# User manual
# edding in-line

elried
technology partner

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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 Thermal Inkjet (TIJ) printing technology with 600 dpi<br>Printing distance to surface up to 8 mm |
| **Print height** | In-line 12: Up to 11 lines, between 1.0 mm and 12.7 mm (0.5 inch)<br>In-line 25: Up to 22 lines, between 1.0 mm and 25,4 mm (1 inch) |
| **Print speed** | 120 m per minute with horizontal resolution of 150 dpi<br>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,<br>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<br>Web server for access from every workstation |
| **User interface** | Intuitive user interface with real WYSIWYG print preview<br>Automatic wizards for printer set-up<br>Step-by-step graphic tutorials for set-up and maintenance on the printer display |
| **Input devices** | Wireless compact keyboard (included)<br>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<br>Dedicated industrial port for rotary encoder, alarm and two, relay / and light scanner photocell ports (PC 1 & 2)<br>Light scanner PC 2 input can be used as multi-IO: Reset product counter, increase product counter, change print direction, start/stop printing, etc.<br>2 high-speed USB 2.0 input ports |
| **Language selection** | German, English, French, Polish, Portuguese, Romanian, Russian, Spanish, Turkish, Korean, Chinese, Danish |
| **Housing / Body** | Ultra-robust and impact-resistant aluminium housing<br>Stainless steel deflector on the front of the printer for food environments<br>4-in-1 sandwich design (controller, screen, push-button and ink cartridge)<br>Independent unit, can be used without PC |
| **Accessories** | Mounting Structure (Length: xx, Diameter: xxx), USB Keyboard … |
| **Power supply** | Power adapter: AC 100–240 V, 50/60 Hz, 1.6 A, automatic switching<br>Printer: 24 V, 2.5 A |

| | |
|---|---|
| **Dimensions (L/W/H)** | 123.5 x 77.2 x 83.0 m |
| **Weight** | 0.6 kg – without ink cartridge and mount |
| **Operating environment** | 5–40 °C (41–104 °F) at 10–90 % humidity (non-condensing) |
| **Quality** | Made in Germany<br>Following ISO 9001, CIG 023, IEC 62368 (US) |

## 1.2   Assembly notes

- To assemble the system, please read the "step-by-step section" above the graphical representation or the graphic step-by-step tutorial stored on the printer (settings, mounting instructions).

  Ensure that all screws are tight and the device is protected against shocks and impact. External damage such as bumps/knocks is not covered by the warranty.

Grounding of the housing is optional. It is recommended in case of static charging!

**Step-by-Step introduction:**

1. Screw attachment piece to printer using two of the supplied screws

2. Mark base piece at the mounting position using the supplied drill hole marker

3. Attach base piece using the supplied screws and nuts, and screw first mounting rod to the base

4. Attach second rod using the first cross clamp

5. Depending on mounting position, attach third rod as required using the second cross clamp

6. Screw printer to the mount. To ensure optimum print quality, position the printer so that you keep a print distance of max. 6 - 8 mm to the print object.

7. Insert cartridges at an angle (approx. 15°) and lock with the fixing lever. If excessive dust and ink accumulate on the print head (causing deterioration of the print image), clean the nozzle surface with the cleaning cloth supplied with the cartridge.

8. Commission printer according to the following section

9. Printer is ready!



First steps: www.edding.tech/printers
Erste Schritte / Primeros pasos / Premiers pas / Primeiros passos / Ilk adım

Some menu items/options contain an additional description on the printer itself. Just click on the icon and a message with additional information/description will appear.

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
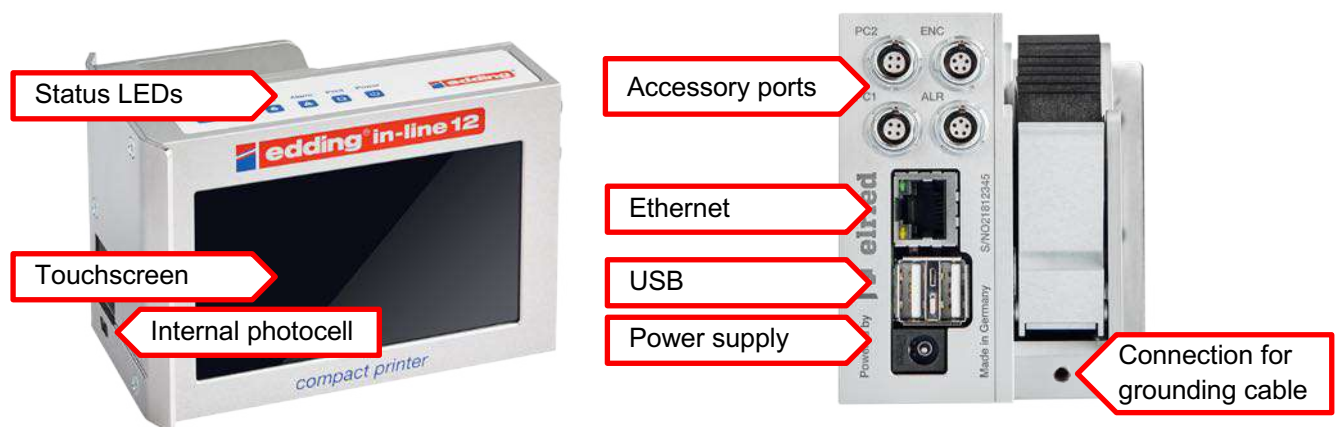


**Status LEDs**

Power:               Printer is supplied with voltage and powered-up
Print:               Printer is in print mode; printing is performed when triggered
Ink low:             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.

**Accessory ports**

PC1/PC2:        Printing triggered by an external photocell, for improved
                recognition of complex surfaces
Encoder (ENC): Connection of an external rotary pulse encoder for accurately measuring the
                current conveyor speed. For an optimal print image, even at varying speeds
Alarm (ALR):    Connection of an external alarm light to visualise the operating status

Accessory cable length may not exceed 2.5 metres.

**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.

**Power supply**

Connection socket for the external mains adapter (C14 DC connector, Ø 5.5 / 2.1 mm). Only use original mains adapter with 24 V and 2.5 A.

**Connection for grounding cable**

Connection for discharging static charges and electric currents. A grounding cable is not required (optional only).

Attention: For applications with high static charge an earthing should be connected.
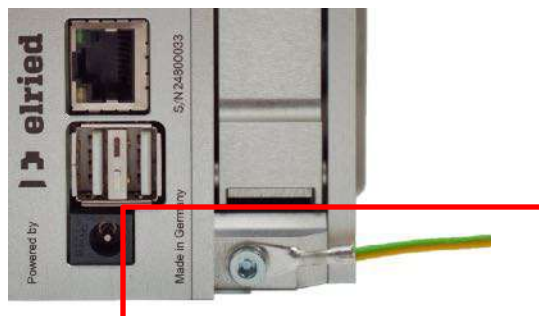
## 2.2    External keyboard

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).
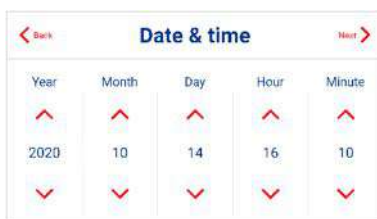
Any other USB keyboard can also be used.

## 2.3 Start-Wizard

When the printer is first powered-up, use the "Basic Settings" assistant (under "Preferences") for setting up the printer:
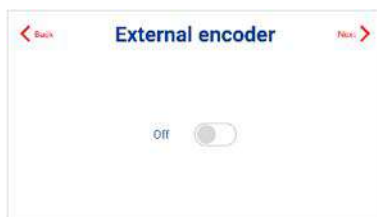
Selection of the language for operating the printer. Selection is made using the red left or right arrows. Confirm with "Next".

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.

To use an external rotary encoder, confirm selection accordingly with "ON".

Selection "ON": The parameters of the external encoder are prompted.

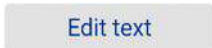Selection "OFF": Asks for the speed of the passing products.

Selection of whether the accessory "external photocell" is connected to the printer. Otherwise triggered by the integrated internal photocell.

## 2.4    Main screen



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. |
|  | 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.
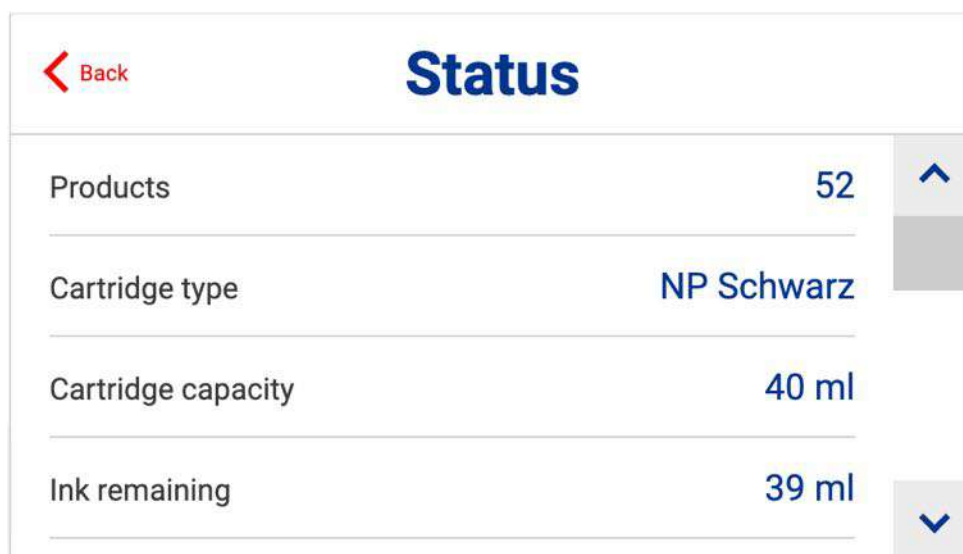
Name: Welcome    The name of the current message.

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 in-line 25:**

The in-line system detects and selects the cartridge by itself. Therefore, the following section is not relevant for the in-line 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. |

## 2.5    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
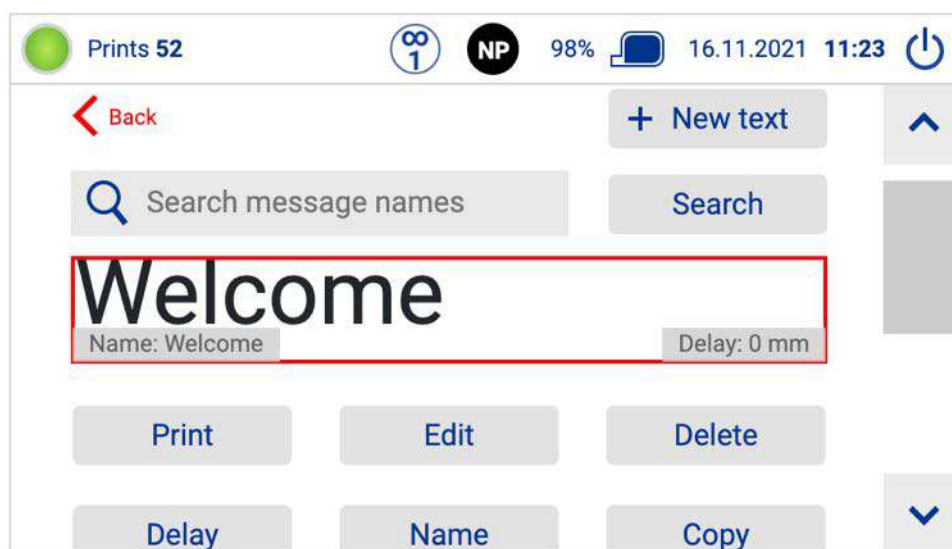


| | | Create new print text |
|---|---|---|
|  | | Create new print text |

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
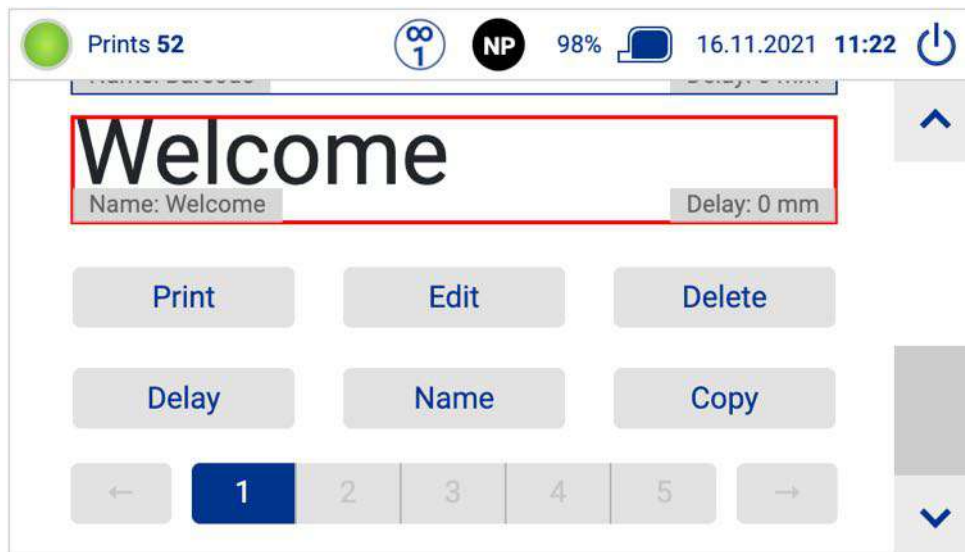
Edit text

Delete print text

Set print delay for the current text in mm
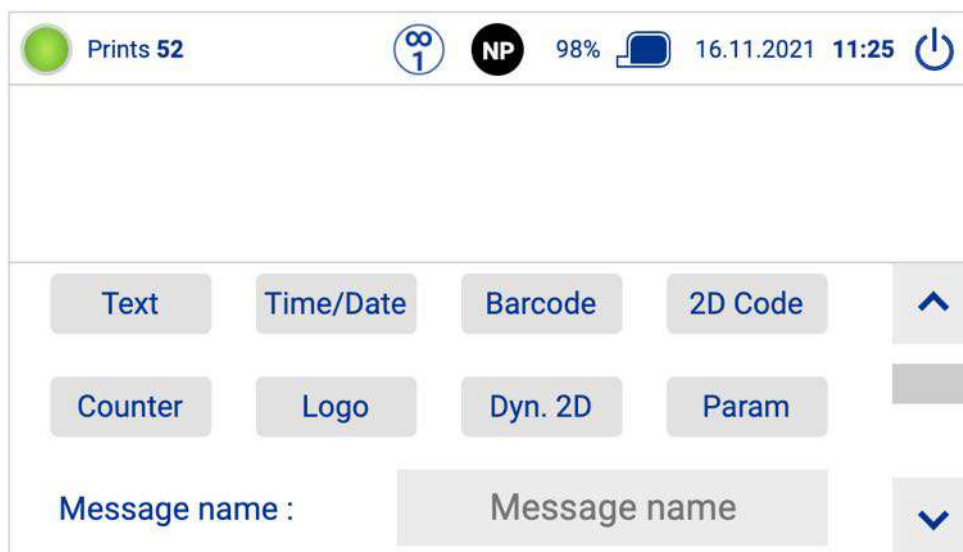
Rename print text/message

Print text/message content will be copied and pasted into a new message.

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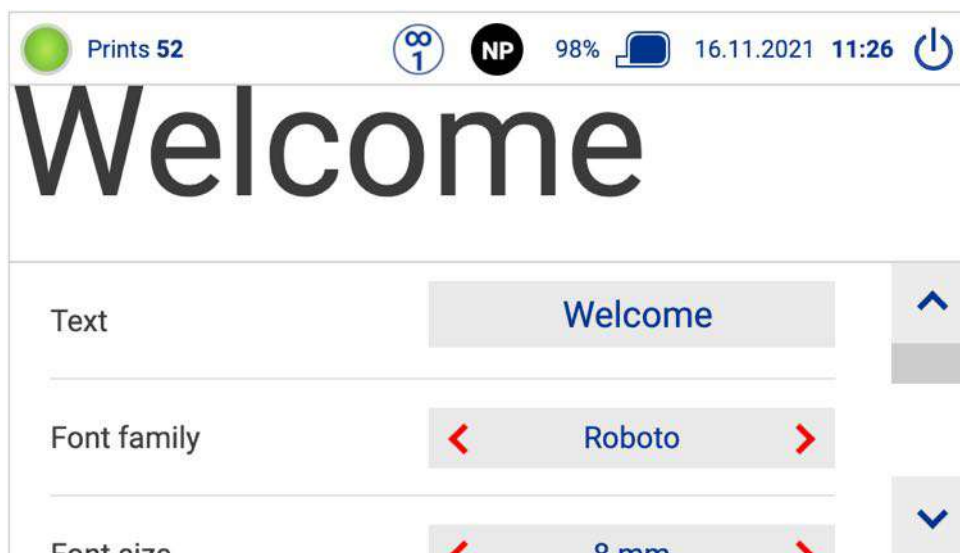
After the field type is selected the field content is prompted and diverse parameters such as font and size are displayed depending on field type. An external keyboard or the printer's on-screen keyboard can be used for input. After input is complete, confirm with ENTER.



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 & Setup Instructions

Installation assistants configure the most important settings using simple questions:

**Setup instructions:** Shows how to setup the printer (image slide show).

**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 2.3).

**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 (25 mm for the in-line 25 model) corresponds to an image height of 300 pixels, therefore this is also the maximum image height.

**Firmware Update:** Firmware update of the printing system via Ethernet or USB. To do this, the USB stick must be formatted in FAT32 format. The USB stick may only contain the update file and the SHA verification file without subfolders.

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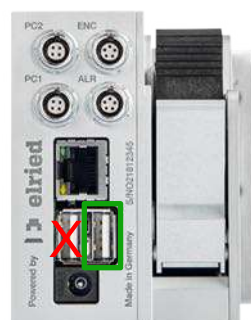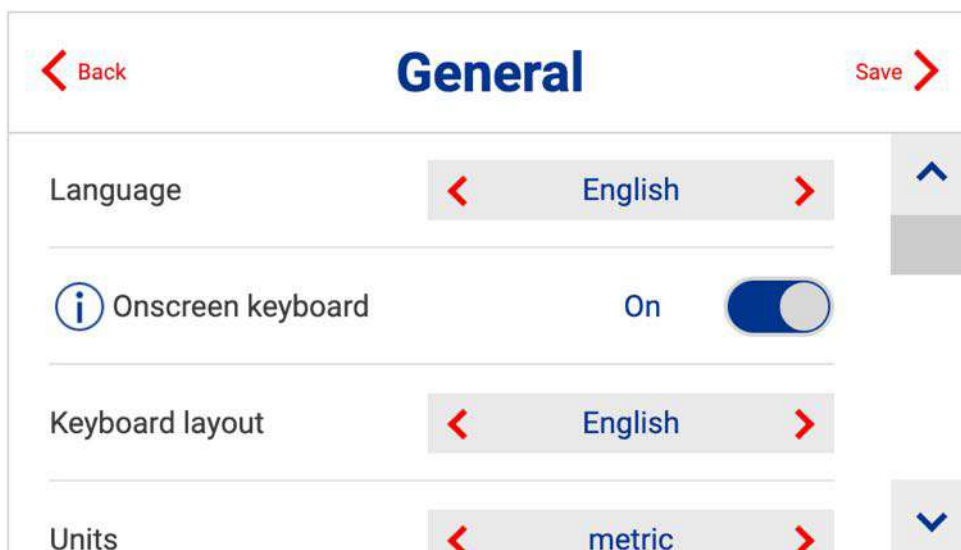


**Backup / Restore:** Backup: Copy all messages and logos to an USB stick (.dmp format). Restore: Restore the messages and logos from the .dmp file. It is recommended that the printer is empty. Existing messages and logos are not restored and causes an error message, even if other messages and logos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

**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 (4.1).

**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).

**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.
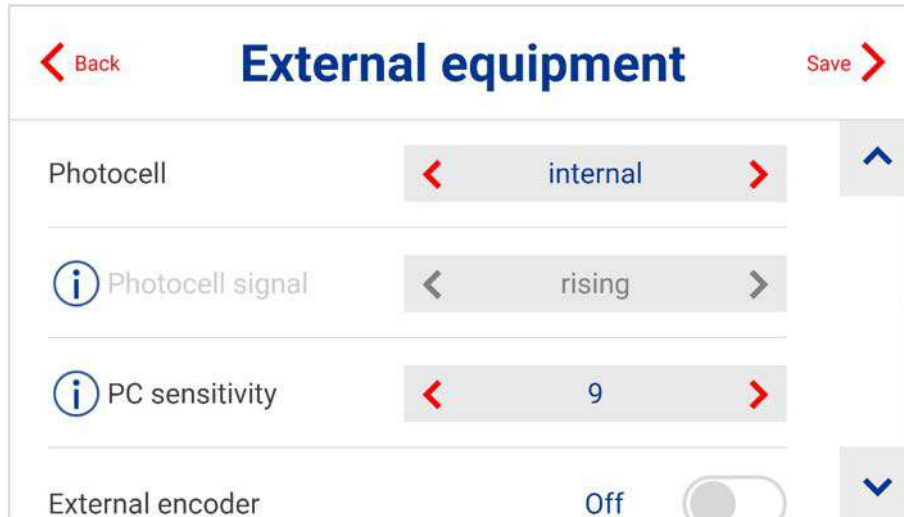
**Printer mode:**

- **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 (Millimeters). 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:** Selection of whether the internal or external photocell should be used for printing. If an external photocell is connected, "PC 1" or "PC 2" must be selected here. These refer to the respective inputs of the printer PC 1 and PC 2.

**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).

**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:** Selection of whether the accessory "external rotary encoder" is connected to the printer. If not, the system prints at the configured conveyor speed.

**Pulse / Rotation:** Number of pulses emitted by the external rotary encoder per rotation. If the standard edding rotary encoder is used, this value is set at 2.500 pulses.

**Diameter:** Measuring wheel diameter of the external rotary encoder. If the original edding rotary encoder is used, this value is 63,7 mm.

**Print speed:** Speed at which the products pass the printer, if no external rotary encoder is connected.

*Hint for detecting the speed*: Mark a straight section of 3 meters on the conveyor belt. Measure the speed of a product over this meter (in seconds). Multiply 20 by the measured value and you get the current speed of the production line in meters per minute.

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

# 5    Speed charts

## 5.1    Print speed and settings

The following table shows which settings and which encoder are required to reach the desired print speed for a clean print image:
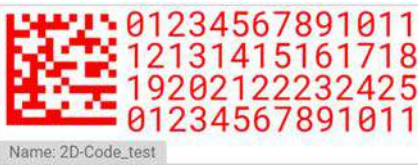
| Print speed in m/min | Max. horizontal resolution in dpi | Max. vertical resolution in dpi | Number of encoder pulses in ppr (with 63.7mm diameter) |
|:---:|:---:|:---:|:---:|
| 20 | 600 | 600 | 5000 |
| 30 | 600 | 600 | 5000 |
| 40 | 400 | 600 | 5000 |
| 60 | 300 | 600 | 5000 |
| 80 | 200 | 600 | 2500 |
| 100 | 150 | 600 | 2500 |
| 120 | 150 | 600 | 2000 |
| 140 | 100 | 600 | 1200 |
| 160 | 100 | 600 | 1200 |
| 180 | 100 | 600 | 800 |

Note for machine integrators:

The maximum input frequency of the encoder connector is 25kHz.

## 5.2  Message frequency

The following table shows the possible number of prints per second for different field types
(static or dynamic):

| Field type | Static field | Static field | Dynamic field |
|---|---|---|---|
| Content | Letter "M" | Date | dyn. 2D-Code 10mm with 4 variable parameter (14 digits) |
| Font | Roboto | Roboto | Roboto |
| Font size | 3mm | 3mm | 10mm Code und 2mm fields |
| Sample image | M<br>Name: Test_M | 12.05.2020<br>Name: Test_Datum | 01234567891011<br>12131415161718<br>19202122232425<br>01234567891011<br>Name: 2D-Code_test |
| Possible prints per second | 40 | 20 | 7 |

All data are standard values and depend on the total text length and the content to be printed.

# 6      External communication

## 6.1     Access from PC or smartphone/tablet

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

A few provisions must first be made:



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.

1.  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!

2.  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:
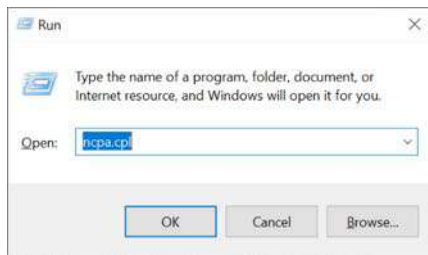


Press the key combination [Windows - R] to display the "Run" window. Then type the command ncpa.cpl and press Enter to open the network connections.
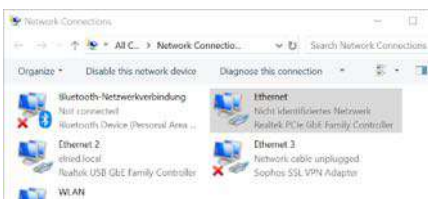


Click on the displayed connection (unidentified network), press the right mouse button and open in the *Properties* menu.
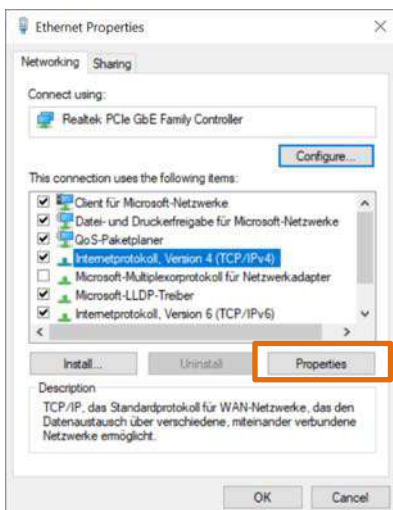


In the properties of Ethernet, click/check *Internet Protocol, version 4 (TCP/IPv4)* and press *Properties* (highlighted in orange).



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, 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.

## 6.2    External +24V-signals

The in-line uses 4 external ports to receive external machine signals. These are also being used to connect your genuine edding accessories photocell, encoder and alarm light. The ports are assigned as followed:



**PC 1 / PC 2:**

Pin 1    PNP    Signal input: Send a +24V signal for print-go
Pin 2    GND    Ground / earth
Pin 3    NPN    Signal input: Send a GND signal for print-go
Pin 4    +24V    +24 V supply voltage

If possible, please aim to switch potential-free signals. The maximum power drain of all external connectors shall not exceed 1.5 A. You do not have to set PNP or NPN via the software, both inputs are leading to similar results. Only do not use them in parallel at the same time. The inputs are debounced at 3 ms.

**ENC:**

Pin 1    +24V    +24 V supply voltage
Pin 2    ENC A  Input for incremental encoder signal (HTL)
Pin 3    Rel A    Relay-input
Pin 4    Rel B    Relay-output
Pin 5    GND    Ground / earth

The maximum power drain of all external connectors shall not exceed 1.5 A.

**ALR:**

Pin 1    +24V    +24 V supply voltage
Pin 2    S_R     NPN Signal output for "Alarm" = red light on the alarm light
Pin 3    S_Y     NPN signal output for "low ink" = yellow light on the alarm light
Pin 4    S_G     NPN Signal output for "printer active" = green light on the alarm light
Pin 5    GND     Ground / earth

The maximum power drain of all external connectors shall not exceed 1.5 A. The signal outputs are NPN switched.

If you are using the original edding alarm connection cable, the matching wire colours are on the open end:

Pin 1    +24V    brown
Pin 2    S_R     white
Pin 3    S_Y     yellow
Pin 4    S_G     green

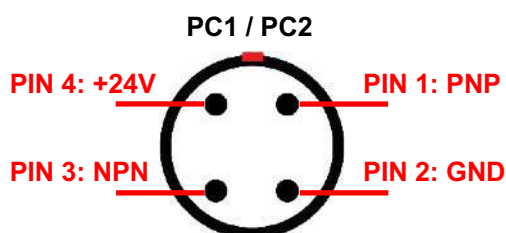**Additional: Edding relay cable - pin assignment and corresponding cable color**

**PC1 / PC2**

PIN 4: +24V          PIN 1: PNP

PIN 3: NPN           PIN 2: GND

Illustration shows the connector view.
Part number: LO-E-I-RK

**PIN ←→ Cable color**
Pin 1 ←→ white:    PNP     Signal input: Send a +24V signal for print-go
Pin 2 ←→ brown:    GND     Ground / earth
Pin 3 ←→ green:    NPN     Signal input: Send a GND signal for print-go
Pin 4 ←→ yellow:   +24V    +24 V supply voltage

If possible, please aim to switch potential-free signals. The maximum power drain of all external connectors shall not exceed 1.5 A. You do not have to set PNP or NPN via the software, both inputs are leading to similar results. Only do not use them in parallel at the same time. The inputs are debounced at 3 ms.

## 6.3    UV-Lamp

With the in-line it is possible to use special UV ink cartridges by using additional hardware: a UV lamp, a control unit, and associated cables. The diagram shows how the individual elements are connected and how the UV system works with the printer:
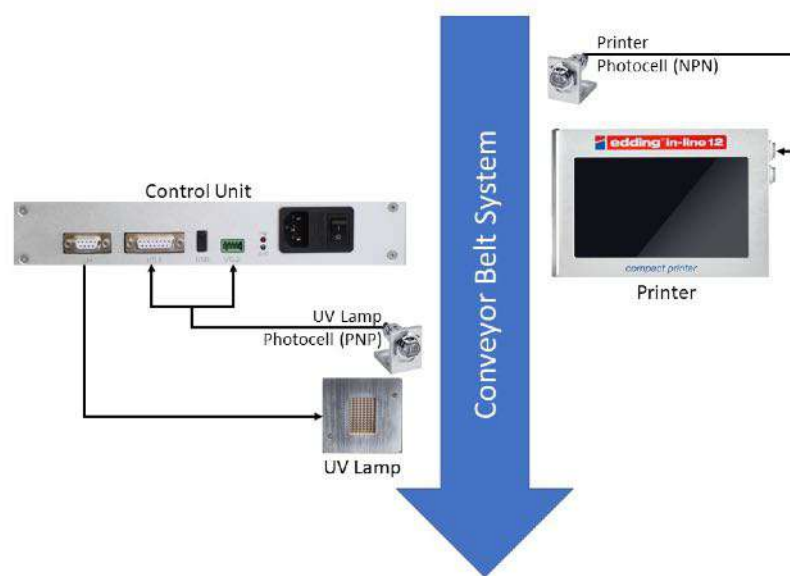


1. The printer photocell detects an article on the conveyor belt and sends a signal to the printer for printing.
2. After the article has been printed, the UV lamp photocell detects the article and sends a signal to the control unit.
3. The control unit will light the UV lamp to dry the print.

The printer and UV lamp are positioned with an offset (minimum 25 cm).

**Speed**

Depending on the positioning of the UV lamp there are different maximum printing speeds. If the lamp is positioned so that a shorter illumination takes place (short way), a maximum printing speed of 32 m/min is possible. If the lamp is adjusted for a longer illumination, the maximum print speed is 46 m/min.

**IMPORTANT!**

For a perfect result, the UV lamp must be placed close to the product (3-6 mm distance to the product) and the photocell for the UV lamp must be positioned at the height of the lamp!

**Safety Notes**

- Do not look directly to the working UV lamp; if possible please wear UV light protection goggles during operation.
- UV lamp could reach high temperature, do not touch the UV lamp directly to avoid burn.
- Keep all vent clear and not blocked to ensure the cooling system function properly.
- Do not irradiate the same area of the substrate/objector production line for too long to avoid damage caused by high temperature.
- Keep UV lamp at least 25 cm away from the print head to avoid illumination onto the print head nozzle and clog the nozzle.
- Over curing will powderize the UV ink and could reduce adhesion.
- Under curing will result in ink not fully dried and reduced adhesion.

**Technical Specification**

| Control Unit | |
|---|---|
| Power supply | Power adapter: AC 100–240 V, 50/60 Hz |
| Maximum Output Power | 320 W |
| **UV Lamp** | |
| Wavelength | 395 nm |
| Peak Irradiance | 12 W / cm² |
| Curing Area | 25 x 36 mm |
| Maximum Power | 190 W |

## 6.4 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)**

## 6.5    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".

# 7 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.

# 8    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.
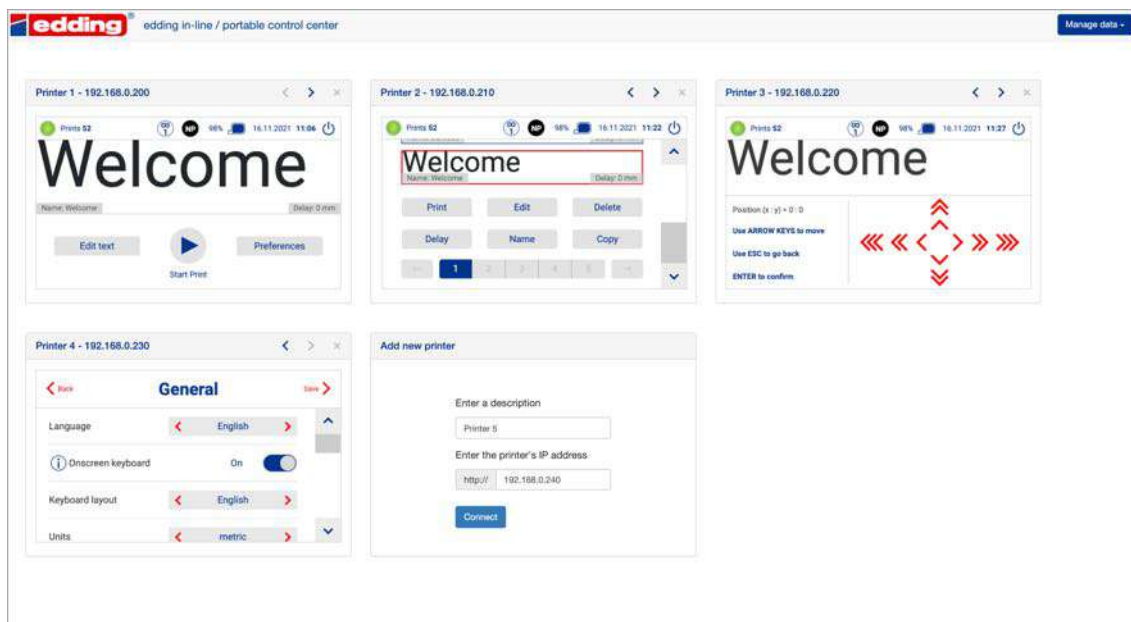


Any number of printers can be added by entering the printer's IP-address. They can then be operated independently of one another.

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.