



m610 advanced Manual

Revision No.	Firmware Version
AB	C.5.0

P/N WLK463154-01

Revision: AB, January 2018



It is essential that you read these operating instructions before commissioning.

Please observe the safety instructions.

Keep in a safe place for future reference.

Neither this documentation nor any of the documents in the appendix are covered by an updating service.

Copyright January 2018, Wolke by Videojet (herein referred to as Wolke). All rights reserved.

This document is the property of [Wolke by Videojet](#) and contains confidential and proprietary information owned by Wolke. Any unauthorized copying, use or disclosure of it without the prior written permission of Wolke is strictly prohibited.

Perpetuo Print Mode[®] and Dynamic Print Intensity[®] are registered trademarks.

1	IDENTIFICATION	1-1
1.1	Type of Printer	1-1
1.2	Manufacturer	1-1
1.3	Intended Use	1-1
2	GENERAL INSTRUCTIONS AND INFORMATION	2-1
2.1	Warranty and Liability	2-1
2.2	Archiving the User Manual	2-1
2.3	Abbreviations List	2-1
3	SAFETY INSTRUCTIONS	3-1
3.1	General Instructions and Information	3-1
3.2	Duties of the Company Operating the System	3-1
3.3	Duties of the Staff	3-1
3.4	Hazards Associated with Handling the m610 advanced	3-2
3.5	Manual Language Codes	3-3
4	INSTALLATION	4-1
4.1	Integral Parts and Accessories of the m610 advanced	4-1
4.2	Controller	4-7
4.2.1	Installation	4-7
4.2.2	Terminals	4-8
4.2.3	Nameplate	4-9
4.2.4	Ambient Conditions	4-9
4.2.5	IP65 Caps on the Controller's Rear Side	4-10
4.3	Printhead and Wolke Cartridge	4-11
4.3.1	Positioning of Printhead	4-13
4.3.2	Printhead Arrangement	4-13
4.3.3	Installing the Printheads	4-14
4.3.4	Selection of a Suitable Installation Position	4-14
4.4	Photoelectric Cell	4-15
4.4.1	Position of Photoelectric Cell	4-16
4.4.2	Installing the Photoelectric Cell	4-16
4.4.3	Settings of Photoelectric Cell	4-19
4.4.4	Detection of a Measuring Object	4-20
4.5	Shaft Encoder (Optional)	4-22
4.5.1	Installation of the External Shaft Encoder	4-22
4.6	Installation with the Mounting System (Optional)	4-24
4.7	Installation by Means of the Parallelogram (Optional)	4-26
4.7.1	Connecting the Printer Components	4-28
5	OPERATION	5-1
5.1	Control Panel	5-1
5.2	Switching the System ON	5-3
5.3	Screen Displays	5-4
5.3.1	Information Bar	5-4
5.3.2	Label Status	5-5
5.3.3	Shift Function "Shift" Key	5-5
5.3.4	Ink Levels	5-6
5.3.5	Time	5-7
5.3.6	Rulers	5-7
5.3.7	View of Print and Edit Memory	5-8

5.4	Keyboard	5-9
5.4.1	Upsizing/Downsizing of the View	5-9
5.4.2	Scrolling	5-9
5.4.3	Keyboard Lock	5-10
5.4.4	Restart of the m610 advanced	5-10
5.5	Overview of the Menu Structures	5-11
5.5.1	File/Edit	5-11
5.5.2	File/Edit/New/Barcode	5-11
5.5.3	File/Edit/New/Time field	5-12
5.5.4	File/Edit/Act. field/Scroll	5-12
5.5.5	File/Edit/View	5-12
5.5.6	File/Edit/Zoom	5-12
5.5.7	File/Act. Print	5-13
5.5.8	Adjustments	5-13
5.5.9	System/Diagnosis	5-13
5.6	Hotkeys	5-14
5.7	Navigation within the Menu Displays	5-15
6	COMMISSIONING USING WEBSERVER	6-1
6.1	Switch on the Controller	6-1
6.1.1	Connect to Webserver	6-1
6.1.1.1	Language	6-2
6.1.1.2	Login	6-2
6.1.1.3	Network Configuration - Configure IP Address	6-3
6.1.1.4	Network Configuration	6-4
6.2	SYSTEM - SETTINGS	6-6
6.2.1	Machine Parameters	6-6
6.2.1.1	Number of Printheads	6-6
6.2.1.2	Shaft Encoder	6-7
6.2.1.3	Deleting Data Buffer	6-9
6.2.1.4	Pulses/Meter	6-9
6.2.1.5	Backlight Power Off	6-10
6.2.1.6	Printheads	6-10
6.2.1.7	Various System Settings	6-13
6.2.2	External I/O	6-15
6.2.2.1	Inputs	6-15
6.2.2.2	Outputs	6-18
6.2.2.3	Expeller	6-19
6.2.2.4	Camera	6-19
6.2.2.5	Status Displays of the Warning Beacon	6-20
6.2.3	Cartridges	6-21
6.2.3.1	Ink Type	6-22
6.2.3.2	Manage Ink Types (Allowed List)	6-22
6.2.3.3	Temperature Controlled	6-24
6.2.3.4	Increase Ink Level	6-25
6.2.3.5	Low Ink and Out of Ink	6-25
6.2.3.6	Voltage and Pulse Width	6-26
6.3	System Settings	6-27
6.3.1	Print Memory Refresh	6-27
6.4	Error Conditions	6-28
6.5	System Date/Time	6-30
6.6	System Monitor	6-31

6.6.1	Auto Log Off	6-31
6.6.2	Connection/Communication	6-32
6.6.2.1	USB Interface	6-32
6.7	Factory Settings	6-33
6.8	System State	6-38
6.9	Logging	6-39
6.10	System Update	6-40
7	COMMISSIONING USING CONTROLLER.	7-1
7.1	Installation Settings	7-1
7.1.1	Construction	7-1
7.1.1.1	Number Of Printheads	7-1
7.1.1.2	Shaft Encoder	7-2
7.1.1.3	Pulses/Meter	7-2
7.1.1.4	Deleting Data Buffer	7-3
7.1.1.5	Backlight Power Off	7-3
7.1.1.6	Printheads	7-4
7.1.1.7	Various System Settings	7-6
7.1.1.8	Language	7-9
7.1.2	External I/O	7-10
7.1.2.1	Inputs	7-10
7.1.2.2	Outputs	7-14
7.1.2.3	Expeller	7-15
7.1.2.4	Camera	7-15
7.1.2.5	Status Displays of the Warning Beacon	7-16
7.1.3	Cartridges	7-17
7.1.3.1	Ink Type	7-17
7.1.3.2	Allowed Ink Type List	7-18
7.1.3.3	Temperature Controlled	7-19
7.1.3.4	Increase Ink Level	7-20
7.1.3.5	Low Ink and Out of Ink	7-20
7.1.3.6	Voltage and Pulse Width	7-21
7.1.4	Print Memory Refresh	7-22
7.1.5	Connection/Communication	7-23
7.1.5.1	TCP/IP Port	7-24
7.2	Resetting the System Settings (Factory Setting)	7-26
7.3	System Settings	7-29
7.3.1	System Time	7-29
7.3.2	System Monitor	7-30
7.3.3	Ext. Settings	7-31
7.4	Label Settings	7-31
7.4.1	Size & Resolution	7-32
7.4.2	Label Dimensions	7-33
7.4.3	Additional Settings	7-34
7.5	Spitting	7-36
8	PRINT LABELS	8-1
8.1	Generating a Print Label	8-1
8.1.1	Text	8-1
8.1.2	Counter	8-3
8.1.3	Date	8-10
8.1.4	Time Field/Time	8-14

8.1.5	Time Field/Shift	8-17
8.1.6	Embedded Field Types	8-19
8.1.7	Barcode	8-20
8.1.7.1	EAN8, EAN13, UPC-A/E	8-22
8.1.7.2	Code128/EAN128	8-25
8.1.7.3	2/5i and Code39	8-28
8.1.7.4	Codabar	8-30
8.1.7.5	Datamatrix	8-31
8.1.7.5.1	GS1-Datamatrix	8-35
8.1.7.5.2	PPN-Datamatrix	8-36
8.1.7.5.3	HIBC-Datamatrix	8-38
8.1.7.6	QR Code	8-39
8.1.7.7	Postnet/IMB	8-40
8.1.7.8	GS1 Databar	8-42
8.1.8	Bitmap	8-45
8.1.9	Combi Field	8-46
8.1.10	Variable Label Field (Text Field and Barcode)	8-48
9	EDITING LABEL FILE	9-1
9.1	Opening Label File	9-1
9.2	Edit Help View/Zoom	9-2
9.2.1	Zoom	9-2
9.2.2	View	9-3
9.3	Modifying Certain Label Fields	9-5
9.3.1	Scroll	9-5
9.3.2	Change	9-6
9.3.3	Search	9-7
9.3.4	Delete	9-8
9.4	Inserting New Label Fields	9-9
9.5	Saving a Print Label	9-11
9.6	Load and Print	9-13
9.7	File Management	9-16
9.7.1	Clone/Backup	9-16
10	BIDIRECTIONAL PRINT	10-1
10.1	Input Settings	10-1
10.1.1	Installation Settings	10-1
10.1.2	Various Installation Settings	10-2
11	USER ADMINISTRATION	11-1
11.1	Login	11-1
11.1.1	Users	11-2
11.1.2	Passwords for User Groups	11-3
11.1.3	User Access	11-5
12	REPLACEMENT OF CARTRIDGE	12-1
12.1	Inserting the Wolke Cartridge into Various Printheads	12-1
12.2	Change Cartridge	12-3
12.3	Cartridge Ink Level	12-3
13	DIAGNOSTIC	13-1
13.1	Diagnostic Menu	13-1

13.1.1	Printheads Screen	13-1
13.1.2	Print Process Screen	13-3
13.1.3	Digital IO Screen	13-5
13.1.4	Cartridges Screen	13-6
13.2	Product Counter	13-7
14	TECHNICAL DATA.	14-1
14.1	Technical Drawings	14-1
14.2	Weights	14-6
14.3	View of the m610 advanced's Rear Panel	14-6
14.4	Terminals	14-7
14.4.1	Power Supply	14-7
14.4.2	Differential Shaft Encoder Socket	14-8
14.4.3	Differential Shaft Encoder Extension Cables	14-10
14.4.4	External Inputs and Outputs	14-11
14.4.4.1	24 V DC Socket Version	14-12
14.4.5	Printhead Socket	14-15
14.4.6	Photoelectric Cell on the Printhead of the m610 advanced	14-15
15	SERVICE AND MAINTENANCE	15-1
15.1	Information on Care	15-1
15.2	Storage of Ink Cartridges	15-1
15.2.1	Cleaning the Cartridges	15-1
15.3	Maintenance Instructions	15-2
16	TROUBLESHOOTING	16-1
16.1	Printing	16-1
16.2	Label	16-4
16.3	Spitting	16-5
16.4	Cartridge	16-6
16.5	Operator Control	16-7
16.6	Communication m610 advanced – PC	16-7
16.7	Display	16-8
16.8	Diagnosis	16-9
16.9	Miscellaneous	16-9
17	SCREEN MESSAGES	17-1
17.1	Error Messages	17-1
17.2	Warnings	17-3
17.3	Alarms	17-4
17.4	Information	17-5
	Index	1

In this user manual, the following designations and symbols are used to indicate hazards:

**NOTE**

This symbol represents information which is to facilitate operation or compliance with which may improve the operating procedures.

**ATTENTION**

Information which, if not observed, may result in damage or destruction of the device or in damage to property.

**WARNING**

Information which, if not observed, may result in a health hazard for the operator.

**INFORMATION ON CARE**

This symbol indicates important information about how to care for the m610 advanced correctly. Non-observance of this information may result in faults in the operation of the m610 advanced or its environment.

1 Identification

1.1 Type of Printer

Type: m610 advanced
Version: C.5.0
Updated: January 2018

Type of printer

Up to firmware version C.5.0

1.2 Manufacturer



If you have any questions or need assistance, contact Wolke by Videojet on +49 (0)9187-95678-88. All customers within the United States, contact Videojet Technologies Inc. at 1-800-843-3610.

Wolke by Videojet
Wacholderweg 3
90518 Altdorf,
Germany

Phone: +49 (0)9187-95678-88
Fax: +49 (0)9187-95678-99
International Fax: -
Web: www.wolke.com/en/

Videojet Technologies Inc.
1500 Mittel Boulevard
Wood Dale,
IL 60191-1073 U.S.A.

1-800-843-3610
1-800-582-1343
630-616-3629
www.videojet.com

Manufacturer

1.3 Intended Use

The Wolke m610 advanced is exclusively used for the coding of various materials (products, packaging materials, etc.). The customer has to ensure that the appropriate inks are used. Use of any other inks is considered as an improper use. Wolke by Videojet, will not be responsible for any damage resulting from such improper use.

Intended use

Proper usage also include the following:

- Compliance with all the instructions given in the user manual.
- Compliance with the specified maintenance works.
- Compliance with all the safety instructions.
- Regular inspection of the device for damage on connectors, cables, the keyboard, the display and the housing.
- Inspection of the printhead on a regular basis for good condition and foreign matter (ink, water etc.)

2 General Instructions and Information

2.1 Warranty and Liability

The current version of the "General Terms and Conditions of Sale and Delivery" of Wolke by Videojet, is applied. These will be available to the user/operating company at the latest when the contract is agreed. No warranty claims or claims for liability for damages will not be accepted with respect to personal injury or damage to property if caused by any of the following:

Warranty and Liability

- The misuse of the m610 advanced.
- Improper installation, commissioning, operation and maintenance of the m610 advanced.
- Operation of the m610 advanced with faulty safety devices or improperly fitted/non-functional safety or protective devices.
- Non-compliance with instructions in the user manual relating to assembly, commissioning, operation and maintenance of the m610 advanced.
- Non-authorized modifications of the m610 advanced (e.g. removal of the device's bases).
- Improper repairs.
- Disasters caused by the impact of third parties or force majeure.

2.2 Archiving the User Manual



ATTENTION

Contact the manufacturer immediately if the operating instructions cannot be found. Keep the operating instructions with the system at all times. Keep the user manual to hand at all times.

Archiving the User Manual

2.3 Abbreviations List

Abbreviations

Abbreviation	Expansion
DIAG	Diagnostics
NA	Not Applicable
ENC	Encoder
ERR	Error
DC	Direct Current
pm	Print Memory
PZ	Photoelectric Sensor
PPD	Preferred Print Direction
UDP	User Datagram Protocol
FTP	File Transfer Protocol
UI	User Interface

3 Safety Instructions

3.1 General Instructions and Information

Observe the instructions and information contained in the operating instructions:

*General
instructions
and
information*

- Familiarization with the basic safety instructions and safety provisions is a prerequisite for safe handling of and trouble-free operation with the m610 advanced.
- These operating instructions contain the most important information for operation of the m610 advanced in accordance with the safety provisions.
- This user manual, especially the safety instructions, must be observed by all persons working with the m610 advanced.

3.2 Duties of the Company Operating the System

The operating company agrees to ensure that all persons working on the m610 advanced meet the following requirements:

*Duties of the
company
operating the
system*

- That they are familiar with the basic rules and provisions relating to work safety and accident prevention and have been instructed in how to operate the m610 advanced.
- That they have read and understood the chapter on safety and the warnings contained in this user manual and have confirmed this with their signatures.
- Those regular checks are conducted to ensure that they work safely.

3.3 Duties of the Staff

All persons instructed to work on the m610 advanced agree to comply with the following requirements before starting their work:

*Duties of the
stuff*

- That they shall comply with the basic rules and provisions relating to work safety and accident prevention.
- That they shall read the chapter on safety and the warnings contained in this user manual and confirm with their signatures that they have understood them.

3.4 Hazards Associated with Handling the m610 advanced

*Hazards
associated with
handling the
m610 advanced*

The m610 advanced has been designed in accordance with the state of the art in technology and approved safety practice. Nevertheless, there is still a risk of certain dangers to the life and health of the operator or third party associated with the use of the m610 advanced or of impairment to the m610 advanced or other items of property.

The m610 advanced must only ever:

- be used for its intended purpose
- and in perfect working order in safety terms

All faults which may impair safety in any way must be rectified immediately. Such faults include, above all, damage in the following areas:

- Cables
- Housing
- Operating elements
- Plug-and-socket connectors

If any faults should occur in these areas, the m610 advanced must be shut down immediately and must not be restarted until properly repaired.



ATTENTION

Observe all statutory electrical safety codes and practices.

3.5 Manual Language Codes

To order the required manuals, make sure to add the 2-digit language code at the end of the part number. For example, the part number of the Spanish version of the Operator Manual is WLK463154-04. Use the list of language codes shown in [Table 3_1, "Language List"](#) to identify the translated versions of the manual.

*Manual
language codes*

Language	Code
English (US)	1
French	2
German	3
Spanish	4
Portuguese Brazilian	5
Italian	8
English (UK)	21
Turkish	24
Czech	25

Tab. 3_1: Language List

4 Installation

4.1 Integral Parts and Accessories of the m610 advanced

Scope of supplies:

- ➔ Remove all parts from the cardboard box and remove the packaging material.
(Avoid damaging the components when using sharp objects to open the packaging.)
- ➔ Check that all parts included in the scope of supplies are present and in good condition.

If parts are missing or damaged, please contact the agent or your contact person at Wolke.

*Main
components*



Fig. 4_1: Controller and Power Supply Cable



Fig. 4_2: Printheads

The blue printhead is suitable for all standard applications. The red, green and gold colored special-size printheads are designed for non-standard installation and space situations.



Fig. 4_3: Connector Cable from Printhead to the Controller; One Cable/Printhead

The printhead cable is available with one-sided angle plug.



Fig. 4_4: Head Plates for the Blue Printhead

Head plate, in different versions for 1, 2, 3 or 4 heads.

Main components



Fig. 4_5: Sensor

The analysis electronics are for detecting the print material and transferring the print signal.



Fig. 4_6: Adapter Plate (Left-Hand) and Spacer Plate

The adapter plate and the spacer plate are required if the locating wheel is used, for mounting the sensor to the printhead.



Fig. 4_7: Optical Fiber

The optical fiber is fitted between the analysis electronics and the head plate.



Fig. 4_8: Wolke Cartridge

Wolke cartridges are available with a range of types of ink for the different substrates. Wolke cartridges are 'smart' cartridges containing ink data such as ink level, ink type, expiry date etc.

Accessories



Fig. 4_9: Protective Caps for Cartridges

The protective caps protect the nozzle plate from mechanical damage and from drying out in storage.



Fig. 4_10: Mounting System for 1-head Mounting

The mounting system allows fast and simple printhead mounting.



Fig. 4_11: Adjusting Unit for Multi-head Mounting

The accessory part for multi-head mounting is suitable for all printhead versions. The adjusting unit allows the printheads to be finely adjusted for perfect print images.

The resilient printhead suspension element ensures that the printing distance is always optimized whatever the product position.

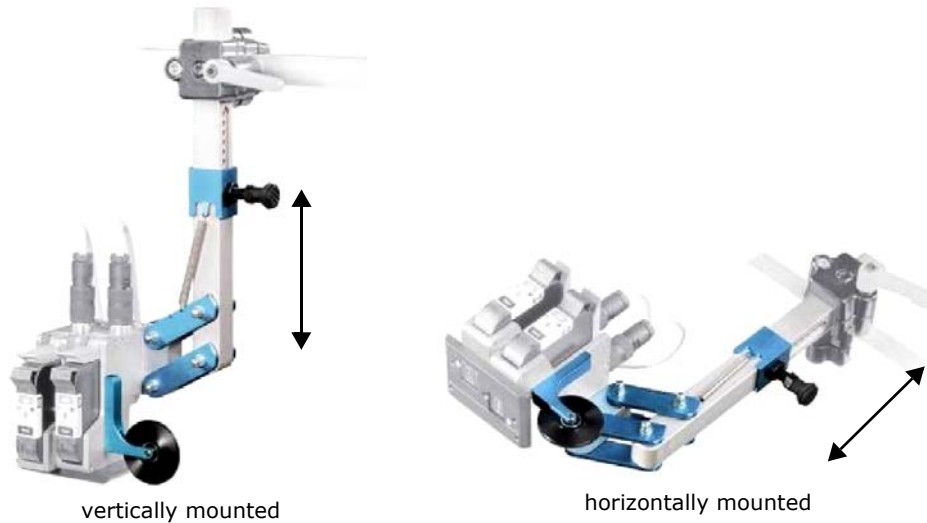


Fig. 4_12: Parallelogram with Locating Wheel

Accessories

An alternative to the locating wheel is the deflector. Both of these components facilitate initial distance compensation which goes easy on the material. Either the locating wheel or the deflector are used depending on the specific application.



Fig. 4_13: Deflector and Locating Wheel



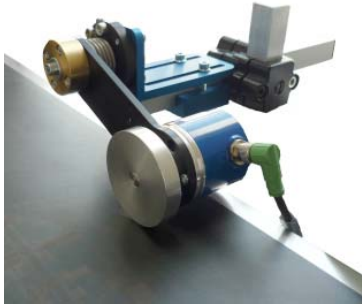
Fig. 4_14: Shaft Encoder

The shaft encoder with differential signals is for measuring the product speed and therefore for adjusting the print to different speeds.



Shaft encoder measuring wheels for the different conveyor belt surfaces.

Fig. 4_15: Measuring Wheels for the Shaft Encoder



This easy to install mount ensures that the shaft encoder is perfectly supported.

Fig. 4_16: Resilient Shaft Encoder Mount



Connector cable between the shaft encoder and controller.

Accessories

Fig. 4_17: Shaft Encoder Cable



The warning beacon is mounted directly on the m610 advanced and is for indicating system faults and the "ready for printing" state (green).
The warning beacon is operated via the 24 V interface.

Fig. 4_18: Warning Beacon



Fig. 4_19: Splitter Box

Accessories



Fig. 4_20: Documentation USB

The splitter box is used to connect an additional device on a single shaft encoder.

This software is comprised of Windows-based programs.

The Wolke Label Creator software is for creating print labels on the PC.

The Wolke Label Creator software enables labels, logos, fonts and machine configurations to be transferred from a PC to the m610 advanced or from the m610 advanced to a PC.

4.2 Controller

Controller



Dimension drawings are included in [Chapter 14](#).

Fig. 4_21: Controller

4.2.1 Installation

The controller can be placed either on a mount or on a table top. Alternatively, it can also be mounted vertically, for which the four threaded holes (M6) on the underside of the controller are provided.

Installation



ATTENTION

Only use screws with a maximum length of 12mm.

Screws which are any longer will damage the controller housing.

4.2.2 Terminals

Terminals

The controller comes with the following terminals on the back for installation:

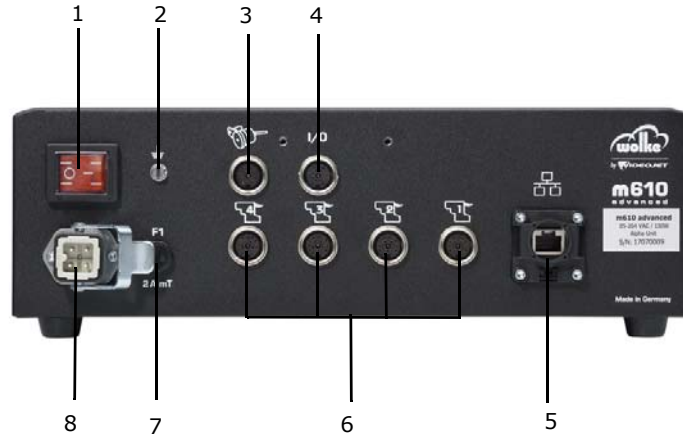



Fig. 4_22: Rear of Controller – Connectivity

- | | |
|---|----------------------------------|
| 1 On/Off switch | 5 Ethernet interface |
| 2 Grounding point  | 6 Terminals for printhead cables |
| 3 Terminal for the shaft encoder | 7 Fuse |
| 4 I/O Terminal 24 V DC | 8 Power socket |

When you connect the components, please refer to [Chapter 4.7.1, "Connecting the Printer Components"](#).

For a detailed list of terminals, please refer to [Chapter 14.4, "Terminals"](#).



The default equipment of each m610 advanced includes a hood with male insert for the Ethernet socket. It ensures protection against humid conditions in accordance with IP65 when connecting a network cable.

Fig. 4_23: Hood with Male Insert

For a detailed description of assembly and utilization, please refer to the enclosed assembly instructions.

4.2.3 Nameplate

The nameplate of the m610 advanced is provided on the rear.

Nameplate



Fig. 4_24: Sample Illustration, Nameplate m610 advanced

The nameplate provides the following information:

- the supply voltage
- the connected power
- the hardware version
- the serial number

4.2.4 Ambient Conditions

Ambient conditions

Parameters	Limits	Unit
Type of enclosure	IP 65	–
Ambient temperature		
while in actual operation	5 to 45	°C
during storage	-25 to 55	°C
during transport	-25 to 55	°C
Condensation	not admissible	

Tab. 4_2: Ambient Conditions of the m610 advanced

When you connect the components, please refer to [Chapter 4.7.1, "Connecting the Printer Components"](#).

4.2.5 IP65 Caps on the Controller's Rear Side

IP65 caps

The IP65 caps protect the individual contacts against jets of water and dirt and ensure that the device complies with the IP65 standard. In the delivery condition all of the sockets have IP65 caps fitted. To be able to connect connector cables the IP65 caps have to be removed from the required sockets.

- ➔ Make sure that caps are screw-fastened to all unused sockets on the controller.



Fig. 4_25: Rear of Controller with Caps



ATTENTION

Any damage resulting from IP65 caps which are not screw-fastened will not be covered by the guarantee/warranty.

4.3 Printhead and Wolke Cartridge

Description of the individual components with reference to the blue standard printhead.

*Printhead and
Wolke
cartridge*



NOTE

The Wolke cartridge is only inserted in the printhead in this illustration for explanatory purposes.

For detailed instructions on how to insert the Wolke cartridge, please refer to [Chapter 12.1](#).

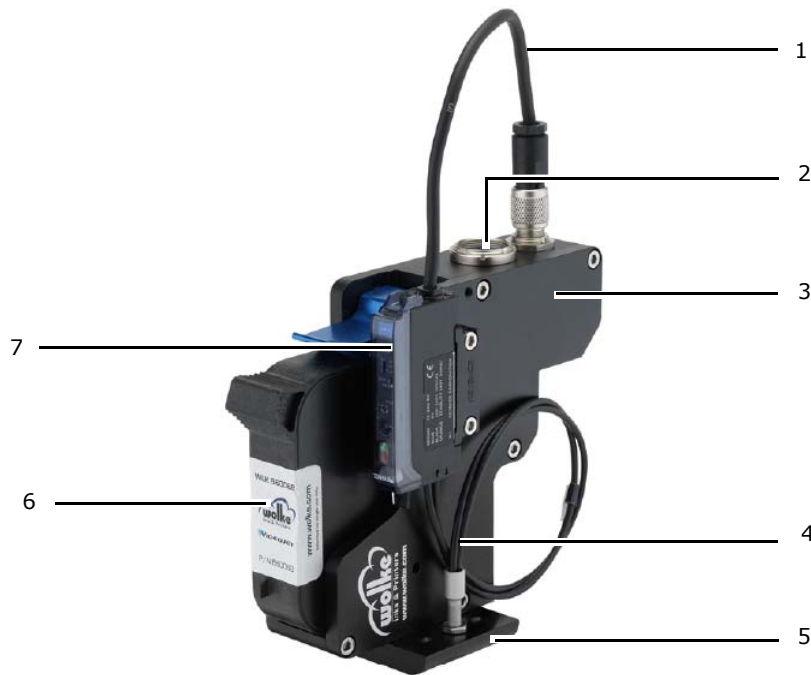


Fig. 4_26: Standard Printhead (in this case with a Conventional Photoelectric Cell)

- | | | | |
|---|---|---|--------------------------------------|
| 1 | Connector cable for photoelectric cell - printhead | 5 | Head plate |
| 2 | Terminal for connector cable for printhead - controller | 6 | Wolke cartridge, e. g. premium black |
| 3 | Printhead | 7 | Photoelectric cell |
| 4 | Optical fiber | | |

Special size printheads for printing different types of print material.



Short, low model with cable outlet at the bottom.

Fig. 4_27: Red Printhead

*Printhead and
Wolke cartridge*



Long, low model with cable outlet at the top. This special version permits print material to be printed which is fed through deep inside the machine.

Fig. 4_28: Green Printhead



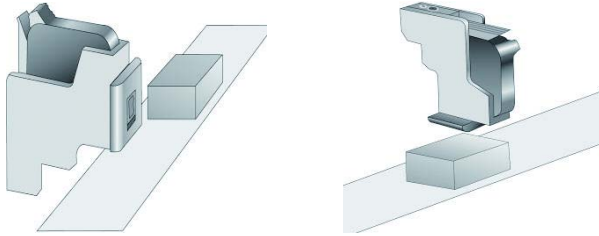
Special version, similar to the green printhead, but with a side mount. Since it does not have the mounting lugs at the bottom, it can be integrated even deeper in the machine.

Fig. 4_29: Golden Printhead

4.3.1 Positioning of Printhead

The following positions are available when the printheads are installed:

Printhead positioning



printhead at the side

printhead at the top

Fig. 4_30: Printhead Positioning Options

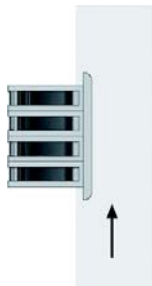


NOTE

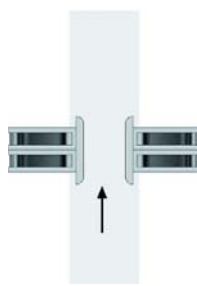
It is not possible to print from below (against gravity).

4.3.2 Printhead Arrangement

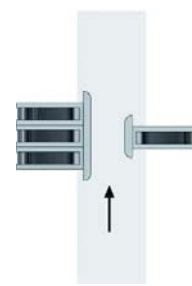
Printhead arrangement



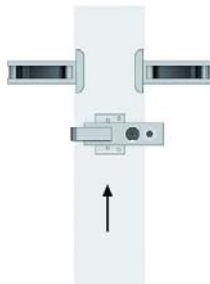
all on one side



2 on the left and 2 on the right



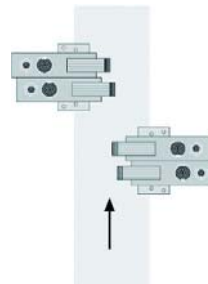
three on the left and one on the right



side and at the top



at the top



at the top, left and right

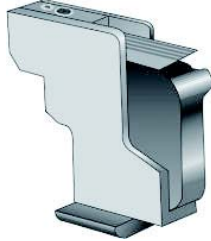
Fig. 4_31: Examples – Equipment of the m610 advanced with Four Printheads

4.3.3 Installing the Printheads

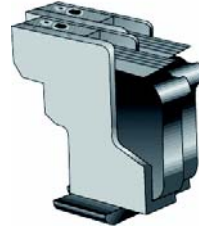
Installing the printheads

With the help of the head plates, the printheads can be installed either individually or together.

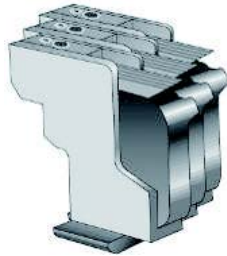
To this effect, we recommend the mounting system in [Chapter 4.1](#).



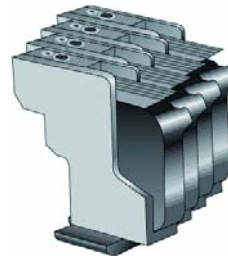
Individual installation of one printhead
12.7mm print height per printhead



2 printheads
Print height = 25.4mm



3 printheads
Print height = 38.1mm



4 printheads
Print height = 50.8mm

Fig. 4_32: Printing Head According to the Number of Printheads

4.3.4 Selection of a Suitable Installation Position

Installation position

When arranging and positioning the printheads on the line, it is important to make sure that it is possible to replace the cartridges at any time.



WARNING

Risk of injury to hands from moving machine parts

When selecting the installation position, make sure that the cartridges can be replaced at any time without any danger.



NOTE

When planning the installation, please note that the optimum distance between the nozzle plate on the cartridge and the print material is between 1mm and max. 3mm. The printhead head plate can be directly in contact with the product and is intended to provide protection for the cartridge.

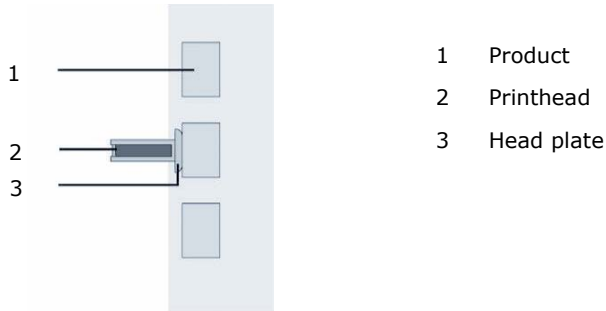


Fig. 4_33: Selection of a Installation Position



ATTENTION

The following problems can be avoided if the installation position is selected correctly:

- Vibrations on the printhead
- Overheating of the printhead, the photoelectric cell and the cartridge as a result of being installed too close to sources of process heat
- Electrostatic charge
- Soiling caused by lacquer, adhesive or other similar products used in the production process

4.4 Photoelectric Cell

To enable this photoelectric cell to be fitted, our printheads have been equipped with four new size M3 threads (two on each side, see below in [Chapter 14.1, "Technical Drawings"](#)).

Photoelectric cell



Fig. 4_34: Photoelectric Cell (Keyence)

4.4.1 Position of Photoelectric Cell

Position of photoelectric cell

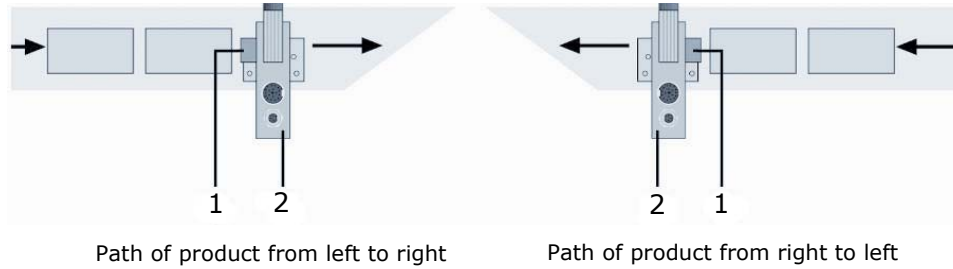


Fig. 4_35: Position of Photoelectric Cell

1 Photoelectric cell

2 Printhead

This form of installation enables the standard values for the sensor distance to be maintained for both product path directions, see [Chapter 7.1.1.1, "Number Of Printheads"](#).

4.4.2 Installing the Photoelectric Cell

Installing the photoelectric cell

- Measure the optical fiber.
- When taking the measurements, please note that the two upper ends of the optical fiber have to be inserted in the product sensor later.
- Leave a sufficient length of the optical fiber to place it in a loop. Thus, avoiding sharp bends which might impair sensitivity. This also reduces stress of the cable.
- Use the cutter to cut the optical fiber to the required length. The required length is measured from the product sensor location on the side of the printhead to the face of the printhead, allowing for single loop to prevent stress on the optical fiber.
- If using the printhead mounting positions, the optical fiber length will be 406 mm (16 inches).



ATTENTION

If the optical fiber is not cut cleanly, this may impair the operation of the photoelectric cell.

Therefore:

Only use each cutting hole in the cutter once.

Every new optical fiber comes with a new cutter.



Fig. 4_36: Cutter for Optical Fibre

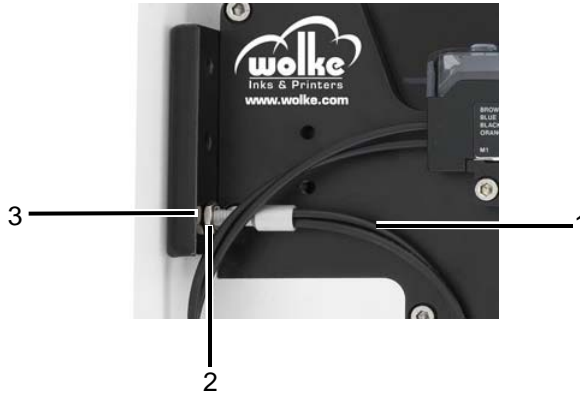


Fig. 4_37: Cutting the Optical Fiber to Size

- 1 Optical fiber
- 2 Nut
- 3 Serrated Lock Washer



ATTENTION

Handle the optical fiber with care. Prevent injury by removing sharp edges in wire.


- Thread nut on to the shaft at the end of the optical fiber.
- Place serrated lock washer on to the shaft at the end of the optical fiber.
- Thread the shaft of the optical fiber into the appropriate mounting hole on the printhead front plate, based on the direction the product is traveling.
- Ensure that the optical fiber is not protruding past the front surface of the front plate, as damage to the optical fiber or product may occur.
- Tighten the nut (item 2) against the back of the front plate.
- Identify the product sensor mount and attach to the printhead.


*Installing the
photoelectric
cell*



Product Sensor Mount
Attached to Printhead

Fig. 4_38: Product Sensor Mount Attached to Printhead

- Each optical fiber has a different purpose and it is important to wire the product sensor correctly.
- Locate the optical fiber with the green dots. This must be connected to the output port which is indicated with the  icon.

Insert the optical fiber fully (approx. 14 mm). Insert the remaining optical fiber into the input port, indicated with the  icon.

Fasten the fibers with the quick-release fastener (fastener moves to the up position to secure).

- The sensor will not be able to issue the correct signal if the optical fibers are not routed correctly.

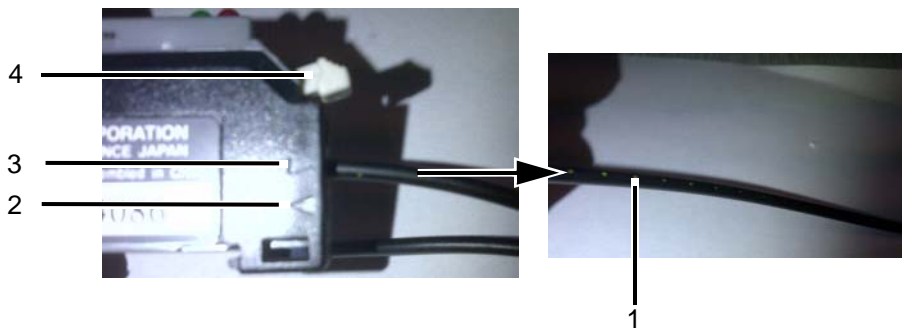


Fig. 4_39: Inserting the Optical Fiber in Product Sensor

- 1 Optical Fiber with Green Dots
- 2 Input Port
- 3 Output Port
- 4 Quick-release Fastener

Installing the photoelectric cell

- Latch the product sensor onto the installation mount.



Fig. 4_40: Screws in Product Sensor

- 1 Installation Mount
- 2 Screws

- Insert the connector of the product sensor cable into the product sensor connection on the rear printhead (see Figure 4-9), and tighten the connector by hand.



ATTENTION

Make sure to tighten the connector of the photocell cable only by hand without using any tools, in order to avoid damage.



Fig. 4_41: Product Sensor Connection



Fig. 4_42: Product Sensor Installed

4.4.3 Settings of Photoelectric Cell

*Settings of
photoelectric
cell*

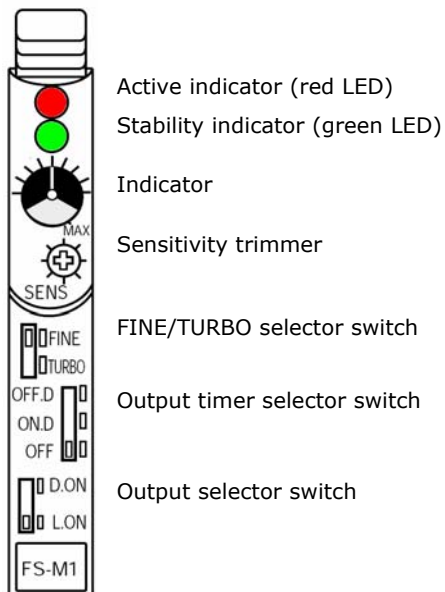


Fig. 4_43: Adjusting Photoelectric

Active indicator (red)

Lights up when the switch connection is activated.

Stability indicator (green)

Lights up when sufficient light is received.

Indicator

Shows the current position of the sensitivity trimmer. One turn of the trimmer changes the position of the indicator by one mark on the indicator scale.

Sensitivity trimmer

Turning the trimmer in a clockwise direction increases the sensitivity. Turning the trimmer in a counterclockwise direction reduces the sensitivity. Sensitivity varies according to the print material. Adjust the sensitivity every time you use a different print material.

FINE/TURBO selector switch

FINE: For recognizing minimal differences or for exact positioning (standard setting, reaction time: 250µs).

TURBO: For recognizing an object across large distances or recognizing an object with low reflection (reaction time: 500µs).

Output timer selector switch

OFF.D: OFF delay, 40ms.

ON.D: ON delay, 40ms.

OFF: Delay switched off (standard setting).

Output selector switch

D.ON: The setting for special applications. The print resolution at the transition is from reflective to non-reflective.

L.ON: The print resolution at the transition is from non-reflective to reflective (standard setting).

4.4.4 Detection of a Measuring Object

Detection of a measuring object

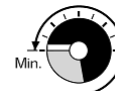
- ➞ Set the D.ON/L.ON switch to the L.ON position.



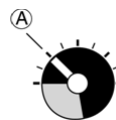
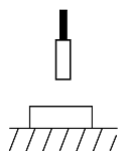
- ➞ Set the FINE/TURBO selector to position FINE.



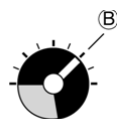
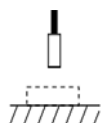
- ➞ Set the sensitivity to the minimum. Turn the trimmer until the indicator is within the transparent display area.



- Using a measuring object, set the sensitivity in the identification area. To do so, turn the trimmer in a clockwise direction until the function indicator (red LED) lights up. This is point A.



- Remove the measuring object. If the function indicator (red LED) does not light up without an object, continue turning the trimmer in a clockwise direction until it lights up. This is point B.



Detection of a measuring object

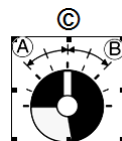
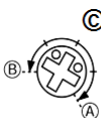


NOTE

If the function indicator (red LED) lights up without an object, the indicator must be switched off (turn trimmer counterclockwise).

Then turn the trimmer in a clockwise direction again until the function indicator lights up. This is point B.

- Set the sensitivity to an average (point C) between point A and point B. Once the sensitivity difference between point A and point B is half a rotation, stable identification will be possible.



- Set the D.ON/L.ON switch in dependency on whether the sensor should be switched on or off for an object.



NOTE

After changing over the FINE/TURBO selector, sensitivity must be readjusted.

4.5 Shaft Encoder (Optional)

Shaft encoder



for smooth or hard belt surfaces (suitable for standard shaft encoders)

Fig. 4_44: Shaft Encoder and Rubber Measuring Wheel

The speed can be sensed via the shaft encoder or be entered as a fixed value.

Measurement of the speed by means of shaft encoder

For optimum printing results it is necessary to have precise speed measurements. Since the speed of the product may fluctuate slightly (e.g. because of unevenness in the conveyor belt or starting and stopping of production), the use of an external shaft encoder is recommended.

Preset speed

The product speed is entered in the menu "Arrangement" ([Chapter 7.1.1](#)). This mode takes no account of fluctuations in speed.

4.5.1 Installation of the External Shaft Encoder

Installation of the external shaft encoder

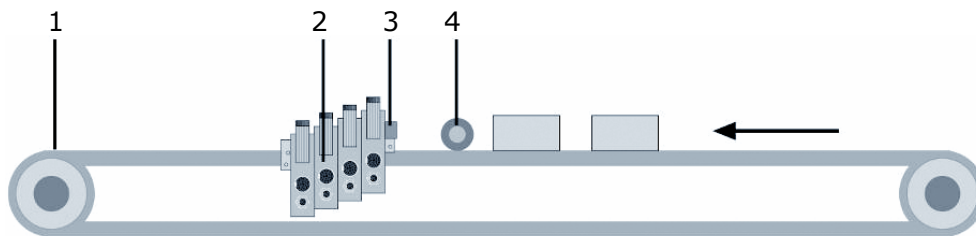


Fig. 4_45: Mounting the External Shaft Encoder

- | | | | |
|---|---------------|---|--------------------|
| 1 | Conveyor belt | 3 | Photoelectric cell |
| 2 | Printheads | 3 | Shaft encoder |

To ensure the shaft encoder transmits the actual product speed, as far as possible, the following must be considered:

- Install the shaft encoder as close to the printheads as possible (ideally in the same track).
- Use the correct measuring wheel (aluminium/rubber/plastic) in order to achieve speed measurements without slippage.



Fig. 4_46: Various Measuring Wheel Versions

➡ If you use a different shaft encoder, please refer to [Chapter 7.1.1.2, "Shaft Encoder"](#).

For optimum contact between the shaft encoder and the conveyor belt, a resilient shaft encoder mount can be used (optional). This mount enables the position and pressing pressure to be adjusted.

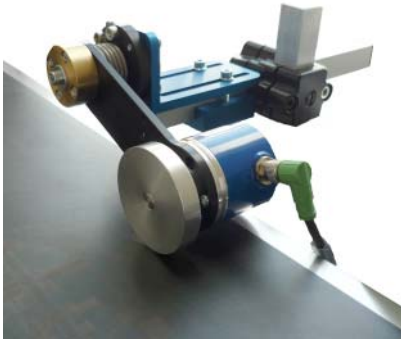


Fig. 4_47: Resilient Shaft Encoder Mount



NOTE

Ideally you should avoid mounting the shaft encoder on the belt shaft or on the underside of the conveyor belt. The speeds can well be different here.

Installation by means of the mounting system

4.6 Installation with the Mounting System (Optional)



The mounting system allows fast and simple printhead mounting.

Fig. 4_48: Mounting System for 1-Head Mounting of a Blue Printhead



Suitable for the mounting system for multi-head mounting (all printhead versions). The adjusting unit allows the printheads to be finely adjusted for perfect print images.

Fig. 4_49: Adjusting Unit for Multi-Head Mounting



The mounting adapter for assembly of a red, green or golden printhead is available in lengths of 400/600mm.

Fig. 4_50: Mounting Adapter for Green, Red and Gold Colored Printheads



The mounting adapter for assembly of a golden printhead is available in a length of 400mm.

Fig. 4_51: Mounting Adapter for Gold Colored Printheads



Printing from above



Printing from the side

Fig. 4_52: Example with Reference to 1-Head Mounting (using a 1-Head Mounting System)



The stainless steel design of the mounting system is especially well suited for the pharmaceutical, medical and food industry. The mounting adapter for assembly of a red or green printhead is available in a length of 200mm.

Fig. 4_53: Stainless Steel Mounting System for the Red and Green Printhead



The mounting adapter for assembly of a blue printhead is available in a length of 200mm.

*Installation by
means of the
mounting
system*

Fig. 4_54: Stainless Steel Mounting Adapter for the Blue Printhead



The mounting adapter for assembly of a golden printhead is available in a length of 200mm.

Fig. 4_55: Stainless Steel Mounting Adapter for the Golden Printhead

4.7 Installation by Means of the Parallelogram (Optional)

Installation by means of the parallelogram

Many products and packaging materials (e.g. wrapping) are slightly uneven/cambered or are transported on the conveyor belt in a range of different positions.

In these cases the parallelogram with measuring wheel or deflector described under accessories ([Chapter 14](#)) should be used. This is to ensure a constant optimum print result for such applications.

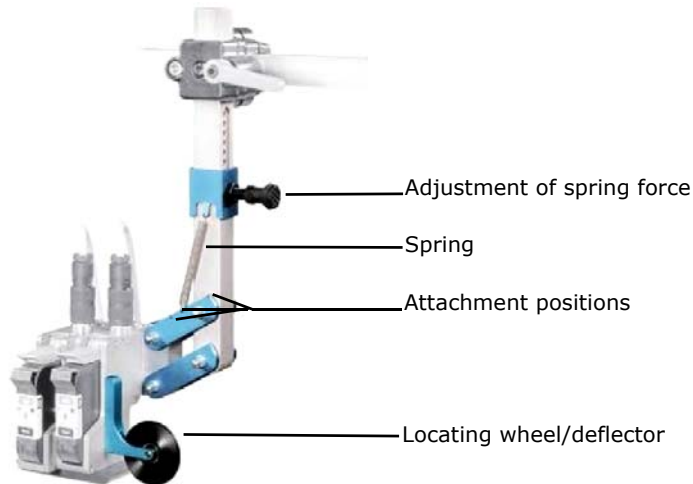


Fig. 4_56: Parallelogram

It is suitable for side- or top-mounting. The maximum deflection is 90mm, measured from the rest position.

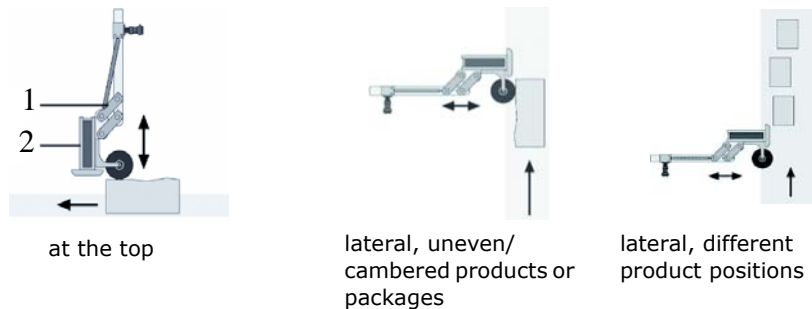


Fig. 4_57: Possible Positions of the Parallelogram

1 Parallelogram

2 Printhead

Description of functions

The springs included in delivery have different tensile strengths. The different attachment positions are for weight compensation for 1-, 2-, 3-, and 4-head systems and for adjusting the spring force in the case of vertical printing.

The locating wheel or the deflector moves the parallelogram to the correct position and thereby facilitates initial distance compensation which goes easy on the material.

The choice between the deflector and locating wheel will depend on the specific application.

Installation by means of the parallelogram

Installation of the locating wheel (with the new sensor)

If a locating wheel is used, the new sensor has to be installed on the printhead as follows (because of its dimensions):



The locating wheel is screwed on as before with two size M3 screws (6mm long).



New spacer plate.



Fit the spacer plate.



Fasten the adapter and spacer plate (two size M3 screws, max. 15mm long).



Screw on the installation mount.



Attach and connect the sensor.

4.7.1 Connecting the Printer Components

Connecting the printer components

- ➔ Do not connect the connector cable before the printheads, controller and, if applicable, a shaft encoder have been installed on the production line.
- ➔ Identify both ends of each printhead cable using the enclosed cable markers and insert strips.
- ➔ Make sure that caps are fitted to all unused sockets on the controller. Any damage resulting from IP65 caps which are not in place will not be covered by the guarantee/ warranty.
- ➔ Check that all union nuts are securely fastened on the connectors. Otherwise there is risk of data communication errors.
- ➔ Make sure that the connector cable is laid at a sufficient distance from all sources of interference. Do not lay the cable parallel to any frequency converters or servo-motor cables.

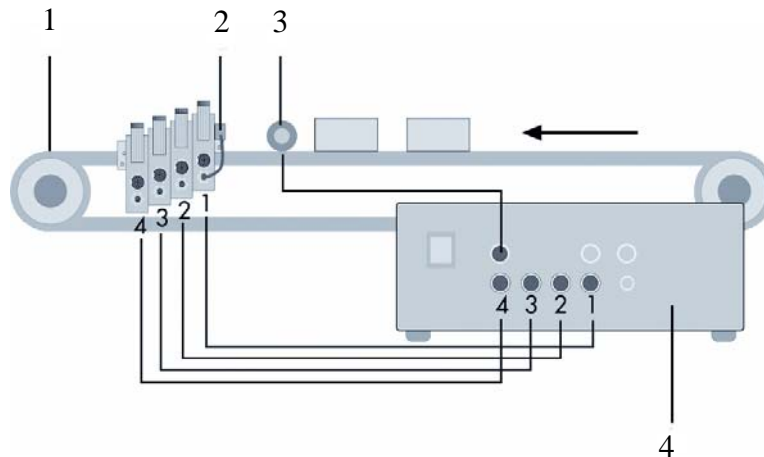


Fig. 4_58: Connect the Connector Cable from the Printhead to the Controller

- | | | | |
|---|--------------------|---|------------------------|
| 1 | Conveyor belt | 3 | Shaft encoder |
| 2 | Photoelectric cell | 4 | Back of the controller |



ATTENTION

The device must be switched off when the printheads are being installed. For further information on the positions of the printheads, please refer to [Chapter 4.3.1](#).

The following applies in general: The device must always be switched off before you undertake any work of connecting or disconnecting.

5 Operation









Controller can be operated directly at the controller UI or remotely via the webserver.








5.1 Control Panel

Control panel



Fig. 5_59: Control Panel

Button	Function
	Return to higher-level menu
	Delete
	Activates controller of the m610 advanced. "Prep" (Prepare) appears top right in the display and then green "OK".
	m610 advanced controller is deactivated. "Stop" (red) appears top right in the display.
	Switches between upper case and lower case.
	Caps lock key, upper case.
	S1 selector key to activate the special characters and the function key for the hotkeys (see page 14).
	Space key, Refresh/regeneration of the screen display.

Button	Function
	S2 selector key to activate the special characters. This has to be pressed simultaneously with a special character key.
	Tab key, Toggle between edit screens.
	Insert, generates a free space
	Enter/entry confirmation
	Delete, Backspace
	System control is mainly via function keys F1 to F12.
	Arrow keys for navigating in the individual menu displays.

Tab. 5_3: Key Assignment - Overview

5.2 Switching the System ON

The controller is switched on with the master switch at the back of the controller. (If the LED fails to light up, this means that the main fuse is faulty or there is no voltage.)

Switching the system ON

During booting, the following information appears on the display:



Fig. 5_60: Display while Booting

The following menu appears after booting has been completed:

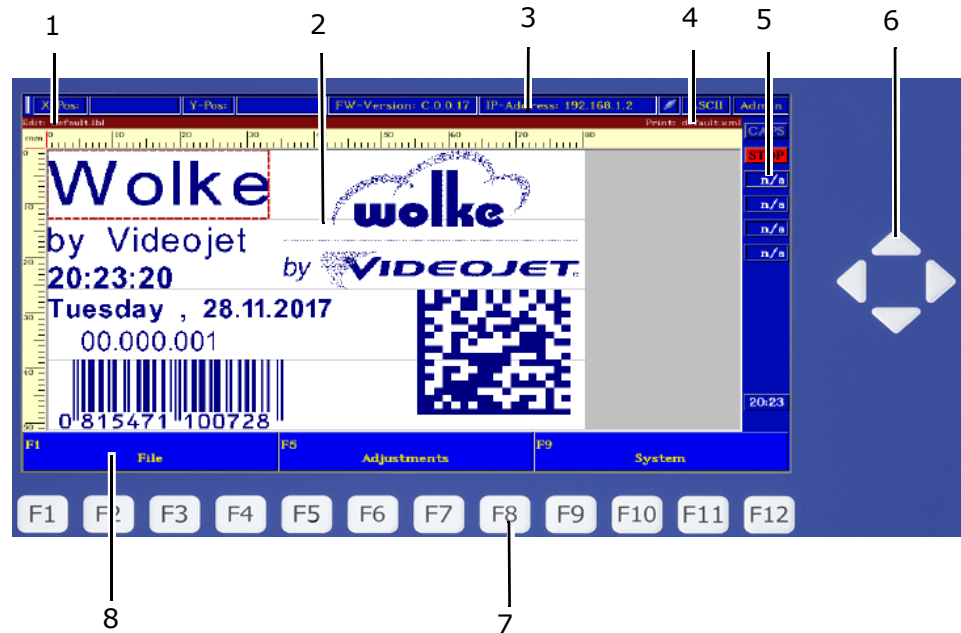


Fig. 5_61: Control Panel - Operator Control and Indications

- | | |
|-------------------------|-----------------|
| 1 Status - Edit memory | 5 Ink levels |
| 2 Display | 6 Arrow keys |
| 3 Information Bar | 7 Function keys |
| 4 Status - Print memory | 8 Menu bar |

5.3 Screen Displays

5.3.1 Information Bar

Information bar

The information bar on the top of the display provides the information about X-position/Y-position, firmware version, IP address, label mode and logged in user group.



Fig. 5_62: Information Bar

X-Pos/Y-Pos

The X and Y positions displays the coordinates for the selected field in the label. If no value appears next to X-Pos/Y-Pos, the field of the label is not selected.

FW-Version

The firmware version on the information bar displays the current software version of the m610 advanced.

IP-Address

The IP-Address on the information bar displays the current IP address or gateway IP address of the m610 advanced controller.

ASCII/UTF8

The label mode (ASCII/UTF8) for the corresponding label is displayed on the information bar.

Admin/Advanced/Normal/Operator

The logged in user group (Admin/Advanced/Normal/Operator) is displayed on the information bar.

5.3.2 Label Status

If a new, empty label is created, the top status line shows, to the right of the indication "Edit:", the text "unnamed". If the label is saved under a freely selectable name, the name of the label appears as usual.

Label status

edit: unnamed.lbl print: default.lbl

Fig. 5_63: Edit: Unnamed

Whenever a file is opened with "File/Open", the file name appears under "Edit". This label (e.g. "default") is then located in the main memory (edit memory). Whenever the system is started, the last label file to have been opened is shown in the display.

edit: default.lbl print:

Fig. 5_64: Edit File Name

If any changes were made to the file and these changes have not yet been saved, the file name is marked with a small asterisk (*).

edit: default.lbl* print:

Fig. 5_65: File Name Marked

The label name only appears in the print field after completion of the "File/Load" operation. The label shown here is located in the print memory. The m610 can only be activated via the green start key if there is a label in the print memory.

edit: default.lbl print: default

Fig. 5_66: Print "File Name"



NOTE

The edit and print memories are totally independent of one another. You can therefore edit label "A" while printing label "B" at the same time.

5.3.3 Shift Function "Shift" Key

The shift function can be locked via the "CAPS" key. If the shift function is locked, the word "CAPS" in the status column is lit in light white, otherwise it appears in dark.

Shift function



Fig. 5_67: Display with Shift Function Locked

5.3.4 Ink Levels

Ink levels

The level in the used cartridge appears on the right in the main menu of the m610 advanced and is only an approximate value (depending on ambient and working conditions).

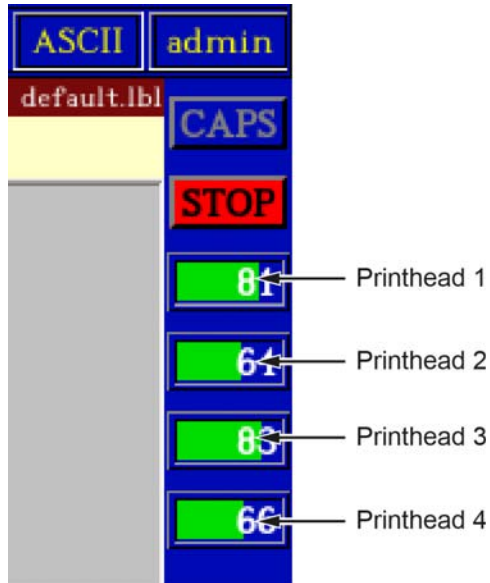
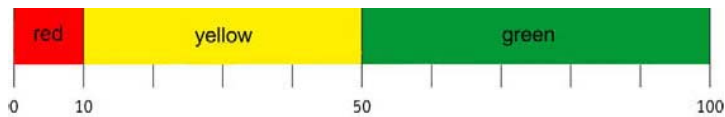


Fig. 5_68: Level of the Cartridges

The background color in the ink indicator of the m610 advanced changes according to the percentage level of ink. In the graphic level display for the cartridges in the right-hand display area, the following applies:

- The color change from "green" to "yellow" is effected at 49%.
- The color change from "yellow" to "red" is effected as soon as the alarm activation level is no longer reached (see Chapter 7.1.3).



change of colour green > yellow at 49%, change of colour yellow > red if alarm activation level is set to < 10%

Fig. 5_69: Example Level Indication

5.3.5 Time

The current time of the real-time clock installed in the m610 advanced is displayed at the bottom of the status column. This time is used when printing date and time fields and to process the next print data after each printing operation.

Time

When the unit is switched OFF, the clock is supplied by a lithium battery. The battery's service life is extended by switching the unit ON, as in this case the power supply unit ensures power supply during operation. If the unit is not used, the clock runs approx. for 5 years in battery mode. For the time change to summer time, the display appears in light blue; for the time change to winter time, it appears in dark blue.

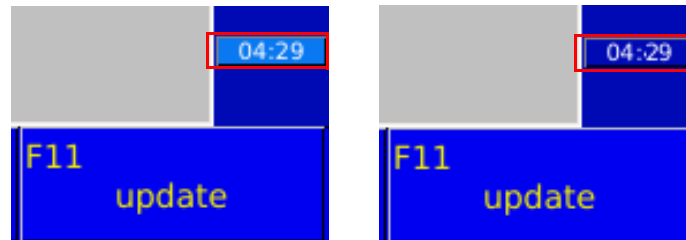


Fig. 5_70: System Time Indication Summer Time (Left-Hand) and Winter Time

5.3.6 Rulers

Rulers are located on top and at the left side of the screen; they feature millimeter scales.

Rulers

The values for X appear horizontally, starting on the left from 0 towards the right in ascending order and the values for Y vertically, starting on top from 0 downwards in ascending order; these can be specified for positioning of the fields. Scaling adapts automatically to the enlargement factor. Here appear the position of the fields used and the label length.

5.3.7 View of Print and Edit Memory

*Print and
edit memory
display*

For viewing the edit memory contents, the menu bar appears in blue. When loading the label into the print memory, the view changes over to print memory display. The colour of the memory bar changes over from blue to green.



Fig. 5_71: Screen Display, Edit Memory



Fig. 5_72: Screen Display, Print Memory

5.4 Keyboard

The keyboard is a glued-on membrane keyboard which enquires all keys sequentially at intervals of 60 milli seconds. This means that key actuation may not be recognized if the key is pressed at intervals of less than 60msec, as thus, the key has been actuated and released precisely between two queries.

Keyboard

5.4.1 Upsizing/Downsizing of the View

The size of the screen display can be varied. To this effect, hold the S1 key on the left of the "Space" button while pressing one of the arrow keys on the right next to the display.

*Upsize/
downsize
screen
display*

The arrow keys are assigned as follows:

-  +  = Upsize, large step
-  +  = Upsize, small step
-  +  = Downsize, large step
-  +  = Downsize, small step









5.4.2 Scrolling

The position of the screen display can be varied if upsizing has been selected which does not permit complete representation of the label. To ensure all areas can be viewed, the label can be moved up and down, to and fro on the screen.

Scrolling

To this effect, hold the S2 key to the right of the "Space" button while pressing one of the arrow keys to the right of the display.

The arrow keys are assigned as follows:

-  +  = Screen rolls down, large step
-  +  = Screen rolls to the left, small step, right-hand screen area is made visible
-  +  = Screen rolls up, large step
-  +  = Screen rolls to the right, small step, left-hand screen area is made visible

5.4.3 Keyboard Lock

Keyboard lock

The keyboard can be locked and unlocked. The "Start" and the "Stop" key remain active even if the keyboard is locked.

To activate the key lock, the "Green" key and the "Shift" key must be held pressed while pressing the "ESC" key. The message "Keyboard locked" appears in the footer of the display.

Whenever the shortcut is actuated, the locking state changes.




 +
  +
 
 Lock or unlock keyboard (if the keyboard is locked the "START" and "STOP" keys and the contrast setting function remain active)



Fig. 5_73: Message "Keyboard locked"




5.4.4 Restart of the m610 advanced

Restart of the m610 advanced

The m610 advanced can be restarted via the keyboard without actuating the power switch. This is convenient if the power switch is not accessible at all or only with difficulties, for ex. as the system has been integrated completely into a plant.

To restart, hold the "Red" and the "Shift" key pressed while pressing one of the "Tab" keys.

The m610 advanced performs a restart. Information which is not saved will be lost.

 +
  +
  = Restart of the m610 advanced

5.5 Overview of the Menu Structures

For orientation purposes, all menu structures are shown below. Hotkeys are available for the most important menu items, see [Chapter 5.6](#).

Overview of the menu structures

5.5.1 File/Edit

File/Edit

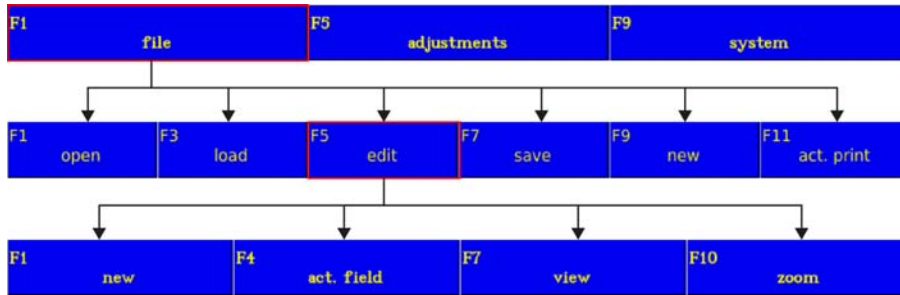


Fig. 5_74: Menu File > Edit

5.5.2 File/Edit/New/Barcode

*File/Edit/New/
Barcode*

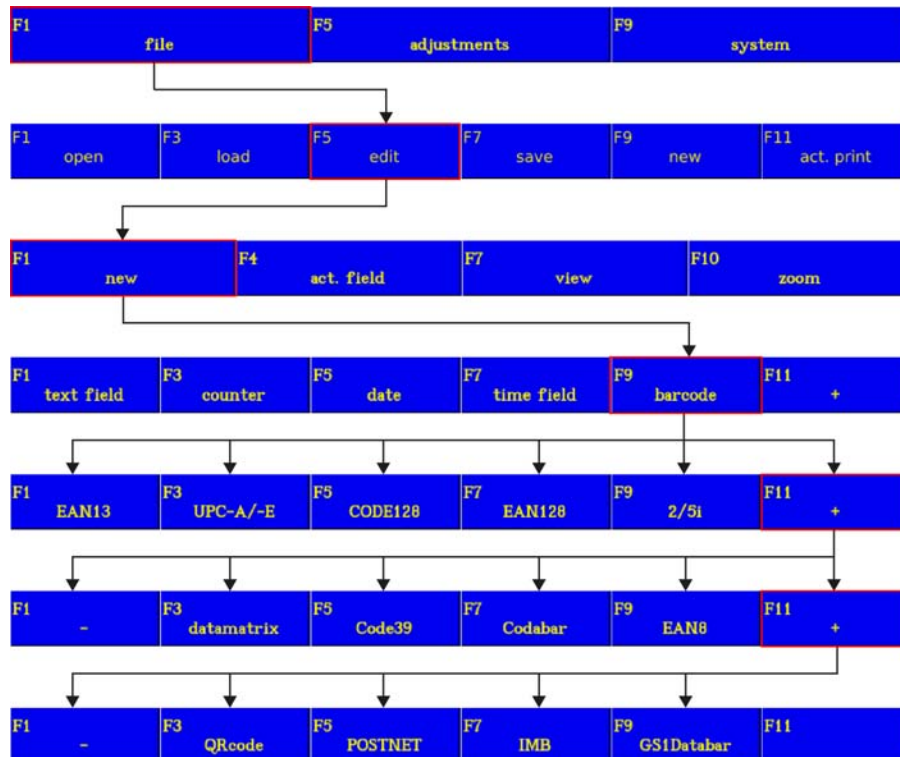


Fig. 5_75: Menu New > Barcode

5.5.3 File/Edit/New/Time field

*File/Edit/New/
Time field*

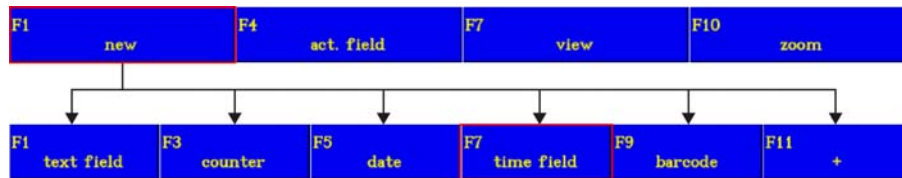


Fig. 5_76: Menu New > Time Field

5.5.4 File/Edit/Act. field/Scroll

*File/Edit/Act.
field/Scroll*

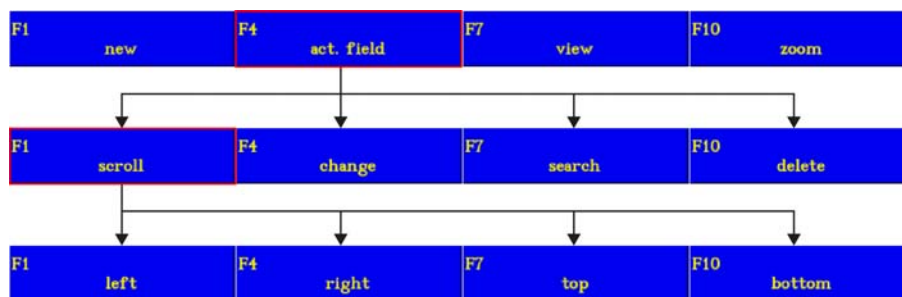


Fig. 5_77: Menu File > Edit > Act. Field

5.5.5 File/Edit/View

File/Edit/View



Fig. 5_78: Menu File > Edit > View

5.5.6 File/Edit/Zoom

File/Edit/Zoom

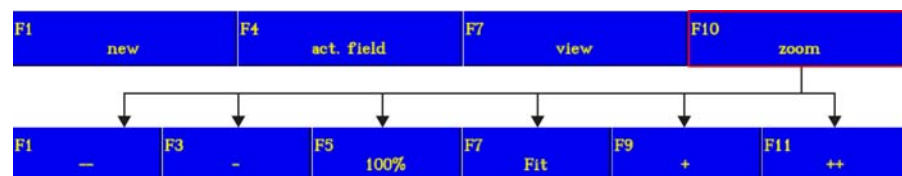


Fig. 5_79: Menu File > Edit > Zoom

5.5.7 File/Act. Print

File/Act. print

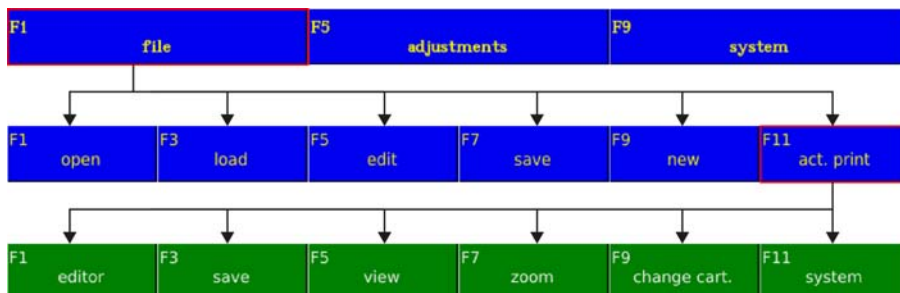


Fig. 5_80: Menu File > Act. Print



NOTE

You can only exit the "Act. Print" menu with "F1 - Editor".

5.5.8 Adjustments

Adjustments

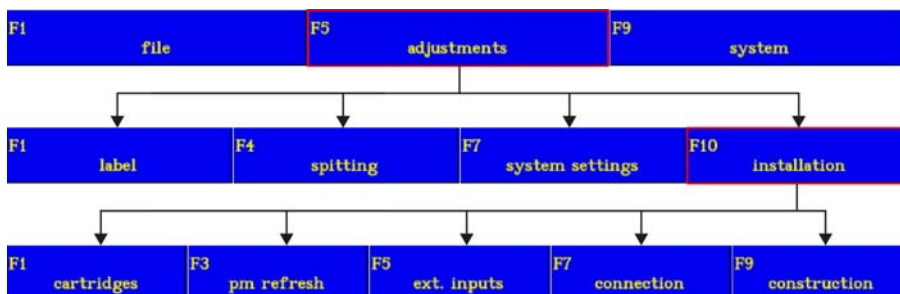


Fig. 5_81: Menu Adjustments > Installation

5.5.9 System/Diagnosis

*System/
Diagnosis*

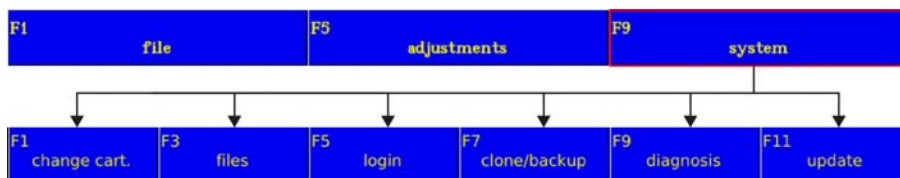





















Fig. 5_82: Menu System > Diagnosis

5.6 Hotkeys

Hotkeys

Pressing the following keys simultaneously (S1 + letter) takes you directly to the menu fields you require:

Hotkeys	Function	Available in print mode
 + O = Open	File/Open	
 + L = Load	File/Load	
 + E = Edit	File/Edit/Act. field/Change	
 + X = Delete	File/Edit/Act. field/Delete	
 + S = Save	File/Save	X
 + P = Parameter	Adjustments/Label	
 + F = Spitting	Adjustments/Spitting	
 + T = Time & Date	Adjustments/ System settings/ System Time	
 + M = Monitor "Screen Saver Function"	Adjustments/ System Parameters/ System Monitor	X
 + Y = Inktype	Adjustments/Installation/ Cartridges/Ink Type	
 + R = Print memory Refresh	Adjustments/Installation/ pm refresh	
 + I = I/O	Adjustments/Installation/ Ext. inputs	X
 + N = Network (Connection establishment)	Adjustments/Installation/ Connection	
 + A = Arrangement	Adjustments/Installation/ Construction	
 + C = Cartridge	System/Change cartridge	X
 + U = User	System/Login	X
 + D = Diagnosis	System/Diagnosis	X
 + Shift + esc = Keyboard lock		
 + Shift + tab = Restart of the m610 advanced		

Tab. 5_4: Hotkeys – Overview



NOTE

- In print mode (green menu bar instead of blue) the only hotkeys available are those marked with an (X) above.
- Hotkeys using S1 described in the Table 5_4, "Hotkeys – Overview" can use "Green" key in place of S1 to perform same function.
- The user rights also apply to the hotkeys.
- Two hotkeys cannot follow one immediately after the other.
- Once you exit a menu item selected by a hotkey, you return directly to the menu you started with.

5.7 Navigation within the Menu Displays

Within the menu fields there are six basic different ways of making entries:

Navigation within the menu displays

- Navigate to menu options via "Tab" key
- Fields for selecting options from popup window
- Fields for user-defined editing
- Selection lists
- Activate/deactivate selection
- Drop down lists

Navigate to menu options via "Tab" key

Fig. 5_83: System > Login

- Select the menu line with the arrow keys and the relevant function keys.
- Navigate to the required parameter/menu option via "Tab" key
- Make your desired selection or enter the required value for the parameter.
- = Cancel the entry(ies) and exit the menu

Once you have edited all your desired menu items, press the "Enter" key (= Apply entry(ies) and exit the menu).

Fields for selecting options from popup window

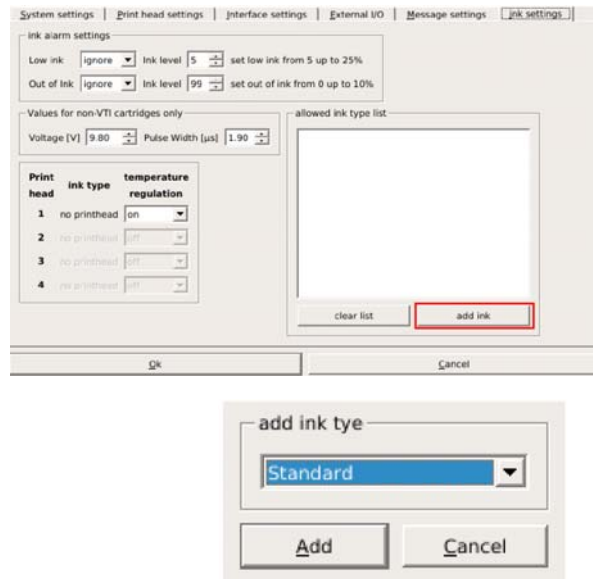




Fig. 5_84: Menu Adjustments > System Settings > Ink Settings

Navigation:

- Select the menu line with the arrow keys  and the required button.
- A pop up window appears, make your desired selection from the drop down list or enter the required text
-  = Cancel the entry(ies) and exit the menu

Once you have edited all your desired menu items, press the "Enter" key (= Apply entry(ies) and exit the menu).

Fields for user-defined editing

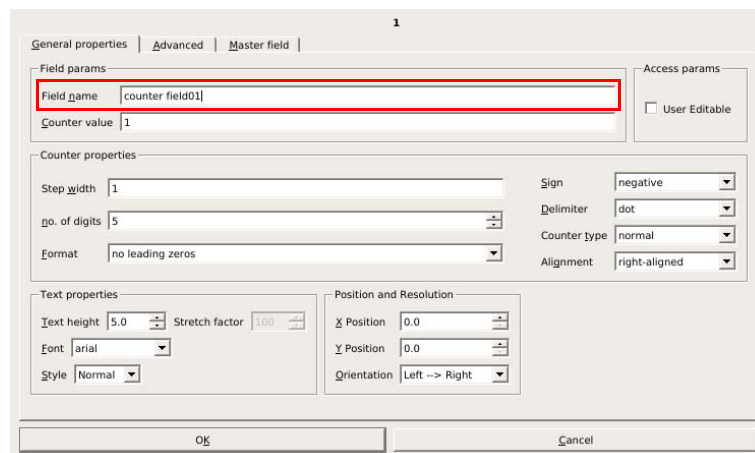





Fig. 5_85: Menu File > Edit > New > Counter: Text Input

Navigation:

- Select menu line via arrow keys 
- Enter the required text using keyboard
- Use arrow keys  to move within the text
-  = Cancel the entry(ies) and exit the menu



NOTE

The "ins" key is for inserting individual characters. This means that you do not have to re-enter the whole text if you make an error or wish to add something.

*Navigation
within the
menu displays*

Once you have edited all your desired menu items, press the "Enter" key (= Apply entry(ies) and exit the menu).

Selection lists

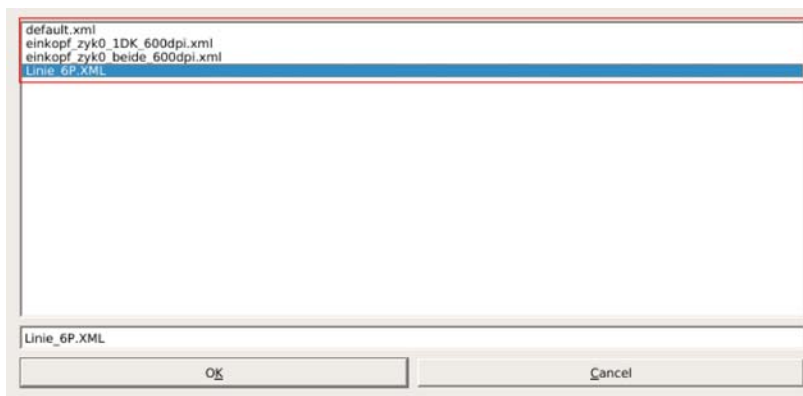





Fig. 5_86: File Open – Selection List

Navigation:



- Once you have opened the menu you can go to the list using either  or via the displayed function key "F1" in the menu bar, depending on the menu
- To move up and down in the list, use the  arrow keys
- Enter a letter in the file name text box and cursor moves to the first file name with this letter in the file list

Exit field:

-  = Confirm and apply selection made and exit the list

*Navigation
within the
menu displays*

Exit menu:

-  = Cancel the selection and exit the menu
-  = Confirm and apply selection made and exit the menu

Activation/deactivation of a selection

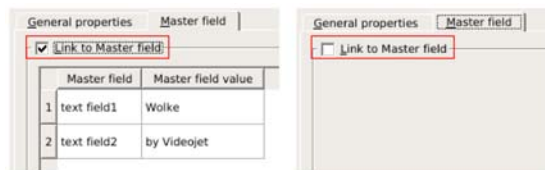






Fig. 5_87: Menu File > Edit > New > Textfield (Detail)

Navigation:

- Select the menu line with the arrow keys 
- Make your desired selection with the relevant function key. Use enter or space to toggle.
-  = Cancel the entry(ies) and exit the menu

Once you have edited all your desired menu items, press the "Enter" key (= Apply entry(ies) and exit the menu).

In the menu, the activated function appears with , the deactivated function with .

*Navigation
within the
menu displays*

Drop down lists

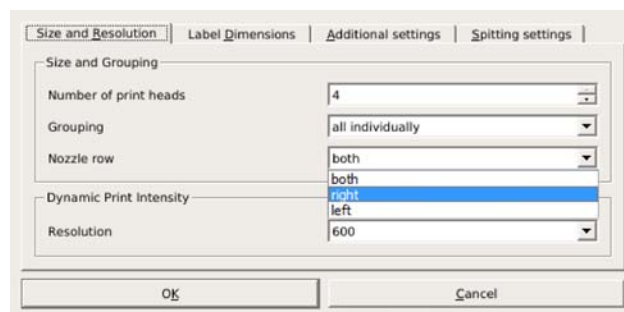




Fig. 5_88: Menu Adjustments > Label (Detail)



Navigation:

- Select menu line via "Tab" key
- To move up and down in the drop down list, use the  arrow keys.
- On the keyboard, to move up and down in the list, use either "Enter" or "Space" key
- Make your desired selection from the list

Exit field:

-  = Confirm and apply selection made and exit the list

Exit menu:

-  = Cancel the selection and exit the menu
-  = Confirm and apply selection made and exit the menu

*Navigation
within the
menu displays*

6 Commissioning using Webserver

6.1 Switch on the Controller

Do the following steps to switch on the controller and connect to the webserver:

1. Ensure that the ethernet cable is connected correctly to the m610 advanced controller.
2. Switch on master switch at the rear of the controller.

Switching the system ON

During booting, the following information appears on the display:

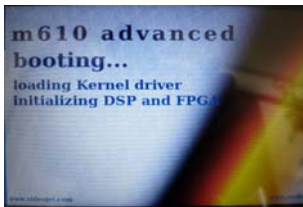


Fig. 6_89: Display while Booting



6.1.1 Connect to Webserver

3. Open web browser and type the IP address as shown in Fig. 6_89. The default IP address is set to 192.168.1.2.

Connect to webserver



NOTE

Internet Explorer (IE9 and newer), Firefox, Google Chrome, Safari can be used as the web browser. For proper operation, JavaScript must be enabled.

Now the user is connected to the m610 advanced webserver. The login page is displayed.

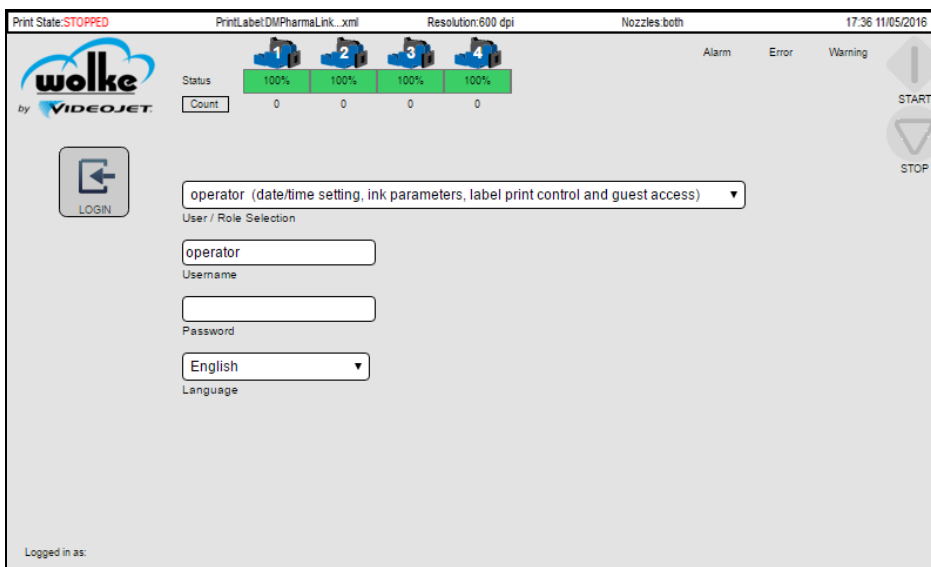


Fig. 6_90: Login Page

6.1.1.1 Language

Language

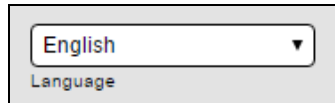


Fig. 6_91: Language Selection

The user can scroll through the list and set the language of the m610 advanced webserver.

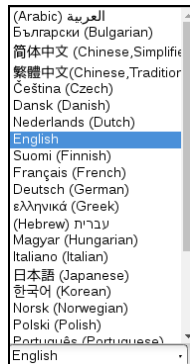


Fig. 6_92: Language List

6.1.1.2 Login

Login

The user can login as 'admin' for initial set-up.



NOTE

The password for 'admin' login is admin.

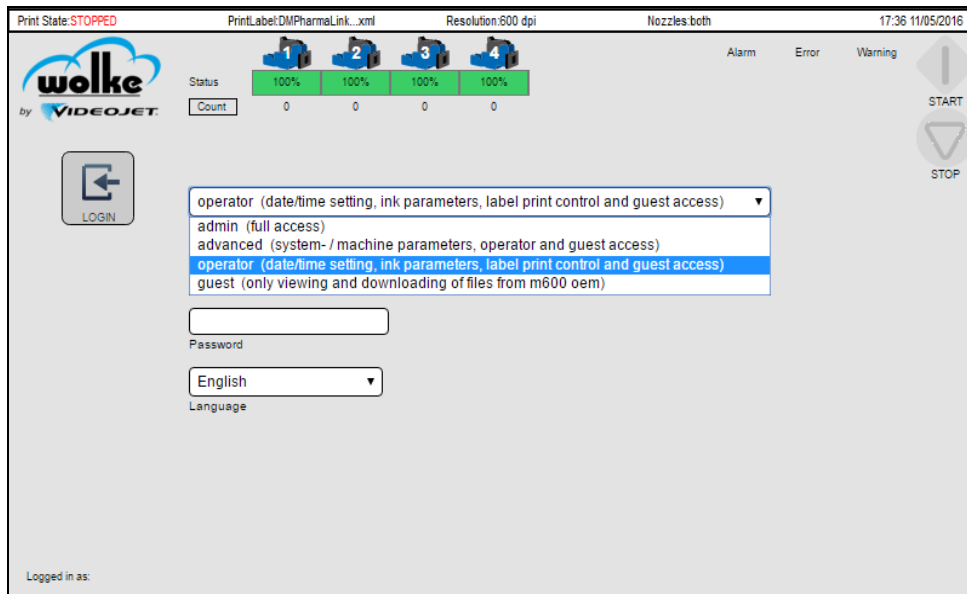


Fig. 6_93: Login Page_Admin

The Home screen is displayed. The **HOME** button allows the user to return to the Home screen from other menu screens.

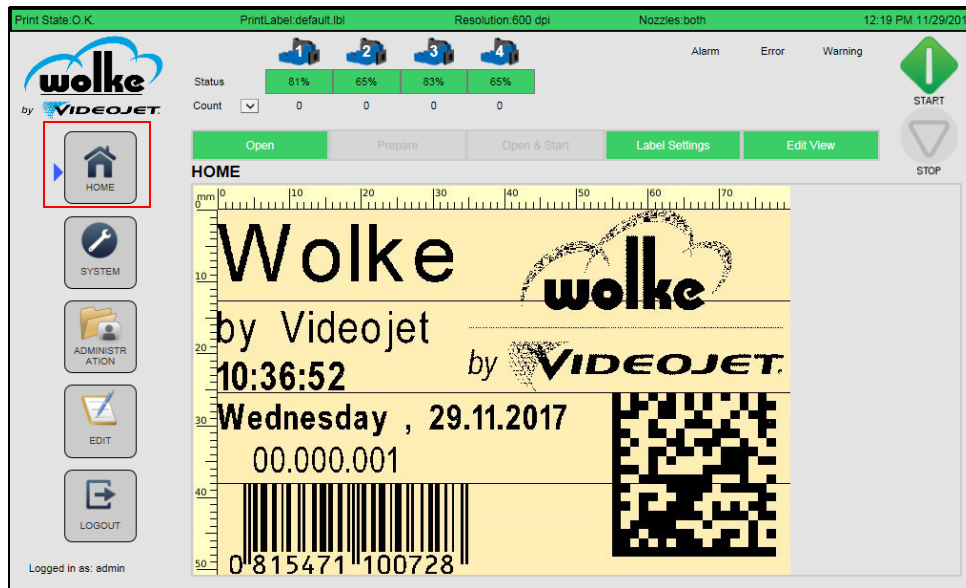


Fig. 6_94: Home Screen

6.1.1.3 Network Configuration - Configure IP Address

Navigate to **ADMINISTRATION > SYSTEM SETTING**, the **Network Parameter** page. The network parameter page allows the user to manually set the host address, net mask and gateway address to setup the network connection.

Configure IP address

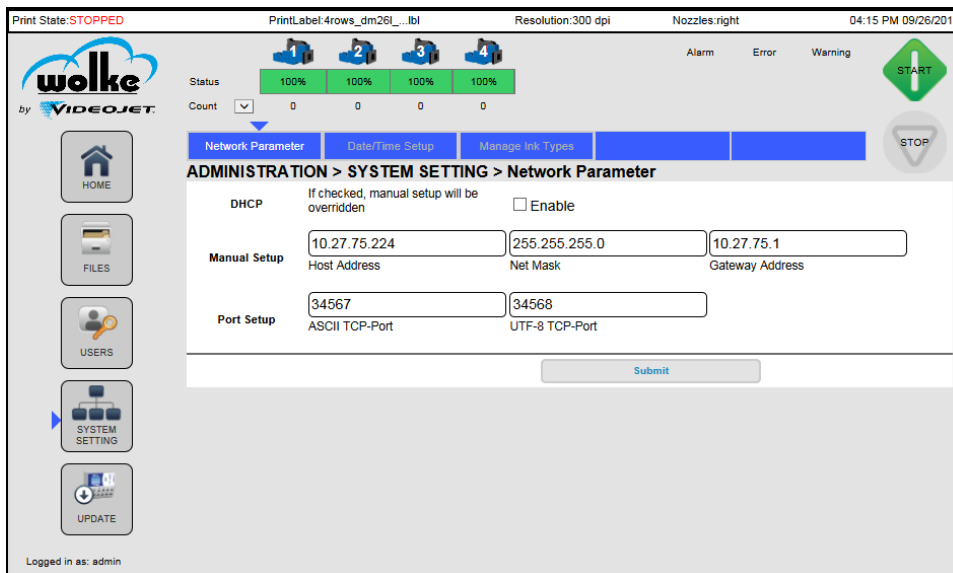


Fig. 6_95: Network Parameter Page

The unit is shipped with a static IP address as default (refer "[Connect to Webserver](#)"). The user can change the IP address either manually or automatically.

**NOTE**

The IP address can be changed automatically by enabling DHCP.

To change the static IP address, do the following steps:

Uncheck the DHCP enable check box.

NOTE: The user can automatically set the IP address by enabling the DHCP enable check box.

Set the Host address to the new IP address.

NOTE: The user can set the IP address as per their requirement.

Set the Net Mask IP to the required address.

NOTE: The default Net Mask IP is set to 255.255.255.0. Refer to "[Net Mask](#)" for more information.

Specify the Gateway Address.

Specify the ASCII TCP port number.

Specify the UTF8 TCP port number.

Click on the **Submit** button to save the changes.

The gateway setting can be disregarded in case of a direct connection.

6.1.1.4 Network Configuration

Interface
TCP/IP Port

Fig. 6_96: Network Configuration

DHCP

If the check box is selected the manual set up will be overridden.

Host Address

Host address is the static IP address to be used in your network for the m610 advanced. The IP address to be entered here is dependent on the specific network in which the m610 advanced is to be integrated.

Net Mask

Net masks or network masks are only of relevance if your company network is subdivided into several sub-networks. If your company network is comprised of only one network you should specify the following network mask:

Address class	Address area	Network mask
class A Network	0.0.0.1-127.255.255.255	255.0.0.0
class B Network	128.0.0.1-191.255.255.255	255.255.0.0
class C Network	192.0.0.1-223.255.255.255	255.255.255.0

Tab. 6_5: Address Classes and Network Masks

If several sub-network masks are used in your company network, contact your administrator about the allocation of the sub-network mask.

Gateway Address

Gateway is for communication within your network. The gateway IP address is dependent on your company network, for example, in a Class C network your gateway IP address could be 192.168.0.1.

ASCII TCP Port

ASCII TCP Port number used is defined here, for example, 34567.

Ports 20, 21, 22 and 80 should not be used, as these are used by the FTP protocol by default.

UTF-8 TCP Port

UTF-8 TCP Port number used is defined here, for example, 34568.

Ports 20, 21, 22 and 80 should not be used, as these are used by the FTP protocol by default.

Setting up the Network Connection

If the network includes a DHCP server, a PC/laptop does not require a fixed IP address, as it is assigned automatically, in case of an emergency.

*Setting up
network
connection*

The controller comes with DHCP disabled.

Refer to "[Connect to Webserver](#)" to enable DHCP via webserver.

Once the controller is connected to a network port, the controller IP address will be enabled. Open webserver and enter IP address, UTF-8 address etc. to connect to the controller.

6.2 SYSTEM - SETTINGS

6.2.1 Machine Parameters

6.2.1.1 Number of Printheads



NOTE

The m610 advanced has maximum of four printheads.

*Number of
printheads*

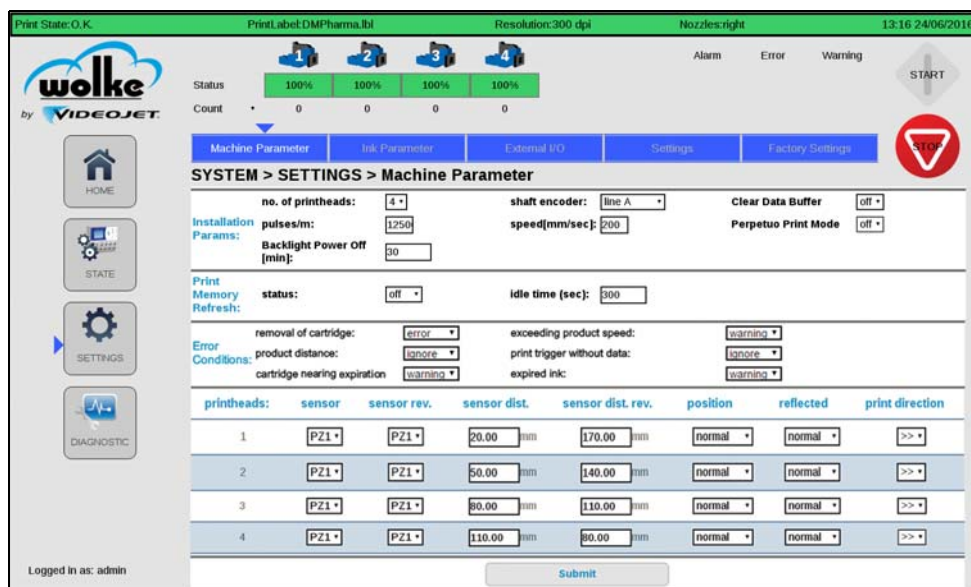
To select the number of printheads to be connected, do the following steps.

1. Click **SETTINGS** on the **SYSTEM** menu.



Fig. 6_97: Settings

2. Click **Machine Parameter**.



Print State: O.K. PrintLabel: DMPharma.tbl Resolution: 300 dpi Nozzles: right 13:16 24/06/2016

Status: 100% 100% 100% 100% Alarm Error Warning START

Count: 0 0 0 0

Machine Parameter Ink Parameter External I/O Settings Factory Settings

SYSTEM > SETTINGS > Machine Parameter

Installation Params:

- no. of printheads: 4
- pulses/m: 1250
- Backlight Power Off [min]: 30
- shaft encoder: line A
- speed(mm/sec): 200
- Clear Data Buffer: off
- Perpetuo Print Mode: off

Print Memory Refresh:

- status: off
- idle time (sec): 300

Error Conditions:

- removal of cartridge: error
- product distance: ignore
- cartridge nearing expiration: warning
- exceeding product speed: warning
- print trigger without data: ignore
- expired ink: warning

printheads	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1	PZ1	20.00	170.00	normal	normal	>>
2	PZ1	PZ1	50.00	140.00	normal	normal	>>
3	PZ1	PZ1	80.00	110.00	normal	normal	>>
4	PZ1	PZ1	110.00	80.00	normal	normal	>>

Logged in as: admin Submit

Fig. 6_98: Machine parameter

3. Click the **no. of printheads** drop-down list to select the printheads.



Fig. 6_99: No. of Printheads

The number of printheads that you select from this list has an influence on the parameter lines shown in the heads field (sensor, sensor distance, position, reflected, and the print direction).

The error conditions for removal of cartridge, product distance, exceeding product speed and print trigger without data can be set from this page.

6.2.1.2 Shaft Encoder

The shaft encoder drop-down list available on **Machine Parameter** page is for activating and deactivating the input of the external shaft encoder.

Shaft encoder

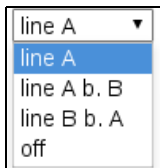


Fig. 6_100: Shaft Encoder

In order to achieve an optimum print image, as a matter of principle, we recommend that you use an external shaft encoder, especially for printing barcodes; or check if both the nozzle rows are activated.



NOTE

The supply voltage to the differential shaft encoder must be 5 V.

Shaft encoder	Description
Line A	This is the standard setting. Only track A of the shaft encoder is evaluated. With this setting, location-dependent printing is not possible.
Line A before B	For this setting, a two-track shaft encoder must be connected to the m610 advanced. Here, the preferred printing direction is determined by line A leading before line B by 90°.
Line B before A	For this setting, a two-track shaft encoder must be connected to the m610 advanced. Here, the preferred printing direction is determined by line B leading before line A by 90°.
off	No shaft encoder is connected. The system prints at a fixed speed. The speed is entered in mm/sec.

Phasing of shaft encoder Tracks A and B depending on the sense of rotation:

Shaft encoder

If the shaft encoder turns clockwise with the encoder shaft viewed from the front, line A is leading before line B by 90°.

Evaluation of both the tracks of the shaft encoder is used for location-dependent printing.



NOTE





The printing direction for bidirectional printing is detected via a signal on the external input 4.



A before B

B before A

Fig. 6_101: Phasing of Shaft Encoder Tracks A and B

Measuring wheel design		Wheel diameter	Standard values Pulses/m
	Solid aluminium, smooth (standard)	67,33 mm	11819
	Aluminium with studded rubber cover	63,66 mm	12500
	Solid aluminium with cross spokes	63,66 mm	12500
	Plastic, smooth	63,66 mm	12500

Tab. 6_6: Shaft Encoder Measuring Wheels with Dimensions

6.2.1.3 Deleting Data Buffer

The **Clear Data Buffer** option is "off" by default. You can select the "on" option, so that the data buffer of the variable fields is deleted after the controller enters the print state STOPPED.

Deleting data buffer

Clear Data Buffer

Tab. 6_7: Clear Data Buffer

6.2.1.4 Pulses/Meter

If a shaft encoder from another manufacturer is used, the **pulses/m** need to be adjusted accordingly in the menu.

Pulses/Meter

no. of printheads:

pulses/m:

Installation Params:

Fig. 6_102: Pulse/m

The following calculation formulae can be used for guidance:

I_U	= 2500 pulses per revolution
d	= Measuring wheel diameter (in mm)
I_M	= Pulses per meter
v	= Belt speed in meters per second
F_I	= Pulse frequency; max. 300.000 Hz (= 300 kHz)
π	= 3.142

Pulses per meter to be specified on the m610 advanced webserver:

$$I_M = 1000 \cdot I_U / (d \cdot \pi)$$

Maximum pulse frequency:

$$F_I = v \cdot I_M = v \cdot 1000 \cdot I_U / (d \cdot \pi)$$

It is imperative that this calculation is made if a shaft encoder from another manufacturer is used. The maximum permitted input frequency for the shaft encoder input on the m610 advanced is 300 kHz. You must not exceed this value.



ATTENTION

If the speed is not constant, it is indicated by the following:

- The print image appears compressed/stretched
- The spaces between the prints deviate from the preset values
- When printing with two nozzle rows, nozzle rows 1 and 2 are not aligned precisely (formation of shades)

In all such cases, an external shaft encoder should be installed subsequently.

6.2.1.5 Backlight Power Off

Backlight power off

The **Backlight Power Off** option is used to control the backlight of the m610 advanced controller screen. The value is measured in Minutes.

Backlight Power Off [min]:

Fig. 6_103: Backlight Power Off

6.2.1.6 Printheads

Printheads

The drop-down lists in the **Machine Parameter** window are used to specify the bidirectional settings, the position of the text, mirroring (if applicable), and the sensor distance that is communicated to the m610 advanced webserver.

Moreover, the input is selected which supplies the print trigger signal for the head in question.

printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	<input type="text" value="PZ1"/>	<input type="text" value="PZ1"/>	<input type="text" value="20.00"/> mm	<input type="text" value="170.00"/> mm	<input type="text" value="normal"/>	<input type="text" value="normal"/>	<input type="text" value="<<"/>
2	<input type="text" value="PZ1"/>	<input type="text" value="PZ1"/>	<input type="text" value="50.00"/> mm	<input type="text" value="140.00"/> mm	<input type="text" value="normal"/>	<input type="text" value="normal"/>	<input type="text" value="<<"/>
3	<input type="text" value="PZ1"/>	<input type="text" value="PZ1"/>	<input type="text" value="80.00"/> mm	<input type="text" value="110.00"/> mm	<input type="text" value="normal"/>	<input type="text" value="normal"/>	<input type="text" value="<<"/>
4	<input type="text" value="PZ1"/>	<input type="text" value="PZ1"/>	<input type="text" value="110.00"/> mm	<input type="text" value="80.00"/> mm	<input type="text" value="normal"/>	<input type="text" value="normal"/>	<input type="text" value="<<"/>

Fig. 6_104: Printheads Descriptions

Bidirectional settings

The **print direction** drop-down list provides you with the mask for the settings, contrary to the preferred direction.

Position

OFF:	Letters, normal	Text	(normal)
ON:	Letters, upside down	ⱥ	(headlong)

Reflected

OFF:	Letters, normal	Text	(normal)
ON:	Letters, mirrored	ɹǝʇ	(mirrored)

Print direction



NOTE

The conveyor runs in the opposite direction of the printing direction.

Right-hand > left-hand: Conveyor runs from left to right. (>>)

Left-hand > right-hand: Conveyor runs from right to left. (<<)

If two nozzle rows are used for printing, and a shade (letters are printed twice at an offset) of 8 mm occurs, the printing direction must be changed.

Sensor

Here, you can define the input where the trigger signal is expected for the printhead.

Sensor rev.

Here, you can define the input where the trigger signal is expected for the head in reverse direction.



NOTE

This is used for bidirectional settings.

Sensor distance

The sensor distance is the distance between the point where printing is triggered, and the first nozzle row.

Sensor distance rev.

The sensor distance reverse is the distance between the point where printing is triggered, and the first nozzle row.



NOTE

This is used for bidirectional settings.

**NOTE**

In all these descriptions, the direction information is based on the position ("normal" or "headlong") facing the nozzle plates on the cartridges.



position	reflected	print direction
normal ▾	normal ▾	>> ▾
normal ▾	normal ▾	>> ▾

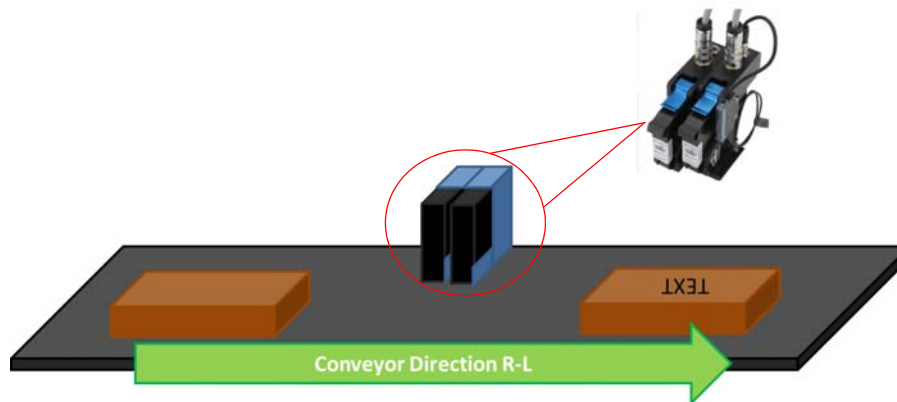


Fig. 6_105: Print Direction

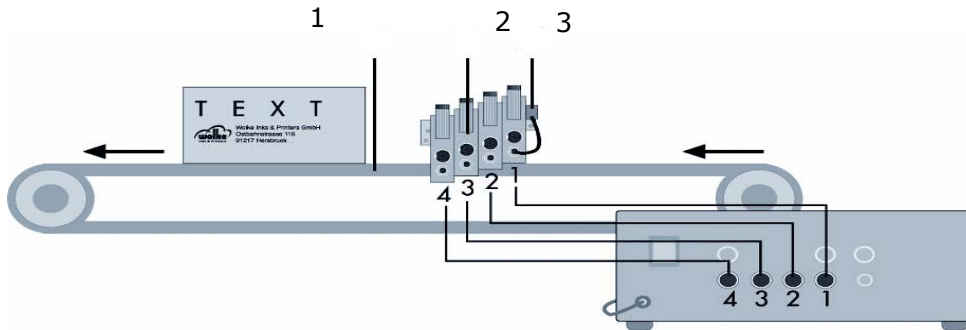
**NOTE**

Whenever the system settings are changed, the label must be reloaded.

6.2.1.7 Various System Settings

The factory setting is based on the following arrangement:

Various system settings



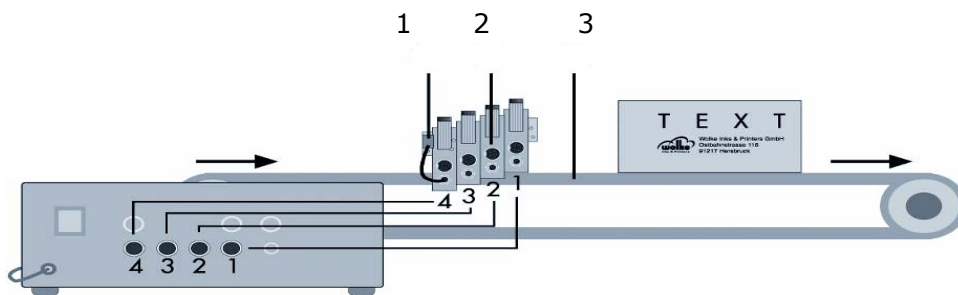
- 1 Conveyor belt
- 2 Heads
- 3 Photoelectric cell

printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1 ▾	PZ1 ▾	20.00 mm	170.00 mm	normal ▾	normal ▾	>> ▾
2	PZ1 ▾	PZ1 ▾	50.00 mm	140.00 mm	normal ▾	normal ▾	>> ▾
3	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	normal ▾	normal ▾	>> ▾
4	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	normal ▾	normal ▾	>> ▾

Fig. 6_106: Settings for Head 1-4

Alternative A: Reverse product path direction (<<)

Various system settings



- 1 Photoelectric cell
- 2 Heads
- 3 Conveyor belt

printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1 ▾	PZ1 ▾	170.00 mm	20.00 mm	normal ▾	mirrored ▾	<< ▾
2	PZ1 ▾	PZ1 ▾	140.00 mm	50.00 mm	normal ▾	mirrored ▾	<< ▾
3	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	normal ▾	mirrored ▾	<< ▾
4	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	normal ▾	mirrored ▾	<< ▾

Fig. 6_107: Settings for Head 1-4

- | printheads: | sensor | sensor rev. | sensor dist. | sensor dist. rev. | position | reflected | print direction |
|-------------|------------------|------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
| 1 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>20.00 mm</div> | <div>170.00 mm</div> | <div>headlong ▾</div> | <div>mirrored ▾</div> | <div>>> ▾</div> |
| 2 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>50.00 mm</div> | <div>140.00 mm</div> | <div>headlong ▾</div> | <div>mirrored ▾</div> | <div>>> ▾</div> |
| 3 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>80.00 mm</div> | <div>110.00 mm</div> | <div>headlong ▾</div> | <div>mirrored ▾</div> | <div>>> ▾</div> |
| 4 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>110.00 mm</div> | <div>80.00 mm</div> | <div>headlong ▾</div> | <div>mirrored ▾</div> | <div>>> ▾</div> |

- | printheads: | sensor | sensor rev. | sensor dist. | sensor dist. rev. | position | reflected | print direction |
|-------------|------------------|------------------|----------------------|----------------------|---------------------|-----------------------|-----------------------|
| 1 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>20.00 mm</div> | <div>170.00 mm</div> | <div>normal ▾</div> | <div>normal ▾</div> | <div>>> ▾</div> |
| 2 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>50.00 mm</div> | <div>140.00 mm</div> | <div>normal ▾</div> | <div>normal ▾</div> | <div>>> ▾</div> |
| 3 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>80.00 mm</div> | <div>110.00 mm</div> | <div>normal ▾</div> | <div>normal ▾</div> | <div>>> ▾</div> |
| 4 | <div>PZ1 ▾</div> | <div>PZ1 ▾</div> | <div>110.00 mm</div> | <div>80.00 mm</div> | <div>normal ▾</div> | <div>mirrored ▾</div> | <div><< ▾</div> |

m610 advanced Manual_AB
Software Version: 5.0

6.2.2 External I/O

This section allows the user to set the parameters for all input and output devices.

6.2.2.1 Inputs

In addition to the four inputs for the four photoelectric cells on the four printheads, the m610 advanced webserver also comes with four additional parameterizable digital inputs. These four inputs come out at the I/O connector.

External inputs

This menu is for assigning different functions to the inputs.

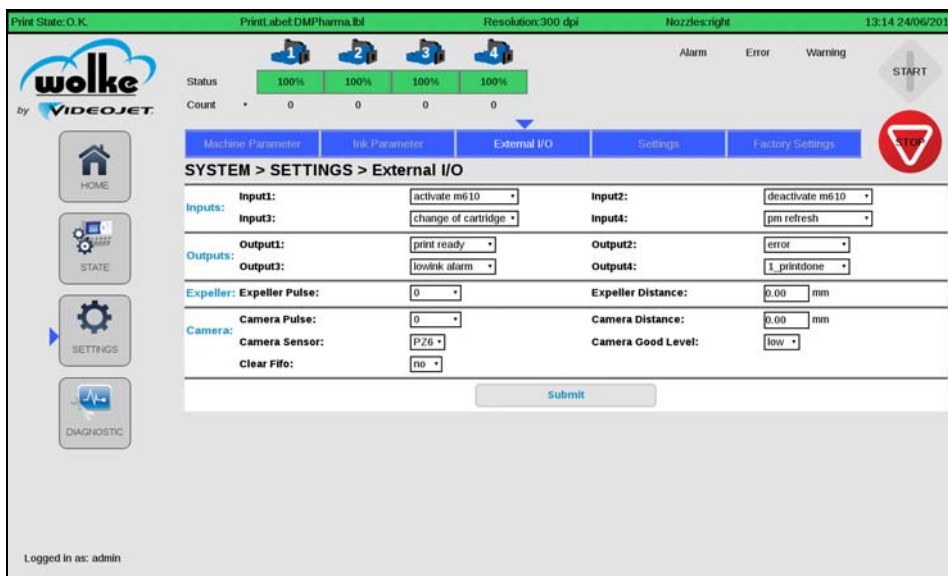


Fig. 6_110: External Inputs

Four inputs with a 24 V level are available to the m610 advanced. These are four identical inputs with different potential.

Do the following steps to change the external inputs:

1. Click **SETTINGS** on the **SYSTEM** menu (see Fig. 6_110).
2. Click **External I/O**.
3. Select the required options from the drop-down lists for **Input1**:, **Input2**:, **Input3**:, and **Input4**..

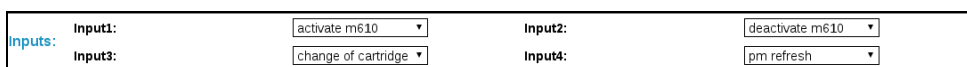


Fig. 6_111: External Inputs Drop-down Lists

External Input1, Input2, Input3, and Input4 provide the following options:

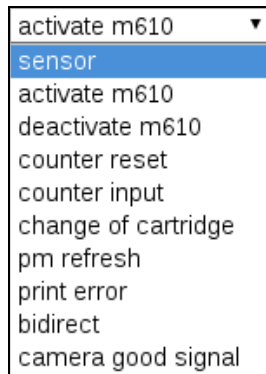


Fig. 6_112: External Inputs

Inputs	Description
Sensor	Selecting "sensor" means to evaluate the external input for the trigger signal (start signal) for printing instead of the photoelectric cell on the printhead. The m610 advanced printer reacts to the rising signal edge.
Activate m610	Selecting "activate m610" means that the input can be used to activate the m610 advanced via an external signal (for example, PLC). The function is triggered with a falling signal edge. (The print state changes to Start).
Deactivate m610	Selecting "deactivate m610" means that the input can be used to deactivate the m610 via an external signal (for example, PLC). The function is triggered with a falling signal edge. (The print state changes to Stopped).
Counter reset	Selecting "counter reset" means that a counter configured as "Update external" (pallet counter) can be reset to its counter start value via input. The m610 advanced reacts to the rising signal edge.
Counter input	Selecting "counter input" means that a counter configured as "Update external" (pallet counter) can be incremented and decremented via input by the preset step size. The m610 advanced reacts to the rising signal edge.
Change of cartridge	Selecting "change of cartridge" means that the external input can be used for replacing the cartridge directly with an external signal (example PLC), see Chapter 12, "Replacement of Cartridge" . The m610 advanced reacts to the rising signal edge and switches immediately to "Stop" mode.

Tab. 6_8: External Inputs



NOTE

Activating the "Change of cartridge" option stops an active printing operation on the m610 advanced.

Inputs	Description
Print memory refresh	<p>The input is used to update the dynamic print data when a signal is given. This is done with the aid of an additional sensor which is installed at a correspondingly large distance from the print trigger sensor. The m610 advanced reacts to the rising signal edge.</p> <p>Example: If a label is printed with a date, time, counter, and shift code field, all the data for the next print will be generated immediately after completion of the previous print. If the system stops shortly before midnight, the next print data would appear as follows, for example: 23:55 h 13 August 2006, Counter status 123456789, Shift code late shift</p> <p>If printing continues only after midnight, the date of the previous day, the time of the previous day, the shift code before a possible change of shift and a possible counter status which should have been reset at the time of the shift change, will be printed.</p> <p>This can be prevented with an additional sensor. It generates a signal which is then read only when a certain amount of time has elapsed without printing. If this signal appears, the m610 updates the data to be printed, if the line has been at a standstill for a lengthy period. This requires a certain amount of time (update process), such that the sensor for this function must be positioned a correspondingly large distance from the print sensor. An appropriate time should be set in the setting menu for print memory updating.</p> <p>If you have selected "automatic" in the setting memory during print memory updation, no additional input signal is necessary for updating the print memory.</p>
Print error	<p>If the input is switched, an error message is displayed. Moreover, output 2 is set to HIGH (error message on output 2). External "error message" is signalled via the Ethernet interface. The m610 advanced reacts to the rising signal edge.</p>
Bidirect	<p>Selecting "bidirect" means the input to control of printing directions for bidirectional printing.</p> <p>In the preferred direction, the printing direction is determined by the setting in the installation settings. If printing is required contrary to the preferred printing direction, this input must be assigned a "high" level to change over the printing direction prior to the print trigger signal, and this assignment must be maintained until the print trigger signal has been received safely.</p>
Camera good signal	<p>The input is used by the camera when a good product has been read. This input is required if an expeller is configured.</p>

Tab. 6_9: External Inputs

6.2.2.2 Outputs

Do the following steps to change the external outputs:

1. Click **SETTINGS** on the **SYSTEM** menu (see Fig. 6_110).
2. Click **External I/O**.
3. Select the required options from the drop-down lists for **Output1:**, **Output2:**, **Output3:**, and **Output4:**.

Output1:	<input type="text" value="print ready"/>	Output2:	<input type="text" value="error"/>
Output3:	<input type="text" value="lowink alarm"/>	Output4:	<input type="text" value="1_printdone"/>

Fig. 6_113: External Outputs Drop-down Lists

External Output1, Output2, Output3, and Output4 provide the following options.

External outputs

- print ready
- error
- lowink alarm
- counter alarm
- 1_printdone
- 2_printdone
- 3_printdone
- 4_printdone
- camera trigger
- expeller trigger

Fig. 6_114: External Output

External Input	Description
Print ready	This digital output signals when the m610 advanced is ready for printing.
Error	This digital output signals when the error occurred, such as no printhead mounted or no cartridge inserted.
Lowink alarm	This digital output signals when the ink level has reached the preset alarm trigger threshold.
Counter alarm	This digital output signals when the end counter value is reached, if the alarm has been activated in the relevant counter menu.
Printdone_1/2/3/4	This output signals the end of printing for head 1 (or alternatively for head 2/3/4). In this case, the end of printing means the end of the label. A falling signal edge is generated once end of printing has been reached.
Camera trigger	This digital output signals when a product is detected by the camera.
Expeller trigger	This digital output signals when a camera good signal has not been received and a product is detected for the expeller.

Tab. 6_10: External Outputs

6.2.2.3 Expeller

Expeller

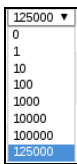

Do the following steps to change the Expeller parameters:

1. Click **SETTINGS** on the **SYSTEM** menu (see Fig. 6_110).
2. Click **External I/O**.
3. Select the required options from the drop-down lists for **Expeller Pulse:** and **Expeller Distance:**.

Expeller: Expeller Pulse: Expeller Distance: mm

Fig. 6_115: Expeller Parameters

The following table provides the various options available for each of Expeller parameters:

Expeller Parameters	Drop-down Options	Description
Expeller Pulse		Expeller pulse (μ s) can be set from the drop down range available "0" to "125000".
Expeller Distance		Expeller distance (mm) is the distance between the expeller and the printhead.

Tab. 6_11: Expeller Parameters

6.2.2.4 Camera

Camera

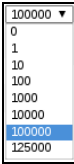

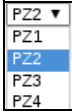


Do the following steps to change the Camera parameters:

1. Click **SETTINGS** on the **SYSTEM** menu (see Fig. 6_110).
2. Click **External I/O**.
3. Select the required options from the drop-down lists for **Camera Pulse:**, **Camera Distance:**, **Camera Sensor:**, **Clear Fifo:** and **Camera Good Level:**.

Camera: Camera Pulse: Camera Distance: mm
 Camera Sensor: Camera Good Level:
 Clear Fifo:

Fig. 6_116: Camera Parameters

The following table provides the various options available for each of Camera parameters:

Camera Parameters	Drop-down Options	Description
Camera Pulse		Camera pulse (μ s) can be set from the drop down range available "0" to "125000".
Camera Distance		Camera distance (mm) is the distance between the camera and printhead.
Camera Sensor		Camera sensor allows the user to select the printhead photocell that is used to calculate the camera distance and trigger.
Clear Fifo		First In First Out (FIFO) allows the user to organize and manipulate data buffer.
Camera Good Level		Camera good level allows the user to select either low and or high signal for the 'Camera Good' signal.

Tab. 6_12: Camera Parameters

6.2.2.5 Status Displays of the Warning Beacon

Status displays of the warning beacon

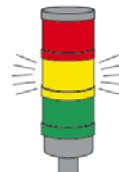
The default external outputs 1-3 are evaluated.



m610 advanced is OFF or set to "STOP"



m610 advanced ready for printing



Ink alarm



m610 advanced warning



m610 advanced error

Fig. 6_117: Various Indications of the Warning Beacon



NOTE

The beacon status can be configured by the user.

6.2.3 Cartridges

Cartridges

Do the following steps to get information about cartridges:

1. Click **SETTINGS** on the **SYSTEM** menu.

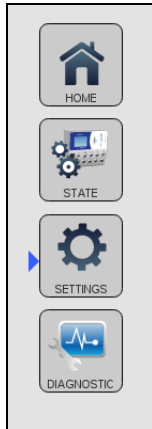


Fig. 6_118: Settings

2. Click **Ink Parameter**.

Print State: STOPPED PrintLabel: 4rows_dm26l_.lbl Resolution: 300 dpi Nozzles: right 04:29 PM 09/26/2017

Status: 100% -1% -1% -1%

Count: 0 0 0 0

Machine Parameter **Ink Parameter** External I/O Settings Factory Settings

SYSTEM > SETTINGS > Ink Parameter

Ink alarm setting: Low Ink: alarm 20% set low ink from 5 up to 25%
Out of Ink: off 10% set out of ink from 0 up to 10%

Values for NON-VTI Cartridges only: Voltage: 9.8 Pulse width: 1.9

printhead:	type	temp_reg	increase ink level
1	Premium Black (WLK60006A)	on	increase ink level
2	nonvalidated cartridge	on	increase ink level
3	no printhead	on	increase ink level
4	no printhead	on	increase ink level

Logged in as: admin

Submit

Fig. 6_119: Ink Parameter

Ink type

6.2.3.1 Ink Type

printhead:	type	temp_reg	increase ink level
1	Premium Black (WLK660068A)	<input type="checkbox"/> on	<input type="button" value="increase ink level"/>
2	non-authenticated cartridge	<input type="checkbox"/> off	<input type="button" value="increase ink level"/>
3	no printhead	<input type="checkbox"/> off	<input type="button" value="increase ink level"/>
4	no printhead	<input type="checkbox"/> off	<input type="button" value="increase ink level"/>

Fig. 6_120: Ink Type

The ink type is displayed for authenticated cartridges. The ink types appear with the article number and designation.

**NOTE**

The suitability of a certain ink cannot be precisely predicted, but must be determined by printing tests.

Contact your Wolke sales partner to do this for you.

No warranty can be assumed for the use of an ink without printing tests.

Manage Ink Types

6.2.3.2 Manage Ink Types (Allowed List)

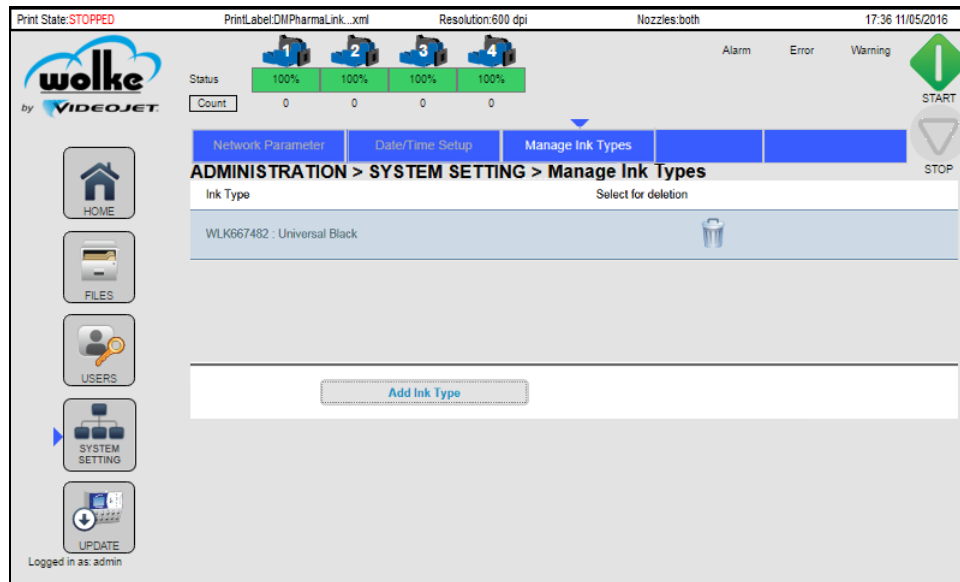


Fig. 6_121: Manage Ink Types

Do the following steps to manage the allowed ink types:

1. Click **SYSTEM SETTING** on the **ADMINISTRATION** menu.
2. Click **Manage Ink Types** (see Fig. 6_121).

- Click the **Add Ink Type** button to add an ink type. The following dialog opens:

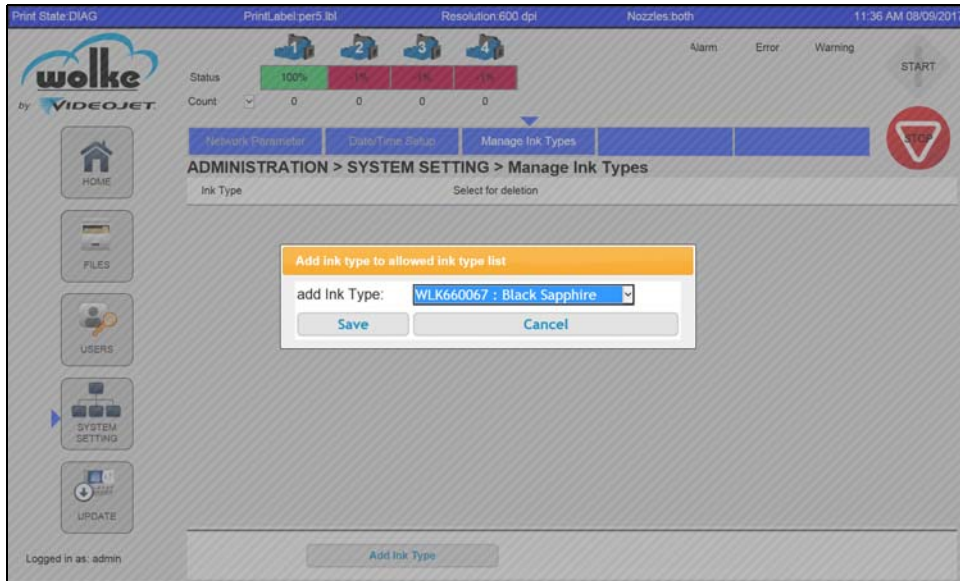


Fig. 6_122: Add Ink Type

- Select the ink type and click the **Save** button. The ink type added now appears on the ink type drop down list and **Manage Ink Types** page.



NOTE

The allowed list of ink types can be processed and deleted. To delete an allowed ink type, click on the delete icon under select for deletion option from the **Manage Ink Types** screen.



NOTE

If there are one or more inks in the allowed list, only those ink types can be used on this controller.

Temperature controlled

6.2.3.3 Temperature Controlled

temp_reg
on ▼
on ▼
on ▼
on ▼

Fig. 6_123: Temp_reg

If this function is off, the selected printhead will be operated without temperature control. If this function is on, the maximum throughput (prints per second) of the system may be impacted.

If a cartridge is removed while the m610 advanced webserver is in status OK, an error message is displayed.

The error stays in the print state until the error is removed by selecting either **Acknowledge** or **Ignore**. This removes the error and print can be resumed.

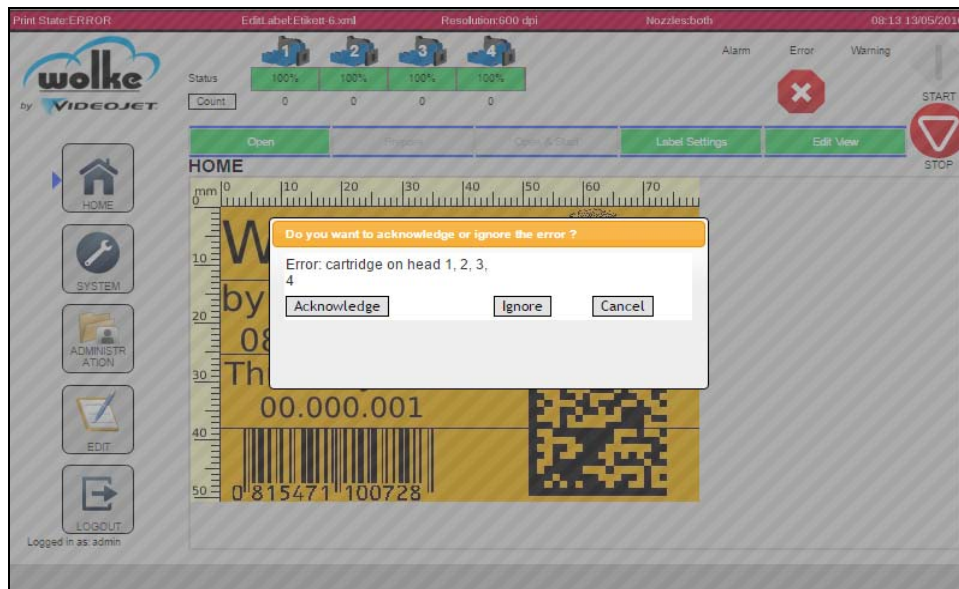


Fig. 6_124: Acknowledge or Ignore Error

Note that if the temperature control is off, neither the cartridge temperature or the number of defective nozzles can be shown in the diagnosis menu.
If a cartridge is removed during the printing operation, this is not detected either.



ATTENTION

We recommend that you consult your contact person at Wolke before deactivating the temperature control.

6.2.3.4 Increase Ink Level

For authenticated cartridges, if the ink percentage level is at or below the ink out level which is set at 0% (default), the ink level can be adjusted to remove any remaining ink from the cartridge, by selecting the **increase ink level** button. Adjust the ink level up to 5% to remove any remaining ink in the cartridge.

Increase Ink Level



NOTE

The maximum limit to adjust the ink level is 5% and depends on the type of ink used.

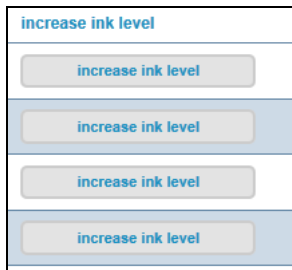
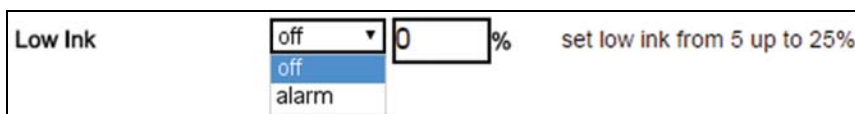


Fig. 6_125: Increase Ink Level

6.2.3.5 Low Ink and Out of Ink



Low Ink and Out of Ink

Fig. 6_126: Low Ink

It is possible to send out an alarm signal via any output on the I/O socket and to connect the signal to an alarm horn/alarm lamp.

The low ink alarm can be set on any of the configurable outputs. To enable the alarm to be triggered, select 'alarm' from the ink parameter settings and set at a value between 5 and 25%, configure the appropriate output to 'low ink alarm'.

To disable, select low ink 'off' on the ink parameter settings page.

The activation level for ink alarm can be set in the range from 25% to 5%.

Out of Ink	<div> <div>error</div> <div>off</div> <div>alarm</div> <div>error</div> </div>	<div>0</div> <div>%</div>	set out of ink from 0 up to 10%
------------	--	---------------------------	---------------------------------

Fig. 6_127: Out of Ink

The out of ink alarm can be set on any of the configurable outputs. To enable the alarm/error to be triggered, select 'alarm' or 'error' from the ink parameter settings and set at a value between 0 and 10%, configure the appropriate output to 'out of ink alarm' or 'out of ink error'.

To disable, select out of ink 'off' on the ink parameter settings page.

The activation level for out of ink alarm/error can be set in the range from 10% to 0%.

**NOTE**

The user can set the low ink and out of ink settings for authenticated cartridges only.

**NOTE**

All ink tracking functionality is available for authenticated cartridges only.

6.2.3.6 Voltage and Pulse Width

Voltage and Pulse Width

Voltage	<div>9.8</div>	Pulse width	<div>1.9</div>
---------	----------------	-------------	----------------

Fig. 6_128: Voltage and Pulse Width

The user can set the voltage and pulse width for non-authenticated cartridges.

**NOTE**

If power cycled, the voltage and pulse width settings will revert to default values.

6.3 System Settings

6.3.1 Print Memory Refresh

Do the following steps to refresh the print memory:

1. Click **SETTINGS** on the **SYSTEM** menu.

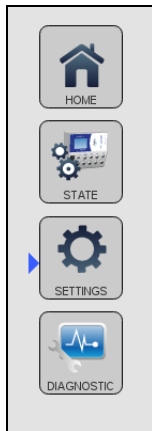


Fig. 6_129: Settings

2. Go to the **Machine Parameter**.

Print State: O.K. Print Label: DMPharma.tbl Resolution: 300 dpi Nozzles: right 13:16 24/06/2016

Status: 100% 100% 100% 100% Alarm Error Warning START

Count: 0 0 0 0

Machine Parameter Ink Parameter External I/O Settings Factory Settings

SYSTEM > SETTINGS > Machine Parameter

no. of printheads: 4 shaft encoder: line A Clear Data Buffer: off

Installation Params: pulses/m: 1250 speed(mm/sec): 200 Perpetuo Print Mode: off

Backlight Power Off [min]: 30

Print Memory Refresh: status: off idle time (sec): 300

Error Conditions: removal of cartridge: error exceeding product speed: warning

product distance: ignore print trigger without data: ignore

cartridge nearing expiration: warning expired ink: warning

printheads	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1	PZ1	20.00 mm	170.00 mm	normal	normal	>>
2	PZ1	PZ1	50.00 mm	140.00 mm	normal	normal	>>
3	PZ1	PZ1	80.00 mm	110.00 mm	normal	normal	>>
4	PZ1	PZ1	110.00 mm	80.00 mm	normal	normal	>>

Logged in as: admin Submit

Fig. 6_130: Machine Parameter

3. Click the **status** drop-down list to select the option.

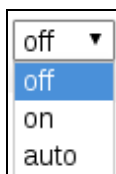


Fig. 6_131: Print Memory Status

Status	Description
Off	The print memory will not update.
On	<p>The option "on" is used to update the dynamic print data if the signal is issued. This is generally done with the aid of an additional sensor, which must be installed at a correspondingly large distance from the print trigger sensor. This additional sensor is connected to the m610 advanced via the 24 V interface.</p> <p>The print memory will be updated regularly after each print.</p> <p>For the print pause/sec to expire, a value between 0 and 999 must be entered.</p>
Auto	The print memory is updated automatically based on idle time without external sensors. A value between 0 to 999 must be entered for the print pause/sec to expire.

Tab. 6_13: Print Memory Status

**NOTE**

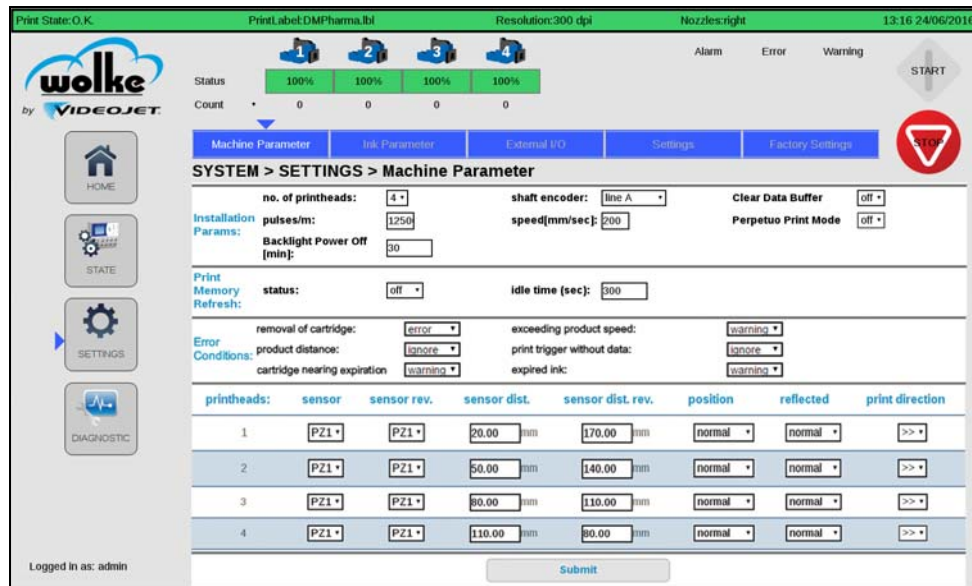
As the functions "printing cyclically, infinitely", and "updating the print" memory are mutually exclusive, it is absolutely essential to check this setting. In this case, the label is not loaded.

To eliminate this state, either "cyclically, infinitely" or "print memory refresh" must be deactivated.

6.4 Error Conditions

The m610 advanced Machine Parameter page allows user to define the error conditions by doing the following tasks:







Error conditions



The screenshot shows the 'SYSTEM > SETTINGS > Machine Parameter' page. The top status bar indicates 'Print State: O.K.', 'Print Label: DMPharma.ttl', 'Resolution: 300 dpi', 'Nozzle: right', and the date '13.16.24/06/2016'. Below this, there are four status indicators (100%) and a 'START' button. The left sidebar contains navigation icons for HOME, STATE, SETTINGS (selected), and DIAGNOSTIC. The main content area is divided into several sections: 'Installation Params' (no. of printheads: 4, pulses/m: 1250, Backlight Power Off [min]: 30), 'Print Memory Refresh' (status: off, idle time (sec): 300), and 'Error Conditions'. The 'Error Conditions' section includes settings for removal of cartridge (error), exceeding product speed (warning), print trigger without data (ignore), and cartridge nearing expiration (warning). Below these are four rows of sensor settings (1-4) with columns for printheads, sensor, sensor rev., sensor dist., sensor dist. rev., position, reflected, and print direction. A 'Submit' button is at the bottom right.

Fig. 6_132: Error Conditions

The user can set the error conditions for the following:

Error Conditions	Drop-down Options	Description
Removal of cartridge		<p>Select the error condition required for removal of cartridge.</p> <p>The user can select "ignore", "warning" or "error" from the drop-down list to notify the error during removal of cartridge.</p>
Exceeding product speed		<p>Select the error condition required for exceeding product speed.</p> <p>The user can select "ignore", "warning" or "error" from the drop-down list to notify during exceeding product speeds.</p>
Product distance		<p>Select the error condition required for product distance.</p> <p>The user can select "ignore" or "warning" from the drop-down list to set the error condition for inappropriate product distance.</p>
Print trigger without data		<p>Select the error condition required for print trigger without data.</p> <p>The user can select "ignore" or "warning" from the drop-down list to set the error condition for print trigger without any data.</p>
Cartridge nearing expiration		<p>Select the error condition required for nearly expired cartridge.</p> <p>The user can select "ignore" or "warning" from the drop-down list to set the error condition if ink is nearly expired.</p>
Expired ink		<p>Select the error condition required for print trigger without data.</p> <p>The user can select "ignore" or "warning" from the drop-down list to set the error condition if ink is expired.</p>

Tab. 6_14: Error Conditions



NOTE

Warning raises a notification on the controller but continues the print operation.

Error raises a fault notification on the controller and stops the print operation.



NOTE

Ink Expiration data is available for authenticated cartridges only.

6.5 System Date/Time

The m610 advanced Date/Time Setup allows to set the current time based on the time zone available from the drop down list.

The date and the time can be manually entered to set the system date and time.



Fig. 6_133: Date/Time Setup

Do the following steps to set the time and date:

1. Click **SYSTEM SETTING** on the **ADMINISTRATION** menu.
2. Click **Date/Time Setup** (see Fig. 6_133).
3. Click the **Time Zone** drop-down list to select the required time zone.

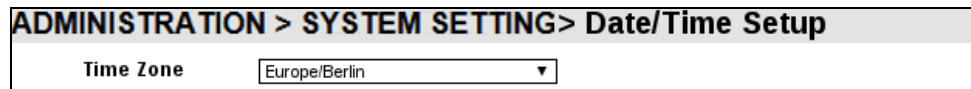


Fig. 6_134: Time Zone

4. Enter the date on the **Year/Month/Day** fields.



Fig. 6_135: Setup Time and Date

System
date/time

5. Enter the time on the **Hour/Minute/Second** fields. (see Fig. 6_135).
6. For the time and date displayed on the webserver page header, please specify the **Date Format** and the **Time Format**.

Print State: STOPPED PrintLabel: Edit.xml Resolution: 300 dpi Nozzles: left 16:27 27/04/2016

Fig. 6_136: Webserver Page Header

7. Click on the **Submit** button.

Now the printer is set to the current time and date settings.



NOTE

Set the time zone for the corresponding daylight saving. Set the time zone as UTC for no daylight saving.

6.6 System Monitor

6.6.1 Auto Log Off

The user can set the Auto Log Off settings by navigating to **ADMINISTRATION > USERS > Change Auto Log Off**.

This page allows the user to set Login Timeout in Seconds. Once the time is reached, the webserver logs off from the current User login.

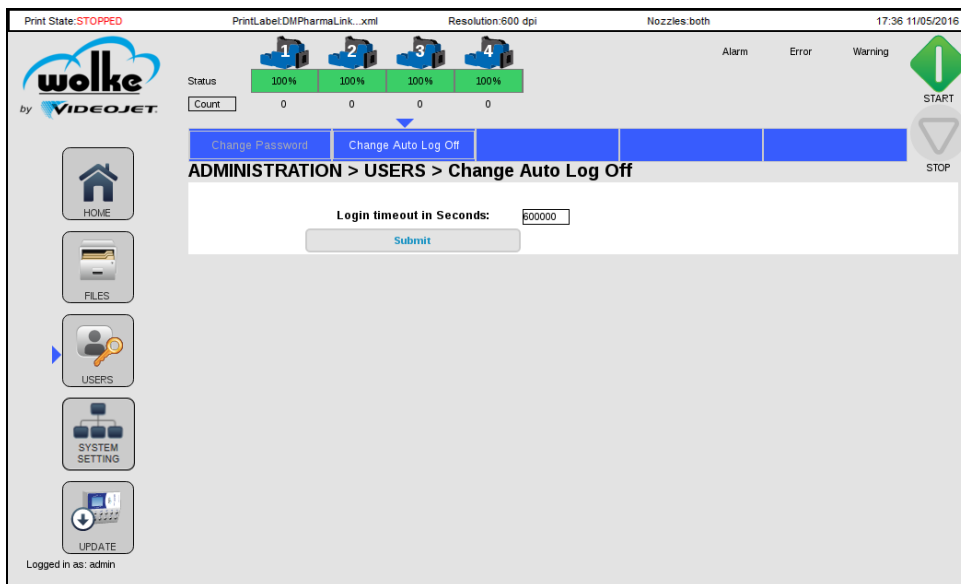


Fig. 6_137: Auto Log Off

6.6.2 Connection/Communication

6.6.2.1 USB Interface

The USB page allows the user to create a backup and clone of the controller. The controller network settings and firmware can be selected to be overwritten or retained when installing the clone.

The user can view the USB interface by navigating to **ADMINISTRATION > FILES > USB**.

The USB page also allows the backup to be restored or the clone to be installed as needed. The user will be prompted to continue when either option is selected. Fig. 6_138 displays the USB page of the m610 advanced printer.

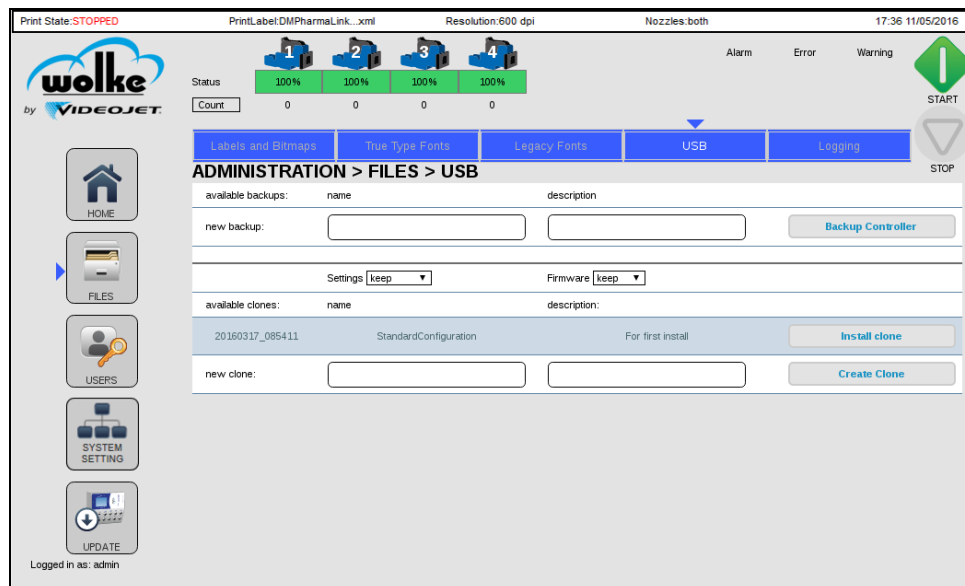


Fig. 6_138: USB Page

The page shows the following details:

- Name and description of available backups.
- Name and description of available clones.

The page allows the user to create new backups and also to create new clones.

**NOTE**

Place the update file (*.ipk), in the USB root directory, within a folder named as 'Updates'.

6.7 Factory Settings

The following parameters are reset while the factory settings are loaded:

Configuring the connection on the m610 Factory Settings

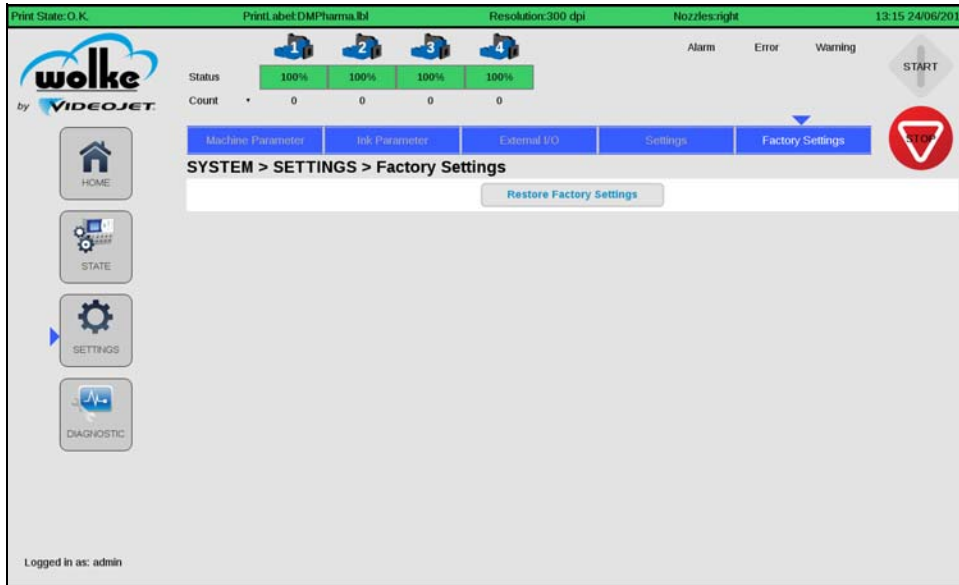


Fig. 6_139: System State

Factory settings indicate the criteria to revert back when the button is selected.

Menu	Menu item	Value (factory setting)																																								
HOME - PREPARE																																										
	First Printhead	1																																								
SYSTEM - SETTINGS - Machine Parameter																																										
Installation Params:	no. of printheads:	4 ▾																																								
	pulses/m:	12500																																								
	Backlight Power Off [min]:	30																																								
	shaft encoder:	line A ▾																																								
Print Memory Refresh:	Clear Data Buffer	off ▾																																								
	speed[mm/sec]:	200																																								
	Perpetuo Print Mode	off ▾																																								
	status:	off ▾																																								
Error Conditions:	idle time (sec):	300																																								
	removal of cartridge:	error ▾																																								
	exceeding product speed:	warning ▾																																								
	product distance:	ignore ▾																																								
	print trigger without data:	ignore ▾																																								
	cartridge nearing expiration:	ignore ▾																																								
	expired ink:	warning ▾																																								
<table><tr><th>printheads:</th><th>sensor</th><th>sensor rev.</th><th>sensor dist.</th><th>sensor dist. rev.</th><th>position</th><th>reflected</th><th>print direction</th></tr><tr><td>1</td><td>PZ1 ▾</td><td>PZ1 ▾</td><td>20.00 mm</td><td>170.00 mm</td><td>normal ▾</td><td>normal ▾</td><td>>> ▾</td></tr><tr><td>2</td><td>PZ1 ▾</td><td>PZ1 ▾</td><td>50.00 mm</td><td>140.00 mm</td><td>normal ▾</td><td>normal ▾</td><td>>> ▾</td></tr><tr><td>3</td><td>PZ1 ▾</td><td>PZ1 ▾</td><td>80.00 mm</td><td>110.00 mm</td><td>normal ▾</td><td>normal ▾</td><td>>> ▾</td></tr><tr><td>4</td><td>PZ1 ▾</td><td>PZ1 ▾</td><td>110.00 mm</td><td>80.00 mm</td><td>normal ▾</td><td>normal ▾</td><td>>> ▾</td></tr></table>			printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction	1	PZ1 ▾	PZ1 ▾	20.00 mm	170.00 mm	normal ▾	normal ▾	>> ▾	2	PZ1 ▾	PZ1 ▾	50.00 mm	140.00 mm	normal ▾	normal ▾	>> ▾	3	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	normal ▾	normal ▾	>> ▾	4	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	normal ▾	normal ▾	>> ▾
printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction																																			
1	PZ1 ▾	PZ1 ▾	20.00 mm	170.00 mm	normal ▾	normal ▾	>> ▾																																			
2	PZ1 ▾	PZ1 ▾	50.00 mm	140.00 mm	normal ▾	normal ▾	>> ▾																																			
3	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	normal ▾	normal ▾	>> ▾																																			
4	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	normal ▾	normal ▾	>> ▾																																			

Menu	Menu item	Value (factory setting)
Installation params:	no. of printheads:	4
	shaft encoder:	line A
	Clear Data Buffer:	off
	pulses/m:	12500
	speed [mm/sec]:	200
	Perpetuo Print Mode:	off
	Backlight Power Off [min]:	30
Print Memory Refresh:	status:	off
	idle time (sec):	300
Error Conditions:	removal of cartridge:	error
	exceeding product speed:	warning
	product distance:	ignore
	print trigger without data:	ignore
	cartridge nearing expiration	ignore
	expired ink	warning
printheads: 1	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	20.00
	sensor dist. rev.	170.00
	position	normal
	reflected	normal
	print direction	>>
printheads: 2	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	50.00
	sensor dist. rev.	140.00
	position	normal
	reflected	normal
	print direction	>>
printheads: 3	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	80.00
	sensor dist. rev.	110.00
	position	normal
	reflected	normal
	print direction	>>

Menu	Menu item	Value (factory setting)
printheads: 4	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	110.00
	sensor dist. rev.	80.00
	position	normal
	reflected	normal
	print direction	>>

SYSTEM - SETTINGS - Ink Parameter

Ink alarm setting:

Low Ink

off

5

%

set low ink from 5 up to 25%

Out of Ink

off

0

%

set out of ink from 0 up to 10%

Values for NON-VTI Cartridges only:

Voltage

9.8

Pulse width

1.9

printhead:	type	temp_reg	increase ink level
1	Premium Black (WLK660068A)	on	increase ink level
2	nonvalidated cartridge	on	increase ink level
3	no printhead	on	increase ink level

Submit

Ink alarm setting:	Low Ink	off
	Out of Ink	off
	%	5 (ink percentage for low ink)
	%	0 (ink percentage for out of ink)
Values for Non-Authenticated Cartridges only:	Voltage	9.8
	Pulse width	1.9
	temp_reg	on

Values for NON-VTI Cartridges only:

Voltage

9.8

Pulse width

1.9

Submit

SYSTEM - SETTINGS - External I/O		
<div> <div> Inputs: Input1: <input type="text" value="activate m610"/> Input3: <input type="text" value="change of cartridge"/> </div> <div> Input2: <input type="text" value="deactivate m610"/> Input4: <input type="text" value="pm refresh"/> </div> </div>		
<div> <div> Outputs: Output1: <input type="text" value="print ready"/> Output3: <input type="text" value="lowink alarm"/> </div> <div> Output2: <input type="text" value="error"/> Output4: <input type="text" value="1_printdone"/> </div> </div>		
<div> <div> Expeller: Expeller Pulse: <input type="text" value="0"/> Camera Pulse: <input type="text" value="0"/> Camera Sensor: <input type="text" value="PZ1"/> Clear Fifo: <input type="text" value="no"/> </div> <div> Expeller Distance: <input type="text" value="0.00"/> mm Camera Distance: <input type="text" value="0.00"/> mm Camera Good Level: <input type="text" value="low"/> </div> </div>		
Inputs:	Input1:	activate m610
	Input2:	deactivate m610
	Input3:	change of cartridge
	Input4:	pm refresh
Outputs:	Output1:	print ready
	Output2:	error
	Output3:	lowink alarm
	Output4:	1_print done
Expeller	Expeller Pulse:	0
	Expeller Distance:	0.00 mm
Camera	Camera Pulse:	0
	Camera Distance:	0.00 mm
	Camera Sensor:	PZ1
	Clear Fifo:	no
	Camera Good Level:	low
SYSTEM - SETTINGS - Settings (message)		
<div> <div> Send Method: Send periodically each <input type="text" value="off"/> Seconds Send on event change: <input type="text" value="no"/> </div> <div> Message Types: Alarm status: <input type="text" value="no"/> Buffer low: <input type="text" value="no"/> Print Status: <input type="text" value="no"/> Print Done: <input type="text" value="no"/> </div> <div> Error: <input type="text" value="no"/> Warning: <input type="text" value="no"/> Printed index: <input type="text" value="no"/> </div> </div>		
Send method:	Send periodically each:	off (Seconds)
	Send on event change:	no
Message types:	Alarm status:	no
	Error:	no
	Buffer low:	no
	Warning:	no
	Print Status:	no
	Printed index:	no
	Print Done:	no

ADMINISTRATION - SYSTEM SETTINGS - Network Parameter		
<div> <div>DHCP</div> <div>If checked, manual setup will be overridden</div> <div><input type="checkbox"/> Enable</div> </div>		
Manual Setup	192.168.1.2	255.255.255.0
	Host Address	Net Mask
	192.168.1.1	
Port Setup	34567	34568
	ASCII TCP-Port	UTF-8 TCP-Port

DHCP	Enable	Check box - unchecked
Manual Setup	Host Address	192.168.1.2*
	Net Mask	255.255.255.0*
	Gateway Address	192.168.1.1*
Port Setup	ASCII TCP-Port	34567*
	UTF-8 TCP-Port	34568*

Tab. 6_15: Parameters of Factory Setting

* Network settings will not be updated with factory reset.

6.8 System State

State

The System State page provides the status of the printer. The system state is read only page and Fig. 6_140 displays the system state of the m610 advanced printer.

The user can view the system state by navigating to **SYSTEM > STATE**.

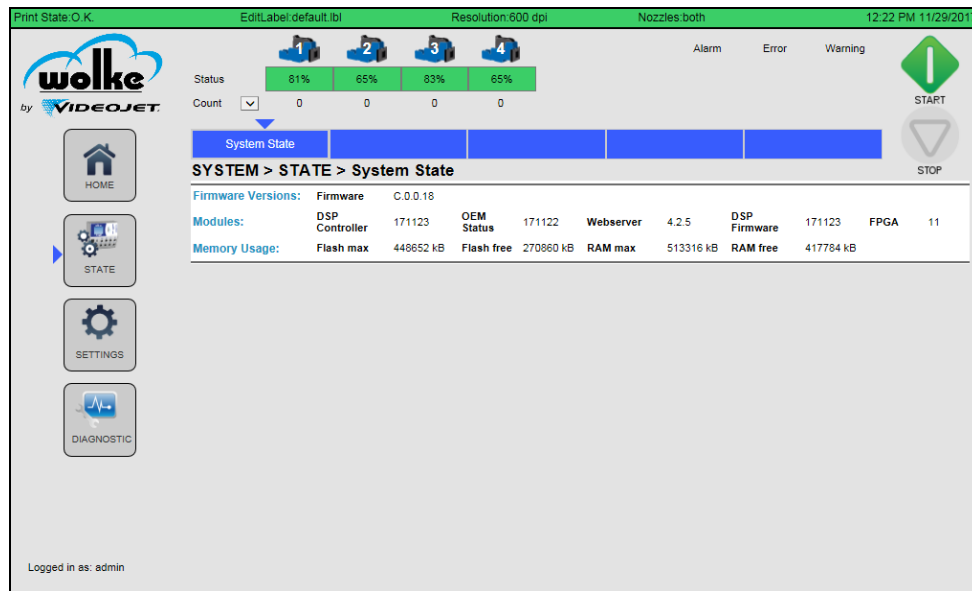


Fig. 6_140: System State

This page shows the following details:

- Firmware Versions
- Modules
- Memory Usage

6.9 Logging

Logging

The log files are created for key activities in the webserver. This will help in troubleshooting activities. The user can download, save and delete the log files as required as shown in Fig. 6_141.

The user can view the log files by navigating to **ADMINISTRATION > FILES > Logging**.

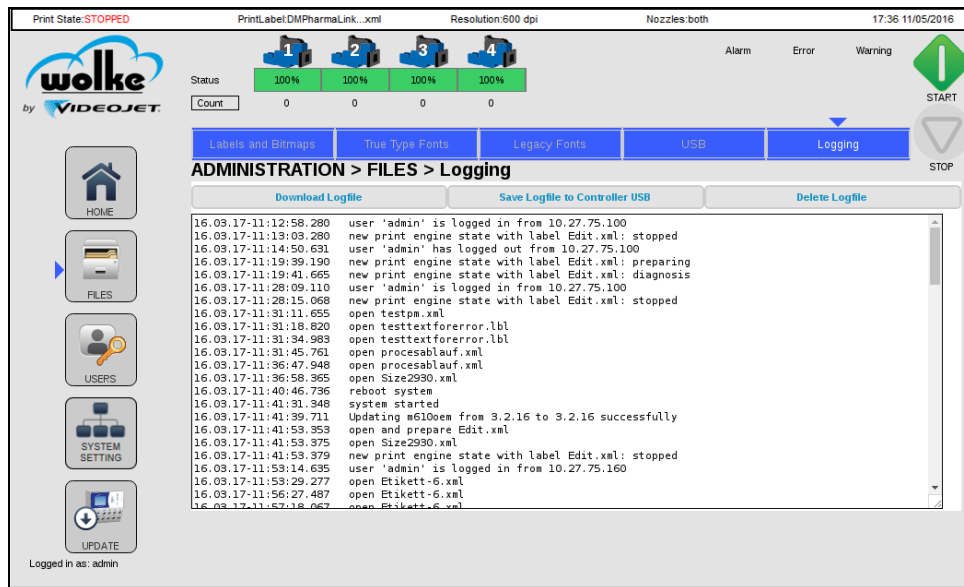


Fig. 6_141: Logging

6.10 System Update

Update

The system update provides information about the software packages installed in the system. It allows the user to update the allowable package by selecting the updated file as shown in Fig. 6_142.

The user can update the packages by navigating to **ADMINISTRATION > UPDATE**.



NOTE

Admin user access is required to update the installed packages.

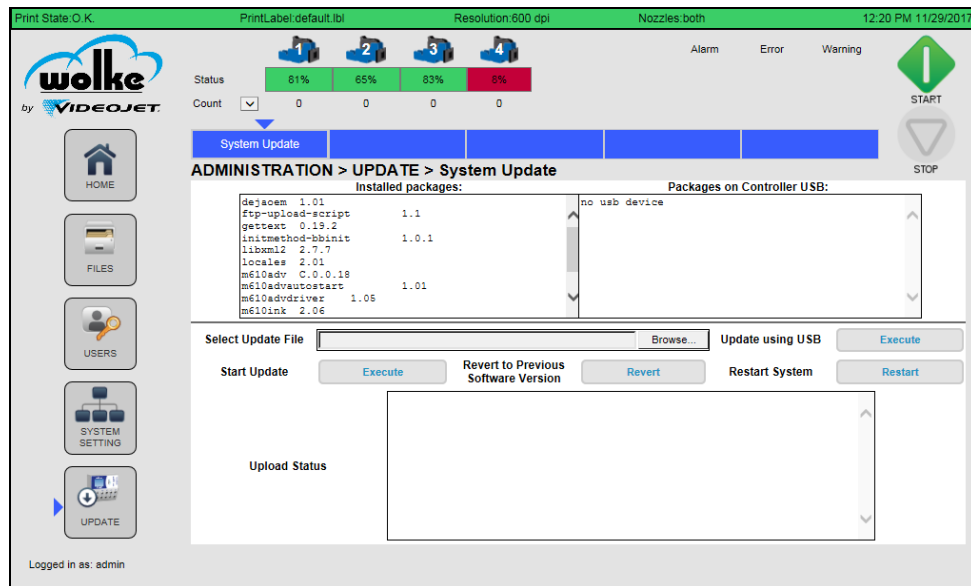


Fig. 6_142: System Update

The system update can be done in two ways:

- Through controller USB
- Through PC

Do the following steps to update the system:

1. Login to the m610 advanced webserver as admin.
2. Navigate to **ADMINISTRATION > UPDATE**.

3. Do the following steps to update via controller USB

a.) Place the update file on the USB.



NOTE

Place the required update file (*.ipk), in the USB root directory, within a folder named as 'Updates'.

b.) Insert the USB in the USB terminal of the controller.

c.) The available software file(s) is visible under 'Packages on Controller USB' window.

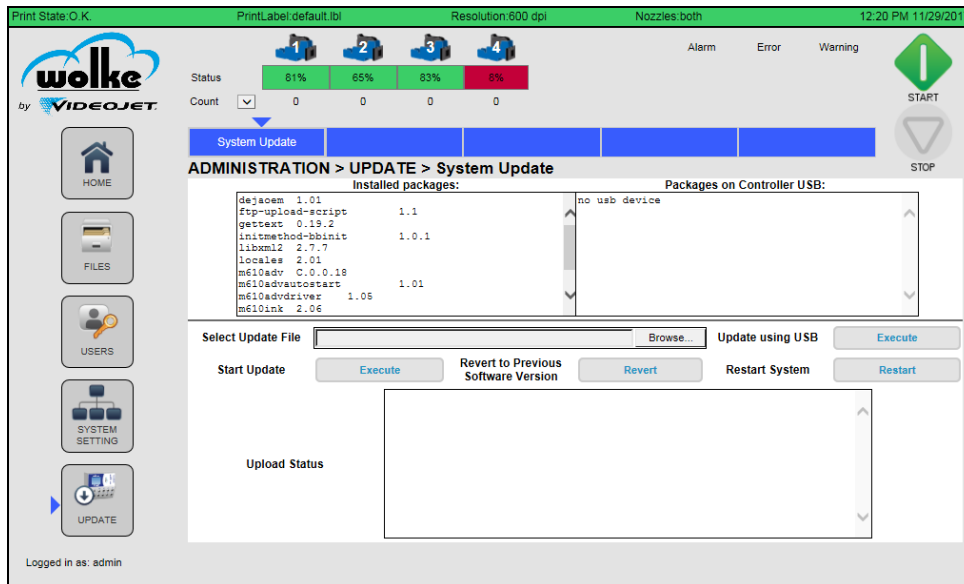


Fig. 6_143: System Update via USB

d.) Click on **Execute** in 'Update using USB' to upload the update files.

3. Do the following steps to update via PC

a.) Click on **Browse** in 'Select Update File' to locate the required update files from your PC.

b.) Click on **Execute** in 'Start Update' to upload the selected files.

4. Once the software is ready for controller update, the user is prompted to continue with a system restart.
 Select **OK** to restart and update the controller installed packages. Select **Cancel** to continue with current settings.

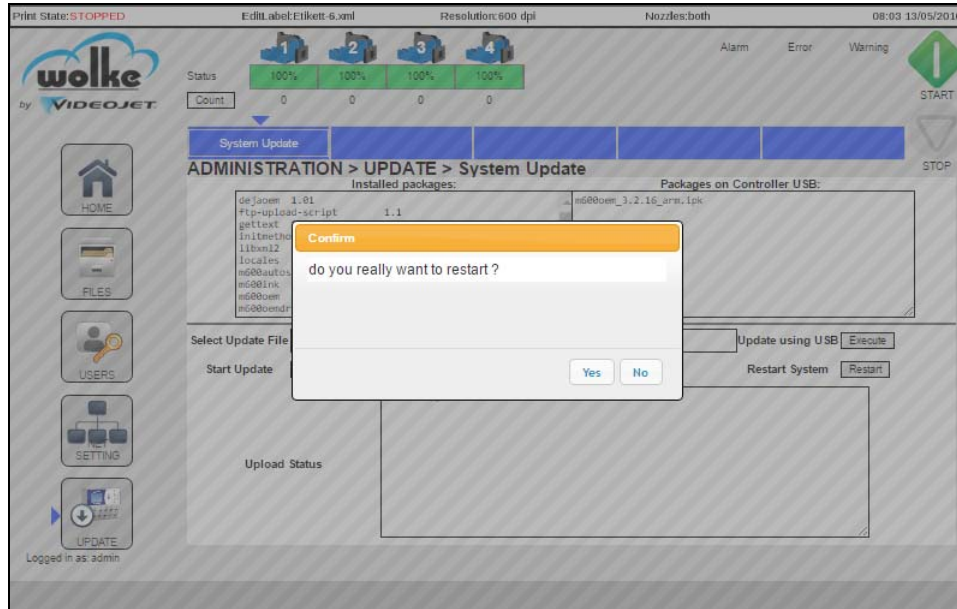


Fig. 6_144: System Restart

Revert to Previous Version

The user can revert to previous software version after controller restart by selecting **Revert** button.



NOTE

The user can manually restart the system by clicking the **Restart** in 'Restart System'.



NOTE

The user will be prompted not to power down the controller during a system restart.

7 Commissioning using Controller

7.1 Installation Settings

7.1.1 Construction

7.1.1.1 Number Of Printheads

Basic hardware settings - Configuration with the system and production line, valid for all labels.

Number of printheads

S1 + A

The diagram illustrates the menu navigation path for the 'Construction' settings. It starts with a top row of buttons: 'F1 File', 'F5 Adjustments', and 'F9 System'. An arrow points from 'F5 Adjustments' to a second row of buttons: 'F1 label', 'F4 spitting', 'F7 system settings', and 'F10 installation'. Another arrow points from 'F10 installation' to a third row of buttons: 'F1 cartridges', 'F3 pm refresh', 'F5 ext. inputs', 'F7 connection', and 'F9 construction'. An arrow from 'F9 construction' points down to a screenshot of the 'Construction' settings window.

The screenshot shows the 'Construction' settings window with the following sections:

- Installation Parameter:**
 - No. of print heads: 1 (dropdown)
 - Shaft encoder: off (dropdown)
 - Pulses/m: 12500 (spinbox)
 - Flush variable buffer: on (dropdown)
 - Speed (mm/sec): 200 (spinbox)
 - Perpetuo Print Mode: off (dropdown)
 - Language: English (dropdown)
 - Backlight power off (min): 5 (spinbox)
- Print memory refresh:**
 - status: off (dropdown)
 - Idle time (sec): 300 (spinbox)
- Saving Labels:**
 - Label auto save: off (dropdown)
 - save label granted: no (dropdown)
- Error Conditions:**
 - Remove cartridge: error (dropdown)
 - Exceeding product speed: warning (dropdown)
 - Product distance: ignore (dropdown)
 - Print trigger without data: ignore (dropdown)
 - cartridge gearing expiration: ignore (dropdown)
 - cartridge expired: warning (dropdown)

Buttons at the bottom: 'Ok' and 'Cancel'.

Fig. 7_145: Menu Adjustments > Installation > Construction

Click the **No. of print heads** to select the printheads.

A close-up of the 'No. of print heads' dropdown menu in the 'Construction' settings window. The dropdown is open, showing a list of options. The current selection is '1'.

Fig. 7_146: Menu Adjustments > Installation > Construction

The number of printheads that you select from this list has an influence on the parameter lines shown in the heads field (sensor, sensor distance, position, reflected, and the print direction) on **Print head settings** page.

The error conditions for removal of cartridge, product distance, exceeding product speed and print trigger without data can be set from this page.

Further settings for the printheads or the labels must be made under "Adjustments/Label" (see [Chapter 7.4](#)).

**NOTE**

Cartridge Expiration data is available for authenticated cartridges only.

7.1.1.2 Shaft Encoder

Shaft encoder

The shaft encoder drop-down list available on **System settings** page is for activating and deactivating the input of the external shaft encoder.

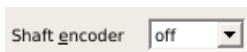


Fig. 7_147: Shaft Encoder

In order to achieve an optimum print image, as a matter of principle, we recommend that you use an external shaft encoder, especially for printing barcodes; or check if both the nozzle rows are activated.

**NOTE**

The supply voltage to the differential shaft encoder must be 5 V.

Shaft encoder	Description
Line A	This is the standard setting. Only track A of the shaft encoder is evaluated. With this setting, location-dependent printing is not possible.
Line A before B	For this setting, a two-track shaft encoder must be connected to the m610 advanced. Here, the preferred printing direction is determined by line A leading before line B by 90°.
Line B before A	For this setting, a two-track shaft encoder must be connected to the m610 advanced. Here, the preferred printing direction is determined by line B leading before line A by 90°.
off	No shaft encoder is connected. The system prints at a fixed speed. The speed is entered in mm/sec.

For more information on phasing of shaft encoder refer to "[Shaft Encoder](#)".

7.1.1.3 Pulses/Meter

Pulses/Meter

If a shaft encoder from another manufacturer is used, the pulses/m have to be adjusted accordingly in the menu.

The following calculation formulae can be used for guidance:

$$\begin{aligned}
 I_U &= 2500 \text{ pulses per revolution} \\
 d &= \text{Measuring wheel diameter (in mm)} \\
 I_M &= \text{Pulses per meter} \\
 v &= \text{Belt speed in meters per second} \\
 F_I &= \text{Pulse frequency; max. 300.000 Hz (= 300 kHz)}
 \end{aligned}$$

$$\pi = 3,142$$

Pulses per meter for entering on the m610 advanced:

$$I_M = 1000 \cdot I_U / (d \cdot \pi)$$

Maximum pulse frequency:

$$F_I = v \cdot I_M = v \cdot 1000 \cdot I_U / (d \cdot \pi)$$

It is imperative that this calculation is made if a shaft encoder from another manufacturer is used. The maximum permitted input frequency for the shaft encoder input on the m610 advanced is 300kHz. This value must never be exceeded.



ATTENTION

If the speed is not constant, this may be indicated by the following:

- The print image appears compressed/stretched
- The spaces between the prints deviate from the preset values
- When printing with two nozzle rows, nozzle rows 1 and 2 are not precisely aligned (formation of shades)

In all such cases, an external shaft encoder should be installed subsequently.

7.1.1.4 Deleting Data Buffer

The **Flush variable Buffer** option is "off" by default. You can select the "on" option, so that the data buffer of the variable fields is deleted after the controller enters the print state STOPPED.

Deleting data buffer

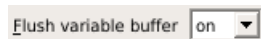


Fig. 7_148: Flush Variable Buffer

7.1.1.5 Backlight Power Off

The **Backlight Power Off (min)** option is used to control the backlight of the m610 advanced controller screen. The value is measured in Minutes.

Backlight Power Off

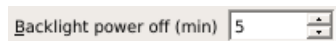
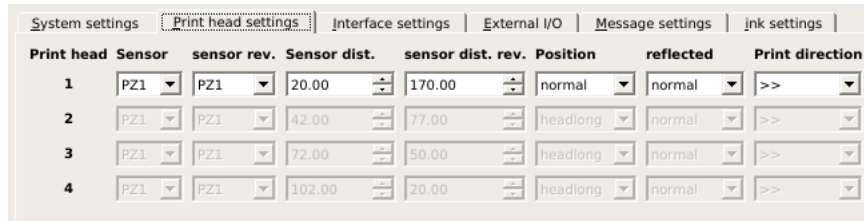


Fig. 7_149: Backlight Power Off (Min)

7.1.1.6 Printheads

The drop-down lists in the **Print head settings** page are used to specify the bidirectional settings, the position of the text, mirroring (if applicable), and the sensor distance that is communicated to the m610 advanced webserver.

Moreover, the input is selected which supplies the print trigger signal for the head in question.



Print head	Sensor	sensor rev.	Sensor dist.	sensor dist. rev.	Position	reflected	Print direction
1	PZ1	PZ1	20.00	170.00	normal	normal	>>
2	PZ1	PZ1	42.00	77.00	headlong	normal	>>
3	PZ1	PZ1	72.00	50.00	headlong	normal	>>
4	PZ1	PZ1	102.00	20.00	headlong	normal	>>

Fig. 7_150: Printheads Descriptions

Printheads

bidirectional settings

The button "bidirectional settings" takes you to the mask for the settings contrary to the preferred direction (see [Chapter 10.1.1, "Installation Settings"](#)).

Position

OFF: → Letters, normal **Text** (normal)
ON: → Letters, upside down **Text** (headlong)

Reflected

OFF: → Letters, normal **Text** (normal)
ON: → Letters, mirrored **Text** (mirrored)

Print direction



NOTE

The conveyor runs in the opposite direction of the printing direction.

Right-hand -> left-hand: Conveyor runs from left to right. (>>)
 Left-hand > right-hand: Conveyor runs from right to left. (<<)

If two nozzle rows are used for printing and a shade (letters are printed twice at an offset) of 8mm occurs, the printing direction must be changed.

Sensor

Here you define the input where the trigger signal is expected for the printhead in question.

Sensor rev.

Here, you can define the input where the trigger signal is expected for the head in reverse direction.



NOTE

This is used for bidirectional settings.

Sensor distance

The sensor distance is the distance between the point where printing is triggered and the first nozzle row.

Sensor distance rev.

The sensor distance reverse is the distance between the point where printing is triggered, and the first nozzle row.



NOTE

This is used for bidirectional settings.



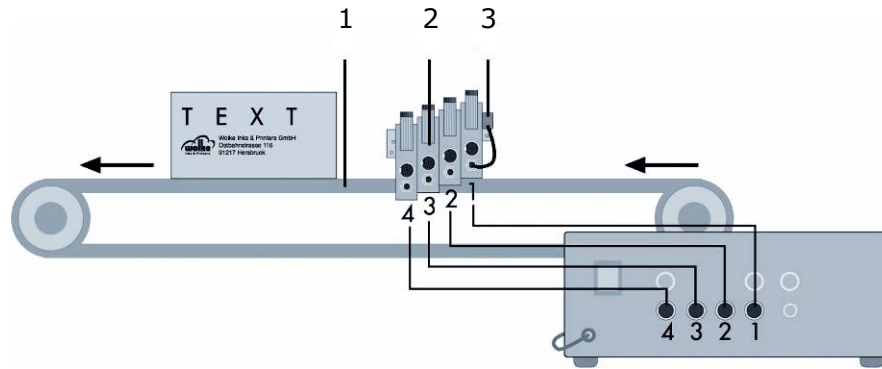
NOTE

In all the following descriptions, the direction information is based on position ("normal" or "headlong") facing the nozzle plates on the cartridges.

7.1.1.7 Various System Settings

Various system
settings

The factory setting is based on the following constellation:



- 1 Conveyor belt
- 2 Printheads
- 3 Photoelectric cell



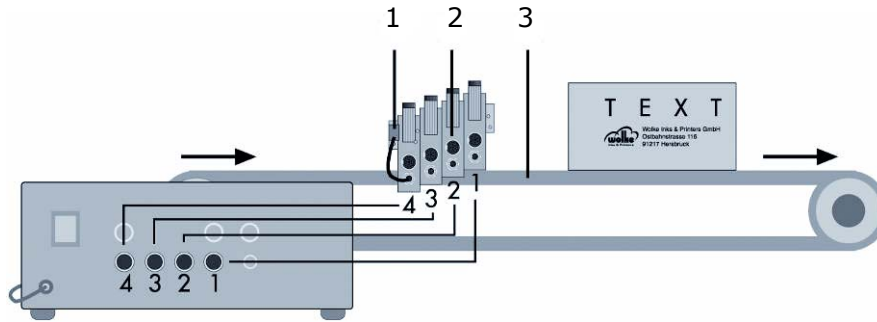
Fig. 7_151: View of Label in Edit Memory of the m610 Advanced

Print head	Sensor	sensor rev.	Sensor dist.	sensor dist. rev.	Position	reflected	Print direction
1	PZ1	PZ1	20.00	170.00	normal	normal	>>
2	PZ1	PZ1	50.00	140.00	normal	normal	>>
3	PZ1	PZ1	80.00	110.00	normal	normal	>>
4	PZ1	PZ1	110.00	80.00	normal	normal	>>

Fig. 7_152: Menu Settings for Head 1-4

Alternative A: Reverse product path direction (<<)

Various system settings

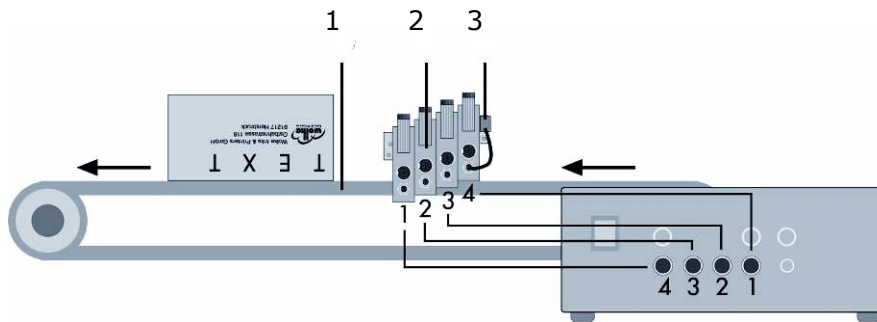


- 1 Photoelectric cell
- 2 Printheads
- 3 Conveyor belt

Print head	Sensor	sensor rev.	Sensor dist.	sensor dist. rev.	Position	reflected	Print direction
1	PZ1	PZ1	170.00	20.00	normal	mirrored	<<
2	PZ1	PZ1	140.00	50.00	normal	mirrored	<<
3	PZ1	PZ1	110.00	80.00	normal	mirrored	<<
4	PZ1	PZ1	80.00	110.00	normal	mirrored	<<

Fig. 7_153: Alternative A – Menu Settings for Head 1-4

Alternative B: Print direction as in the factory setting, read direction reversed (i)



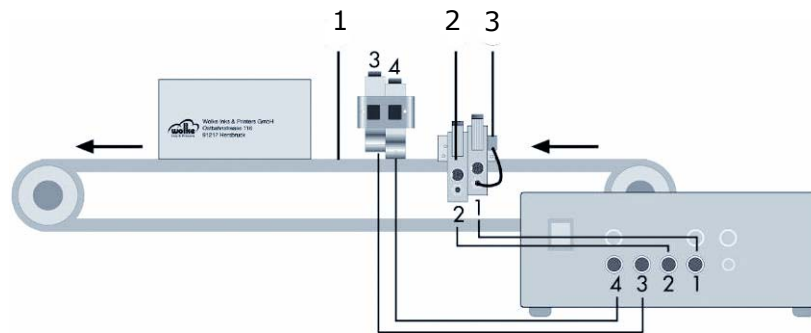
- 1 Conveyor belt
- 2 Printheads
- 3 Photoelectric cell

Print head	Sensor	sensor rev.	Sensor dist.	sensor dist. rev.	Position	reflected	Print direction
1	PZ1	PZ1	20.00	170.00	headlong	mirrored	>>
2	PZ1	PZ1	50.00	140.00	headlong	mirrored	>>
3	PZ1	PZ1	80.00	110.00	headlong	mirrored	>>
4	PZ1	PZ1	110.00	80.00	headlong	mirrored	>>

Fig. 7_154: Alternative B – Menu Settings for Head 1-4

Alternative C: Print direction as in the factory setting but with printing from two sides (*, <>)

Various system settings



- 1 Conveyor belt
- 2 Printheads
- 3 Photoelectric cell

Print head	Sensor	sensor rev.	Sensor dist.	sensor dist. rev.	Position	reflected	Print direction
1	PZ1	PZ1	20.00	170.00	normal	normal	>>
2	PZ1	PZ1	50.00	140.00	normal	normal	>>
3	PZ1	PZ1	80.00	110.00	normal	normal	>>
4	PZ1	PZ1	110.00	80.00	normal	mirrored	<<

Fig. 7_155: Alternative C – Menu Settings for Head 1-4

7.1.1.8 Language

Language





Fig. 7_156: Language Selection

1	Cesky	(Czech)
2	Dansk	(Danish)
3	Deutsch	(German)
4	English	
5	Español	(Spanish)
6	Francais	(French)
7	Italiano	(Italian)
8	Magyar	(Hungarian)
9	Nederlands	(Dutch)
10	Norsk	(Norwegian)
11	Portuguese	(Portuguese)
12	Polski	(Polish)
13	Slovenski	(Slovenian)
14	Suomi	(Finish)
15	Svenska	(Swedish)
16	Türkçe	(Turkish)

Tab. 7_16: List Box "Menu Language"

The menu language of the m610 advanced can be selected from a list box. The names of the languages appear in the language to be selected from case to case with a consecutive number.

- Scroll the list by means of the arrow keys .
- The selection made in the list is accepted via .

Some special characters usual in certain languages are replaced by the appropriate standard character (e. g. "Ž" by "Z").



NOTE

To accept the change-over to another dialog language, the system menu must be exited via ENTER.

7.1.2 External I/O

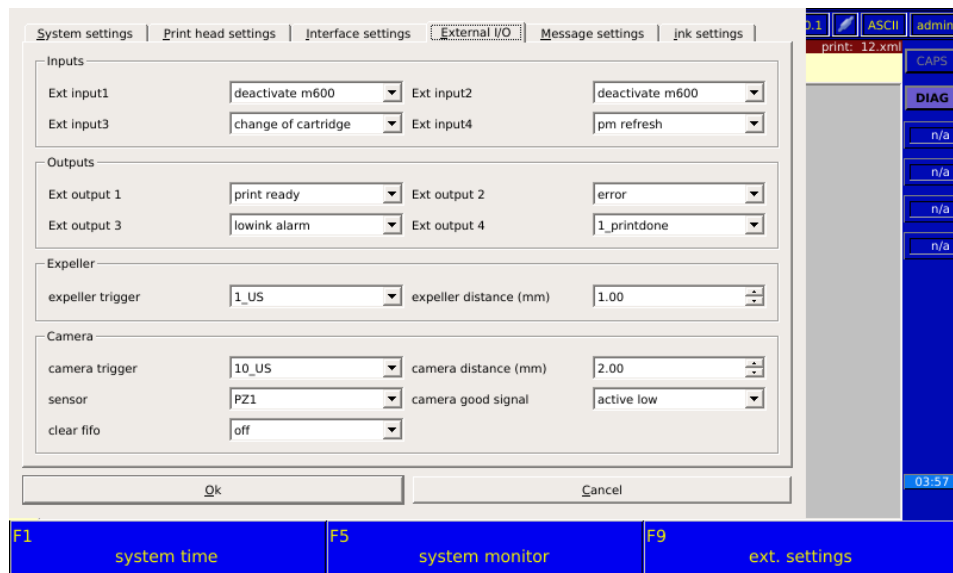
This section allows the user to set the parameters for all input and output devices.

7.1.2.1 Inputs

External inputs

In addition to the four inputs for the four photoelectric cells on the four printheads, the m610 advanced also comes with four additional parameterizable digital inputs. These four inputs come out at the I/O connector.

This menu is for assigning different functions to the inputs.



The screenshot shows the 'External I/O' settings window. The window has tabs for 'System settings', 'Print head settings', 'Interface settings', 'External I/O' (selected), 'Message settings', and 'Jnk settings'. The 'External I/O' tab is divided into several sections:

- Inputs:** Four dropdown menus for Ext input1, Ext input2, Ext input3, and Ext input4. The values are: deactivate m600, deactivate m600, change of cartridge, and pm refresh.
- Outputs:** Four dropdown menus for Ext output 1, Ext output 2, Ext output 3, and Ext output 4. The values are: print ready, error, lowink alarm, and 1_printdone.
- Expeller:** A dropdown for expeller trigger (1_US) and a numeric field for expeller distance (mm) (1.00).
- Camera:** A dropdown for camera trigger (10_US), a numeric field for camera distance (mm) (2.00), a dropdown for sensor (PZ1), and a dropdown for camera good signal (active low). There is also a dropdown for clear fifo (off).

At the bottom of the window are 'Ok' and 'Cancel' buttons. To the right of the window is a vertical toolbar with buttons for 'print: 12.xml', 'CAPS', 'DIAG', and several 'n/a' buttons. At the bottom of the screen are three function key buttons: F1 system time, F5 system monitor, and F9 ext. settings.

Fig. 7_157: External Inputs

Four inputs with a 24 V level are available to the m610 advanced. These are four identical inputs with different potential.



Do the following steps to change the external inputs:

5. Select the required options from the drop-down lists for **Ext Input1**, **Ext Input2**, **Ext Input3**, and **Ext Input4**.

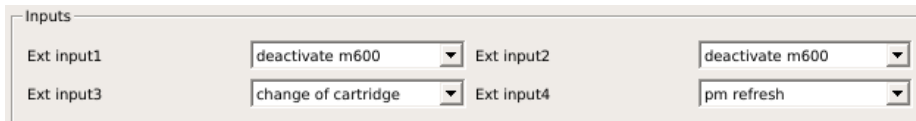


Fig. 7_158: External Inputs Drop-down Lists

External Input1, Input2, Input3, and Input4 provide the following options:

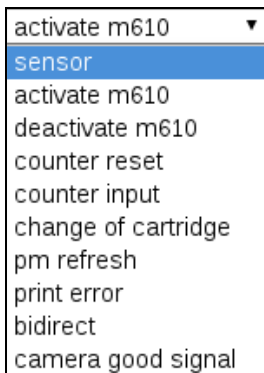


Fig. 7_159: External Inputs

For further information on the function [Chapter 12.2](#).

Inputs	Description
Sensor	Selecting "sensor" means to evaluate the external input for the trigger signal (start signal) for printing instead of the photoelectric cell on the printhead. The m610 advanced printer reacts to the rising signal edge.
Activate m610	Selecting "activate m610" means that the input can be used to activate the m610 advanced via an external signal (for example, PLC). The function is triggered with a falling signal edge. (The print state changes to Start).
Deactivate m610	Selecting "deactivate m610" means that the input can be used to deactivate the m610 via an external signal (for example, PLC). The function is triggered with a falling signal edge. (The print state changes to Stopped).
Counter reset	Selecting "counter reset" means that a counter configured as "Update external" (pallet counter) can be reset to its counter start value via input. The m610 advanced reacts to the rising signal edge.
Counter input	Selecting "counter input" means that a counter configured as "Update external" (pallet counter) can be incremented and decremented via input by the preset step size. The m610 advanced reacts to the rising signal edge.
Change of cartridge	Selecting "change of cartridge" means that the external input can be used for replacing the cartridge directly with an external signal (example PLC), see Chapter 12, "Replacement of Cartridge" . The m610 advanced reacts to the rising signal edge and switches immediately to "Stop" mode.

Tab. 7_17: External Inputs



NOTE

Activating the "Change of cartridge" option stops an active printing operation on the m610 advanced.

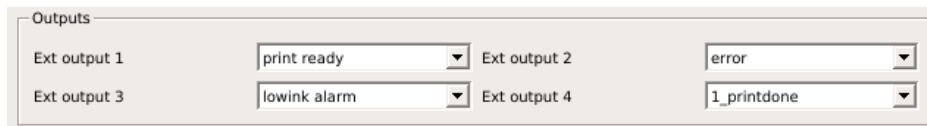
Inputs	Description
Print memory refresh	<p>The input is used to update the dynamic print data when a signal is given. This is done with the aid of an additional sensor which is installed at a correspondingly large distance from the print trigger sensor. The m610 advanced reacts to the rising signal edge.</p> <p>Example: If a label is printed with a date, time, counter, and shift code field, all the data for the next print will be generated immediately after completion of the previous print. If the system stops shortly before midnight, the next print data would appear as follows, for example: 23:55 h 13 August 2006, Counter status 123456789, Shift code late shift</p> <p>If printing continues only after midnight, the date of the previous day, the time of the previous day, the shift code before a possible change of shift and a possible counter status which should have been reset at the time of the shift change, will be printed.</p> <p>This can be prevented with an additional sensor. It generates a signal which is then read only when a certain amount of time has elapsed without printing. If this signal appears, the m610 updates the data to be printed, if the line has been at a standstill for a lengthy period. This requires a certain amount of time (update process), such that the sensor for this function must be positioned a correspondingly large distance from the print sensor. An appropriate time should be set in the setting menu for print memory updating.</p> <p>If you have selected "automatic" in the setting memory during print memory updation, no additional input signal is necessary for updating the print memory.</p>
Print error	<p>If the input is switched, an error message is displayed. Moreover, output 2 is set to HIGH (error message on output 2). External "error message" is signalled via the Ethernet interface. The m610 advanced reacts to the rising signal edge.</p>
Bidirect	<p>Selecting 'bidirect' means the input to control of printing directions for bidirectional printing.</p> <p>In the preferred direction, the printing direction is determined by the setting in the installation settings. If printing is required contrary to the preferred printing direction, this input must be assigned a "high" level to change over the printing direction prior to the print trigger signal, and this assignment must be maintained until the print trigger signal has been received safely.</p>
Camera good signal	<p>The input is used by the camera when a good product has been read. This input is required if an expeller is configured.</p>

Tab. 7_18: External Inputs

7.1.2.2 Outputs

Do the following steps to change the external outputs:

1. Navigate to **F5 (Adjustment) > F10 (Installation) > F5 (ext. inputs)**.
2. Click **External I/O** page.
3. Select the required options from the drop-down lists for **Ext Output 1, Ext Output 2, Ext Output 3, and Ext Output 4**.

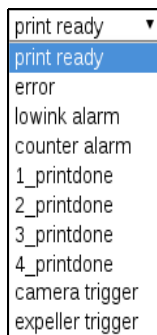


The screenshot shows a configuration window titled 'Outputs'. It contains four drop-down menus arranged in a 2x2 grid. The first row shows 'Ext output 1' set to 'print ready' and 'Ext output 2' set to 'error'. The second row shows 'Ext output 3' set to 'lowink alarm' and 'Ext output 4' set to '1_printdone'.

Fig. 7_160: External Outputs Drop-down Lists

External Output 1, Output 2, Output 3, and Output 4 provide the following options.

External outputs



The screenshot shows a vertical list of options for an external output. The options are: 'print ready' (highlighted), 'error', 'lowink alarm', 'counter alarm', '1_printdone', '2_printdone', '3_printdone', '4_printdone', 'camera trigger', and 'expeller trigger'.

Fig. 7_161: External Output

External Input	Description
Print ready	This digital output signals when the m610 advanced is ready for printing.
Error	This digital output signals when the error occurred, such as no printhead mounted or no cartridge inserted.
Lowink alarm	This digital output signals when the ink level has reached the preset alarm trigger threshold.
Counter alarm	This digital output signals when the end counter value is reached, if the alarm has been activated in the relevant counter menu.
Printdone_1/2/3/4	This output signals the end of printing for head 1 (or alternatively for head 2/3/4). In this case, the end of printing means the end of the label. A falling signal edge is generated once end of printing has been reached.
Camera trigger	This digital output signals when a product is detected by the camera.
Expeller trigger	This digital output signals when a camera good signal has not been received and a product is detected for the expeller.

Tab. 7_19: External Outputs

7.1.2.3 Expeller

Expeller

Do the following steps to change the Expeller parameters:

1. Navigate to **F5 (Adjustment) > F10 (installation) > F5 (ext. inputs)**.
2. Click **External I/O** page.
3. Select the required options from the drop-down lists for **expeller trigger** and **expeller distance (mm)**.

Expeller

expeller trigger: 1_US

expeller distance (mm): 1.00

Fig. 7_162: Expeller Parameters

The following table provides the various options available for each of Expeller parameters:

Expeller Parameters	Drop-down Options	Description
Expeller Trigger	<div> <div>125000</div> <div>0</div> <div>1</div> <div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div> <div>125000</div> </div>	Expeller pulse (μ s) can be set from the drop down range available "0" to "125000".
Expeller Distance (mm)	<div> <div>expeller distance (mm)</div> <div>1.00</div> </div>	Expeller distance (mm) is the distance between the expeller and the printhead.

Tab. 7_20: Expeller Parameters

7.1.2.4 Camera

Camera

Do the following steps to change the Camera parameters:

1. Navigate to **F5 (Adjustment) > F10 (installation) > F5 (ext. inputs)**.
2. Click **External I/O** page.
3. Select the required options from the drop-down lists for **camera trigger**, **camera distance (mm)**, **sensor**, **camera good signal**, and **clear fifo**.

Camera

camera trigger: 10_US

camera distance (mm): 2.00

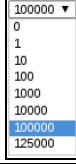
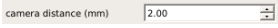
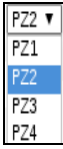


sensor: PZ1

camera good signal: active low

clear fifo: off

Fig. 7_163: Camera Parameters

The following table provides the various options available for each of Camera parameters:

Camera Parameters	Drop-down Options	Description
Camera Trigger		Camera pulse (μ s) can be set from the drop down range available "0" to "125000".
Camera Distance (mm)		Camera distance (mm) is the distance between the camera and printhead.
Sensor		Camera sensor allows the user to select the printhead photocell that is used to calculate the camera distance and trigger.
Camera Good Level		Camera good level allows the user to select either low and or high signal for the 'Camera Good' signal.
Clear Fifo		First In First Out (FIFO) allows the user to organize and manipulate data buffer.

Tab. 7_21: Camera Parameters

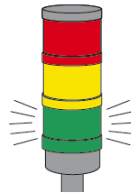
7.1.2.5 Status Displays of the Warning Beacon

Status displays of the warning beacon

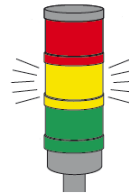
The external outputs 1-3 are evaluated.



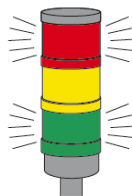
m610 advanced is OFF or set to "STOP"



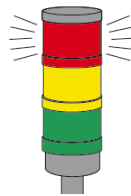
m610 advanced ready for printing



Ink alarm



m610 advanced warning



m610 advanced error

Fig. 7_164: Various Indications of the Warning Beacon

7.1.3 Cartridges

Cartridges

S1 + Y

The diagram shows the navigation path from the main menu to the Cartridges screen. The main menu has F1 File, F5 Adjustments, and F9 System. F5 Adjustments leads to a sub-menu with F1 label, F4 spitting, F7 system settings, and F10 installation. F10 installation leads to another sub-menu with F1 cartridges, F3 pm refresh, F5 ext. inputs, F7 connection, and F9 construction. The screenshot shows the 'cartridges' screen with the following sections:

- Ink Alarm Settings:**
 - Low Ink: Ignore (dropdown), Ink Level: 5 (slider), Set low ink from 5 up to 25%
 - Out of Ink: Ignore (dropdown), Ink Level: 0 (slider), Set out of ink from 0 up to 10%
- Values for non-authenticated cartridges only:**
 - Voltage [V]: 9.80 (slider), Pulse Width [μs]: 1.90 (slider)
- Print PH Table:**

Print PH	Ink Type	Temperature Regulation
1	WLK670068	ON (dropdown)
2	non authenticated cartridge	ON (dropdown)
3	no printhead	ON (dropdown)
4	no printhead	ON (dropdown)
- Allowed Ink Type List:** A large empty box with 'Clear List' and 'Add Ink' buttons below it.

Buttons at the bottom: OK, Cancel.

Fig. 7_165: Menu Adjustments > Installation > Cartridges

7.1.3.1 Ink Type

Ink type

Print head	ink type	temperature regulation
1	Universal Black (WLK667482A)	on (dropdown)
2	Non-Porous Black (WLK660072A)	on (dropdown)
3	Premium Black (WLK660068A)	on (dropdown)
4	Premium Black (WLK660068A)	on (dropdown)

Fig. 7_166: Ink Type

The ink type is displayed for authenticated cartridges. The ink types appear with the article number and designation.



NOTE

The suitability of a certain ink cannot be precisely predicted, but must be determined by printing tests.

Contact your Wolke sales partner to do this for you.

No warranty can be assumed for the use of an ink without printing tests.

Manage Ink Types

7.1.3.2 Allowed Ink Type List

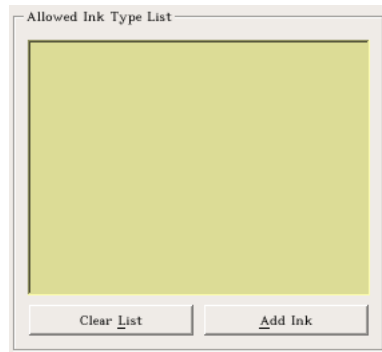


Fig. 7_167: Allowed Ink Type List

Do the following steps to manage the allowed ink types:

1. Navigate to **F5 (Adjustment) > F10 (Installation) > F1 (Cartridges)**.
2. Click **Ink Settings** page(see Abb. 7_167).
3. Click **add ink** button to add an ink type. The following dialog opens:

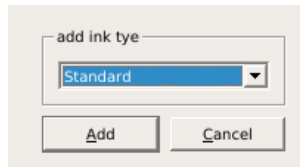


Fig. 7_168: Add Ink Type

4. Select the ink type and click the **Add** button.

The ink type added now appears on the ink type drop down list and **Ink settings** page.



NOTE

The allowed list of ink types can be processed and deleted. Click **clear list** button to clear the allowed ink types.



NOTE

If there are one or more inks in the allowed list, only those ink types can be used on this controller.

7.1.3.3 Temperature Controlled

Temperature controlled



Fig. 7_169: Temp_reg

If this function is off, the selected printhead will be operated without temperature control. If this function is on, the maximum throughput (prints per second) of the system may be impacted.

If a cartridge is removed while the m610 advanced is in status OK, an error message is displayed if the temperature control is on.

The error stays in the print state until the error is removed by selecting either **OK** or **Ignore**. This removes the error and print can be resumed.

- ➡ Note that if the temperature control is off, neither the cartridge temperature or the number of defective nozzles can be shown in the diagnosis menu.
If a cartridge is removed during the printing operation, this is not detected either.



ATTENTION

We recommend that you consult your contact person at Wolke before deactivating the temperature control.

Increase Ink Level

7.1.3.4 Increase Ink Level

For authenticated cartridges, if the ink percentage level is at or below the ink out level which is set at 0% (default), the ink level can be adjusted to remove any remaining ink from the cartridge, by selecting the **increase ink level** button (navigate to **F9 (System) > F1(Change Cart.)**). Adjust the ink level up to 5% to remove any remaining ink in the cartridge.



NOTE

The maximum limit to adjust the ink level is 5% and depends on the type of ink used.

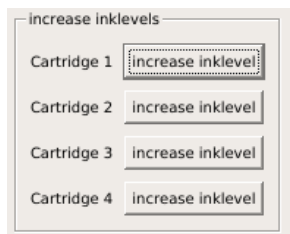


Fig. 7_170: Increase Ink Level

7.1.3.5 Low Ink and Out of Ink

Low Ink and Out of Ink



Fig. 7_171: Low Ink

It is possible to send out an alarm signal via any output on the I/O socket and to connect the signal to an alarm horn/alarm lamp.

The low ink alarm can be set on any of the configurable outputs. To enable the alarm to be triggered, select 'alarm' from the ink parameter settings and set at a value between 5 and 25%, configure the appropriate output to 'low ink alarm'.

To disable, select low ink 'off' on the ink parameter settings page.

The activation level for ink alarm can be set in the range from 25% to 5%.



Fig. 7_172: Out of Ink

The out of ink alarm can be set on any of the configurable outputs. To enable the alarm/error to be triggered, select 'alarm' or 'error' from the ink parameter settings and set at a value between 0 and 10%, configure the appropriate output to 'out of ink alarm' or 'out of ink error'.

To disable, select out of ink 'off' on the ink parameter settings page.

The activation level for out of ink alarm/error can be set in the range from 10% to 0%.



NOTE

The user can set the low ink and out of ink settings for authenticated cartridges only.



NOTE

All ink tracking functionality is available for authenticated cartridges only.

7.1.3.6 Voltage and Pulse Width

Voltage and Pulse Width

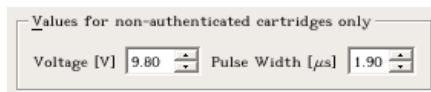


Fig. 7_173: Voltage and Pulse Width

The user can set the voltage and pulse width for non-authenticated cartridges.



NOTE

If power cycled, the voltage and pulse width settings will revert to default values.

Updating the
print memory

7.1.4 Print Memory Refresh

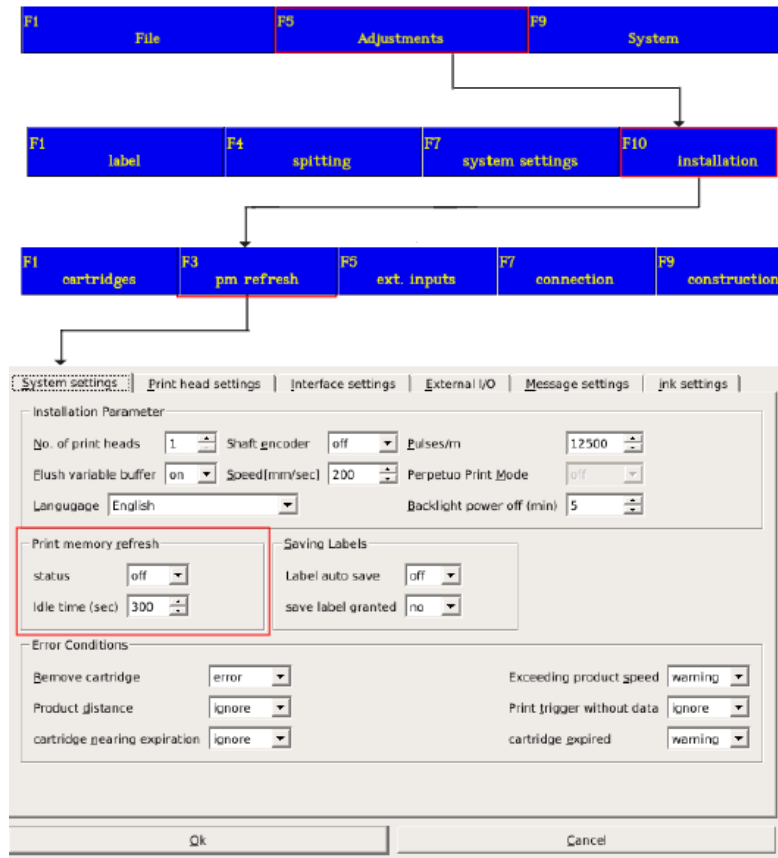


Fig. 7_174: Menu Adjustments > Installation > Pm Refresh

Status	Description
Off	The print memory will not update.
On	The option "on" is used to update the dynamic print data if the signal is issued. This is generally done with the aid of an additional sensor, which must be installed at a correspondingly large distance from the print trigger sensor. This additional sensor is connected to the m610 advanced via the 24 V interface. The print memory will be updated regularly after each print. For the print pause/sec to expire, a value between 0 and 999 must be entered.
Auto	The print memory is updated automatically based on idle time without external sensors. A value between 0 to 999 must be entered for the print pause/sec to expire.

Tab. 7_22: Print Memory Status



NOTE

As the functions "printing cyclically, infinitely", and "updating the print" memory are mutually exclusive, it is absolutely essential to check this setting. In this case, the label is not loaded.

To eliminate this state, either "cyclically, infinitely" or "print memory refresh" must be deactivated.

7.1.5 Connection/Communication

Connection/
Communication

S1 + N



Fig. 7_175: Menu Adjustments > Installation > Connection



NOTE

All the available commands are explained in our "command document (P/N: WLK463133)"



NOTE

For remote control of the m610 advanced controller via one of the interfaces, the following must be taken into account:

Manual acknowledgement of warning or error messages results in inconsistencies regarding status interrogation and subsequent acknowledgement.

During remote operation, acknowledgements must also be performed via the interface, using the appropriate commands.

Mixed mode combining manual control and remote control must be especially avoided in view of error processing.

Interface TCP/IP Port

7.1.5.1 TCP/IP Port

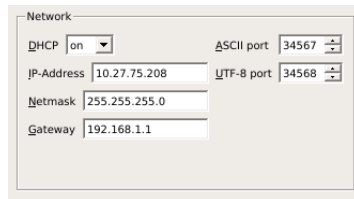


Fig. 7_176: Interface TCP/IP

DHCP

If the **On** is selected the manual set up will be overridden.

IP-address

IP address is for entering the static IP address to be used in your network for the m610 advanced. The IP address to be entered here is dependent on the specific network in which the m610 advanced is to be integrated.

Network mask

Network masks are only of relevance if your company network is subdivided into several sub-networks. If your company network is only comprised of one network you should specify the following network mask:

Address class	Address area	Network mask
class A Network	0.0.0.1-127.255.255.255	255.0.0.0
class B Network	128.0.0.1-191.255.255.255	255.255.0.0
class C Network	192.0.0.1-223.255.255.255	255.255.255.0

Tab. 7_23: Address Classes and Network Masks

If several sub-network masks are used in your company network, ask your administrator about the allocation of the sub-network mask.

Gateway

The gateway is for communication within your network. The gateway IP address is dependent on your company network, e.g. in a Class C network your gateway IP address could be 192.168.2.1.

ASCII Port

ASCII Port number used is defined here, for example, 34567.

Ports 20, 21, 22 and 80 should not be used, as these are used by the FTP protocol by default.

UTF-8 Port

UTF-8 Port number used is defined here, for example, 34568.

Ports 20, 21, 22 and 80 should not be used, as these are used by the FTP protocol by default.

Setting up the Network Connection

If the network includes a DHCP server, a PC/laptop does not require a fixed IP address, as it is assigned automatically, in case of an emergency.

*Setting up
network
connection*

The controller comes with DHCP disabled. Once the controller is connected to a network port, the controller IP address will be enabled.

Open webserver and enter IP address, UTF-8 address etc. to connect to the controller.

7.2 Resetting the System Settings (Factory Setting)

Resetting the system settings

The following parameters are reset while the factory settings are loaded:



NOTE

When the system is reset to the factory settings, the passwords are also deleted.

Menu	Menu item	Value (factory setting)
System settings		
Installation parameter	no. of print heads	4
	shaft encoder	line A
	Flush Variable Buffer	off
	pulses/m	12500
	speed [mm/sec]	200
	Perpetuo Print Mode	off
	Backlight Power Off (min)	30
	Language	English
Print memory refresh	status	off
	idle time (sec)	300
Saving Labels	Label auto save	off
	Save label granted	no
Error Conditions:	remove cartridge	error
	exceeding product speed	warning
	product distance	ignore
	print trigger without data	ignore
	cartridge nearing expiration	ignore
	cartridge expired	warning
printheads: 1	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	20.00
	sensor dist. rev.	170.00
	position	normal
	reflected	normal
	print direction	> >
printheads: 2	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	50.00
	sensor dist. rev.	140.00
	position	normal
	reflected	normal
	print direction	> >

Menu	Menu item	Value (factory setting)
printheads: 3	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	80.00
	sensor dist. rev.	110.00
	position	normal
	reflected	normal
	print direction	>>
printheads: 4	sensor	PZ1(Photoelectric Sensor)
	sensor rev.	PZ1(Photoelectric Sensor)
	sensor dist.	110.00
	sensor dist. rev.	80.00
	position	normal
	reflected	normal
	print direction	>>
Ink settings		
Ink alarm settings	Low Ink	off
	Out of Ink	off
	Ink level	5 (ink percentage for low ink)
	Ink level	0 (ink percentage for out of ink)
Values for Cartridges only:	Voltage [V]	9.8
	Pulse width [µs]	1.9
	temperature regulation	on
External I/O		
Inputs	Ext Input1	activate m610
	Ext Input2	deactivate m610
	Ext Input3	change of cartridge
	Ext Input4	pm refresh
Outputs	Ext Output 1	print ready
	Ext Output 2	error
	Ext Output 3	lowink alarm
	Ext Output 4	1_print done
Expeller	expeller trigger	0
	expeller distance (mm)	0.00 mm
Camera	camera trigger	0
	camera distance (mm)	0.00 mm
	sensor	PZ1
	clear fifo	no
	camera good level	low
Message settings		

Send Method	Send periodically (sec)	off (Seconds)
	Send on event change:	no
Message Types	Alarm	no
	Error	no
	Status	no
	Variable index	no
	Buffer low	no
	Warning	no
	Print Done	no

Interface settings		
Network	DHCP	Enable (Check box - unchecked)
	IP-Address	192.168.1.2*
	Netmask	255.255.255.0*
	Gateway	192.168.1.1*
	ASCII port	34567*
	UTF-8 port	34568*

Tab. 7_24: Parameters of Factory Setting

* Network settings will not be updated with factory reset.

7.3 System Settings

7.3.1 System Time

System time

S1 + T

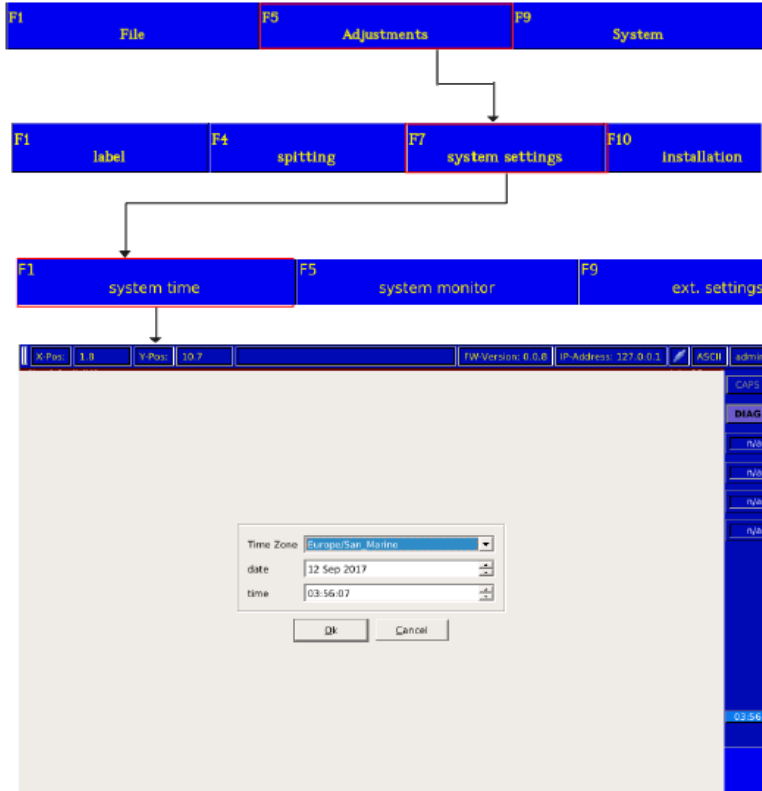


Fig. 7_177: Menu Adjustments > System settings > System Time



NOTE

Set the time zone for the corresponding daylight saving.
Set the time zone as UTC for no daylight saving.

The m610 advanced Date/Time Setup allows to set the current time based on the time zone available from the drop down list.
The date and the time can be manually entered to set the system date and time.



NOTE

The time displayed is used as new time for the internal Real Time Clock.



NOTE

Summer/Winter time is set automatically by the controller according to the selected time zone, time and date.

7.3.2 System Monitor

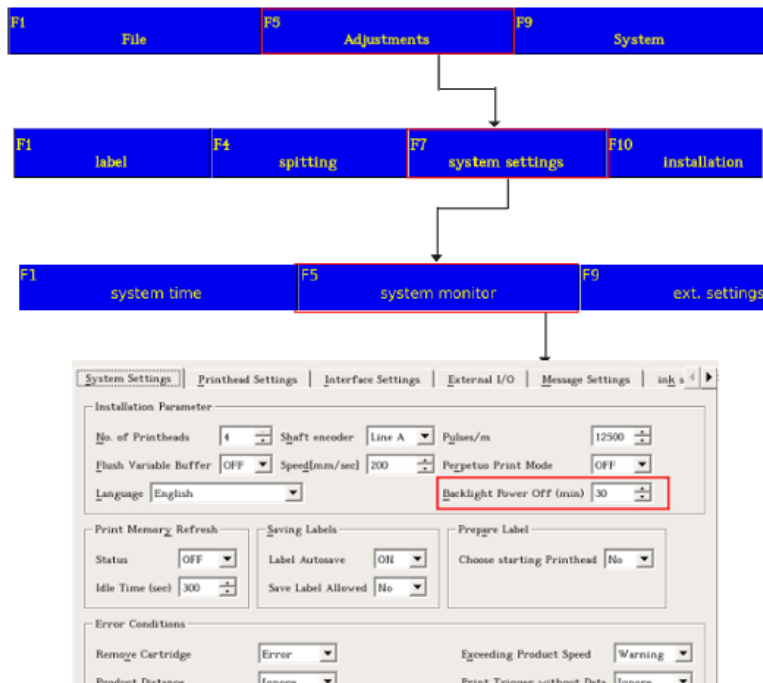


Fig. 7_178: Menu Adjustments > System Settings > System Monitor

The m610 advanced operating system has a "screensaver function" (similar to that of a PC), to extend the service life of the backlight tube of the LCD display used in the m610 advanced.

The screensaver function is deactivated if the Backlight Power Off [min] value is "0" (The range is 0-99).

Waiting time to switching off:

The shut-off time of the display lighting can be adjusted from 5 to 30 minutes. The default time is 30 minutes.

Actuation of any key causes the display lighting of the m610 advanced to be switched on without triggering any other function on the m610 advanced. The display lighting is switched on again whenever information, a warning or an error message appear.

If passwords have been assigned for the various user groups, an input mask appears upon activation of the display to query the password for the screen saver.

The screensaver function is activated automatically after the update. The shut-off time has been set to 15 minutes.

7.3.3 Ext. Settings

Ext. settings

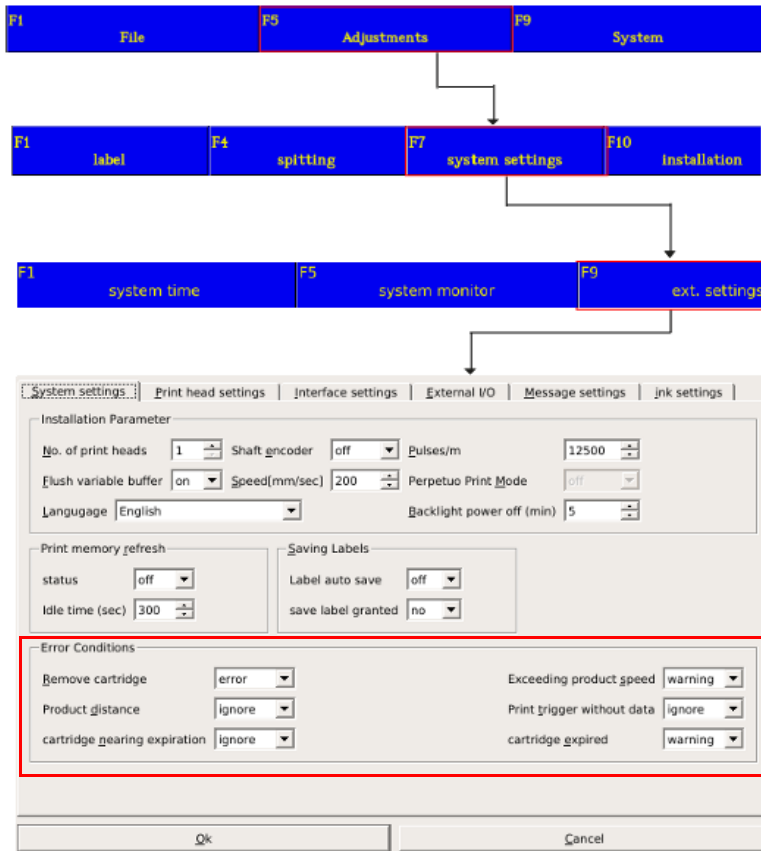


Fig. 7_179: Menu Adjustments > System Settings > Ext. Settings

7.4 Label Settings

Settings configured for the print label.

Label settings

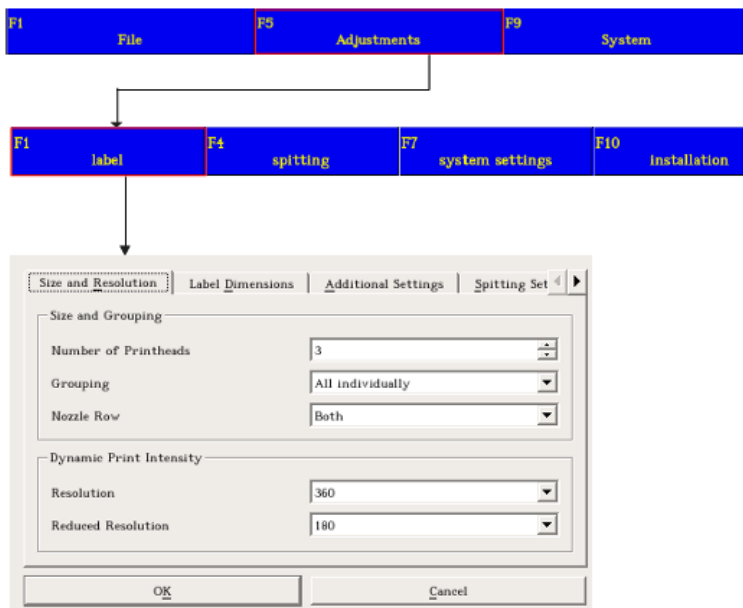


Fig. 7_180: Menu Adjustments > Label

**NOTE**

All dimensions given in the menu are in millimeters (mm).

The settings made here are always specifically for the active print label only.

The following notes and instructions on creating labels must be observed:

- Different label settings for each print file
If different print settings are to apply to each print label, the "Adjustments/Label" menu has to be readjusted for each label.
- Identical label settings for each print file
If the "label" settings for a new print label are to remain unchanged or be identical with those of an earlier label, an existing file has to be opened which contains the required settings. The "File/New" menu opens an empty label field, with the label settings of the previously opened label being retained.

7.4.1 Size & Resolution

Size and resolution

Fig. 7_181: Definition of Size and Resolution

The various options available are described in the below table:

Parameters	Description
Number of print heads	Set the number of printheads required to print the image. The number of printheads range from 1-4.
Grouping	<ul style="list-style-type: none"> • all individually - Each head prints different data within a job. If this setting is selected, whenever you create a new job you will be given exactly the number of print fields that were set in the Number of printheads. • all like head 1 - All the printheads print the same data as head 1. In this setting, only one print head is made available. The text entered here applies automatically to all the heads which were predefined for this job in the Number of printheads. • head 3/4 like 1/2 - Heads 3 and 4 print the same data as heads 1 and 2. In this case only two heads will be available for entering the print data. The text entered here applies equally to heads 1/2 and 3/4.

Parameters	Description
Nozzle row	The ink cartridge has two nozzle rows. The printer can be setup to print with both nozzle rows or only one nozzle row (left/right). Set "both" to print with maximum resolution. The resolution is 300 dpi with the left or the right nozzle row and 600 dpi with both the nozzle rows.
Resolution	This sets the horizontal resolution. This setting specifies the dpi for the label used during printing in the direction of movement of the product.
Reduced Resolution	This option allows a reduced resolution (dpi) to be set for use with certain objects (e.g. text) in a label. When selected for an object, the object is printed at a reduced resolution (increasing ink consumption optimization) rather than the defined label resolution. To use reduced resolution, a selection button is made available in the eligible objects field properties which allows reduced resolution to be used with that object.

Tab. 7_25: Size and Resolution

Printing examples:



Fig. 7_182: Printing Example with 1 Nozzle Row = 300dpi



Fig. 7_183: Printing Example with 2 Nozzle Rows = 600dpi

Size and resolution

7.4.2 Label Dimensions

This part of the menu is for setting the three dimensions which determine the length of the label (specifications in mm):

Print head	Dist. Before [mm]	Dist. After [mm]	Rev Dist. Before [mm]	Rev Dist. After [mm]	Print length [mm]
1	0.00	5.00	0.00	5.00	80.00
2	0.00	5.00	0.00	5.00	80.00
3	0.00	5.00	0.00	5.00	80.00
4	0.00	5.00	0.00	5.00	80.00

Fig. 7_184: Definition of the Label Dimensions

The various options available to set the label dimensions are described in the below table.

Parameters	Description
Dist. Before	The distance (in mm) between the beginning of the product and the beginning of the printing area.

Parameters	Description
Dist. After	The distance (in mm) between the end of the printing area and the end of the product. Note: Due to the system configuration, the "Dist. After" cannot be less than 5mm.
Rev Dist. Before	The reverse distance (in mm) between the beginning of the product and the beginning of the printing area. Note: Reverse printing permits printing in both directions of movement.
Rev Dist. After	The reverse distance (in mm) between the end of the printing area and the end of the product.
Print Length	The print length is the length of the job. Note: The print length can be defined individually for each printhead. The print length of the first printhead determines the print length of all heads.

Tab. 7_26: Label Dimensions

Label
dimensions

7.4.3 Additional Settings

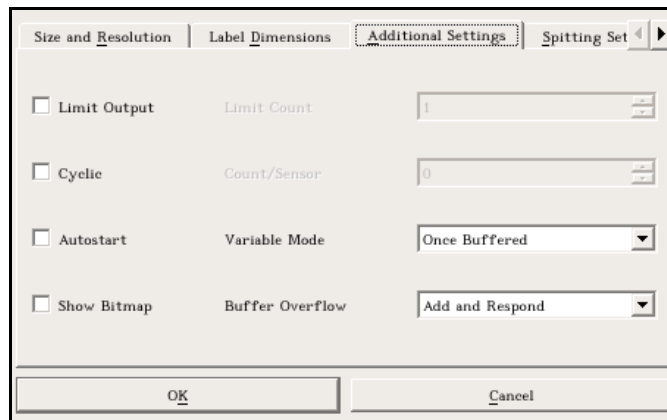
Other
parameters

Fig. 7_185: Additional Settings

The various options available for the additional settings are described in the table below:

Parameters	Description
Limit output	Defines the number of jobs that are permitted to be in the Job queue. Limit count is a setup parameter for Limit output .
Cyclic	Defines the counter per sensor signal. Count/Sensor is a setup parameter for Cyclic .
Autostart	If the label with active Autostart was in print memory before repowering the printer, the printer will automatically start.
Show Bitmap	Displays bitmaps. Note: Only monochrome (black-and-white) Windows bitmaps can be used. These bitmaps must be saved in a resolution of 600dpi x 600 dpi, so that they are printed in the generated size. Scaling within the system is not possible. The bitmaps must have a Windows Bitmap File Header.
Limit count	Defines the number of prints that will be done if Limit output is activated.

Parameters	Description
Count/Sensor	<p>Defines the amount of prints which will be done when triggered once. If the value is set to "0", the printer will print as long as the printer sensor is high.</p> <p>Note: The setting "Number/Sensor 0" is ideal for printing endless material.</p>
Variable Mode	<p>The variable mode is used to supply variable fields with data from an external source (serialization of the print data).</p> <p>In once buffered mode, the variable data record provided by the host controller is printed only once. If no more data in the print buffer, the printer will wait until the new data is transferred from the host controller into the print buffer. The host controller can send multiple variable data sets prior to or during prints.</p> <p>In continuous mode, a data record is printed repeatedly, until a new data record is transferred.</p> <p>In once unbuffered mode, the host controller will send variable data for the next print. Once the print is complete, the variable data for the following print is sent.</p>
Buffer Overflow	<p>Set the actions for buffer overflow conditions from the dropdown list. This is required when more sets of data are sent than permitted.</p> <ul style="list-style-type: none"> • Add and Respond- Allows to add job after the maximum permitted number of jobs in the queue has been reached. • Reject and Respond - Rejects the job after the maximum permitted number of jobs in the queue has been reached. • Overwrite - Overwrites the already sent data set on the printer. • Add, Respond and Warn - Allows the user to add job after the maximum permitted number of jobs in the queue has been reached and warns the user about the buffer overflow. • Reject and Generate Error - Rejects the job after the maximum permitted number of jobs in the queue has been reached and generates error.

Tab. 7_27: Additional Settings

Below, find an overview on how the m610 advanced behaves after a power failure or after switching ON/OFF:

Case no.	Edit memory	Print memory	m610	Action
1	Label 1 with Autostart	Label 2 with Autostart	OK	Label 2 is printed
2	Label 1 with Autostart	Label 2 without Autostart	STOP	no label is printed
3	Label 1 without Autostart	Label 2 with Autostart	OK	Label 2 is printed
4	Label 1 without Autostart	Label 2 without Autostart	STOP	no label is printed
5	Label 1 with Autostart	No label	STOP	no label is printed

Tab. 7_28: Behaviour After a Power Failure or after Switching ON/OFF

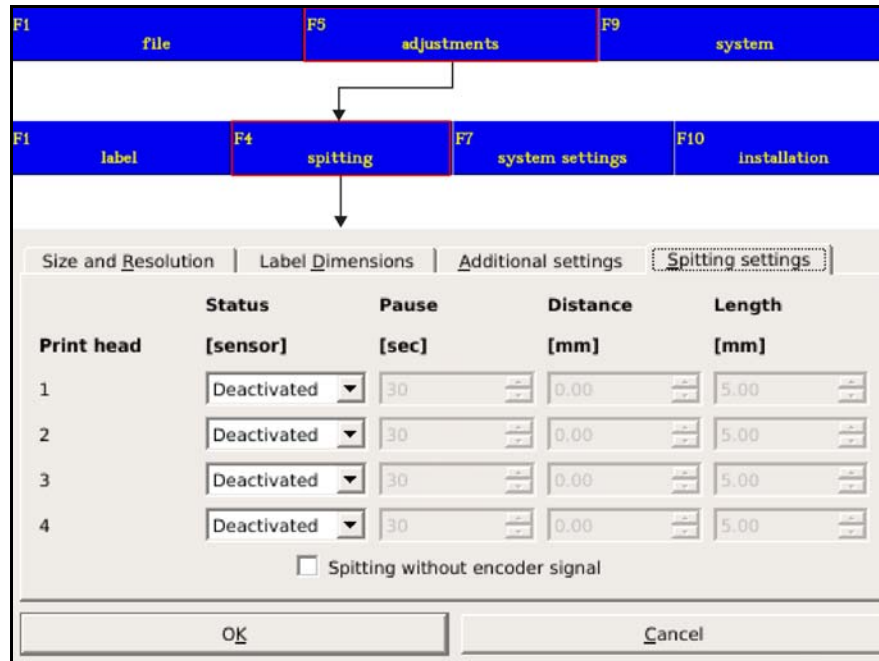


NOTE

More than one label can be marked as an Autostart label. However, the autostart starts up with the label which was last used in the print memory and carried an Autostart marking.

7.5 Spitting

Spitting



Navigation: F1 file, F5 adjustments, F9 system, F1 label, F4 spitting, F7 system settings, F10 installation.

Menu tabs: Size and Resolution, Label Dimensions, Additional settings, Spitting settings.

Print head	Status [sensor]	Pause [sec]	Distance [mm]	Length [mm]
1	Deactivated	30	0.00	5.00
2	Deactivated	30	0.00	5.00
3	Deactivated	30	0.00	5.00
4	Deactivated	30	0.00	5.00

☐ Spitting without encoder signal

Buttons: OK, Cancel

S1 + F

Fig. 7_186: Menu Adjustments > Spitting

The spitting is carried out at timed intervals when the printhead is powered on but not printing. The user can set the length of purge and the time interval for timed printing.

If the printhead is powered on and has not been printing, the printhead will purge once it reaches the inactivity period of time defined by the user. The function can also be deactivated.

Parameters		Description
Status		Allows the user to activate or deactivate the purge
Pause		Idle time for the printhead to purge. It is the time interval between purges.
Distance		The distance between the printer trigger and the start of the purge.
Length		The length of the purge. The user can set the length and time for spitting activated.
Spitting encoder	without	Spitting is triggered by a separate input/photocell. No speed signal is required.

Tab. 7_29: Spitting Settings

Spitting



NOTE

Spitting distance + spitting length must be smaller than distance before + sensor distance. Otherwise, a spitting bar is printed in the label whenever printing is triggered.

**ATTENTION**

If two different signals are used for spit and print triggering it is imperative that you make sure that the signals are always triggered in alternate sequence. As the print sensor is not activated before the spit sensor has been triggered, it must be ensured that the spit signal is not generated after expiry of the spit pause until the print signal is issued.

To put these settings into effect, the m610 must be re-booted.

8 Print Labels

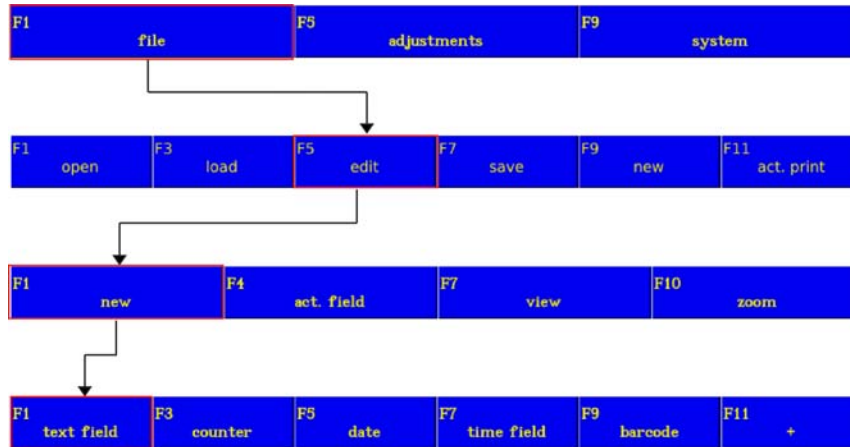
8.1 Generating a Print Label

8.1.1 Text

Text field

Text field is used to insert the required text in the label. The text field is used for the following:

- To enter the text contents in the input field.
- To set the field properties (text height, font type, style and stretch factor).
- To set the position and orientation of the text field in the label.
- To select the User Editable field, if the text object has to be edited by the user.
- To select the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 8_187: File > Edit > New > Text field

Fig. 8_188: Text Field Window

**NOTE**

To navigate within editable input lines in the various fields, use the tab and arrow keys. To insert characters in a text line, use the "ins" key (see also [Chapter 5.7, "Navigation within the Menu Displays"](#)).

Field params:

Unique field names are created by the m610 advanced. The field name consists by default of the field type, followed by a number.

The uniqueness of each manual change of the field name by the operator is verified by the m610 advanced. Should the entered field name have already been assigned, and if the field name is terminated by a digit, the latter is incremented as long as necessary to make the field name unique. Any blanks at the end of the field name are removed.

Variable field:

If this selection is activated, data can be transferred e.g. from a database by means of an interface command directly into the variable fields, and printed immediately. (see [Chapter 7.4.3](#))

User editable:

If the selection is activated by the administrator, the User "Operator" is authorized to change the contents of text and barcode fields. Changes to the text height, position, alignment etc. are not possible. (see also [Chapter 11.1.1, "Users"](#)).

Linking to a master field

Master field is used to link the text field to a master field.

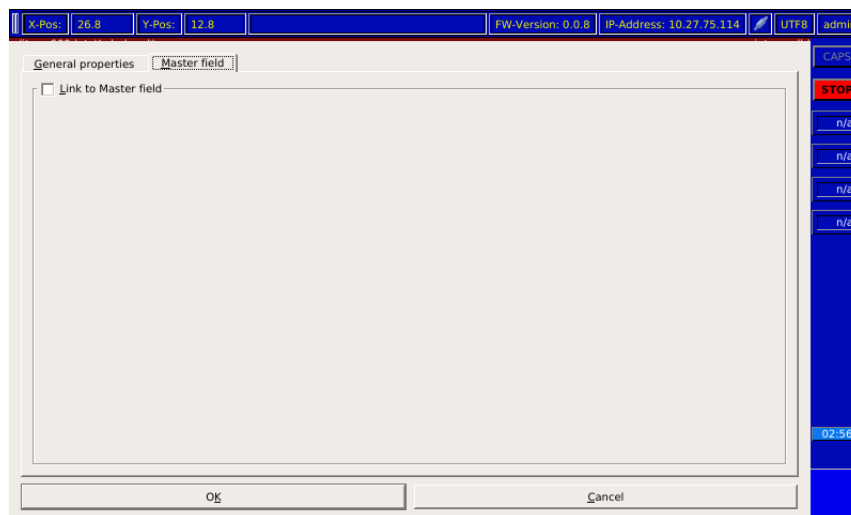


Fig. 8_189: Text Field - Master Field Window

Do the following tasks to link the text field to a master field:

- Go to Master field window.
- Select Link to Master field option. The list of Master field and Master field value is displayed.
- Select the required master field and acknowledge it with "OK".

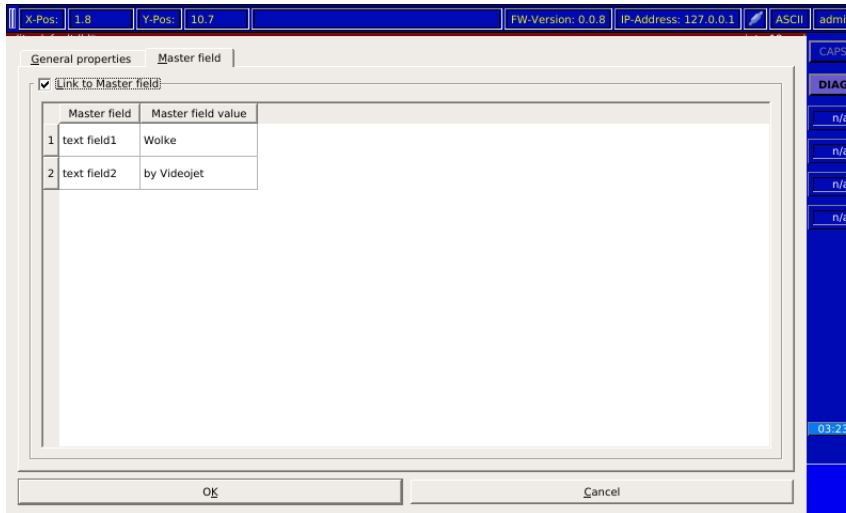


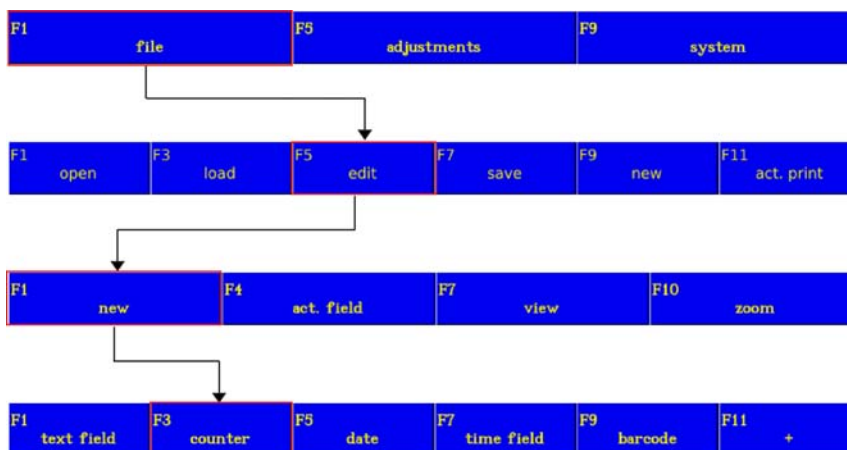
Fig. 8_190: Text Field - Master Field Window - Linked

8.1.2 Counter

Counter field allows the user to insert the counter in the label. Counter field is used for the following:

Counter

- To enter the counter value.
- To set the counter properties.
- To set the field properties (text height, font type, style and stretch factor)
- To set the position and orientation of the counter field in the label.

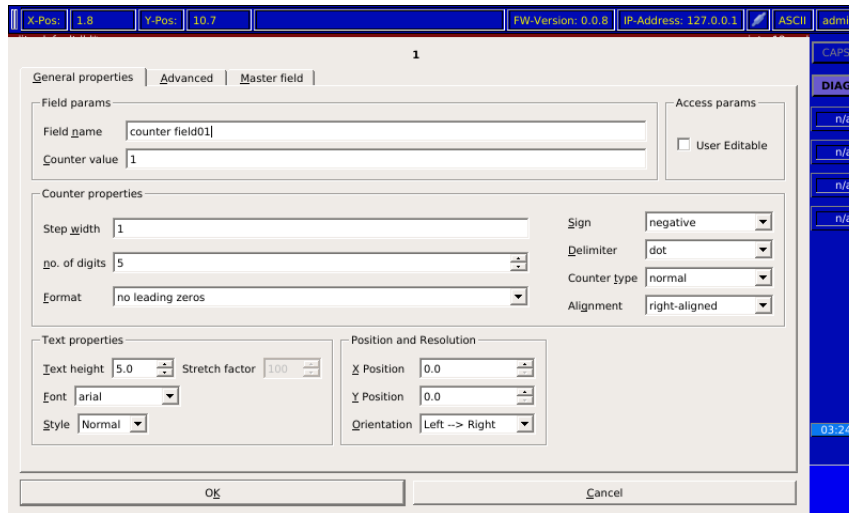


Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 8_191: Menu File > Edit > New > Counter



The screenshot shows the 'Counter Field Window' with the following settings:

- Field params:** Field name: counter field01, Counter value: 1, Access params: ☐ User Editable
- Counter properties:** Step width: 1, Sign: negative, Delimiter: dot, Counter type: normal, Alignment: right-aligned, No. of digits: 5, Format: no leading zeros
- Text properties:** Text height: 5.0, Stretch factor: 100, Font: arial, Style: Normal
- Position and Resolution:** X Position: 0.0, Y Position: 0.0, Orientation: Left -> Right

Fig. 8_192: Counter Field Window

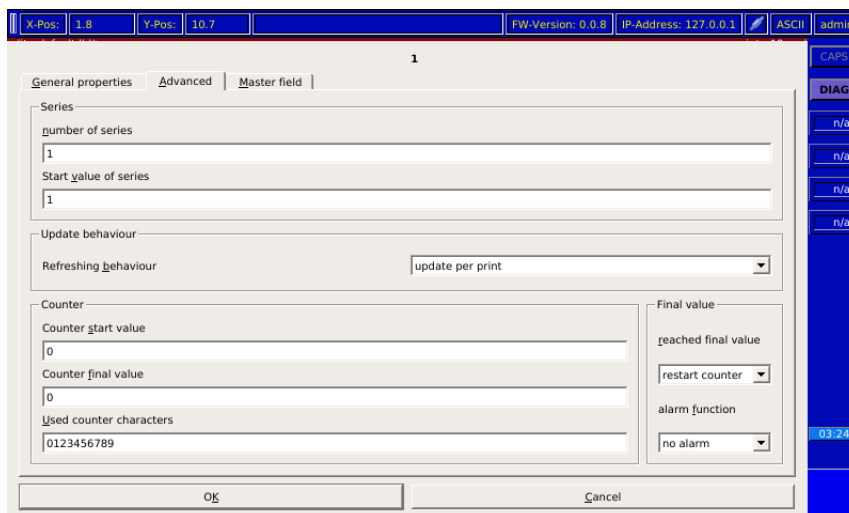
**NOTE**

To navigate within freely editable input lines in the various fields, use the tab and arrow keys (see [Chapter 5.7](#), "Navigation within the Menu Displays").

Advanced Counter Settings
Advanced counter formats

Advanced option is used for the following:

- To format the batch counters.
- To set the action to be performed when the final value is reached.
- To activate the alarm once the final value is reached.



The screenshot shows the 'Counter Field - Advanced Window' with the following settings:

- Series:** number of series: 1, Start value of series: 1
- Update behaviour:** Refreshing behaviour: update per print
- Counter:** Counter start value: 0, Counter final value: 0, Used counter characters: 0123456789
- Final value:** reached final value: restart counter, alarm function: no alarm

Fig. 8_193: Counter Field - Advanced Window

Number of series:

This is for setting the number of products to be identified with the same counter value.

Example: The first product batch is comprised of 50 packages:

Number of series 50 → The first 50 packages will be printed with the same counter value (=batch number).

Then the counter is increased by the set step size (see previous counter menu view).

Batch start value:

By specifying a batch start value you can adjust the size of the first batch. For example, if the quantity in the first batch is lower (rejects in the start up of production, etc.), this can be specified here.

The changed quantity only applies to the first batch. After this the value in "Number of batches" is used as the basis. If "0" is entered, the first batch has also the full number of units.

Example: the batches are comprised of 50 packages per batch.

In the first run through, however, 10 packages are rejected before the printing process can start up.

Therefore, 40 is entered in "Batch start value" and 50 in "Number of batches" (applicable for all subsequent batches).

Counter start value:

When the actual number of batches running through reaches the value specified in "Counter end value", the counter is reset to the value specified here.

Counter final value:

The counter counts up or down until this value is reached. The next step is determined by the next function "Reached final value".

Reached final value:

In this menu item this is for specifying what happens next when the "Counter final value" has been reached.

Re-start counter:	The counter starts again at the value specified under "Counter start value".
Stop printer:	Printing stops when the end value is reached.
Ignore:	Printing continues.

Alarm function:

The "Counter alarm" is activated once the end value has been reached. It applies a signal to the digital output 4 (see also [Chapter 14.4.4.1](#)).

Refreshing behaviour:

Update per print:

The counter status (see previous menu view) is changed by the set step size after every print (in the examples: counter status 100, step size 1).

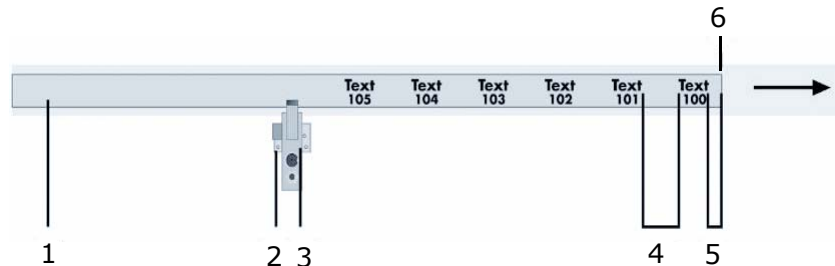


Fig. 8_194: Refreshing Behaviour – Update per Print

- | | | | |
|---|--------------------------------------|---|--------------------------|
| 1 | Print material, e. g. fan-fold paper | 4 | Distance after |
| 2 | Photoelectric cell | 5 | Distance before |
| 3 | Print head | 6 | Photoelectric cell pulse |

Update per sensor signal:

The counter status is only updated when a new sensor signal is issued.

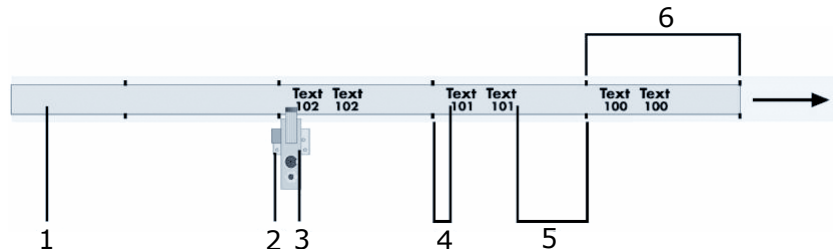


NOTE

For update per sensor, following settings have to be taken into account (see [Chapter 7.4.3](#)):

- Cyclic has to be activated
- Number/Sensor = 0

When cyclic mode has been activated and number/sensor has been set to $\neq 0$, the counter value will change by the preprogrammed quantum at each print (like update per print).



See also
[Chapter 7.1.2](#),
 "External I/O"

Fig. 8_195: Refreshing Behaviour – Update per Sensor Signal

- | | | | |
|---|-------------------------------------|---|---------------------------|
| 1 | Print material (e. g. blister band) | 4 | Distance after |
| 2 | Photoelectric cell | 5 | Distance before |
| 3 | Print head | 6 | Photoelectric cell pulses |

Counter field with external trigger (pallet counter):

The counter field in the m610 advanced can also be incremented and decremented via an external trigger by the preset step size.

This means that the counter status is not incremented via the print trigger sensor, properly speaking.

To enable the counter to be triggered and reset externally, updating must be set to "Update externally" in the editor of the counter field under "advanced".

Counter characters used

These are the characters used by the counter. The basic setting is a decimal counter (characters 0 - 9). Up to 30 characters can be entered.

	decimal		hexadecimal	
Basis	10		16	
counter characters used	0123456789		0123456789ABCDEF	
Counter start value	1		1	
Example	1. print	1	1. print	1
	2. print	2	2. print	2
	3. print	3	3. print	3
	etc.		4. print	4
	9. print	9	etc.	
	10. print	10	14. print	E
	11. print	11	15. print	F
	12. print	12	16. print	10
			17. print	11

Tab. 8_30: Printing Example of a Decimal and Hexadecimal Counter

	alphabetic	binary
Basis	26	2
counter characters used	ABCDEFGHIJKLMNOPQRSTUVWXYZ	01
Counter start value	A	0

	alphabetic		binary	
Example	1. print	A	1. print	0
	2. print	B	2. print	1
	3. print	C	3. print	10
	etc.		4. print	11
	25. print	Y	5. print	100
	26. print	Z	6. print	101
	27. print	BA	7. print	110
	28. print	BB	8. print	111
	etc.		9. print	1000
	51. print	BY		
	52. print	BZ		
	53. print	CA		
	54. print	CB		

Tab. 8_31: Printing Example for an Alphabetic and Binary Counter

Linking to a master field

Master field is used to link the counter field to a master field.

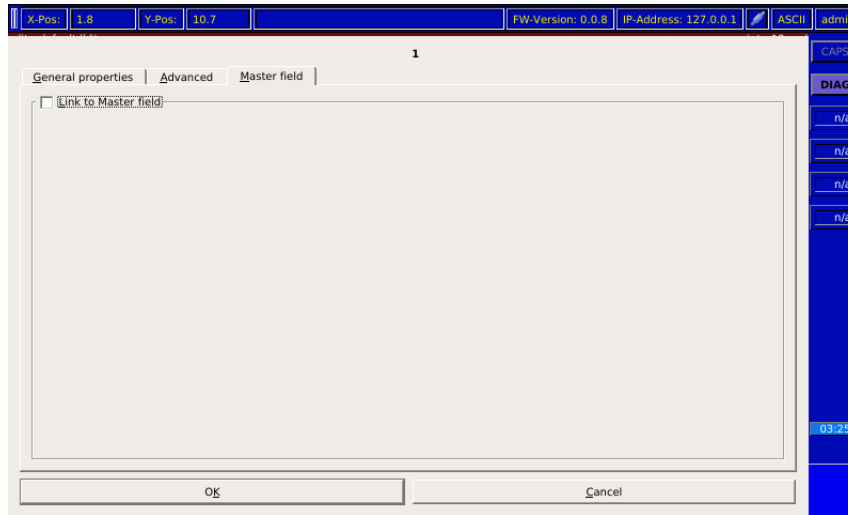


Fig. 8_196: Counter Field - Master Field Window

Do the following tasks to link the text field to a master field:

- Go to Master field window.
- Select Link to Master field option. The list of Master field and Master field value is displayed.
- Select the required master field and acknowledge it with "OK".

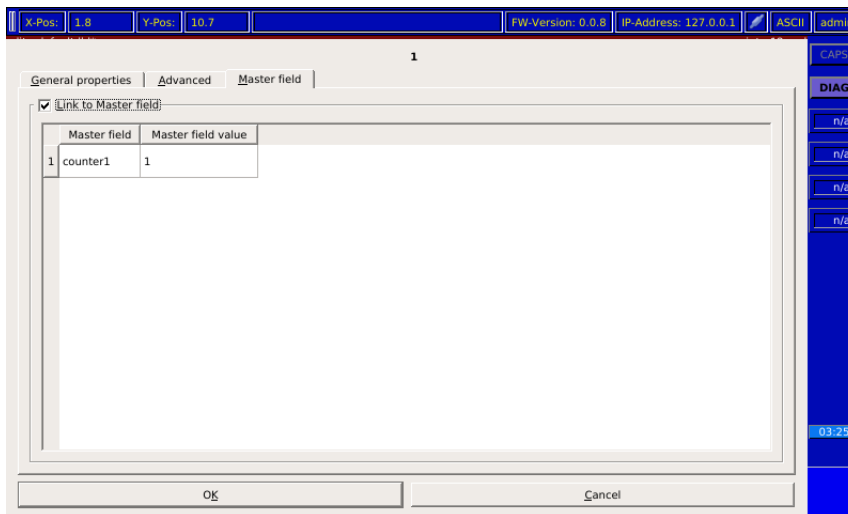


Fig. 8_197: Counter Field - Master Field Window - Linked

8.1.3 Date

Date

Date field is used to insert the date as per the required format in the label. The Date field is used for the following:

- To set the update mode and offset value.
- To set the date format.
- To select the user editable field, if the date object has to be edited by the user.
- To set the Forerun values (days/months/years).
- To set the field properties (text height, font type and style).
- To set the position and orientation of the date field in the label.



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

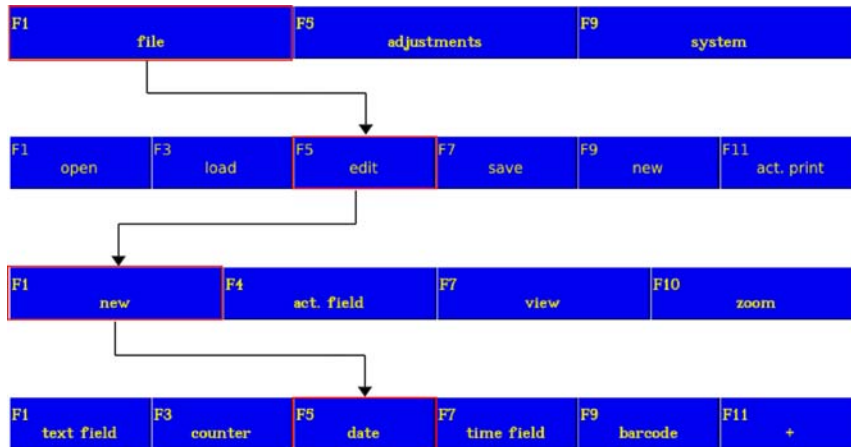


Fig. 8_198: Menu File > Edit > New > Date

Fig. 8_199: Date Field Window



NOTE

To navigate within freely editable input lines in the various fields, use the tab and arrow keys (see [Chapter 5.7](#), "Navigation within the Menu Displays").

User Defined Date Format

User defined date format option is used for the following:

- To customize the date format by assigning names for the days, months and days of the week via the tabs: day codes, month codes and week-day codes.
- The day, month and week-day codes allow the user to define the codes required within the label.

Julian calendar offset:

This is for entering the offset if a Julian calendar date is used.

Day Codes:

It allows the user to define their own day code. To assign own value for day code, go to a specific day code, enter the new value and acknowledge it with "OK".

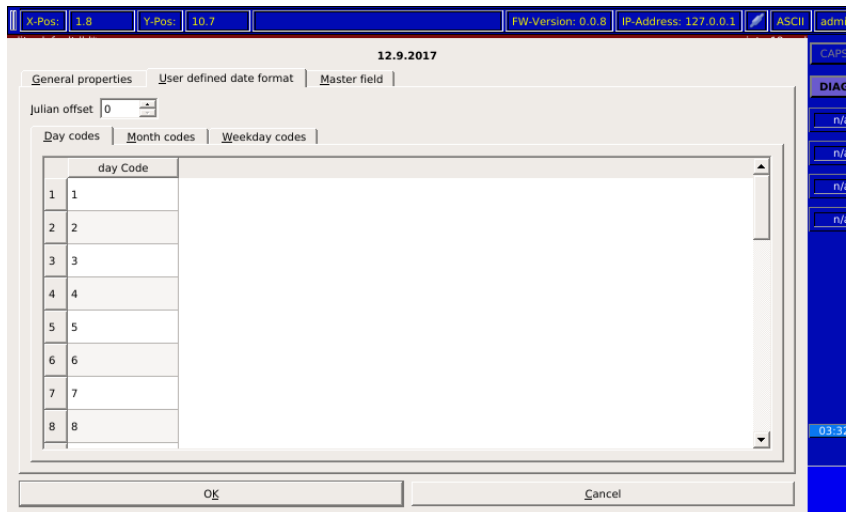


Fig. 8_200: Day Codes

Month Codes:

It allows the user to define their own month code. To assign own text for month code, go to a specific month code, enter the new text and acknowledge it with "OK".

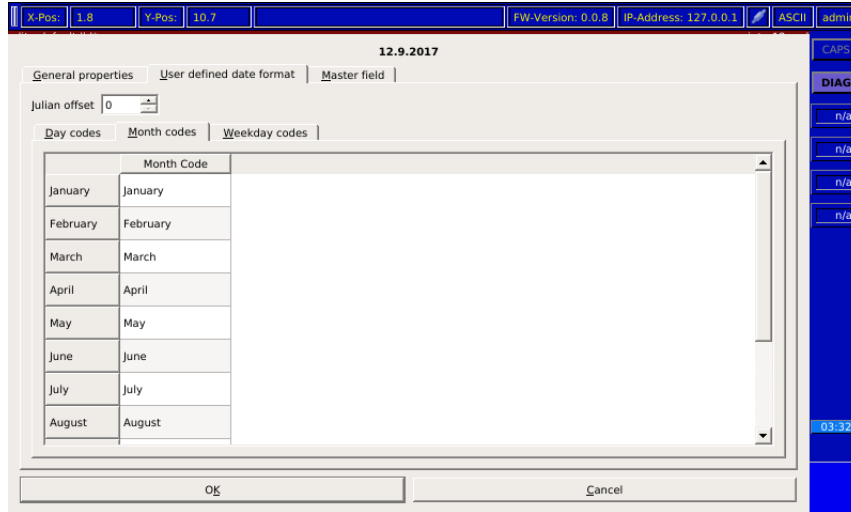


Fig. 8_201: Month Codes

Weekday Codes:

It allows the user to define their own weekday code. To assign own text for weekday code, go to a specific weekday code, enter the new text and acknowledge it with "OK".

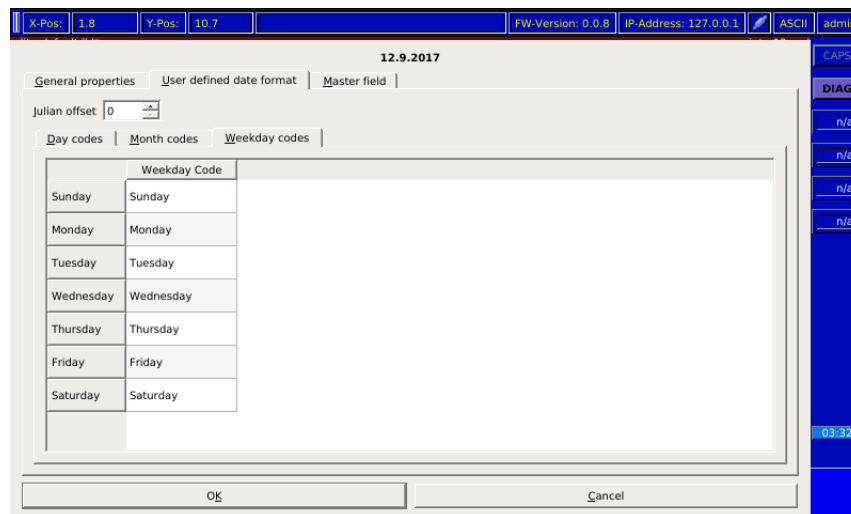


Fig. 8_202: Weekday Codes

Linking to a master field

Master field is used to link the data field to a master field.

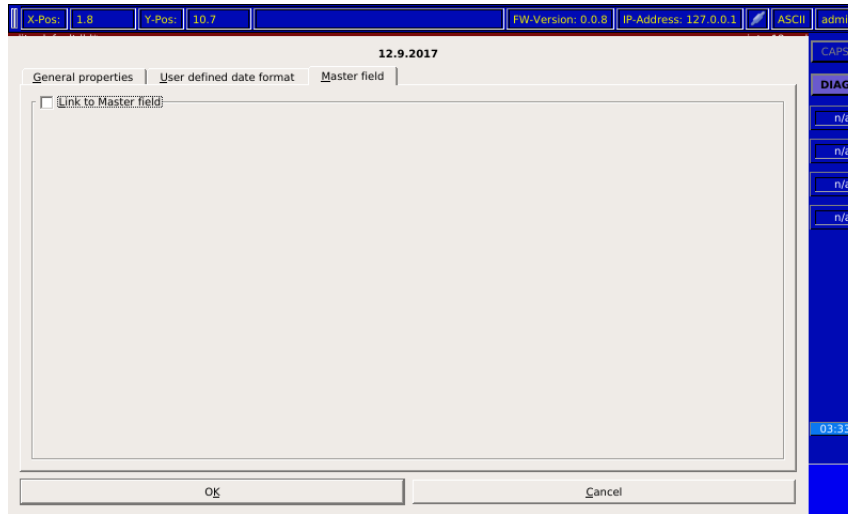


Fig. 8_203: Data Field - Master Field Window

Do the following tasks to link the text field to a master field:

- Go to Master field window.
- Select Link to Master field option. The list of Master field and Master field value is displayed.
- Select the required master field and acknowledge it with "OK".

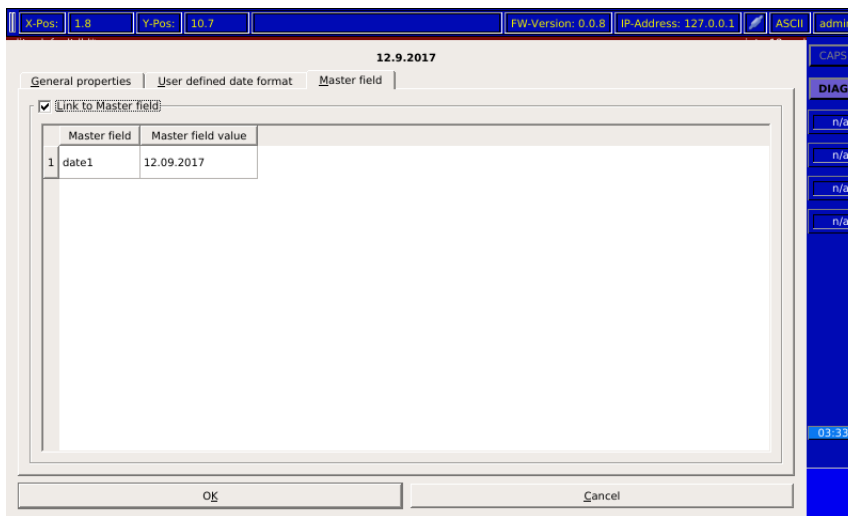


Fig. 8_204: Data Field - Master Field Window - Linked

8.1.4 Time Field/Time

Time field/ Time

Time field is used to insert the time in required format in the label. Time field is used for the following:

- To set the update mode and offset value.
- To set the time format and forerun values.
- To set the field properties (text height, font type and style).
- To set the position and orientation of the time field in the label.

Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

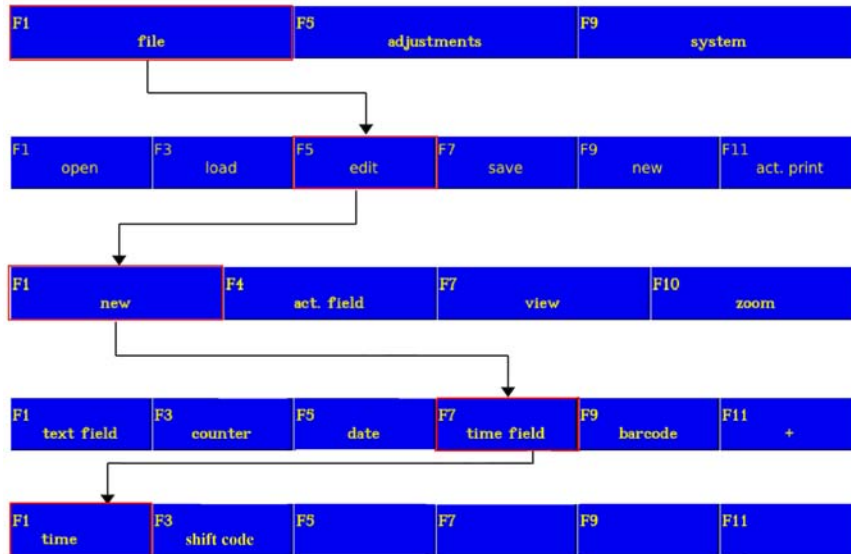


Fig. 8_205: Menu File > Edit > New > Time Field > Time

The screenshot shows the 'Time Field Window' with the following settings:

- Field params:** Field name: time field01, Time Format: %S:%I:%E
- Update mode:** Update mode: Seconds, Interval: 0
- Forerun:** Foregun (hh:mm): 0 : 0, Offset: 0 : 0
- Text properties:** Text height: 5.0, Stretch factor: 100, Font: arial, Style: Normal
- Position and Resolution:** X Position: 0.0, Y Position: 0.0, Orientation: Left --> Right

Fig. 8_206: Time Field Window

Forerun:

If instead of printing the current time you wish to print a time which is offset either backwards or forwards, you can enter the setting here.

Time format:

This selection list allows you to select one of the 54 predefined time formats. If the selection list does not contain a suitable format for the required application, you also have the option of creating a user-defined date format under "Format".

The time integrated in the selection list is selected as an example. The time format is displayed in the label field on the basis of the current time.

Update mode:

Update mode is for setting whether the time is updated in seconds, minutes or hours.

Interval:

This is for specifying the interval between updates. The unit for updating is either seconds, minutes or hours, depending on the setting in "Update mode".

Example:

Update mode = Hours Interval = 8 → The time is updated every 8 hours



NOTE

In order to achieve time intervals of identical length (print on your product), the set intervals for seconds and minutes must be divisible by 60 and for hours they must be divisible by 24. Otherwise offsets will result.

Format:

In the field "Format" the user can compile his/her own time format (see "User Defined Date Format" on page 11.). Below, please find an overview of the format parameters to be used:

Parameter	Explanation
% S	Hours (24h format), 2-digit
% s	Hours (24h format)
% T	Hours (12h format), 2-digit
% t	Hours (12h format)
% I	Minutes 2-digit
% i	Minutes
% E	Seconds 2-digit
% A	AM/PM
% a	am/pm
%V	Coded hours from the hour code list
%Z	Tenths of seconds, single-digit
%H	Hundredths of seconds, 2-digit
%L	Thousandths of seconds, 3-digit

Tab. 8_32: Format Parameters in the Time Field

Hour codes

Here, you can code the individual hours, and assign different values to them.

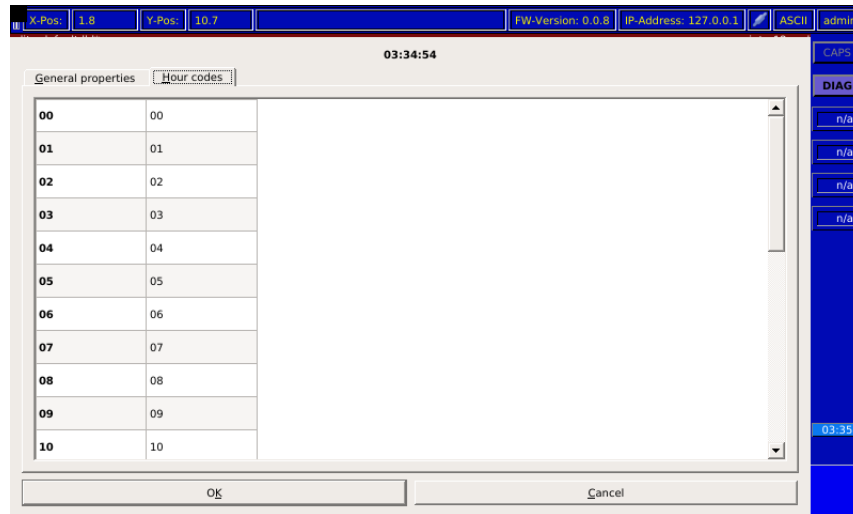


Fig. 8_207: Hour Codes

A different coding can be entered for each hour. If you require this function, you must first adapt the hour code list. Subsequently, the format formula must be entered using the required parameter:

Actuate "F1 - character for entering hours manually" to access the appropriate input mask. The mask is designed as in case of the day or month codes.

- The list contains 24 entries from 00 to 23 h.
- For the code per hour, the user disposes of max. 15 characters.

The format line for a time of the day with coded hour can then be entered as follows:

Format line	Printing example
%V - %I - %E	999 - 36 - 54 (Coded hour - minutes - seconds)

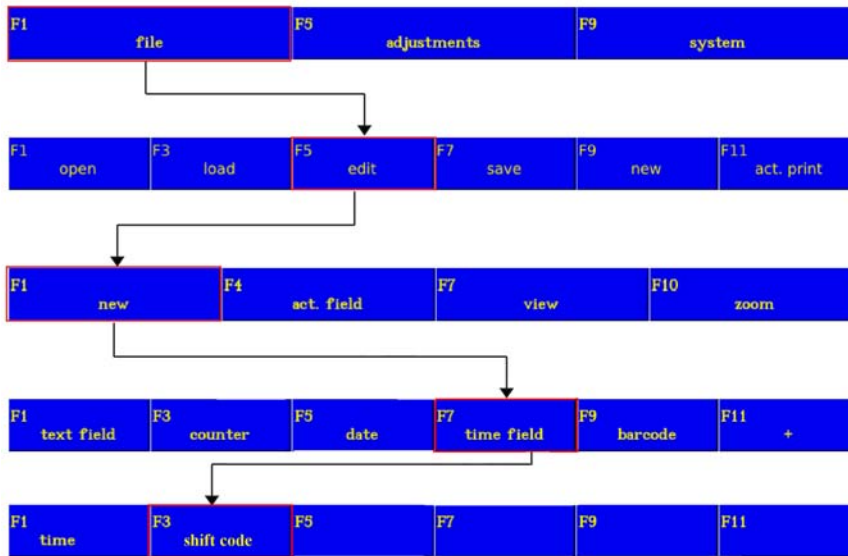
As a general rule the update interval is based on real time, starting with an adjustment to 0.00 h. The offset function can be used to have the update carried out at a specified time.

8.1.5 Time Field/Shift

Shift field allows to insert the shift details in the label. Shift field is used for the following:

- To set the number of shifts (maximum eight shifts).
- To set the display hour format.
- To enter the shift start time and shift code for all the shifts.
- To set the field properties (text height, font type and style)
- To set the position and orientation of the shift field in the label.

*Time Field/
Shift*



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 8_208: Menu File > Edit > New > Time Field > Shift Code

Fig. 8_209: Shift Field Window

**NOTE**

The shift code is for the coding and reproduction of the different production shifts during a day.

Number of shifts:

This menu is for selecting the number of shifts in each production day. A maximum of 8 shifts are available. Only the shifts which have been selected (lines) are actively shown, the other input lines remaining gray.

Format:

This selection is for specifying the time format for entering the beginning of the shift. "F1" sets the 24-hour format used in Europe and "F2" sets the 12-hour format used in the USA or UK (with the addition of "am" and "pm").

Example:

	„24 hours“ (Europe)	„12 hours“ USA and UK
6 h 15 minutes morning	06:15:00	06:15:00 am
12 h 15 minutes midday	12:15:00	12:15:00 pm
2 h 15 minutes afternoon	14:15:00	02:15:00 pm
10 h 15 minutes evening	22:15:00	10:15:00 pm

Tab. 8_33: Time Formats for Europe and USA/UK

Shifts:

Every activated shift has a three-part field for entering the start of the shift and the desired code. The field always begins with the name "Shift" and the "No." of the shift in front. This field cannot be altered. The following part of the field is for entering the start of the shift, either in 24-hour or 12-hour format depending on the hours format. The third part of the field is for entering the desired code for the shift designation. A total of 16 characters are available here.

Use the arrow keys to navigate within the input fields. The only time entered for each shift is the time at which the shift begins. The duration of the shift is derived automatically from the start of the next shift.

Shift Format:

Here, the format for the time can be entered. The specifications are the same as those for the time (see "Time Field/Time" on page 14).

8.1.6 Embedded Field Types

Creating an embedded field type

To create the embedded field type, select the position of the dummy for the embedded field in the input line. Subsequently, the field type to be inserted can be selected via arrow keys.

Embedded fields



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

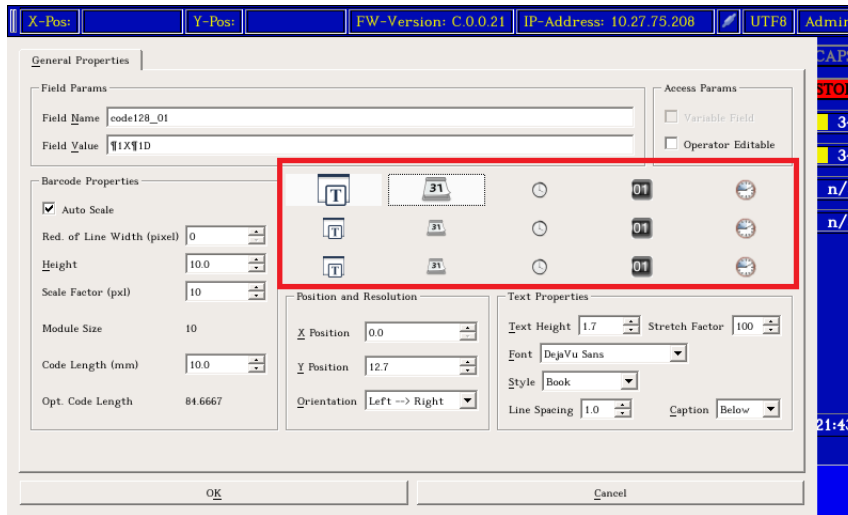


Fig. 8_210: Example – Embedded Field Types in Barcode Field Code128

IMPORTANT

- To obtain the assignment of the embedded fields to the function keys, the dummies for the embedded fields in the input line must be numbered (for three successive date fields e.g. 1D2D3D).
- Unique field names must be assigned for the embedded fields.

8.1.7 Barcode

Barcode



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

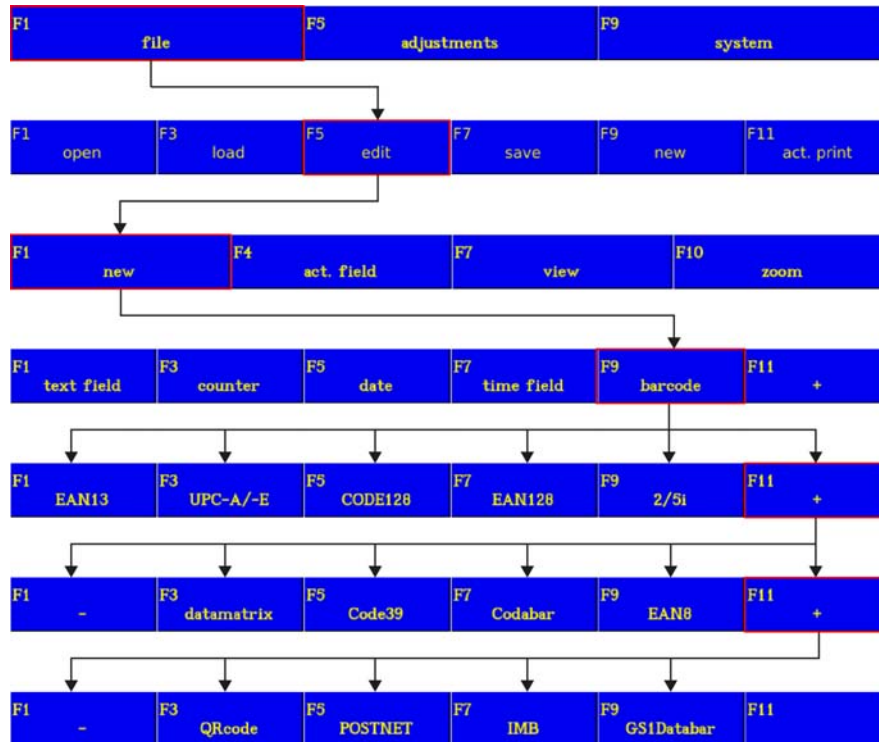


Fig. 8_211: File > Edit > New > Barcode

**NOTE**

The menu fields for the barcodes EAN13, UPC-A/E, EAN8 and Code128/EAN128 are identical and are explained together.

The following barcodes can be printed on the m610 advanced:

- EAN8
- EAN13
- UPC-A
- UPC-E
- CODE128
- EAN128
- 2/5i
- Codabar
- Code39
- Datamatrix
- GS1-Datamatrix
- QR Code
- Postnet/IMB
- GS1 Databar Composite

Basic principles

The structure of the barcode must correspond to the directives applicable for barcode structures (e.g. ean/UCC), i.e.: how many and which characters are required and are permitted, what is the structuring sequence for structured codes, what size is possible and makes sense, are data field identifiers being used etc.

When setting up barcode fields, check how the ink used behaves on the substrate used.

If bleeding (blotting paper effect) has been detected, the value of the bar width reduction must be adapted accordingly, as otherwise the bar width tolerances may not be complied with. This may impair the reading performance of the scanner.

The bar width reduction value determines the number of pixels reduced on the sides of the individual bars of the barcode. To this effect, it is recommended to perform some test prints to judge the behaviour.

To generate barcodes of the required quality, the m610 advanced requires a precise speed signal. If the speed signal is wrong, the barcode is either compressed, stretched or printed with tailing, which necessarily impairs the reading effect. Thus, a shaft encoder should be used, as far as possible.

When printing by means of several print heads, adjust the sensor distance and the alignment of the print heads with regard to the direction of product movement, so that "stepped" printing is avoided.

The resolution must be set so that the blotting effect is not too distinct, and on the other hand, the contrast is strong enough.

The quality of the overall pattern depends also highly on the substrate used.



NOTE

In case of the barcode types Code39, Code25i, Code128, EAN 128, Datamatrix, GS1 Databar and QRcode, an embedded field may also be used as value of the barcode. To enter the embedded field, click on the appropriate icon. The editor window of the embedded field opens to enable editing. If a barcode other than mentioned above has been selected, the icons are not visible.

If an embedded field is inserted in the barcode contents, the object cannot be edited by the User.



NOTE

The barcodes Codabar, Code39, Code 2/5i, Code128, EAN128, GS1 Databar, Postnet, and IMB can only be printed with the orientation from left --> right and right --> left.

8.1.7.1 EAN8, EAN13, UPC-A/E

*EAN 8, EAN 13,
UPC-A/E*

For the barcode types EAN8, EAN13 and UPC-A/E, the checksum is calculated automatically.

General Properties option is used for the following:

- To enter the barcode value.
- To set the field properties (red. of line width, height, scale factor).
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

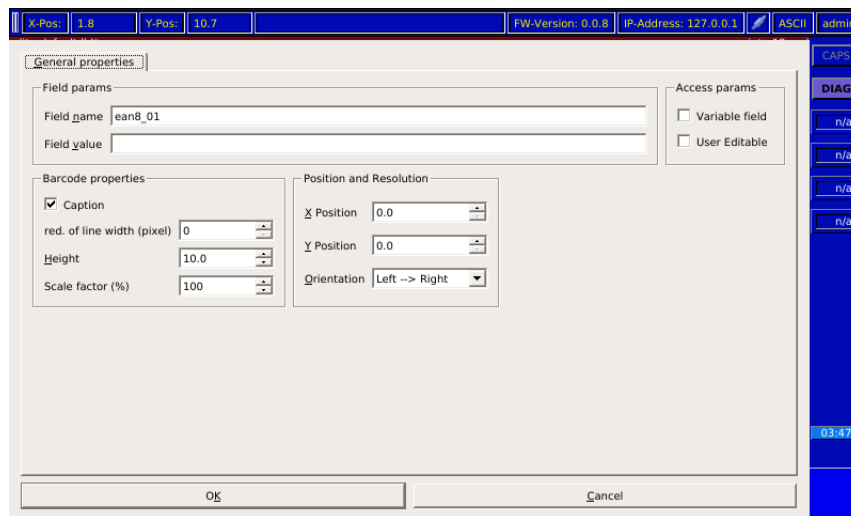


Fig. 8_212: Barcode EAN 8

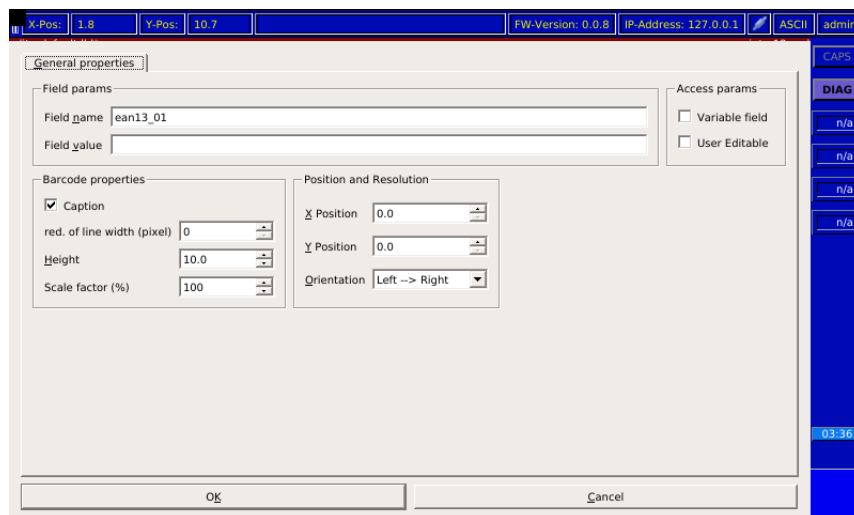


Fig. 8_213: Barcode EAN 13



NOTE

The barcode UPC-A/E can be compressed to UPCE format.

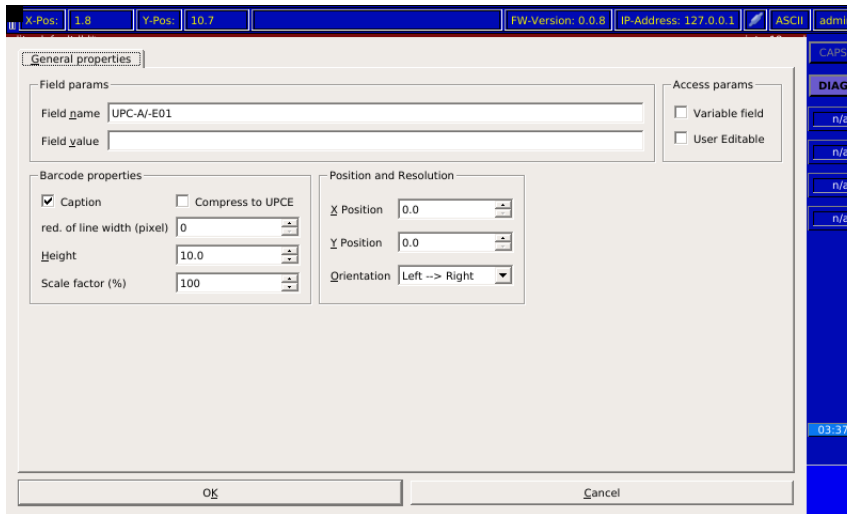


Fig. 8_214: Barcode UPC-A/E



NOTE

The explanations marked • below are provided once only for all barcodes.

Bar coding for EAN 8, EAN 13

Here, the 12 digits of the EAN 13 respectively the 7 digits of the EAN8 are entered. The last digit = check digit does not have to be entered manually because it is calculated by the program itself.

Bar coding for UPC A/E

Here, the 11 digits are entered at UPC-A/E. The last digit = check digit does not have to be entered manually because it is calculated by the program itself.

Compress into UPCE

The UPCE code can be generated by selecting "Compress into UPCE". The UPCE code is a shortened variant of the UPC code, which is also a numeric code with the digits 0-9. The UPC-E is an 8-digit code, with the eighth digit being the check digit and the first digit being a system identifier, which is always "0". The coded digits are included as plain text below the code.

Bar width reduction in pixels •

This function is provided to enable the legibility of the barcode to be adjusted to account for different combinations of ink and substrate (product packaging material). This is particularly important if the ink bleeds heavily on the substrate (= runs). In order to achieve the optimum presentation of the bars on such materials, a bar width reduction is recommended.

**NOTE**

Leave the value unchanged first and then decide after the first test print whether an adjustment is required.



Reduction: 0 Pixel
Scaling: 120%



Reduction: 4 Pixel
Scaling: 120%

Fig. 8_215: Example – Samples with Identical Scaling and Different Reduction

Scale factor •

The “Scaling” function is for expanding or compressing the barcode so that it can be adjusted to meet requirements.



100 % Basis



> 100 % = Broaden
barcode



< 100 % = Narrow
barcode

In the case of very small print areas which require barcode scaling of under 100 % it will often be necessary to combine scaling and barcode reduction.

Example:

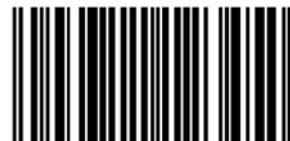
With scaling of 70% the spaces between the bars are still very small. Depending on the material, the ink may fill the spaces. In order to avoid this, the bar width should be reduced with the “Bar width reduction” menu item and this will produce an optimum barcode print.

Height [mm] •

“Height” is for setting the print height of the barcode.

With text

This is for specifying whether the barcode appears with or without a number plain text line.



Orientation

This is for setting the orientation of the barcode.



NOTE

The barcodes Code128, EAN128, 2/5i, Code39, Codabar and the combi field (see [Chapter 8.1.9](#)) can only be printed with the orientation **Left-hand -> Right-hand** or **Right-hand -> Left-hand**.

In case of vertical print orientation, the cleanness of the cartridges requires special attention.

8.1.7.2 Code128/EAN128

*Code128/
EAN128*

Auto scale property is available for the barcode types Code128, Ean128.

General Properties window is used for the following:

- To enter the barcode value.
- To insert the dynamic fields (text, date, time, counter and shift code) in the barcode value field.
- To set the field properties (red. of line width, height, scale factor, module size, codelength, opt. codelength).
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

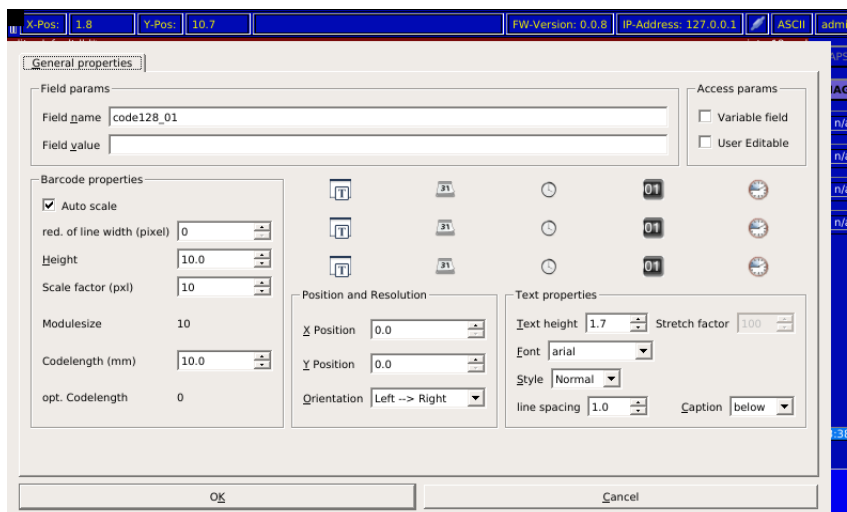


Fig. 8_216: Barcode Code128

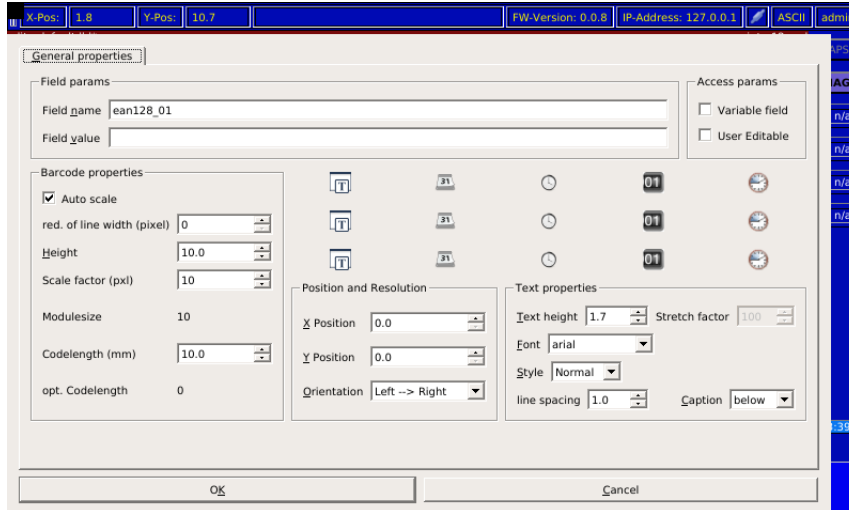


Fig. 8_217: Barcode EAN128

Bar coding

This menu item is for entering the digit combination for the barcode.

Text field/Counter/Date/Time/Shift code

If the barcode is only presented with bar coding, no entries have to be made in these fields.

If a label is printed with an additional text field, counter, date, time or shift code entry in the plain text line (the required field is added directly to the plain text line), you have to edit it by selecting the respective fields.

The text and the date field can be linked to a master field (see [Chapter 8.1.1](#) and [Chapter 8.1.3](#)).

Caption

The plain text line shows the barcode digits which are entered. You can choose between having the digits shown either below or above the barcode or not having them shown at all.

Auto Scale

Autoscaling is a function used to improve the encodability of small codes. With activated autoscaling, the module size of the code is optimised in accordance with the selected resolution. The function is realised so that if possible, the next smallest optimal module size is chosen, i.e. the code cannot be larger than originally set.

Code Length

With activated autoscaling, the maximum code length can be entered with barcode leading edges/barcode trailing edges. The printer then selects the next smallest module size for the resolution to display the code length.

Opt. code Length

The optimised code length results from the desired code length and the selected scaling (pixels).

Module size

Is only displayed if autoscaling is activated. The module size defines the size of the individual code modules. The value given here, gives the module size in pixels. This display serves only for information.

Scale factor (pixel)

Here the scaling of a code module can be entered. If the optimised code length deviates greatly from the desired code length, this effect can be improved through adjusting of the scaling (pixels). The possible values are dependent on the selected print resolution.

Possible module sizes (scaling pixels) with selected printing resolution:

Resolution DPI	Possible module size
600	10, 9, 8, 7, 6, 5
450	6, 12, 8, 4
360	15, 10, 5
300	16, 14, 12, 10, 8, 6
240	15, 10, 5
200	15, 12, 9, 6
180	10
150	12, 8, 4
120	15, 10, 5
100	12, 6
75	16, 8
60	10

Tab. 8_34: Possible Module Sizes (Scaling Pixels) with Selected Printing Resolution



NOTE

If the resolution (DPI) of the print label changes, the module size must possibly be automatically adjusted. This means that the size of the code can also change. The adjustment of the module size is displayed through the message below and must be acknowledged with "OK".

Text height [mm]

This defines the height of the text in the plain text line.

8.1.7.3 2/5i and Code39

2/5i, code39

The **barcode 2/5 Interleaved** is only admissible for representing the digits from 0 to 9.

The input mask for the barcode 2/5 Interleaved provides the same five standard field types (text field, date, Time, Counter and Shift code) as in the other barcodes (e.g. EAN 128, Code 128).

Each of the five field types (Text field, Date, Time, Counter and Shift code) are available only once as embedded fields per 2/5 Interleaved barcode field.

For the implementation of the additional functions in the barcode 2/5 Interleaved, the same five standard field types (Text field, Date, Time, Counter and Shift code) are available as in the other barcodes (e.g. EAN 128, Code 128), (see [Chapter 8.1.7.2, "Code128/EAN128"](#)).

The user, when entering the information to be coded, must ensure that only the digits from 0 to 9 are used for the five available embedded fields (Text, Date, Time, Counter and Shift code). Neither is it admissible to use any special characters, such as: . - /etc.

A plausibility check by the m610 advanced is not possible, as the existing fields (Text field/Date, Time, Counter and Shift code) with all their configuration options have been used for this functional extension.

The **barcode Code39** is an alphanumerical barcode which allows the numbers 0-9, 26 letters (without Umlauts) and 7 special characters (-.\$/+%[space]) to be presented. A checkbox ("_with delimiter") can be used to print the plain text line with or without asterisk as start and stop character. In this process, the coded contents are not changed.

For the barcode types Code39, Code25i, the checksum can be calculated. To calculate checksum select Calculate checksum option in the General properties window.

General Properties window is used for the following:

- To enter the barcode value.
- To insert the dynamic fields (text, date, time, counter and shift code) in the barcode value field.
- To set the field properties (red. of line width, height, scale factor, bar ratio).
- To select Calculate checksum, if the checksum value has to be calculated.



NOTE

The Code39 barcode field properties allow to include delimiter.

- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.

- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

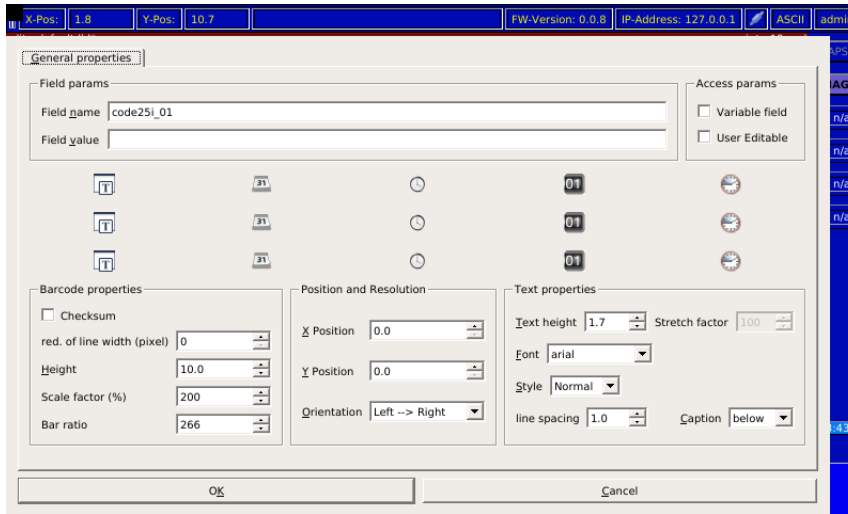


Fig. 8_218: Barcode 2/5i

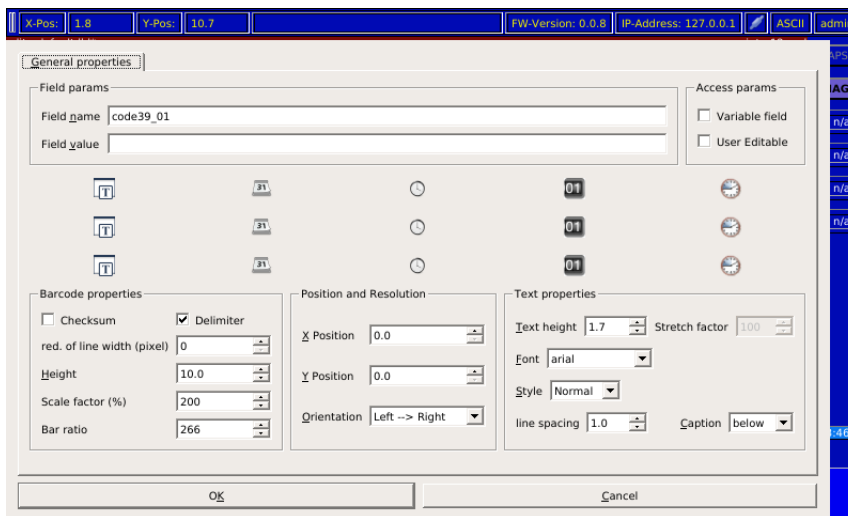


Fig. 8_219: Barcode code39

Bar coding

This menu item is for entering the digit combination for the barcode. "Check digit" is for specifying whether the barcode appears with or without a check digit.

Caption

The plain text line shows the barcode digits which are entered. You can choose between having the digits shown either below or above the barcode or not having them shown at all.

Check sum

This is for specifying whether a check digit calculation and presentation is required or not.

Bar ratio

Bar ratio is for specifying the ratio between thick and thin barcode bars. The value entered here should be between 200% and 300%.

Example prints:



Bar ratio 200



Bar ratio 300

Text height [mm]

This defines the height of the text in the plain text line.

8.1.7.4 Codabar

Codabar

The coding Codabar provides a limited alphanumeric character set. Only alphabetic characters (letters) can be used as start and stop characters. In addition to these letters, the special characters \$ + - : . / are also possible.

For the barcode type Codabar the checksum can be calculated. To calculate checksum select Calculate checksum option in the General properties window.

General Properties window is used for the following:

- To enter the barcode value.
- To set the field properties (red. of line width, height, scale factor, bar ratio).
- To select Calculate checksum, if the checksum value has to be calculated.
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

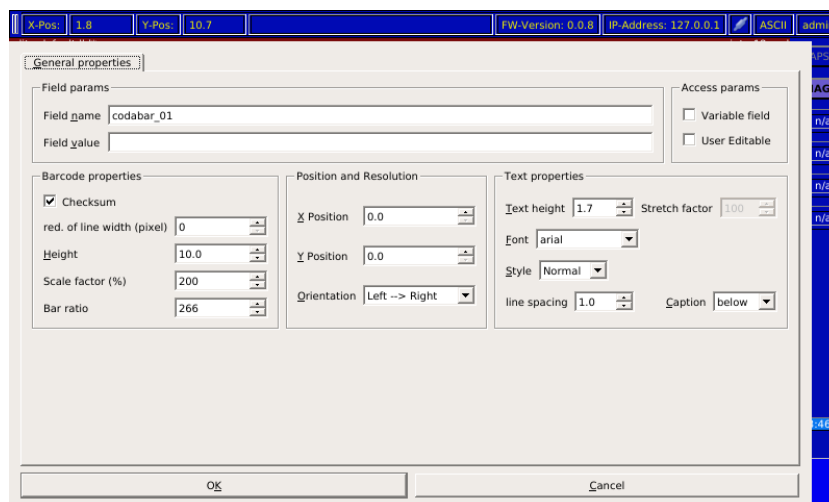


Fig. 8_220: Barcode Codabar

Given that the menu fields for the Codabar are the same as the fields for the previous barcodes, please refer to the previous pages for explanations.

8.1.7.5 Datamatrix

Datamatrix

General Properties window is used for the following:

- To enter the barcode value.
- To insert the dynamic fields (text, date, time, counter and shift code) in the barcode value field.
- To set the field properties (type, matrix size, pixel reduction, module size and actual value).
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

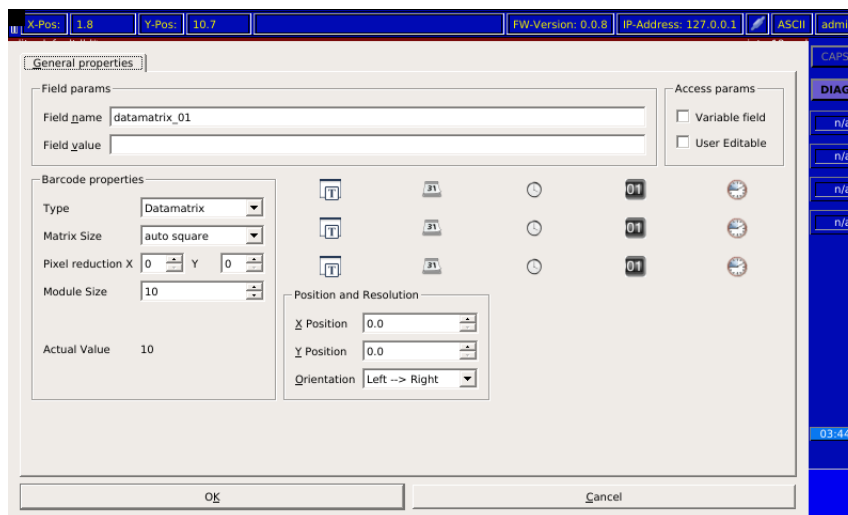


Fig. 8_221: Barcode Datamatrix

Type

This field is for selecting the type of datamatrix barcode. The code is later shown in the display in the form of a square/rectangular (depending on the matrix selected) with the label "2D" for Datamatrix. The matrix size is directly dependent on the number of characters entered here.



ATTENTION

All size specifications in relation to the 2D Datamatrix code are based on a resolution of the m610 advanced of 600 x 600dpi.

Module size

The module size defines the size of the individual code modules. The value specified here gives the module size in pixels.

The module size can be set, but not each value is possible for each resolution:

Resolution (dpi)	Step size	Example
600	1	1,2,3,4,5,6,7,8,9,10, ...
450	4	4,8,12,16,20, ...
360	5	5,10,15,20, ...
300	2	2,4,6,8,10,12,14, ...
240	5	5,10,15,20, ...
200	3	3,6,9, 12, 15, ...
180	10	10, 20, 30, 40, ...
150	4	4,8,12,16,20, ...
120	5	5,10,15,20, ...
100	6	6, 12, 18, 24, ...
75	8	8, 16, 24, 32, ...
60	10	10, 20, 30, 40, ...

Tab. 8_35: Possible Module Sizes Depending on the Resolution

Example:

Entering the value "10" means that the module size is 10 x 10 pixels. Under ideal conditions the pixel size should be 0.043mm.

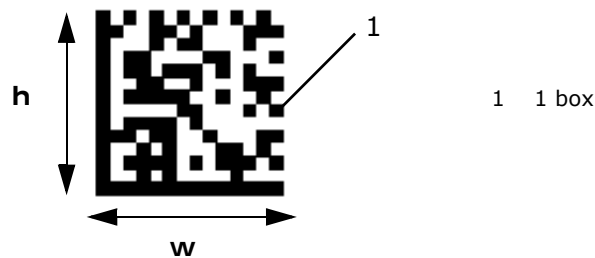


Fig. 8_222: Example – Datamatrix

Example: Matrix size = 8x32, module size = 10

Calculation of the height (h)

$$h = \text{Matrix size} \times \text{module size} \times \text{pixel size}$$

$$h = 8 \times 10 \times 0.043 \text{ mm} = 3.44 \text{ mm}$$

Calculation of the width (w)

$$b = \text{Matrix size} \times \text{module size} \times \text{pixel size}$$

$$b = 32 \times 10 \times 0.043 \text{ mm} = 13.76 \text{ mm}$$

Pixel Reduction

X: An entry in this field reduces the number of pixels in each module crosswise to the direction of printing. The size of the Datamatrix code is not affected by these two entries.

Y: An entry in this field reduces the number of pixels in each module in the direction of printing.



NOTE

This function "Pixel reduction" are provided to enable the legibility of the barcode to be adjusted to account for different combinations of ink and substrate (product packaging material). This is particularly important if the ink bleeds heavily on the surface (= runs).

Matrix size [number of modules]

The list for the matrix size allows you to choose whether the code as a whole should be shown as a square or rectangle. The program then calculates the minimum size in number of crosswise modules x number of lengthwise modules shown at the top edge of the menu in the middle.

This size is the minimum size required for showing the content of the code entered under Datamatrix. If you require the code to be shown with a larger matrix you can select one from the size list. This means that you can keep the same size of matrix for products even when the content varies.

Matrix size

Matrix size			
auto square	18x18	36x36	12x26
auto rectangular	20x20	40x40	12x36
10x10	22x22	44x44	16x36
12x12	24x24	48x48	16x48
14x14	26x26	8x18	
16x16	32x32	8x32	

Tab. 8_36: Possible Matrix Sizes of the Datamatrix

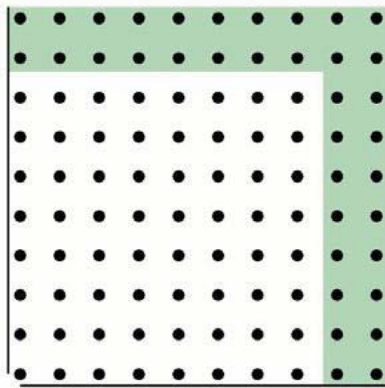


NOTE

If, for example, a module size of 10 x 10 was selected and "Both nozzle rows" (= 600dpi vertical resolution) and a resolution in the printing direction (= 600dpi horizontal resolution) was set on the m610 advanced, the module will be printed with 10 x 10 pixels.

If, for example, the m610 advanced is set to "Left nozzle row" (= 300dpi vertical resolution) and a resolution in the printing direction (= 600dpi horizontal resolution) is selected, the module will be printed with just 2 x 2 pixels, even though the basic area is the same.

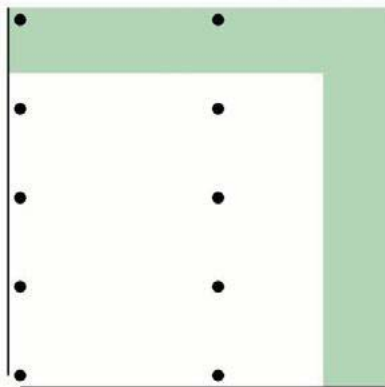
a) Module size of 10 x 10 for setting 600 x 600dpi



- If "Lengthwise reduction = 2" and "Crosswise reduction = 2" is entered, the module size is reduced by this surface.

- Pixel

b) Module size of 10 x 10 for setting 300 x 120 dpi



- If "Lengthwise reduction = 2" and "Crosswise reduction = 2" is entered, the module size is reduced by this surface.

- Pixel

Fig. 8_223: Drawing regarding Datamatrix

Datamatrix types

There are three types of data matrices:

- GS1 Datamatrix
- PPN Datamatrix
- HIBC Datamatrix

Emblem:

If the code type is selected, the user can define in which position the code type is to be displayed.

The information "top/left-hand/right-hand" always refers to the orientation of the Datamatrix in case of left-hand -> right-hand orientation.

8.1.7.5.1 GS1-Datamatrix

GS1-
Datamatrix

Fig. 8_224: GS1 Datamatrix

Datamatrix is a two-dimensional matrix symbology. Only the ISO version ECC 200 of the Datamatrix is admissible for EAN applications, as only this version provides the symbology protection usual for EAN. In analogy to the EAN 128 barcode, this is ensured by coding in the first position of the Datamatrix the function character 1 (FNC1).

Other FNC1 characters as "group separator" are placed in the correct position automatically by the m610 advanced.

The GS1-compliant code (EAN Datamatrix) can be activated via the selection field. Subsequently, data input has to be effected analogously to the EAN 128 barcode (application identifier, followed by data content).

The data identifier is entered in brackets, followed by the data contents. The brackets are not coded into the Datamatrix.

Processing the GS1-coded data for the EAN Datamatrix

- If the selection "GS1 Datamatrix" is activated, the input data are coded in accordance with the EAN128 Standard (FNC1).
- If the selection "GS1 Datamatrix" is deactivated, the Datamatrix is coded as previously (without FNC1).

Examples: Orientation of the Datamatrix and display of the code type:

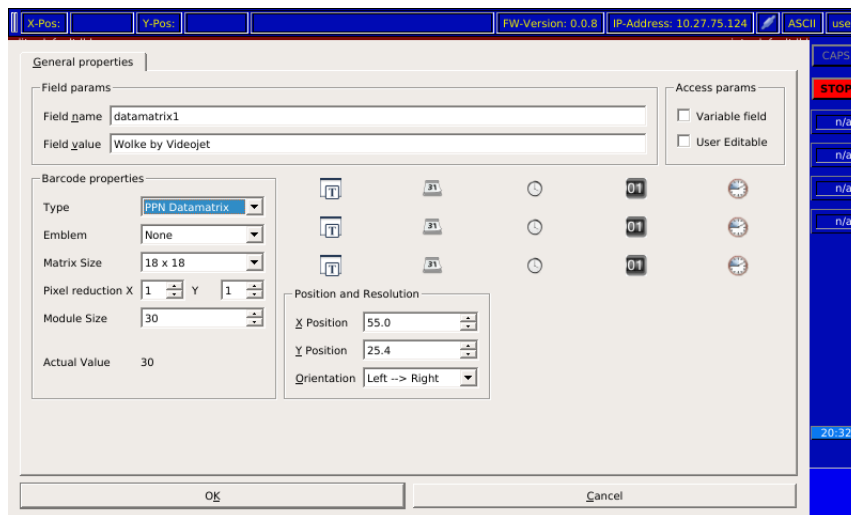


NOTE

For an excerpt of the GS1 Application Identifiers (AI) available for the GS1 Datamatrix code, please refer to [Table 8_39 on page 44](#).

8.1.7.5.2 PPN-Datamatrix

PPN
Datamatrix



The screenshot shows the 'General properties' tab of the PPN Datamatrix configuration dialog. It includes fields for 'Field name' (datamatrix1) and 'Field value' (Wolke by Videojet). The 'Barcode properties' section shows 'Type' set to 'PPN Datamatrix', 'Emblem' set to 'None', 'Matrix Size' set to '18 x 18', 'Pixel reduction X' and 'Y' both set to '1', 'Module Size' set to '30', and 'Actual Value' set to '30'. The 'Position and Resolution' section shows 'X Position' set to '55.0', 'Y Position' set to '25.4', and 'Orientation' set to 'Left -> Right'. There are also 'Access params' checkboxes for 'Variable field' and 'User Editable'. The dialog has 'OK' and 'Cancel' buttons at the bottom.

Fig. 8_225: PPN Datamatrix

The PPN Datamatrix is used to code data including the PPN (Pharma Product Number), batch designation, expiry date and serial number.

Example for entry:

(9N)111234567842(1T)1A234B5(D)151231(S)1234567890123456

List of the data identifiers (DI) available for the PPN Datamatrix acc. to IFA Coding System, specification PPN Code, Version 1.02:

DI	Complete designation	Character length	Character set
9N	Pharmacy Product Number	4-22	0-9; A-Z no special characters, no lowercase letters, no umlauts
1T	Batch designation	1-20	0-9; A-Z permitted special characters "-" and "_", no lower-case letters, no umlauts
D	Expiry date	6	0-9
S	Serial number	1-20	0-9; A-Z no special characters, no lowercase letters, no umlauts
16D	Date of production	8	0-9
8P	GTIN	14	0-9

Tab. 8_37: Data Identifier (DI) - Excerpt



NOTE

Coding is effected in Data Matrix Code acc. to ISO/IEC 16022 and the data structure and syntax acc. to ISO/IEC 15418 and ISO/IEC 15434.

Examples: Orientation of the Datamatrix and display of the code type:



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
lefthand



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
top



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
righthand

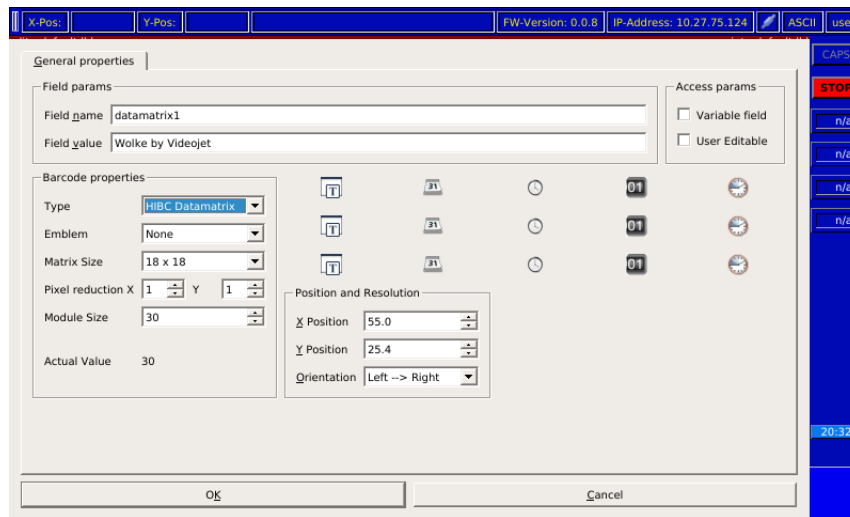
HIBC
Datamatrix
8.1.7.5.3 HIBC-Datamatrix


Fig. 8_226: HIBC Datamatrix

The HIBC (Healthcare Industry Bar Code) is administered by the EHIBCC Organisation. The conventional HIBC is identified by the registered system identifier "+" (plus), so that is clearly distinguishable from all other systems.

Example for entry:

E234MEDIX12YOL

+ E234 MEDIX12Y 0 L

---Check/Link Character (L)
 --- Unit of Measure (U)
 -----Product or Catalog Number (PCN)
 -----Labeler Identification Code (LIC)
 -----HIBC Supplier Flag Character


NOTE

Coding is effected in Data Matrix Code acc. to ISO/IEC 16022 and the data structure and syntax acc. to ISO/IEC 15418 and ISO/IEC 15434.

Examples: Orientation of the Datamatrix and display of the code type:



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
lefthand



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
top



Orientation of Datamatrix:
left-hand - > right-hand;
Display of code type:
righthand

8.1.7.6 QR Code

QR Code

Kanji mode and 8-Bit mode can be selected for QR code.
General Properties window is used for the following:

- To enter the barcode value.
- To insert the dynamic fields (text, date, time, counter and shift code) in the barcode value field.
- To set the field properties (Matrix size, pixel reduction, module size, actual value, and ECC level).
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

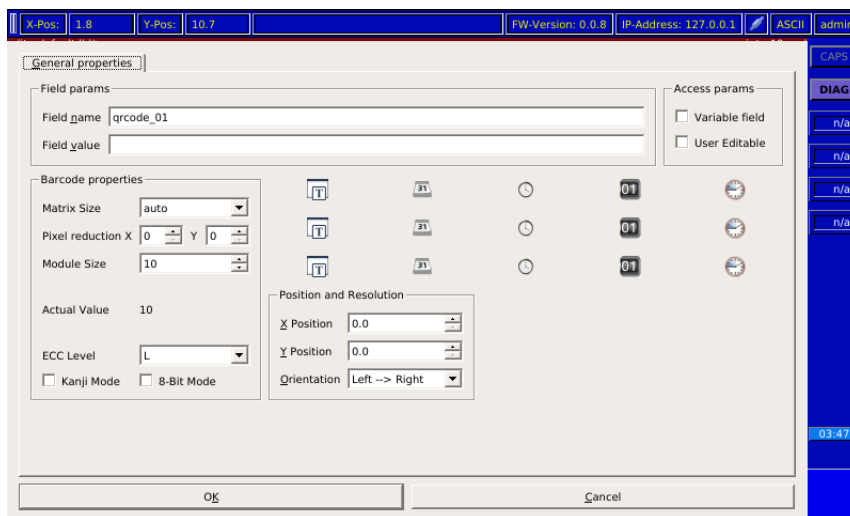


Fig. 8_227: Barcode Type QR Code



NOTE

For the explanations on the items Module size, pixel reduction and on the matrix size, refer to [Chapter 8.1.7.5](#).

Matrix size

Matrix size				
auto	53x53	89x89	125x125	161x161
21x21	57x57	93x93	129x129	165x165
25x25	61x61	97x97	133x133	169x169
29x29	65x65	101x101	137x137	173x173
33x33	69x69	105x105	141x141	177x177
37x37	73x73	109x109	145x145	
41x41	77x77	113x113	149x149	
45x45	81x81	117x117	153x153	
49x49	85x85	121x121	157x157	

ECC Level

Here, the ECC Level (Error Correction Code Level) can be selected.

- L (lowest ECC level)
- M
- Q
- H (highest ECC level)

The higher the ECC level, the more redundant data is coded in QR code and the larger the code matrix.

Code variants of the QR code

The following four coding variants are used for the QR code:

- binary 8-bit
- Kanji

Moreover, it is possible to activate only the binary code (8-bit) or only the Kanji code.

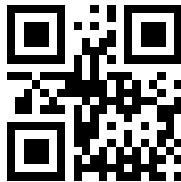


Fig. 8_228: Example QR Code

8.1.7.7 Postnet/IMB

Postnet/IMB

General Properties window is used for the following:

- To enter the barcode value.
- To set the field property, Red. of line width.
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.

- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

Fig. 8_229: Barcode Type Postnet

Fig. 8_230: Barcode Type IMB



NOTE

For the explanations on the items Module size, pixel reduction and on the matrix size, refer to [Chapter 8.1.7.5](#).

Postnet/Intelligent Mail Barcode (IMB)

The option "Postnet type" is used to select between the Postnet and the IMB.

The **PostNet** (Postal Numeric Encoding Technique) is a Code of the US Post Office. It serves to convert the addressee's post code into a machinereadable format.

The PostNet barcode is composed of the start character, the user data (digits), the checksum and the stop character. The checksum is calculated by adding, for the time being, all user data. The difference between this sum and the next number divisible by 10 is the checksum.

The **Intelligent Mail Barcode** (previously known as 4-State Customer Barcode) is the latest generation of USPS® barcode technology for sorting and traceability of letters and envelopes.

The Intelligent Mail Barcode technology combines the functions of the POSTNET™ barcode and the PLANET Code® barcode in a common barcode.

8.1.7.8 GS1 Databar

GS1 Databar

Overview

The GS1 DataBar consists of seven possible barcode variants. Many of them are readable irrespective of their position or direction and admissible for coding consumer units as of 2010 in compliance with the application recommendations.

The GS1 DataBar is a small linear barcode which allows to code supplementary information such as weight or best-before date in addition to the GTIN ID within an extremely small space. Thanks to its readability irrespective of position and direction, the barcode is suited for use at the Point of Sale.

GS1 Composite Symbology

The GS1 Databar allows to combine 1D codes and special 2D codes, with the 2D component always positioned above the 1D code. The two components are separated by a separator pattern.

The linear 1D component comprises the GTIN number. In most cases, the superimposed 2D component comprises the batch code and the expiry date of the product.

The following linear 1D and 2D components can be used within Composite Symbology:

linear 1D component	2D component
EAN/UPC Codes (EAN13, EAN8, UPC-A, UPC-E)	GS1 Composite component CC-A <ul style="list-style-type: none"> • MicroPDF417 (contents up to 56 characters)
a member of the GS1 DataBar symbology family	GS1 Composite component CC-B <ul style="list-style-type: none"> • MicroPDF417 (contents up to 338 characters)
GS1 128 (UCC/EAN128)	GS1 Composite component CC-C <ul style="list-style-type: none"> • PDF417 (contents up to 2361 characters)

Tab. 8_38: 1D and 2D Komponenten within the Composite Symbology

The following codes can be generated using the current firmware:

1D codes:

- GS1 Databar limited
- GS1 Databar stacked

2D codes:

- MicroPDF417 CC-A
- MicroPDF417 CC-B



NOTE

Depending on the number and combination of the contents, the CC-A or CC-B code is used automatically.

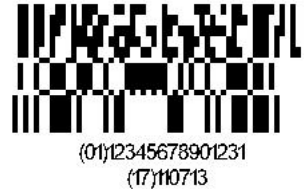


NOTE

Please note that in "variable" mode (serialization) only one code per label can be used.



GS1 Databar limited with
MicroPDF417 CC-A



GS1 Databar stacked with MicroPDF417
CC-A

Fig. 8_231: Examples of GS1 Databar limited and GS1 Databar stacked

General Properties window is used for the following:

- To enter the barcode value.
- To insert the dynamic fields (text, date, time, counter and shift code) in the barcode value field.
- To set the field properties (linear code, pixel reduction, module size, actual value).
- To set the position and orientation of the barcode object in the label.
- To select the User Editable field, if the barcode object has to be edited by the user.
- To highlight the Variable field, to transfer data. For example, to transfer data directly from a database to the variable fields with the help of an interface command, and to print them immediately.

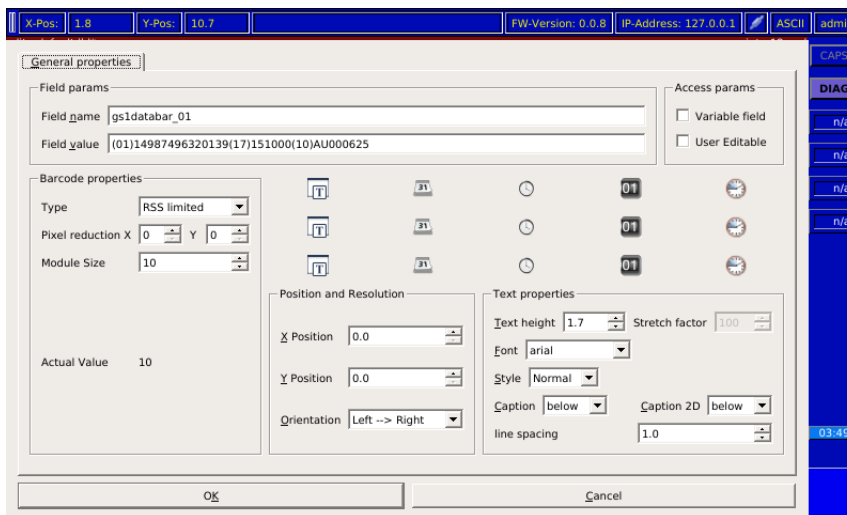


Fig. 8_232: Barcode type GS1 Databar

**NOTE**

For the explanations on the items Module size, pixel reduction and on the matrix size, refer to [Chapter 8.1.7.5](#).

Field name

16 characters are available for the field name.

Bar coding

A total of 3 lines are available for entering the date. At least two GS1 Application Identifiers must be entered here.

**NOTE**

For the 1D component of the GS1 Databar Composite "stacked" and "limited", the Application Identifier 01 (GTIN) is provided **exclusively**.

For the GS1 Databar limited the GTIN has to begin with "0" or "1" (see ISO 24724).

Example for entry:

(01)12345678901237	(17)110718
1D component	2D Component

GS1 Databar

Excerpt from the list of GS1 Application Identifiers (AI) available for the 2D component:

AI	Complete designation	Format
01	GTIN	n2+n14
10	Lot/batch number	n2+an..20
11	Date of manufacture (YYMMDD)	n2+n6
12	Due date (YYMMDD)	n2+n6
13	Date of packaging (YYMMDD)	n2+n6
15	Best-before date (YYMMDD)	n2+n6
17	Date of expiry (YYMMDD)	n2+n6
21	Serial number	n2+an..20
90	Information for application coordinated bilaterally (including FACT DIs)	n2+an..30
8004	Global Individual Asset Identifier EAN identification for serial objects	n4+an..30

Tab. 8_39: GS1 Application Identifier - Excerpt

Type

Regarding the Linear Code, a selection can be made between "RSS limited" and "RSS14 stacked".

The 1D component "RSS limited" is selected as default. The addition "stacked" refers to a stacked code. The data structure follows the GS1 Application Identifier concept.

Caption

The plain text line shows the barcode digits of the 1D component which have been entered. You can choose between having the digits displayed either below or above the barcode or not having them displayed at all.

Caption 2D

The caption 2D displays the barcode digits of the 2D component which have been entered. You can choose between having the digits displayed either below or above the barcode or not having them displayed at all.

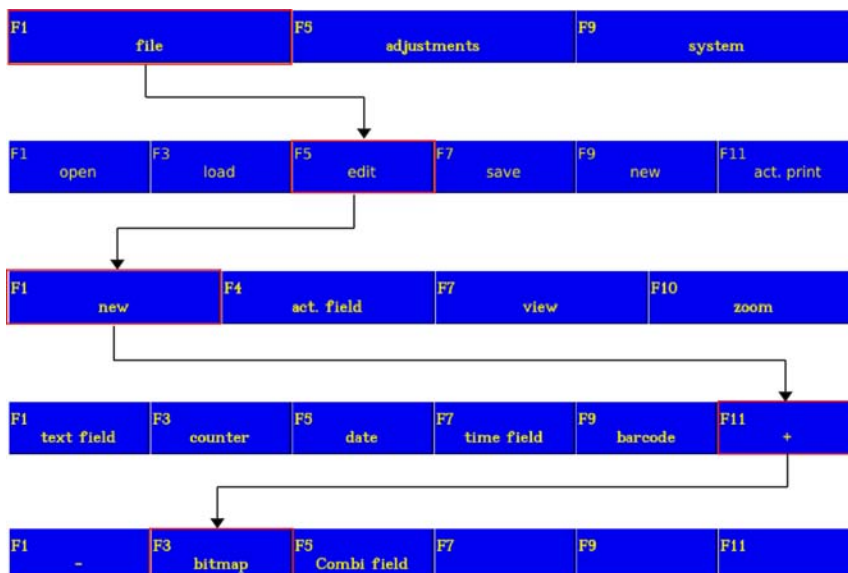
8.1.8 Bitmap

This menu item allows you to select logos and graphics (bitmaps) which have previously been saved and print them. Whenever logos are changed or new ones are added they have to be saved in a graphics program as a black-and-white bitmap (file ending "bmp") in the final printing size with a resolution of 600 x 600 dpi. Only bitmaps created in Windows can be used. The logos can be transferred to the m610 advanced via the optional manager software for PC.

Bitmap

General properties window is used for the following:

- General properties option is used to select the required bitmap image.
- To set the position and orientation of the bitmap image in the label.



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 8_233: Menu File > Edit > New > Bitmap

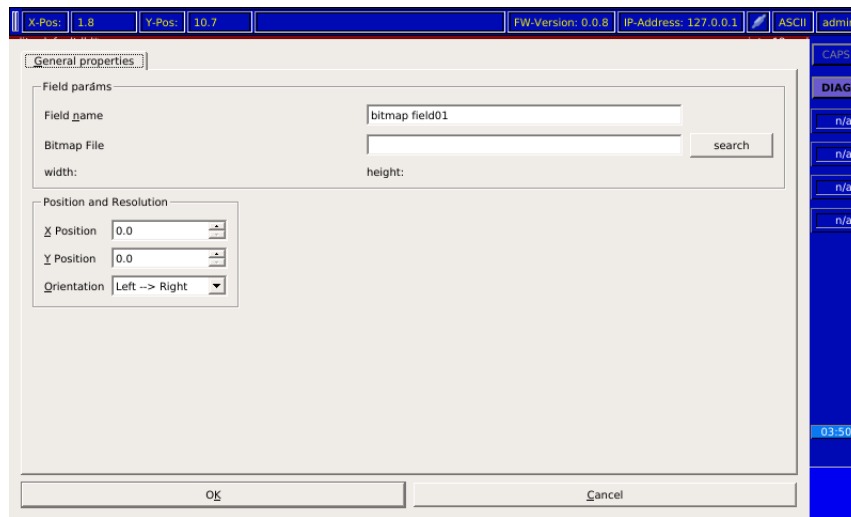


Fig. 8_234: Bitmap

**NOTE**

The following must be complied with when using bitmaps:

- Standard Windows Bitmap
- Monochrome (color depth 1 bit)
- Resolution of 600 x 600 dpi
- The bitmaps are not scaled, i.e. they cannot be varied in size in the m610 advanced, as can e.g. texts or barcodes.
- If a bitmap has e.g. a resolution of 300 x 300 dpi, the printed bitmap only has half the width and half the height of the original bitmap.
- If the bitmap is not monochrome, it is not transferred to the m610 advanced.
- The bitmap file must be saved in the same directory as the label.
- This is the only way to represent the label completely when opening it subsequently.

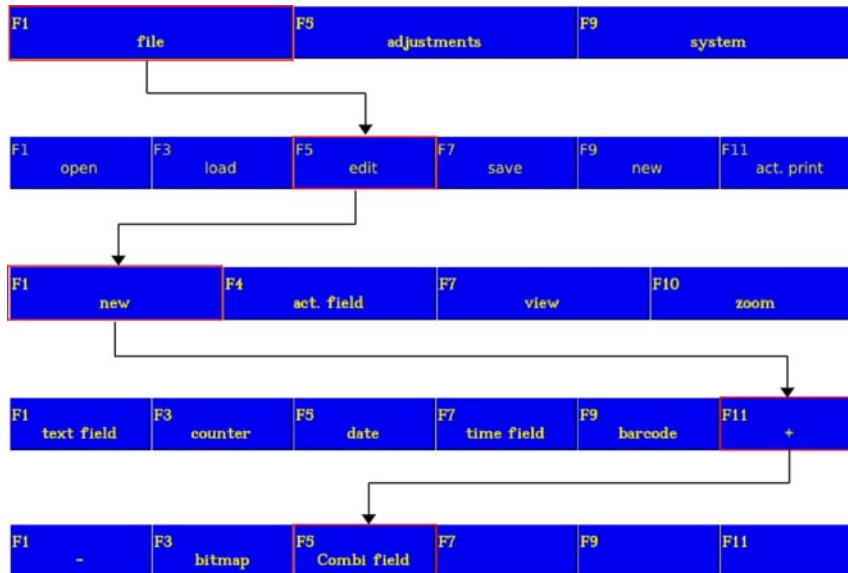
8.1.9 Combi Field

Combi Field

Combi field is used to insert multiple data in the label.

General properties window is used for the following:

- To insert multiple fields.
- To insert text, date, time, counter and shift in the single field.
- To merge fields.



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 8_235: Menu File > Edit > New > Combi Field

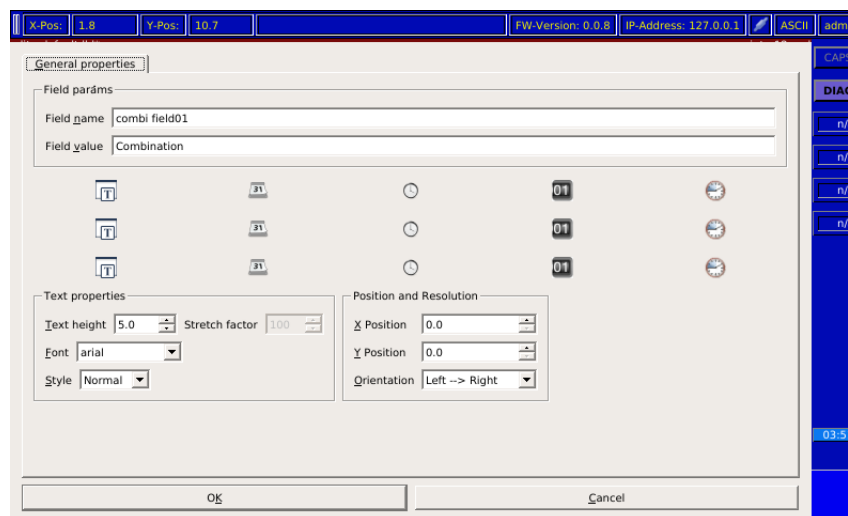


Fig. 8_236: Combi Field

The field type "combi field" is so designed that output of various different field contents is possible, separated by the same character clearance, even in case of transition from contents to contents.

Data input in combi field

As in case of the data input lines for barcodes with embedded fields and for the text field, max. 80 characters can be entered for the new field type "combi field". These 80 characters can be used to enter the following contents:

- Free text input
- Embedded text field
- Embedded counter field
- Embedded date field

Combi field

- Embedded time field
- Embedded shift code field

To do so, proceed as follows:

- In each combi field, three embedded fields of each of the types existing so far may be embedded (i.e. three text fields, three counter fields, three date fields, three time fields and three shift code fields).
- Insertion, editing and deleting of these embedded fields is effected - as in case of Code 128 - via the menu keys.
- The contents of the new combi field cannot be changed via the interface using the Q command.

8.1.10 Variable Label Field (Text Field and Barcode)

Variable label field

This feature is required for serialization of the print data. When creating a label with variable text fields, the data are transferred e. g. from an external data source directly into the variable fields by means of an interface command (see command documentation) and can be printed immediately.



NOTE

"The m610 uses only one data buffer for all printheads. Therefore, using variable data (such as serialization), the same trigger signal should be used for all the printheads used".



NOTE

All the commands mentioned above can be found in our "command documentation".

- A field becomes a variable field if it is activated as such under the menu item Text field, and saved. This option is also available under the barcodes. If "variable" is activated, the embedded fields are deactivated automatically. Here, the following applies as well: if a label is to be printed, it must be in the print memory.
- Before data are to be sent, an I2 command should first be sent to interrogate the status.
- When positioning the variable fields, the maximum possible character width must be taken into consideration. Overlapping must be avoided (the field adapts automatically to the character width).
- Sent data are discarded on a "stop" (the function "delete data buffer" is activated) or when the printer is switched off.

There are two different ways how to print variable fields:

“Variable mode: once” - each content is printed only once

*“Variable
mode: once”*

This mode has the following features:

- If a data record is sent, this data record is printed and then deleted in the m610 advanced. Thus, this data record cannot be printed again. Subsequently, the “advanced” changes over to WAIT until the next data record follows.
- If several data records are sent, they are executed in the order they are received. If additional data records are added, these are buffered and subsequently printed (FIFO).
- After pressing the start button or sending the F2 command (Start Signal), the status of the m610 advanced changes over to WAIT, until data have been transferred via one of the QA[S|C|I] commands. If at least one data record is ready for printing, the m610 advanced changes over to O.K.
- It is indispensable to transfer data in any case for all variable fields.
- A content directly specified in the field is not printed.
- If several data records are transferred at once, the I2 command can be used to interrogate whether the m610 advanced has changed back to WAIT and thus indicates that all transferred data have been printed.
- While the m610 advanced is printing the data records of the previous transfer, further data can be transferred until the buffer is filled. Whenever data have been transferred successfully, the m610 advanced returns the remaining free buffer space.

“Variable mode: continuous” - each content is printed repeatedly until another content is transferred

*“Variable
mode:
continuous”*

This mode has the following features:

- After pressing Start or sending the F2 command (see Command documentation), the m610 advanced changes over to O.K.
- If no data is transferred, the m610 advanced prints the content of the label's fields during loading.
- If a data record is transferred, the latter is printed repeatedly until a new data record is transferred or printing operation is stopped.
- If new data are transferred without printing the previous ones, the old data are overwritten by the new ones. The previously transferred data are never printed. The data records cannot be buffered.
- It is not necessary to provide all variable fields with data; fields which do not receive new data print the label content or the previously transferred data.

9 Editing Label File

9.1 Opening Label File

Opening label file

Select the fields with the arrow keys

Press Enter
(= Confirm the selection and exit the menu)

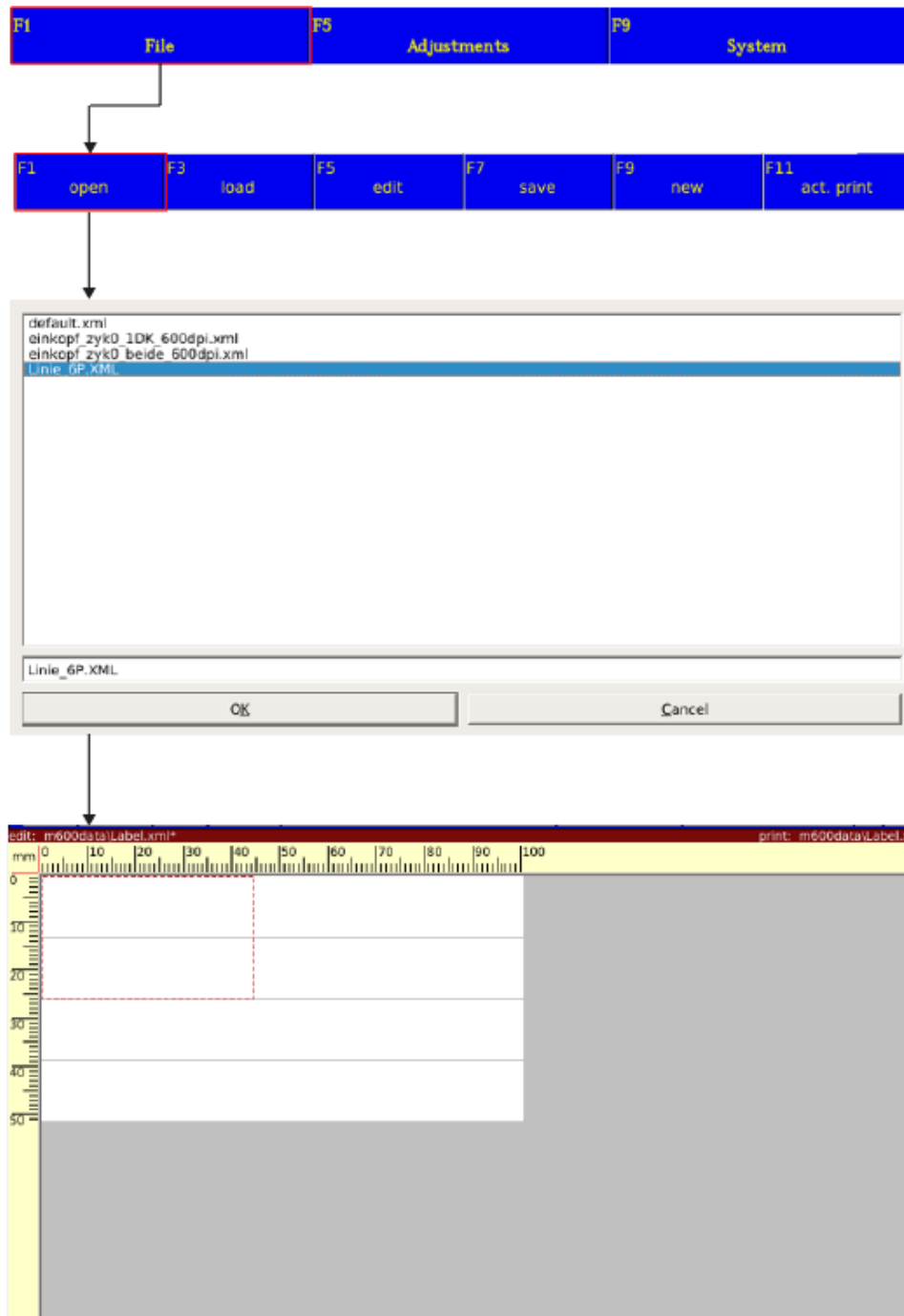


Fig. 9_237: Opening Label File

After "File/Open", the file to be edited can be selected from the list (arrow keys). Then confirm by pressing "Enter" and exit the menu.

Label status

When a label is opened it is shown in the status line under "Edit" in the m610 advanced display. If any changes were made to the file and these changes have not yet been saved, the file name is marked with an (*) (see [Chapter 5.2, "Switching the System ON"](#)).

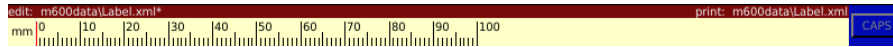


Fig. 9_238: Label status



NOTE

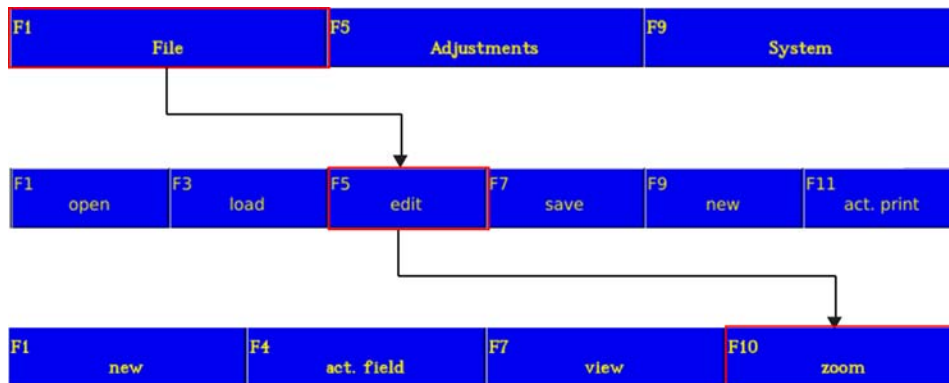
On the edit memory screen, you can jump to the "File/Open" menu from any menu via the key combination "S1 key" + "O". Pressing "Enter" then takes you back to the menu you started with.

9.2 Edit Help View/Zoom

9.2.1 Zoom

Zoom

The label field can be reduced in size in order to obtain a view of the complete label, or expanded in order to make adjustments to or check particularly small texts.



Select the field with the arrow keys

Fig. 9_239: Menu File > Edit > Zoom

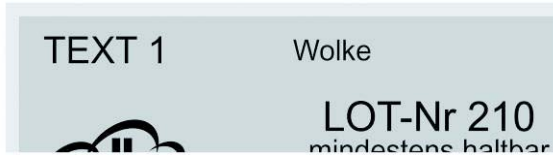
100 % view

Pressing the key "F5" will show the label in the 100% view.



Zoom in: + (Factor 1) or ++ (Factor 2)

To expand the view in steps, repeatedly press the "F7" or "F9" keys.



Zoom out: - (Factor 1) or -- (Factor 2)

To reduce the view in steps, repeatedly press the "F3" or "F1" keys.



Alternatively you can use the following abbreviated commands:

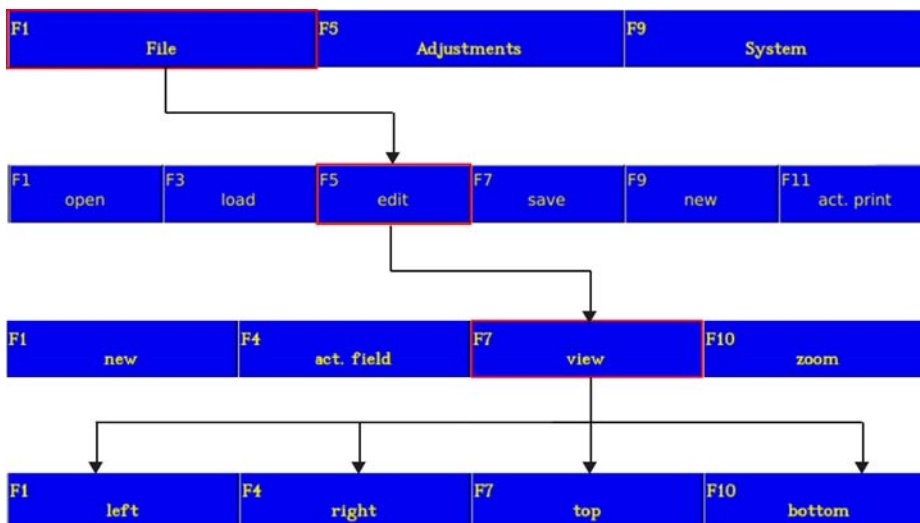
Zoom



9.2.2 View

To make editing easier you can use the "View" function to scroll up/down and left/right within the label as a whole.

View

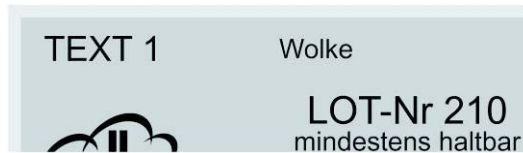


Select the field
with the arrow
keys

Fig. 9_240: Menu File > Edit > View

Example:

A label that has been enlarged with the zoom function appears in the display as shown below:

**“F7” Up / “F10” Down**

The “F7” key is for scrolling up in the label and the “F10” key is for scrolling down.

**“F1” Left/ “F4” Right**

The “F1” key is for scrolling to the left in the label and the “F4” key is for scrolling to the right.

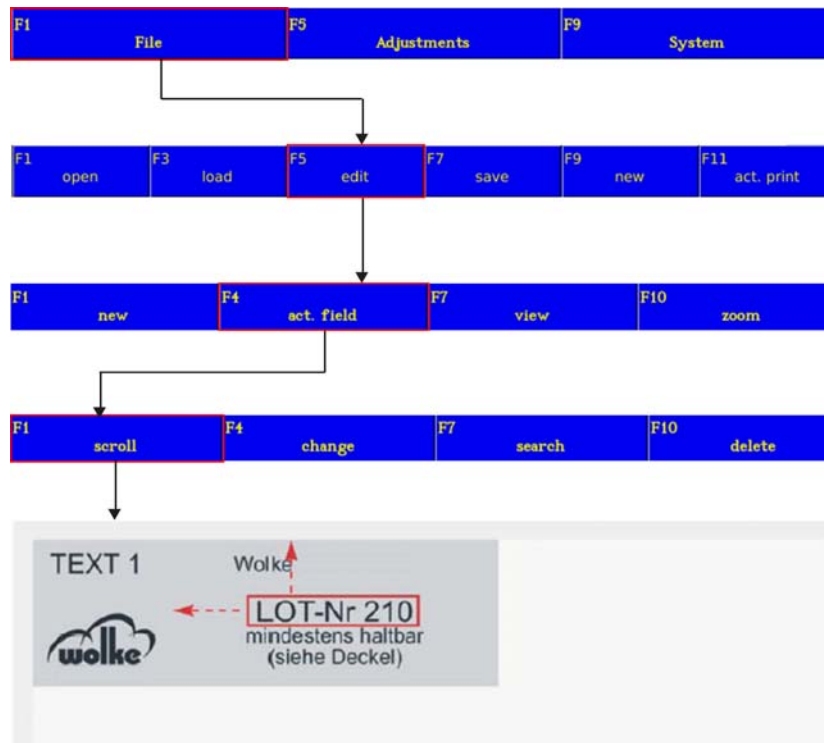


Alternatively you can use the following abbreviated commands:



9.3 Modifying Certain Label Fields

9.3.1 Scroll



Scroll



Select the fields with the arrow keys

Fig. 9_241: Menu File > Edit > Act. field > Scroll

The "Scroll" function enables you to easily position the label fields. Use the arrow keys to select the field you wish to move. This will then be marked with a red frame. To get to the "Scroll" menu, use "File/Edit/Field/Scroll". The functions available there can be used to move the selected field to the desired position.



Scroll

space

For a new display structure

Function keys "F1", "F4", "F7" and "F10" can be used to move the field to the required position.

In order to move other fields, repeat these procedures.

To accept this change, you must exit the menu via the ESC key.

9.3.2 Change

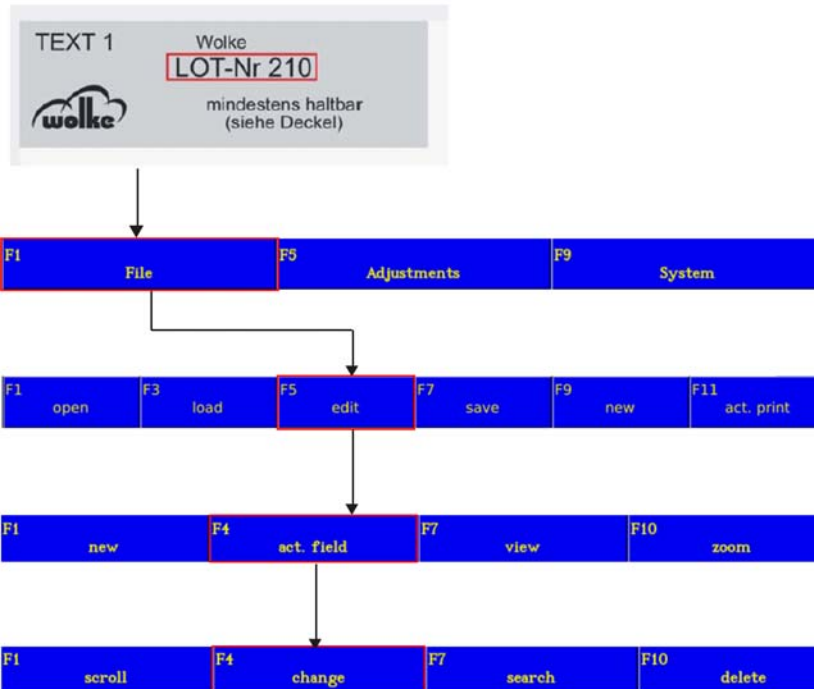
Change

The "Change" function enables you to edit each individual field. Use the arrow keys to select the field you wish to change. The field will then be marked with a red frame. To get to the editor for the field you have selected, use "File/Edit/Field/Change". If you make any changes, press the "Enter" key to confirm the changes and exit the menu.



NOTE

An alternative method of opening the editor for the field you have selected is to press the key combination "S1 key" + "E".



Select the field with the arrow keys

Fig. 9_242: Menu File > Edit > Act. field > Change

The screenshot shows the 'Text Field' editor window. At the top, there's a status bar with 'X-Pos:', 'Y-Pos:', 'FW-Version: C.0.0.21', 'IP-Address: 10.27.75.208', 'UTF8', and 'Admin'. Below this is a tabbed interface with 'General Properties' and 'Master Field'. The 'General Properties' tab is active, showing 'Field Name' as 'text field3' and 'Field Value' as 'LOT-Nr. 210'. There are 'Access Params' with checkboxes for 'Variable Field' and 'Operator Editable'. The 'Text Properties' section includes 'Text Height' (5.0), 'Stretch Factor' (100), 'Font' (DejaVu Sans), and 'Style' (Book). The 'Position and Resolution' section includes 'X Position' (49.7), 'Y Position' (22.8), and 'Orientation' (Left -> Right). At the bottom are 'OK' and 'Cancel' buttons. On the right side, there's a vertical toolbar with buttons for 'CAPS', 'STOP', '34', 'n/a', '21:32', and 'nt'.

Fig. 9_243: Text Field

The change text will then be applied in the label. In order to change other fields, repeat these procedures.

9.3.3 Search

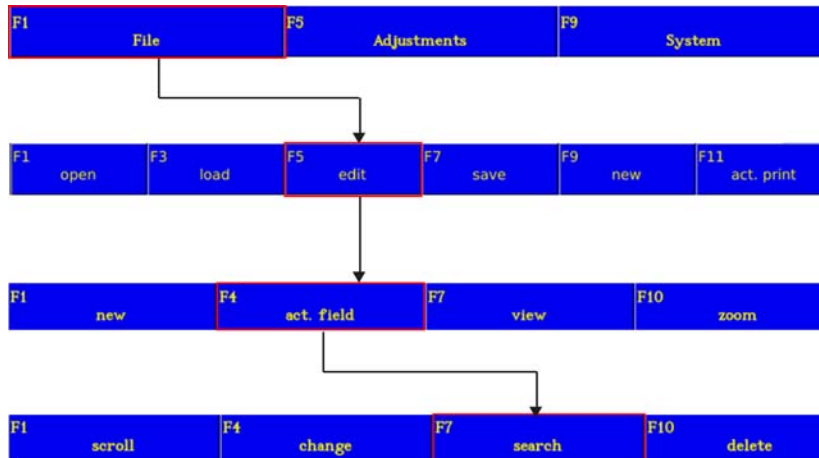
This menu item enables you to mark print fields with a frame by entering the field name so that you can then edit it.

Search



NOTE

Label fields can be selected and edited more quickly with the arrow keys.



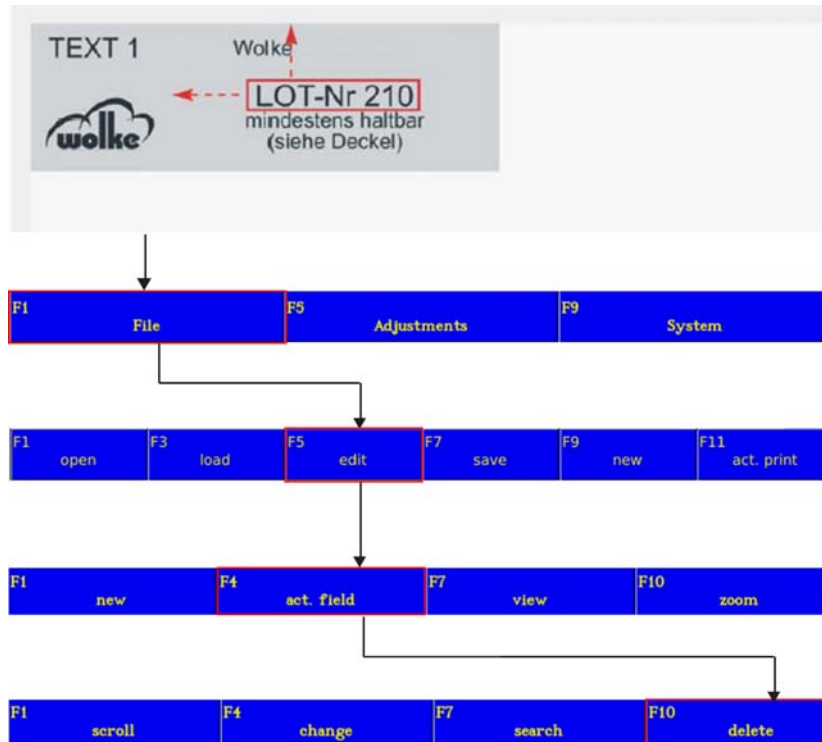
Select the field with the arrow keys

Fig. 9_244: Menu File > Edit > Act. field > Search

9.3.4 Delete

Delete

This function is for deleting individual fields within the label. To do so, use the arrow keys to select the required field (for marking with a red frame). When you actuate the "File/Edit/Field/Delete" keys, a check query appears: Choose between "Yes!" (=Delete irreversibly) and "No!" (=Cancel).



Select the field
with the arrow
keys

Fig. 9_245: Menu File > Edit > Act. field > Delete

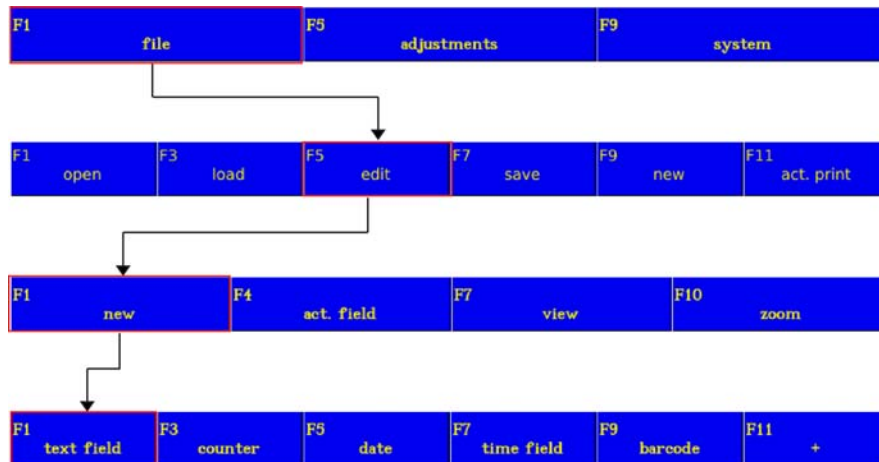
9.4 Inserting New Label Fields

"Insert new label fields" is similar to [Chapter 8.1, "Generating a Print Label"](#). The function "Insert new label fields" is explained below with reference to an example involving the "Zoom" and "Scroll" functions. For explanations relating to other areas (Counter, Date, Time, Barcode, Bitmap), please refer to [Chapter 8.1.2](#) and following sections.

Inserting new label fields

Example:

➔ Select the required menus (in this example "Text field").



Select the field with the arrow keys

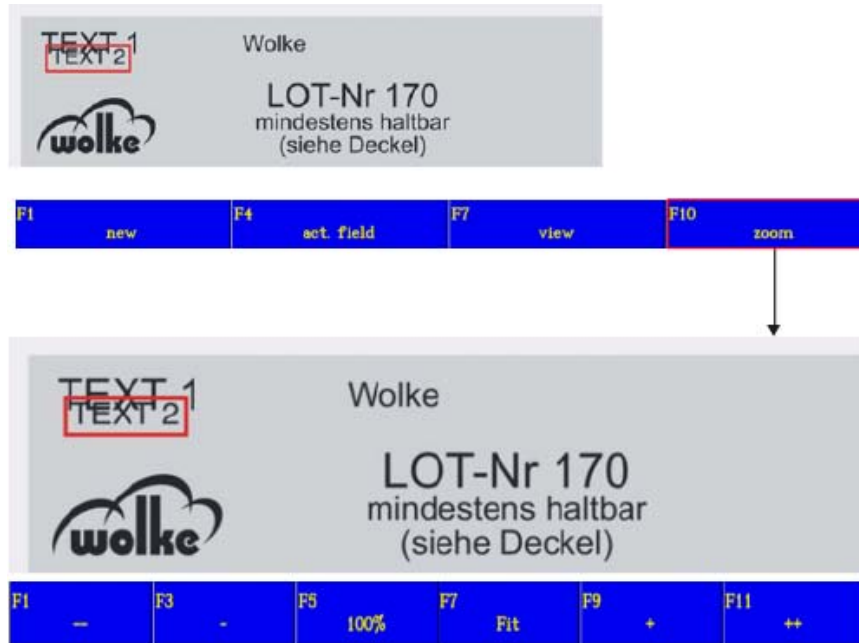
➔ Enter your data (in this example "Text 2") and all other variables (text height, etc.).



The text will be loaded to the print field where it can be entered.

Zoom in on the label to make it easier to edit (see [Chapter 9.2.1, "Zoom"](#)):

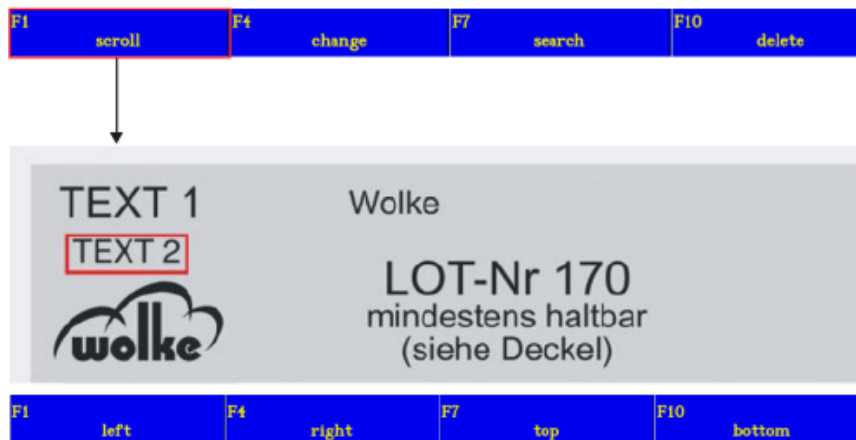
*Inserting new
label fields*



Alternatively you can use the following abbreviated commands:



Move the text field which has been inserted:

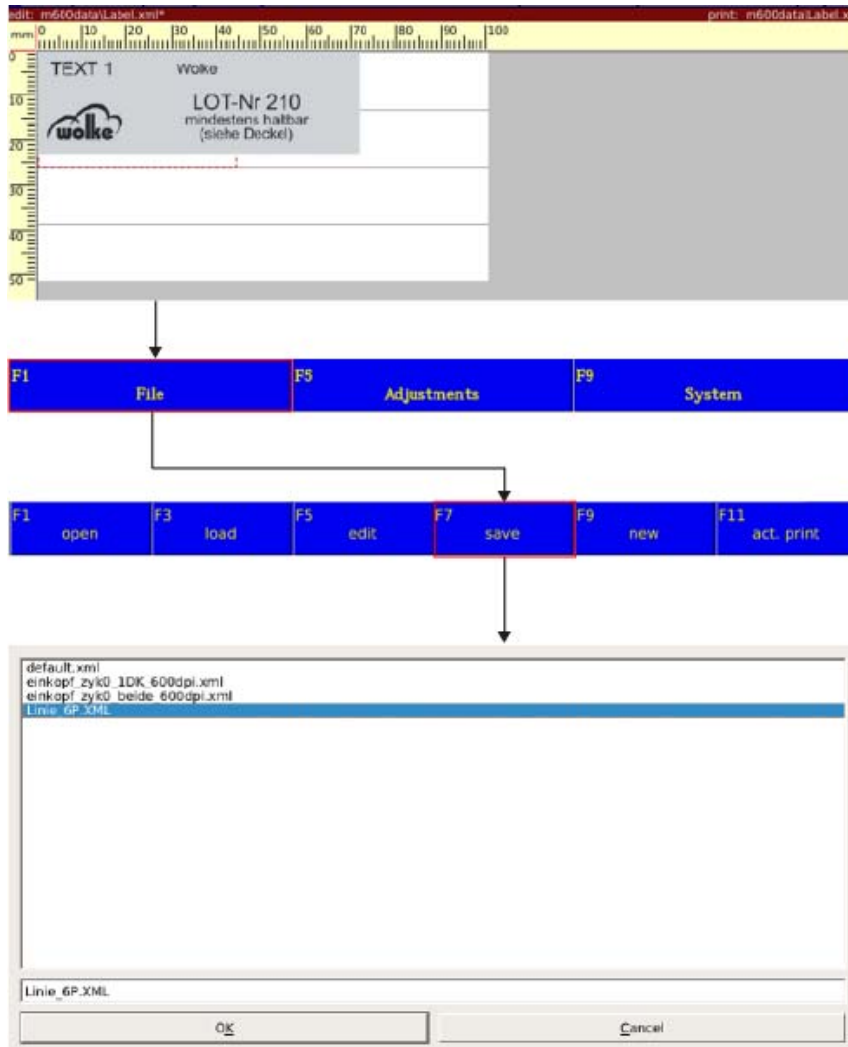


Move the label field to the desired position (see [Chapter 9.3.1, "Scroll"](#)).

9.5 Saving a Print Label

To save a label that you have created, proceed as follows:

Saving a print label



Press 1 x Enter
(=confirm
selection and
exit menu)

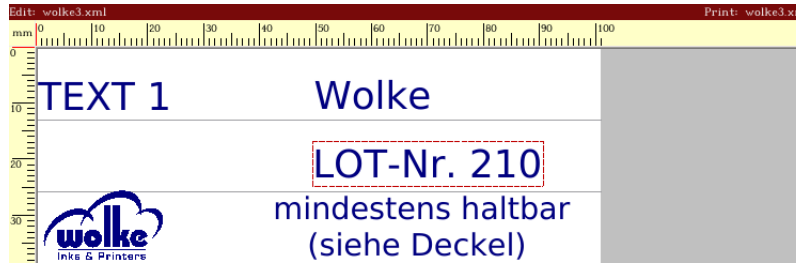
- Save amendments to an existing file under the existing name and exit the menu or give it a new name (no special characters).

**ATTENTION**

Do not switch the controller OFF during saving operation, as otherwise the flash modules might be destroyed.

Before switching the device OFF, make sure that saving is completed.

The saved file name will appear in the status line on the display.

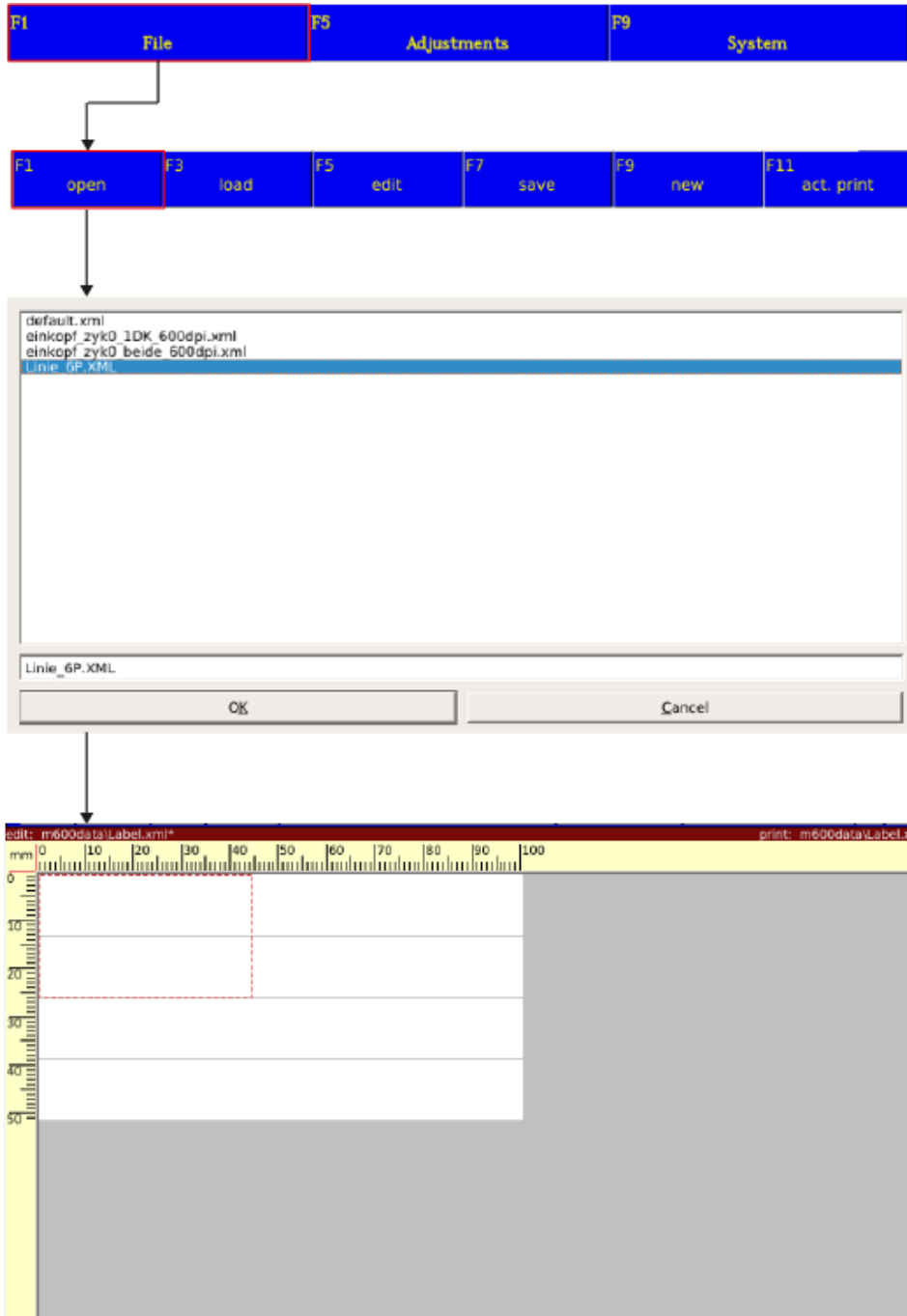
**NOTE**

You can switch to the "File/Save" menu from any other menu using the key combination "S1 key" + "S". Pressing the "Enter" key then takes you back to the start menu again.

9.6 Load and Print

In order to be able to print a label, it first has to be loaded to the edit memory and then to the print memory.

Load and print



Select the menu items with the arrow keys

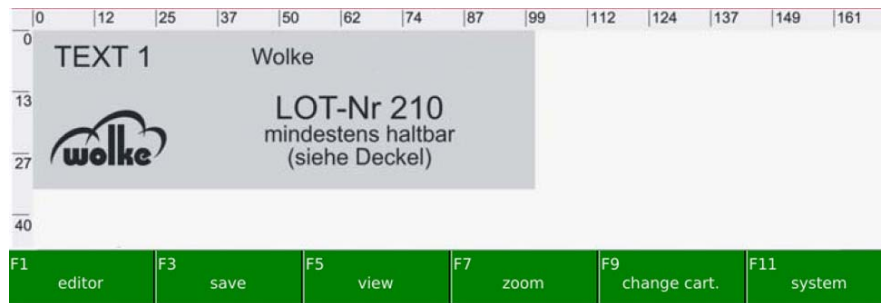


Confirm the entries with "Enter" and exit the menu

➡ Press the "F3" key to load the label to the print memory.



Press the "F3 - Load" key to load the opened label from the edit memory to the print memory. The file name of this label will then be shown in the status bar in the display under "Print" and the display will have a green menu bar. This color indicates that the current label is ready for printing. All set variables (Counter, Time, Date, etc.) are based on this label.



Load and print

The functions "F1 - Editor", "F3 - Save", "F5 - View", "F7 - Zoom", "F9 - Change cartridge" and "F11 - System" can be used while printing is being carried out.



NOTE

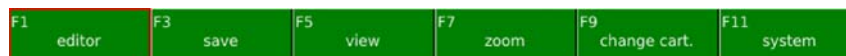
Executing the function "F9 - Change cartridge" stops the printing process.

Press the "F1 - Editor" key to change over to the label in the edit memory. This is indicated by the blue menu bar. The only difference between these two labels is in the variable values.

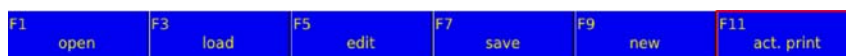
Example:

The label contains a field with a counter which begins at "100". When this label is opened and loaded (green menu bar), the m610 will run 1000 prints. If the label is viewed in the edit memory (blue menu bar) the counter is still on "100", while the counter for the label in the print memory (green menu bar) is on "1100".

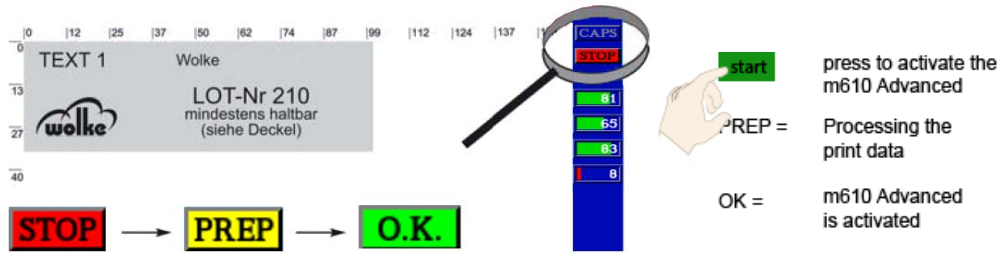
NOTE:



Actuate the key "F1 - Editor" to change from the print memory view to the edit memory view.

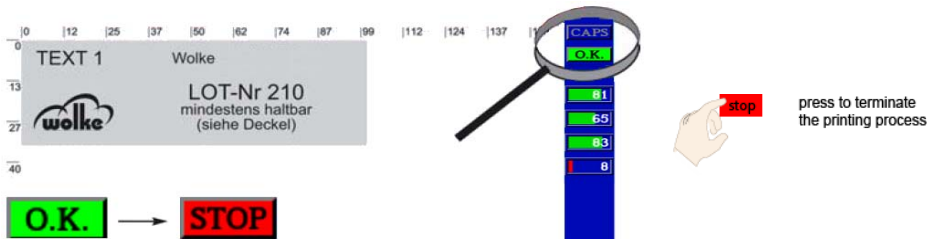


Actuate the key "F11 – Act.print" (current print) to change from the edit memory view to the print memory view.



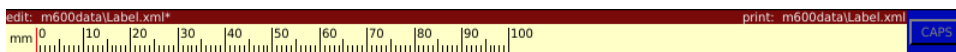
Once the label is in the print memory, the m610 advanced can be activated with the "Start" key or, if selected, using an external input. This changes the status from "Stop" to "Prepare" then "OK".

Load and print



The m610 advanced can be deactivated with the "Stop" key or, if selected, using an external input. This changes the status from "OK" to "Stop".

Label status:



Edit: "File name"

Whenever a file is opened, the file name appears under "Edit". This label ("Wolke 1") is then located in the main memory (edit memory). If any changes were made to the file and these changes have not yet been saved, the file name is marked with a small asterisk.

Print: "File name"

The label name only appears in this field after completion of the loading operation. The label shown here ("Wolke 2") is then located in the print memory. The m610 advanced can only be activated via the green start key if there is a label in the print memory.

The edit and print memories are totally independent of one another. You can therefore print label "A" (Wolke 2) while editing label "B" (Wolke 1) at the same time.

When switching ON, the labels opened and loaded on switching OFF are re-opened into the edit and print memory.

9.7 File Management

9.7.1 Clone/Backup

Clone/backup



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

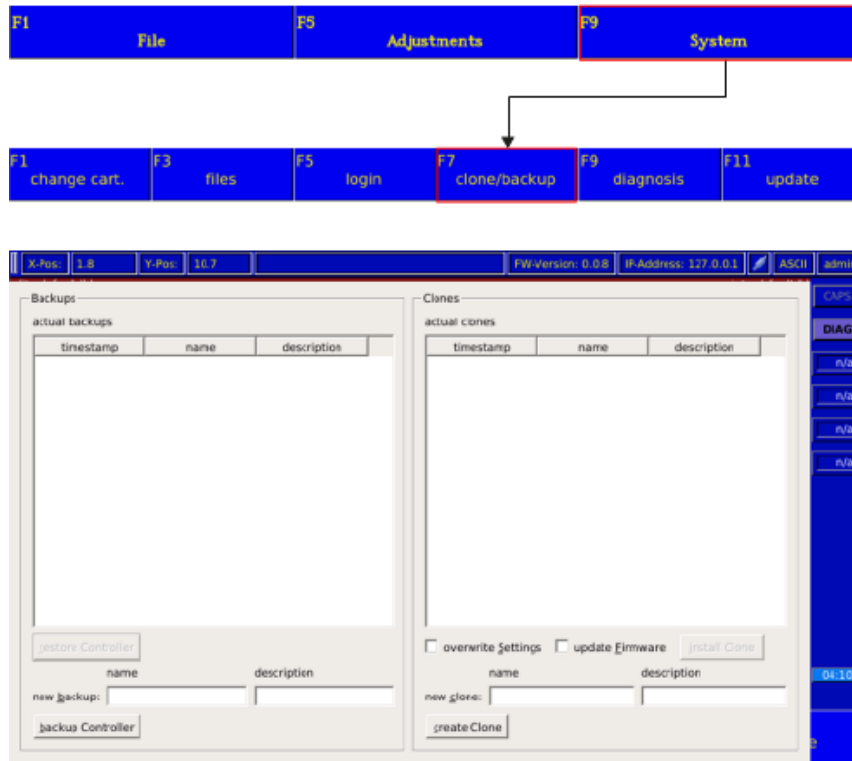


Fig. 9_246: System > Clone/backup

The clone/backup can be used to have a backup of the selected files.

Whenever you wish to delete any files you can select them with the arrow keys and delete them by pressing the "Enter" key.

After selecting the required files, enter the new clone/backup name and description and select the "create clone"/"backup controller" option.

10 Bidirectional Print

Bidirectional printing is used in systems whose printheads move on traversing units. Bidirectional printing permits printing in both directions of movement.

Bidirectional print

10.1 Input Settings

In the preferred direction, the printing direction is determined by the settings in the installation settings. If printing is required contrary to the preferred printing direction, this input must be assigned a "high" level to change over the printing direction prior to the print trigger signal, and this assignment must be maintained until the print trigger signal has been received safely.

Input settings



NOTE

When using bidirectional printing, refer to [Chapter 10.1.1, "Installation Settings"](#).

10.1.1 Installation Settings

Bidirectional Settings

The "bidirectional settings" allows you to configure the mask, for the settings contrary to the preferred direction. Each printhead must be specified in this mask, as to which start sensor the head should trigger when printing opposite to the preferred direction, and how far the signal is away from the first nozzle bank of the cartridge of the head in question.

Installation settings

For more information on bidirectional settings, refer to [Chapter 7.1.1.6, "Printheads"](#).



NOTE

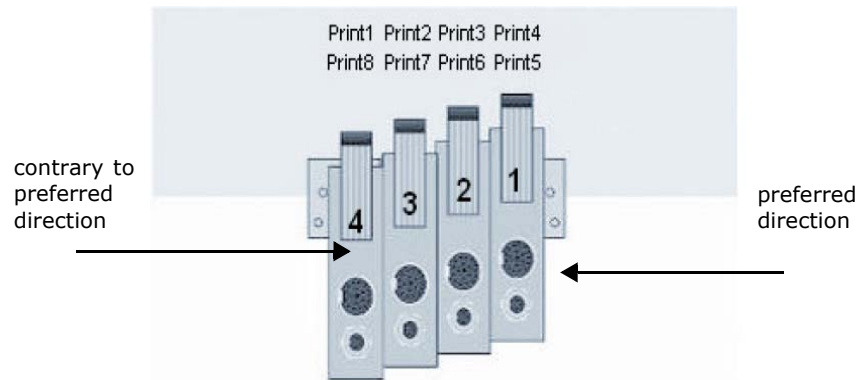
In this context, it must be noted that negative sensor distances are allowed, as long as the following equation is positive:

$$\text{Total distance} = \text{Distance}_{\text{Sensor...Printhead}} + \text{Distance}_{\text{Before}} > 0$$

10.1.2 Various Installation Settings

Various
installation
settings

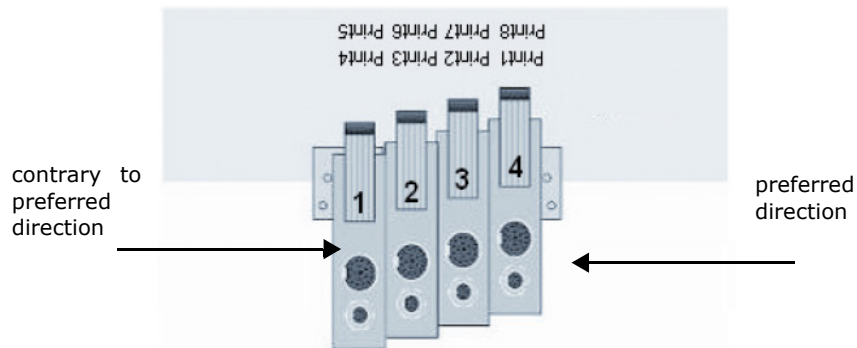
Variant A – Preferred direction: left-hand to right-hand (1st option)



printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1 ▾	PZ1 ▾	20.00 mm	170.00 mm	normal ▾	normal ▾	>> ▾
2	PZ1 ▾	PZ1 ▾	50.00 mm	140.00 mm	normal ▾	normal ▾	>> ▾
3	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	normal ▾	normal ▾	>> ▾
4	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	normal ▾	normal ▾	>> ▾

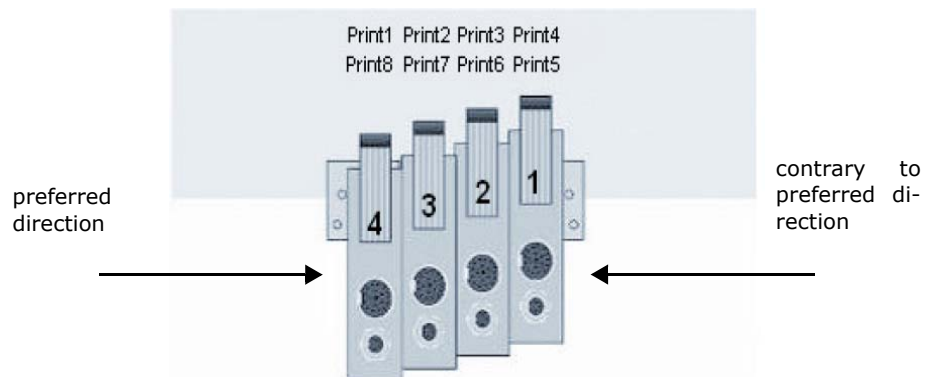
Various
installation
settings

Variant B – Preferred direction: left-hand to right-hand (2nd option)



printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1 ▾	PZ1 ▾	20.00 mm	170.00 mm	headlong ▾	mirrored ▾	>> ▾
2	PZ1 ▾	PZ1 ▾	50.00 mm	140.00 mm	headlong ▾	mirrored ▾	>> ▾
3	PZ1 ▾	PZ1 ▾	80.00 mm	110.00 mm	headlong ▾	mirrored ▾	>> ▾
4	PZ1 ▾	PZ1 ▾	110.00 mm	80.00 mm	headlong ▾	mirrored ▾	>> ▾

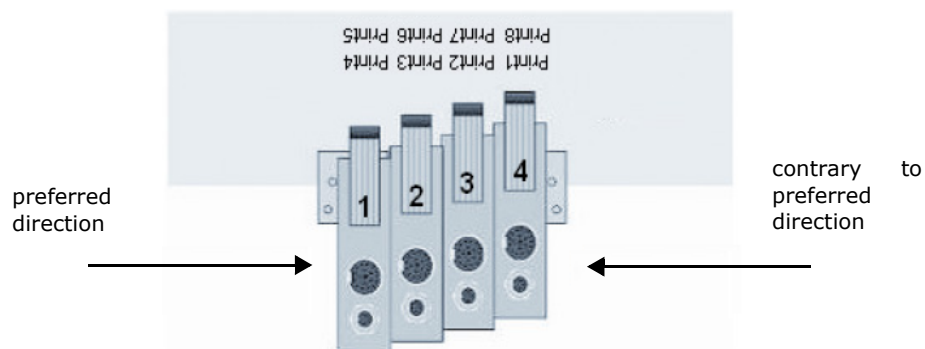
Variant C – Preferred direction: left-hand to right-hand (1st option)



*Various
installation
settings*

printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1	PZ1	20.00 mm	170.00 mm	normal	mirrored	<<
2	PZ1	PZ1	50.00 mm	140.00 mm	normal	mirrored	<<
3	PZ1	PZ1	80.00 mm	110.00 mm	normal	mirrored	<<
4	PZ1	PZ1	110.00 mm	80.00 mm	normal	mirrored	<<

Preferred direction: left-hand to right-hand (2nd option)



*Various
installation
settings*

printheads:	sensor	sensor rev.	sensor dist.	sensor dist. rev.	position	reflected	print direction
1	PZ1	PZ1	20.00 mm	170.00 mm	headlong	normal	<<
2	PZ1	PZ1	50.00 mm	140.00 mm	headlong	normal	<<
3	PZ1	PZ1	80.00 mm	110.00 mm	headlong	normal	<<
4	PZ1	PZ1	110.00 mm	80.00 mm	headlong	normal	<<

11 User Administration

11.1 Login

Webserver Login:

Webserver Login

The Login screen for webserver is as displayed in [Figure 11_247](#).

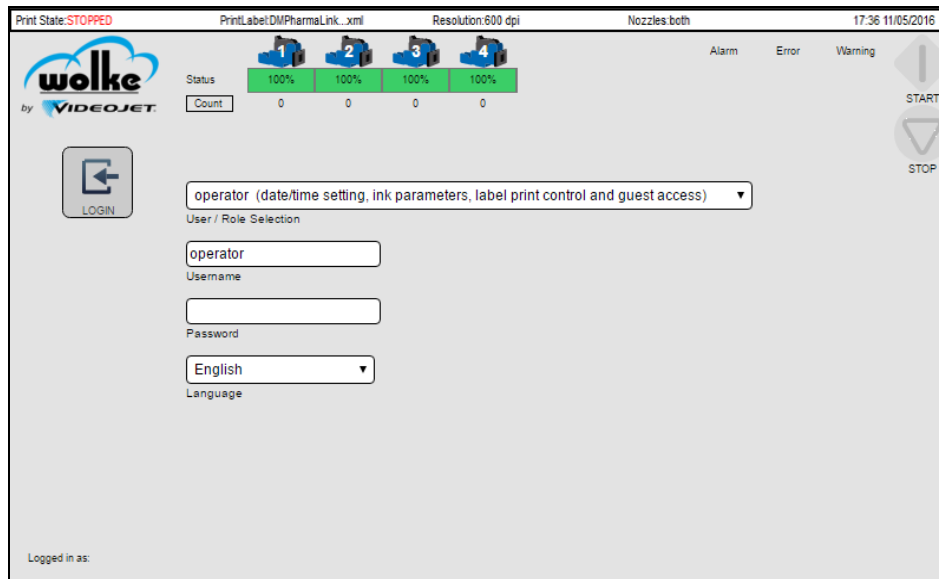


Fig. 11_247: Webserver Login Page

Controller Login:

Controller Login

Follow the steps to open the controller login window:

1. Use the arrow keys to select the login field.

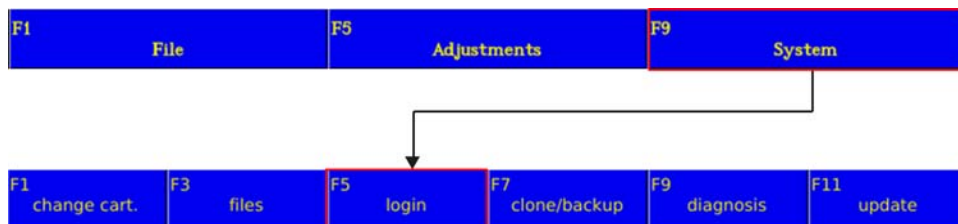


Fig. 11_248: Login Field



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

2. The login screen for controller is as displayed in [Figure 11_249](#).

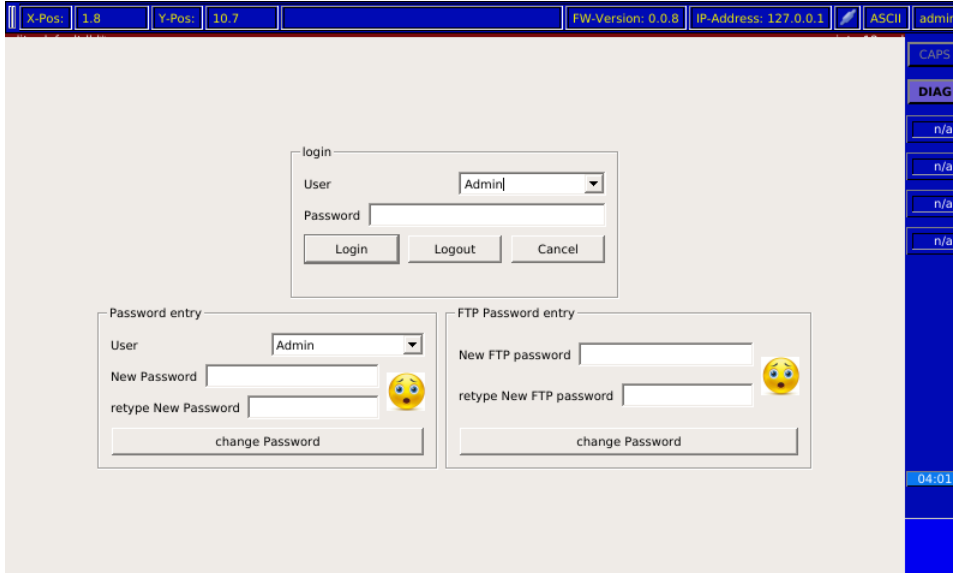


Fig. 11_249: Controller Login Page

Login mask

- Each user can be protected with a password.
- After making necessary changes, all users can log off via **Logout** button.

11.1.1 Users

Users

The webserver has the following users:

- Admin
- Advanced
- Normal
- Operator

Once the user selects the required Username and enter the correct password, the user should click on **Login** button to log into the webserver. The user should select the **Login** button to log into the controller.

11.1.2 Passwords for User Groups

The admin has the rights to change the password for user group. For access rights refer to [Chapter 11.1.3, "User Access"](#).

Passwords for user groups

Logging onto user groups:

- ➔ Select the user group (Admin, Advanced, Normal, Operator) with which you wish to log on.
NOTE: The corresponding user group appears in the Username textbox.
- ➔ Specify the Password in the password text box.
NOTE: The default password for initial login is same as the user name. For Example, for the username admin the password is set to admin.
- ➔ Select "Login". The message "Login successful" is displayed.

Changing user passwords from Administrator login for webserver:

1. Login to the m610 advanced webserver as admin.
2. Click **USERS** on the **ADMINISTRATION** menu.
3. Click **Change Password** tab.
4. Select the required user from the drop-down list (see [Figure 11_250](#)).

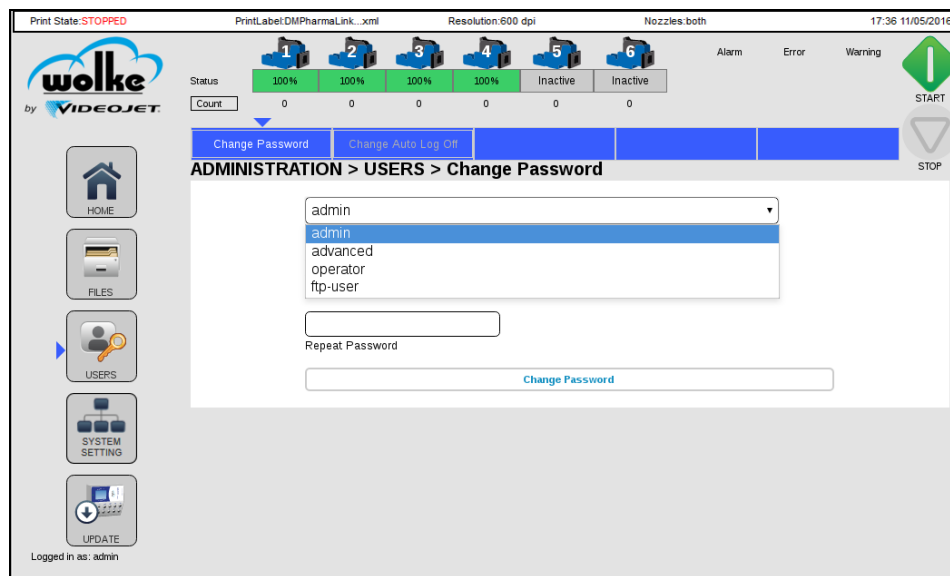


Fig. 11_250: Change Password for Webserver

5. Enter and confirm the **New Password** for the user selected.
6. Click **Change Password** button to set the new password.

Changing user passwords from Administrator login for controller:

1. Login to the m610 advanced controller as admin (see [Figure 11_249](#)).
2. Access the "Password entry" field.
3. Select the required user from the drop-down list.
4. Enter and confirm the **New Password** for the user selected.
5. Retype the new password in the "Retype New Password" field (see [Figure 11_251](#)).

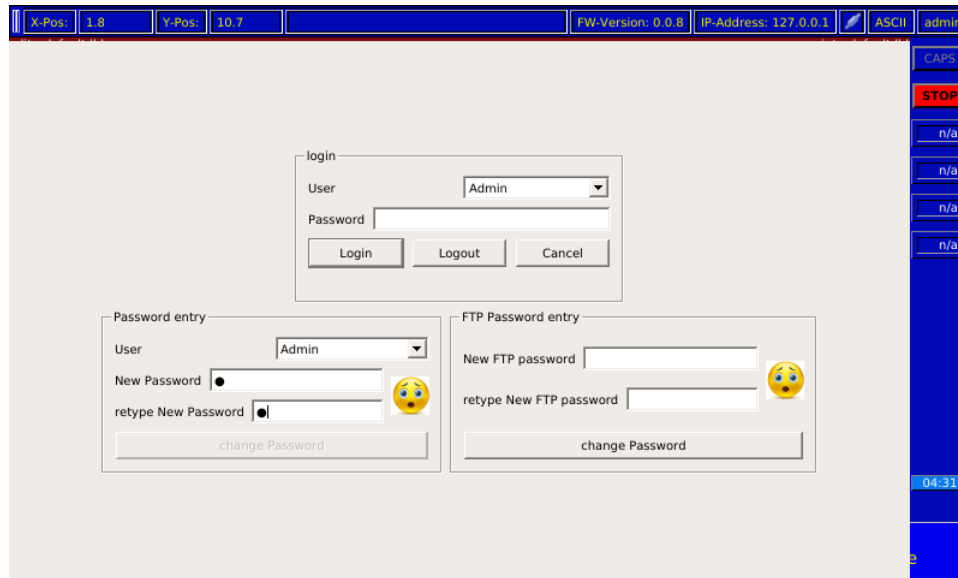


Fig. 11_251: Change Password

6. Select the **Change Password** button to set the new password.
7. A pop-up window appears to indicate that the password is changed successfully (see [Figure 11_252](#)).

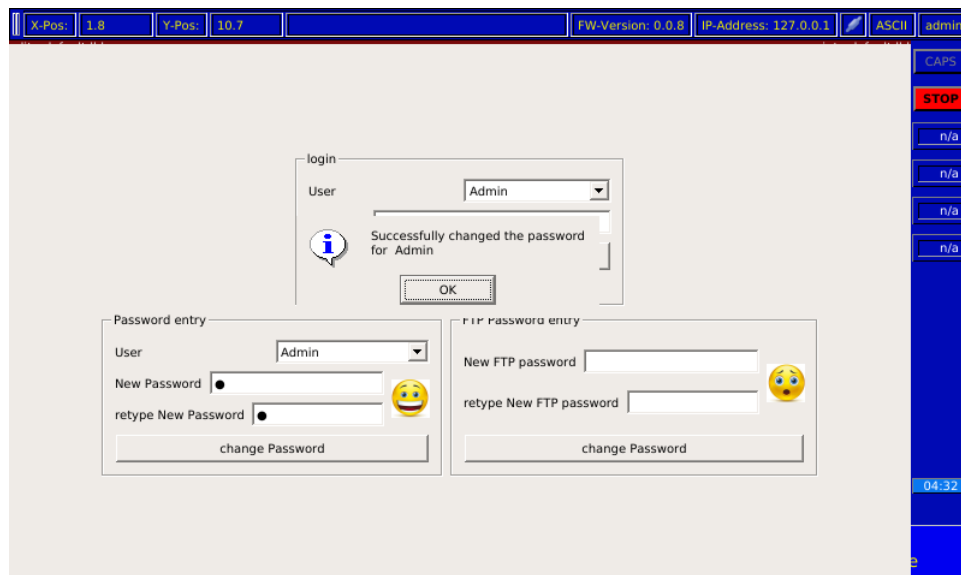


Fig. 11_252: Successful Password Change



NOTE

Users (Advanced and Operator) can also change the password for their login using menu **USERS > ADMINISTRATION**.

In this case the user needs to provide the current password to change the password.

The default password for FTP user is "admin". This password can be changed in "USERS".

11.1.3 User Access

The following table lists the access rights applicable for various users.

User Access

Function	Access			
	Admin	Advanced	Normal	Operator
Select Language	Yes	Yes	Yes	Yes
Open Label	Yes	Yes	Yes	No
Prepare Label	Yes	Yes	Yes	No
Open & Start	Yes	Yes	Yes	No
Start (Print)	Yes	Yes	Yes	No
Stop (Print)	Yes	Yes	Yes	No
Alarm Acknowledge	Yes	Yes	Yes	No
Error Acknowledge	Yes	Yes	Yes	No
Error Ignore	Yes	Yes	Yes	No
Warning Acknowledge	Yes	Yes	Yes	No
Warning Ignore	Yes	Yes	Yes	No
Download Log Files	Yes	Yes	Yes	Yes
Delete Log Files	Yes	No	No	No
Change Machine Parameters	Yes	Yes	No	No
Change Ink Parameters	Yes	Yes	Yes	No
Ink Level Reset	Yes	Yes	Yes	No
Change IO Parameters	Yes	Yes	No	No
Changing Message Settings Parameters	Yes	Yes	No	No
Uploading Files to m610 advanced (Label, Bitmap, fonts, Ink Par and Settings)	Yes	No	No	No
Downloading Files From m610 advanced (Label, Bitmap, fonts, Ink Par and Settings)	Yes	Yes	Yes	Yes
Deleting Files (Label, Bitmap, fonts, Ink Par and Settings)	Yes	No	No	No
Change User Password	Yes	User level dependant	User level dependant	No
Change Auto Log Off	Yes	No	No	No
Change Network Parameters	Yes	No	No	No

Function	Access			
	Admin	Advanced	Normal	Operator
Change Date/Time	Yes	Yes	Yes	No
Manage Ink Types	Yes	No	No	No
System Update	Yes	No	No	No
Open Diagnosis Mode	Yes	Yes	Yes	No
Restart System	Yes	No	No	No
Edit EditLabel Position	Yes	Yes*	No	No
Edit EditLabel Text	Yes	Yes*	Yes*	No
Edit PrintLabel Position	Yes	Yes	No	No
USB make Backup and Clone	Yes	Yes	Yes	No
USB restore Backup/Clone	Yes	No	No	No

Tab. 11_40: User Access

*Yes - except for Save

12 Replacement of Cartridge

12.1 Inserting the Wolke Cartridge into Various Printheads

The cartridge is actuated via the contactor pins in the printhead. In new printheads these contactor pins may sometimes be a little sluggish. This soon clears after the Wolke cartridge has been used the first few times.

When inserting the Wolke cartridge into the printheads, proceed as follows:

*Inserting the
Wolke cartridge*

- ➔ Deactivate the m610 advanced by selecting STOP key on the controller and clicking STOP button on the web server).
- ➔ For new Wolke cartridges, remove the protective tape from the gold contactor and nozzle plate, or for cartridges already in use, remove the cap.
- ➔ Make sure that you do not touch the contactor plate as any soiling will have a negative impact on the print image.
- ➔ Flip the locking lever back and insert the cartridge.



- ➔ Press the cartridge in towards the back in a straight line.



➞ Secure the cartridge by pressing the locking lever down.

*Inserting the
Wolke cartridge*



NOTE

Do not touch either the contactor pins on the printhead or the contactor plate on the cartridge with your fingers (oxidation). This will ensure that you have a long lasting high print quality.

Whenever the printer is not used for any lengthy period (e.g. at the weekend), it is advisable to remove the cartridges from the mounts and to store them in the protective caps which are available as options (to protect the nozzles from drying out). The amount of time it takes for a cartridge to dry out varies according to the type of ink used.



ATTENTION

Never allow the printhead and cartridge to come into contact with liquids (especially solvents).



INFORMATION ON CARE

If the nozzle plate should become soiled, clean it exclusively with an absorbent, lint-free, damp cotton wool cloth. Do not use paper! To dampen the cloth, only use de-ionized or distilled water for water based inks and isopropyl alcohol for solvent based inks.

Always make sure that the cartridge is dry before you re-insert it. Do not use solvent-containing cleaning agents.

12.2 Change Cartridge

For authenticated cartridges:



ATTENTION

Cartridges may only be changed if the m610 advanced is in the "Stop" mode. Otherwise, the cartridges or the printheads might get damaged.

For non-authenticated cartridges:



NOTE

If power cycled, the voltage and pulse width settings will revert to default values.

12.3 Cartridge Ink Level

Cartridge Ink Level in Webserver:

Navigate to **SYSTEM > SETTINGS > Ink Parameter** to open the "Ink Parameter" screen (see Fig. 12_253).

*Cartridge ink level
(Webserver)*

Print State: STOPPED PrintLabel: 4rows_dm261...lbi Resolution: 300 dpi Nozzles: right 04:29 PM 09/26/2017

Status: 100% -1% -1% -1%

Count: 0 0 0 0

Machine Parameter **Ink Parameter** External I/O Settings Factory Settings

SYSTEM > SETTINGS > Ink Parameter

Ink alarm setting: Low Ink: alarm 20% set low ink from 5 up to 25%
Out of Ink: off 10% set out of ink from 0 up to 10%

Values for NON-VTI Cartridges only: Voltage: 9.8 Pulse width: 1.9

printhead:	type	temp_reg	increase ink level
1	Premium Black (WLK60008A)	on	increase ink level
2	nonvalidated cartridge	on	increase ink level
3	no printhead	on	increase ink level
4	no printhead	on	increase ink level

Logged in as: admin Submit

Fig. 12_253: Ink Parameter

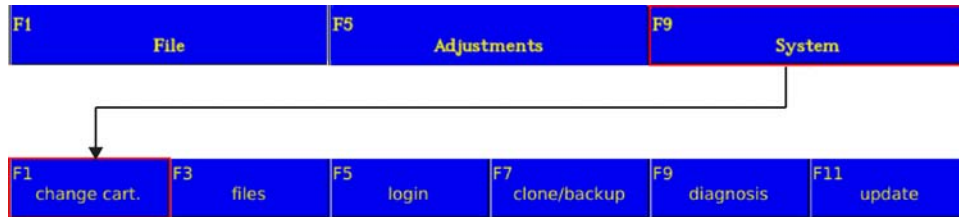
Cartridge ink level (Controller)

S1 + C

Cartridge Ink Level in Controller:

Follow the steps to open the Increase Inklevels window in the controller:

1. Use the arrow keys to select the change cartridge field.



Select the menu items with the arrow keys



Confirm the entries with "Enter" and exit the menu

Fig. 12_254: Change Cartridge

2. The Increase Inklevels window for controller is as displayed in Fig. 12_255.

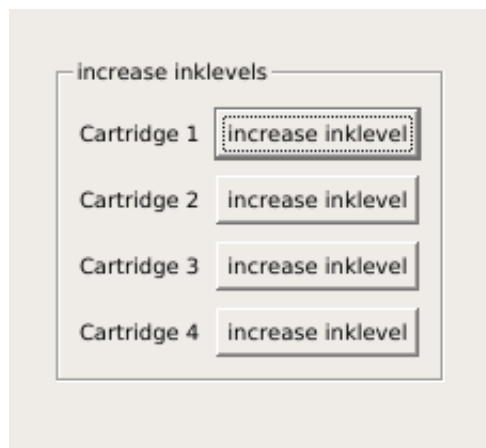


Fig. 12_255: Increase Ink Level (Controller)

For authenticated cartridges:

- the out of ink percentage level can be set from 0% up to 10%.
- the low ink level can be set from 5 up to 25%.



NOTE

Select the required cartridge using the tab key and increase the ink level using the space key.

13 Diagnostic

13.1 Diagnostic Menu



ATTENTION

The diagnostic screen can be opened in both "Start" and "Stop" states. If you open the diagnostic menu during printing, the updating process may be slowed down depending on printing performance.

Webserver data will update only if the printer is not in error or stop state.

Diagnosis menu

Navigate to **SYSTEM > DIAGNOSTIC**. It displays the diagnostic menu options as shown in [Figure 13_256](#), [Figure 13_258](#) and [Figure 13_260](#).

13.1.1 Printheads Screen

This screen gives information about the printheads connected to the printer.

Printheads

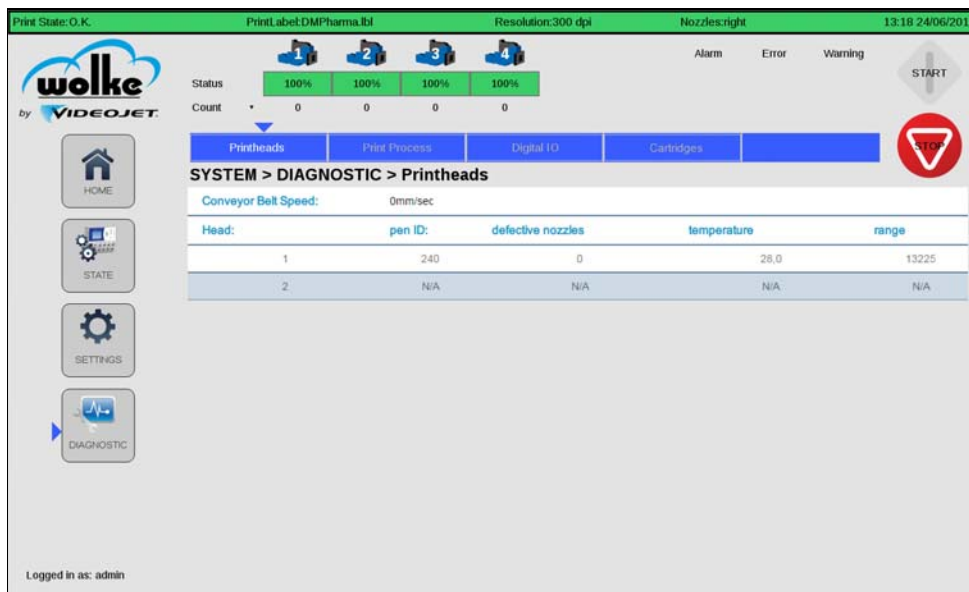


Fig. 13_256: Printheads Screen (Webserver)

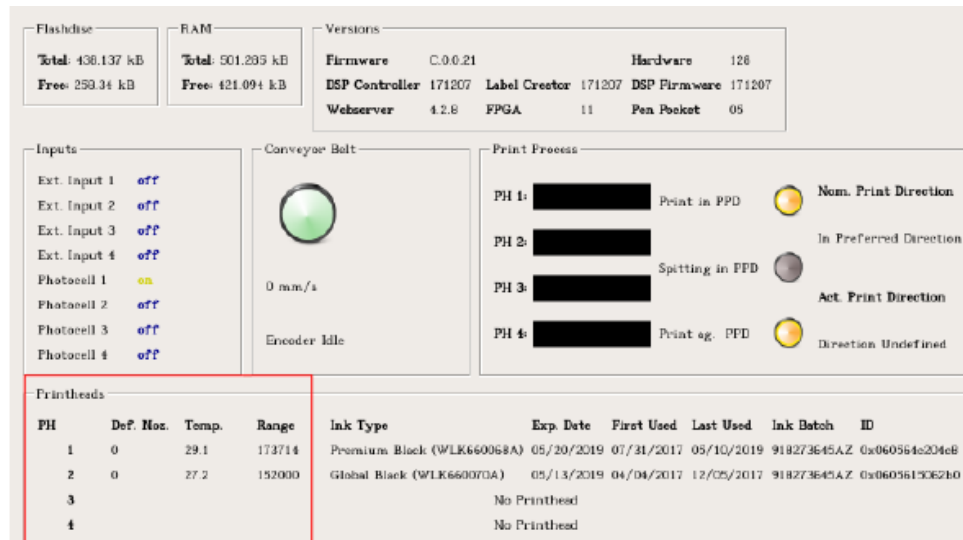


Fig. 13_257: Input Cartridges Screen (Controller)

This screen displays the following information about the printheads connected to the printer:

Printheads

Diagnosis Menu	Description
pen-ID	This displays the identification number for Wolke cartridges. This number is only relevant to a service personnel.
defective nozzles	This shows that certain individual nozzles have been destroyed because of malfunction (for example, if they "burn" - see the next section "Temperature"). This menu only displays "errors" that are capable of technical measurement. For example, it is not possible to show nozzles which have dried out on the outside because a cartridge was incorrectly inserted.
temperature	For reasons related to the printing technology of the thermal inkjet process, every cartridge contains heating elements. If printing is not performed, this temperature is normally, approximately at room temperature. During the printing operation the temperature may rise to a maximum of 60 degrees Celsius, depending on the load on the cartridge (printing speed, print text, and so on). Malfunction, e.g. improper system operation at excessive printing speed, may cause the nozzles to "burn", after which it will only take a few prints before the cartridge fail.
range	Number of prints with current label that can be printed based on ink remaining

Tab. 13_41: Key Assignment - Overview



NOTE

Ink information is available for authenticated cartridges only.

If the data is not available, the information will be displayed as N/A.

13.1.2 Print Process Screen

Print Process

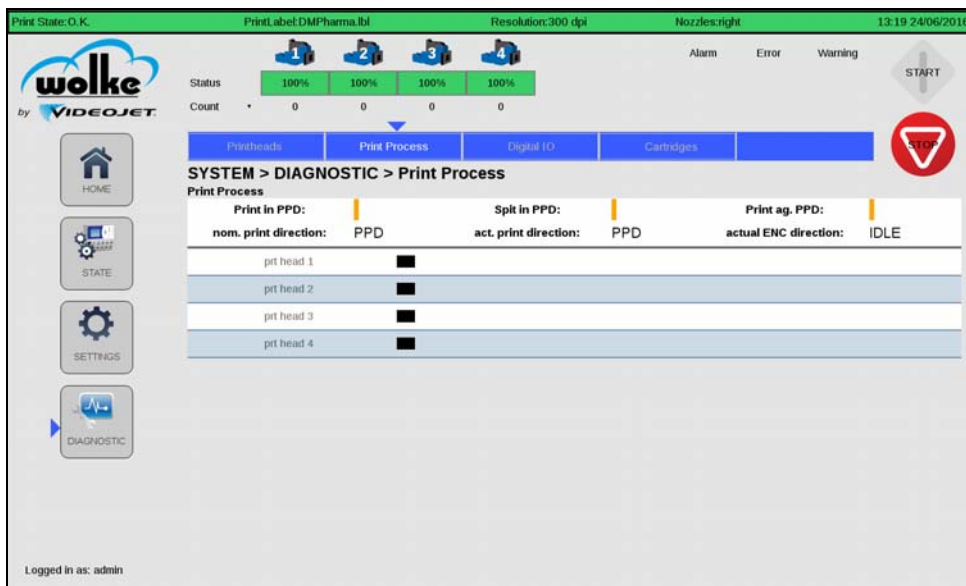
















Fig. 13_258: Print Process Screen (Webserver)



Fig. 13_259: Input Cartridges Screen (Controller)

Webserver Display	Controller Display	Description
Print in PPD: 	Print in PPD 	This displays the status of printer related sensor for print.
nom. print direction: PPD	Nom. Print Direction In Preferred Direction	This displays the selected PPD direction.
Spit in PPD: 	Spitting in PPD 	This displays the status of printer related sensor for spit.
act. print direction: PPD	Act. Print Direction Direction Undefined	This also displays the actual PPD direction.
Print ag. PPD: 	Print ag. PPD 	This displays the status of printer related sensor for contrary print.
actual ENC direction: IDLE	Encoder Idle	This also displays the actual encoder direction.
<div>prt head 1 </div> <div>prt head 2 </div> <div>prt head 3 </div> <div>prt head 4 </div>	<div>PH 1: </div> <div>PH 2: </div> <div>PH 3: </div> <div>PH 4: </div>	This displays the status of PPD for individual printheads

Tab. 13_42: Print Process

The required printing direction is the direction which has been adjusted via the external input 4.

The actual printing direction is the printing direction in which printing is currently effected.

13.1.3 Digital IO Screen

This screen gives information about the digital inputs and outputs.

Digital IO

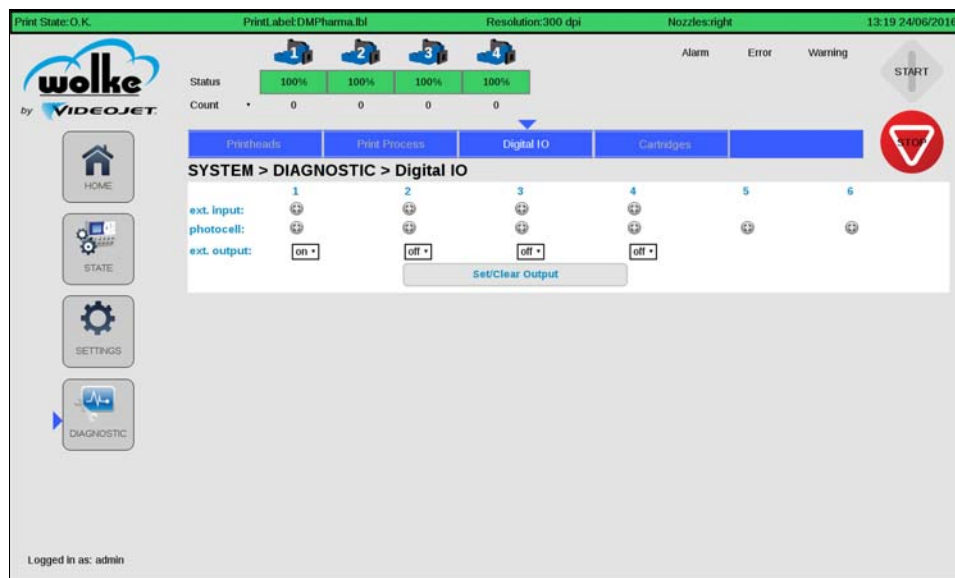


Fig. 13_260: Digital IO Screen (Webserver)

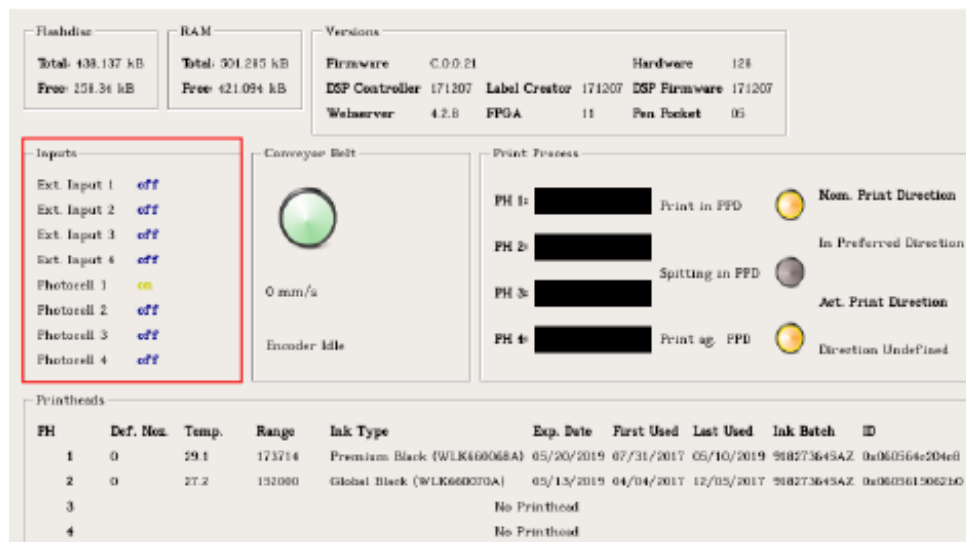


Fig. 13_261: Input Cartridge Screen (Controller)

Display	Description
ext. input	This displays the status of the connected external inputs. The active external inputs are displayed in green.
photocell	This displays the status of the photocells. The active photocells are displayed in green.
ext output	This allows the user to select whether to activate or de-activate the external output. Note: Only available in DIAG mode. This is used only for wiring tests.

Tab. 13_43: Digital IO Screen

Select the **Set/Clear Output** to activate or de-activate the output.

13.1.4 Cartridges Screen

Cartridges

This screen gives information about the current value of different cartridge parameters.



NOTE

Ink information is available for authenticated cartridges.

If the data is not available, the information will be displayed as N/A.

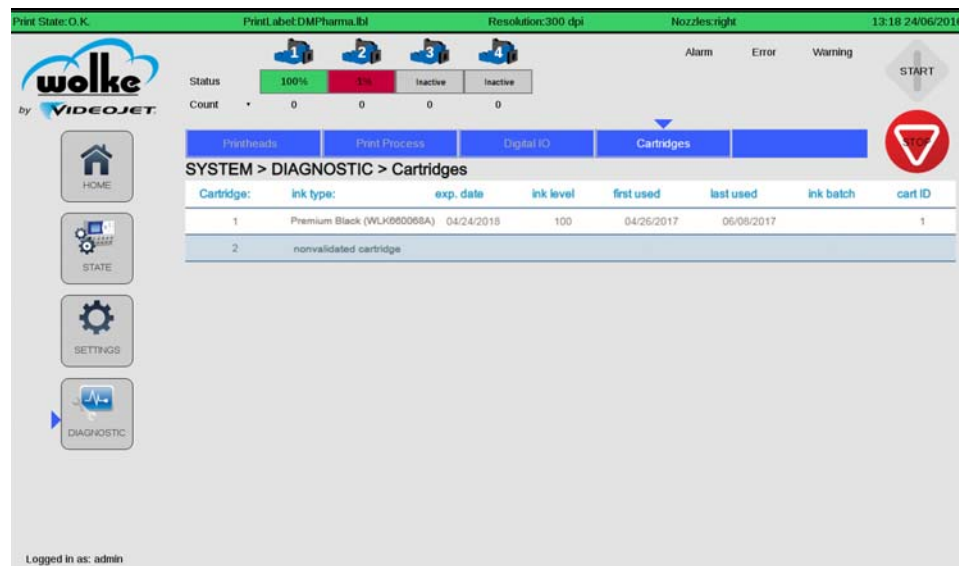


Fig. 13_262: Cartridges Screen (Webserver)

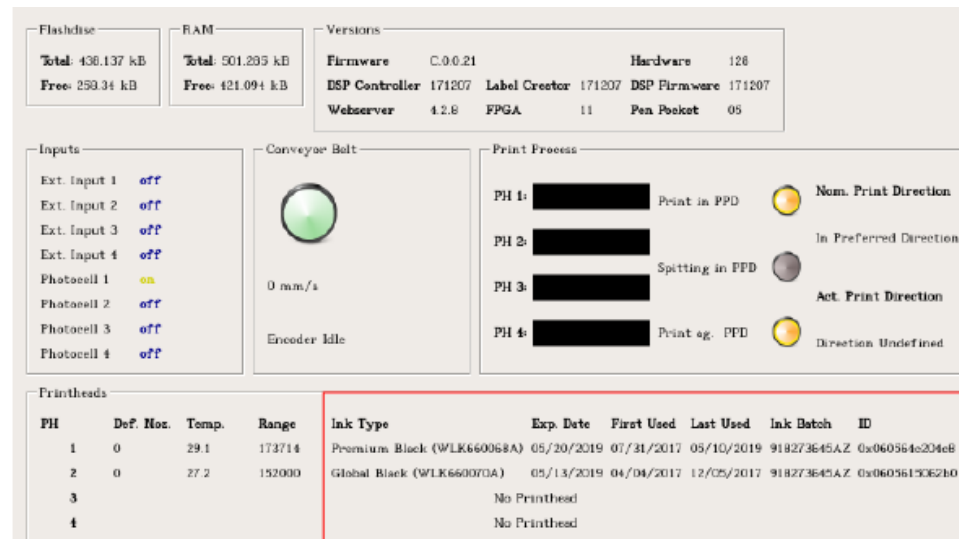


Fig. 13_263: Input Cartridges Screen (Controller)

Display	Description
Ink type	This displays the type of ink
Exp. date	This displays the expiry date of the cartridge.
Ink level	This displays the ink level (%) of the cartridge.
First used	This displays the date on which the cartridge was first used after installation.
Last used	This displays the date on which the cartridge was last used.
Ink batch	This displays the ink batch number.
Cart ID	This displays the identification number for the cartridge.

Tab. 13_44: Cartridges Screen

13.2 Product Counter

The product counter provides an overview of the number of prints of the m610 advanced between start and stop of the printer. If the m610 advanced is stopped and restarted, the product counter is reset to 0 and incremented from the start. The product counter is always activated and is displayed in a menu of its own. Depending on the number of printheads activated in the system settings, the product counter is incremented for each printhead. The count can be interrogated via the interface.

Display mask of the product counter

The display of the product counter is only accessible via the green menu in print mode.

Print menu view:

F1 editor	F3 save	F5 view	F7 zoom	F9 change cart.	F11 system
--------------	------------	------------	------------	--------------------	---------------

If "F11 - System" is selected in the print menu view, the following submenu appears:

F1 diagnosis	F7 print info
-----------------	------------------

By selecting F1 "Diagnosis", the operator reaches the familiar diagnostic menu. If F7 "Print info" is selected, the product counter view appears:

Printhead	Global Counter	Product Counter	Range	Remaining Time
1	6678785	485708	3404	n/a
2	6678784	485708	100714	n/a
3	6678811	485708	64002	n/a
4	6678802	485708	115202	n/a

Tab. 13_45: Product Counter



NOTE

The number of prints per printhead displayed depends on the printheads activated in the system settings.



NOTE

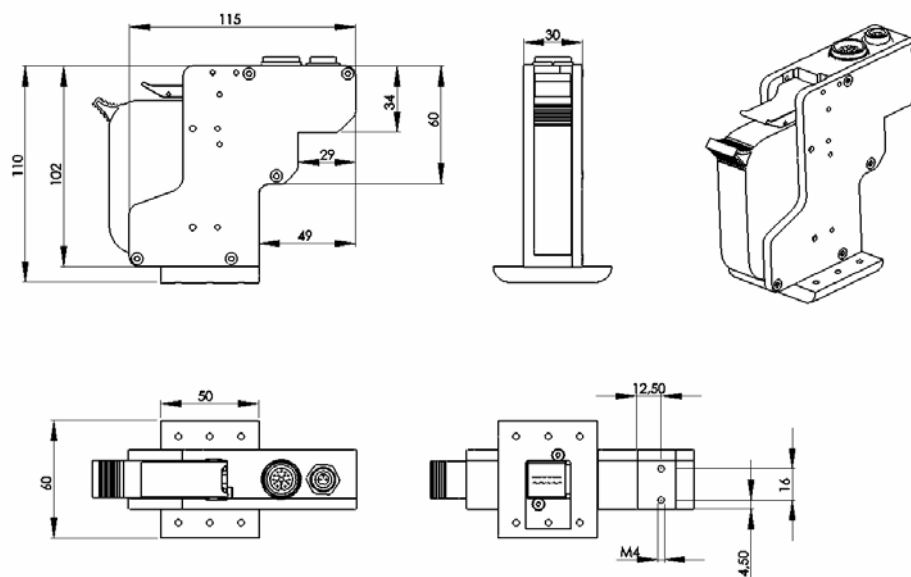
To return to the print menu view, press the ESC key twice.

14 Technical Data

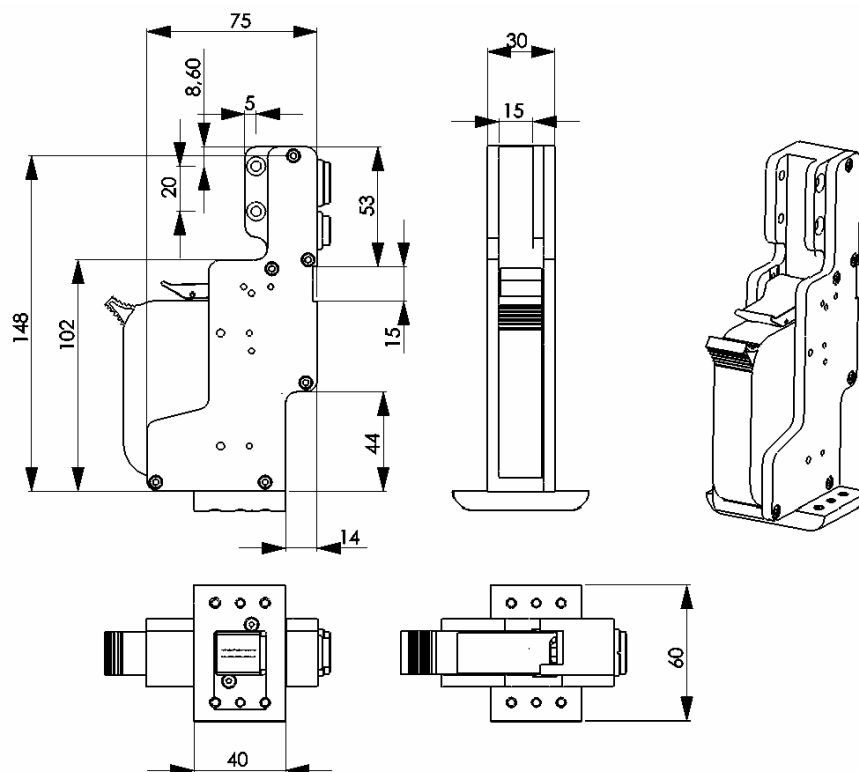
14.1 Technical Drawings

Printhead, blue

Technical drawings

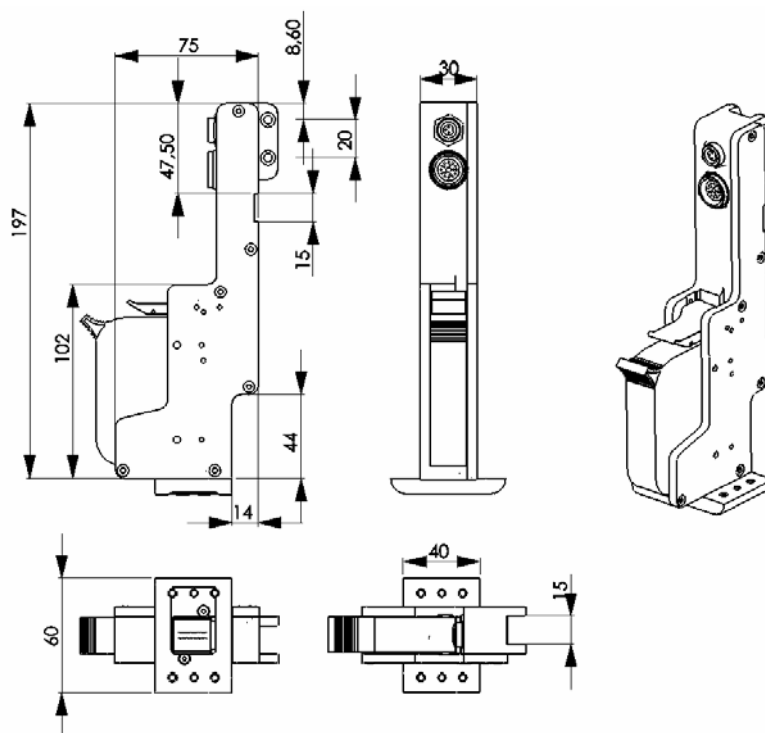


Printhead, red

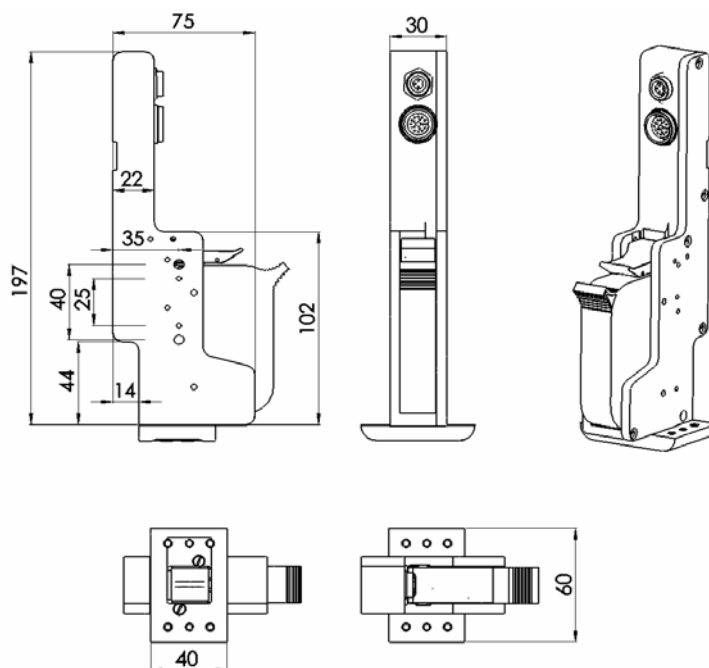


Technical
drawings

Printhead, green

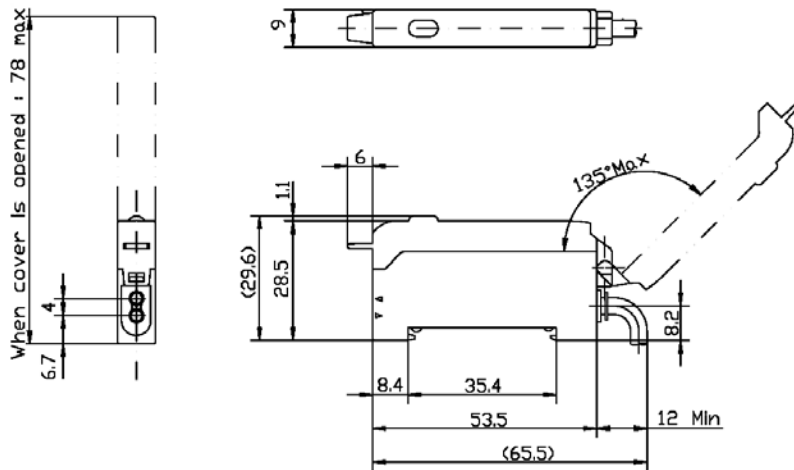


Printhead, gold

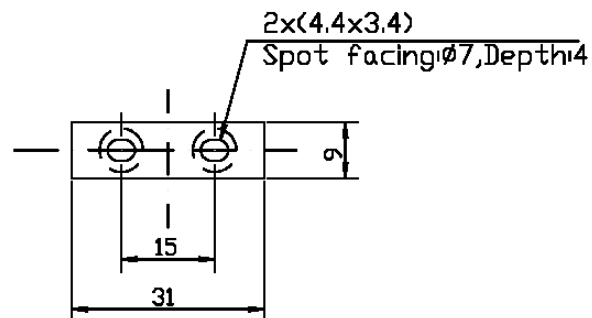
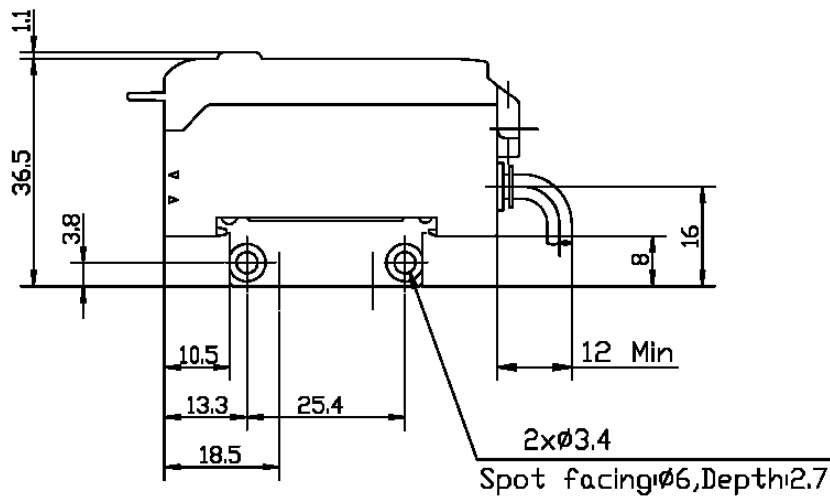


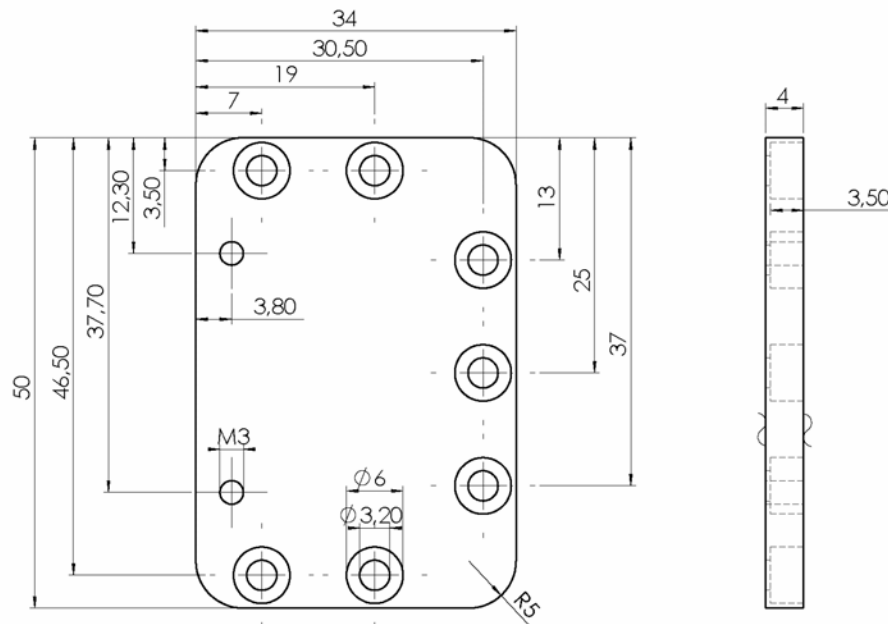
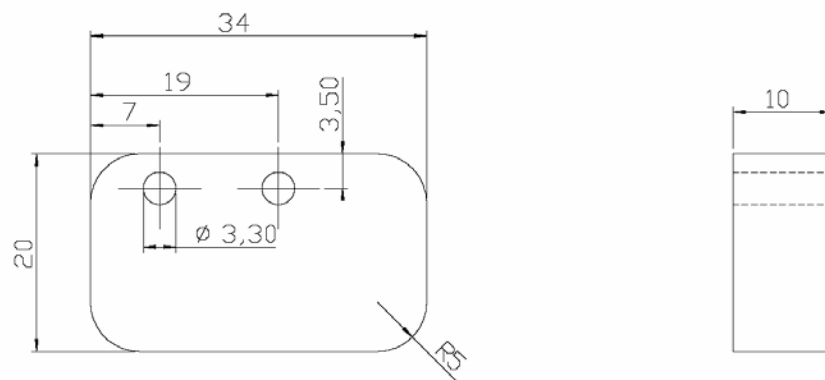
Sensor, Keyence

Technical drawings



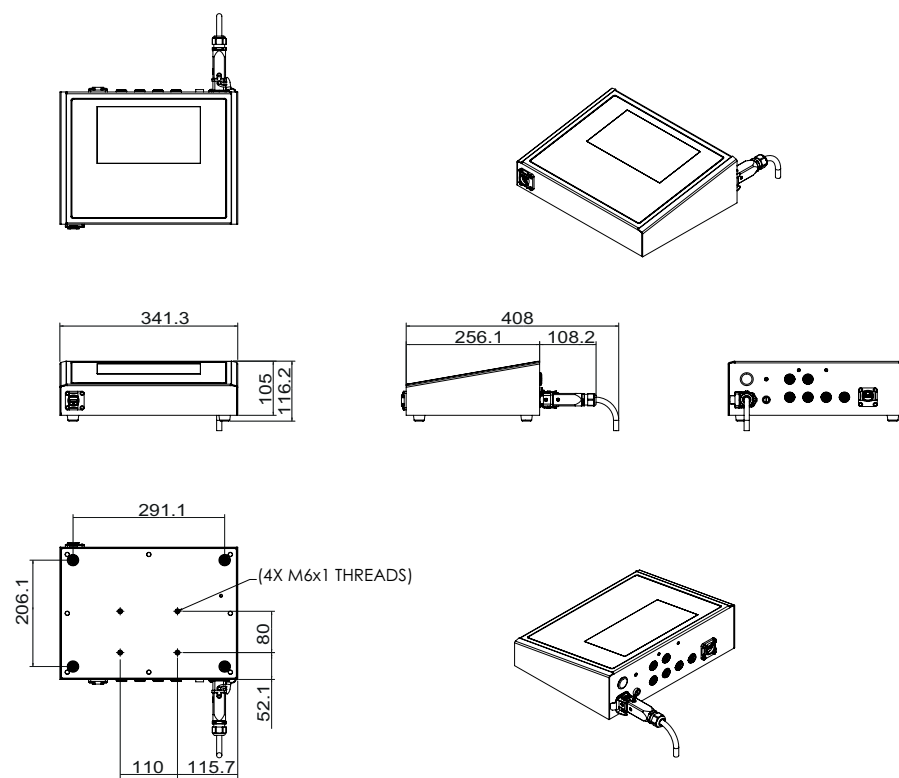
Sensor with installation mount



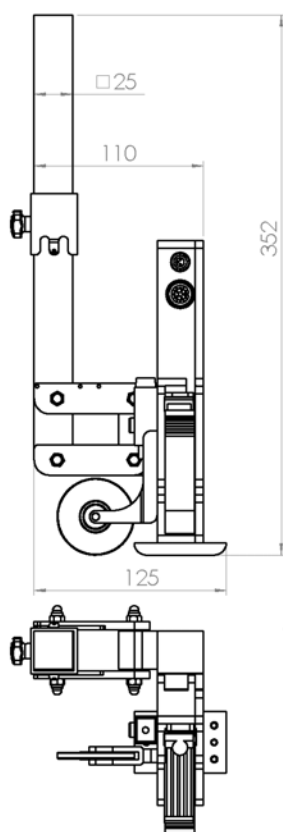
**Technical
drawings**
Adapter plate for sensor

Spacer plate for sensor, for use with a locating wheel


Controller

Technical
drawings



Parallelogram



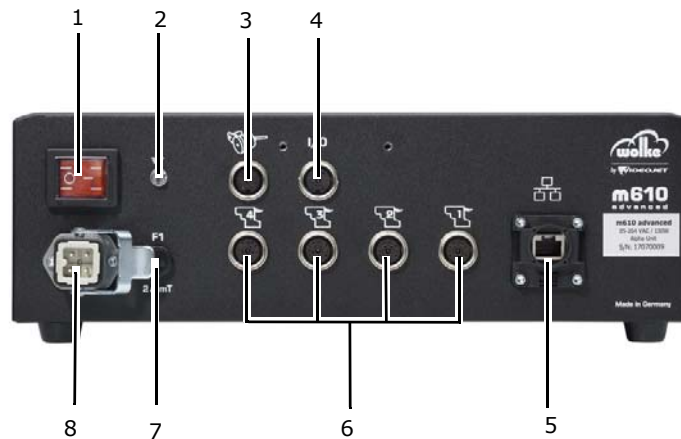
14.2 Weights

Weights

Component	Weight in gram
Controller	2254 free space for assembly (B): ~ 400 mm
Printhead, blue	298 the view shows: jet plate, bottom; printhead from the right
Printhead, green	332 the view shows: jet plate, bottom; printhead from the right
Printhead, gold	324 the view shows: jet plate, bottom; printhead from the right
Printhead, red	268 the view shows: jet plate, bottom; printhead from the right

14.3 View of the m610 advanced's Rear Panel


m610 advanced rear panel



When you connect the components, please refer to [Chapter 4.7.1, "Connecting the Printer Components"](#).

For a detailed description of the terminals, please refer to [Chapter 14.4, "Terminals"](#).

Fig. 14_264: Rear Panel – Connectivity

- | | |
|---|---|
| 1 Two pole ON/OFF switch with pilot lamp | 5 Terminal for the Ethernet interface |
| 2 Grounding point  | 6 Terminals for printheads 1-4 |
| 3 Terminal for external shaft encoder for measuring the speed of the product being printed | 7 Fuse F1 for the primary fuse protection of the m610 advanced |
| 4 Terminal for the 4 digital inputs and outputs. 24 V DC version for inputs and outputs. | 8 Power plug with four pole industrial plug-and-socket connection |
| | 9 USB-Front Panel* |

*The components are not shown in the picture.



NOTE

All the terminals are panel sockets. In combination with the matching connectors they meet the requirements of IP65 type of protection. For the m610 advanced to meet the requirements of IP65, all panel sockets must be fitted with protective caps when not in use and all union nuts and strain-relief devices must be securely tightened/fastened.

14.4 Terminals

14.4.1 Power Supply

Supply voltage

Power supply

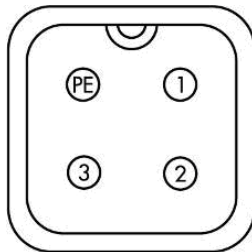
The user is not expected to change the supply voltage. The m610 advanced is available with 100-240 V DC, 50/60 Hz, 150 W wide-range power supply.

Type of connection

In this version the m610 advanced is equipped with a directly mounted plug housing. Included in delivery with this version of the m610 advanced is a connecting cable, approx. 1.8m in length, with matching connector.

Plug-and-socket connector used

A 4-pole industrial plug-and-socket connector is provided for the connection to the power supply. This is equipped with a leading ground contact.



Connector in mounted plug housing, type:
HAN 3A-M
Cable coupler, type:
HAN 3A-F

Top view of the contact side of the built-in plug

PIN on the m610 advanced	Function	Cable colour	I/O
1	Phase	brown	<- I
2	Neutral	blue	<- I
3	not used		
PE	Protective earth	green/yellow	<- I

Tab. 14_46: Pin Assignment - Connection to Power Supply

14.4.2 Differential Shaft Encoder Socket

Differential shaft encoder socket

The differential shaft encoder which can be connected to this socket enables the m610 to determine the speed of the product being printed (in this context see [Chapter 7.1.1](#)).

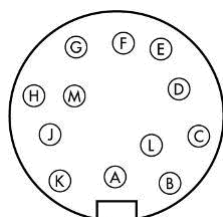
The standard differential shaft encoder supplied by Wolke by Videojet delivers 2,500 pulses per revolution. Four different measuring wheels are available for the differential shaft encoder. If the measurement wheel is positioned directly on the product conveyor belt, the resultant values are as shown in the table below. The number of pulses per meter has to be entered in the "Adjustments/Installation" menu.

Measuring Wheel model	Diameter	Standard values Pulses/m
Aluminium measuring wheel (solid material)	67,33mm	11.819
Rubber measuring wheel (studded)	63,66mm	12.500
Solid aluminium with cross spokes	63,66mm	12.500
Plastic, smooth	63,66mm	12.500

Tab. 14_47: Values for Pulses/meters Depending on Measuring Wheel Diameter

Plug-and-socket connector used

A 12-pole plug-and-socket connector is used for the differential shaft encoder connection.



Cable connector
Cable tie, series 423, type 99-5629-15-12

Top view of the solder side of the plug

Pin on the m610 advanced	Function	Values m610 advanced	I/O
A	-		
B	GND	0 V DC	-> O
C	Output signal A		<- I
D	GND (jumped in plug)		
E	Output signal A, inverted		<- I
F			
G	Vcc	+5 V DC max. 0,5 A	-> O
H	Output signal B (90° out of phase)		<- I
J	GND (jumped in plug)		
K	Output signal B, inverted		<- I
L			
M			

Tab. 14_48: Connector Pin Assignment – Differential Shaft Encoder Socket

Shaft encoders from other manufacturers

A shaft encoder from another manufacturer can be used instead of the standard type from Wolke by Videojet at any time. However, any such shaft encoder must have exactly the same values as the standard type from Wolke by Videojet.

*Differential
shaft encoder
socket*

Important information about the use of a shaft encoder:

Incorrect pulses per meter ratio set on the m610 advanced

If the ratio of pulses per meter set on the m610 advanced identical to the actual situation (e. g. a different measuring wheel, measuring wheel is not in direct contact with the belt, different shaft encoder), the print image will either be stretched or compressed lengthwise. If the printheads print with both nozzle rows, the two print images created by the two offset nozzle rows will not be exactly aligned with each other. A shadow will be the result. If the print image is made up of several printheads, an offset will also be visible at the transition from one printhead to the other.

Slippage on the measuring wheel on the differential shaft encoder

If the differential shaft encoder is not pressed onto the conveyor belt with enough pressure or is in contact with a very smooth surface (e. g. belt driving roller), the shaft encoder may occasionally slip and the m610 advanced will then receive incorrect speed information. In the print image this is apparent in stretching in the print direction and an offset at the printhead transition points. Another problem occurs whenever heavy products are on the belt, causing the differential shaft encoder to jump off. In the print image this is apparent in missing prints and offsetting. If the pressing pressure on the belt is excessive, however, this may destroy the differential shaft encoder bearing.

Insufficient number of pulses per revolution (less than 500)

If you print with a low belt speed or the belt is accelerated or slowed down during printing, it is possible that the automatic adjustment of the printing speed may not be fast enough. This will result in an imprecise print image (stretching, compression, offsetting at the transition points between the printheads if several printheads are used). If the speed of the belt is too slow the m610 advanced interprets this as a stop. For very slow belt speeds it is therefore advisable to use a shaft encoder with a large pulse/revolution ratio.

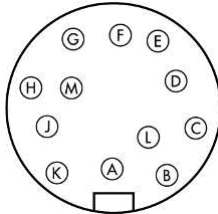
14.4.3 Differential Shaft Encoder Extension Cables

Differential shaft encoder extension cables

The standard differential shaft encoder is available with a connection cable in various lengths. Wolke by Videojet also offers a range of extension cables in different lengths.

Plug-and-socket connector used

A 12-pole plug-and-socket connector is used for the differential shaft encoder connection.



Cable connector
Cable tie, series 423, type 99-5629-15-12

Cable coupler
Cable tie, series 423, type 99-5630-15-12

Top view of the solder side of the plug

Pin on the m610 advanced	Function	Pins on the coupler
A		A
B	GND	B
C	Output signal A	C
D	GND (jumped in plug)	D
E	Output signal A, inverted	E
F		F
G	Vcc	G
H	Output signal B (90° out of phase to A)	H
J	GND (jumped in plug)	J
K	Output signal B, inverted	K
L		L
M		M

Tab. 14_49: Connector Pin Assignment – Differential Shaft Encoder Extension Cables

14.4.4 External Inputs and Outputs

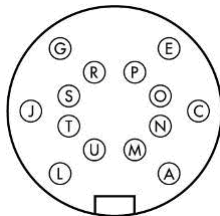
Description of functions

External inputs and outputs

The m610 advanced has 4 digital inputs and outputs. The inputs can be used to trigger a diversity of functions of the m610 advanced. The outputs indicate various items of information about the status of the m610 advanced. The relevant settings have to be made in the "Adjustments/Installation/Ext. Inputs" menu. To protect the electronics in the m610 advanced, all input and output channels in the panel socket (for 5 V DC and 24 V DC) are decoupled by means of optocouplers.

Plug-and-socket connector used

Two 14-pole plug-and-socket connectors are used for the external input and output connections. The 5 V DC and 24 V DC versions each come with one plug-and-socket connector each.



Cable connector
 Cable tie, series 423, type 99-5651-15-14

Top view of the solder side of the plug

14.4.4.1 24 V DC Socket Version

24 V DC socket
version

PIN on the m610 advanced	Function	Cable colour	I/O
P	m610 advanced 24 V DC	white/yellow	->
J	Ext. + 24 V DC (for the outputs)	black	<-
T	m610 GND	brown	->
A	Ext. GND (for the outputs)	gray	<-
C	Input 1 m610 advanced	pink	<-
G	Input 2 m610 advanced	red	<-
L	Input 3 m610 advanced	purple	<-
N	Input 4 m610 advanced	white/green	<-
E	Ext. GND (for the inputs)	blue	<-
O	Output 1 m610 advanced, OK	green/brown	->
R	Output 2 m610 advanced, error	yellow/brown	->
S	Output 3 m610 advanced; 0-40 %, user-defined	white	->
U	Output 4 m610 advanced; Count value reached or end of printing	yellow	->

Tab. 14_50: Connector Pin Assignment of the 24 V DC I/O Socket

Technical data for the inputs on the I/O 24 V DC socket

The input channels of the 24 V DC socket are connected to the same optocouplers as for the 5V DC socket but are already connected internally with series resistors for 24V. The reference ground for these inputs is contact "E".

V_{inL}	Input voltage "Low level"	0...+5 V
V_{inH}	Input voltage "High level"	+ 20...+ 28 V
$I_{in\ max.}$	max. input current	max. 20 mA
t_p	Signal make-time	min. 25 ms

Tab. 14_51: Limits for the 24 V Input Interface



NOTE

The time given in the table refers to the use of the input as a signal for the start of printing.

Technical data for the outputs on the I/O 24 V DC socket

24 V DC socket
version

For the output channels for the 24 V DC socket the m610 advanced has been equipped with Power MOS-FETs. These can be supplied with power from both the power supply unit integrated in the m610 advanced or by an external power supply unit.

		internal	external
$U_{out\ int}$	Output voltage of the m610 advanced driver	24 V DC	24 V DC
$V_{out\ ext.}$	max. external voltage for power supply to the m610 advanced power driver	50 V DC	50 V DC
$I_{out\ max.}$	Maximum continuous output current	150 mA	500 mA
$I_{out\ max.}$	max. peak output current for 3 seconds	1,0 A	1,0 A

Tab. 14_52: Limits for the 24 V DC Output Interface

Test of the external outputs

The external outputs can be tested, e.g. via a connected warning beacon.

- ➡ When in the diagnostic menu, press simultaneously the S1 key and the blank keys.
(You access the diagnostic menu via "F7 - System"> "F10 - Diagnosis".)

All 4 outputs are activated cyclically.

To terminate the test, press S1 and the space button simultaneously. You can exit the diagnostic menu via the Esc button.

Connection examples

Descriptions of how a range of external devices are connected to the m610 advanced, using examples.

Signal light with 5 meter I/O cable:

PIN on the m610 advanced	Function	Cable colour	Jumper	Contact of signal lamp
P	VCC	white/yellow	X	nc
J	Ext.: + 24 V	black	X	nc
T	GND	brown	X	0
A	Ext. GND	gray	X	0
O	Output 1 m610 advanced OK (ready for printing)	green/brown		1
R	Output 2 m610 advanced error	yellow/brown		3
S	Output 3 m610 advanced alarm	white		2

Tab. 14_53: Connection Example Signal Light with 5 Meter I/O Cable

The 24 V DC output drivers for the m610 advanced are designed for a maximum of 150 mA.



NOTE

The internal power supply unit in the m610 advanced is only designed for a joint maximum external load of 150 mA. If an alternative to LED elements is used for the signal lights, with over 50 mA per indicator, an external power supply unit has to be used. If an external power supply unit is used, the jumpers on the plug of the m610 advanced have to be removed between P + J and between T + A. Power is then supplied via J + A.

24 V DC socket version

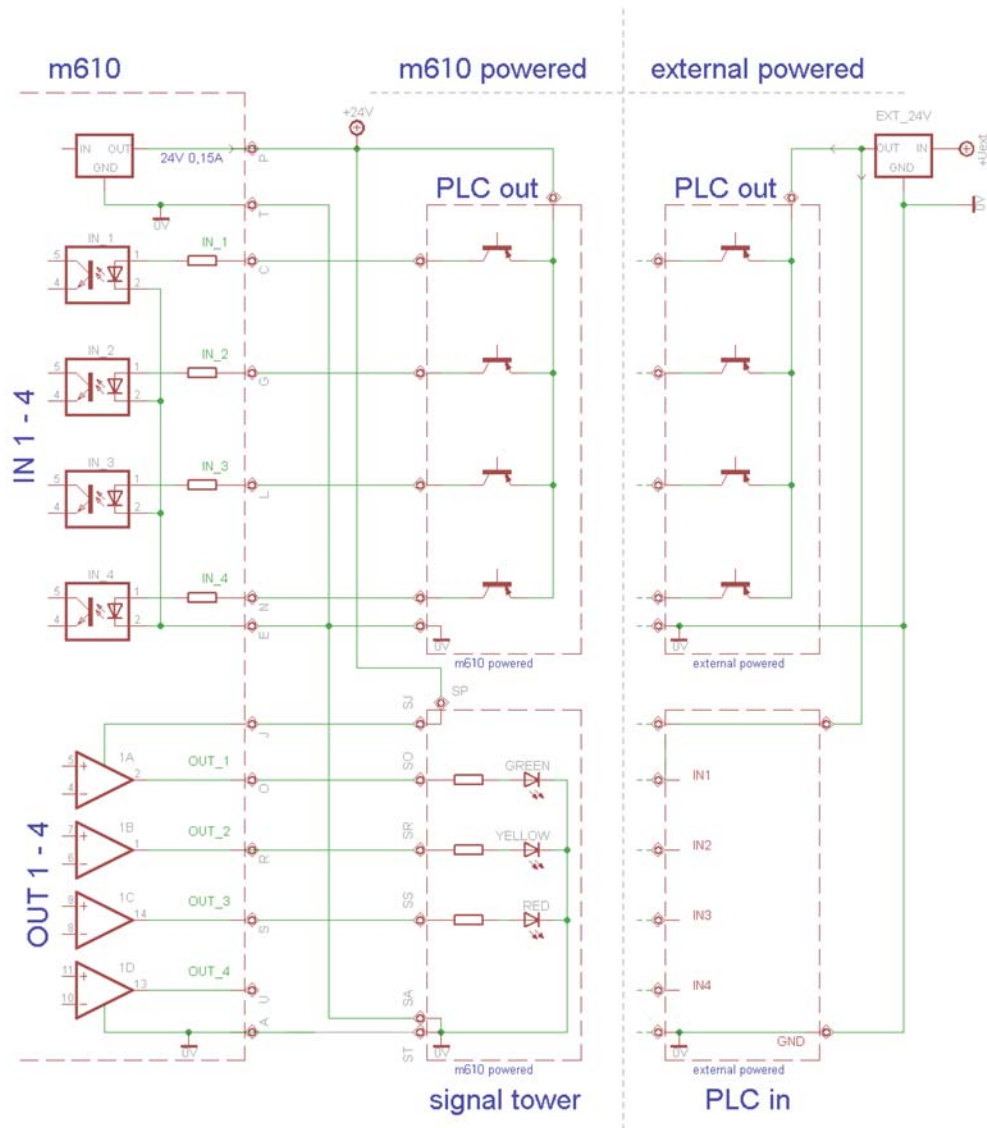


Fig. 14_265: Wiring Example for the 24 V DC Interface

14.4.5 Printhead Socket

Given that up to four printheads can be operated with the m610 advanced simultaneously, there are four of these panel sockets.

Printhead socket

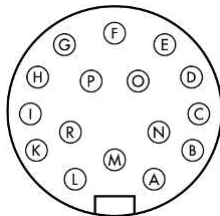


ATTENTION

Only connect the printhead cable with the m610 advanced either switched off or in "Stop" mode.

Plug-and-socket connector used

A 16-pole plug-and-socket connector is used for the printhead connection.



Cable connector

Cable tie, series 723, type 09-0505-70-16

Top view of the solder side of the plug

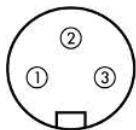
14.4.6 Photoelectric Cell on the Printhead of the m610 advanced

The output on the standard photoelectric cell from Keyence is equipped with a NPN transistor (open-collector). This means that the output signal is an inactive high-resistance one and is drawn from ground (0 Volt) in the active state. Given that in the m610 advanced, this signal is connected internally to a pull up resistor against +5 Volt, the signal level received by the m610 advanced is either 0 Volt (active) or +5 V (inactive).

Photoelectric cell on the printhead of the m610 advanced

Plug-and-socket connector used

A 3-pole plug-and-socket connector is used for the connection.



Cable connector

Cable tie, series 712, type 09-0405-00-03

Top view of the solder side of the plug

PIN on the m610 advanced	Function	Value m610 advanced	Cable colour	I/O
1	Output signal of photoelectric cell	GND (0 V DC)	black	<-
2	Vcc	+ 24 V DC	brown	->
3	GND	Ground (0 V)	blue	->

Tab. 14_54: Pin Assignment of The Photoelectric Cell

15 Service and Maintenance

15.1 Information on Care



INFORMATION ON CARE

If the display is soiled, it can be cleaned using a commercially available moist screen cleaning wipe.

Service and maintenance



INFORMATION ON CARE

Dust on the contact pins of the printhead can be evacuated using a vacuum pump or be removed with a fine paintbrush.

To this effect, the m610 advanced must be switched off.

15.2 Storage of Ink Cartridges

The ink cartridges should be stored at room temperature (ambient temperature of print system) $\pm 5^{\circ}\text{C}$ deviation. A temperature of 18-25°C and a relative humidity of 35-55% is ideal.

Whenever the printer is not used for any lengthy period, it is advisable to remove the cartridges from the mounts and to store them in the protective caps which are available as options (to protect the nozzles from drying out). (Wolke art. no. WLK660035)

Storage of ink cartridges

15.2.1 Cleaning the Cartridges

Cleaning of the ink cartridge is required before the cartridge is to be reinserted, or if the print image has deteriorated visibly.

Cleaning the cartridges

- Before replacing the ink cartridge, check it visually for leakage. (Make sure ink does not leak.)
- Check the contact film visually for oxidation and mechanical damage.
- Do not use the cartridge if it is not in correct working order.
- If necessary, replace the cartridge.

**INFORMATION ON CARE**

If the nozzle plate should become soiled, clean it exclusively with an absorbent, lint-free, damp cotton wool cloth. To dampen the cloth, only use de-ionized or distilled water.

A cleaning kit is optionally available (Art. nr.660040).

Always make sure that the cartridge is dry before you re-insert it.

**ATTENTION**

Never use solvent or liquids other than de-ionized / distilled water to clean the ink cartridges.

15.3 Maintenance Instructions

Maintenance instructions

The controller does not require any maintenance.

Work to be performed	Measures
Printhead Check the contact pins visually once per month for damage/corrosion. Check the scraper blade visually once per month for wear. Check the function of the cartridge locking lever.	If necessary, replace the printhead. If necessary, replace the head plate. If necessary, replace the locking lever.
Cable Check all screw-fastened plug-and-socket connectors for tight fit.	If necessary, retighten them.
Check quarterly the printhead cables in the cable carriers for visible chafing, wear or crushed areas.	If necessary, replace the printhead cables.

**NOTE**

Please contact your local representative for more information on accessories.

16 Troubleshooting

16.1 Printing

Troubleshooting/printing

Fault	Cause	Solution
The label is not printed.	The label is empty, i.e. there are no printable objects (such as text, time, date, counter or barcode fields) in the label.	Open, load and start a label with print data in it.
	The label was not loaded to the print memory.	The label must be loaded to the print memory before printing.
	The status of the m610 advanced is not on OK, i.e. the START key was not pressed or the STOP key has been inadvertently pressed.	In order to start printing the START key has to be pressed.
	A shaft encoder is being used but is not activated in the system settings.	Activate the shaft encoder in the system settings.
	A shaft encoder is being used but it is activated in the system settings of the shaft encoder.	Deactivate the shaft encoder in the system settings and set the constant printing speed.
	The DO (Dark On) setting has been applied on the Keyence photoelectric cell.	Switch the setting on the photoelectric cell to the standard setting LO (Light On).
	The photoelectric cell has been connected to a print head that has not been parameterized in the system settings.	Connect the photoelectric cell to a print head that has been parameterized in the system settings.
	The photoelectric cell has been connected to a print head that has not been parameterized in the system settings.	Parameterize the print head to which the photoelectric cell has been connected in the system settings.
	The photoelectric cell fails to detect the print material because the range (shaft encoder setting) is not large enough or the print material is too far away (and is not detected as a result).	Turn the setting screw on the photoelectric cell in the + direction until the LED on the photoelectric cell shines green or move the print material closer to the optical fiber on the photoelectric cell.
	The sensitivity of the photoelectric cell has been incorrectly set.	Please make sure that the photoelectric cell is correctly set. Please observe the specifications in the manual.
	The photoelectric cell is faulty.	Replace the photoelectric cell with a new one that works.
	The photoelectric cell is not connected to the print head or is not connected to it properly.	Connect the photoelectric cell correctly to the print head (see manual).
	The optical fiber may be soiled and has to be cleaned.	Please clean the optical fiber with a damp cloth.
	One of the optical fibers may be damaged or broken.	Please replace the optical fiber with a new one that works.
	The optical fiber is not inserted deeply enough.	Insert the optical fiber into the relevant holes as far as the stop and secure with the lever.

Fault	Cause	Solution
The label is not printed.	The cartridge is empty.	Replace the cartridge with a new one. Do not forget to reset the ink level in the "Change cartridge" menu to 100 %.
	The protective tape on the nozzle rows on the cartridge was not removed.	The nozzle rows on new cartridges are protected by a protective tape. If you forget to remove this protective tape the cartridge will not be ready for printing. Please check whether the protective tape has been removed.
	If the printer is not used for a while it is possible that one or more of the nozzles can dry out (the open time is dependent on the type of ink, the ambient temperature and the air humidity).	Remove the cartridge and clean the nozzles. It is recommended that you use a microfiber cloth to clean them. For optimum cleaning results, dampen the cloth slightly with distilled water.
	The cartridge was not inserted correctly.	Remove the cartridge from the print head and insert it correctly.
	The contacts on the cartridge may be soiled.	Please clean the contacts with a dry microfiber cloth.
	Printing is triggered by an external sensor. This has been correctly connected to the I/O port at the back of the m610 advanced but has not been correctly parameterized in the "External inputs" menu of the m610 advanced.	Please check the settings in the "External inputs" menu of the m610 advanced. The settings for the sensor in the system settings may not match those for the settings in the "External inputs" menu.
	Printing is triggered by an external sensor. However, it has not been connected to the I/O port at the back of the m610 advanced.	Connect the sensor to the correct input (24 V or 5 V)
	Spitting is activated, but the spit signal is missing.	Correct the spit settings.
Changes made to the label are not printed	The changes were not loaded to the print memory.	Load the amended label to the print memory again and press the Start key.
	You may have made changes to the label and switched the m610 advanced off and then on again without having saved the changes.	All changes have to be saved before you switch the printer off, otherwise the changes will be lost.

Fault	Cause	Solution
Shadow print	The print direction has been incorrectly set in the system settings.	Change the print direction for the print head concerned in the system settings.
	The set pulse count per m is incorrect.	Adjust the pulses per meter in the system settings to the shaft encoder and/or the drive disc. Please also observe the specifications in the m610 advanced manual, Chapter 7.1.1.2 .
	The shaft encoder drive disc slips. The speed is not measured correctly.	Make sure that the drive disc is firmly pressed onto the product conveyor belt. If the pressing pressure on the belt is excessive, however, this may destroy the shaft encoder bearings.
Shadow print	The measuring wheel of the shaft encoder does not run parallel to the belt. This results in excessive slippage and a false speed signal.	Set the direction of running of the measuring wheel to be parallel to the belt.
	Prints are made without the shaft encoder. The product speed set in the system settings is different to the actual product speed.	Please check the actual product speed and adjust accordingly. If problem persists, set printer to use left or right nozzle row only.
Stretched or compressed print image	The pulse count per meter is incorrect.	Adjust the pulse count per meter.
	The shaft encoder measuring wheel measures the speed on a curve (e.g. guide roller).	Mount the measuring wheel on a flat surface as far as possible.
	Prints are made without the shaft encoder. The fixed product speed set in the system settings is either too fast (compressed) or too slow (stretched).	Set the exact speed in the system settings menu.
	The resolution setting referring to the speed is too high.	Reduce the resolution or the delivery rate.
The print image is printed upside down	The position setting has been incorrectly set in the system settings.	Check the system settings and change them if required. Please also observe the specifications in the m610 advanced manual, Chapter 7.1.1.6 .
The print image is back-to-front	The "Mirrored" setting has been incorrectly set in the system settings.	Check the system settings and change them if required. Please also observe the specifications in the m610 advanced manual, Chapter 7.1.1.6 .
The print position is incorrect	The sensor distance is incorrect.	Measure the actual values and adjust the setting. Please also observe the specifications in the m610 advanced manual, Chapter 7.1.1.6 .
	The "Distance before" value in the label settings is incorrect.	Measure the actual values and adjust the setting. Please also observe the specifications in the m610 advanced manual, Chapter 7.4.2 .
	The product does not pass the sensor on the belt with a uniform alignment. The misalignment of the product causes the print to trigger too early or too late.	Ensure that the products are better aligned while being conveyed. Fit or readjust guide rails if necessary.

Fault	Cause	Solution
Print in block form or "cubic graphics"	The products are conveyed at too fast a speed for the set resolution (DPI).	Please adjust the value for the "Resolution (DPI)" accordingly. Please observe the specifications in the m610 advanced manual when you do so, see Chapter 7.4.1 .
White stripes in the print image	Some of the nozzles in the cartridge may be clogged and require cleaning.	Please remove the cartridge and clean the nozzles. It is recommended that you use a microfiber cloth to clean them. For optimum cleaning results, dampen the cloth slightly with distilled water when using water based inks and isopropyl alcohol when using solvent based inks.
	Some of the nozzles in the cartridge may be faulty as a result of mechanical damage.	Replace the cartridge with a new one. Please do not forget to reset the ink level in the "Change cartridge" menu to 100 %.
Print gap between the print heads (only applies to multi-head systems)	The nozzle rows are not aligned at exactly 90° to the print direction.	Align the print heads exactly. The nozzle rows must be aligned at exactly 90° to the print direction. Use the installation aid during installation.
Overlapping between the print heads (only applies to multi-head systems)	The nozzle rows are not aligned at exactly 90° to the print direction.	Align the print heads exactly. The nozzle rows must be aligned at exactly 90° to the print direction. Use the installation aid during installation.
Fields are printed overlapping	The fields in the label to be printed are not correctly positioned.	Position the fields (red frame) so that they do not overlap. Select the field by moving the cursor key to the right or left.
The print is too light	The print resolution used (DPI) is too low.	Increase the resolution (DPI) for this label. Please observe the specifications in the m610 advanced manual, see Chapter 7.4.1 , when you do so.
	Only one nozzle row is being used.	Select both nozzle rows for this label in the settings.
Ink does not dry fast enough on the print material	The print resolution used (DPI) is too high.	Reduce the resolution (DPI) for this label.
	Both nozzle rows are being used.	Select one nozzle row for this label in the settings.

16.2 Label

Troubleshooting/label

Fault	Cause	Solution
The label cannot be opened	The label is not compatible with this Firmware version.	The label must be newly created for this Firmware version.

Fault	Cause	Solution
After switching the m610 advanced ON, no label appears (white screen), the m610 advanced may not be operable.	The label is invalid.	When you switch on the m610 advanced, hold the SPACE key pressed until booting has been completed. Then remove the invalid label from the m610 flash disk.
The opened label cannot be edited.	You are logged on as a "Operator" user. This user group is not permitted to edit and save labels.	To be able to edit labels you have to log on at least as a "Normal" user.
The opened label cannot be saved.	You are logged on as a "Operator" or "Normal" user.	To be able to save labels you have to log on at least as an "Advanced" user.
After a certain number of prints the m610 advanced automatically switches to STOP.	A counter field is printed in which the counter end value is predefined and the m610 advanced switches to STOP mode when this value is reached.	Change the specifications for the label.
	A limited print run has been specified in the label settings.	Change the specifications for the label.

16.3 Spitting

Troubleshooting/Spitting

Fault	Cause	Solution
Following the print pause the label is not printed any more.	The spit sensor was not triggered.	If two different sensors are used for spit and print triggering you must ensure that after the pause it is the spit sensor that is triggered first and then the print sensor, if spitting without encoder signal is deactivated.
No spit operation	The spit pause setting may be too long, i.e. the actual print pause is not as long as the print pause set in the spit menu.	Adjust the "Pause" setting in the spit menu to the actual print pause.
	The m610 advanced does not receive a speed signal.	Spitting is only possible if the m610 advanced receives a speed (encoder) signal; except if spitting without encoder signal is activated.
A black bar / line is located at the beginning of each print	Spitting distance + spitting length are bigger than the distance before + sensor distance.	Reduce the distance or the spitting length; see Chapter 7.5

16.4 Cartridge

Troubleshooting/cartridge

Fault	Cause	Solution
The "Ink empty" alarm is not shown at output 3	The "Ink empty" alarm for output 3 is not activated.	Activate the ink alarm in the "Cartridges" menu.
The "Ink empty" alarm is not shown but the cartridge does not print any more	The wrong cartridge size may have been selected in the "Cartridges" menu.	Please check the settings in the "Cartridges" menu and correct if necessary.
The ink alarm continues to be shown even after a new cartridge has been inserted.	The ink level was not reset when the cartridge was changed.	Reset the ink level in the "Change cartridge" menu.
Non-Authenticated Ink Cartridge Warning	Ink cartridge being used is not a smart cartridge.	Purchase and install genuine Wolke smart cartridges.
	Ink cartridge being used is from a third ink party supplier and cannot be identified for ink type and delivered ink volume.	
	Ink cartridge is faulty. It may not be programmed correctly or cannot be read.	Try using a different Wolke smart cartridge.
Other Cartridge Faults	Dirty or contaminated electrical contacts on the ink cartridge and/or mating contacts inside printhead.	Remove the ink cartridge and inspect electrical contacts on ink cartridge. Ensure that there is no ink, debris or other foreign substance on the contacts. Use a flashlight to inspect the mating contacts inside the printhead. Clean contacts as necessary and re-test. If problems persist, try using a different a Wolke smart cartridge.
	Possible electrical component failure inside the printhead.	Contact Wolke Service.
Ink Expired	The Ink Cartridge Expiry date is approaching.	Purchase a new Wolke Smart Cartridge ready to replace when expiry date is reached.
	The ink Cartridge Expiry date has past and the cartridge can not longer be used.	Insert a new Wolke Smart Cartridge to continue.
Cartridge Empty	The ink cartridge is reading 0% (default low ink alarm) but there is still ink in the cartridge.	Adjust the ink level up to 5% to remove any remaining ink in the cartridge.
	The ink cartridge is empty.	Insert a new Wolke Smart Cartridge to continue.

Fault	Cause	Solution
Ink Type Not allowed	The ink cartridge contains an ink type not included in the ink approved list.	1. Check the allowed ink types. Refer Chapter 7.1.3.2 . 2. If the ink type is to be allowed, update the allowed inks list and clear warning.

16.5 Operator Control

Fault	Cause	Solution
Not all m610 advanced menus can be selected	The user who has logged in does not have sufficient user rights.	Log on with the correct user group. Please refer to the m610 advanced manual for details.
The wrong dialog language is displayed	The wrong operator language has been selected.	Set the correct language in the system settings (S1 key + A).
The keyboard does not respond when the keys are pressed	The keyboard lock has been activated. This is also shown in the display.	To lift the keyboard lock, press the key combination "S1 key + Shift + ESC" simultaneously.
	Unknown.	Switch off the m610 advanced and then switch it on again to restart the system.

Troubleshooting/operator control

16.6 Communication m610 advanced – PC

Fault	Cause	Solution
The TCP/IP connection between the m610 advanced and the PC cannot be established	The cable connection between the m610 advanced and the PC or the network has not been installed or has been incorrectly installed.	Check the cable connection between the m610 advanced and the PC/network.
	The network cable is faulty.	Replace the network cable.
	The wrong IP address has been entered.	Check whether the correct IP address has been entered. Ask your network administrator if necessary.
	The wrong Gateway address has been entered.	Check whether the correct Gateway address has been entered. Ask your network administrator if necessary.
	The wrong network mask has been entered.	Check whether the correct network mask has been entered. Ask your network administrator if necessary.
	The wrong port has been entered.	Check whether the correct port (standard port is 7) has been entered. Ask your network administrator if necessary.

Troubleshooting/communication m610 advanced – PC

16.7 Display

Troubleshooting/Display

Fault	Cause	Solution
The display of the m610 advanced is switched off	The fuse has been tripped.	Replace the fuse at the back of the m610 advanced housing (T2A, 250V).
	The m610 screensaver is active. The display is switched off.	Press any key on the m610 advanced keyboard to switch on the display again.
	The display is faulty.	Contact Wolke Service.
	The controller was switched OFF and switched ON again too quickly.	After switching OFF, wait for min. 10 seconds before you switch the controller ON again.
The system time is shown incorrectly	The system time has been wrongly set.	Adjust the system time accordingly. See the m610 advanced manual, Chapter 7.3.1 .
	The wrong or wrongly parameterized summer/winter time setting has been selected.	Adjust the settings for the summer/winter time accordingly.
The images in the label are shown as a square with a diagonal cross.	The function for displaying images ("Show bitmap") in the label has been deactivated.	Activate the function for displaying images ("Show bitmap") in the label. In order to have the images shown the amended label has to be opened again.
	The bitmap file linked to the label is not contained on the m610 flash disk.	Check that the bitmap file is on the m610 flash disk.
General display error on the m610 advanced	By quick up-/downsizing or scrolling in the screen display.	Press the SPACE key to refresh the display.
Variable data fields are not updated.	Variable data contents are not updated in Edit mode.	Switch to the print view (green menus).
	The command "V2 buffered" has been activated in the system settings but it is not used via the interfaces.	Deactivate the V2 command in the system menu if it is not required.

16.8 Diagnosis

Fault	Cause	Solution
Speed information is not shown correctly	When the m610 advanced is in the OK mode the diagnosis menu only shows the speed measured for the last successful print.	Run a print and watch the speed indicator in the diagnosis menu. This is continuously updated during printing. Alternatively you can exit the diagnosis menu, press the STOP key and then return to the diagnosis menu. The speed of the conveyor belt, which is continuously measured, will be shown (the m610 advanced status indicator will now be DIAG).
Consumption in ml per print is given as 0 in the diagnosis menu	The opened label has not been loaded by the operator or there is no label in the print memory.	Load the (amended) label to the print memory and press the Start key.
The value for the measured cartridge temperature is given as 0 for each one.	The "Temp. controlled" setting has been deactivated in the "Cartridges" menu.	Load the (amended) label to the print memory and press the Start key.
The value for the faulty nozzles per cartridge is given as 300 for each one.	An error message or warning message concerning the print head or the cartridges was ignored by the operator by pressing the "Ignore" key.	Activate the "Temp. controlled" setting in the "Cartridges" menu. Do not ignore any error or fault messages.

*Troubleshooting/
diagnosis*

16.9 Miscellaneous

Fault	Cause	Solution
No more memory space available on the m610 flash disk.	The m610 flash disk is full.	Delete labels which are not used.

*Troubleshooting/
miscellaneous*

17 Screen Messages

17.1 Error Messages

The error message displayed must be confirmed or ignored.

Error messages

Message	Possible Cause	Solution
No printhead installed (1)	The label loaded in the print memory requires more printheads than are connected.	Reduce the number of heads in the label or connect more printheads.
	faulty cable connection, faulty plug-and-socket connector, faulty printhead electronics	Check the connections between the m610 advanced and the printhead. If the fault is not eliminated, contact the persons in charge at Wolke.
	In diagnostic menu, if no printhead is connected. The printhead might be faulty. The connection between printer and printhead is not established correctly.	Replace the printhead. Check the connections.
No cartridge inserted (2)	No cartridge inserted.	Insert a cartridge into the printhead.
	The contacts of the cartridge are faulty or are not connected electrically to the printhead electronics.	Replace the cartridge. If the fault is not eliminated, contact the persons in charge at Wolke.
Check printhead cable, printhead or cartridge (17)	Cartridge was removed during operation without switching the m610 advanced previously to STOP.	Insert a cartridge. Start the printer.
	Individual contacts of the cartridge are not connected electrically to the printhead electronics.	Clean the cartridge contacts, see Chapter 15.2.1 . If necessary, replace the cartridge.
	faulty cable connection, faulty plug-and-socket connector, faulty printhead electronics	Check the connections between the m610 advanced and the printhead. If the fault is not eliminated, contact the persons in charge at Wolke.
	The temperature measurement of a cartridge has failed.	Clean the cartridge contacts, see Chapter 15.2.1 . If necessary, replace the cartridge. Check the contact film visually.
Printing speed too high (5)	The printing data are not transmitted quickly enough to the printhead.	Reduce the resolution or print length; increase the "distance after", see Chapter 7.4.2 . If the fault cannot be eliminated, contact the persons in charge at Wolke.
Non-authenticated printhead (7)	Non authenticated printhead connected	Connect printhead with authentication hardware
Incompatible printhead (8)	printhead with unsupported hardware connected	Connect printhead with authentication hardware
Non allowed ink type (9)	Ink type inserted, which is not in the allowed ink type list	Insert allowed ink type(s) on this controller only

Message	Possible Cause	Solution
Maximum ink reached (10)	Number of allowed ink level resets exceeded	Insert new authentication cartridge
Cartridge nearing expiration (11)	Cartridge is about to expire	
Cartridge expired (12)	Cartridge is expired	Insert new authentication cartridge
Cartridge expiration grace period exceeded (13)	Cartridge is expired beyond grace period	Insert new authentication cartridge
Update printhead (14)	printhead firmware update failed	Contact Wolke by Videojet technical support
Non-authenticated cartridge (15)	Non authenticated cartridge inserted	Insert authenticated cartridge if ink tracking functionality is necessary.
Out of ink (16)	Remaining ink level of cartridge fell below out of ink level and this event has been parametrised as error	Insert new authentication cartridge

17.2 Warnings

Warnings

Message	Possible Cause	Solution
Check printhead cable, printhead or cartridge (4)	Cartridge was removed during operation without switching the m610 advanced previously to STOP.	Insert a cartridge. Start the printer.
	Individual contacts of the cartridge are not connected electrically to the printhead electronics.	Clean the cartridge contacts, see Chapter 15.2.1 If necessary, replace the cartridge.
	faulty cable connection, faulty plug-and-socket connector, faulty printhead electronics	Check the connections between the m610 advanced and the printhead. If the fault is not eliminated, contact the persons in charge at Wolke.
	The temperature measurement of a cartridge has failed.	Clean the cartridge contacts, see Chapter 15.2.1 If necessary, replace the cartridge. Check the contact film visually.
Insufficient distance between the prints (1)	Data processing not yet completed for the printhead currently printing.	Reduce the print length or increase the "distance after", see Chapter 7.4.2 . Reduce the resolution, see Chapter 7.4.1 . If the fault cannot be eliminated, contact the persons in charge at Wolke.
Printing speed too high (2)	The printing data are not transmitted quickly enough to the printhead.	Reduce the resolution or print length; increase the "distance after", see Chapter 7.4.2 . If the fault cannot be eliminated, contact the persons in charge at Wolke.
Maximum ink reached (3)	Number of allowed ink level resets exceeded	Insert new authentication cartridge
Exchange cartridge (5)	Perpetuo mode: one of the used cartridges ink level fell below out of ink level	Exchange cartridge new authentication cartridge
Cartridge nearing expiration (7)	Cartridge is about to expire	
Cartridge expired (8)	Cartridge is expired	Insert new authentication cartridge
Out of ink (9)	Remaining ink level of cartridge fell below out of ink level and this event has been parametrised as warning	Insert new authentication cartridge
Non-authenticated cartridge (10)	Non authenticated cartridge inserted	Insert authenticated cartridge if ink tracking functionality is necessary.
Cartridge expiration grace period exceeded (12)	Cartridge is expired beyond grace period	Insert new authentication cartridge

Message	Possible Cause	Solution
Non allowed ink type (14)	Ink type inserted, which is not in the allowed ink type list	Insert allowed ink type(s) on this controller only
Incompatible printhead (15)	Printhead with unsupported hardware connected	Connect printhead with authentication hardware
Non authentication printhead (16)	Non authenticated printhead connected	Connect printhead with authentication hardware
Data buffer overflow (6)	There are more data records in the print buffer than parameterized	Contact Wolke by Videojet technical support

17.3 Alarms

Displayed alarms must be acknowledged.

Alarms

Message	Cause	Solution
Ink alarm	Ink level has reached the preset alarm trigger threshold; setting in menu "Cartridge" (F4 > F10 > F1 > "Alarm trigger threshold in%")	Replace the cartridge and reset the level.

17.4 Information

Information

Message	Possible Cause	Solution
Element not found.	The searched field was not found or the field name does not exist.	Correct your entry.
No file found...	Appears in all empty file selection boxes.	So far, no file has been saved on the m610 advanced.
File not found.	The selected file is not present.	Manual entry of the file name does not correspond to an existing file. Please check the entry.
Unable to write file	No free memory.	Delete files no longer needed from your printer.
Unable to write file to write	On trying to create the file to be written, flash disk space was already occupied.	Delete files no longer needed from your printer.
Invalid characters in file name removed.	Tried to use one of the following invalid characters in the file name: .,*?/\	Remove the invalid characters.
No file name specified	No file name was specified when saving a label.	Specify a valid file name.
No valid label file	Tried to open a faulty or invalid label file.	Delete the file with the invalid header. This file has been created by a software which is not supported.
This file already exists! Do you want to overwrite the file?	Message on saving if there is already a file with the same file name.	Confirm if the file is to be overwritten or assign another file name.
The EAN13 requires at least 12 digits!	Too few digits entered for the EAN13	Make sure that always 12 numbers have been entered in the EAN13. The check digit is generated automatically.
The UPC-A requires at least 11 digits.	Too few digits entered for the UPC-A	Make sure that always 11 numbers have been entered in the UPC-A. The check digit is generated automatically.
The EAN8 requires at least 7 digits.	Too few digits entered for the EAN8	Make sure that always 7 numbers have been entered in the EAN8. The check digit is generated automatically.
First, press STOP !	Tried to press START while the m610 was not set to STOP.	Confirm the message with "F1". Subsequently, press STOP.
Error on entry of Datamatrix! The number of data exceeds the limit acceptable for coding as Datamatrix.	More characters entered than what can be coded by the m610 as Datamatrix. These are 174 characters, with digits being paired. Thus, max. 174 alpha_characters, but 348 digits can be entered, with the m610 accepting only max. 240 characters anyway.	Check your entry.

Message	Possible Cause	Solution
With the present label length, the selected change of resolution or number of heads is not possible.	Tried to change resolution or number of heads for a label so that it no longer fits into the memory with the selected print length. The resolution or number of heads is set to the max. value that is possible at present.	Please note: Table 7_26 on page 34.
Labels too long. Max. length = %i	The current label and installation settings do not allow printing of the selected BCD selection. The max. length is specified which can be used for printing the label compilation.	Please note: Table 7_26 on page 34.
Log-on failed.	A wrong password has been entered on logging on.	Check your entry.
Character set [Name] missing! Is replaced by [Name].	Message appears if a label is opened which uses character sets which are not available in the current character set list.	Change the character set or install the appropriate character set. Save the label.
Restart m610? To put these changes into effect, the m610 must be re-started.	The changes performed to the interface settings cannot be transferred before the m610 advanced has been restarted.	Press F1 to restart the m610 advanced automatically.
Error signaled on external input!	The external input configured for errors has been activated.	The cause of the external fault must be eliminated.
Print processor: Memory overflow	There is a memory overload of the print processor on processing the current label.	Please contact immediately Wolke's technical support.
Formatting failed. Flash components faulty!	Faulty flash components discovered on formatting.	Please contact immediately Wolke's technical support.
Installation settings corrupted! Use default values.	Both flash blocks (backup block and regular block) which save the installation settings have invalid checksums. If this message appears repeatedly, flash components are probably faulty.	Check the installation settings for correctness. If necessary, load your installation settings saved on the PC to the m610 advanced. The flash modules may have to be replaced by Wolke.
Installation settings corrupted! Use copy.	Regular flash block which saves the installation settings, has an invalid checksum. The data of the backup block are used. If this message appears repeatedly, flash components are probably faulty.	Check the installation settings for correctness. If necessary, load your installation settings saved on the PC to the m610 advanced. The flash modules may have to be replaced by Wolke.
No label in print memory	Tried to change into print view without a label being available in the print memory.	Load a label into the print memory.
Please check all machine data after an update.	This message appears on first power-up after an update, as in this case the checksum of the installation settings need not be valid.	Acknowledge via the button "F1". Check all settings.

Message	Possible Cause	Solution
Cyclic infinitely excludes updating of print memory.	The selected label setting "cyclic infinitely" is not compatible with the print memory update. The message appears if it is tried to load such constellation into the print memory.	Deactivate either the setting "cyclic infinitely" (number/sensor=0) or the print memory update.
Spitting was deactivated, as in mode Spitting without encoder signal", the spit sensor must not be identical to the print sensor.	To activate spitting at standstill, different "sensors" must be used.	Change either the print sensor in the arrangement settings or the start sensor for spitting in the spit settings for this label.
This field cannot be deleted as it is linked to the following fields: [field name] Please remove first all links to delete this field.	This message appears if the user tries to delete a master field whose links have not been removed.	Confirm the message with "F1". Open the linked fields and remove the links.
Please check the entry.	This message appears in case of unplausible (e. g. "Day: 32" or "Month: 13") or missing date entries.	Enter a valid value.
IPO measurement not successful. No minimum detected.	The parameters are probably incorrect.	Change the parameters.

Index

Numerics

2/5i	28
24 V DC I/O socket	12

B

Barcode	20–??
2/5i	28
Codabar	30
Code128	25
Datamatrix	31
EAN128	25
EAN13	22
EAN8	22
QR Code	39
UPC-A	22

Batch start value	5
Bidirectional print	
Installation settings	1
Phasing of shaft encoder tracks A and B	8, 2

Bitmap	45
--------	----

C

Cartridge	
Cleaning	1
Filling quantity	3
Ink type	22, 17, 18
Storage	1
Change cartridges	3
Codabar	30
Code128	25
Combi field	46
Connection	
TCP/IP	4, 24
USB interface	32

Control panel	1
Counter	
Batch start value	5

D

Datamatrix	31
Modul size	31
Date	10
Linking to a master field	13
Diagnosis	
PEN-ID	3

E

EAN128	25
EAN13	22
EAN8	22
Embedded fields	19
External inputs	15–??, 10–??
Connector pin assignment of the 24 V DC I/O socket	12

External outputs	18, 14
------------------	--------

F

Factory settings	33, 26
------------------	--------

Field types	
Barcode	20
Bitmap	45
Combi field	46
Date	10
Three embedded fields of the same type	19
Time field/Shift code	17
Time field/Time	14
Variable label field	48

Flash disk	
Flash content	16

G

Gateway	5, 25
---------	-------

H

Hotkeys	14
---------	----

I

Ink type	22, 17, 18
Installation settings	1
IP address	24

L

Label fields	
Change	6
Delete	8
Inserting new label fields	9
Scroll	5
Search	7

Label settings	
Autostart	35
Label status	15
Language	
Selection of the menu language	2, 9

M

Maintenance	
Controller	2

Matrix size	
Datamatrix	33
QR Code	39

Measuring wheels	
Design	8

Module size	31
-------------	----

N

Navigation	15
Network	24

P

Photoelectric cell	15
Print heads	
Number of	6, 1
Settings	10, 4
Print memory refresh	27, 22
Printing contrary to the preferred direction	1

Q

QR Code	39
---------	----

S

Screen saver	
password query	30
Shaft encoder	
activating and deactivating	7, 2
Shift code	
Number of shifts	18
Spitting	36–37
System	
System monitor	31, 30
System settings	
various	13, 6

T

TCP/IP	4, 24
Technical drawings	1
Text field	1
Linking to a master field	2, 3, 9, 13
Time field	
Format parameters	15

Shift code	17
Time	14

U

UPC-A	22
USB interface	32
User	
Logon	1
Password for user groups	3, 5
User groups	2

V

Variable label field	48
--------------------------------	----

W

Warning beacon	
Connection example signal light with 5 meter I/O cable	13
indications	20, 16

Z

Zoom	2
----------------	---