

SPX II

Operating Manual



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Information on the scope of delivery, appearance, performance, dimensions and weight reflect our knowledge at the time of printing.

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Carl Valentin print modules comply with the following safety guidelines:

- CE** EG Low-Voltage Directive (2006/95/EC)
- EG Electromagnetic Compatibility Directive (2004/108/EG)
- EG Machinery Directive (2006/42/EG)



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1 Introduction

1.1 General Instructions

Basic information and warning references with the corresponding signal words for the danger level are as follows specified in this manual:



DANGER identifies an extraordinarily great and immediate danger which could lead to serious injury or even death.



WARNING identifies a possible danger would could lead to serious bodily injury or even death if sufficient precautions are not taken.



WARNING of cutting injuries.

Pay attention that cutting injuries caused by blades, cutting devices or sharp-edged parts are avoided.



WARNING of hand injuries.

Pay attention that hand injuries caused by closing mechanical parts of a machine/equipment are avoided.



WARNING of hot surfaces.

Pay attention so as not to come into contact with hot surfaces.



CAUTION indicates a potentially dangerous situation which could lead to moderate or light bodily injury or damage to property.



NOTICE gives you tips. They make a working sequence easier or draw attention to important working processes.



Gives you tips on protecting the environment.



Handling instruction



Optional accessories, special fittings

Date

Information in the display

1.2 Intended Use

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

The print module may only be used while in proper working order and for the intended purpose. Users must be safe, aware of potential dangers and must comply with the operating instructions. Faults, in particular those which affect safety, must be remedied immediately.

The print module is solely intended to print suitable media which have been approved by the manufacturer. Any other or additional use is not intended. The manufacturer/supplier is not liable for damage resulting from misuse. Any misuse is at your own risk.

Intended used includes heeding the operating manual, including the maintenance recommendations/regulations specified by the manufacturer.

**NOTICE!**

The complete documentation is included in the scope of delivery on CD ROM and can also currently be found in the internet.

1.3 Product Description

Labels, textiles and plastic material can be printed with high resolution both in dispensing mode and in passage mode. The assembly of the print module is possible in horizontal and vertical position and owing to its demountable and displaceable control panel the print module can be integrated in almost each packaging process without any problems.

The print module can be used in thermal as well as in thermal transfer applications.

With 8 vector fonts, 6 bitmap fonts and 6 proportional fonts the print module has a large selection at different font types. It can be printed inverse, in italic format or 90 degrees turned fonts.

The handling of our durable print modules is easy and comfortable. The parameter settings are made with the keys of the foil keyboard. At each time the graphic display shows the current status.

Time-saving firmware update is possible by interface. As default, the print module is equipped with a parallel, serial, USB and Ethernet interface. Additionally, the print module is equipped with an USB Host that permits the connection of an external USB keyboard and/or an USB memory stick. The print module automatically recognizes by which interface it is controlled.

The print module is delivered with a printer driver and the free label software Labelstar Office LITE. Existing labels can be saved to a CF card or an USB stick, opened and/or modified with a PC keyboard and finally stand-alone printed.

2 Safety Instructions

The print module is designed for power supply systems of 110 ... 230V. Connect the print module only to electrical outlets with a ground contact.



NOTICE!

When changing the mains voltage the fuse value is to adapt accordingly (see Technical Data).

Couple the print module to devices using extra low voltage only.

Before making or undoing connections, switch off all devices involved (computer, printer, accessories etc.).

Operate the print module in a dry environment only and do not get it wet (sprayed water, mist etc.).

Do not operate the print module in explosive atmosphere and not in proximity of high voltage power lines.

Operate the print module only in an environment protected against abrasive dust, swarf and other similar impurity.

Maintenance and servicing work can only be carried out by trained personnel.

Operating personnel must be trained by the operator on the basis of the operating manual.

If the direct print module is operated with the cover open, ensure that clothing, hair, jewellery and similar personal items do not contact the exposed rotating parts.



NOTICE!

With the open printing unit (due to construction) the requirements of EN60950-1 regarding fire protection casing are not fulfilled. These must be ensured by the installation into the end device.

The print unit and parts of it (e.g. motor, printhead) can get hot during printing. Do not touch the printhead during operation. Cool down the print unit before changing material, removal or adjustment.

Never use highly inflammable consumables.

Carry out only the actions described in these operating instructions. Any work beyond this may only be performed by the manufacturer or upon agreement with the manufacturer.

Unauthorized interference with electronic modules or their software can cause malfunctions.

Other unauthorized work or modifications to the print module can endanger operational safety.

Always have service work done in a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.

There are warning stickers on the print modules that draw your attention to dangers. Therefore the warning stickers are not to be removed as then you and others cannot be aware of dangers and may be injured.

The printing unit must be integrated with the Emergency Stop circuit when it is incorporated into the overall machine.

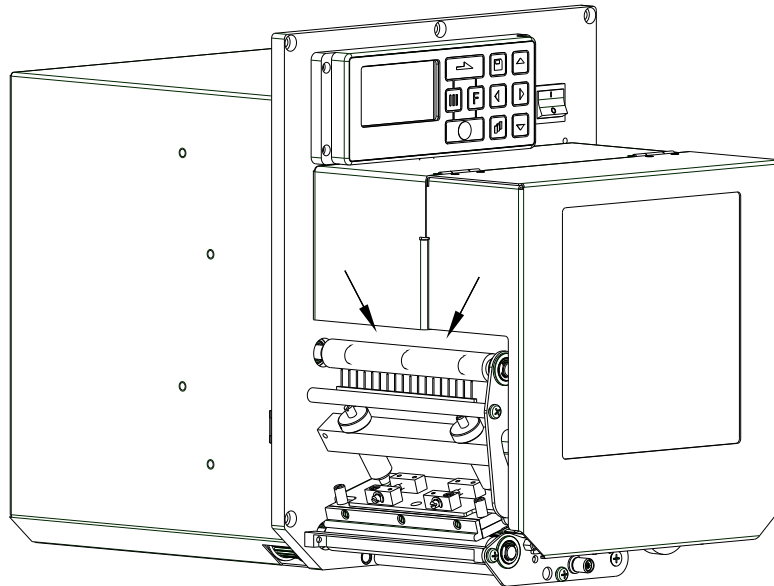


Figure 1



CAUTION!

In consequence of the necessity of being able to insert the thermal transfer ribbon in a convenient manner, the requirements of EN 60950-1 regarding the risk of injuries to the fingers are not complied with at the location marked with arrows.

⇒ These requirements must be insured by means of installation into the end device.

All isolating safety equipment must be installed before starting-up the machine.



DANGER!

Danger to life and limb from power supply!

⇒ Do not open the casing.



CAUTION!

Two-pole fuse.

⇒ Before opening the housing cover, disconnect the printing system from the mains supply and wait for a moment until the power supply unit has discharged.

2.1 Operating Conditions

Before initial operation and during operation these operating conditions have to be observed to guarantee safe and interference-free service of our print modules.

Therefore please carefully read these operating conditions.

Shipment and storage of our print modules are **only** allowed in original packing.

Installation and initial operation of print modules is only allowed if operating conditions were **fulfilled**.

Commissioning is prohibited until it can be established that, where relevant, the machine into which the partly completed machinery is to be incorporated complies with the provisions of Machinery Directive 2006/42/EC.

Initial operation, programming, operation, cleaning and service of our print modules are only recommended after careful study of our manuals.

Operation of print modules is only allowed by especially trained persons.



NOTICE!

Perform trainings regularly. Content of the training are chapter 2.1 (Operating Conditions), chapter 2.1 (Loading Media) and chapter 9 (Maintenance and Cleaning).

These indications are also valid for someone else's equipment supplied by us.

Only use original spare and exchange parts.

Please contact the manufacturer with respect to spare/wear parts.

Conditions for installation place

The installation place of print module should be even, free of vibration and currents of air are to be avoided.

The print modules have to be installed to ensure optimal operation and servicing.

Installation of power supply

The installation of the power supply to connect our print modules has to be effected according to the international rules and regulations, especially the recommendations of one of the three following commissions:

- International Electronic Commission (IEC)
- European Committee for Electro technical Standardisation (CENELEC)
- Verband Deutscher Elektrotechniker (VDE)

Our print modules are constructed according to VDE and have to be connected to a grounded conductor. The power supply has to be equipped with a grounded conductor to eliminate internal interfering voltage.

Technical data of power supply

Power line voltage and power line frequency: See type plate

Allowable tolerance of power line voltage:
+6% ... -10% of nominal value

Allowable tolerance of power line frequency:
+2% ... -2% of nominal value

Allowable distortion factor of power line voltage: $\leq 5\%$

Anti-interference measures

In case your net is infected (e.g. by using thyristor controlled machines) anti-interference measures have to be taken. You can use one of the following possibilities:

- Provide separate power supply to our print modules.
- In case of problems please connect capacity-decoupled isolation transformer or similar interference suppressor in front of our print modules.

Stray radiation and immunity from disturbance

Emitted interference according to EN 61000-6-4: 2007 industrial sector

- Interference voltage to wires according to EN 55022: 09-2003
- Interference field power according to EN 55022: 09-2003
- System perturbation according to EN 61000-3-2: 09-2005
- Flicker according to EN 61000-3-3: 05-2002

Immunity to interference according to EN 61000-6-2: 2006 industrial sector

- Stray radiation against discharge of static electricity according to EN 61000-4-2: 12-2001
- Electromagnetic fields according to EN 61000-4-3: 11-2003
- Fast transient burst according to EN 61000-4-4: 07-2005
- Surge according to EN 61000-4-5: 12-2001
- High-frequency tension according to EN 61000-4-6: 12-2001
- Voltage interruption and voltage drop according to EN 61000-4-11: 02-2005

**NOTICE!**

This is a machine of type A. This machine can cause interferences in residential areas; in this case it can be required from operator to accomplish appropriate measures and be responsible for it.

Machine safety

- EN 415-2 - Safety of packaging machines
- EN 60204-1:2006 - Safety of machinery - Electrical equipment of machines - Part 1

Connecting lines to external machines

All connecting lines have to be guided in shielded lines. Shielding has to be connected on both sides to the corner shell.

It is not allowed to guide lines parallel to power lines. If a parallel guiding cannot be avoided a distance of at least 0.5 m has to be observed.

Temperature of lines between: -15 ... +80 °C.

It is only allowed to connect devices which fulfil the request 'Safety Extra Low Voltage' (SELV). These are generally devices which are checked corresponding to EN 60950.

Installation of data lines

The data cables must be completely protected and provide with metal or metallised connector housings. Shielded cables and connectors are necessary, in order to avoid radiant emittance and receipt of electrical disturbances.

Allowable lines

Shielded line:

4 x 2 x 0,14 mm² (4 x 2 x AWG 26)

6 x 2 x 0,14 mm² (6 x 2 x AWG 26)

12 x 2 x 0,14 mm² (12 x 2 x AWG 26)

Sending and receiving lines have to be twisted in pairs.

Maximum line length:

with interface V 24 (RS-232C) - 3 m (with shielding)

with parallel interface - 3 m (with shielding)

USB - 3 m

Ethernet - 100 m

Limit values

Protection according IP: 20

Ambient temperature °C (operation): Min. +5 Max. +40

Ambient temperature °C (transport, storage): Min. -25 Max. +60

Relative air humidity % (operation): Max. 80

Relative air humidity % (transport, storage): Max. 80
(bedewing of print modules not allowed)

Guarantee

We do not take any responsibility for damage caused by:

- Ignoring our operating conditions and operating manual.
- Incorrect electric installation of environment.
- Building alterations of our print modules.
- Incorrect programming and operation.
- Not performed data protection.
- Using of not original spare parts and accessories.
- Natural wear and tear.

When (re)installing or programming our print modules please control the new settings by test running and test printing. Herewith you avoid faulty results, reports and evaluation.

Only specially trained staff is allowed to operate the print modules.

Control the correct handling of our products and repeat training.

We do not guarantee that all features described in this manual exist in all models. Caused by our efforts to continue further development and improvement, technical data might change without notice.

By further developments or regulations of the country illustrations and examples shown in the manual can be different from the delivered model.

Please pay attention to the information about admissible print media and the notes to the print module maintenance, in order to avoid damages or premature wear.

We endeavoured to write this manual in an understandable form to give and you as much as possible information. If you have any queries or if you discover errors, please inform us to give us the possibility to correct and improve our manual.

3 Technical Data

	SPX II 103/8	SPX II 104/8	SPX II 106/12	SPX II 106/24	SPX II 108/12	SPX II 162/12
Print Resolution	203 dpi	203 dpi	300 dpi	600 dpi	300 dpi	300 dpi
Max. Print Speed	300 mm/s	300 mm/s	300 mm/s	100 mm/s	300 mm/s	200 mm/s
Print Width	104 mm	104 mm	105.7 mm	105.7 mm	108.4 mm	162.2 mm
Passage Width	116 mm	116 mm	116 mm	116 mm	116 mm	176 mm
Printhead	Flat Type	Flat Type	Flat Type	Flat Type	Flat Type	Flat Type
Acoustic emission (Measuring distance 1 m)						
Average sound power level	66.4 dB(A)	62.3 d(B)A	63.7 dB(A)	68,4 dB(A)	67.8 dB(A)	65.1 dB(A)
Labels						
Adhesive Labels or Continuous Material	on rolls : paper, cardboard, textile, synthetics					
Max. Material Weight	220 g/m ² (larger on demand)					
Min. Label Width	25 mm	25 mm	25 mm	25 mm	25 mm	50 mm
Min. Label Height	15 mm	15 mm	15 mm	15 mm	15 mm	15 mm
Max. Label Height	6000 mm	6000 mm	3000 mm	750 mm	3000 mm	2000 mm
Label Sensor	transmission					
Transfer Ribbon						
Ink	outside/inside					
Max. Roll Diameter	Ø 90 mm					
Core Diameter	25.4mm/1"					
Max. Length	450 m					
Max. Width	110 mm / 170 mm (SPX II 162)					
Dimensions in mm (width x height x depth)						
W x H x D	245x300x400 / 245x300x460 (SPX II 162)					
Weight	12 kg / 14 kg (SPX II 162)					
Electronics						
Processor	High Speed 32 Bit					
RAM	16 MB					
Slot	for Compact Flash carte type I					
Battery Cache	for Real-Time clock (storage of data with shut-down)					
Warning Signal	Acoustic signal when error					
Interfaces						
Serial	RS-232C (up to 115200 Baud)					
Parallel	SPP					
USB	2.0 High Speed Slave					
Ethernet	10/100 Base T, LPD, RawIP-Printing, DHCP, HTTP, FTP					
2 x USB Master	Connection for external USB keyboard and memory stick					
WLAN (option)	module 802.11 b/g/n WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, EAP					
Operating Conditions						
Nominal Voltage	110 ... 230V / 50 ... 60 Hz					
Power	275 VA					
Current	2,5 A					
Fuse Values	2x T5A 250 V					

Operating Conditions	SPX II 103/8	SPX II 104/8	SPX II 106/12	SPX II 106/24	SPX II 108/12	SPX II 162/12
Operating Temperature	5 ... 35 °C					
Humidity	max. 80% (not condensing)					
Operation Panel						
Keys	Test print, function menu, quantity, CF Card, feed, enter, 4 x cursor					
LCD Display	Graphic display 132 x 64 pixel					
Settings						
	Date, time, shift times 11 language settings (others on demand) Label and device parameters, interfaces, password protection, variables					
Monitoring						
Stop printing if	End of ribbon, end of labels, printhead open					
Status report	Extensive status print with information about settings e.g. print length counter, runtime counter, photocell interface and network parameters Printout of all internal fonts and all supported bar codes					
Fonts						
Font types	6 Bitmap fonts 8 Vector fonts/TrueType fonts, 6 proportional fonts Other fonts on demand					
Character sets	Windows 1250 up to 1257, DOS 437, 850, 852, 857, UTF-8 All West and East European Latin, Cyrillic, Greek and Arabic (option) characters are supported. Other character sets on demand					
Bitmap fonts	Size in width and height 0,8 ... 5,6 Zoom 2 ... 9 Orientation 0°, 90°, 180°, 270°					
Vector fonts/TrueType fonts	Size in width and height 1 ... 99 mm Variable zoom Orientation 0°, 90°, 180°, 270°					
Font attributes	Depending on character font - bold, italic, inverse, vertical					
Font width	Variable					
Bar Codes						
1D bar codes	CODABAR, Code 128, Code 2/5 interleaved, Code 39, Code 39 extended, Code 93, EAN 13, EAN 8, EAN ADD ON, GS1-128, Identcode, ITF 14, Leitcode, Pharmacode, PZN 7 Code, PZN 8 Code, UPC-A, UPC-E					
2D bar codes	Aztec Code, CODABLOCK F, DataMatrix, GS1 DataMatrix, MAXICODE, PDF 417, QR Code					
Composite bar codes	GS1 DataBar Expanded, GS1 DataBar Limited, GS1 DataBar Omnidirectional, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, GS1 DataBar Truncated					
	All bar codes are variable in height, module width and ratio. Orientation 0°, 90°, 180°, 270°. Optionally with check digit and human readable line.					
Software						
Configuration	ConfigTool					
Process control	NiceLabel					
Label software	Labelstar Office Lite Labelstar Office					
Windows driver	Windows 7 [®] 32/64 Bit, Windows 8 [®] 32/64 Bit Windows 8.1 [®] 32/64 Bit, Windows 10 [®] 32/64 Bit Windows Server 2008 [®] (R2) 64 Bit Windows Server 2012 [®] 64 Bit, Windows Server 2012 [®] (R2) 64 Bit					

Technical details are subject to change.

Standard equipment

- Real time clock with printout date and time
Automatic daylight saving time
Storage of data with shut-down
- Variables: link field, counter, date/time, calculation and shift variable, CF data
- Thermal and thermal transfer version
- Right and left version
- Demountable and displaceable control panel
- Inputs/Outputs
- USB host for connection of an external USB keyboard and an USB memory stick
- RS-232 interface
- Parallel interface
- CVPL protocol and ZPL II[®] protocol
- Label photocell (transmission)
- Slot for CF card
- Windows printer driver on CD ROM
- Labelstar Office Lite on CD ROM

Optional equipment

- External label rewinder
- External rewinder for backing paper
- Externe control panel
- Stainless steel casing
- Ethernet interface
- USB interface
- WLAN interface
- Label applicator
- Dispenser unit with photocell
- Dispenser unit without photocell
- Label photocell transmission and reflexion from bottom
- Ultrasonic photocell
- External rewinder

3.1 Control inputs and outputs

By means of a maximum of 16 control inputs and outputs which, in the following, are also referred to as ports, different functions of the printer system can be triggered and operating states can be displayed.

The ports are provided by means of a D-Sub bushing (26pin HD) at the rear panel of the printer system and are galvanically isolated from protective earth (PE) by means of an optocoupler semi-conductor route.

Each port can be configured as input and as output. This function however, is predefined in the printer software and cannot be changed by the user.

The following parameters can be changed and set by using the menu: debounce times and high or low active.

Printer, internal circuitry

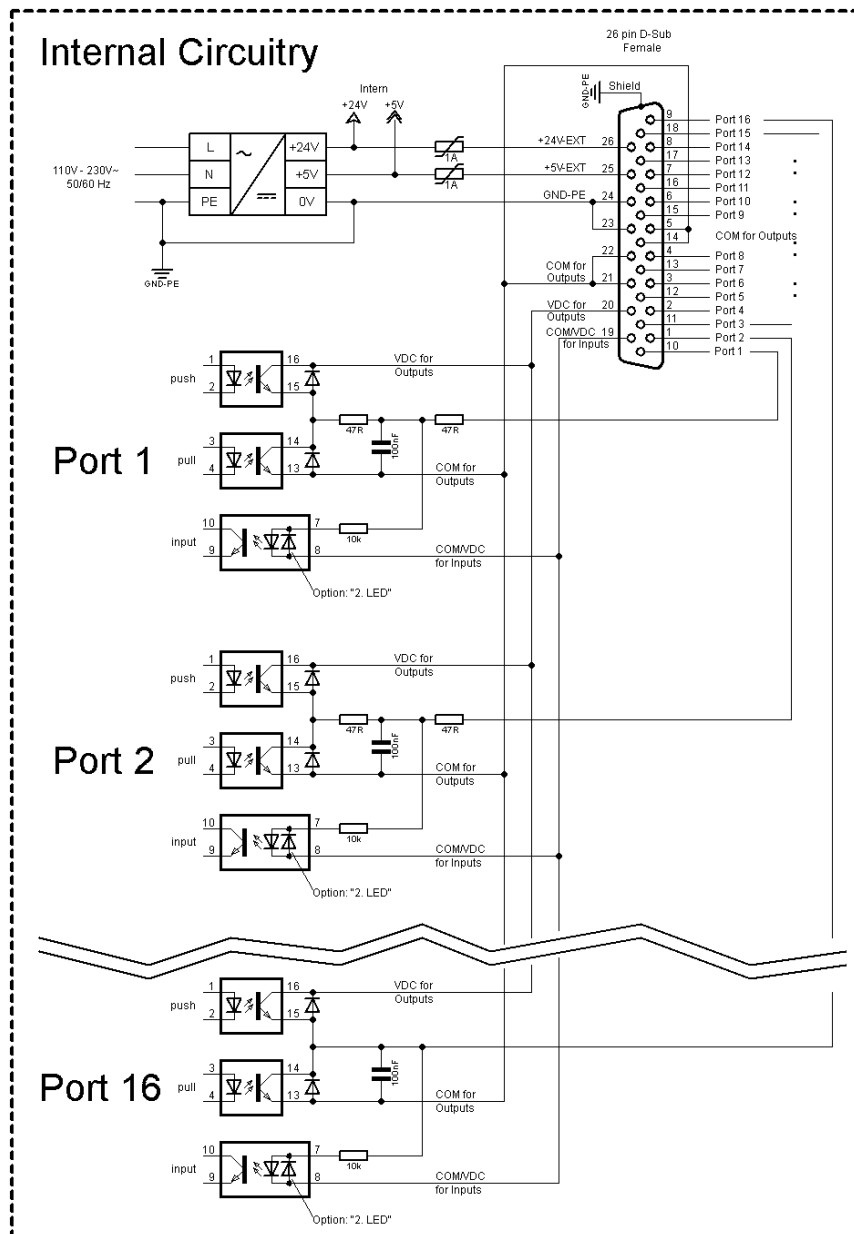


Figure 2

Configuration of D-Sub socket

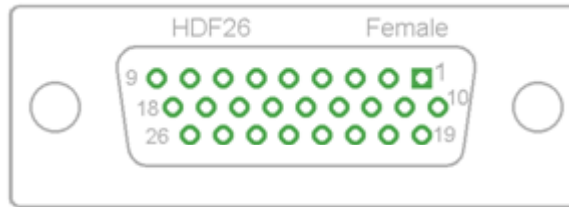


Figure 3

Port 1 to Port 16 = Assignment for I/O Profile *Std_Label*

Identification	Pin	Description / Function
Port 1	10	Print start and cut (Input)
Port 2	1	Reprint last printed label (Input)
Port 3	11	Counter Reset (Input)
Port 4	2	Option applicator only: Start application (Input)
Port 5	12	Error reset (Input)
Port 6	3	Cancel all print jobs (Input)
Port 7	13	No function
Port 8	4	External release signal (Input)
Port 9	15	Error (Output)
Port 10	6	Print order activ (Output)
Port 11	16	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Single print (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option scanner only Bar code not readable (Output)
Port 16	9	Prior warning for transfer ribbon end (Output)
COM/VDC for Inputs	19	Common reference potential of all control inputs. 'COM/VDC for Inputs' is usually connected with the (-) terminal of the control voltage and the control inputs are switched to active (+). By means of the option '2nd LED', 'COM/VDC for Inputs' can optionally be connected with the (+) terminal of the control voltage. Then, the control inputs are switched to active (-).
VDC for Outputs	20	Common supply connection of all control outputs. 'VDC for Outputs' must be connected with the (+) terminal of the control voltage. Never leave 'VDC for Outputs' open even if no output is used.
COM for Outputs	5,14 21,22	Common reference potential of all control outputs. 'COM for Outputs' must be connected with the (-) terminal of the control voltage. Never leave 'COM for Outputs' open even if no output is used.
GND-PE	23,24	'GND-PE' is the reference potential of the '+5 VDC EXT' and '+24 VDC EXT' voltages provided by the printer system. 'GND-PE' is printer internally connected with protective earth (PE).

Identification	Pin	Description / Function
+ 5 VDC EXT	25	5 Volt DC output for external use. Max. 1 A. This voltage is provided from direct print module and can be used e.g. as control voltage. Never apply any external voltage to this output.
+ 24 VDC EXT	26	24 Volt DC output for external use. Max. 1 A. This voltage is provided from direct print module and can be used e.g. as control voltage. Never apply any external voltage to this output.

Technical data

Plug Connector	
Type	D-Sub connector High Density 26-pin. / connector
Manufacturer	W+P-Products
Reference number	110-26-2-1-20
Output Voltages (connected with GND-PE)	
+ 24 V / 1 A	Fuse: Polyswitch / 30 V / 1 A
+ 5 V / 1 A	Fuse: Polyswitch / 30 V / 1 A
Port 1 - 15	
Input	
Tension	5 VDC ... 24 VDC
Impedance	47Ω + (100nF 10 kΩ)
Output	
Tension	5 VDC ... 24 VDC
Impedance	47Ω + (100nF 10 kΩ 47Ω)
Current max.	High +15 mA Low -15 mA
Port 16	
Input	
Tension	5 VDC ... 24 VDC
Impedance	100nF 10 kΩ
Output	
Tension	5 VDC ... 24 VDC
Impedance	100nF 10 kΩ
Current max.	High +500 mA (Darlington BCP56-16) Low - 500 mA (Darlington BCP56-16)
Optocoupler	
Output	TCMT4106, CTR 100% - 300%, Vishay or TLP281-4(GB), CTR 100% - 600%, Toshiba
Input	TCMT4106, CTR 100% - 300%, Vishay or TLP281-4(GB), CTR 100% - 600%, Toshiba
Input Option 2nd LED	TCMT4600, CTR 80% - 300%, Vishay or TLP280-4, CTR 33% - 300%, Toshiba

Example 1

Device connection to a machine with S7-300 SPS.

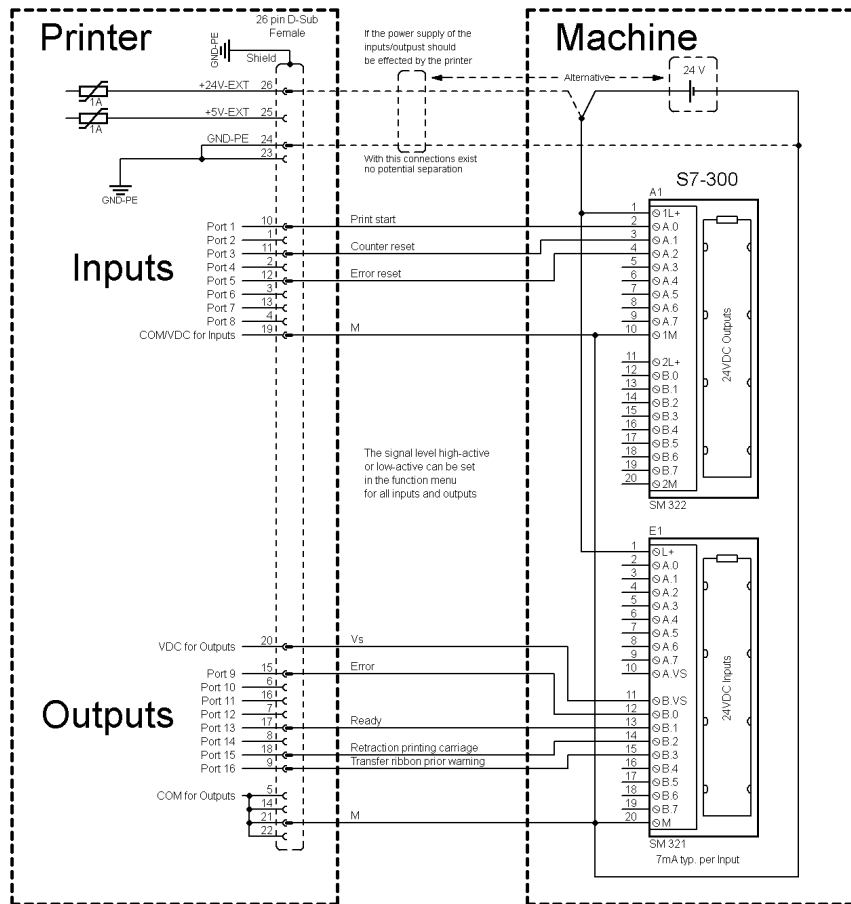


Figure 4

Example 2

Device connection to an operating panel.

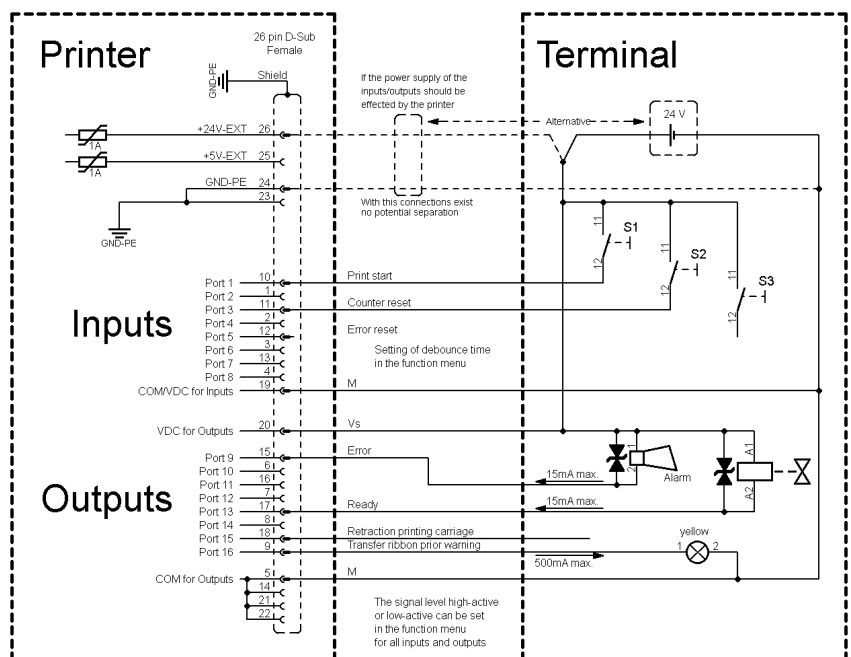


Figure 5

Example 3

Device connection version if 'Option: 2. LED'.

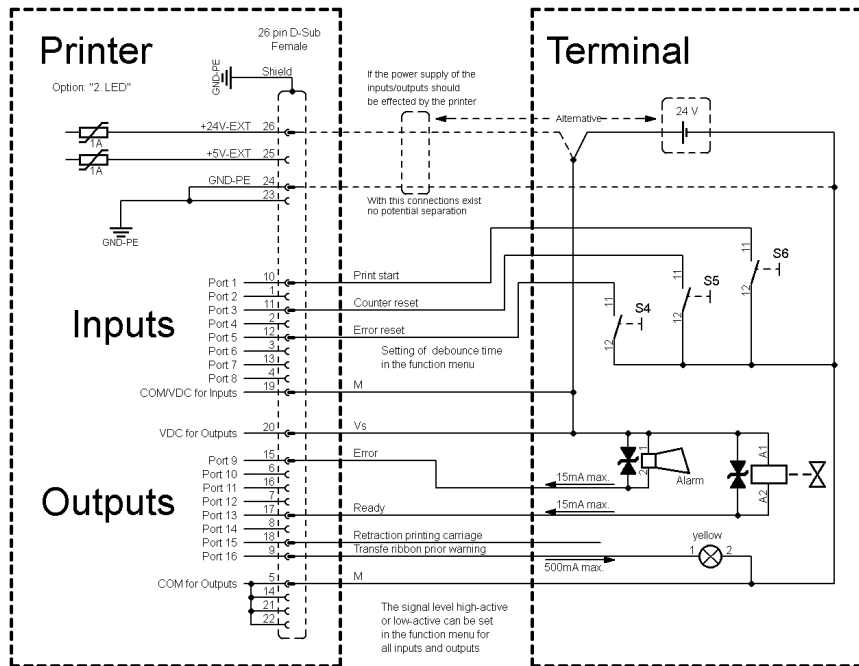


Figure 6

Precautions

When connecting a reed contact with a control input, the contact must have a switching capacity of min. 1 A in order to prevent the contact from sticking due to the inrush current. As an alternative, a suitable resistor can be connected in series.

If one of the printer's internal voltages '+5 VDC EXT' or '+24 VDC EXT' is used, an external fuse e.g. 0.5 AF, should be additionally installed to protect the printer electronics.

In the event of an inductive load, an antiparallel connected diode, for instance, must be used to discharge the induction energy.

In order to minimise the influence of leakage currents at control outputs, a resistor must, depending on what is connected, be installed in parallel with the load.

In order to avoid any damages to the printing system, the max. output currents must not be exceeded or outputs shorted.

3.2 Signal Diagrams

**Dispensing mode:
I/O dynamic**

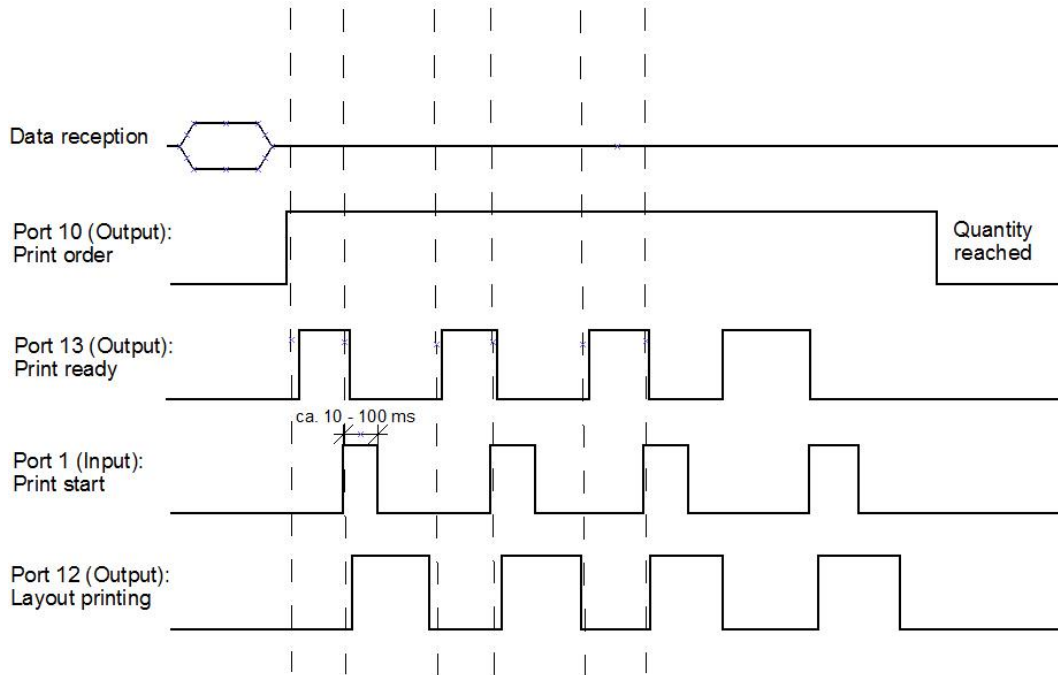


Figure 7

**Dispensing mode:
I/O dynamic continuous**

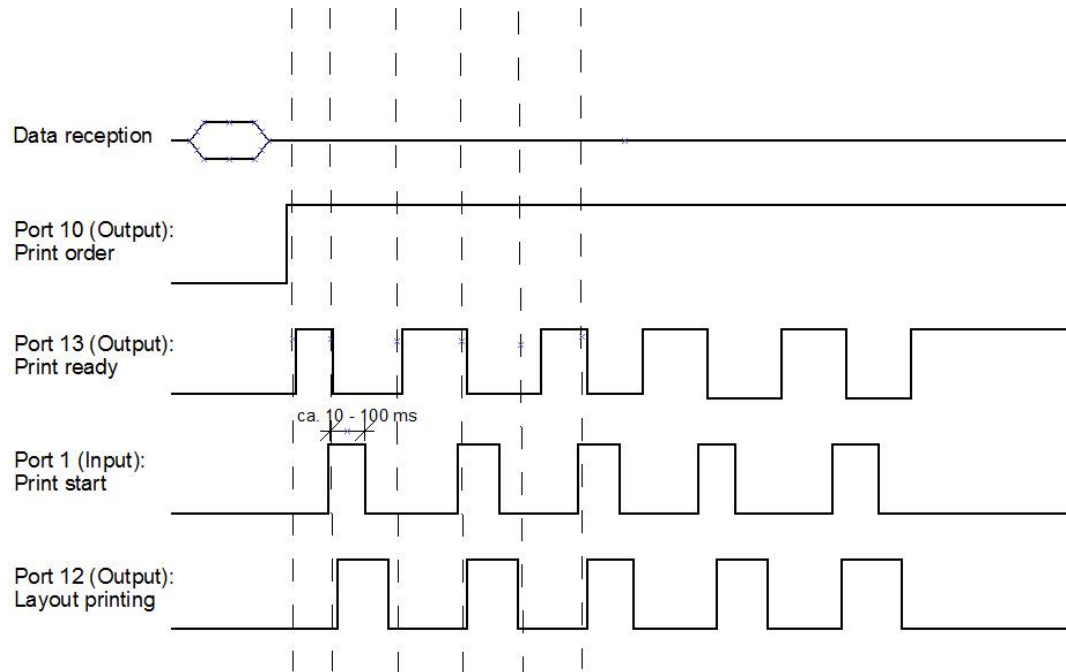


Figure 8

4 Installation

Unpack the print module

- ⇒ Lift the print module out of the box.
- ⇒ Check the print module for transport damages.
- ⇒ Check delivery for completeness.

Scope of delivery

- Print module.
- Power cable.
- Data cable for USB interface.
- I/O accessories (female connectors for I/O I/O 24 cable).
- 1 transfer ribbon roll.
- Dispenser edge (for devices with option dispenser only).
- Empty core, mounted on transfer ribbon rewinder.
- Cleaning foil for printhead.
- Documentation.
- CD with printer drivers.
- Labelstar Office LITE CD ROM



NOTICE!

Retain original packaging for subsequent transport.

4.1 Setting up the Print Module



CAUTION!

The print module and the print media can be damaged by moisture and water.

- ⇒ Set up the print module only in a dry place protected from sprayed water.

- ⇒ Set up print module on a level, vibration-free and air draught-free surface.
- ⇒ Open cover of print module.
- ⇒ Remove foam transportation safeguards near the printhead.

4.2 Connecting the Print Module

Connecting to the power supply

The print module is equipped with a versatile power supply unit. The device may be operated with a mains voltage of 110 ... 230V / 50 ... 60 Hz without any adjustments or modifications.



CAUTION!

The print module can be damaged by undefined switch-on currents.

⇒ Set the power switch to '0' before plugging in the print module.

⇒ Insert power cable into power connection socket.

⇒ Insert plug of power cable into a grounded electrical outlet.

Connecting to a computer or computer network



NOTICE!

Insufficient or missing grounding can cause faults during operation.

Ensure that all computers and connection cables connected to the print module are grounded.

⇒ Connect print module to computer or network with a suitable cable.

4.3 Connecting the CV Rewinder for Backing Paper

⇒ Switch off the print module.

⇒ Install the CV rewriter for backing paper with an external mounting plate at the appropriate position at the packaging machine.

⇒ Insert plugs of backing paper rewriter into the socket provided for it (see page 25).

⇒ Tighten the lateral protective screws at the connection plug in order to prevent an inadvertent removing of connection plug in running operation.



CAUTION!

The print module can be damaged by defective hardware.

⇒ Switch on the print module.
After switching on the module the main menu appears which shows the model type, current date and time

4.4 Connector Pin Assignment (Front Side)

Right version

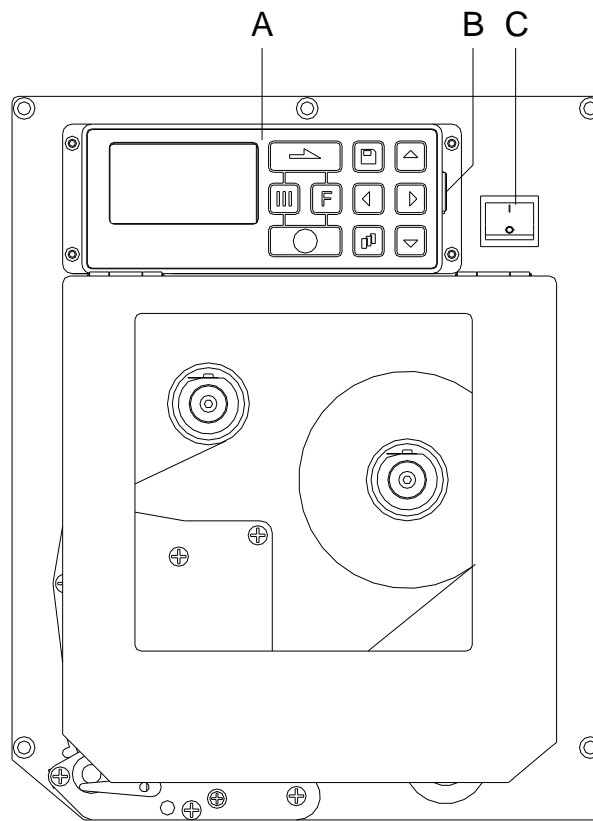


Figure 9

A = Foil keyboard

B = USB host for USB keyboard and memory stick

C = Power switch

4.5 Connector Pin Assignment (Back Side)

Right version

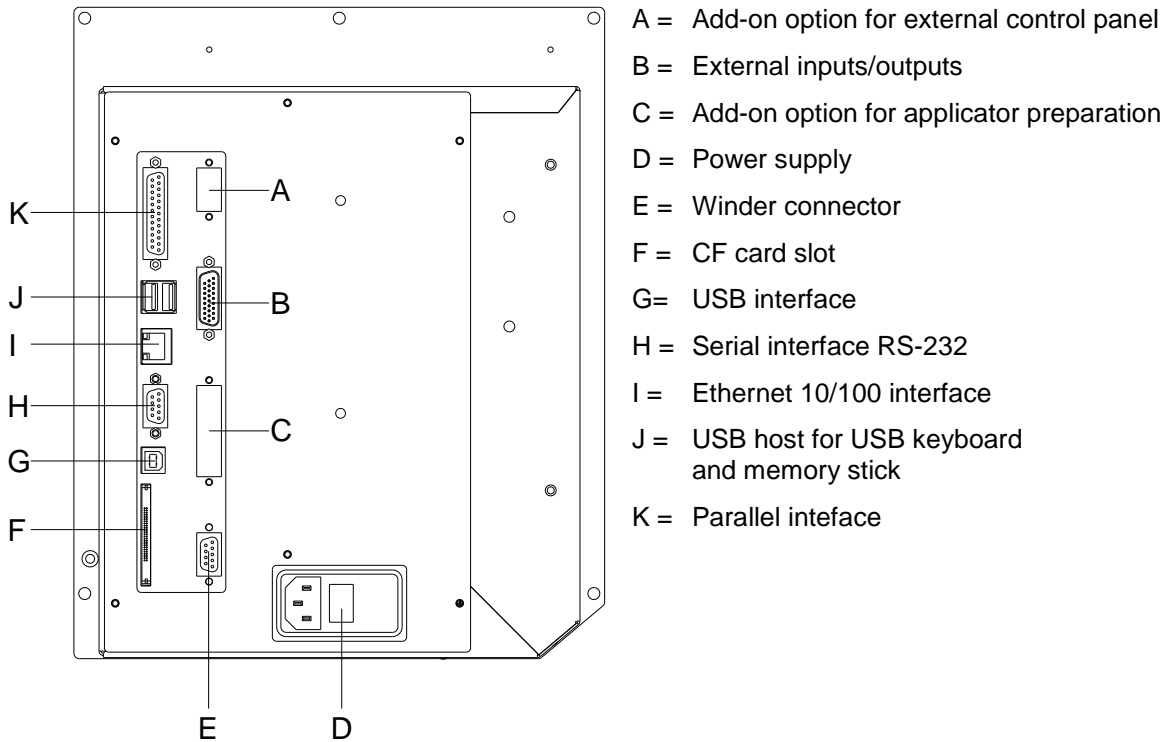


Figure 10

Left version

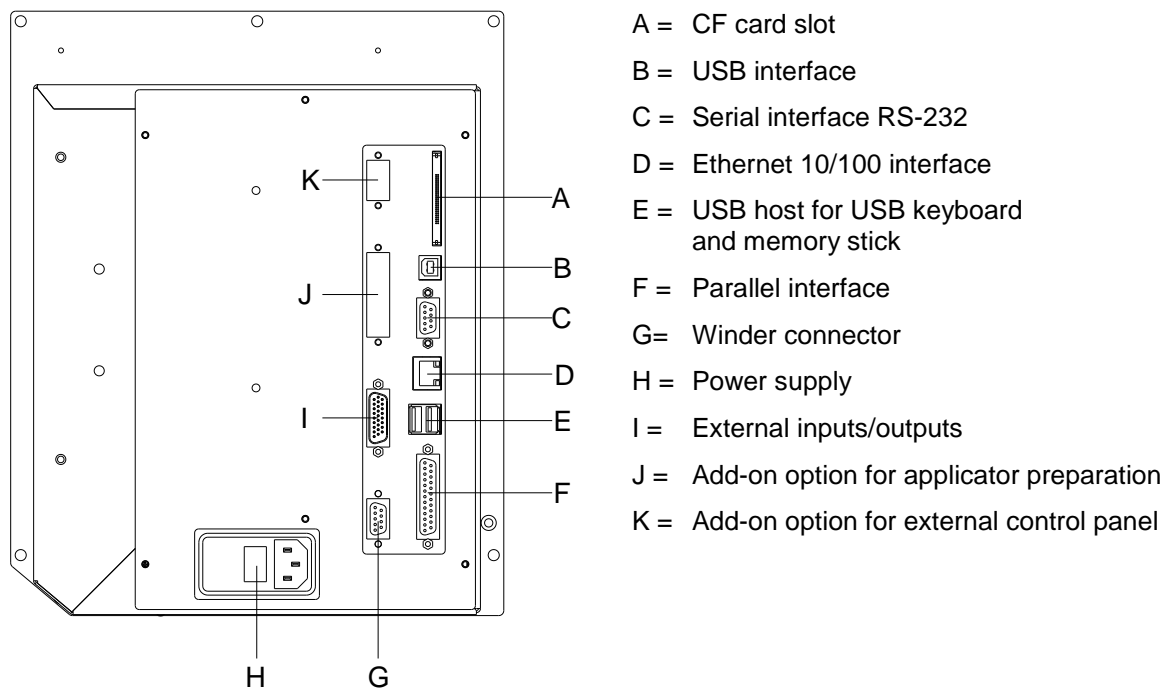


Figure 11


4.6 Start-Up

After all connections are made switch on the print module.

After switching on the print module the main menu appears which shows the print module type, current date and time.

Insert label material and transfer ribbon (see chapter 5. Loading Media, page 29).

Go to menu *Label layout*, select menu item *Measure label* and start measuring (see chapter 6.4 Label Layout, page 39).

Press key  to finish measuring.



NOTICE!

To enable correct measuring, at least two completed labels have to be passed through (not for continuous labels).

During the measuring procedure of label and gap length small differences can occur. Therefore the values can be set and transferred to the print module by means of the label design software as well as via the printer driver.

5 Loading Media

5.1 Loading Label Roll in Dispenser Mode

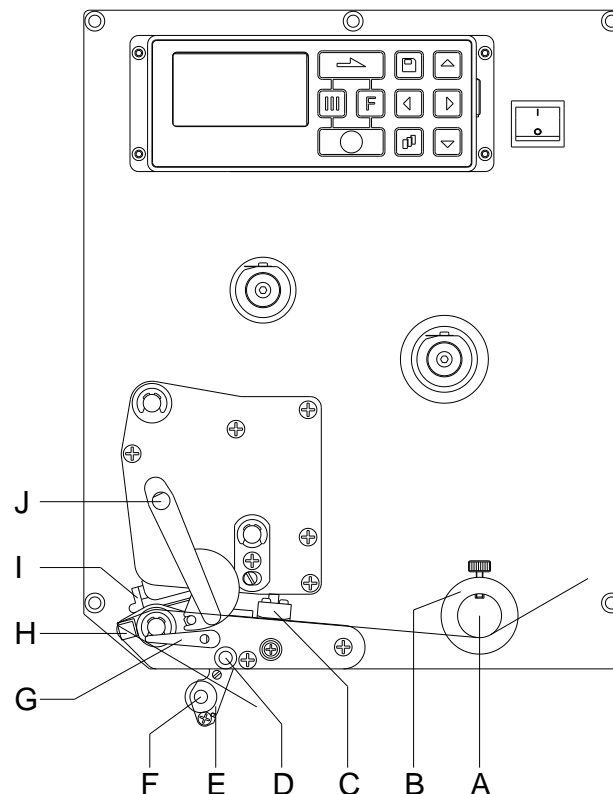


Figure 12

1. Open the print module cover.
2. Open printhead (I) by turning the red pressure lever (J) anticlockwise.
3. Lead the label material (minimum height = 15 mm) below the label guiding (A) and printhead (I) and take care that the labels run through the photocell (C).
4. In order to move the printhead (I) down, turn the red pressure lever (J) in clockwise direction until it locks.
5. Adjust the adjusting rings (B) of the label guiding to the width of material.
6. Lift the dispensing whip (E) to the bottom by turning the stop lever (G) in clockwise direction to the top.
7. Strip some labels from the backing paper and lead the backing material over the dispensing edge (H) and between the plastic roll (F) and the dispensing whip-shaft (D).
8. Press again the dispensing whip (D) to the top and lock it.
9. Lead the supporting paper to the back and fix it at a rewinding unit.
10. Enter the offset value in the *Dispenser I/O* menu.
11. Close the print module cover.

5.2 Loading Labels in Passing Mode

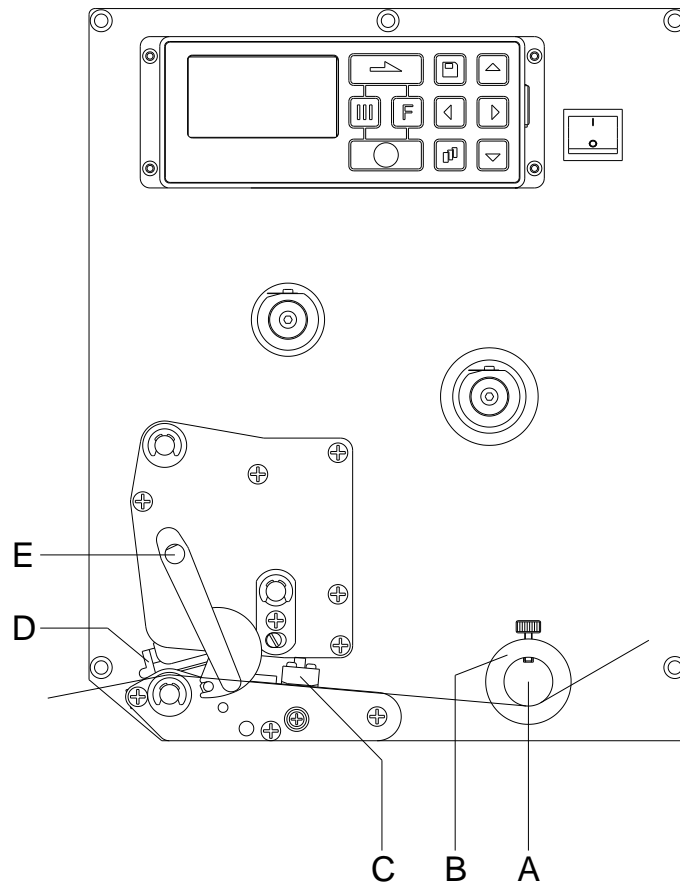


Figure 13

1. Open the print module cover.
2. Open printhead (D) by turning the red pressure lever (E) anticlockwise.
3. Lead the label material below the label guiding (A) and take care that the label runs through the photocell (C).
4. In order to move the printhead (D) down, turn the red pressure lever (E) in clockwise direction until it locks.
5. Adjust the adjusting rings (B) of the label guiding to the width of material.
6. Close the print module cover.

5.3 Loading Transfer Ribbon



NOTICE!

As for the electrostatic unloading the thin coating of the thermal printhead or other electronic parts can be damaged, the transfer ribbon should be antistatic.

The use of wrong materials can lead to print module malfunctions and the guarantee can expire.

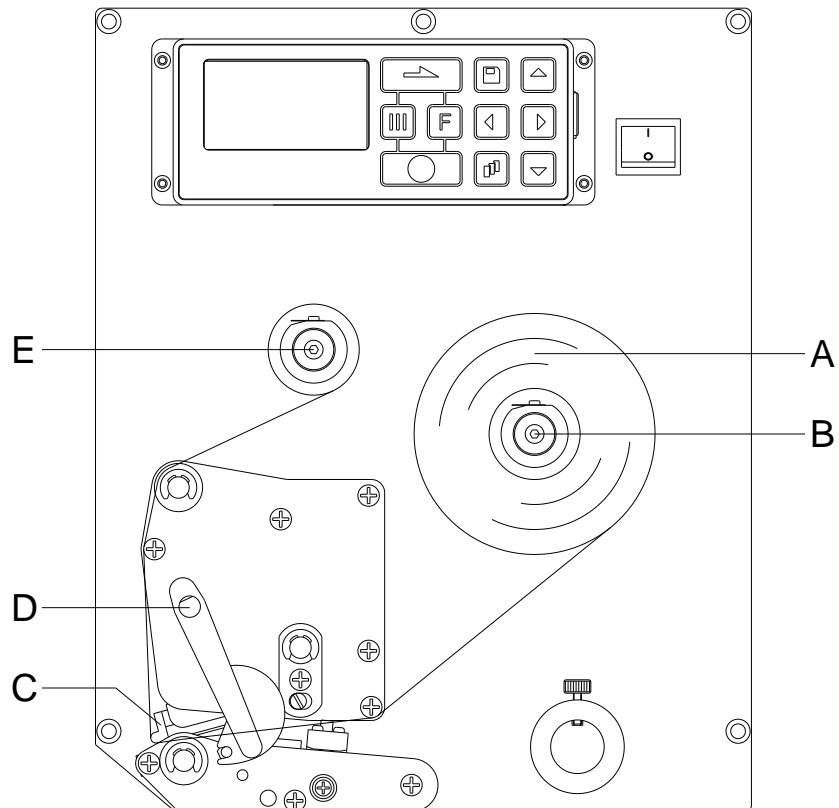


Figure 14



NOTICE!

Before a new transfer ribbon roll is loaded, the printhead must be cleaned using printhead and roller cleaner (97.20.002). For detailed information, please see page 76.

The handling instructions for the use of Isopropanol (IPA) must be observed. In the case of skin or eye contact, immediately wash off the fluid thoroughly with running water. If the irritation persists, consult a doctor. Ensure good ventilation.

1. Open the print module cover.
2. Open printhead (C) by turning the red pressure lever (D) anticlockwise.
3. Load the transfer ribbon roll (A) with outer winding onto the unwinding roll (B).
4. Place an empty ribbon roll on the winding roll (E) and lead the transfer ribbon below the printhead.

5. Fix the ribbon with an adhesive tape in operating direction at the empty roll of the rewinding roll (E).
Check the perfect run of the transfer ribbon by turning the rewinding roll (E) several times anticlockwise.
6. In order to move the printhead (C) down, turn the red pressure lever (D) in clockwise direction until it locks.
7. Close the print module cover.

**NOTICE!**

As for the electrostatic unloading the thin coating of the thermal printhead or other electronic parts can be damaged, the transfer ribbon should be antistatic.
The use of wrong materials can lead to print module malfunctions and the guarantee can expire.


















**CAUTION!**

Impact of static material on people!

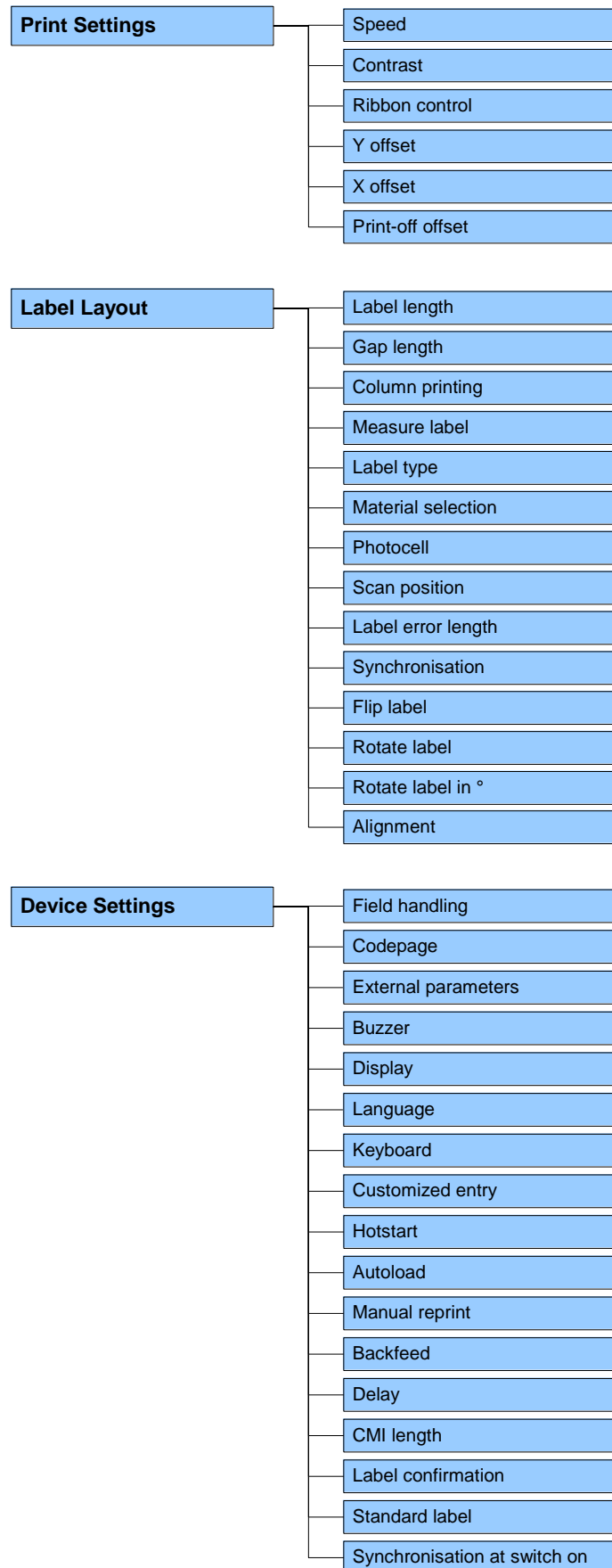
- ⇒ Use antistatic transfer ribbon, because static discharge can occur when removing.

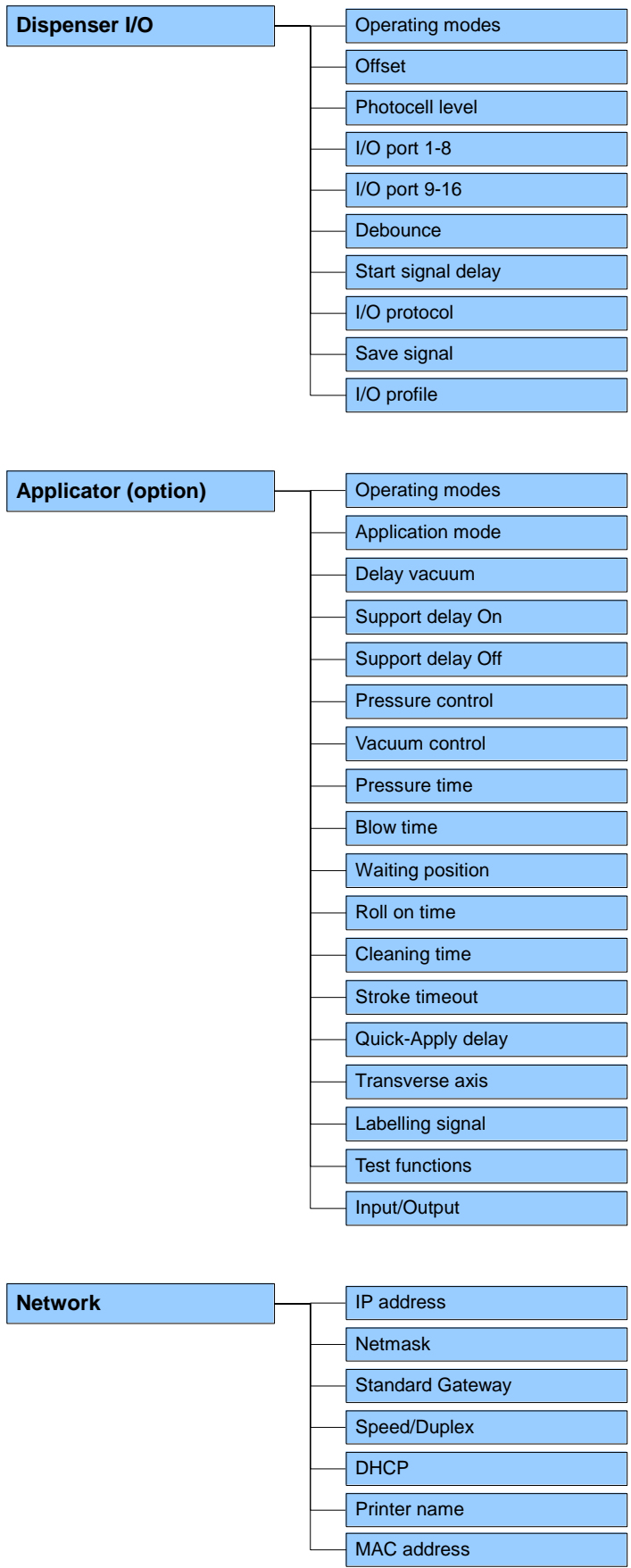
6 Function Menu

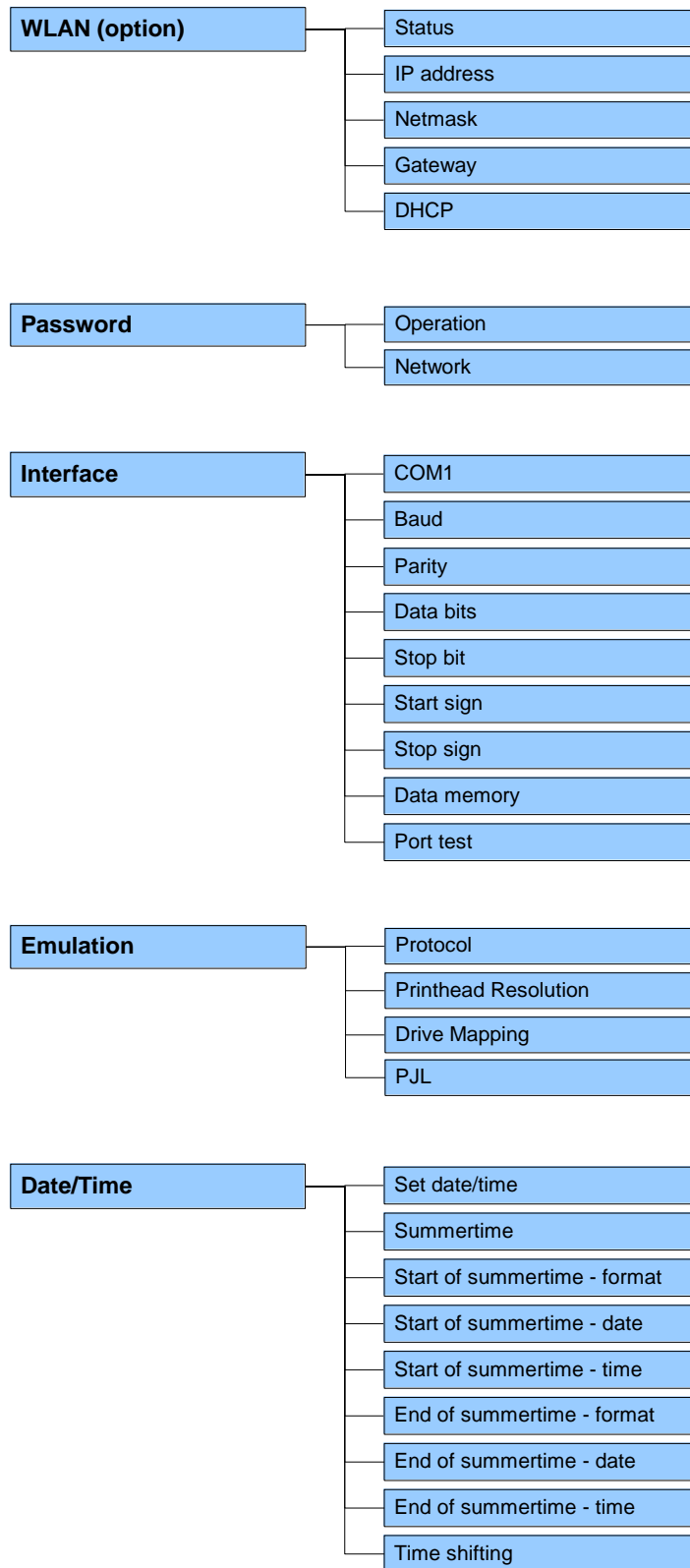
6.1 Operation Panel

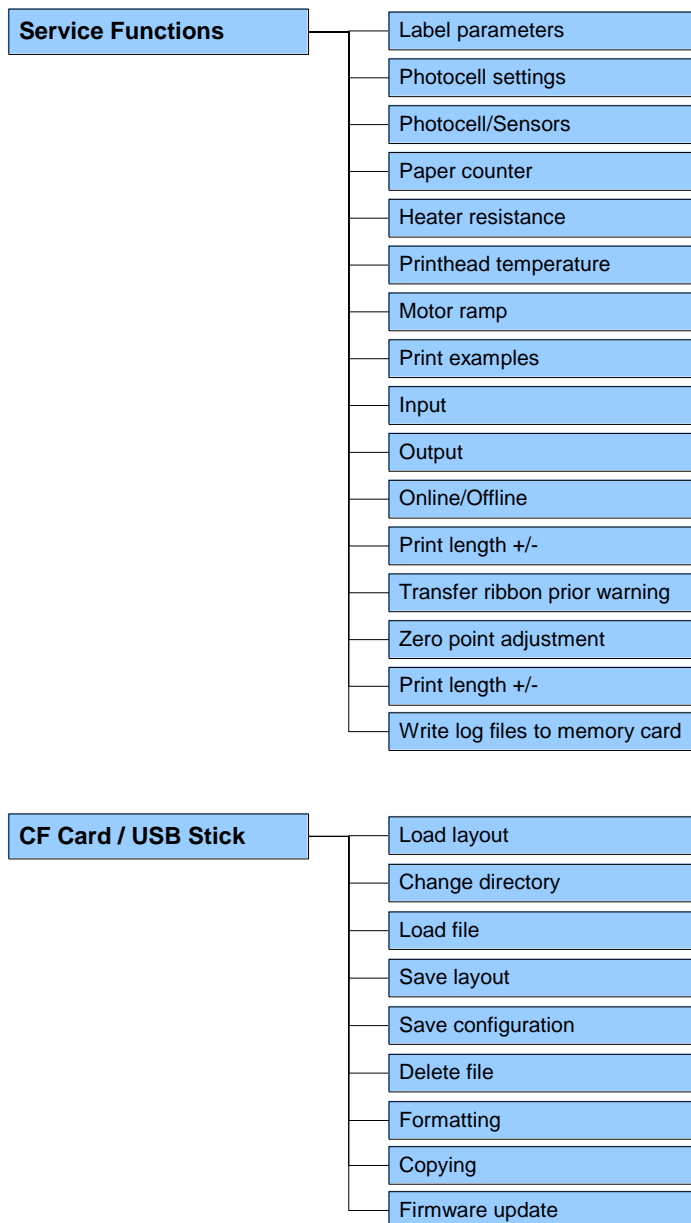
	The top line of the graphic display shows the print module type.
	The graphic display shows information about the current print module status and the print order, reports errors and shows the device settings in the menus.
	Back to the main menu. Start a test print. Delete a stopped print order.
	Change to the function menu. In function menu: one menu item back.
	Change to the quantity (number of pieces) menu. Press keys  and  to select the number of labels that should be printed.
	Change to the menu of the CF card.
	In main menu: feed of one label. In function menu: skip to the next menu item.
	Confirm settings and modifications. Stop and continue current print orders. Delete a stopped print order with key  . No further label of the print order is printed.
	Return to the previous input field. Press keys  and  to change the values.
	Skip to the next input field. Press keys  and  to change the values.
	Increase figure at the cursor position.
	Decrease figure at the cursor position.

6.2 Menu Structure










6.3 Print settings

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  to select the menu *Print settings*.

Speed

Indication of print speed in mm/s (see chapter Technical Data, page 13). The print speed can be determined for each print order anew. The setting of print speed affects also the test prints.

Contrast

Indication of value to set the print intensity when using different materials, print speeds or printing contents.
Value range: 10% ... 200 %.
Step size: 10%.

Press key  to arrive the next menu item.

Ribbon control

Examination if the transfer ribbon roll is to end or if the ribbon was torn at the unwinding roll. The current print order is interrupted and an Error Message appears at the print module display.

Off: The ribbon control is deselected, i.e. the print module continues without an error message.

On, weak sensibility (default): The print module reacts at approx. 1/3 more slowly to the end of the transfer ribbon.

On, strong sensibility: The print module reacts immediately to the end of the transfer ribbon.

Press key  to arrive the next menu item.

Y displacement

Indication of initial point displacement in mm.
Displacement of the complete print in paper direction. With positive values the print in paper direction starts later.
Value range: -30.0 ... +90.0.

Press key  to arrive the next menu item.

X displacement

Displacement of the complete print transverse to the paper direction. The displacement is possible only up to the edges of the printing zone and is determined by the width of the focal line in printhead.
Value range: -90.0 ... +90.0.


Press key  to arrive the next menu item.


Tear-off


Indication of value to which the last label of a print order is moved forward and is moved back to the beginning of label at a new print start. Labels can be torn off after terminating the print order without a label loss by tearing up.
Default value: 12 mm.
Value range: 0 ... 50.0 mm.

6.4 Label Layout

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *Label layout* menu.

Press key  to select the menu.

Label length

Indication of label length in mm
(see chapter Technical Data, page 13).

Gap length

Indication of distance between two labels in mm
(not for continuous labels).
Minimum value: 1 mm.


Press key  to arrive the next menu item.

Column printing

Indication of width of one label as well as how many labels are placed side by side (see chapter 11.1 Column Printing, page 93).


Press key  to arrive the next menu item.

Measure label

Press key  to start measuring. The print module stops automatically after termination of measuring. The determined values are displayed and saved.

Press key  to arrive the next menu item.

Label type

Generally adhesive labels are set. Press key  to select continuous labels. If the menu item *Label length/Gap length* contains a gap value, this value is added to the label length.

Press key  to arrive the next menu item.

Material selection

Selection of the used label and transfer ribbon material.







Press key  to arrive the next menu item.

Photocell

Selection of the used photocell. The selection of transmission photocell normal, transmission photocell inverse or ultrasonic photocell (option) is possible (see chapter 11.4 Photocells, page 98).


Scan position (AP)


Entry of percental label length by that the label end is searched. Marks onto the label can be skipped.


	Press key  to arrive the next menu item.
Label error length	In case an error occurs, indication after how many mm a message appears in the display. Value range: 1 mm ... 999 mm.
Synchronisation	On: If a label is missed on the liner an error message is displayed. Off: Missing labels are ignored, i.e. it is printed into the gap. Press key  to arrive the next menu item.
Flip label	The axis of reflection is in the middle of the label. If the label width was not transferred to the print module, automatically the default label width i.e. the width of the printhead is used. It is recommended to use labels with the same width as the printhead. Otherwise this can cause problems in positioning. Press key  to arrive the next menu item.
Rotate label	According to standard the label is printed ahead with a rotation of 0°. If the function is activated, the label is rotated by 180° and printed in reading direction. Press key  to arrive the next menu item.
Rotate label (in °)	Corresponding to the parameter Rotate label, the label can be turned in 90° steps.  NOTICE! Only printer internal objects (text, lines and barcodes) can be turned. The rotation of graphics is not possible. Press key  to arrive the next menu item.
Alignment	The adjustment of label is effected only after <i>Flip/Rotate label</i> , i.e. the adjustment is independent of the functions <i>Flip label</i> and <i>Rotate label</i> . Left: The label is aligned at the left-most position of printhead. Centre: The label is aligned at central point of printhead. Right: The label is aligned at right-most position of printhead.

6.5 Device Settings

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *Device settings* menu.

Press key  to select the menu.

Field handling

Off: The complete print memory is deleted.

Keep graphic: A graphic res. a TrueType font is transferred to the print module once and stored in the internal memory of print module. For the following print order only the modified data is transferred to the print module. The advantage is the saving of transmitting time for the graphic data.

The graphic data created by the print module itself (internal fonts, bar codes, ...) is generated only if they were changed. The generating time is saved.

Delete graphic: The graphics res. TrueType fonts stored in the internal memory of the print module is deleted but the other fields are kept.

Codepage

Indication of the font used in the device. The following possibilities are available:

Codepage 1252 West European (former ANSI)

Codepage 437 English

Codepage 850 Western European

Codepage 852 Slavic

Codepage 857 Turkish

Codepage 1250 Central and East European

Codepage 1251 Cyrillic

Codepage 1253 Greek

Codepage 1254 Turkish

Codepage 1257 Baltic

WGL4

Please find the tables referring to the above mentioned character sets on www.carl-valentin.de/Downloads.








Press key  to arrive the next menu item.

External parameters

Label dimension only: The parameters for label length, gap length and label width can be transferred to the printer. All other parameter settings are to be made directly at the printer.

On: Sending parameters such as print speed and contrast via our label creation software to the print module. Parameters which are set directly at the print module before are no longer considered.

Off: Only settings made directly at the print module are considered.

- Press key  to arrive the next menu item.
- Buzzer** **On:** An acoustic signal is audible when pressing a key.
Value range: 1 ... 7.
Off: No signal is audible.
- Display** Setting of display contrast.
Value range: 45 ... 75.
- Press key  to arrive the next menu item.
- Language** Selection of language in which you want to display the text in the display. At the moment the following languages are available: German, English, French, Spanish, Finnish, Czech, Portuguese, Dutch, Italian, Danish, Polish, Greek, Hungarian, Russian, Chinese (option), Ukrainian, Turkish, Swedish, Norwegian.
- Press key  to arrive the next menu item.
- Keyboard layout** Selection of region for the desired keyboard layout.
The following possibilities are available: Germany, England, France, Greece, Spain, Sweden, US, Russia.
- Press key  to arrive the next menu item.
- Customized entry** **Off:** No question appears at the display. In this case the stored default value is printed.
On: The question referring the customized variable appears once before the print start at the display.
Auto: The questions referring the customized variable and the quantity query appear after every printed layout.
Auto without quantity query: The question referring the customized variable appears after every layout without additional query for the quantity.
- Press key  to arrive the next menu item.
- Hotstart** **On:** Continue an interrupted print order after switching on the print module anew.
Off: After switching off the print module the complete data is lost (see chapter 11.2, page 94).
- Press key  to arrive the next menu item.
- Autoload** **On:** A label which was loaded once from CF card can be loaded again automatically after a restart of print module.
Procedure: The used label is saved onto CF card. The label is loaded from CF card and printed. After switching the print module Off and again On, the label is loaded from CF card automatically and can be printed again. Press key  to start the print with input of number of labels.

**NOTICE!**

The last loaded label from CF card is always again loaded after a restart of print module.

Off: After a restart of print module the last used label must be again loaded manually from CF card.





NOTICE!

A common use of the functions Autoload and Hotstart is not possible. For a correct Autoload procedure the Hotstart must be deactivated in the print module.

Press key  to arrive the next menu item.

Manual reprint

Yes: In case an error occurred and print module is in stopped mode then you can reprint the last printed labels by means of keys  and .

No: Only blank labels were advanced.

Press key  to arrive the next menu item.

Backfeed

The backfeed was optimised in the operating modes dispenser (optional), cutter (optional) and tear off. Now, when driving into the offset, the following label is 'pre-printed' if possible and therefore the backfeed of label is no necessary and time can be saved.

Delay

The adjustable deceleration time is only for mode 'backfeed automatic' of importance (see chapter 11, page 93).

Press key  to arrive the next menu item.

CMI length

If the print is interrupted in the label, at the printhead this could lead to a small interruption in the printout, showing a fine white line onto the label. To avoid this, a value for the minimum backfeed can be set (0 – 1 mm) at which the label material is moved backwards. At the next print start the free range is overprinted. The setting of CMI length has only an influence at the selection of backfeed mode 'optimised backfeed'.

Press key  to arrive the next menu item.

Label confirmation

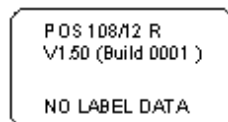
On: A new print order is only printed after confirmation at the device. An already active continuing print order is printed as long as the confirmation is effected at the device.

Off: No query appears at the display of print module.

Press key  to arrive the next menu item.

Standard label

On: If a print order is started without previous definition of label, the standard label is printed.



Off: If a print order is started without previous definition of label, an error message appears in the display.

Press key  to arrive the next menu item.

Synchronization at print start

Off: The synchronization is disabled, i.e. the measuring and label feed have to be released manually.

Measure: After switching on the device, the loaded layout is automatically measured.

Feed: After switching on the device the layout is synchronized to the beginning of layout. For this one or multiple layouts are advanced.

6.6 Dispenser I/O





NOTICE!

In order to operate the print module in dispensing mode a print order has to be started and the print module has to be in 'waiting' mode.

Switch on the print module and the display shows the main menu.

Press key **F** to access the function menu.


Press key  as long as you arrive the *Dispenser I/O* menu.

Press key  to select the menu.

In the upper line of display, the operating mode can be selected.

Offset

In the line below, the dispenser I/O offset (approx. 20 mm) can be set.

Press key  to change to the next operating mode.

Operating modes

Off:

It is printed without the labels are dispensed.

I/O static:

The input signal evaluated, i.e. it is printed as long as the signal exists. The number of labels which was entered at the print start is printed.

The set dispenser offset is not taken into consideration.

I/O static continuous:

For description of this operating mode, see I/O static.

Continuous means that it is printed as long as new data is transferred via interface

The set dispenser offset is not taken into consideration.

I/O dynamic:

The external signal is evaluated dynamically, i.e. is the print module in 'waiting' mode a single label is printed at each signal changing. After the print the set dispenser offset is executed, i.e. a backfeed is effected.

I/O dynamic continuous:

For description of this operating mode, see I/O dynamic.

Continuous means that it is printed as long as new data is transferred via interface.

Photocell:


The print module is controlled via photocell. The print module prints automatically a label if the user takes away the label at the dispensing ledge. The print order is finished when the target number of labels is reached.

Photocell continuous:

For description of this operating mode, see Photocell.

Continuous means that it is printed as long as new data is transferred via interface.

Additional parameters for Dispenser I/O

After selection of desired Dispenser I/O operating mode, press key  to select additional parameters.

Dispenser photocell

First value = Indication of the current sensor level. This indication is for checking purposes and cannot be modified.

Second value = Indication if a label (value = 1) or if no label (value = 0) was found. This indication is for checking purposes if the set switch level leads to a correct label recognition.

Third value = Indication of switch level (Default: 1.2).

Fourth value = Transmission power of label sensor [1..255] Depending on label material (color) the sensor level can be adapted in order to permit a safe label recognition (Default: 80).

**NOTICE!**

The modification of this value is only taken into consideration for the operating modes *Photocell* and *Photocell continuous*.

Press key  to arrive the next menu item.

I/O Port 1-8 and I/O Port 9-16

Definition of port functions. 2 sign show the current setting for each port.

The first sign specifies the following:

- I** = Port operates as Input
- O** = Port operates as Output
- N** = Port has no function (not defined)

These settings cannot be modified.

The second sign specifies the following:

- +** = Active signal level is 'high' (1)
- = Active signal level is 'low' (0)
- x** = Port is deactivated
- &** = Function is executed at each change of the signal level
- s** = Status can be enquired/influenced* by interface
The internal function of print module is deactivated.





The modification of the signal level is only taken into consideration for the operating modes I/O static, I/O dynamic, I/O static continuous and I/O dynamic continuous.#

Press key  to arrive the next menu item.

Debounce

Indication of debounce time of the dispenser input. The setting range of the debounce time is between 0 and 100 ms. In case the start signal is not clear then you can debounce the input by means of this menu item.

* in connection with Netstar PLUS

- Press key  to arrive the next menu item.
- Start signal delay** Indication in time per second of the delay for the start signal.
Value range: 0.00 ... 9.99.
- Press key  to arrive the next menu item.
- I/O protocol** Indication of interface at which the modifications of input signals and output signals (I/O) are sent.
- Press key  to arrive the next menu item.
- Save signal** **On:** The start signal for the next label can already be released during printing the current label. The signal is registered from the print module. The print module starts printing the next label immediately after finishing the current one. Therefore time can be saved and performance be increased.
Off: The start signal for the next label can only be released if the current label is printed to the end and the print module is again in 'waiting' state (output 'ready' set). If the start signal was released already before, so this is ignored.
- Press key  to arrive the next menu item.
- I/O Profile** Selection of the available configurations *Std_Label* (factory setting), *StdFileSetLabel* or *APL*.
The corresponding assignment is indicated on the following page.

List of registered functions for *Std_Label*

1	Print start (Input)
2	Reprint last printed label (Input)
3	Counter reset (Input)
4	Option applicator only: Start application (Input)
5	Error reset (Input)
6	Cancel all print jobs (Input)
7	No function
8	External release signal (Input)
9	Error (Output)
10	Print order active (Output)
11	Dispenser photocell: Label exists at dispenser photocell (Output)
12	Single print (Output)
13	Ready (Output)
14	Option applicator only: Ready for application (Output)
15	Option scanner only Bar code not readable (Output)
16	Transfer ribbon prior warning (Output)

List of registered functions for *StdFileSetLabel*

1	Print start (Input)
2	Error reset (Input)
3*	Number of the file to load Bit 0 (Input)
4*	Number of the file to load Bit 1 (Input)
5*	Number of the file to load Bit 2 (Input)
6*	Number of the file to load Bit 3 (Input)
7*	Number of the file to load Bit 4 (Input)
8*	Number of the file to load Bit 5 (Input)
9	Error (Output)
10	Print order active (Output)
11	Dispenser photocell: Label exists at dispenser photocell (Output)
12	Printing (Output)
13	Ready (Output)
14	No function
15	Option scanner only: Bar code not readable (Output)
16	Transfer ribbon prior warning (Output)

* The files must be saved onto the CF card in the user directory (see chapter 8.4, page 65).

The files must start with 1 or 2 digits (1_Etikett.prn, 02_Etikett.prn).

The files can be saved with a file extension.

In the printer status 'ready', 'waiting' or 'stop', a new file can be loaded. The printer order will be started after charging and an already existing printer order will be deleted.


The input signal 000000 does not charge a file and does not delete an already existing print order.


List of registered functions for *APL*


1	Print start (Input)
2	Reprint last printed label (Input)
3	Counter reset (Input)
4	Option applicator only: Start application (Input)
5	Error reset (Input)
6	Cancel all print jobs (Input)
7	No function
8	No function
9	Error (Output)
10	Print order active (Output)
11	Dispenser photocell: Label exists at dispenser photocell (Output)
12	Printing (Output)
13	Ready (Output)
14	Option applicator only: Ready for application (Output)
15	Option applicator only: Pad is in printing position (Output)
16	Transfer ribbon prior warning (Output)

6.7 Network

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.


Press key  as long as you arrive the *Network* menu.


Press key  to select the menu.

For more information, please see the separate manual.

6.8 Password

Switch on the label printer and the display shows the main menu.

Press key  to access the function menu.






Press key  as long as you arrive the *Password* menu.

Press key  to select the menu.





With a password different functions can be blocked for the operator. There are different applications with which such a password protection can be used reasonably. To receive a most flexible password protection, the printer functions will be divided into several function groups.

Because of these different function groups the password protection is very flexible. The printer can be adjusted best to its actual order, as only certain functions are blocked.

Operation


- Password** Entering a 4-digit numeric password.
Press key  to arrive the next menu item.
- Protection configuration** Printer settings can be changed (contrast, speed, operating mode, ...). The password protection prevents modifications at the printer settings.
Press key  to arrive the next menu item.
- Protection favorites** The password protection prevents the access to the favorites.
Press key  to arrive the next menu item.
- Protection memory card** With the functions of the memory card, labels can be stored, loaded, etc. The password protection has to decide if no access or only readable access on CF card is allowed.
No protection: No password protection
Userview only: Only reading access
Protected: Access blocked
Press key  to arrive the next menu item.
- Protection Printing** In case the printer is connected to a PC, it can be useful, that the user is not able to produce a print manually. So the password protection prevents that prints can be produced manually.
Press key  to arrive the next menu item.
In order to execute a blocked function, first of all the valid password has to be entered. If the correct password is entered then the desired function can be executed.


Network


- Password** Entering a 15-digit password. The password can consists of alphanumeric and special characters.
Press key  to arrive the next menu item.
- Protection HTTP** The communication by HTTP can be avoided.
Press key  to arrive the next menu item.
- Protection Telnet** The settings of the Telnet service cannot be changed.
Press key  to arrive the next menu item.
- Protection remote access** The password protection prevents the remote control of the printer.
Press key  to arrive the next menu item.
In order to execute a blocked function, first of all the valid password has to be entered. If the correct password is entered then the desired function can be executed.

6.9 Interface

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *Interface* menu.

Press key  to select the menu.

COM1 / Baud / P / D / S

COM1:

0 - serial interface Off.
1 - serial interface On.
2 - serial Interface On, no error message occurs in case of a transmission error.

Baud:

Indication of bits which are transferred per second (speed of data transfer).

Value range: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

P = Parity:

N - No parity; E - Even; O - Odd

Please observe that the settings correspond to those of the direct print module.

D = Data bits:

Setting of data bits.

Value range: 7 or 8 Bits.

S = Stop bits:

Indication of stop bits between bytes.

Value range: 1 or 2 stop bits.

Press key  to arrive the next menu item.

Start sign / End sign

SOH: Start of data transfer block → Hex format 01

ETB: End of data transfer block → Hex format 17

Two different start / en signs can be set. The settings are normally SOH = 01 HEX and ETB = 17 HEX. Several host computers cannot process these signs and therefore SOH = 5E HEX and ETB = 5F cannot be set.

Press key  to arrive the next menu item.

Data memory

Standard: After starting a print order the print module buffer receives data as long as it is filled.




Advanced: During a current print order data is received and processed.

Off: After starting a print order no more data is received.

Press key  to arrive the next menu item.


Porttest


Check whether the data are transferred via the interface.


Press the  and  keys to select standard (on). Press the  key and the data sent via any port (COM1, LPT, USB, TCP/IP) is printed.

6.10 Emulation

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *Emulation* menu.


Press key  to select the menu.

Protocol

CVPL: Carl Valentin Programming Language

ZPL: Zebra® Programming Language

Change between CVPL protocol and ZPL II® protocol.

Press key  to confirm the selection.

The direct print module performs a restart and ZPL II® commands are transformed into CVPL commands internally by the direct print module and then executed by the device.

In menu Protocol, press key  to arrive the next menu item.

Printhead resolution

At activated ZPL II® emulation the printhead resolution of the emulated device must be set, e.g. 11.8 Dot/mm (= 300 dpi).



NOTICE!

If the printhead resolution of the Zebra® printer differs from that of the Valentin device, then the size of objects (e.g. texts, graphics) complies not exactly.

Press key  to arrive the next menu item.

Drive mapping

The access to Zebra® drives

B: CF card

R: RAM Disk (standard drive, if not indicated)

is rerouted to the corresponding Valentin drives

A: CF

R: RAM Disk

This can be necessary if the available space on the RAM disk (at present 512 KByte) is not sufficient or if bitmap fonts are downloaded to the device and be stored permanently.



NOTICE!

As the build-in fonts in Zebra® printers are not available in Valentin devices this can cause small differences in the text image.

Press key  to arrive the next menu item.


PJL (Printer Job Language)


Status information regarding the print order can be indicated.

6.11 Datum & Uhrzeit





Switch on the print unit and the display shows the main menu.

Press key **F** to access the function menu.

Press key  as long as you arrive the *Date/Time* menu.

Press key  to select the menu.

Setting of date and time

The upper line of display shows the current date, the second line the current time. Press keys  to  arrive the next input field. Press keys  and  to increase and/or decrease the figures at the cursor position.

Press key  to arrive the next menu item.

Summertime

On: Device automatically adjust clock for daylight saving changes.

Off: Summertime is not automatically recognized and adjusted.

Press key  to arrive the next menu item.

Start of summertime – Format

Select the format in which you want to define beginning summertime. The above example indicates the default setting (European format).

DD = day	WW = week	WD = weekday
MM = month	YY = year	next day = only next day is taken into consideration

Press key  to arrive the next menu item.

Start of summertime – Date

By means of this function you can enter the date at which summertime has to start. This entry refers to the previously selected format.

Press key  to arrive the next menu item.

Start of summertime – Time

By means of this function you can define the time when you want to start summertime.

Press key  to arrive the next menu item.

End of summertime – Format

Select the format in which you want to define end of summertime. The example above indicates the default setting (European format).

Press key  to arrive the next menu item.

End of summertime – Date

By means of this function you can define the date when you want to stop summertime. The entry refers to the previously selected format.

Press key  to arrive the next menu item.

End of summertime – Time

By means of this function you can define the time when you want to stop summertime.

Press key  to arrive the next menu item.

Time shifting

By means of this function you can enter time shifting in hours and minutes (for automatically adjustment from summer and wintertime). This entry refers to the currently set device time.

6.12 Service Functions



NOTICE!

So that the distributor res. the manufacturer in case of service can offer fast support the necessary information such as selected parameters can be taken directly from the service functions menu of the device.

Switch on the print module and the display shows the main menu.

Press key to access the function menu.

Press key as long as you arrive the *Service functions* menu.

Press key to select the menu.

Label parameters

Indication of label parameters in Volt.

A: Indication of minimum value.

B: Indication of difference between minimum and maximum value.

C: Indication of trigger level. The value is ascertained while measuring and can be changed.

Press key to arrive the next menu item.

Photocell configuration

This function enables definition of photocell levels.

In case of problems while positioning or measuring of label, levels for label photocell can be set manually. Make sure that a large hub as possible (above the label >3 V, above the gap <1 V) is set.

Press key to arrive the next menu item.

Photocell parameters

DLS: Indication of transmission photocell level in Volt.

RLS: Indication of reflexion photocell level in Volt.

SLS: Indication of peel off photocell level in Volt.

TR: Indication of transfer ribbon photocell status (either 0 or 1).

H: Indication of printhead position.

0 = printhead down

1 = printhead up

Press key to arrive the next menu item.

Paper counter

D: Indication of printhead attainment in meters.

G: Indication of print module attainment in meters.

Press key to arrive the next menu item.






Heater resistance

To achieve a high print quality, the indicated Ohm value must be set after an exchange of printhead.

Press key to arrive the next menu item.


Printhead temperature

Indication of printhead temperature. The printhead temperature corresponds normally to the room temperature. In case the maximum printhead temperature is exceeded, the current print order is interrupted and an error message appears at the print module display.


- Press key  to arrive the next menu item.
- Motor Ramp**
This function is often used for high printing speed as the tearing of transfer ribbon can be prevented.
The higher the '++' value is set, the slower the feeding motor is accelerated.
The smaller the '--' value is set, the faster the feeding motor is decelerated.
- Press key  to arrive the next menu item.
- Print examples**
- Settings = Printout of all print module settings such as speed, label and transfer ribbon material.
- Bar codes = Printout of all available bar code types.
- Fonts = Printout of all available font types.
- Press key  to arrive the next menu item.
- Input**
Indication of input signal level which depends on the set *I/O Profile* (see page 46).
0 = Low
1 = High
- Press key  to arrive the next menu item.
- Output**
Indication of signal level which depends on the set *I/O Profile* (see page 46).
0 = Low
1 = High
- Press key  to arrive the next menu item.
- I/O Status**
Relevant results are counted and registered in RAM memory. The protocols get lost after switching off the device.
- RInt** = Real Interrupts
The start input impulses are counted directly at the Interrupt.
- Dbnc** = Debounced
The start input impulses that are longer than the set debounce time are counted. Only these start impulses can lead to a print. If a start impulse is too short, no print is released. This is recognized by the fact that RInt is counted, Dbnc not.
- NPrn** = Not Printed
The debounced start input impulses that have not lead to a print are counted. Causes: no active print order, print order stopped (manually or because of an error) or the printing system is still active with the processing of a print order.
- PrtStrtReset** = The counters are reset.
- PrtStrtTime** = Measured length of the last start impulse in ms.

Press key  to arrive the next menu item.

Online / Offline

This function is activated e.g. if the transfer ribbon is to be changed. It is avoided that a print order is processed although the module is not ready. If the function is activated then press the key  to change between Online and Offline mode. The respective state is indicated in the display.

Standard: Off

Online: Data can be received by interface. The keys of the foil keyboard are only active, if you changed in the Offline mode with key .

Offline: The keys of the foil keyboard are still active but received data are not processed. If the module is again in Online mode then new print orders can be again received.

Press key  to arrive the next menu item.

Transfer ribbon advance warning

Before the end of transfer ribbon, a signal is send by the control output.

Warning diameter

Setting of transfer ribbon advance warning diameter.

In case you enter a value in mm then a signal appears via control output when reaching this diameter (measured at transfer ribbon roll).

Ribbon advance warning mode

Warning: When reaching the transfer ribbon advance warning diameter, the corresponding I/O output is set.

Reduced print speed: Speed on which the printing speed is to be reduced.

Error: The printing system stops when reaching the transfer ribbon advance warning diameter with the message 'too less ribbon'.

Reduced print speed

Setting of reduced print speed in mm/s. This can be set in the limits of the normal print speed.

Press key  to arrive the next menu item.

Zero point adjustment in Y direction

Indication of value in 1/100 mm.

After replacing the printhead - the print cannot be continued at the same position on the label, the difference can be corrected in printing direction.



NOTICE!

The value for zero point adjustment is set ex works. After replacing the printhead, only service personnel are allowed to set this value anew.

**Zero point adjustment
in X direction**

Press key  to arrive the next menu item.

Indication of value in 1/100 mm.

After replacing the printhead - the print cannot be continued at the same position on the label, the difference can be corrected across the printing direction.

**NOTICE!**

The value for zero point adjustment is set ex works. After replacing the printhead, only service personnel are allowed to set this value anew.

Press key  to arrive the next menu item.

Print length +/-

Indication of print layout correction in percent.

By mechanical influences (e.g. label roll size) the print layout can be printed increased and reduced to its original size.

Value range: +10.0% ... -10.0%

Press key  to arrive the next menu item.

**Write log files to
memory card**

Starting with firmware version 1.70, the printer logs different events internally. In case of service, the error cause can be located faster.

With this command, different log files are saved on an existing storage medium (memory card or USB stick). After the 'Finish' message the storage medium can be removed.

The files are in directory 'log':

LogMemErr.txt: Logged errors with additional information such as date/time and file name/line number (for developers).

LogMemStd.txt: Logging of selected events.

LogMemNet.txt: Data latest send via port 9100.

Parameters.log: All printer parameters in human readable form.


TaskStatus.txt: Status of all printer tasks.

The files *LogMemErr.txt* and *LogMemStd.txt* are written in circle, i.e. old contents are overwritten. The entry logged last is marked with „---“.

6.13 Main Menu

Switch on the print module and the display shows the main menu. The main menu shows information such as device type, current date and time, version number of firmware and the used FPGA.


The selected display is shown for a short time, then the indication returns to the first information.


Press key  to arrive the next information display.


7 Options

7.1 Label Applicator

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *Label applicator* menu.

Press key  to select the menu.

Press key  to change to the next mode.

Operating modes

Stamp on:

The label remains in a fixed position. The label is pressed directly onto the product.

Blow on:

The pad moves to a pre-adjusted position approximately 10 mm away from the product. The label is blown onto the product by an air jet stream. The print and apply cycle performs in a fixed position or in linear movement of the product.

Roll on:

The label is dispensed and moved until touching the roller of the roll on pad. In the labelling position, this roll is pressed onto the product. Then the label is applied and rolled on by the movement of product.

Press key  to arrive the next parameter.

Application mode

The applicator can be operated in two different ways concerning the order of printing and labelling within one labelling cycle.

Print-Apply:

The print of a label is released by an external start signal. At the same time the vacuum on the pad as well as the supporting air from the blow tube are switched on. If the label is printed and picked up completely from tamp, the supporting air is switched off and the lift cylinder is controlled to move the pad down towards the labelling position. A sensor signals when the labelling position is reached.

Following, the vacuum is switched off and the label is transferred to the product. After applying the label, the lift cylinder is so controlled that the pad is again moved back to the starting position.

Now the labelling cycle is finished.

Apply-Print:

Before starting the cyclic operation 'apply-print', the printing and picking up of the first label has to be released separately by a special signal.

The pad with the printed label is in starting position and the vacuum at the pad is switched on.

At start of the cyclic operation when sending the start signal, the first label is already on the pad. The following process is similar to the mode 'print-apply' but at the end of the cycle the next label is printed and picked up by the pad.

Now the labelling cycle is finished.

Press key  to arrive the next parameter.

Vacuum delay

The vacuum is connected not immediately with print start, but only if the label were put forward a certain time. This delay causes that the label runs more easily under the pad as it is not sucked and in this way braked.

Value range: 0 ... 2500 ms

Step size: 10 ms

Default: 0 ms

Press key  to arrive the next parameter.

Support delay On

The supporting air from the blow tube is not immediately switched on at print start but only if the label has covered a distance.

This delay helps to prevent a turning or swinging at the front of the label and consequently avoids faults when the label is being picked up from print module.

Value range: 0 ... 2500 ms

Step size: 0 ms

Default: 0 ms

Press key  to arrive the next parameter.

Support delay Off

Delayed to the process of the label being picked up, the supporting air is switched off.

In many cases, after being picked up by the pad the label edge may still stick on the liner. This may affect the accuracy of the label positioning or even cause faults in the labelling. Therefore, switching off the air blow delayed can be useful to separate the label from liner and neatly place the label on the surface of pad.

Value range: 0 ... 2500 ms

Step size: 10 ms

Default: 500 ms

Press key  to arrive the next parameter.

Pressure control

With activated compressed air control, with help from a compressed air sensor it is checked at each labelling cycle if the compressed air fits with the valve block. If no compressed air is presented, the labelling cycle is stopped and the error message 'compressed air' is displayed.

If the parameter 'pressure control' is set to Off, the error treatment as described above will not be effected. This can be especially helpful at initiation of the labelling system.

For standard operation, set the parameter to On..

Press key  to arrive the next parameter.

Vacuum control

The label transfer from print module to applicator is controlled by a vacuum sensor. If the transfer of label fails, the sucking holes on the pad will not be covered by the label and therefore no vacuum can originate on the pad. Afterwards an error message appears and the label strip will be fed back.

If the parameter 'vacuum control' is set to Off, the error treatment as described above will not be effected. This can be especially helpful during adjustments, because the immediate backfeed will be cancelled and therefore it is easier to check the reasons for the faulty transfer.

For standard operation, set the parameter to On.

Press key  to arrive the next parameter.

Pressure time

This parameter is only active if the operating mode 'stamp on' is selected. The time period can be adjusted while the stamp is kept in the labelling position for applying the label onto the goods.

Press key  to arrive the next parameter.

Blow time

This parameter is only active if the operating mode 'blow on' is selected. The time period can be adjusted, while the blowing air is switched on for transferring the label onto product.

Value range: 0 ... 2500 ms

Step size: 10 ms

Default: 100 ms

Press key  to arrive the next parameter.

Waiting position

This parameter is only active if the operating mode 'blow on' and mode 'apply-print' are selected.

Waiting position up:

In cyclic mode the pad with the printed label waits in the labelling position near the dispense edge of print module for the external start signal.

Waiting position down:

In cyclic mode the printed label is transported to the labelling position at the end of a cycle.

So the next cycle begin with blowing up the label.

Press key  to arrive the next parameter.

Roll on time

This parameter is only active if the operating mode 'blow on' is selected. The time period can be adjusted while the roll on pad is stopped in labelling position.

Value range: 0 ... 5000 ms

Step size: 10 ms

Default: 0 ms

Press key  to arrive the next parameter.







Cleaning time

This parameter is only active if the operating mode 'blow on' and 'roll on' are selected. The time period can be adjusted for the cleaning period of pad after application procedure.

Value range: 0 ... 2500 ms





Step size: 10 ms

Default: 100 ms

- Press key  to arrive the next parameter.
- Stroke timeout**
 Moving up and down of pad.
 If the pad does not reach the corresponding final position within the set time, then an error message appears ('final position above' at moving up and/or 'final position below' at moving down).
 Value range: 0 ... 5000 ms
 Step size: 10 ms
 Default: 0 ms
- Press key  to arrive the next parameter.
- Quick-Apply delay**
Only with available option quick-apply:
 With this function, the travel speed of the cylinder may be reduced before it hits the product. The time until the delay commences may be set. The exhaust throttle (bottom) on the cylinder must be opened completely for this.
 Value range: 0 ... 2500 ms
 Step size: 10 ms
 Default: 0 ms
- Press key  to arrive the next parameter.
- Transverse axis**
Only with available option transverse axis:
 This function allows you to set if the pad makes a transversal movement before the upwards movement, and/or accordingly after the upwards movement back into the print position.
 If the parameter 'transverse axis' is set to On, in each case a transverse movement takes place. At setting Off, no transversal movement takes place and the application procedure begins in the print position.
- Press key  to arrive the next parameter.
- Labelling signal**
 If printing and applying of the label are to separately released, a separate signal for applying the label can be activated (port 4, start applying).
Off:
 No labelling signal is used, i.e. after printing the label and takeover onto the pad, the applying procedure begins immediately.
Print position:
 After printing the label and takeover onto the pad, the printer waits in print position for the labelling signal.
Labelling position:
 After printing the label and takeover onto the pad, the pad makes a transversal movement into the labelling position. There the printer waits for the labelling signal. With applicators without transversal axis, this setting is identical with the setting 'print position'.
- Press key  to arrive the next parameter.
- Test functions**
Stroke adjust
 The arrester can be adjusted and the stroke speed can be set. The pad makes a stroke movement and return again to the basic position after reaching the lower end position.
- Press key  to start the stroke movement.

Input/Output

Press key  to arrive the next parameter.

This menu serves for the applicator setup as well as for error tracing. Input signals of the applicator can be monitored and output signals can be set or reset separately. With keys  and  the corresponding output for setting and/or resetting the output signals can be selected. With keys  and  the corresponding output can be set or reset.

Input signals


- I₁ = Pre-dispense key
 - 1 = key pressed
 - 0 = key not pressed
- I₂ = Final position up
 - 1 = pad in final position up
 - 0 = pad not in final position up
- I₃ = Final position down
 - 1 = pad in final position down
 - 0 = pad not in final position down
- I₄ = Compressed air
 - 1 = compressed air available
 - 0 = no compressed air available
- I₅ = Vacuum
 - 1 = vacuum at pad available
 - 0 = no vacuum at pad available
- I₆ = Final position right
 - 1 = pad in final position right
 - 0 = pad not in final position right
- I₇ = Final position left
 - 1 = pad in final position left
 - 0 = pad not in final position left


Output signal


- O₁ = Move pad downwards
 - 1 = On / 0 = Off
- O₂ = Move pad upwards
 - 1 = On / 0 = Off
- O₃ = Transverse right
 - 1 = On / 0 = Off
- O₄ = Transverse left
 - 1 = On / 0 = Off
- O₅ = Blowing air
 - 1 = On / 0 = Off
- O₆ = Supporting air
 - 1 = On / 0 = Off
- O₇ = Vacuum
 - 1 = On / 0 = Off

7.2 WLAN

Switch on the print module and the display shows the main menu.

Press key  to access the function menu.

Press key  as long as you arrive the *WLAN* menu.

Press key  to select the menu.

The menu item *WLAN* can only be selected if a *WLAN* card was recognized at switching on the print module.

For more information, please see the separate manual.

8 Compact Flash Card / USB Memory Stick

8.1 General Information

On the back side of the label printer is the slot for the CF card and the USB port for inserting the USB memory stick.

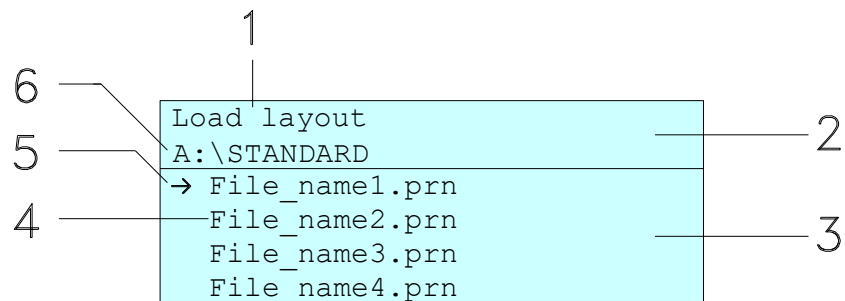
The mass storage menu (memory menu) permits the access to CF cards or USB memory sticks attached to the printer. Among loading and saving labels simple operations of contents are possible such as delete files/directories, copy files/directories or formatting.



NOTICE!

In case of a malfunction of the original memory medium it is recommend to copy the most important data by means of a commercial Card Reader.

8.2 Display Structure



1 = Current function

2 = 2-lined header

3 = Scroll range

4 = File names / directory names

5 = Marking of the selected file (cursor)

6 = Current path (drive:\directory)

The two-line header (2) contains the current function name (1) and the current path (6).

The four-line scroll range indicates a list of files/directories. The first entry (marked with an arrow) is the active one. To this file/directory and/or these files/directories refer all actions.



NOTICE!

Three drives are available.

A:\ indicates the CF card.



















U:\ indicates the USB memory stick.

(only one stick can be inserted)

R:\ indicates the RAM (ZPL Emulation).

8.3 Navigation

The memory menu is operated with the keys of the foil keyboard of the control unit or with different function keys of an attached USB keyboard.

		Return to the previous menu.
		Function <i>Load layout</i> : Change to the File Explorer. File Explorer: Change to the 'context menu'.
		Select a file/directory if a multiple selection is possible.
		Main menu: Access to the memory menu. File Explorer: Create a new file.
		Start the current function for the active file/directory.
		Change to the superordinate directory.
		Change to the currently marked directory.
		In the current directory scroll upwards.
		In the current directory scroll downwards.

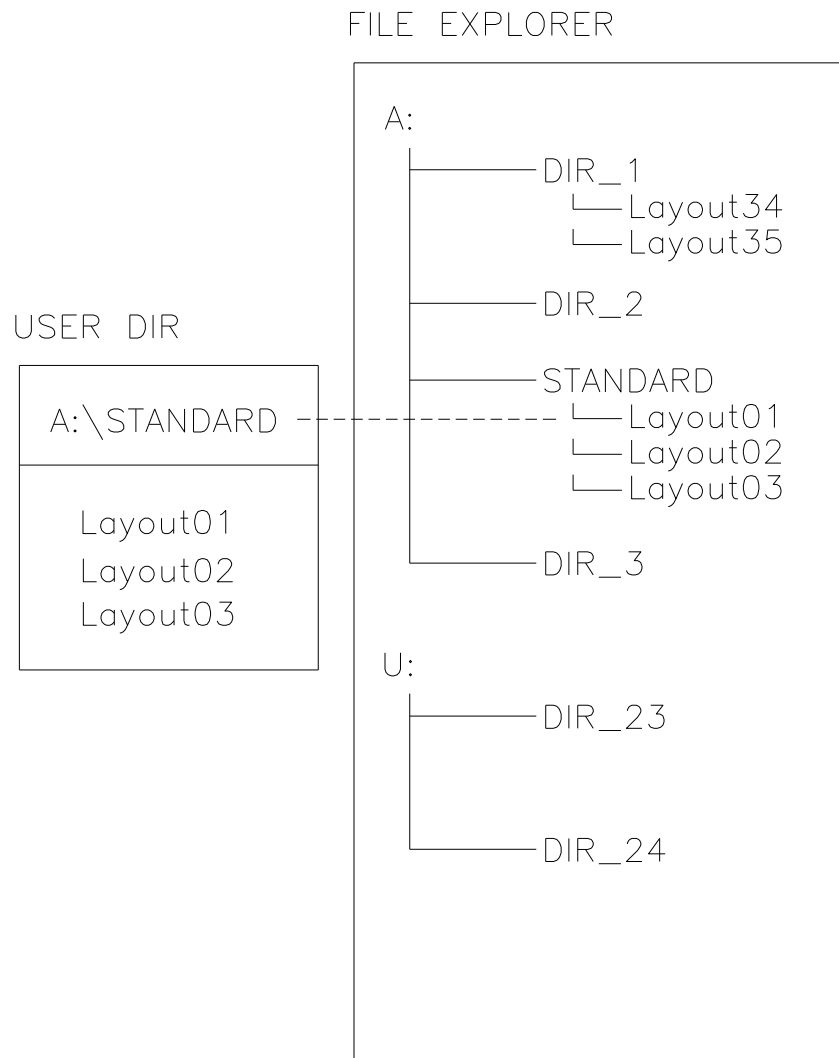
8.4 Define User Directory




NOTICE!


An user directory is to be defined:

- before using and/or navigating through the memory menu.
- if formatting of CF card is effected at PC and thus the STANDARD directory was not created automatically.




The user directory is the root directory in which the user saves usually the most frequently used files/layouts. The utilisation of the user directory permits the quick and direct access to the files saved in the defined user directory. The definition of an user directory saves thus a long search of the file to be printed.


Press key  to access to the memory menu.

Press key  to call the File Explorer.

<pre>File Explorer A:\ [Drives] -><STANDARD> <DIR_1></pre>	<pre>Context Menu A: ->Set as user dir Format Copy</pre>
--	---

Press keys , , ,  to select the directory.

Press key  to display all available functions.

Select the function *Set as user dir* and press key  to confirm the selection.


Press key  as long as the printer returned to the main menu.





At the next start of the memory menu the selected directory is displayed as user directory.


8.5 Load Layout

Loads a layout within a defined user directory. The function allows quick access to the desired layout as only layout files are displayed and directories hidden.

```
Load layout
A:\STANDARD
->File_name1.prn
File_name2.prn
File_name3.prn
File_name4.prn
```


Press key  to access to the memory menu.

Press keys , , ,  to select the layout to be printed.

Press key  to confirm the selection.

The printer display shows automatically the window to insert the number of copies which are to print.

Select the number of copies which are to be printed.

Press key  to start the print order.



NOTICE!

The directory CANNOT be changed here. A change of directory MUST be made in the File Explorer with the function *Change directory*.

8.6 File Explorer

The File Explorer is the file manager of the printing system. The File Explorer provides the main functions for the user interface of memory menu.

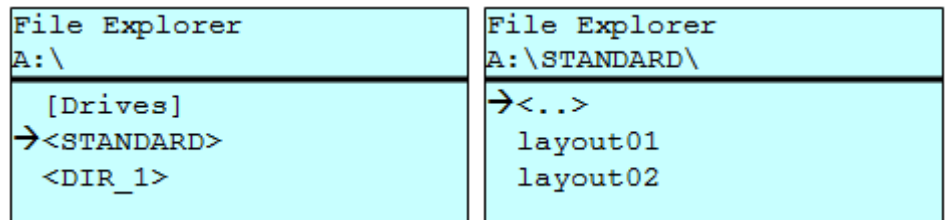
In the user directory, press key **F** to access to the File Explorer.

Following functions are available:

- Change drive and/or directory
- Load file
- Save layout and/or configuration
- Delete file(s)
- Format CF card
- Copy file(s)

Change drive/directory

Selection of drive and/or directory in which the files are saved.



Press key **□** to access to the memory menu.

Press key **F** to call the File Explorer.

Press keys **▲**, **▼**, **◀**, **▶** to select the directory.


Press key **●** to confirm the selection.


The selected directory is now displayed.

Load file


Loads a file. This can be a configuration saved before, a layout, etc.

```
Load file
A:\STANDARD\
<..>
->layout01
   layout02
```

Press key  to access to the memory menu.

Press key  to call the File Explorer.

Press keys  and  to select the file.


Press key  to load the selected file.


If the selected file is a layout, then the number of copies to print can be entered immediately.


Save layout


Saves the currently loaded layout under the selected name.

```
Save file
A:\STANDARD
->Save layout
   Save config.
noname
```

Press key  to access to the memory menu.

Press key  to call the File Explorer.

Press key  to change to the menu *Save file*.


Select the function *Save layout* and confirm the selection with key .


If an USB keyboard is attached a new file name for *noname* can be assigned.


Save configuration


Saves the complete, current printer configuration under the selected name.

```
Save file
A:\STANDARD
-----
Save layout
→ Save config.
-----
config.cfg
```

Press key  to access to the memory menu.

Press key  to call the File Explorer.

Press key  to change to the menu *Save file*.


Select the function *Save configuration* and confirm the selection with key .


If an USB keyboard is attached a new file name for *config.cfg* can be assigned.

Delete file(s)


Deletes one or more files and/or directories irrevocably. With the deletion of a directory both the contained files and the subdirectories are deleted.


File Explorer A:\STANDARD\ ----- layout01 *	Context menu 2 objects marked ----- → Delete Copying
→ layout02 *	
layout03	
layout04	

Press key  to access to the memory menu.

Press key  to call the File Explorer.

Press keys  and  to select the file.

Press key  to mark the files which are to be deleted. The marked entries are listed with *. Repeat this procedure until all desired files and/or directories are marked for deletion.

Press key  to call the context menu.

Select the function *Delete* and confirm the selection with key .

**NOTICE!**

The deleting procedure is irreversible!

Formatting


Formats irrevocably the memory card.




NOTICE!


USB sticks cannot be formatted at the printer!


File Explorer DRIVES	Context menu A:\
→A: 954Mb free U: No media	Set as user dir →Formatting Copy

Press key  to access to the memory menu.

Press key  to call the File Explorer.

Select the drive which is to format with the navigation keys.


Press key  to call the context menu.


Select the function *Format* and confirm the selection with key .

Copying


Creates a duplicate of the original file and/or the original directory to make changes independently of the original.


File Explorer A:\STANDARD\ layout01 * → layout02 * layout03 layout04	Context menu 2 objects marked Delete → Copying
---	---

Press key  to access to the memory menu.

Press key  to call the File Explorer.


Press keys  and  to select the file.

Press key  to mark the files which are to be copied. The marked entries are listed with *. Repeat this procedure until all desired files and/or directories are marked for copying.

Press key  to call the context menu.

Select the function *Copy* and confirm the selection with key .

Select Destination DRIVES → A: 954Mb free

Select the target storage with the navigation keys and press key  to confirm the selection.

8.7 Firmware Update

Starting from firmware version 1.58 it is possible to make a firmware update also via the memory menu. Both the USB stick as well as the CF card can be used for this.

Procedure

On the CF card / USB memory stick a directory is created in which the necessary update files are stored (firmware.prn, data.prn). By means of the function *Load file* the file *firmware.prn* is selected/loaded. In the first step the printer executes the firmware update. After the necessary restart automatically the file *data.prn* is loaded. In this way the remaining components were updated. is After a renewed restart the update procedure is finished.

8.8 Filter

For certain functions a filter mask or a file name of a file which is to be saved can be entered. This input is indicated in the path line. It is possible with the filter mask to look for certain files. For example, with the input of 'L' only the files are listed whose character string starts with 'L' (regardless of upper and lower cases).

Without filter

```
Load layout
A:\STANDARD
→First_file.prn
  Layout_new.prn
  Sample.prn
  12807765.prn
```

With filter

```
Load layout
L
→Layout_new.prn
```


9 Maintenance and Cleaning



DANGER!

Risk of death by electric shock!

⇒ Before opening the housing cover, disconnect the printing system from the mains supply and wait for a moment until the power supply unit has discharged.



NOTICE!

When cleaning the label printer, personal protective equipment such as safety goggles and gloves are recommended.

Maintenance schedule

Maintenance task	Frequency
General cleaning (see section 9.1, page 74).	As necessary.
Cleaning transfer ribbon drawing roller (see section 9.2, page 75).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Cleaning print roller (see section 9.3, page 75).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Cleaning printhead (see section 9.4, page 76).	<p>Direct thermal printing: Each time the label roll is changed.</p> <p>Thermal transfer printing: Each time the transfer ribbon is changed or when the printout is adversely affected.</p>
Cleaning label photocell (see section 9.5, page 77).	When exchanging the label roll.
Replacing printhead (see section 9.6, page 78).	In case of errors in printout.



NOTICE!

The handling instructions for the use of Isopropanol (IPA) must be observed. In the case of skin or eye contact, immediately wash off the fluid thoroughly with running water. If the irritation persists, consult a doctor. Ensure good ventilation.

**WARNING!**

Risk of fire by easily inflammable label soluble!

- ⇒ When using label soluble, dust must be completely removed from the print module and cleaned.

9.1 General Cleaning

**CAUTION!**

Abrasive cleaning agents can damage the print module!

- ⇒ Do not use abrasives or solvents to clean the outer surface of the print module.
- ⇒ Remove dust and paper fuzz in the printing area with a soft brush or vacuum cleaner.
- ⇒ Clean outer surfaces with an all-purpose cleaner.

9.2 Cleaning the Transfer Ribbon Drawing Roller

A soiled print roll can lead to reduced print quality and can affect transport of material.

1. Open cover of printing system.
2. Remove labels and transfer ribbon from the printing system.
3. Remove deposits with roller cleaner and a soft cloth.
4. If the roller appears damaged, replace it.

9.3 Cleaning the Printer Roller

**CAUTION!**

Print roller can be damaged!

⇒ Do not use sharp or hard objects to clean the print roller.

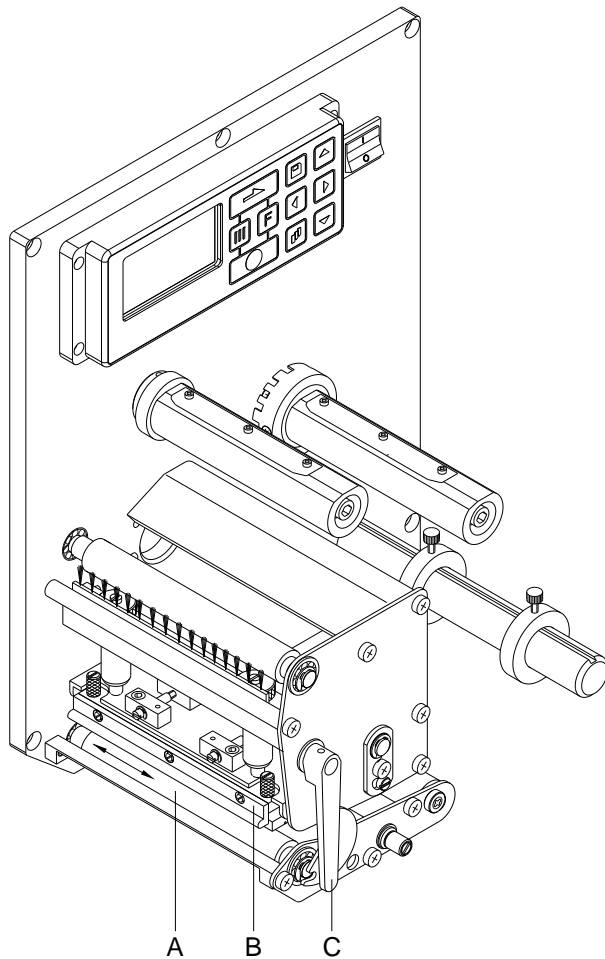


Figure 15

A soiled print roll can lead to reduced print quality and can affect transport of material.

1. Open print module cover.
2. Turn red lever (C) counter clockwise to lift up the printhead (B).
3. Remove labels and transfer ribbon from the print module.
4. Remove deposits with roller cleaner and a soft cloth.
5. Turn the roller (A) manually step by step to clean the complete roller (only possible when print module is switched off, as otherwise the step motor is full of power and the roller is kept in its position).

9.4 Cleaning the Printhead

Printing can cause accumulation of dirt at printhead e.g. by colour particles of transfer ribbon, and therefore it is necessary to clean the printhead in regular periods depending on operating hours, environmental effects such as dust etc.



CAUTION!

Printhead can be damaged!

- ⇒ Do not use sharp or hard objects to clean the printhead.
- ⇒ Do not touch protective glass layer of the printhead.

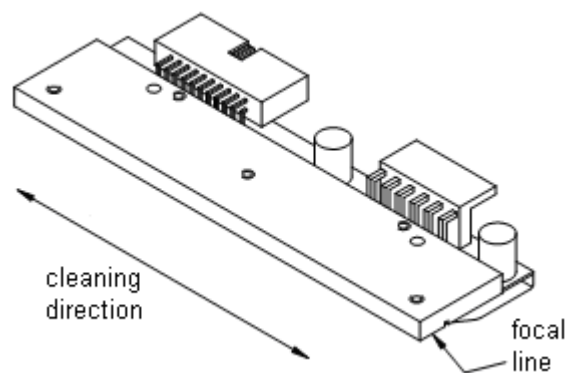


Figure 16

1. Open the print module cover.
2. Turn the red lever (B, in Figure 15) anticlockwise to lift up the printhead.
3. Remove labels and transfer ribbon.
4. Clean printhead surface with special cleaning pen or a cotton swab dipped in pure alcohol.
5. Allow printhead to dry for 2-3 minutes before commissioning the print module.

9.5 Cleaning the Label Photocell



CAUTION!

Label photocell can be damaged!

⇒ Do not use sharp or hard objects or solvents to clean the label photocell.

The label photocell can become dirtied with paper dust and this can adversely affect label detection.

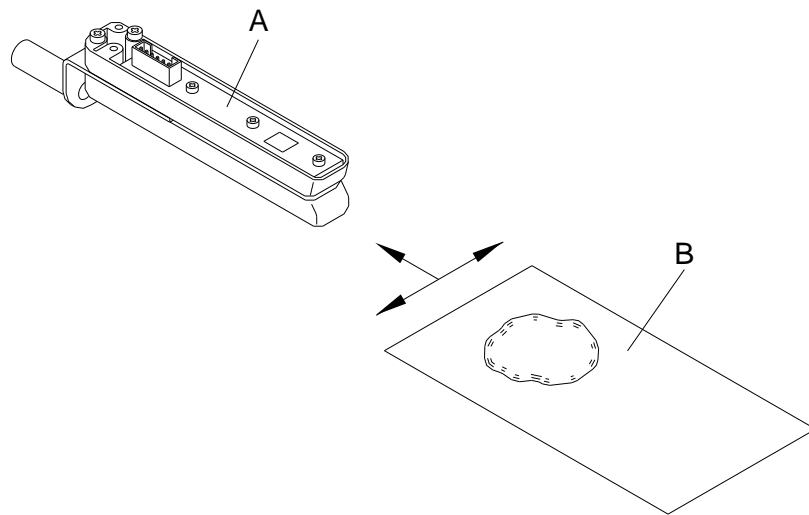


Figure 17

1. Open print module cover.
 2. Turn red lever counter clockwise to lift up the printhead.
 3. Remove labels and transfer ribbon from the print module.
 4. Blow out the photocell (A) with pressure gas spray. Observe strictly the instructions on the spray can!
 5. Clean the label photocell (A) additionally with a cleaning card (B) before soaked in pure alcohol. Move the cleaning card from one side to the other (see illustration).
 6. Reload the labels and transfer ribbon (see chapter 5 Loading Media, page 29).
- 1.

9.6 Replacing the Printhead (General Information)

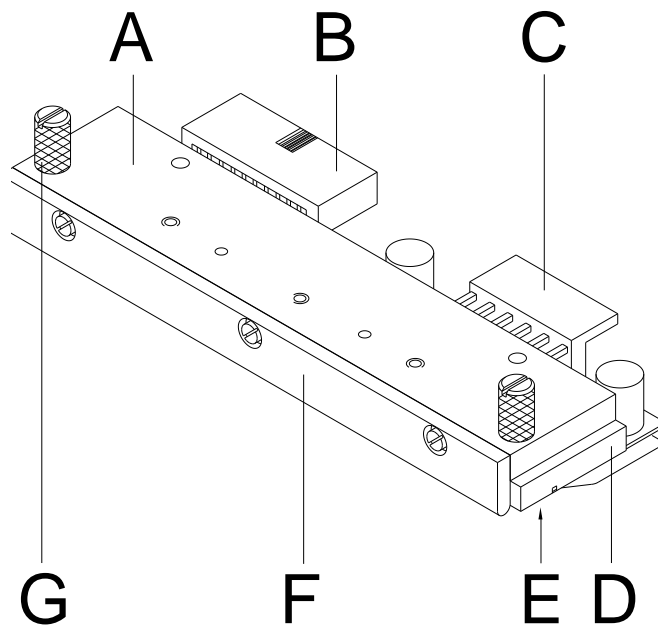


Figure 18

- A Head plate
- B Plug connection
- C Plug connection
- D Printhead
- E Focal line
- F Guiding
- G Knurled screw



CAUTION!

The printhead can be damaged by static electricity discharges and impacts!

- ⇒ Set up print module on a grounded, conductive surface.
- ⇒ Ground your body, e.g. by wearing a grounded wristband.
- ⇒ Do not touch contacts on the plug connections (B, C).
- ⇒ Do not touch printing line (E) with hard objects or your hands.

9.7 Replacing the Printhead

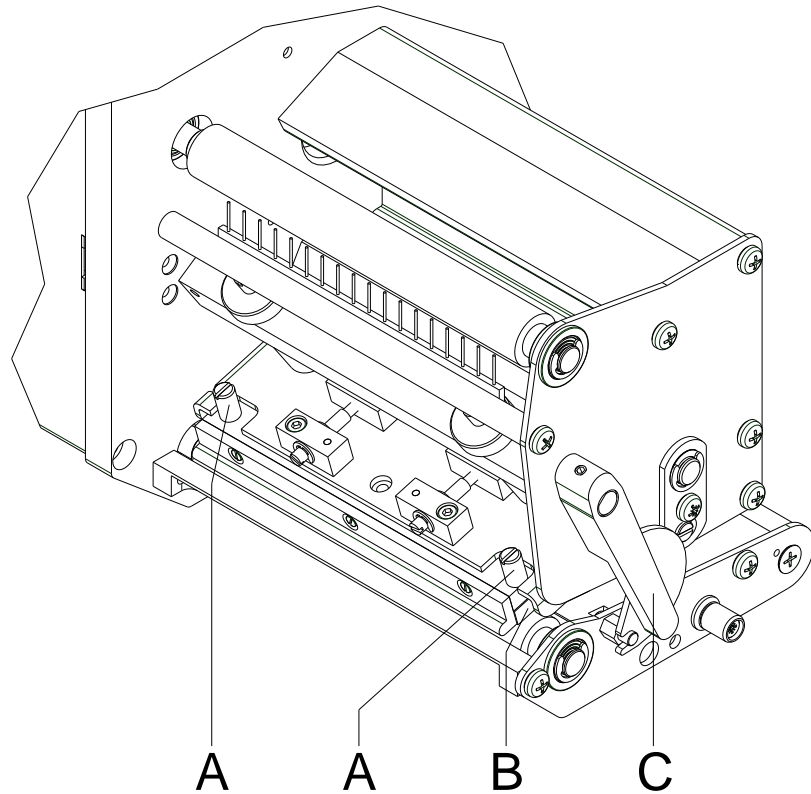


Figure 19

Removing the printhead

1. Remove labels and transfer ribbon.
2. When printhead is closed, loosen the knurled screws (A).
3. Turn red lever (C) counter clockwise to lift up the printhead.
4. If the printhead (B) is not disengaged on the pressure roller, continue loosen the knurled screws (A).
5. Remove the printhead carefully to the front until you can reach the plug connections.
6. Remove plug connections and then remove printhead (B).

Installing the printhead

1. Attach plug connections.
2. Position printhead (B) in the intermediate layer in such a way that the printhead drillings correspond with the appropriate drillings in the intermediate layer.
3. Lightly keep printhead mounting bracket on the printer roller with one finger and check for correct positioning of the printhead.
4. Screw in the knurled screws (A) and tighten them.
5. Reload labels and transfer ribbon (see chapter 5 Loading Media, page 29).
6. Check resistance value on the type plate of printhead and if necessary change the value in the menu *Service functions/Heater resistance*.

9.8 Adjusting Printhead

Parallelism

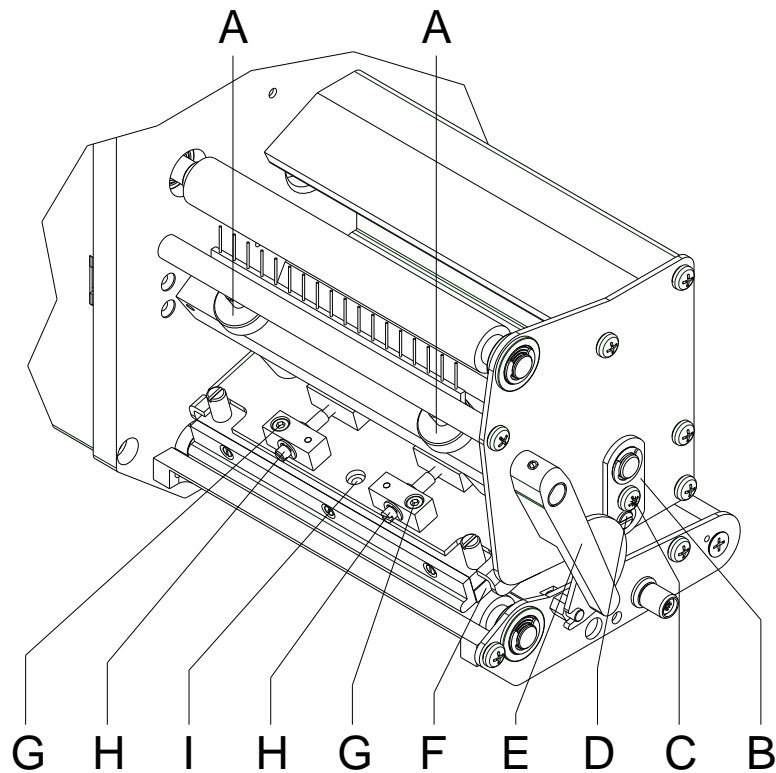


Figure 20



NOTICE!

An important characteristic for a high quality print is the parallelism of the focal line of the thermal printhead to the pressure roll. Because of the fact that the position of focal line of the printhead depends on fluctuations caused by production, it is necessary to adjust the parallelism.

1. With the screws (D) the parallelism of the focal line of printhead to the pressure roller can be aligned. Turning clockwise moves the printhead backward.
2. Start a test print.
3. If the horizontal lines in the test grid are not parallel with the label edges, continue adjusting the parallelism with the screws (D).
4. Set the best possible image quality by maintaining parallelism via turning the screws (D) in an alternating fashion. Differences in the density between the two sides are still permissible.
5. Tighten again the fixing screws (G).

**Pressure balance
right/left****NOTICE!**

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (F) you can set the balance.

1. Loosen screw (G) with a screwdriver by approx. ¼ rotations.
2. In order to achieve a pressure balance, turn the eccentric bolt (H) as long as the printing result comes up to your full expectation.
3. Tighten again screw (G).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure**NOTICE!**

Change the head contact pressure with the screws (A) at the inside and outside of the printhead. Increasing the head contact pressure leads to an improvement of the print image density on the corresponding side and to a shifting of the ribbon feed path in the corresponding direction.

**CAUTION!**

Damage of printhead by unequal use!

⇒ Change factory settings only in exceptional cases.

The selection of the smallest value can optimise the life cycle of printhead.

1. Turn the pressure screws (A, Figure 20) to change the pressure of printhead.
2. Turning of pressure screws (A, Figure 20) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory settings.
3. Turning of pressure screws (A, Figure 20) exactly one rotation from the right stop position counter clockwise results in the factory settings.

**NOTICE!**

It is importantly that the knurled button which is coated with protective lacquer is not removed from the pressure screw as otherwise the above mentioned settings are faulty.

10 Error correction

Error message	Cause	Remedy
1 Line too high	Line rises up completely or partly over the upper edge of label.	Move line down (increase Y value). Check rotation and font.
2 Line too low	Line rises up completely or partly over the bottom edge of label.	Move line up (reduce Y value). Check rotation and font.
3 Character set	One res. several characters of the text is res. are not available in the selected font.	Change text. Change font.
4 Unknown code type	Selected code is not available.	Check code type.
5 Invalid position	Selected position is not available.	Check position.
6 CV font	Selected font is not available.	Check font.
7 Vector font	Selected font is not available.	Check font.
8 Measuring label	While measuring no label was found. Set label length is too large.	Check label length and if labels are inserted correctly. Restart measuring anew.
9 No label found	No label available. Soiled label photocell. Labels not inserted correctly.	Insert new label roll. Check if labels are inserted correctly. Clean the label photocell.
10 No ribbon	During the print order the ribbon roll becomes empty. Defect at the transfer ribbon photocell.	Change transfer ribbon. Check transfer ribbon photocell (service functions).
11 COM FRAMING	Stop bit error.	Check stop bits. Check baud rate. Check cable (printer and PC).
12 COM PARITY	Parity error.	Check parity. Check baud rate. Check cable (printer and PC).
13 COM OVERRUN	Loss of data at serial interface (RS-232).	Check baud rate. Check cable (printer and PC).

Error message	Cause	Remedy
14 Field numer	Received line number is invalid at RS-232 + parallel interface.	Check sent data. Check connection PC - printer.
15 Length mask	Invalid length of received mask statement.	Check sent data. Check connection PC - printer.
16 Unknown mask	Transferred mask statement is invalid.	Check sent data. Check connection PC - printer.
17 Missing ETB	No end of data found.	Check sent data. Check connection PC - printer.
18 Invalid character	One res. several characters of the text is res. are not available in the selected font.	Change text. Change font.
19 Invalid statement	Unknown transferred data record.	Check sent data. Check connection PC - printer.
20 Invalid check digit	For check digit control the entered res. received check digit is wrong.	Calculate check digit anew. Check code data.
21 Invalid SC number	Selected SC factor is invalid for EAN res. UPC.	Check SC factor.
22 Invalid number of digits	Entered digits for EAN res. UPC are invalid < 12; > 13.	Check number of digits.
23 Check digit calculation	Selected check digit calculation is not available in the bar code.	Check calculation of check digit. Check bar code type.
24 Invalid extension	Selected zoom factor is not available.	Check zoom factor.
25 Offset sign	Entered sign is not available.	Check offset value.
26 Offset value	Entered offset value is invalid.	Check offset value.
27 Printhead temperature	Printhead temperature is too high. Defective printhead sensing device.	Reduce contrast. Change printhead.
28 Cutter error	With cut an error occurred. Paper jam.	Check label run. Check cutter run.
29 Invalid parameter	Entered data do not correspond to the characters allowed from the application identifier.	Check code data.

Error message	Cause	Remedy
30 Application Identifier	Selected application identifier is not available in GS1-128.	Check code data.
31 HIBC definition	F Missing HIBC system sign. Missing primary code.	Check definition of HIBC code.
32 System clock	Real Time Clock function is selected but the battery is empty. Defective RTC.	Change battery. Change RTC component.
33 No CF interface	Interrupted connection CPU - CF card. Defective CF card interface.	Check connection CPU - CF card interface. Check CF card interface.
34 No print memory	No print CF found.	Check CF assembly on CPU.
35 Printhead open	At start of a print order the printhead is open.	Close the printhead and start print order anew.
36 BCD invalid format	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
37 BCD overflow	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
38 BCD division	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
39 FLASH ERROR	Flash component error.	Run a software update. Change CPU.
40 Length command	Invalid length of the received command statement.	Check data sent. Check connection PC - printer.
41 No drive	CF card not found / not correctly inserted.	Insert CF card correctly.
42 Drive error	Impossible to read CF card (faulty).	Check CF card, if necessary change it.
43 Not formatted	CF Card not formatted.	Format CF card.
44 Delete current directory	Attempt to delete the actual directory.	Change directory.
45 Path too long	Too long indication of path.	Indicate a shorter path.

Error message	Cause	Remedy
46 Drive write-protected	Memory card is write-protected.	Deactivate write protection.
47 Directory not file	Attempt to indicate a directory as file name.	Correct your entry.
48 File already open	Attempt to change a file during an access is active.	Select another file.
49 No file/directory	File does not exist on CF card.	Check file name.
50 Invalid file name	File name contains invalid characters.	Correct entry of name, remove special characters.
51 Internal file error	Internal file system error.	Please contact your distributor.
52 Root full	The max. number (64) of main directory entries is reached.	Delete at least one main directory entry and create subdirectories.
53 Drive full	Maximum CF capacity is reached.	Use new CF Card, delete no longer required files.
54 File/directory exists	The selected file/directory already exists.	Check name, select a different name.
55 File too large	During copying procedure not enough memory space onto target drive available.	Use a larger target card.
56 No update file	Errors in update file of firmware.	Start update file anew.
57 Invalid graphic file	The selected file does not contain graphic data.	Check file name.
58 Directory not empty	Attempt to delete a not empty directory.	Delete all files and sub-directories in the desired directory.
59 No interface	No CF card drive found.	Check connection of CF card drive. Contact your distributor
60 No CF card	No CF card is inserted.	Insert CF card in the slot.
61 Webserver error	Error at start of web server.	Please contact your distributor.
62 Wrong FPGA	The direct print module is equipped with the wrong FPGA.	Please contact your distributor.
63 End position	The label length is too long. The number of labels per cycle is too much.	Check label length res. the number of labels per cycle.

Error message	Cause	Remedy
64 Zero point	Defective photocell.	Change photocell.
65 Compressed air	Pressure air is not connected.	Check pressure air.
66 External releaser	External print release signal is missing.	Check input signal.
67 Row too long	Wrong definition of column width res. number of columns.	Reduce the column width res. correct the number of columns.
68 Scanner	The connected bar code scanner signals a device error.	Check the connection scanner/printer. Check scanner (dirty).
69 Scanner NoRead	Bad print quality. Printhead completely soiled or defective. Print speed too high.	Increase contrast. Clean printhead or exchange (if necessary). Reduce print speed.
70 Scanner data	Scanned data does not correspond to the data which is to print.	Exchange printhead.
71 Invalid page	As page number either 0 or a number > 9 is selected.	Select a number between 1 and 9.
72 Page selection	A page which is not available is selected.	Check the defined pages.
73 Page not defined	The page is not defined.	Check the print definition.
74 Format user guiding	Wrong format for customised entry.	Check the format string.
75 Format date/time	Wrong format for date/time.	Check the format string.
76 Hotstart CF	No CF card found.	If option hotstart was activated, a CF card must be inserted. Switch off the printer before inserting the memory card.
77 Flip/Rotate	Selection of print of several columns and also mirror/rotate.	It is only possible to select one of both functions.
78 System file	Loading of temporary hotstart files.	Not possible.
79 Shift variable	Faulty definition of shift times (overlapping times).	Check definition of shift times.
80 GS1 Databar	General GS1 Databar error.	Check definition and parameter of GS1 Databar code.
81 IGP error	Protocol error IGP.	Check sent data.

Error message	Cause	Remedy
82 Time generation	Printing creation was still active at print start.	Reduce print speed. Use printers' output signal for synchronisation. Use bitmap fonts to reduce generating time.
83 Transport protection	Both DPM position sensors (start/end) are active.	Displace zero point sensor Check sensors in service functions menu
84 No font data	Font and web data is missing.	Run a software update.
85 No layout ID	Label ID definition is missing.	Define label ID onto the label.
86 Layout ID	Scanned data does not correspond to defined ID.	Wrong label loaded from CF card.
87 RFID no label	RFID unit cannot recognise a label.	Displace RFID unit or use an offset.
88 RFID verify	Error while checking programmed data.	Faulty RFID label. Check RFID definitions
89 RFID timeout	Error at programming the RFID label.	Label positioning. Faulty label.
90 RFID data	Faulty or incomplete definition of RFID data.	Check RFID data definitions.
91 RFID tag type	Definition of label data does not correspond with the used label.	Check storage partitioning of used label type
92 RFID lock	Error at programming the RFID label (locked fields).	Check RFID data definitions. Label was already programmed.
93 RFID programming	Error at programming the RFID label.	Check RFID definitions.
94 Scanner timeout	The scanner could not read the bar code within the set timeout time.	
	Defective printhead. Wrinkles in transfer ribbon. Scanner wrong positioned. Timeout time too short.	Check printhead. Check transfer ribbon. Position scanner correctly, corresponding to the set feeding. Select longer timeout time.

Error message	Cause	Remedy
95 Scanner layout difference	Scanner data does not correspond to bar code data.	Check adjustment of scanner. Check scanner settings / connection.
96 COM break	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
97 COM general	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
98 No software printhead FPGA	No printhead-FPGA data available.	Please contact your responsible distributor.
99 Load software printhead FPGA	Error when programming printhead-FPGA.	Please contact your responsible distributor.
100 Upper position	Option applicator Sensor signal up is missing.	Check input signals / compressed-air supply.
101 Lower position	Option applicator Sensor signal down is missing.	Check input signals / compressed-air supply.
102 Vacuum plate empty	Option applicator Sensor does not recognise a label at vacuum plate.	Check input signals / compressed-air supply.
103 Start signal	Print order is active but device not ready to process it.	Check start signal.
104 No print data	Print data outside the defined label. Selection of wrong module type (design software).	Check selected module type. Check selection of left/right version.
105 Printhead	No original printhead is used.	Check the used printhead. Contact your distributor.
106 Invalid Tag type	Wrong Tag type. Tag data do not match the Tag type in the printer.	Adapt data or use the correct Tag type.
107 RFID invalid	RFID module is not activated. No RFID data can be processed.	Activate RFID module or remove RFID data from label data.
108 GS1-128 invalid	Transferred GS1-128 bar code is invalid.	Verify bar code data (see GS1-128 bar code specification).
109 EPC parameter	Error at EPC calculation.	Verify data (see EPC specification).

Error message	Cause	Remedy
110 Housing open	When starting the print order the housing cover is not closed.	Close the housing cover and start the print order anew.
111 EAN.UCC code	Transferred EAN.UCC code is invalid.	Verify bar code data (see corresponding specification).
112 Print carriage	Printing carriage does not move.	Check gear belt (possibly broken).
113 Applicator error	Option applicator Error while using applicator.	Check applicator.
114 Left position	Option applicator Left final position switch is not in correct position.	Check LEFT final position switch for correct function and position. Check function of pneumatics for cross traverse.
115 Right position	Option applicator Right final position switch is not in correct position.	Check RIGHT final position switch for correct function and position. Check function of pneumatics for cross traverse.
116 Print position	Option applicator The print position is not correct.	Check TOP and RIGHT final position switch for correct function and position. Check pneumatics for function
117 XML parameter	The parameters in the XML file are not correct.	Please contact your responsible distributor.
118 Invalid variable	Transferred variable is invalid with customized entry.	Select correct variable without customized entry and transfer it.
119 No ribbon	During the print order the ribbon roll becomes empty. Defect at the transfer ribbon photocell.	Change transfer ribbon. Check transfer ribbon photocell (service functions).
120 Wrong directory	Invalid target directory when copying.	Target directory must not be within the source directory. Check target directory.
121 No label found	No label found at the rear printhead (DuoPrint). Soiled label photocell. Labels not inserted correctly.	Insert new label roll. Clean the label photocell. Check if labels are inserted correctly.
122 IP occupied	The IP address was already assigned.	Assign a new IP address.

Error message	Cause	Remedy
123 Print asynchronous	<p>The label photocell do not work in the order as it is expected according to print data.</p> <p>The settings of the photocell are not correct.</p> <p>Settings of label size and gap size are not correct.</p> <p>No label found at the rear printhead.</p> <p>Soiled label photocell.</p> <p>Labels not inserted correctly.</p>	<p>Check label size and gap size.</p> <p>Check label photocell settings.</p> <p>Check correct loading of label material.</p> <p>Insert new label roll.</p> <p>Clean the label photocell.</p> <p>Check if labels are inserted correctly.</p>
124 Print too slow	The print speed is too slow.	Increase the speed of the customers' machine.
125 DMA send buffer	Communication problem HMI.	Restart the printer.
126 UID conflict	Configuration RFID programming faulty.	Run RFID initialising.
127 Module not found	RFID module not available.	<p>Check the RFID module connection.</p> <p>Please contact your responsible distributor.</p>
128 No release signal	No print release by higher-level control (customer machine).	Activate release signal at the higher-level control.
129 Wrong firmware	Firmware does not match the used printer type.	<p>Use firmware that fits to the printer type.</p> <p>Please contact your responsible distributor.</p>
130 Language missing	Language file for the set printer language is not available.	Please contact your responsible distributor.
131 Wrong material	Label material does not fit to printing data.	User label material with suitable label and/or gap length.
132 Invalid mark-up tag	Invalid mark-up formatting characters in text.	Correct the formatting characters in the text.
133 Script not found	LUA script file not found.	Check the file name.

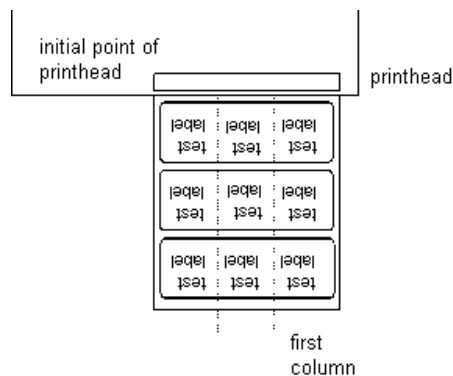
Error message	Cause	Remedy
134 Script failure	LUA script is incorrect.	Check the script.
135 Script user error	Error in LUA script user input.	Correct the input value.
136 No reprint available	No label data for reprinting available.	Send new label data to the printer.
137 Printhead short circuit	Electrical short at the printhead.	Check the used printhead. Please contact your distributor.
138 Too little ribbon	Transfer ribbon ends.	Change transfer ribbon.
139 Hardware error	A hardware component could not be found.	Please contact your responsible distributor.

11 Additional Information

11.1 Column Printing


With this print module several columns can be printed, i.e. the information of one column can be printed several times (depending on its width) on a label. Caused by this the use of the complete print width is possible and the generating time is enormously reduced.


For example 4 columns with a width of 25 mm or 2 columns with a width of 50 mm can be printed onto a label with a width of 100 mm. Please note that the first layout is always the one with the largest x coordinate, i.e. it has the largest distance to the printhead.






Setting the print of several columns



Press key **F** to access the function menu.



Press key  as long as you arrive the menu *Label layout*.


Press key  to confirm the selection.

Press key  as long as to the menu item *Width/Columns*.

Press keys  and  to set the label width. The *Width* is the width of one column, e.g. 20.0 mm.

Press keys  and  to arrive the *Column* input field.

Press keys  and  to change the number of columns, e.g. 4 columns with a layout width of 20.0 mm.

Press key  to start the print with input of number of labels and number of lines. The number of labels corresponds to the number of layouts that should be printed.

e.g. Columns: 3, Items: 4

label 6	label 5	label 4
label 3	label 2	label 1

The first four labels were printed but not labels 5 and 6.

11.2 Hotstart



NOTICE!

The data is saved onto CF card. Therefore the CF card is a condition for the *Hotstart* menu item.

The function *Hotstart* contains e.g. that in case of a power failure the currently loaded label can be further processed without any loss of data. Moreover a print order can be interrupted and to be continued after switching on the print module anew.



NOTICE!

At an active *Hotstart* all necessary data is stored on the CF card therefore do not remove the card during operation. When removing during operation, this causes the loss of all data on the CF card.

Saving the current label

In case the *Hotstart* function is set to on, at the start of a print order the data of the current label is saved to the corresponding directory of the CF card.

However the following conditions have to be fulfilled:

- CF card inserted in drive A.
- CF card not write-protected.
- Enough free storage space onto CF card.

An error message appears in case these conditions are not fulfilled.

Saving the print order state

At switching off the print module the state of the current print order is saved to the corresponding directory of the CF card.

However the following conditions have to be fulfilled:

- CF card inserted in drive A.
- CF card not write-protected.
- Enough free storage space onto CF card.

Loading a label and print order state

When restarting the print module (if the function *Hotstart* is activated) the saved label data and the status of print order were loaded from the corresponding file on the CF card. Because of this reason, when switching on the print module a CF card has to be inserted in the appropriate drive. If the data cannot be loaded an error message appears.

Starting the print order

In case at switching off the print module a print order was active, then a print start is released automatically and the required res. actual number of printed labels is refreshed. In case the print order was stopped at switching off the print module, it is again set to the stopped mode after switching on the print module anew. In case a customized entry was active during switching off the print module, the window for the first customized variable is displayed.

Refreshing the variable counter

As in the intended file only the start values of the counter are saved, they are refreshed at a new start of the print order by means of the number of printed labels. Each counter is counted corresponding from its start value. Afterwards the position of the current and the next counter update are correctly set by means of the update intervals.

**NOTICE**

Make sure that in case graphics are onto the label they have to be saved onto CF card.

11.3 Backfeed/delay

Backfeed operating modes

In continuous dispensing mode (IO dynamic continuous, IO static continuous, IO photocell continuous) no optimised backfeed is possible. Because of the fact when changing the print order, then the current label in the offset sector is already printed from the old print order.

With activated double cut no optimised backfeed is possible.

In the sector that is printed when preprint the following label, no date/time variable should be existing, because this could be refreshed before the next start impulse.

Standard

Peel off: After printing the label, it is driven into the dispensing offset and waited there, until the label was removed (photocell) or a new start signal is given (IO dynamic). Afterwards it is again backtracked to the beginning of label and then the next label is printed.

Cutter: After printing the label, it is driven into the cutter offset; the label is cut and then backtracked immediately to the beginning of label (if an operating mode with backfeed is selected). Afterwards the next label is printed, if necessary.

Tear off edge: After printing the last label of a print order it is driven into the tear-off offset and the label res. labels can be taken away. When starting a new print order, first it is backtracked again to the beginning of label and then the next label is printed.
If a following print order is available before driving into the tear-off offset, then it is not driven into tear-off offset but the following label is directly printed.

Automatic

Peel off: After printing the label it is driven into the dispensing offset and then backtracked to the beginning of label either immediately or after the set delay time. When releasing a new start signal (IO dynamic) the next label is immediately printed.

Cutter: This is the same function as for 'backfeed standard' as it is always backtracked immediately to the beginning of label.

Tear off edge: After printing the last label of a print order it is driven into the tear-off offset and then backtracked to the beginning of label either immediately or after the set delay time. When starting a new print order then the next label is immediately printed.
If a following print order is available before driving into the tear-off offset, then it is not driven into tear-off offset but the following label is directly printed.

No backfeed	Peel off:	After printing the label it is driven into the dispensing offset and there waited. When releasing a new start signal (IO dynamic) then the next label is immediately printed. Because of the fact that the label is already in the offset, the label is only printed from beginning of offset position, i.e. at the definition of label an accordingly large range must be left free at the top margin of label, because these data are otherwise not printed.
	Cutter:	This is the same function as for 'backfeed standard' as it is always backtracked after cutting immediately to the beginning of label.
	Tear off edge:	After printing the last label of a print order it is driven into the tear-off offset. When starting a new print order, the next label is immediately printed. Because of the fact that the label is already in the offset, the label is only printed from beginning of offset position, i.e. at the definition of label an accordingly large range must be left free at the top margin of label, because these data are otherwise not printed. If a following print order is available before driving into the tear-off offset, then it is not driven into tear-off offset but the following label is directly printed.
Optimised backfeed	Peel off:	After printing the label, during driving into dispensing offset the following label is 'pre-printed', if this is already available (generated). When releasing a new start signal (IO dynamic) the already 'pre-printed' label is printed to the end and when driving into the dispenser offset the following label is again 'pre-printed'. In case the following label is not yet available or at the last label of a print order, the dispenser offset is driven as until now, and then for the next label before printing the backfeed to the beginning of label is executed.
	Cutter:	After printing the label, during driving into the cutter offset the following label is 'pre-printed', if this is already available (generated). After the cut it is not backtracked but the already 'pre-printed' label is printed to the end and when driving into the cutter offset the following label is again 'pre-printed'. If the following label is not yet available or at the last label of a print order, the cutter offset is driven as until now, then cut and afterwards the backfeed to the beginning of label is executed.
	Tear off edge:	This is the same function as for 'backfeed standard' as it is only driven into the tear-off offset at the last label of a print order, if no following print order is available.

11.4 Photocells

Transmission photocell normal

For this photocell type the transmitter is at the top res. the receiver at the bottom, i.e. the infra-red light is sent from the top. In this way the label detection is also from the top. This photocell type is used for standard adhesive labels with gap.

Transmission photocell inverse

For this photocell type the transmitter is at the top res. the receiver at the bottom, i.e. the infra-red light is sent from the top. The label detection is, same as for the transmission photocell normal, from the top. However, it is printed differently as for normal photocells, in the translucent place; the print module recognizes the opaque place as gap. This photocell type is used frequently when printing foils.



NOTICE!

When using transmission photocells inverse, the print module must measure a difference of 2.5 V and for reflection photocells inverse 1 V between translucent and opaque material. Otherwise the print module does not recognize a difference between label and gap (bar).

11.5 Ultrasonic photocell (option)

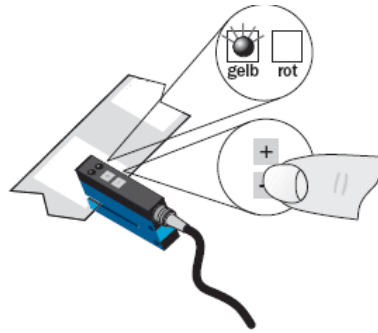


NOTICE!

The ultrasonic photocell must be adjusted on the currently used label material.

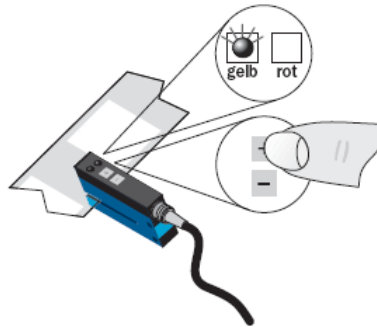
This photocell type is particularly suitable for the use of transparent labels on transparent backing paper.

Adjustment of photocell

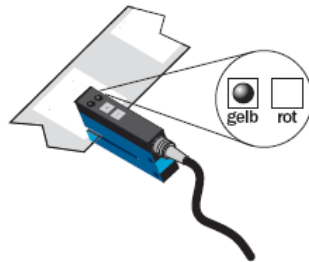


Adjustment of switching point in 'light-switching' mode:
The switching output Q is active if the backing paper is detected between the labels (gap detection).

Position the label between the active surface of the fork sensor (see arrow on sensor). With key **-** and/or **+** adjust until the switching output indicator is off.



Position the backing paper in the active area of the fork sensor. The switching output indicator (yellow) must light up again. Otherwise increase the sensitivity with **+** until the switching threshold is correctly adjusted.



If necessary, adjust the switching point slightly in the other direction.

Sensitivity setting

Slow setting:
Press key **+** and/or **-** once.
The red LED lights with each key press.

Fast setting:
Press key **+** and/or **-** permanently.
The red LED flashes after 2 seconds.

Light (L) / dark (D) switching

Press key **+** and **-** simultaneously for 6 seconds.
The yellow LED changes status and the red LED flashes slowly.
Release keys **+** and **-**.

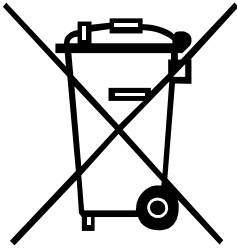
Locking the keys

Press keys **+** and **-** simultaneously for 3 seconds to enable/disable the key lock.

Locking the keys:
The red LED goes off after 3 seconds.
Release keys **+** and **-** and the red LED lights permanently.

Unlocking the keys:
The red LED lights after 3 seconds.
Release keys **+** and **-** and the red LED goes off.

12 Environmentally-Friendly Disposal



Manufacturers of B2B equipment are obliged to take back and dispose of old equipment that was manufactured after 13 August 2005. As a principle, this old equipment may not be delivered to communal collecting points. It may only be organised, used and disposed of by the manufacturer. Valentin products accordingly labelled can therefore be returned to Carl Valentin GmbH.

This way, you can be sure your old equipment will be disposed of correctly.

Carl Valentin GmbH thereby fulfils all obligations regarding timely disposal of old equipment and facilitates the smooth reselling of these products. Please understand that we can only take back equipment that is sent free of carriage charges.

The electronics board of the printing system is equipped with a battery. This must only be discarded in battery collection containers or by public waste management authorities.

Further information on the WEEE directive is available on our website www.carl-valentin.de.

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