
Subnet:	Display the subnet mask of the IP
DNS:	Display of the DNS server for name resolution
Gateway:	Display of the gateway of the configured network
MAC:	Unique identifier of the device in a network

Wifi settings

WiFi SSID: Enter the name of the WiFi network

WiFi Password: Enter the password for the WiFi network

DHCP: Automatic assignment of a network address via DHCP

Static IP: Enter a fixed IP address

Subnet: Enter the subnet mask for a fixed IP address

DNS: Enter the DNS server for name resolution

Gateway: Enter a gateway for network configuration if necessary

Validate: Must be executed once before saving (input validation)

Wifi status

State: Shows the current state (UP or DOWN)

DNS: Display of the DNS server for name resolution

Gateway: Display of the gateway of the configured network

Hostname: Identification name in the network if required

Followed by list of ethernet connections:

IP: Shows the current IP

Subnet: Display the subnet mask of the IP

DNS: Display of the DNS server for name resolution

Gateway: Display of the gateway of the configured network

MAC: Unique identifier of the device in a network

4.3   Print

Configuration of all print-relevant parameters.
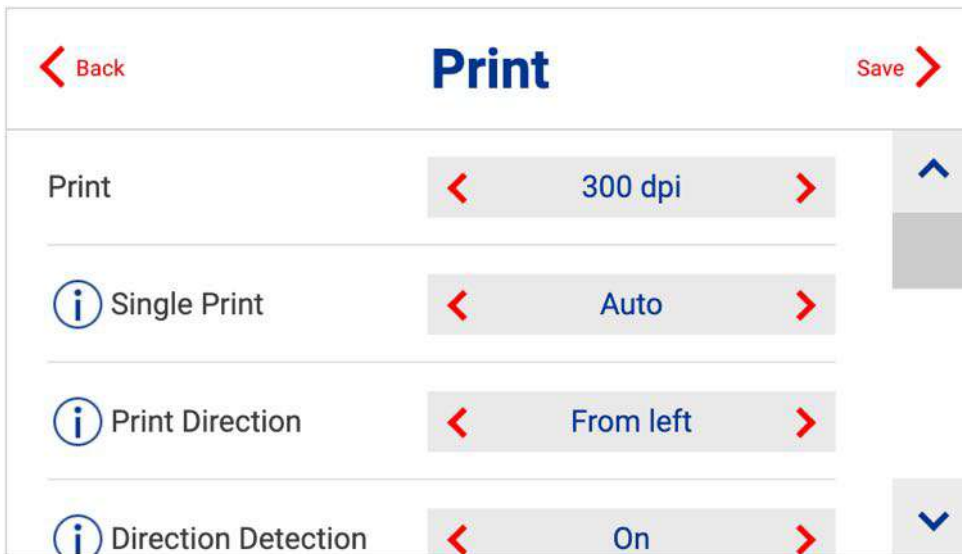
Print: Configuration of the vertical resolution in the levels 75, 100, 150, 300dpi and 600dpi vertical resolution. Vertical resolution is mainly relevant to the intensity of the print image. 600 dpi provides considerably higher contrast but can also cause ink to bleed on non-absorbent materials. 600 dpi also requires the use of an encoder or a very precise setting of the print speed.

Single print: Selects which nozzle row should be used in the print setting 300 dpi or below. In general, standard value "Auto" should be retained. Only when individual nozzles malfunction, an improved print image can be achieved by switching to "left" or "right". See also the "clean cartridge" wizard for cleaning dirty cartridges (3.1).

Print direction: Selection of the print direction, defined from the rear of the printer. "From right" means the products move from right to left on the printer.

Direction Detection: On: Automatic direction detection Off: Direction dependent on selected print direction (may have no print with certain hardware configurations) Expert: Special configuration set in expert mode (visible only if there is another configuration than standard configurations 'on' or 'off').

Print upside down: Set to "yes" to print upside-down in case products passing by the printer are oriented this way. Print preview will still be shown upside-up for better legibility.

Horizontal resolution: Selection of the horizontal resolution. Higher resolutions result in a more intensive print image but also a lower maximum print speed**.**
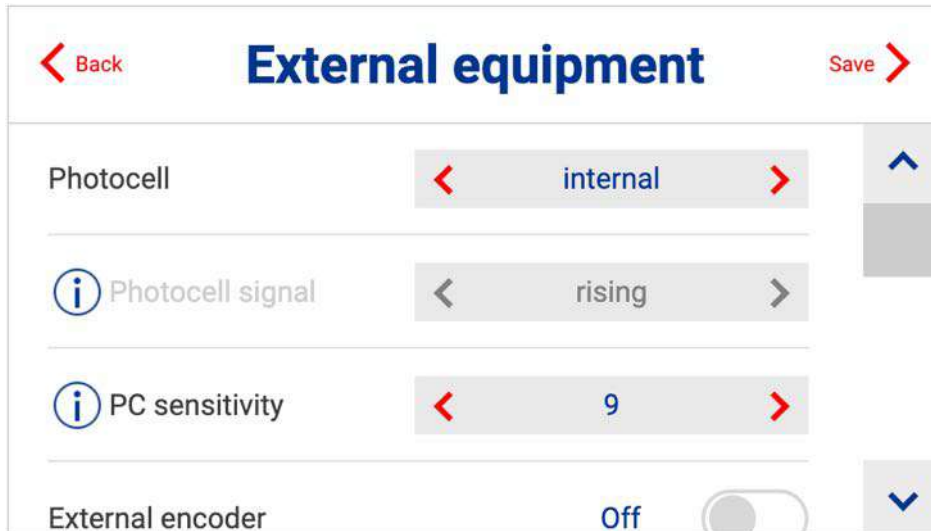
Printer mode:

- **normal:** The message is printed once.
- **endless:** The same message is printed endlessly. The delay defines the interval between the prints.
- **endless-trigger:** Endless print, but only while photocell is triggered.
- **single-shot:** The message is printed with the first value of the parameter queue(s). After each print the printed parameter values are removed from the queue. A new print can be done, if all parameters in the message have values in the parameter queue(s).
- **endless-single-shot:** Combination of endless and single-shot. Print endlessly until parameter queues are empty.

Delay: Set a default delay in mm (Millimetres). The print will offset the beginning of the print image after the release by this distance. All newly created texts/messages are printed with this delay. Will be overwritten if a specific delay has been defined in a message.

4.4 External equipment

Settings for using external equipment such as the edding rotary encoder or the edding photocell.

Photocell: Shows which photocell is used for printing. On the edding portable, this point is pre-set.

Photocell signal: Defines whether the printing should start on the rising or falling trigger signal. In simple terms: Whether printing should start when the photocell is dark (rising) or when this is free again after the product (falling). On the edding portable, this point is pre-set.

PC sensitivity: Only for internal photocell. Can be adjusted for material properties. The mean value is 9, values below 7 and above 11 are only required in exceptional cases.

External encoder: the edding portable always has an external rotary encoder (therefore not selectable).

Pulse / Rotation: Number of pulses emitted by the external rotary encoder per rotation. When using the edding portable, this value is set at 1024 pulses.

Diameter: Measuring wheel diameter of the external rotary encoder. When using the edding portable, this value is set at 17mm.

Print speed: Speed at which the products pass the printer, if no external rotary encoder is connected. On the edding portable, this point is preset and cannot be changed, as there is always an external rotary encoder.

Ticks: Cannot be changed. This represents the number of resulting encoder pulses per inch of feed (automatically calculated by the system).

5　External communication

5.1　Access from PC or smartphone/tablet

The portable can be found, operated and controlled from any device on the same network as the printer.

A few provisions must first be made:

1. If there is only one slot for an Ethernet/LAN connection on your PC, please connect the PC to the Internet via Wi-Fi and make the Ethernet/LAN slot free for the printer.

2. Connect the printer to the PC using the Ethernet/LAN cable.

Plug the network cable (Ethernet/LAN) into the PC and printer (marked green).
Only plug in/plug out the network cable when the printer is switched off!

3. If you cannot proceed with the following steps, please download and install the **TeamViewer** program on your PC. With this tool, we can help you to set up the printer with the network in case of problems.
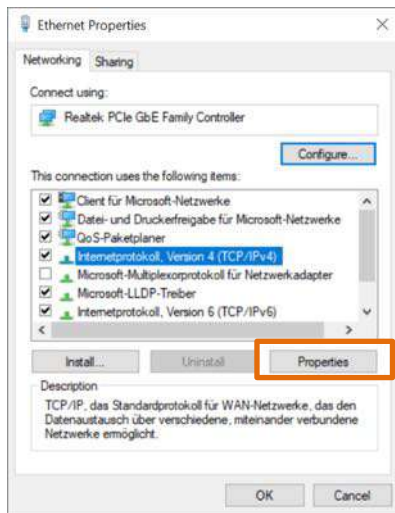
The following steps on the next page show how to set up the network to use the printer with the PC:
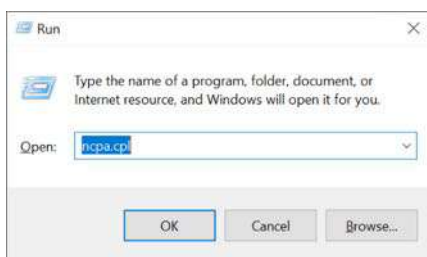
Press the key combination [Windows - R] to display the "Run" window. Then type the command ncpa.cpl and press Enter to open the network connections.
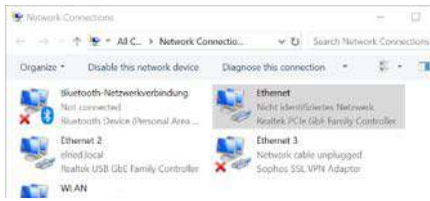
Click on the displayed connection (unidentified network), press the right mouse button and open in the *Properties* menu.

In the properties of Ethernet, click/check *Internet Protocol, version 4 (TCP/IPv4)* and press *Properties* (highlighted in orange).


Activate the item *Use the following IP address* and enter the IP address and subnet mask described in the figure. Default gateway is left empty. Then press OK.
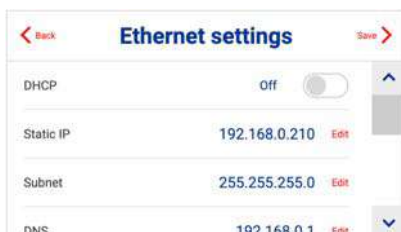
Finally, set the settings described in the image in the printer under *General → Network/Wifi → Ethernet settings* and save them.

Now open any browser on the computer, such as Chrome or Safari, and enter the static IP address previously specified in the printer (in this case *192.168.0.200*). The same menu opens as on the printer itself. From here, the printer can now be monitored, new texts can be created and selected, and settings can be adjusted.
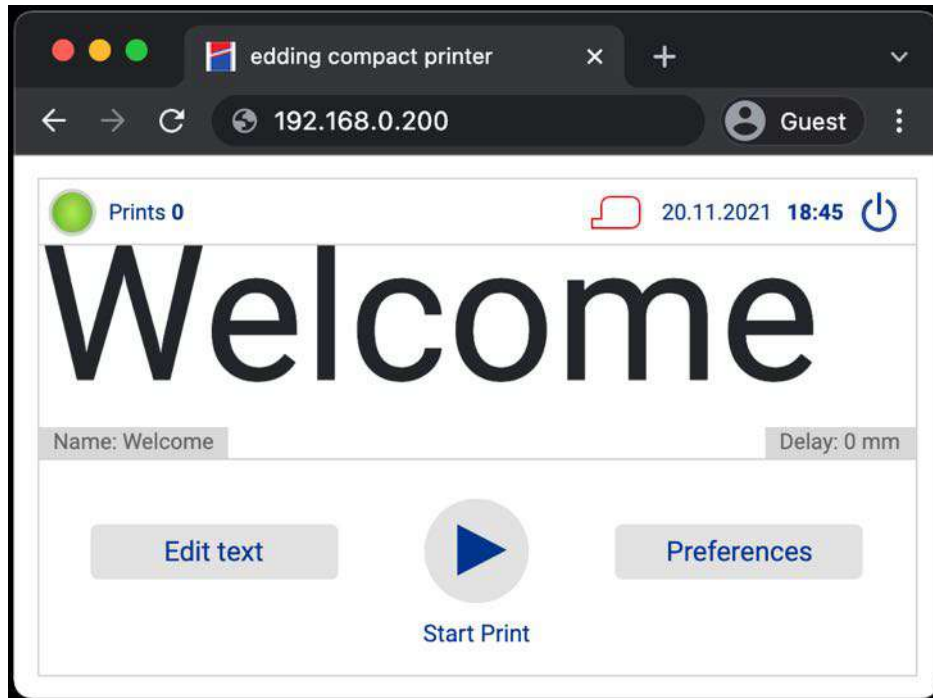
To operate and control the printer with a smartphone or tablet, the printer must be connected to the Wi-Fi router with a LAN cable and the default settings must be made on the Wi-Fi network.

5.2   http-Requests

Numerous printer functionalities can be accessed via http as well as via a TCP connection. More details can be found in the following guide:

User Guide on connectivity (data bases - ERP - PLC systems)

5.3   Dynamic fields via TCP/IP port

In many cases, it is required to send variable data to the printer, that is then being printed as plain text or as part of a 2D-code. Examples could include:

- Printing a non-linear serial number that changes for every product.
- Scanning a barcode and then printing its content
- Printing filling information on the product to improve traceability.
- etc.

In order to do so, edding compact printers offer 5 fields for variable data: Param_01, Param_02, …until Param_05. These can be selected when creating a message.

To then change the content of these data fields, you do not have to follow any complex commands. We simply created 5 TCP-ports that stand for each of the data fields:

- Port 10001 for Param_01
- Port 10002 for Param_02
- Port 10003 for Param_03
- Port 10004 for Param_04
- Port 10005 for Param_05

You only need to send your data to the IP-Address of the printer and the respective port, followed by a "CRLF" (Carriage Return Line Feed, or \r\n or 0x0D0A). The printer will use that new data for its next print.

Sending data to an IP-port can be done from a PLC or any piece of software you are using, but also many barcode scanners and accessories like scales allow you to do so.

More details can be found in the "User guide on connectivity".

6 Troubleshooting

Error: The printer display is white and flickers every few seconds?

Help: Update process has failed. Load USB stick with the firmware/update files to a FAT32 formatted stick, plug it into the right USB port of the printer and restart the device. Afterwards wait about 30min.

Error: After starting/restarting the printer the message "This page isn't working" is displayed?

Help: Remove all USB sticks and USB dongles connected to the printer, then shut down and restart the printer. This error can be caused when the printer is shut down incorrectly (simply set the switch to "0"). Correctly, the printer is shut down via the button (top right of the display).

**Error: The touch-display does not respond to touch (touch does not work)?** With cartridge inserted.

Help: Cartridge is defective. Simply remove the cartridge from the printer and check the function of the touch display again (a restart may be necessary after removing the cartridge). Please take care not to insert or to remove the cartridge while printing is enabled.

Error: The printing position on the product is incorrect?

Help: The print delay for all new messages to be created must be set under *Settings → Print → Default delay*. Or for already existing messages set the delay under *Edit text* for the message to be printed.

7   Printer Control Center

The Printer Control Center is a web-based software for easy management and operation of several printers that are connected to the same network. The Printer Control Center is available for an additional fee.
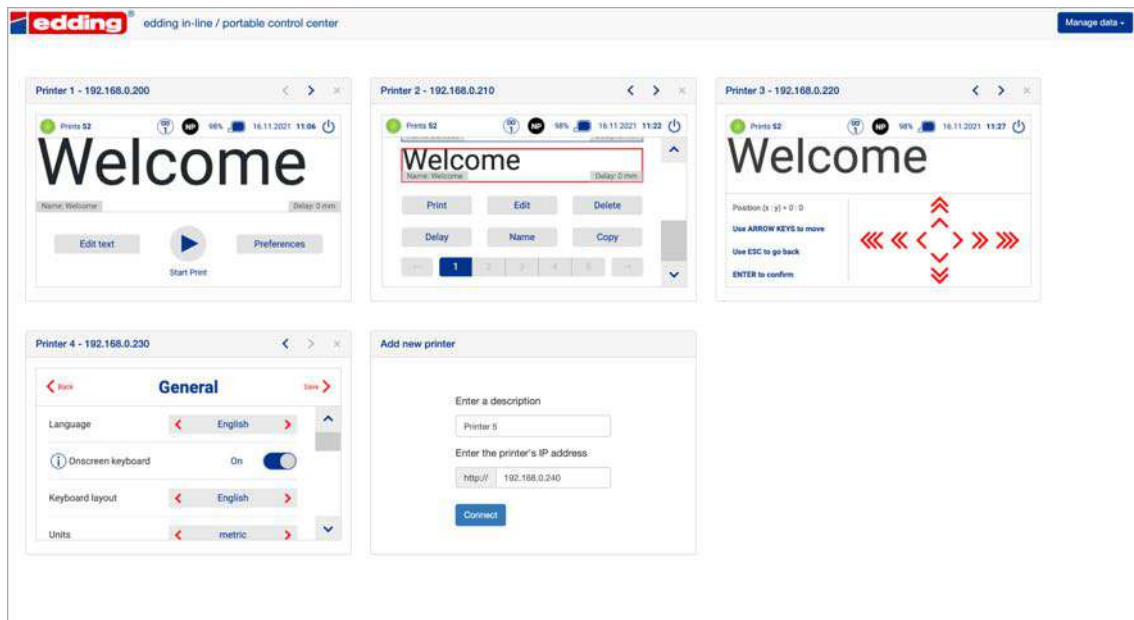
Any number of printers can be added by entering the printer's IP-address. They can then be operated independently of one another.

Once all printers have been added to the control center, the connections can be exported and saved to a PC. The file with the connection data can then be imported at any time to load and display all connected printers again.

Contact us for more information.