valentin DRUCKSYSTEME

SPECTRA II

Operating Manual

Quality . Tradition . Innovation

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

We reserve the rights to make modifications.

Due to the constant further development of our devices discrepancies between manual and device can occur.
Please check www.carl-valentin.de for the latest update.

Trademarks

All named brands or trademarks are registered brands or registered trademarks of their respective owners and may not be separately labelled. It must not be concluded from the missing labelling that it is not a registered brand or a registered trademark.

Carl Valentin label printers comply with the following safety guidelines:

CE Low-Voltage Directive (2014/35/EU)
Electromagnetic Compatibility Directive (2014/30/EU)

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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 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 label printer 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 label printer or other property could be damaged while operating the device.

The label printer 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 label printer 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.

1.3 Important Notes

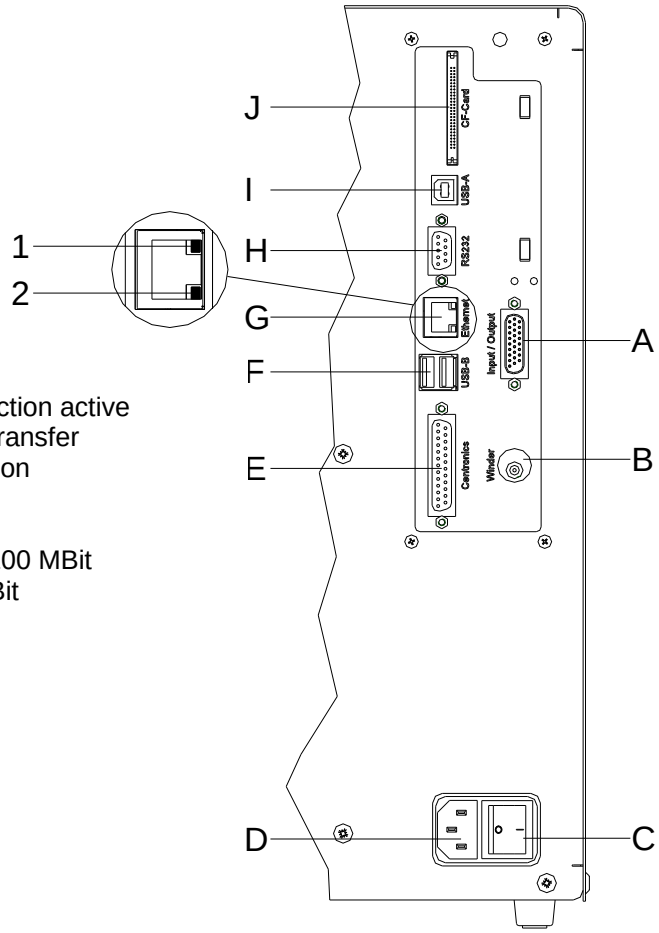
The label printer can be used in thermal as well as in thermal transfer applications.

The label printer is equipped with eight vector, six bitmap and six proportional fonts. It can be printed inverse, in italic format or 90 degrees turned fonts.

The handling of our durable label printers is easy and comfortable. The parameter settings are made at the touchscreen.

Time-saving firmware update is possible by interface. As default, the print module is equipped with a parallel, serial, USB and Ethernet interface. The print module automatically recognizes by which interface it is controlled.

1.4 Connector Pin Assignment (Printer Rear)



1 - LED orange
Lighting = Connection active
Flashing = Data transfer
Off = No connection

2 - LED green
Lighting: Speed 100 MBit
Off: Speed 10 MBit

Figure 1

A External output/input (option)

B Winder connection

CAUTION!

The label printer can be damaged by non-compliant winders.

⇒ Attach only winders of Carl Valentin.

C Switch On/Off

D Power supply

E Parallel interface

F not occupied

G Ethernet 10/100 interface

H Serial interface RS-232

I USB interface

J Plug-in for CF card

2 Safety Instructions

The label printer is designed for power supply systems of 100 … 240 V AC. Connect the print module only to electrical outlets with a ground contact.

Couple the label printer to devices using extra low voltage only.

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

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

Do not operate the label printer in explosive atmosphere and not in proximity of high voltage power lines.

Operate the label printer 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 label printer is operated with the cover open, ensure that clothing, hair, jewellery and similar personal items do not contact the exposed rotating parts.

The print unit and parts of it (e.g. 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.

There is a risk of injury at the tear-off edge. If the tear-off edge is not used, attach the edge protection profile.

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 label printer 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.

DANGER!

Danger to life and limb from power supply!

⇒ Do not open the casing.

2.1 Operating Conditions

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

Therefore please carefully read these operating conditions.

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

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

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

Operation of printer is only allowed by especially trained persons.

NOTICE!

Perform trainings regularly.
Content of the training are chapter 2.1 (Operating Conditions), chapter 5 (Load Media) and chapter 8 (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 printer should be even, free of vibration and currents of air are to be avoided.

The printers have to be installed to ensure optimal operation and servicing.

Installation of power supply

The installation of the power supply to connect our printers 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 printers 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: ≤ 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 printers.
- In case of problems please connect capacity-decoupled isolation transformer or similar interference suppressor in front of our printers.

Stray radiation and immunity from disturbance

Emitted interference according to EN 61000-6-3: 2007
industrial sector

- Interference voltage to wires according to EN 55022/AC: 2011-10
- Interference field power according to EN 55022/AC: 2011-10
- System perturbation according to EN 61000-3-2: 2014-08
- Flicker according to EN 61000-3-3: 2013-08
-

Immunity to interference according to EN 61000-6-2: 2008
industrial sector

- Stray radiation against discharge of static electricity according to EN 61000-4-2: 1995
- Electromagnetic fields according to EN 61000-4-3: 2002
- Fast transient burst according to EN 61000-4-4: 2004
- Surge according to EN 61000-4-5: 1995
- High-frequency tension according to EN 61000-4-6: 2014-02
- Magnetic field with energy frequency according to EN 61000-4-8: 1993
- Voltage interruption and voltage drop according to EN 61000-4-11: 2004

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.

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 62368-1.

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)
with USB - 3 m
with Ethernet - 100 m

Air convection

To avoid inadmissible heating, free air convection has to be ensured.

Limit values

Protection according IP: 20

Ambient temperature °C (operation): Min. +5 Max. +35

Ambient temperature °C (storage): Min. −20 Max. +60

Relative air humidity % (operation): Max. 80

Relative air humidity % (storage): Max. 80

(bedewing of printers 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 printers.
- 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 printers 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 printers.

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 printer 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

3.1 Spectra II (103, 104, 106, 107)

	Spectra II 103/8	Spectra II 104/8	Spectra II 106/12	Spectra II 106/24	Spectra II 107/12
Print resolution	200 dpi	200 dpi	300 dpi	600 dpi	300 dpi
Max. print speed	350 mm/s	350 mm/s	350 mm/s	100 mm/s	350 mm/s
Print width	104 mm	104 mm	105.7 mm	105.6 mm	106.6 mm
Passage width	116 mm	116 mm	116 mm	116 mm	116 mm
Printhead	Flat Type[1+2]	Flat Type[2]	Flat Type[2]	Flat Type[2]	Corner Type[2]
Labels					
Labels, continuous rolls or fan-fold	paper, cardboard, textile, synthetics				
Material weight	max 220 g/m² (larger on demand)				
Label width	min 15 mm	min 15 mm	min 15 mm	min 15 mm	min 15 mm
Label height					
Standard	min 6 mm	min 6 mm	min 6 mm	min 6 mm	min 6 mm
Cutter/dispenser mode	min 25 mm	min 25 mm	min 25 mm	min 25 mm	min 25 mm
Max label height	6000 mm	6000 mm	3000 mm	750 mm	3000 mm
Roll diameter					
Internal unwinder	max. 200 mm				
Internal rewinder	max. 200 mm (option)				
Core diameter	40 mm / 75 mm (option)				
Winding	outside or inside				
Label sensor					
Standard	transmission and reflexion from bottom				
Option	transmission and reflexion from top, ultrasonic photocell				
Transfer Ribbon					
Ink	outside or inside				
Roll diameter	max. Ø 90 mm				
Core diameter	25.4 mm / 1″				
Ribbon length	max 450 m				
Ribbon width	max 110 mm	max 110 mm	max 110 mm	max 110 mm	max 110 mm
Dimensions (mm)					
Width x height x depth	287x380x 503	287x380x 503	287x380x 503	287x380x 503	287 x 380 x 503
Weight	19 kg	19 kg	19 kg	19 kg	19 kg
Electronics					
Processor	High Speed 32 Bit				
RAM	16 MB				
Slot	for Compact Flash card 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				
WLAN (option)	module 802.11 b/g/n WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, EAP				

[1] for thermal direct [2] for thermal transfer

Operation Data	Spectra II 103/8	Spectra II 104/8	Spectra II 106/12	Spectra II 106/24	Spectra II 107/12
Power supply	100 … 240 V AC / 50-60 Hz				
Power consumption	300 VA				
Nominal current	2,7 A				
Operating temperature	5 … 35 °C				
Humidity	max 80 % (non condensing)				
Operation Panel (touch-screen)					
Operating functions	favorites, function menu, memory card, print start, test print, feed, about menu				
Colour display	800 x 480 pixel, screen size 6.5"				
Operation Panel (LCD)					
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, 20 language settings (others on demand) label and device parameters, interfaces, password protection, variables				
Monitoring					
Stop printing if	end of ribbon / end of labels				
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 to1257, 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 8.1® - Windows 10® 32/64 Bit, Windows 11® Windows Server 2016® - Windows Server 2022®				

3.2 Spectra II (108, 160, 162, 216)

	Spectra II 108/12	Spectra II 160/12	Spectra II 162/12	Spectra II 216/12
Print resolution	300 dpi	300 dpi	300 dpi	300 dpi
Max. print speed	350 mm/s	300 mm/s	300 mm/s	200 mm/s
Print width	108.4 mm	160 mm	162.6 mm	216.8 mm
Passage width	116 mm	176 mm	176 mm	226 mm
Printhead	Flat Type[1+2]	Corner Type[2]	Flat Type[1+2]	Flat Type[1+2]
Labels				
Labels, continuous rolls or fan-fold	paper, cardboard, textile, synthetics			
Material weight	max 220 g/m² (larger on demand)			
Label width	min 15 mm	min 50 mm	min 50 mm	min 100 mm
Label height				
Standard	min 6 mm	min 15 mm	min 15 mm	min 15 mm
Cutter/dispenser mode	min 25 mm	min 25 mm	min 25 mm	min 25 mm
Label height	max 3000 mm	max 2000 mm	max 2000 mm	max 1000 mm
Roll diameter				
Internal unwider	max 200 mm			
Internal rewinder	max 200 mm (option)			
Core diameter	40 mm / 75 mm (option)			
Winding	outside or inside			
Label sensor				
Standard	transmission and reflexion from bottom			
Option	transmission and reflexion from top, ultrasonic photocell			
Transfer Ribbon				
Ink	outside or inside			
Roll diameter	Ø 90 mm			
Core diameter	25.4 mm / 1″			
Ribbon length	450 m			
Ribbon width	110 mm	163 mm	170 mm	220 mm
Dimensions (mm)				
Width x height x depth	287 x 380 x 503	337 x 380 x 503	337 x 380 x 503	387 x 380 x 503
Weight	19 kg	21 kg	21 kg	28 kg
Electronics				
Processor	High Speed 32 Bit			
RAM	16 MB			
Slot	for Compact Flash card 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			
WLAN (option)	module 802.11 b/g/n WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, EAP			

[1] for thermal direct [2] for thermal transfer

Operation Data	Spectra II 108/12	Spectra II 160/12	Spectra II 162/12	Spectra II 216/12
Power supply	100 … 240 V AC			
Power consumption	300 VA			700 VA
Nominal current	2.7 A			6.3 A
Operating temperature	5 … 35 °C			
Humidity	max 80 % (non condensing)			
Operation Panel (touch-screen)				
Operating functions	favorites, function menu, memory card, print start, test print, feed, about menu			
Colour display	800 x 480 pixel, screen size 6.5"			
Operation Panel (LCD)				
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, 20 language settings (others on demand) label and device parameters, interfaces, password protection, variables			
Monitoring				
Stop printing if	end of ribbon / end of labels			
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 to1257, 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 8.1® - Windows 10® 32/64 Bit, Windows 11® Windows Server 2016® - Windows Server 2022®			

Standard equipment

- 6,5" touch display or LCD display 132x64 pixels
- Tear-off edge
- Real time clock with printout date and time
  Automatic daylight saving time
  Storage of data with shut-down
- Variables: link field, counter, date/time, currency and shift variable, CF data
- Integrated unwinder
  (max outer diameter 200 mm / 8")
- Thermal or thermal transfer version
- Ethernet interface
- CVPL protocol and ZPL II® protocol
- Label photocell
  (transmission and reflexion from below)
- Slot for CF card

Optional equipment

- Transfer ribbon saving (not 216/12)
- Integrated rewinder
  (max outer diameter 200 mm)
- Cutting unit 'Rotation'
- Cutting unit 'Guillotine' (Spectra II 216)
- Dispenser unit with photocell
- Dispenser unit without photocell
- Ultrasonic photocell (not 107/12, 160/12, 216/12)
- External unwinder
- WLAN interface
- Applicator prearrangement for APX 7000
- Bar code scanner
- Dispenser I/O
- LCD display 132x64 pixel
- Labelstar Office

3.3 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

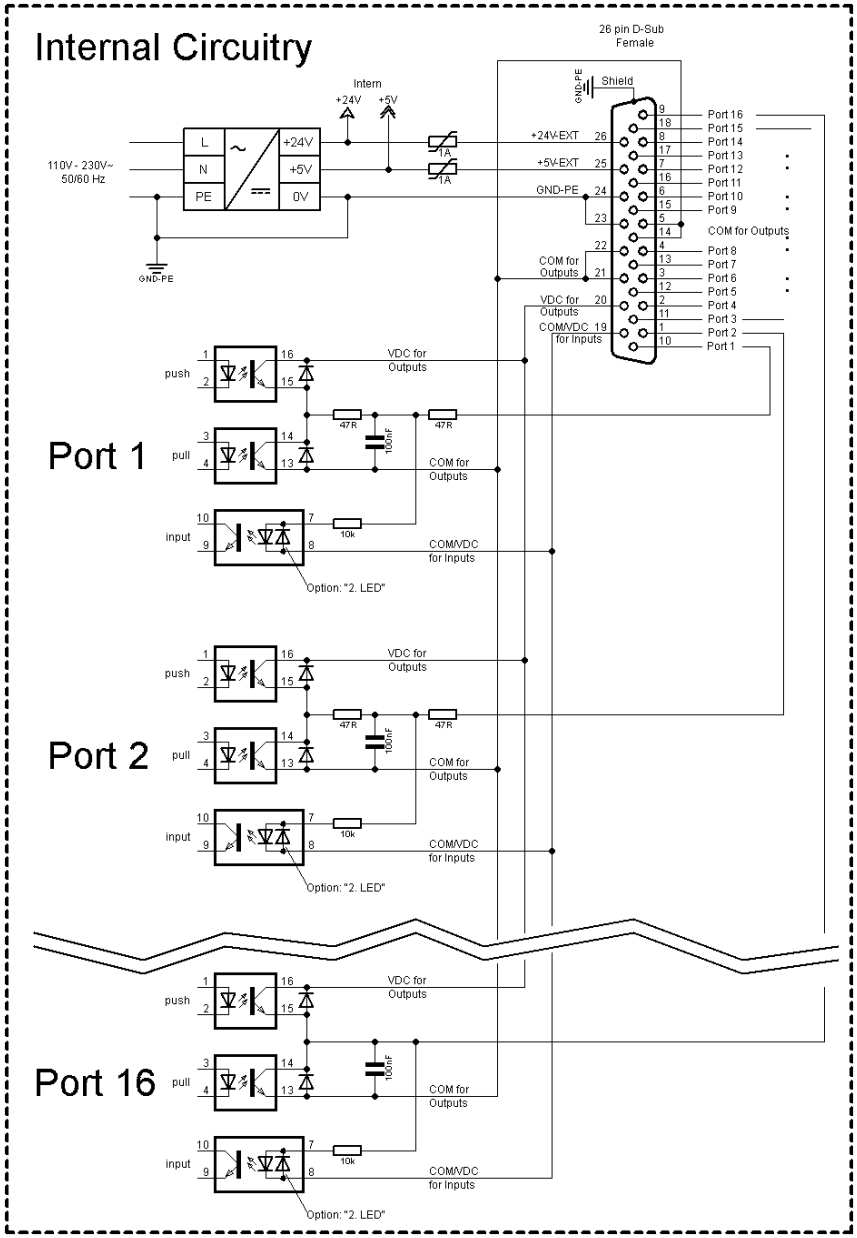


Figure 2

Configuration of D-Sub socket

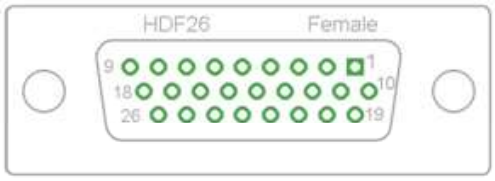


Figure 3

Cable identification

Number	Color
1	white
2	brown
3	green
4	yellow
5	grey
6	pink
7	blue
8	red
9	black
10	violet
11	grey-pink
12	red-blue
13	white-green
14	brown-greed
15	white-yellow
16	yellow-brown
17	white-grey
18	grey-brown
19	white-pink
20	pink-brown
21	white-blue
22	brown-blue
23	white-red
24	brown-red
25	white-black
26	brown-black

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	Label end sensor (Input)
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).
+ 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.

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

Identification	**Pin**	**Description / Function**
Port 1	10	Print start and cut (Input)
Port 2	1	Error reset (Input)
Port 3	11	Number of the file to load Bit 0 (Input)
Port 4	2	Number of the file to load Bit 1 (Input)
Port 5	12	Number of the file to load 2 (Input)
Port 6	3	Number of the file to load 3 (Input)
Port 7	13	Number of the file to load 4 (Input)
Port 8	4	Number of the file to load 5 (Input)
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	No function
Port 15	18	Option scanner only: Bar code not readable (Output)
Port 16	9	Transfer ribbon prior warning (Output)

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

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	No function
Port 9	15	Error (Output)
Port 10	6	Print order active (Output)
Port 11	16	Dispenser photocell: Label exists at dispenser photocell (Output)
Port 12	7	Printing (Output)
Port 13	17	Ready (Output)
Port 14	8	Option applicator only: Ready for application (Output)
Port 15	18	Option applicator only: Pad is in printing position (Output)
Port 16	9	Transfer ribbon prior warning (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.

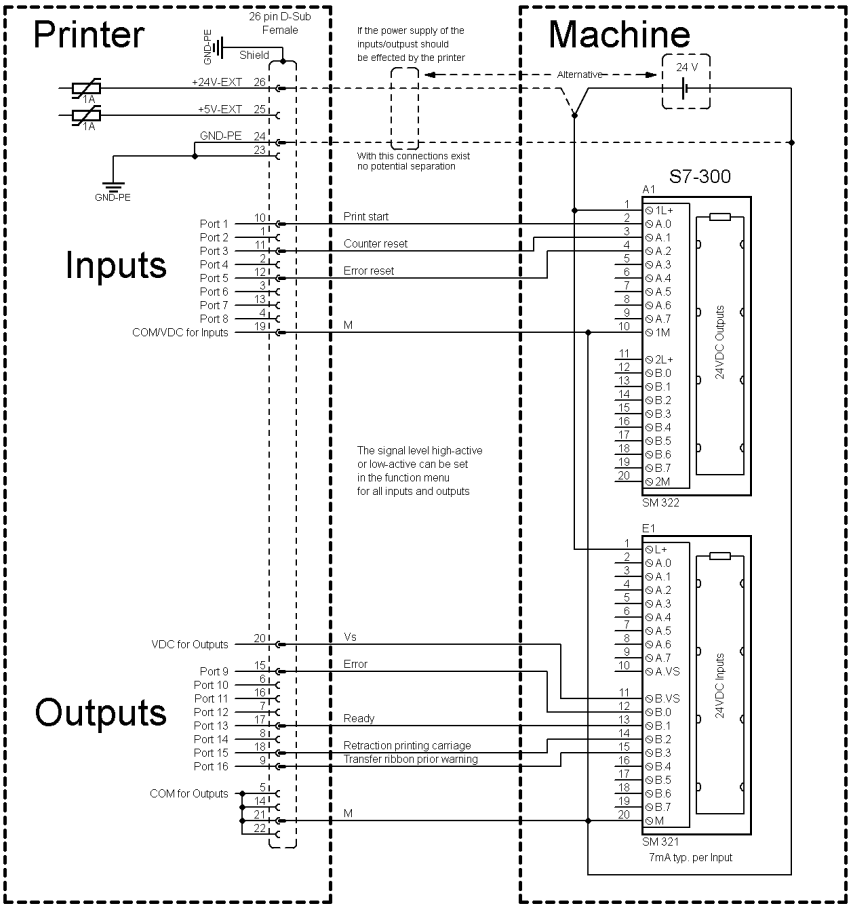


Figure 4

Example 2 Device connection to a operating panel.

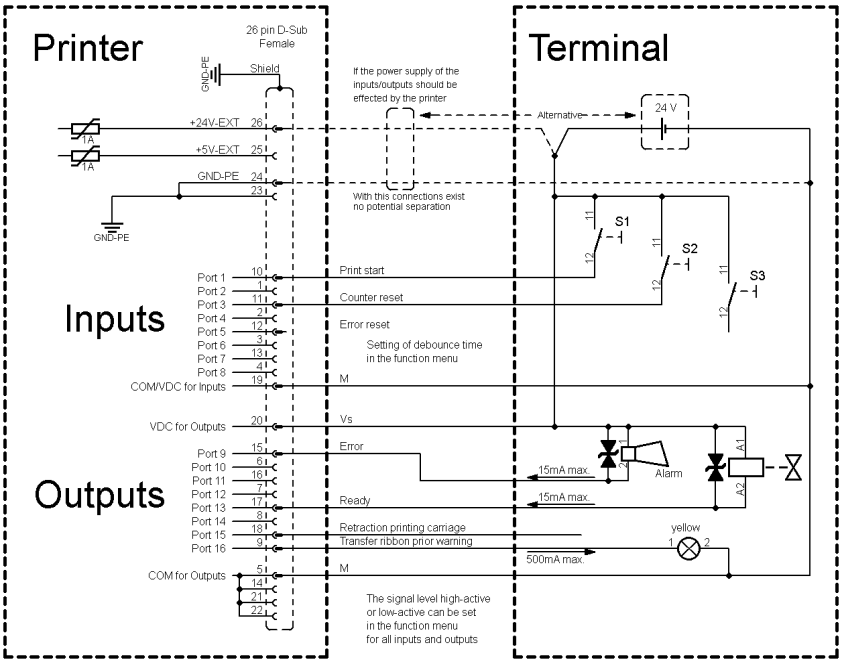


Figure 5

Example 3

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

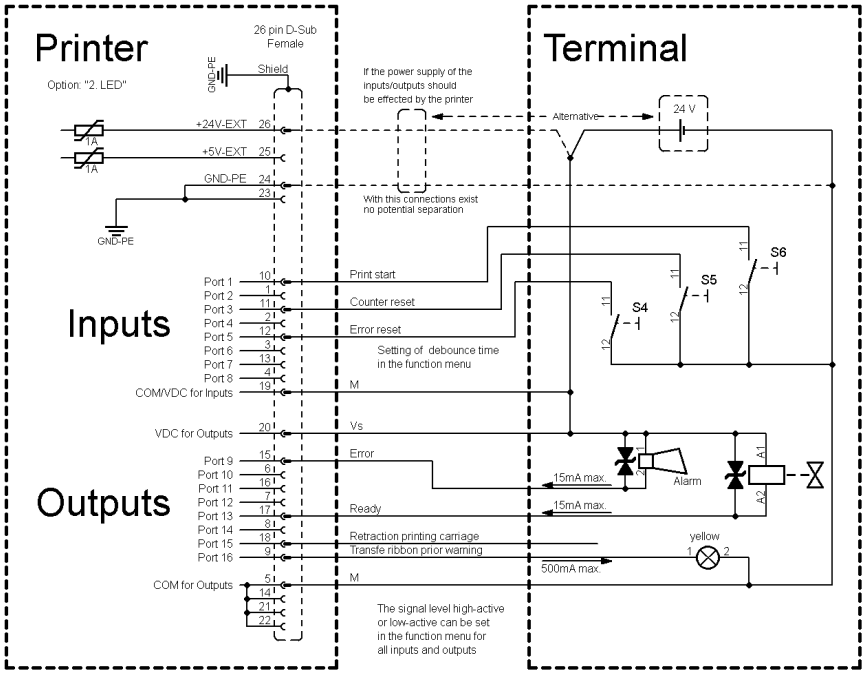


Figure 6

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.

4 Installation

Unpack the label printer

⇒ Lift the label printer on the bottom and remove the printer from the carton.

⇒ Check the label printer for transport damages.

⇒ Check delivery for completeness.

Scope of delivery

- Label printer.
- Power cable.
- Empty core, mounted on transfer ribbon rewinder.
- Tear-off edge (printers with option tear-off edge only).
- Dispensing edge (printers with option dispenser only).
- Cutter unit (printers with option cutter only).
- Product Safety Guide

NOTICE!

Retain the original packaging for subsequent transport.

4.1 Set up the Label Printer

CAUTION!

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

⇒ Set up the label printer only in a dry place protected from sprayed water.

⇒ Set up the label printer on a level, vibration-free and air draught-free surface.

⇒ Open the cover of label printer.

⇒ Remove the foam transportation safeguards near the printhead.

4.2 Connect the Label Printer

Connect to power supply

The label printer is equipped with a versatile power supply unit. The device may be operated with a mains voltage of 100 … 240 V AC / 50-60 Hz without any adjustments or modifications.

CAUTION!

The label printer can be damaged by undefined switch-on currents.

⇒ Set the power switch to '0' before plugging in the label printer.

⇒ Insert the power cable into the power connection socket.

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

Connect to a computer or to a computer network

NOTICE!

Insufficient or missing grounding can cause faults during operation.
Ensure that all computers and connection cables connected to the label printer are grounded.

⇒ Connect the label printer to a computer or network with a suitable cable.

4.3 Initial Operation of the Label Printer

⇒ Switch on the label printer.

⇒ Insert the label material and transfer ribbon (see chapter 5. Load Media, page 31).

⇒ Go to the menu *Label layout*, select the menu item *Measure label* and start measuring.

NOTICE!

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

During measuring the label and gap length small differences can occur. Therefore the values can be set manually in menu *Label layout/Label and Gap*.

5 Load Media

5.1 Load Label Roll

NOTICE!

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

Load label roll in rewind mode

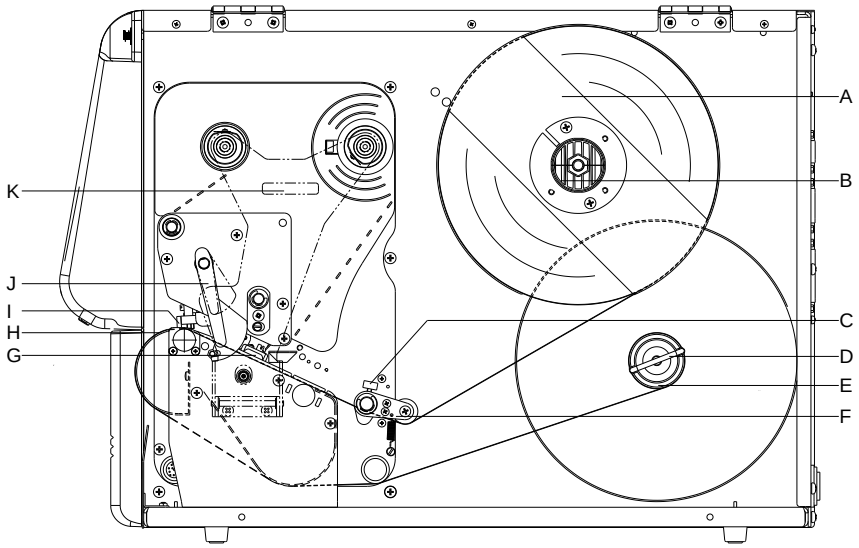


Figure 7

NOTICE!

In rewind mode the labels are wound up internally after printing for later use.

1. Open the printer cover.
2. Open the printhead (I) by turning the pressure lever (J) anticlockwise.

   Spectra II 216! Pull the centring plate (K) outwardly.
3. Remove the outside label mounting plate (A).
4. Load the label roll with inner winding onto the unwinding roll (B).
5. Attach again the label mounting plate (A).
6. Lead the label material below the label guiding (F). Pay attention that the label runs through the photocell (G).

   Spectra II 216! Lift the centring plate (K) again upwards.

7. Place the labels around the front sheet (H) and lead them below the mechanics to the rear.
8. Clamp the label material, with the handle (D) designated for it, at the rewinding roll (F).
9. To move the printhead (I) down, turn the pressure lever (J) in clockwise direction until it locks.
10. Adjust the limit stops (C) of the label guiding roll to the width of material.
11. Close the printer cover.

Load label roll in tear-off mode

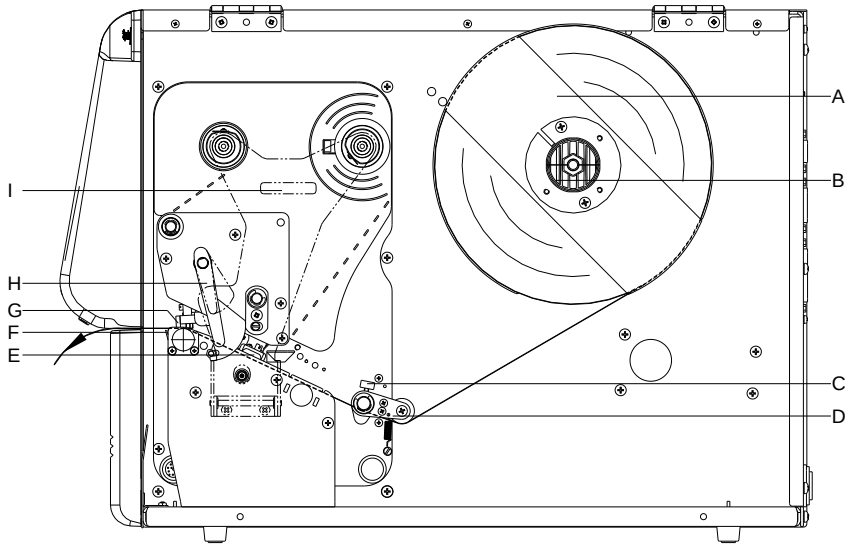


Figure 8

1. Open the printer cover.
2. Open the printhead (G) by turning the pressure lever (H) anticlockwise.

   Spectra II 216! Pull the centring plate (I) outwardly.
3. Remove the outside label mounting plate (A).
4. Load the label roll with inner winding onto the unwinding roll (B).
5. Attach again the label mounting plate (A).
6. Lead the label material below the label guiding (D).
   Take care that the label runs through the photocell (E).

   Spectra II 216! Lift the centring plate (I) again upwards.
7. To move the printhead (G) down, turn the pressure lever (H) in clockwise direction until it locks.
8. The tear off edge (F) is visible in front of the printhead.
9. Enter the offset value in the menu *Printer Initialisation/Tear off*.
10. Adjust the limit stops (C) of the label guiding to the width of material.
11. Close the printer cover.

Load label roll in cutter mode

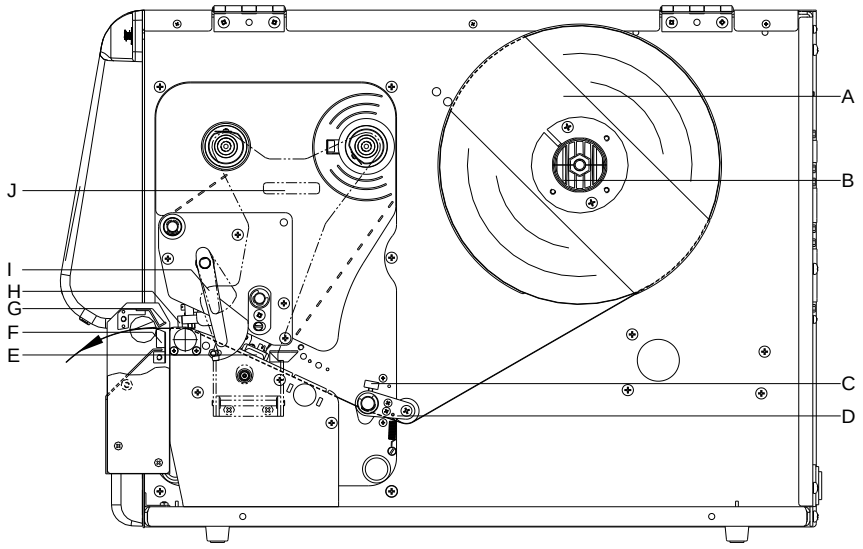


Figure 9

1. Open the printer cover.
2. Open the printhead (H) by turning the pressure lever (I) anticlockwise.

   Spectra II 216! Pull the centring plate (J) outwardly.
3. Remove the outside label mounting plate (A).
4. Load the label roll with inner winding onto the unwinding roll (B).
5. Attach again the label mounting plate (A).
6. Lead the label material below the label guiding (D) and the printhead (H).
   Take care that the label runs through the photocell (E).

   Spectra II 216! Lift the centring plate (J) again upwards.
7. Lead the label material between the inserting angle (G) and the cutter ledge (F).
8. To move the printhead (H) down, turn the pressure lever (I) in clockwise direction until it locks.
9. Adjust the limit stops (C) of the label guiding to the width of material.
10. Close the printer cover.

Load label roll in dispenser mode

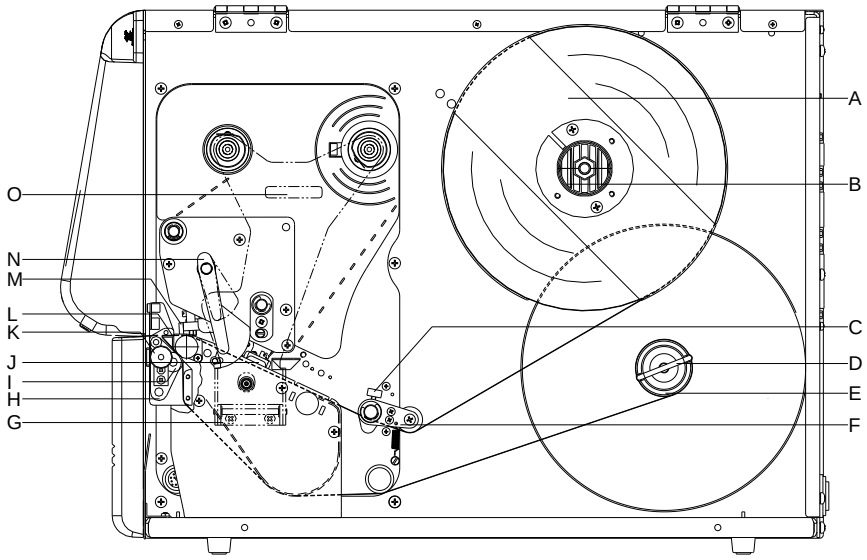


Figure 10

1. Open the printer cover.
2. Open the printhead (M) by turning the pressure lever (N) anticlockwise.

   Spectra II 216! Pull the centring plate (O) outwardly.
3. Remove the outside label mounting plate (A).
4. Load the label roll with inner winding onto the unwinding roll (B).
5. Attach again the label mounting plate (A).
6. Lead the label material below the label guiding (F) and printhead (M). Take care that the labels run through the photocell (J).

   Spectra II 216! Lift the centring plate (O) again upwards.
7. Lift the dispensing whip (H) by pulling the knurled knob (K) outwards to front/to the bottom.
8. To move the printhead (M) down, turn the pressure lever (N) in clockwise direction until it locks.
9. Adjust the limit stops (C) of the label guiding to the width of material.
10. Strip some labels from the backing paper and lead the paper over the dispensing ledge (L) and behind the plastic roll (I).
11. Press again the dispensing whip (H) to the top and lock it.
12. Place the backing paper around the shaft (G) and fix it with the clamp (E) at the rewinding unit (D).
13. Enter the offset value in menu *Dispenser I/O/Offset*.
14. Close the printer cover.

5.2 Load Fanfold Labels

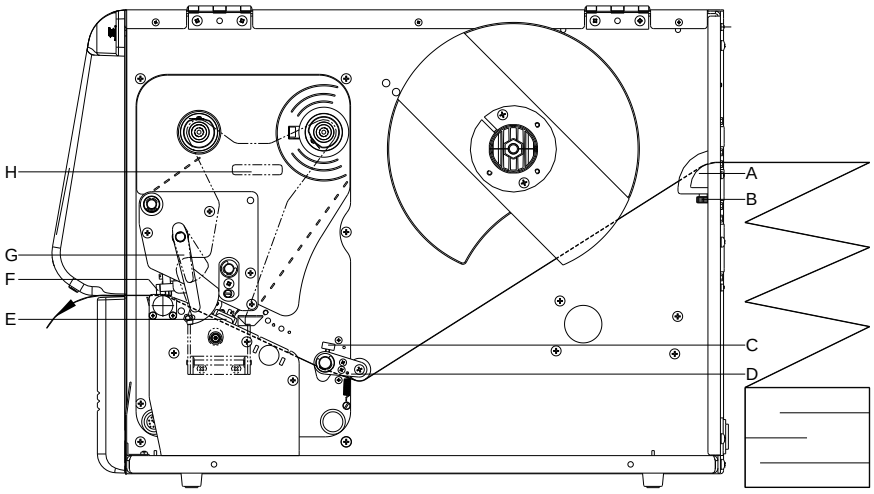


Figure 11

1. Open the printer cover.
2. Open the printhead (F) by turning the red pressure lever (G) anticlockwise.

   Spectra 216! Pull the centring plate (H) outwardly.

3. Load the fan-fold material from the back in the corresponding guiding (A).
4. Lead the fan-fold material below the label guiding (D).
   Pay attention that the label runs through the photocell (E).

   Spectra 216! Lift the centring plate (H) again upwards.

5. In order to move the printhead (F) down, turn the red pressure lever (G) in clockwise direction until it locks.
6. Adjust the adjusting rings (B + C) of the respective label guiding to the width of material.
7. Close the printer cover.

5.3 Load Transfer Ribbon

NOTICE!

For the thermal transfer printing method it is necessary to load a ribbon, otherwise when using the printer in direct thermal print it is not necessary to load a ribbon. The ribbons used in the printer have to be at least the same width as the print media. In case the ribbon is narrower than the print media, the printhead is partly unprotected and this could lead to early wear and tear.

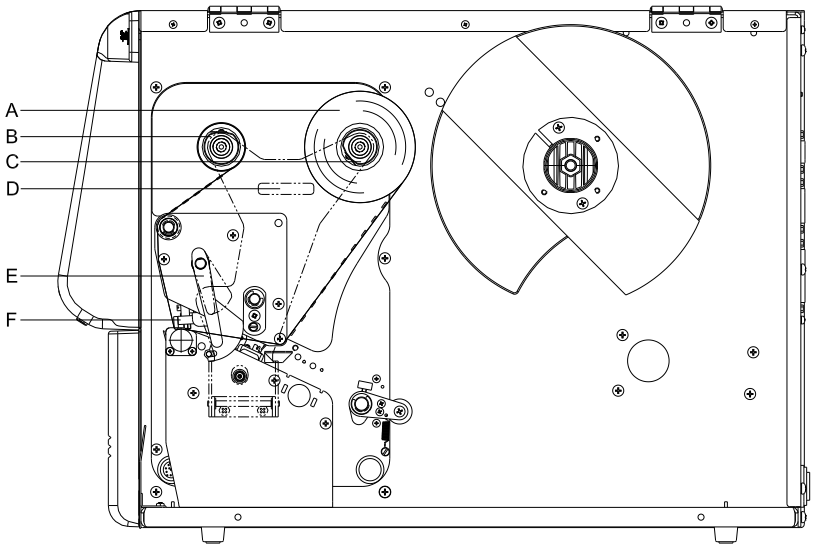


Figure 12

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 82.
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 printer cover.
2. Open the printhead (F) by turning the pressure lever (E) anticlockwise.

   Spectra 216! Pull the centring plate (D) outwardly.

   CAUTION!

   Risk of scraping when inserting the transfer ribbon res. when removing the used transfer ribbon!

   ⇒ Be careful with the spring steel plate edges!
3. Load the transfer ribbon roll (A) with outer winding onto the unwinding roll (C).
4. Place an empty ribbon roll on the rewinding roll (B).

5. Lead the transfer ribbon below the printhead (F).
6. Fix the ribbon with an adhesive tape in rotating direction at the empty roll of the rewinding roll (B).
   Pay attention to the rotation direction of transfer ribbon rewinder.

   Spectra 216! Lift the centring plate (D) again upwards.
7. In order to move the printhead (F) down, turn the pressure lever (E) in clockwise direction until it locks.
8. Close the printer 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 printer malfunctions and the guarantee can expire.

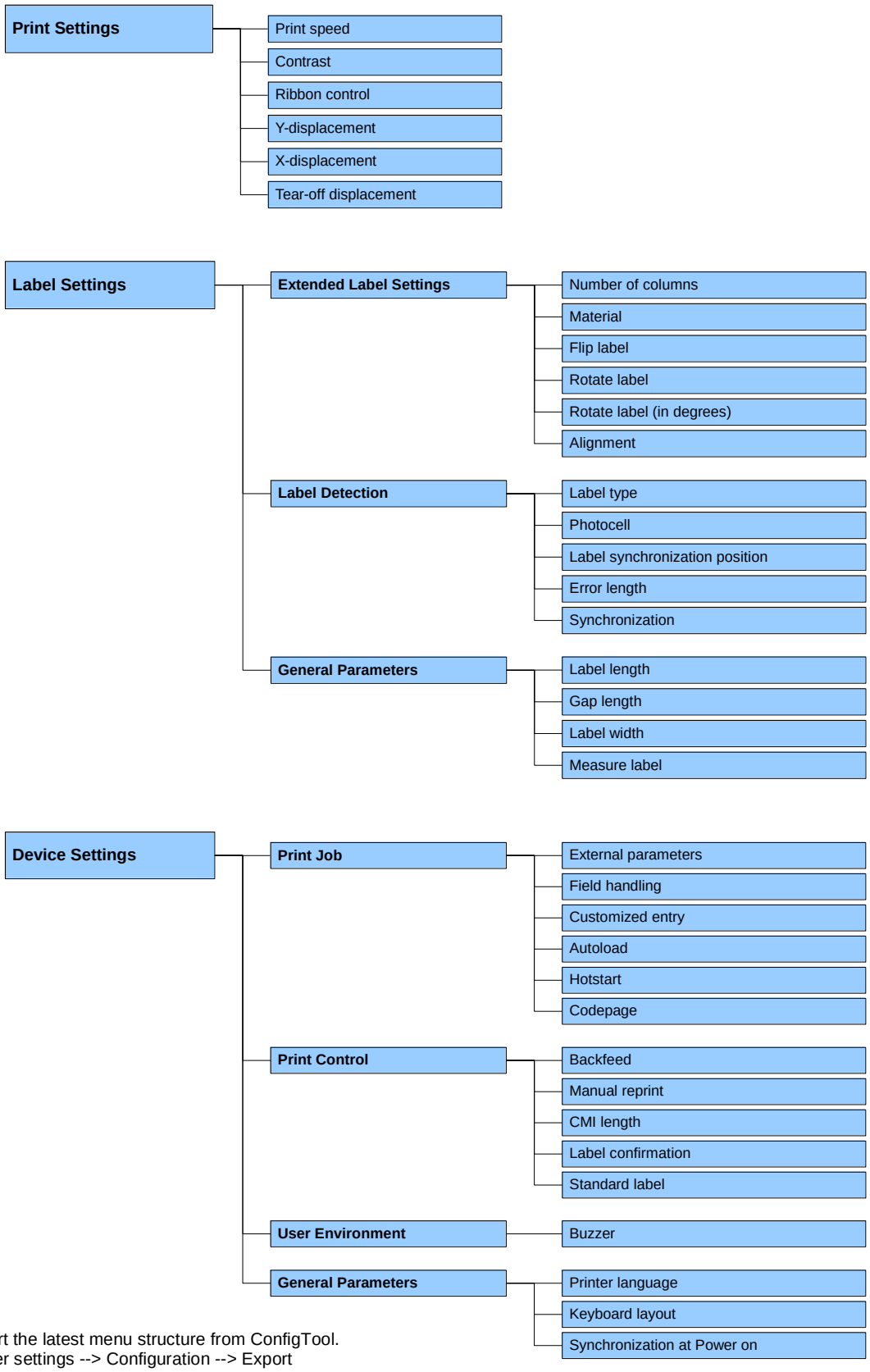
CAUTION!

Impact of electrostatic material on people!

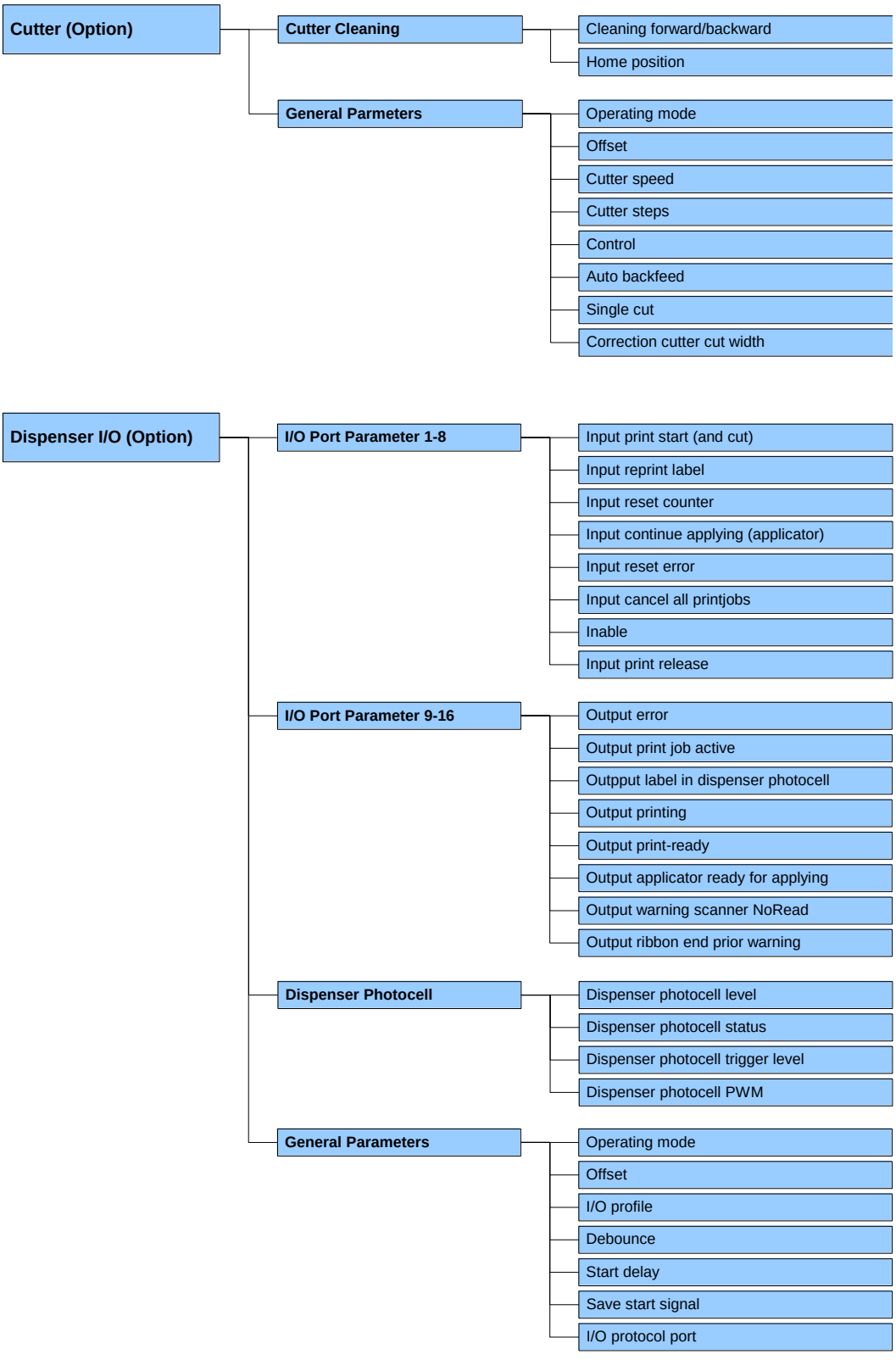
⇒ Use antistatic transfer ribbon because electrostatic discharge can occur when removing.

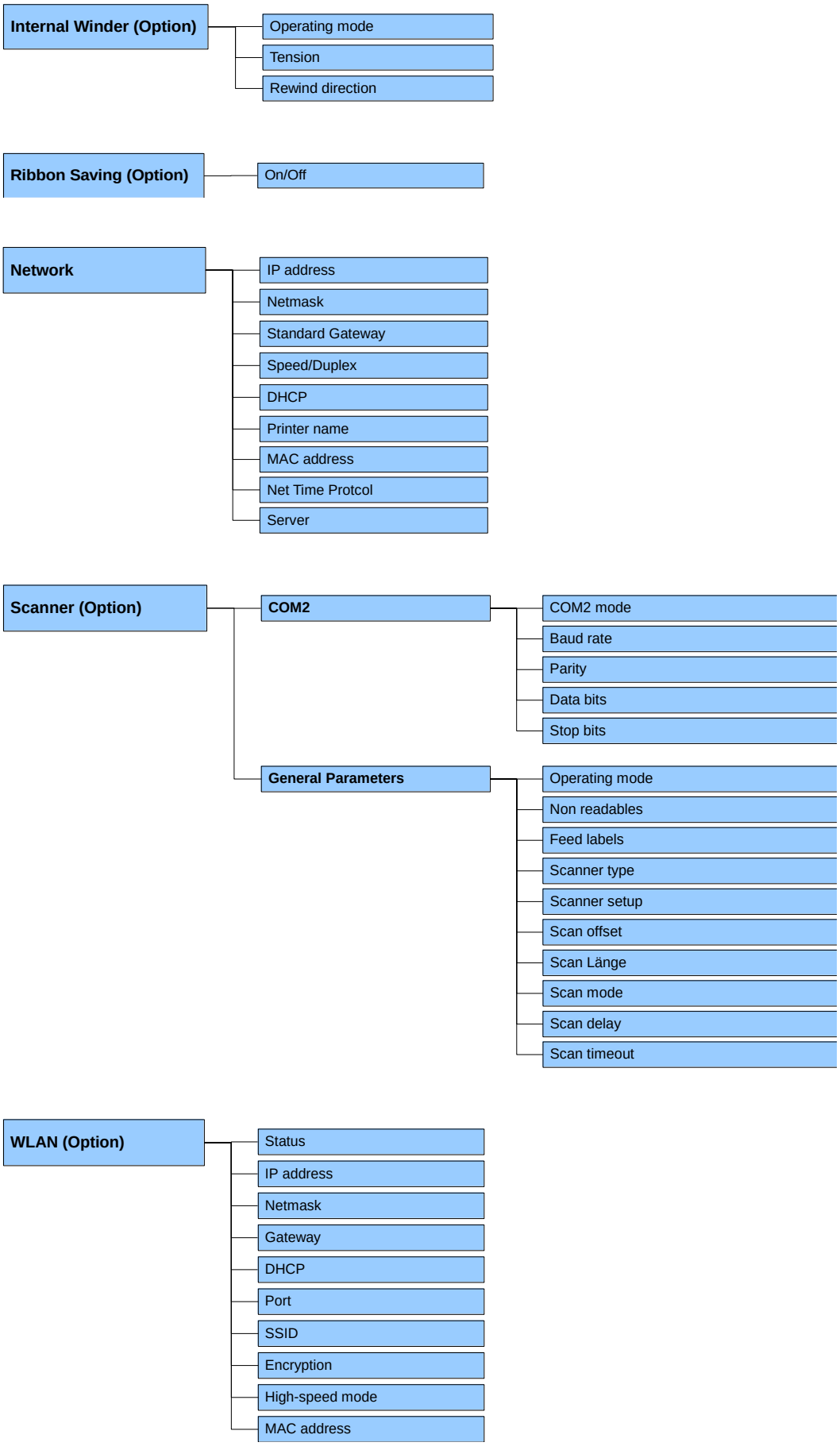
6 Function Menu

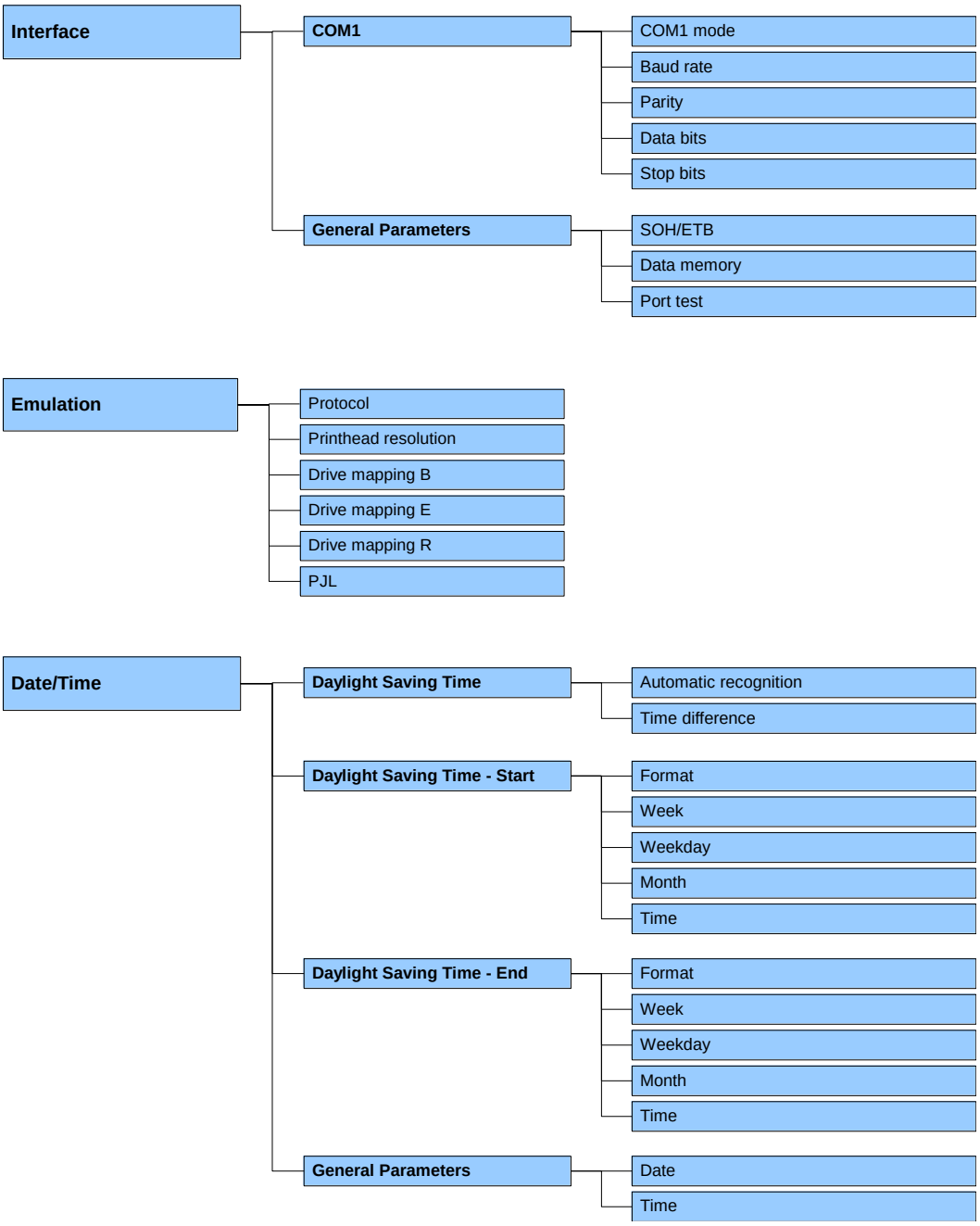
6.1 Menu Structure (Touch-Screen)

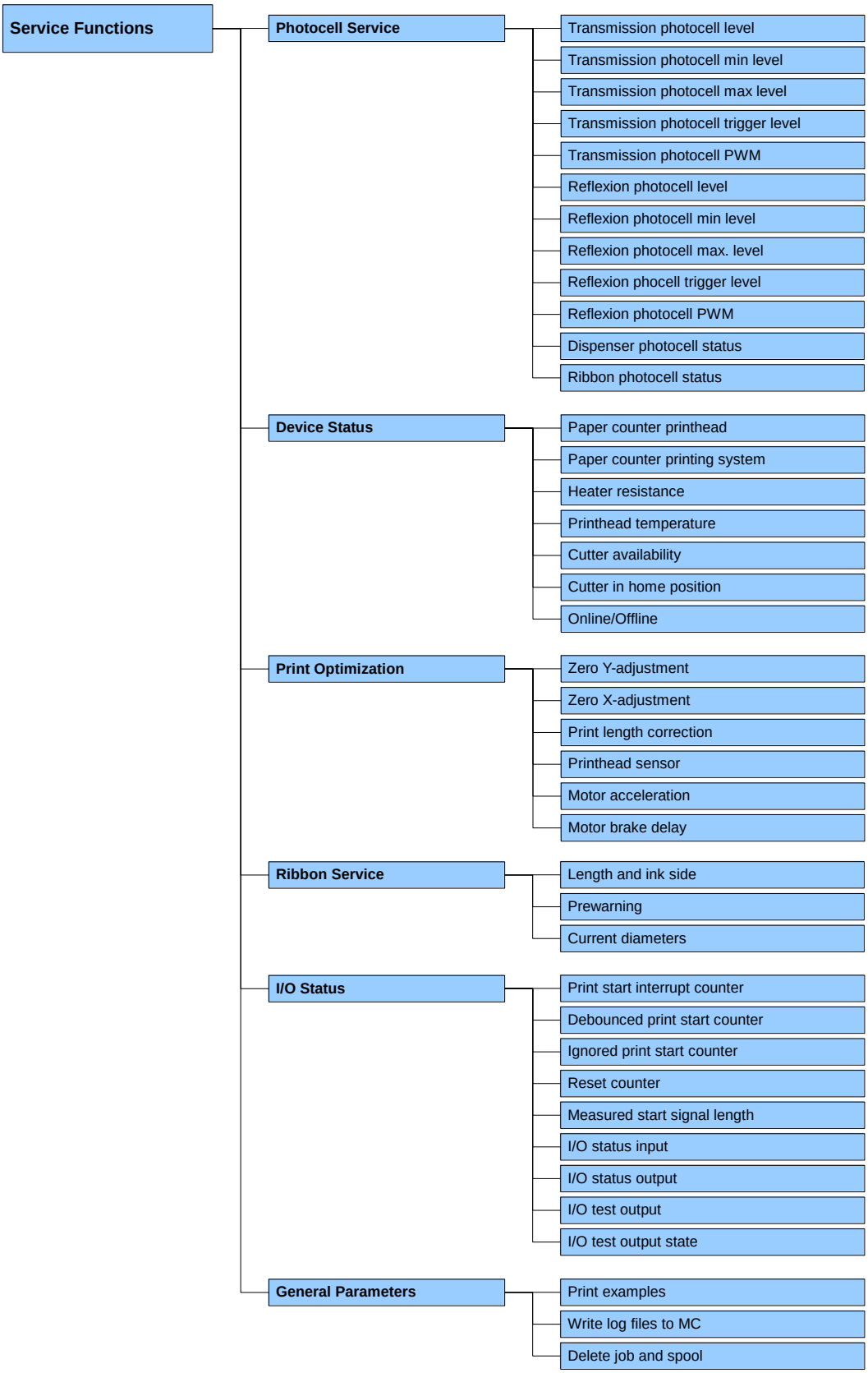


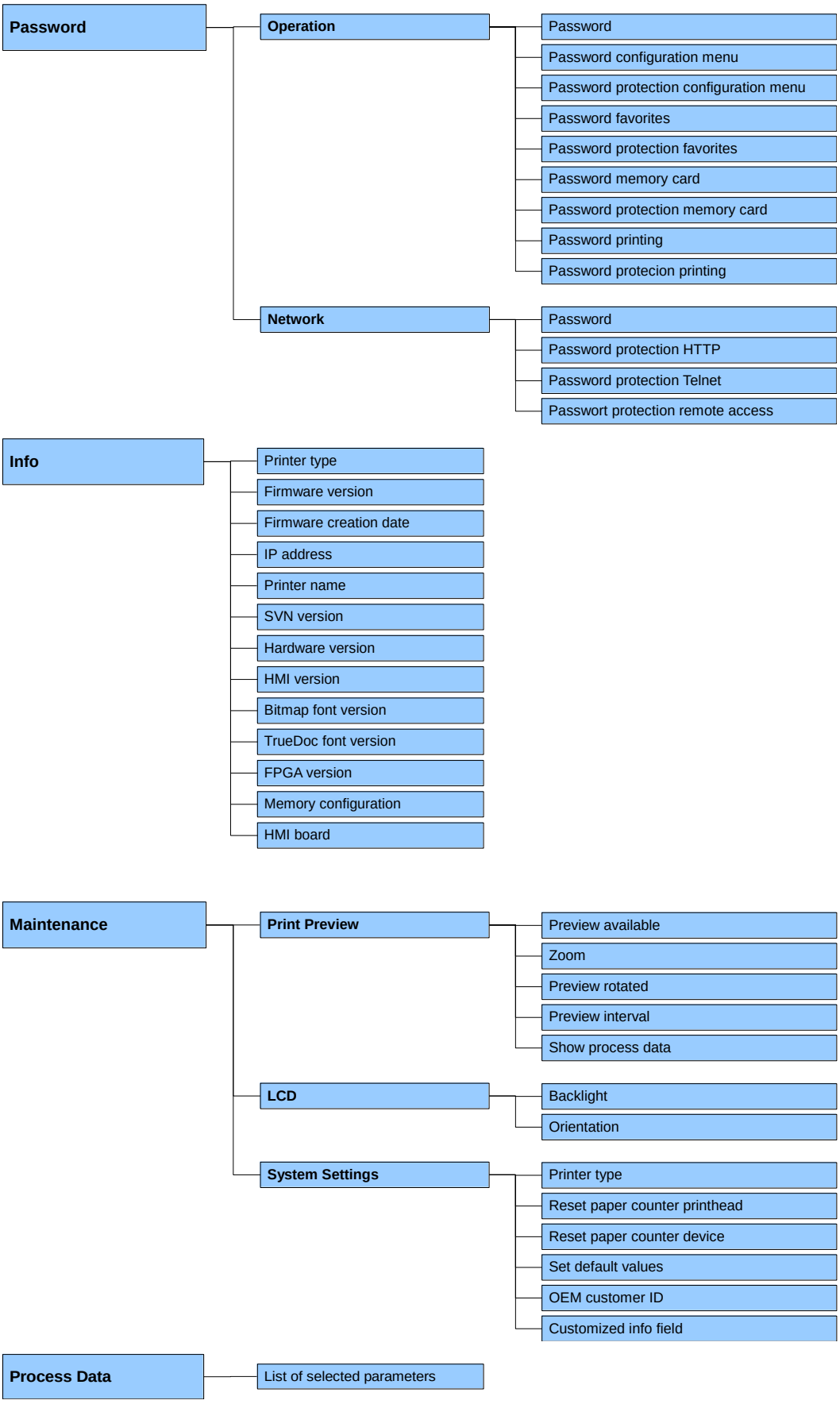
Export the latest menu structure from ConfigTool.
Printer settings --> Configuration --> Export


Cutter (Option)
Cutter Cleaning
Cleaning forward/backward
Home position
General Parmeters
Operating mode
Offset
Cutter speed
Cutter steps
Control
Auto backfeed
Single cut
Correction cutter cut width
Dispenser I/O (Option)
I/O Port Parameter 1-8
Input print start (and cut)
Input reprint label
Input reset counter
Input continue applying (applicator)
Input reset error
Input cancel all printjobs
Inable
Input print release
I/O Port Parameter 9-16
Output error
Output print job active
Outpput label in dispenser photocell
Output printing
Output print-ready
Output applicator ready for applying
Output warning scanner NoRead
Output ribbon end prior warning
Dispenser Photocell
Dispenser photocell level
Dispenser photocell status
Dispenser photocell trigger level
Dispenser photocell PWM
General Parameters
Operating mode
Offset
I/O profile
Debounce
Start delay
Save start signal
I/O protocol port

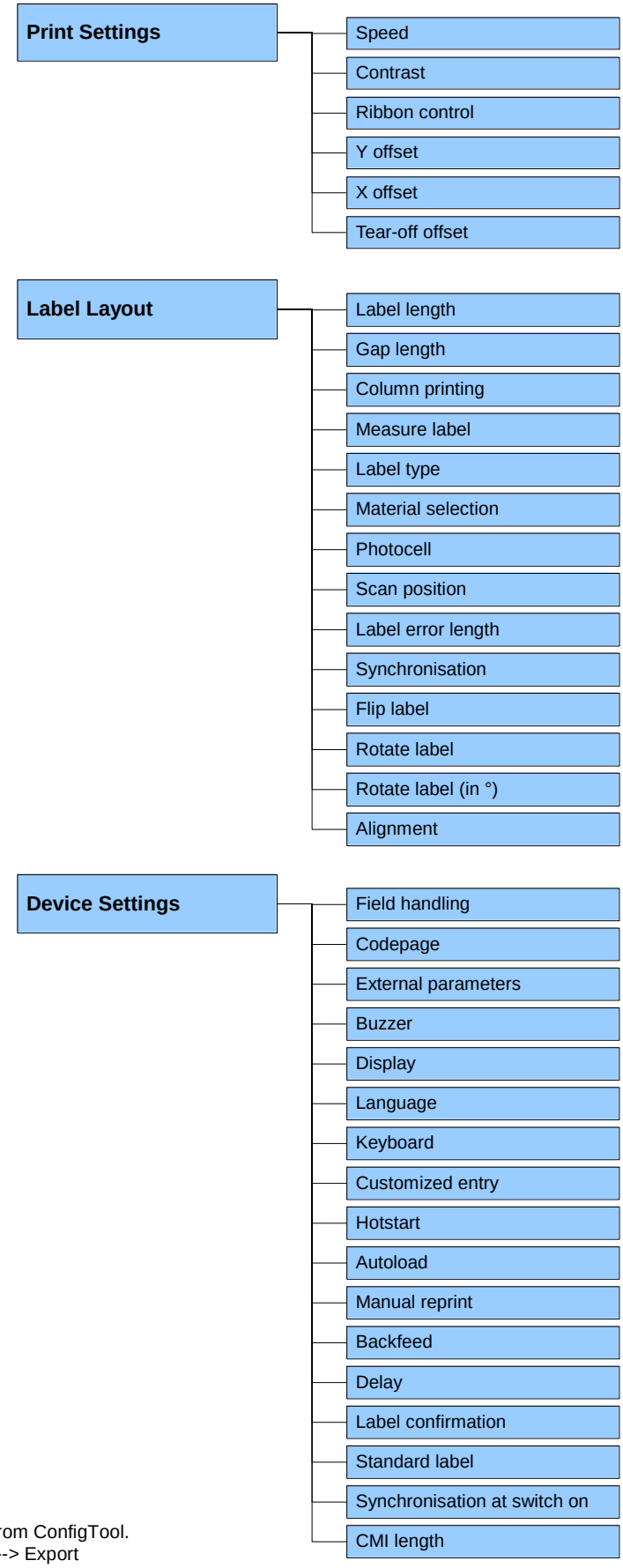

Internal Winder (Option)
Operating mode
Tension
Rewind direction
Ribbon Saving (Option)
On/Off
Network
IP address
Netmask
Standard Gateway
Speed/Duplex
DHCP
Printer name
MAC address
Net Time Protcol
Server
Scanner (Option)
COM2
COM2 mode
Baud rate
Parity
Data bits
Stop bits
General Parameters
Operating mode
Non readables
Feed labels
Scanner type
Scanner setup
Scan offset
Scan Länge
Scan mode
Scan delay
Scan timeout
WLAN (Option)
Status
IP address
Netmask
Gateway
DHCP
Port
SSID
Encryption
High-speed mode
MAC address


Interface
COM1
COM1 mode
Baud rate
Parity
Data bits
Stop bits
General Parameters
SOH/ETB
Data memory
Port test
Emulation
Protocol
Printhead resolution
Drive mapping B
Drive mapping E
Drive mapping R
PJL
Date/Time
Daylight Saving Time
Automatic recognition
Time difference
Daylight Saving Time - Start
Format
Week
Weekday
Month
Time
Daylight Saving Time - End
Format
Week
Weekday
Month
Time
General Parameters
Date
Time

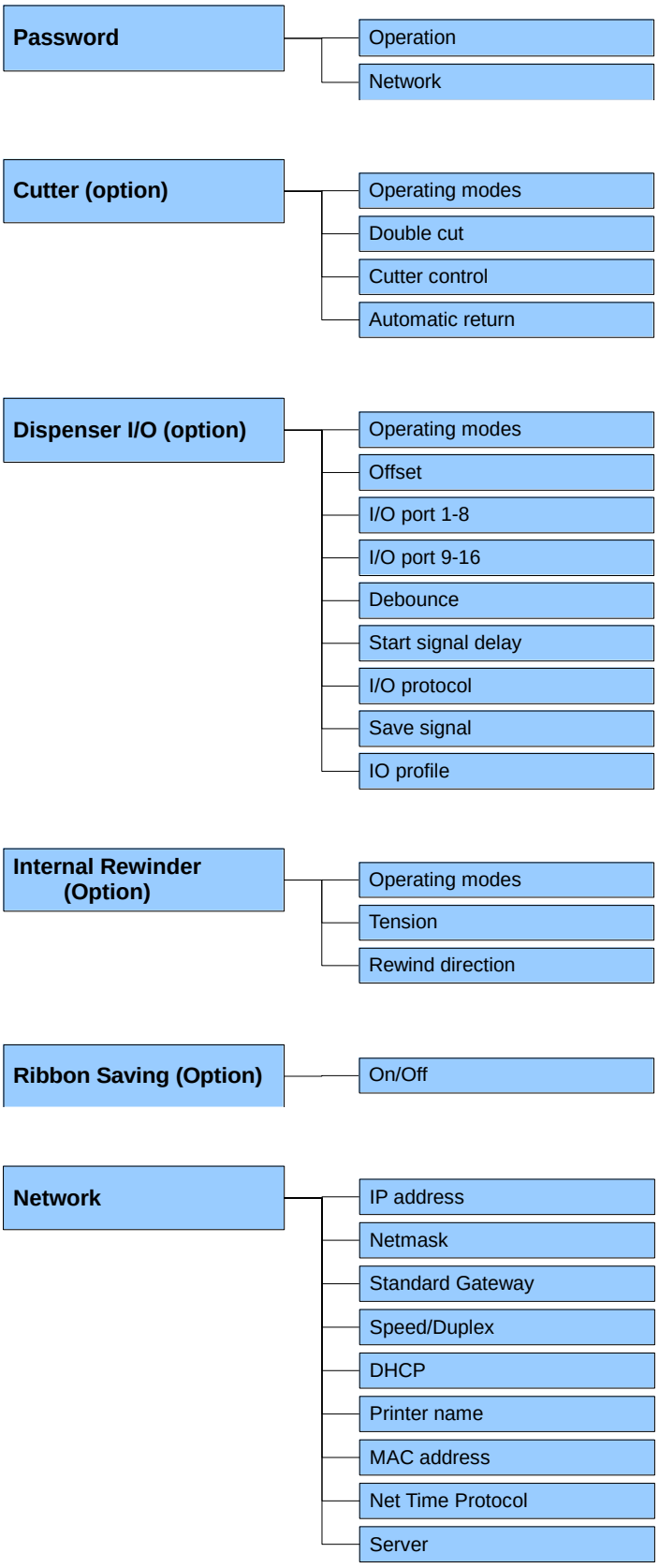

Service Functions
Photocell Service
Transmission photocell level
Transmission photocell min level
Transmission photocell max level
Transmission photocell trigger level
Transmission photocell PWM
Reflexion photocell level
Reflexion photocell min level
Reflexion photocell max. level
Reflexion phocell trigger level
Reflexion photocell PWM
Dispenser photocell status
Ribbon photocell status
Device Status
Paper counter printhead
Paper counter printing system
Heater resistance
Printhead temperature
Cutter availability
Cutter in home position
Online/Offline
Print Optimization
Zero Y-adjustment
Zero X-adjustment
Print length correction
Printhead sensor
Motor acceleration
Motor brake delay
Ribbon Service
Length and ink side
Prewarning
Current diameters
I/O Status
Print start interrupt counter
Debounced print start counter
Ignored print start counter
Reset counter
Measured start signal length
I/O status input
I/O status output
I/O test output
I/O test output state
General Parameters
Print examples
Write log files to MC
Delete job and spool

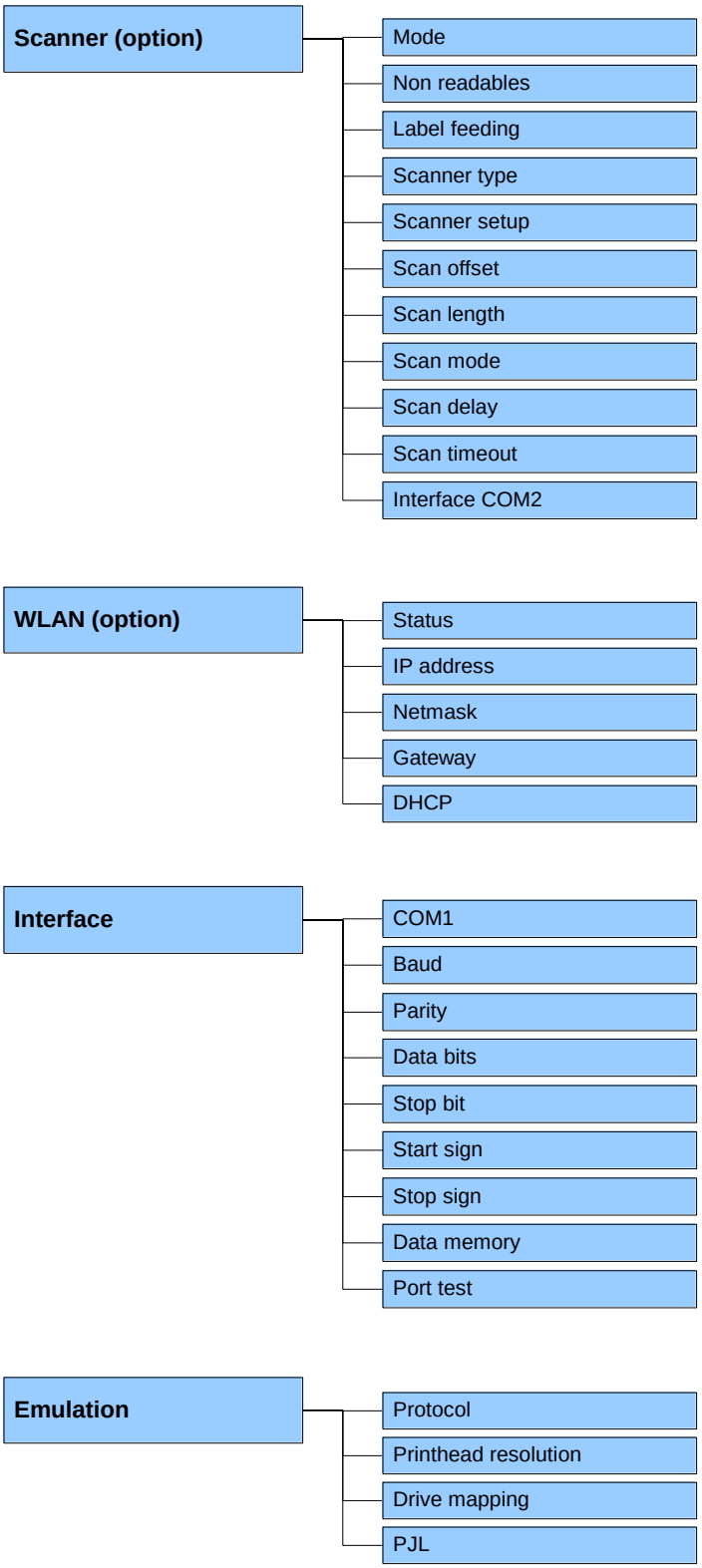

Password
Operation
Password
Password configuration menu
Password protection configuration menu
Password favorites
Password protection favorites
Password memory card
Password protection memory card
Password printing
Password protecion printing
Network
Password
Password protection HTTP
Password protection Telnet
Passwort protection remote access
Info
Printer type
Firmware version
Firmware creation date
IP address
Printer name
SVN version
Hardware version
HMI version
Bitmap font version
TrueDoc font version
FPGA version
Memory configuration
HMI board
Maintenance
Print Preview
Preview available
Zoom
Preview rotated
Preview interval
Show process data
LCD
Backlight
Orientation
System Settings
Printer type
Reset paper counter printhead
Reset paper counter device
Set default values
OEM customer ID
Customized info field
Process Data
List of selected parameters

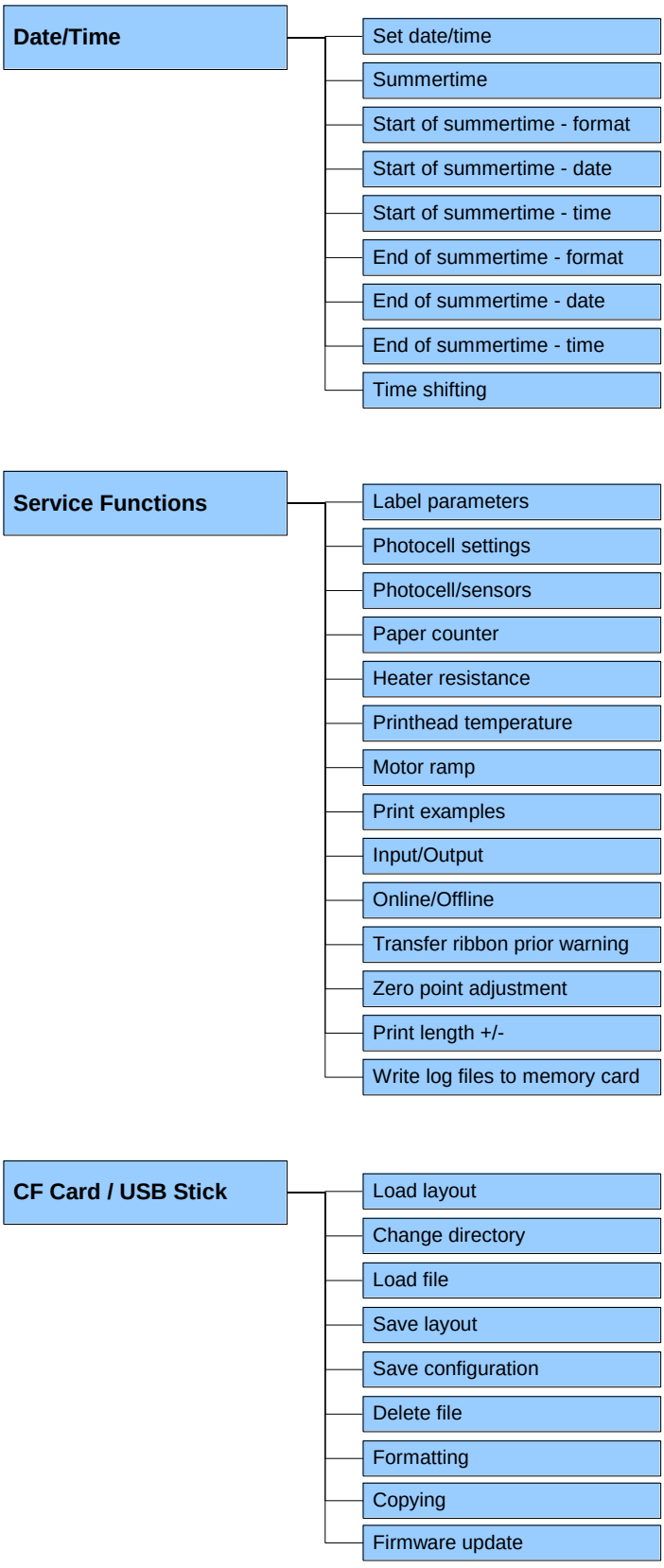
6.2 Menu Structure (LCD)



Export the latest menu structure from ConfigTool.
Printer settings --> Configuration --> Export


Password
Operation
Network
Cutter (option)
Operating modes
Double cut
Cutter control
Automatic return
Dispenser I/O (option)
Operating modes
Offset
I/O port 1-8
I/O port 9-16
Debounce
Start signal delay
I/O protocol
Save signal
IO profile
Internal Rewinder (Option)
Operating modes
Tension
Rewind direction
Ribbon Saving (Option)
On/Off
Network
IP address
Netmask
Standard Gateway
Speed/Duplex
DHCP
Printer name
MAC address
Net Time Protocol
Server


Scanner (option)
Mode
Non readables
Label feeding
Scanner type
Scanner setup
Scan offset
Scan length
Scan mode
Scan delay
Scan timeout
Interface COM2
WLAN (option)
Status
IP address
Netmask
Gateway
DHCP
Interface
COM1
Baud
Parity
Data bits
Stop bit
Start sign
Stop sign
Data memory
Port test
Emulation
Protocol
Printhead resolution
Drive mapping
PJL


Date/Time
Set date/time
Summertime
Start of summertime - format
Start of summertime - date
Start of summertime - time
End of summertime - format
End of summertime - date
End of summertime - time
Time shifting
Service Functions
Label parameters
Photocell settings
Photocell/sensors
Paper counter
Heater resistance
Printhead temperature
Motor ramp
Print examples
Input/Output
Online/Offline
Transfer ribbon prior warning
Zero point adjustment
Print length +/-
Write log files to memory card
CF Card / USB Stick
Load layout
Change directory
Load file
Save layout
Save configuration
Delete file
Formatting
Copying
Firmware update

NOTICE!

The order of the functions described can be different depending on the display (touch-screen or LCD).

6.3 Print Settings

Print speed

Indication of print speed in mm/s. 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.

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 printer display.

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

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

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

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.

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.

Tear off displacement

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.

6.4 Label Settings

6.4.1 Label Layout

Number of columns

Indication how many labels are sidy by side on the liner. With column printing, the label width is to be changed to the width of the layout (see chapter 10.1, page 101).

Material

Selection of the used label and transfer ribbon material.

Flip label

The axis of reflection is in the middle of the layout. If the label width was not transferred to the printer, 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.

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.

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.

Alignment

The adjustment of label is effected only after *Flip/Rotate label*, i.e. the adjustment is independent of the functions *Flip label* and *Rotate label*.
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.

6.4.2 Label Recognition

Label type

Selection of adhesive labels or continuous material is used in the printing system. As default, adhesive labels is set. If the menu item *Label length/Gap length* contains a gap value, this value is added to the label length.

Photocell
Selection of the used photocell.
The selection of one of the following photocell types is possible: transmission photocell normal and inverse, reflexion photocell normal and inverse, ultrasonic photocell (option)
(see chapter 10.4, page 106).

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

Error length
If no new label can be recognized, indication after how many mm a message appears in the display.

Synchronization
On: If no new label is recognized, it is not printed. The new data remains in the memory.
Off: Although no new label is recognized, the next data is printed and removed from the memory.

6.4.3 General Parameters

Label length
Indication of label length in mm.

Gap length
Indication of distance between two labels in mm
(not for continuous labels).

Label width
Indication of label width in mm.

Measure label
Press the key  to start the measuring process. The printer stops automatically after termination of measuring. The determined values are displayed and saved.

6.5 Device Settings

6.5.1 Print Job

Field handling

Off: The complete print memory is deleted.
Keep graphic: A graphic res. a TrueType font is transferred to the printer once and stored in the printer internal memory. For the following print order only the modified data is transferred to the printer. The advantage is the saving of transmitting time for the graphic data. The graphic data created by the printer 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 printer-internal memory is deleted but the other fields are kept.
Restore graphic: At the end of the print order the printed order can again be started at the printer. All graphics and TrueType fonts are again printed.

NOTICE!

Exception: With column printing always full columns must be printed (number of pieces always multiple of the columns). Deleted columns are not restored.

External parameters

Label dimension only: The parameters for label length, gap length and label width can be transferred by the interface of the printer. All other parameter settings were ignored at the interfaces and are to be made directly at the printer.
On: Parameters such as print speed and contrast can be transferred to the printer with our Labelstar Office. Parameters which are set directly at the printer before are no longer considered.
Off: Only settings made directly at the printer were considered.

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.

Autoload

On: A layout loaded once from CF card, can be reloaded after a restart of the printer automatically.

Procedure: The used label is saved onto CF card. The label is loaded from CF card and printed. After switching the printer Off and again On, the label is loaded from CF card automatically and can be printed again.

NOTICE!

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

Off: After a restart of printer 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 printer.

Hotstart

On: A discontinued print order can be continued after switching on the printer anew.
Off: After switching off the printer the complete data is lost (see chapter 10.2, page 102).

Codepage

Indication of the font used in the printer. 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 mentionned character sets on www.carl-valentin.de/Downloads.

6.5.2 Print Control

Backfeed

Backfeed mode: The backfeed was optimised in the operating modes dispenser (optional) and cutter (optional). 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.

Auto backfeed delay: The adjustable delay time is only important with mode 'backfeed automatic' (see chapter 10.3, page 104.

Manual reprint

On: If the printing system is e.g. in stoppin mode after an error, the last printed label can be reprinted with the key 'Reprint'.
Off: Only empty layouts are moved forward.

CMI length

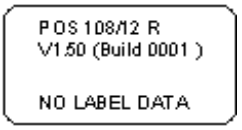
If the print is interrupted in the label, at the printhead this could lead to a small interruption in the printout, showing a fine white line onto the label. To avoid this, a value for the minimum backfeed can be set (0 – 1 mm) at which the label material is moved backwards. At the next print start the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

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 control unit.

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.

6.5.3 User Environment

Buzzer

On (1-7): An acoustic signal is audible when pressing a key.
Off: No signal is audible.

6.5.4 General Parameters

Printer language

Selection of language in which you want to display the text in the printer 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, Estonian.

Keyboard layout

Selection of region for the desired keyboard layout. The following possibilities are available: German, English, French, Greek, Spanish, Swedish, US American, Russian.

Synchronization at power on

Off: The synchronization is disabled, i.e. the measuring and label feed have to be released manually.
Measure: After switching on the printer, the loaded label is automatically measured.
Feed: After switching on the printer the label is synchronized to the beginning of label. For this one or multiple labels are fed.

6.6 Network

IP address (DHCP)

Each participant must have a 32 bit adress. The IP address is separated by full stops and arranged into four parts. Each part has a number range of 0 … 255.

Network mask (DHCP)

In connection with the IP address of the printer, the netmask determines which IP addresses this device searches in the own network.

Standard gateway (DHCP)

The IP address of the network gateway. If the IP address was referred by DHCP then DHCP is indicated in brackets.

Speed and duplex

Automatic:	Default setting. The speed is recognized automatically. Normally this procedure is reliable. In most cases it is not necessary to change the settings.
10 Mbit half:	Speed 10 Mbit/s in the half-duplex transmission method.
10 Mbit full:	Speed 10 MBit/s in the full-duplex transmission method.
100 Mbit half:	Speed 100 MBit/s in the half-duplex transmission method.
100 Mbit full:	Speed 100 MBit/s in the full-duplex transmission method.

DHCP

DHCP permits the automatic referring of the network parameters IP address, network mask and standard gateway of a DHCP server which must be installed in the network.

Printer name

The name of the installed printer in the network. The printer name in connection with DHCP can be used to respond the printer. If DHCP is active and the name of the printer is changed, the printer logs out itself at the DHCP server and afterwards the printer logs in again. After changing the printer name, the printer can have a new IP address.

MAC address

The MAC address (Media Access Control) is the hardware address of each individual network adapter and serves for the clear identification of the printer in network.

6.7 Interface

6.7.1 COM1

COM1 mode
Off: serial interface Off
On (mode 1): serial interface On
On (mode 2): serial interface On; no error message appears in case of a transmission error

Baud rate
Indication of bits which are transferred per second (speed of data transfer).
Value range: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

Parity
None: No parity
Even: Even parity
Odd: Odd parity

Data bits
Setting of data bits.
Value range: 7 or 8 Bits.

Stop bits
Indication of stop bits between bytes.
Value range: 1 or 2 stop bits.

6.7.2 General Parameters

SOH/ETB
SOH: Start of data transfer block → Hex format 01
ETB: End of data transfer block → Hex formal 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.

Data memory
Off: After starting a print order no more data is received.
Standard: After starting a print order the printer buffer receives data as long as it is filled.
Advanced: During a current print order data is received and processed.

Port test
Check whether the data are transferred via the interface.

6.8 Emulation

Protocol

CVPL: Carl Valentin Programming Language
ZPL: Zebra® Programming Language
Change between CVPL protocol and ZPL II® protocol.

The printer performs a restart and ZPL II® commands are transformed into CVPL commands internally by the printer and then executed by the printer.

Printhead resolution

At activated ZPL II® emulation the printhead resolution of the emulated printer 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 printer, then the size of objects (e.g. texts, graphics) complies not exactly.

Drive mapping

The access to Zebra® drives
B: CF card
E: Flash drive
R: RAM disk (standard drive, if not indicated)

is rerouted to the corresponding Valentin drives
A: CF
R: RAM disk
U: not occupied

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 printer and be stored permanently.

NOTICE!

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

PJL (Printer Job Language)

The processing of PJL commands (Hewlett Packard® Print Job Language) can be switched On/Off. Status information relating to the print order can be queried.

6.9 Date/Time

6.9.1 Daylight Saving Time (DST)

Daylight saving time
On: Printer automatically adjust clock for daylight saving changes.
Off: Summertime is not automatically recognized and adjusted.

DST difference (HH:MM
Indication of time difference in hours and minutes for summer/winter time changeover.

6.9.2 Start Daylight Saving Time

DST start (format)
Selection of format to enter the start of the daylight saving time (European format).

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

DST start date (week)
Selection of the week when the daylight saving time should begin.

DST start date (weekday)
Selection of weekday when the daylight saving time should begin.

DST start date (month)
Selection of month when the daylight saving time should begin.

DST start time (HH:MM)
Selection of time when the daylight saving time should begin.

6.9.3 End Daylight Saving Time

DST end (format)
Selection of format to enter the end of the daylight saving time.
The example shows the standard settings (European format).

DST end date (week)
Selection of the week when the daylight saving time should end.

DST end date (weekday)
Selection of the weekday when the daylight saving time should end.

DST end date (month)
Selection of the month when the daylight saving time should end.

DST end time (HH:MM)
Selection of time when the daylight saving time should end.

6.9.4 General Parameters

Date (DD.MM.YY)
Indication of current date.

Time (HH:MM:SS)
Indication of current time.

6.10 Service Functions

6.10.1 Photocell Service

Transmission photocell level	Indication of current level at the transmission photocell. No adjustment possible.
Min transmission photocell level	Indication of the lower level at the transmission photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Max transmission photocell level	Indication of the upper level at the transmission photocell: No adjustment possible. The value is determined during the procedure 'measure label'.
Transmission photocell trigger level	This value defines the level at the limit between label and liner and should be approx. 1,0 V above the level. The value is determined during the 'measure label' procedure and can be readjusted manually, if necessary.
Transmission photocell PWM	Setting the contrast of transmission photocell. With particularly strong, opaque liners, the label recognition can be improved.
Reflexion photocell level	Indication of the current level at the reflexion photocell. No adjustment possible.
Min. reflexion photocell level	Indication of the lower level at the reflexion photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Max. Pegel Reflexion Lichtschranke	Indication of upper level at the reflexion photocell. No adjustment possible. The value is determined during the procedure 'measure label'.
Reflexion photocell trigger level	This value defines the level at the limit between mark and liner and should be approx. 1,0 V above the ninimum level. The value is determined during the 'measure label' procedure and can be readjusted manually, if necessary.
Reflexion photocell PWM	Setting the contrast of reflexion photocell. With problematic marks (color), the label recognition can be improved.

Dispenser photocell status

Indication of current dispenser photocell. The function and correct setting of switching threshold can be examined. No adjustment possible.

Ribbon sensor status

Indication of current transfer ribbon photocell status. The function of transfer ribbon photocell can be examined (manual rotation of ribbon unwinder). No adjustment possible.

6.10.2 Device Status

Paper counter printhead

Indication of printhead performance in meters.

Paper counter printer

Indication of printer performance in meters.

Heater resistance

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

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 printer display.

Cutter available

The printing system (printer-dependent) recognizes automatically whether the cutter (option) is mounted/attached. No adjustment possible.

Cutter in home position

Yes: The cutter is in the initial position and ready for the cutting procedure.

No: The cutter is not in the initial position. Before you are going to release a cutting procedure you first have to place the cutter in its initial position.

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. The respective state is indicated in the display.

Standard: Off

Online: Data can be received by interface.
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.

6.10.3 Print Optimization

Zero Y adjustment

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 X adjustment

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.

Print length correction

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.

Printhead sensor

The printing system (printer-dependent) recognizes automatically whether the printhead is attached correctly. No adjustment possible.

Motor acceleration

This function is often reqquired when using high print speeds, since this prevents the tearing of transfer ribbon.
The higher the value is set, the more slowly is the feed motor accelerated.

Motor brake delay

This function is often reqquired when using high print speeds, since this prevents the tearing of transfer ribbon.
The smaller the value is set, the faster the feed motor is braked

6.10.4 Transfer Ribbon

Prewarning

Ribbon prior warning: Before the end of transfer ribbon, a signal is send by the control output.

Ribbon prior 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 prior warning mode:
Warning: When reaching the transfer ribbon advance warning diamter, 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'.

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

Current diameters

Roll diameter: Indication how much transfer ribbon is still on the transfer ribbon roll. For a correct display some labels must be reprinted.

Time left: Indication during a current print order, how long it can be printed with the existing transfer ribbon.

6.10.5 I/O Status

Relevant results are counted and registered in RAM memory. The protocole get lost after switching off the device.

PrtStrtIntsReal = Real Interrupts
The start input impulses are counted directly at the Interrupt.

PrtStrtIntsDebounced = 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.

PrtStrtIntsNoPrint = 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 ist still active with the processing of a print order.

PrtStrtReset = The counters are reset.

PrtStrtTime = Measured length of the last start impulse in ms.

I/O status input

Indication of input signal level
0 = Low
1 = High

Port		Function
1	=	Print start
2	=	Cut
3	=	Counter reset
4	=	External synchronization of label position
5	=	No function
6	=	No function
7	=	No function
8	=	No function

I/O status output

Indication of output signal level
0 = Low
1 = High

Port		Function
9	=	Error
10	=	Print order active
11	=	Label available at dispenser photocell – with dispenser photocell
12	=	Print end
13	=	Ready
14	=	RFID error – only with option RFID
15	=	Scanner: bar code not readable – only with option scanner
16	=	Ribbon prior warning

6.10.6 General Parameters

Print examples

Settings: Printout of all printer 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.

Write log files to memory card

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). 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 „---„

6.11 Password

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.

6.11.1 Operation

Password

Entering a 4-digit numeric password.

Protection configuration

Printer settings can be changed (contrast, speed, operating mode, ...). The password protection prevents modifications at the printer settings.

Protection favorites

The password protection prevents the access to the favorites.

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 acces on CF card is allowed.

No protection: No password protection
Userview only: Only reading access
Protected: Access blocked

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.

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.

6.11.2 Network

Password Entering a 15-digit password. The password can consists of alphanumeric and special characters.

Protection HTTP The communication by HTTP can be avoided.

Protection Telnet The settings of the Telnet service cannot be changed.

Protection remote access The password protection prevents the remote control of the printer.

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.

6.12 Info

Indicates information such as printer type, current date and time, version number of firmware and used FPGA.

6.13 Maintenance (printer-dependent)

6.13.1 Print Preview

Preview available With activated print preview a picture of the currently printed layout is shown on the display. If the function is not activated, the field remains empty.

Zoom Selection of a certain zoom value for the representation of print preview.

Label: The complete layout is fit to the indication zone.
Fields: Only the print range is fit to the indication zone.
1 .. 8: Manual zoom factor to scale the complete layout down.

Preview rotated The display of label preview can be rotated on the touch-screen display.
On: The label preview is shown rotated by 180° on the display.
Off: The label preview is represented in read direction.

Preview interval During a running print order the preview is refreshed in the set interval.

6.13.2 LCD

Backlight Setting of contrast of background lighting.

LCD orientation

Landscape 180°: The display is represented turned by 180 degres to the function 'Landscape'.

Landscape: The display is represented turned by 90 degres to the reading direction.

Portrait: The display is represented in reading direction.

Portrait 180°: The display is represented turned by 180 degres.

6.13.3 System Settings

NOTICE!

All settings and modifications in system settings require the respective password.

The following system settings can be made:

- Printer type
- Reset paper counter printhead
- Reset paper counter printer
- Set default settings
- OEM client ID

6.14 Memory Card Menu

Load: The selected layout is loaded. After the number of copies have been entered, the print order is started.

Administrative tools: Switching to the file manager (File Explorer).

File explorer

The file explorer is the management system of the printer. The main functions for the memory menu surface is provided in the file explorer.

The following functions can be selected:

- Load file
- Change drive/directory
- Save current label
- Create new folder
- Save current configuration
- Format memory card
- Create user directory

Context menu

By long pressing (> 3 s) on a folder, the context menu is opened. The selected folder can be deleted or selected as **User directory** (key: set).
By long pressing (> 3 s) on a file, the context menu to **Delete**, **Rename** or **Load** is opened.

7 Options

7.1 Cutter

CAUTION!

Risk of injury, particularly during maintenance, the cutter blades are sharp!

⇒ Switch off before attaching the cutter!

⇒ The cutter may only be used when it is mounted on the printer!

⇒ Do not try to cut any materials which exceed the maximum width or thickness specifications.

⇒ Do NOT touch the area of the moving blades!

7.1.1 Cutter Cleaning

Cutter cleaning forward/backward

For cleaning the cutter, the cutter can be moved manually.

Cutter cleaning home position

After cleaning the cutter, the cutter is returned into the initial position.

7.1.2 General Parameters

Cutter mode

Off:
The print order is processed without cutting.

Without backfeed:
A cut is effected after each label.
We recommend using this operating mode if no data which is to print is in the upper part of the label.

With backfeed:
A cut is effected after each label.

Interval with final cut:
A cut is effected after a fixed number of labels which you have to enter at the print start and additionally at the end of the print order.

Interval without final cut:
A cut is effected after a fixed number of labels which you have to enter at the print start. At the end of the printer order no cut is effected except when the set interval comes to the end of the print order.

Final cut:
A cut is only effected at the end of the print order.

Cutter offset	During the cutting procedure, the label is put forward from the print position to the cut position. This distance can be set with the cutter offset.
Double cut offset	When using this function, after the first cut a feed with the set offset is effected and then cut anew. After the cut a backfeed to the printing position is effected.
Cutter speed	Selection of speed to execute a cut. The cut speed depends on the thickness of used label material, i.e. the thicker the material the slower the cut should be executed. Value range: 0 - 4
Cutter steps	When using narrow labels or when only cutting into a specific part of the label – the cutting width can be reduced or increased. Start cutting a label is only recommended when using a cutter mode without backfeed as otherwise at the backfeed the labels tear.
Cutter control	**Automatic:** After each printed label a cut is released. **External:** A cut is released by an external I/O. External can only be selected if the label printer is equipped with option external I/O.
Auto backfeed	**On:** The label is pulled back immediately after the cut. **Off:** The label is pulled back only before the next print.
Single cut	In case you are in the main menu or a print order has been stopped, press the key  to release a single cut. The type of the single cut depends on the set cutter mode, offset and the value set for the double cut.
Correction cutter cut width (not available for Spectra 216)	The value changes the cut width when cut in or cut off.

7.2 Dispenser I/O

NOTICE!

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

7.2.1 I/O Port Parameter 1-8

Input print start (and cut)

Input reprint label

Input reset counter

Input applicator continue apply

Input reset error

Inactive

Inactive

Input external print release (default: disabled)

7.2.2 I/O Port Parameter 9-16

Output error

Output print order active

Output label under dispenser photocell

Output printing

Output print-ready

Output applicator ready for apply

Output warning scanner no read

Output Ribbon end prior warning

7.2.3 Dispenser Photocell

Dispenser photocell level

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

Dispenser photocell status

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.

Dispenser photocell threshold level

Indication of switch level (Default: 1.2).

Dispenser photocell PWM

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).

7.2.4 General Parameters

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 printer 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 printer is controlled via photocell. The printer 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 Photcell.
Continuous means that it is printed as long as new data is transferred via interface.

Dispenser offset

Setting the dispenser offset, i.e. the distance from printhead focal line to the dispensing edge.

I/O profile

Selection of the available configurations *Std_Label* (factory setting), *StdFileSelLabel* or *APL*.

List of registered functions for *Std_Label*

1	Print start and cut (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 scanner only: Bar code not readable (Output)
16	Transfer ribbon prior warning (Output)

List of registered functions for *StdFileSelLabel*

1	Print start and cut (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 2 (Input)
6*	Number of the file to load 3 (Input)
7*	Number of the file to load 4 (Input)
8*	Number of the file to load 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.
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 and cut (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)

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.

Start delay

Indication in time per second of the delay for the start signal.
Value range: 0.00 … 9.99.

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 printing system. The printing system 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 printing system is again in 'waiting' state (output 'ready' set). If the start signal was released already before, so this is ignored.

I/O protocol port

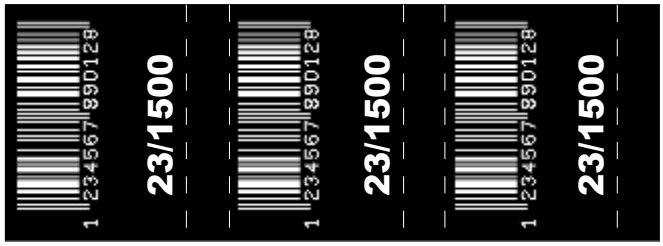
Indication of interface at which the modifications of input signals (I/O)

7.3 Ribbon Saving

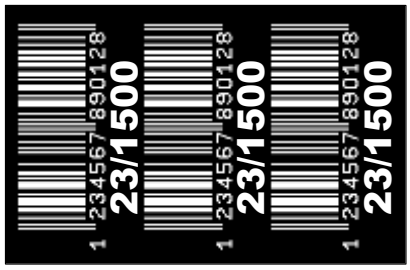
Ribbon save = maximum utilisation of transfer ribbon

Label

Transfer ribbon w/o ribbon saving



Transfer ribbon with ribbon saving



Procedure

In principle the ribbon save is achieved by the way that the transfer ribbon in phases in those no printing is effected stopped or decelerated. If sufficient time is available, the transfer ribbon which was not used for printing can be retracted to print on it afterwards. The possibilities of ribbon save and in this way of the print quality are to be connected with the available time which is needed for decelerating and accelerating of transfer ribbon.

The above example clearly illustrates that the transfer ribbon consumption is much lower when using the ribbon save mode 'Standard'.

In the ribbon save mode 'Off', the printhead is not moved up, i.e. no reduction of transfer ribbon is effected.

7.4 WLAN

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

For more information, please see the separate manual.

7.5 Scanner

7.5.1 COM2

COM2 Mode

Off: serial interface Off
On (mode 1): serial interface On
On (mode 2): serial interface On; no error message appears in case of a transmission error

Baud rate

Indication of bits which are transferred per second (speed of data transfer).
Value range: 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

Parity

None: No parity
Even: Even parity
Odd: Odd parity

Data bits

Setting of data bits.
Value range: 7 or 8 Bits.

Stop bits

Indication of stop bits between bytes.
Value range: 1 or 2 stop bits.

7.5.2 General Parameters

Operating mode

Mode 0 = Off

Mode 1 = Compare data
Bar code date which was read by the scanner is compared with the printed data.

Mode 2 = Check readability
It is only checked if the scanner can read the printed bar codes.

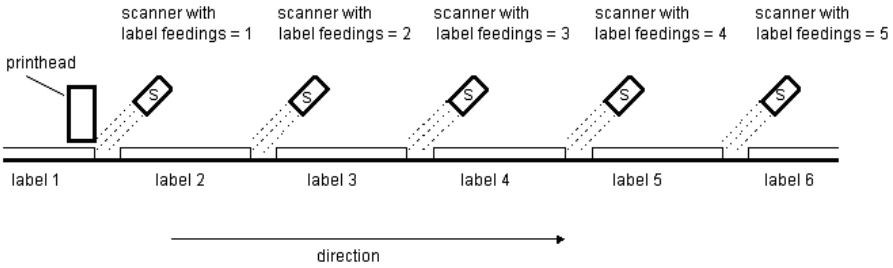
Mode 3 = Chech readability graphic
It is only checked if the scanner can read the printed bar codes. This mode is to use if the bar code is available as graphic (e.g. printing with printer driver). In this case the printer cannot recognize that a bar code is placed onto the label.

No Reads

Indication of number of successive non readables, i.e. when the printer indicates an error message.
Value range: 0 … 9
1 = the printer stops at the first label which cannot be red from the scanner and shows an error message.
0 = the printer do not stop at non-readable. A message appears at the display only.

Feed labels

In many cases it is impossible to position the scanner directly at the printhead, and therefore with this setting a feeding can be set
Value range: 1 … 5
The illustration below clarifies the meaning of this parameter.



Scanner type

Selection of the connected scanner type.
For more information about the different scanner models, please contact our sales department.

Scanner setup

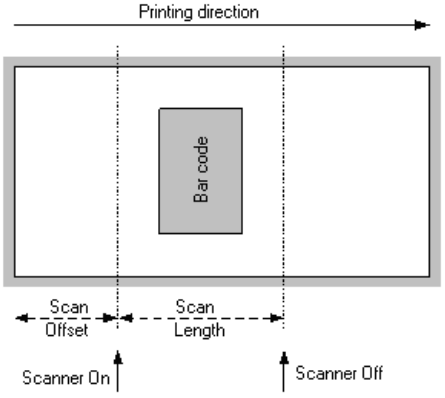
Positioning of scanner. First of all, the scanner must be connected, the appropriate scanner must be selected in the scanner type menu, the interface must be activated in the interface parameter menu and the interface parameters must be set correctly.

Scan Offset

Indication of value at which the label is moved so the scanner can read data onto the label.

Scan length

If this parameter is set to 0 (AUTO), the switch on and off position of scanner is calculated by means of position and height of bar code onto the label.
If the parameter Scan Length is not 0, so this defines the length of scan sector. The start of scan sector is then set by the parameter Scan Offset. The following drawing shows the meaning of parameter.



Scan mode	With this parameter can be adjusted, at which time the scanning of the bar code is to be effected - during printing or after printing.
Scan delay	In scan mode 'after print' the scanner is switched On after the label was printed. With this value the time can be specified between printing the label and switching On the scanner.
Scan timeout	In scan mode 'after print' can be specified with this value the time which is available for scanning the label.

8 Maintenance and Cleaning

DANGER!

Risk of death by electric shock!

⇒ Before opening the housing cover, disconnect the label printer 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 plan

Maintenance task	Frequency
General cleaning (see chapter 8.1, page 80).	As necessary.
Clean the transfer ribbon drawing roller (see section 8.2, page 80).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the pressure roller (see chapter 8.1, page 80).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Clean the printhead (see chapter 8.4, page 82).	Each time the transfer ribbon is changed or when the printout is adversely affected.
Clean the label photocell (see chapter 8.5, page 83).	When replacing the label roll.
Replace printhead (see chapter 8.6, page 84).	When errors in the printout occur.

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 label printer and cleaned.

8.1 General Cleaning

CAUTION!

Abrasive cleaning agents can damage the label printer!

⇒ Do not use abrasives or solvents to clean the outer surface of the label printer.

⇒ Remove dust and paper fuzz in the printing area with a soft brush or vacuum cleaner.

⇒ Clean the outer surfaces with an all-purpose cleaner.

8.2 Clean the Transfer Ribbon Drawing Roller

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

1. Open the printer cover.
2. Remove the transfer ribbon from the label printer.
3. Remove deposits with roller cleaner and a soft cloth.
4. If the roller appears damaged, replace it.
5. Reload labels and transfer ribbon.
6. Close the printer cover.

8.3 Clean the Pressure Roller

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

CAUTION!

Pressure roller can be damaged!

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

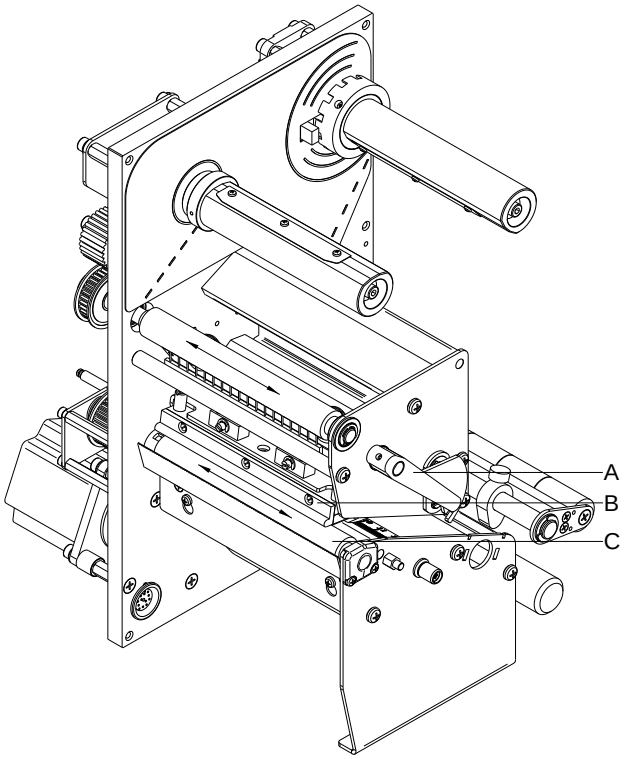


Figure 13

1. Open the printer cover.
2. Turn the lever (A) counter clockwise to lift up the printhead (B).
3. Remove labels and transfer ribbon from the label printer.
4. Remove deposits with the roller cleaner and a soft cloth.
5. Turn the roller (C) manually step by step to clean the complete roller (only possible when the printer is switched off, as otherwise the step motor is full of power and the roller is kept in its position).
6. Reload labels and transfer ribbon.
7. To move the printhead (B) down, turn the lever (A) in clockwise direction until it locks.
8. Close the printer cover.

8.4 Clean 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 the protective glass layer of the printhead.

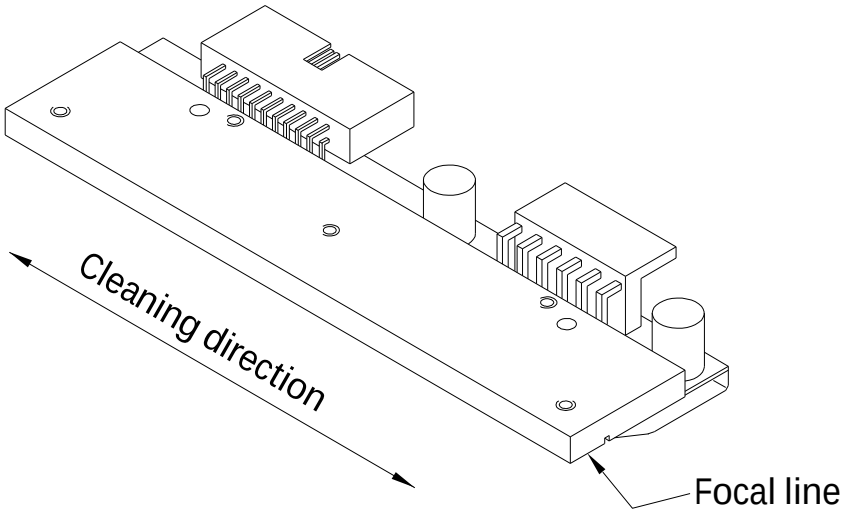


Figure 14

1. Open the printer cover.
2. Turn the lever (A, in Figure 13) counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the label printer.
4. Clean the printhead surface with a special cleaning pen or a cotton swab dipped in pure alcohol.
5. Before using the label printer, let the printhead dry for about two to three minutes.
6. Reload labels and transfer ribbon.
7. To move the printhead down, turn the lever (A, in Figure 13) in clockwise direction until it locks.
8. Close the printer cover.

8.5 Clean 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 be soiled with paper dust. This may affect the label detection.

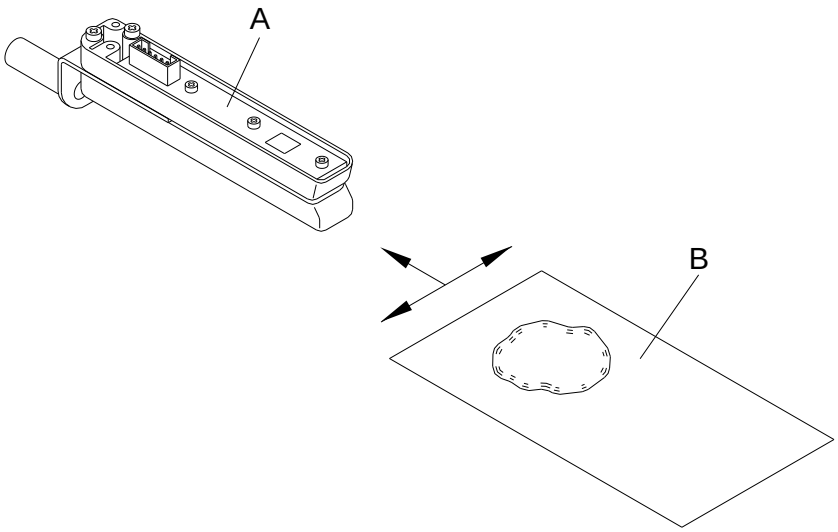


Figure 15

1. Open the printer cover.
2. Turn the lever counter clockwise to lift up the printhead.
3. Remove labels and transfer ribbon from the label printer.
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 labels and transfer ribbon (see chapter 5 Load Media, page 31).
7. To move the printhead down, turn the lever in clockwise direction until it locks.
8. Close the printer cover.

8.6 Replace the Printhead (General)

CAUTION!

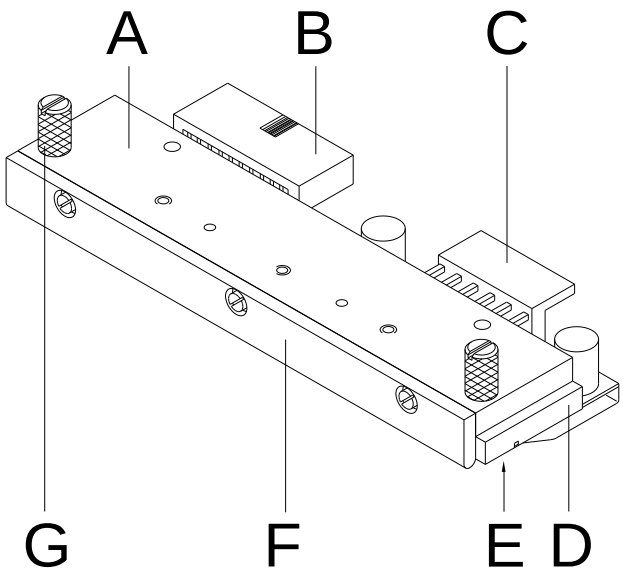
The printhead can be damaged by static electricity discharges and impacts!

⇒ Set up the printer on a grounded, conductive surface.

⇒ Ground your body, e.g. by wearing a grounded wristband.

⇒ Do not touch the contacts on the plug connections (B, C).

⇒ Do not touch the printing line (D) with hard objects or your hands.



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

Figure 16

NOTICE!

The printhead (D) is preinstalled on a head plate (A) and aligned at the factory.

CAUTION!

Danger of abrasion when removing/installing the printhead!

⇒ Pay attention to the toothing when the tear-off edge is installed.

8.7 Replace the Printhead (Flat Type)

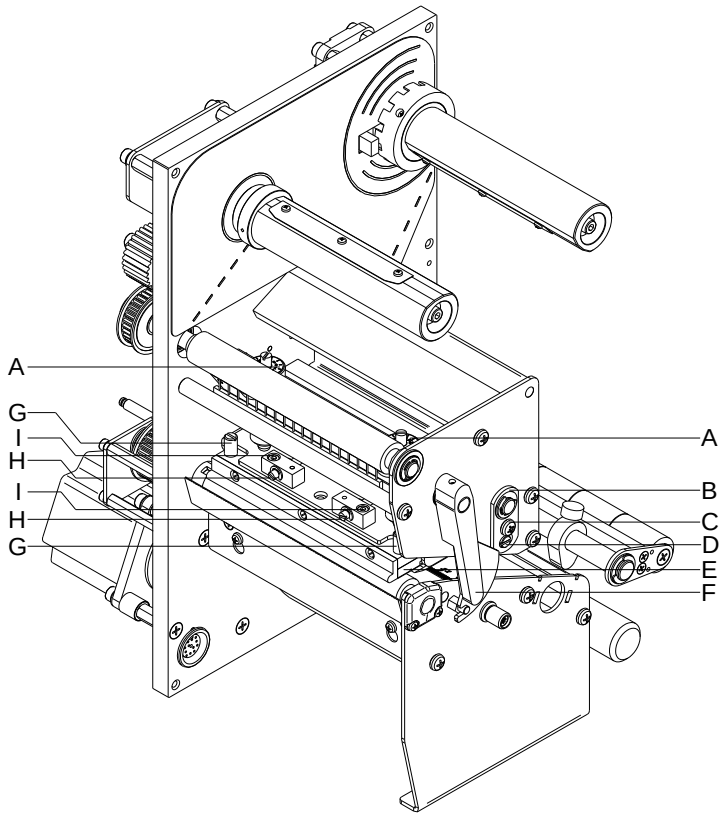


Figure 17

Remove the printhead

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

Install the printhead

1. Attach the plug connections.
2. Position the printhead (E) in the printhead mounting bracket in such a way that the pin is secured in the corresponding hole in the head plate.
3. Lightly keep the printhead mounting bracket on the pressure roller with one finger and check for correct positioning of the printhead.
4. Tighten again the screws (G).
5. Reload labels and transfer ribbon (chapter 5, page 31).
6. To move the printhead (E) down, turn the lever (F) in clockwise direction until it locks.
7. Close the printer cover.
8. Check the resistance value on the type plate of printhead and if necessary change the value in the *Service functions/heater resistance*.

8.8 Adjust the Printhead (Flat Type)

Parallelism

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. Loosen the screws (I, Figure 17) with a hexagon key by approx. ¼ rotations.
2. Adjust the parallelism with the adjusting screws (H, Figure 17).
   Clockwise = printhead moves backwards
   Counter clockwise = printhead moves forwards
3. Clockwise = printhead moves backwards
   Counter clockwise = printhead moves forwards
4. Tighten again the screws (I, Figure 17).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure balance right/left

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (B, Figure 17) you can set the balance as follows:

1. Loosen the screw (C, Figure 17) with a screwdriver by approx. ¼ rotations.
2. In order to achieve a pressure balance, turn the excentric bolt (D, Figure 17) as long as the printing result comes up to your full expectation.
3. Tighten again the screw (C, Figure 17).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure

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!

⇒ Only change the factory settings in exceptional cases.

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

1. Turn the pressure screws (A, Figure 17) to change the pressure of printhead.
2. Turning the pressure screws (A, Figure 17) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (A, Figure 17) from the limit stop counter clockwise to the corresponding scale value (see table) result in the factory settings.

Printhead	Scale value
Spectra II 103, 104, 106, 108, 162, 216	6
Spectra II 107, 160	12

NOTICE!

It is important 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.

8.9 Replace the Printhead (Corner Type)

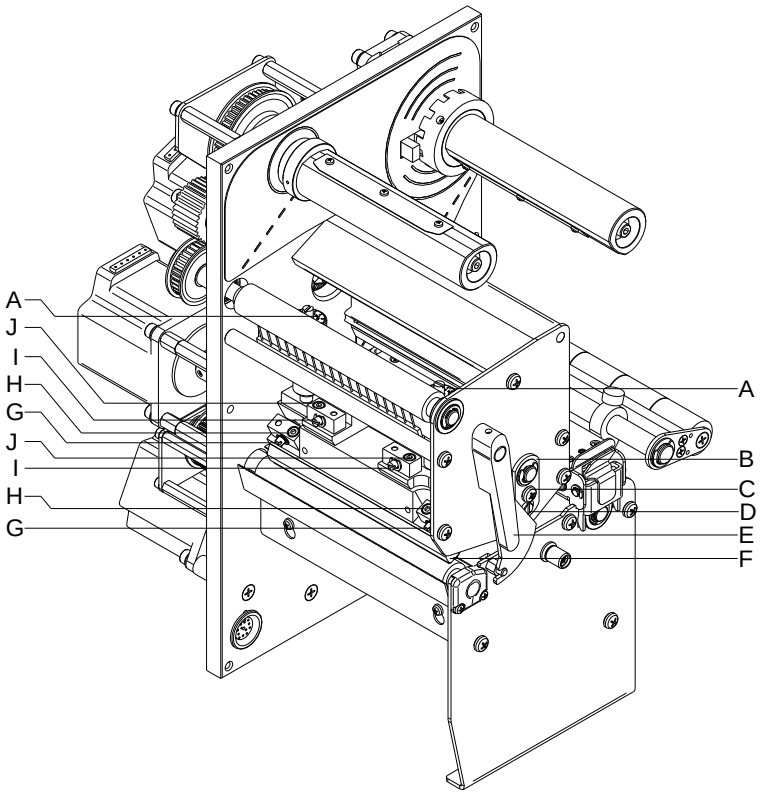


Figure 18

Remove the printhead

1. Remove labels and transfer ribbon from the label printer.
2. When the printhead is closed, loosen the hex (Allen) screws (H).
3. Turn the lever (E) counter clockwise to lift up the printhead (F).
4. If the printhead (F) is not disengaged on the pressure roller, continue loosen the hex (Allen) screws (H).
5. Remove the printhead carefully to the front until you can reach the plug connections.
6. Remove the plug connections and then remove printhead (F).

Install the printhead

1. Attach the plug connections.
2. Position the printhead in the printhead mounting bracket in such a way that the pin is secured in the corresponding hole in the head plate.
3. Lightly keep the printhead mounting bracket on the pressure roller with one finger and check for correct positioning of the printhead.
4. Tighten again the screws (H).
5. Reload labels and transfer ribbon (see chapter 5 Load Media, page 31).
6. To move the printhead (F) down, turn the lever (E) in clockwise direction until it locks.
7. Close the printer cover.
8. Check the resistance value on the type plate of printhead and if necessary change the value in the *Service functions/heater resistance*.

8.10 Adjust the Printhead (Corner Type)

Parallelism

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.

The form of the CornerType printhead needs the setting of parallelism in direction of the adjusting angle and in horizontal position. It needs a little bit of experience to know in which direction you have to adjust the printhead to receive a high quality printing.

1. Loosen the screws (H or J, Figure 18) with a hexagon key by approx. ¼ rotations.
2. Adjust the parallelism with the adjusting screws (G or I, Figure 18).
   Clockwise = printhead moves backwards
   Counter clockwise = printhead moves forwards
3. Adjust the parallelism as long as the printing result comes up to your full expectation.
4. Tighten again the screws (H or J, Figure 18).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure balance right/left

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (B, Figure 18) you can set the balance as follows:

1. Loosen the screw (C, Figure 18) by approx. ¼ rotations.
2. In order to achieve a pressure balance, turn the excentric bolt (D, Figure 18) as long as the printing result comes up to your full expectation.
3. Tighten again the screw (C, Figure 18).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure

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!

⇒ Only change the factory settings in exceptional cases.

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

1. Turn the pressure screws (A, Figure 18) to change the pressure of printhead.
2. Turning the pressure screws (A, Figure 18) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (A, Figure 18) exactly one rotation from the right stop position counter clockwise results in the factory settings.

NOTICE!

It is important 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.

9 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 X 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 BC type	Selected code is not available.	Check code type.
5 Illegal rotation	Selected rotation is not available.	Check rotation.
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 (front printhead). Defect at the transfer ribbon photocell (front 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 number	Received line number is invalid.	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 bar code is res. are not valid.	Change bar code data. 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 code	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 Type check digit	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	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	Not enough print memory available.	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 Unformatted	CF Card not formatted.	Format CF card.
44 Delete directory	Attempt to delete the actual directory.	Change directory.
45 Invalid path	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 CF interface	No CF card drive found.	Check connection of CF card drive. Contact your distributor
60 No media	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 PH 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 release	External print release signal is missing.	Check input signal.
67 Column too wide	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 replace (if necessary). Reduce print speed.
70 Scanner data	Scanned data does not correspond to the data which is to print.	Replace 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 Undefined page	The page is not defined.	Check the print definition.
74 Format user guiding	Wrong format for customized 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 synchronization. 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	Layout ID definition is missing.	Define layout 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 recognize 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 recognize 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. Tad data do not match the Tag type in the printer.	Adapt data or use the correct Tag type.
107 RFID inactive	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 applicator is not in the print position when trying to print a label.	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 (rear printhead). Defect at the transfer ribbon photocell (rear 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 PH2	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	The label photocell do not work in the order as it is expected according to print data.	Check label size and gap size.
	The settings of the photocell are not correct.	Check label photocell settings.
	Settings of label size and gap size are not correct.	Check correct loading of label material.
	No label found at the rear printhead.	Insert new label roll.
	Soiled label photocell.	Clean the label photocell.
	Labels not inserted correctly.	Check if labels are inserted correctly.
124 Speed too low	The print speed is too slow.	Increase the speed of customers' machine.
125 DMA 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.	Check the RFID module connection. Please contact your responsible distributor.
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.	Use firmware that fits to the printer type. Please contact your responsible distributor.
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.

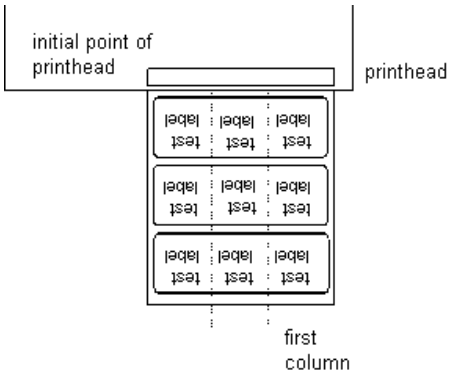
Error message	Cause	Remedy
134 Script failure	LUA script is incorrect.	Check the script.
135 Script user error	Error in LUA script user input.	Correct the input value.
136 No reprint available	No label data for reprinting available.	Send new label data to the printer.
137 Printhead short circuit	Electrical short at the printhead.	Check the used printhead. Please contact your distributor.
138 Too less ribbon	Transfer ribbon ends.	Change transfer ribbon.
139 Rewinder error	Label band is torn	Load a new label roll. Stick together the label band.
140 Rewinder motor blocked	External rewinder motor is blocked.	Switch off the printing system and check mechanical resistance. Change the full label roll.
141 Hardware error	A hardware component could not be found.	Please contact your responsible distributor.
142 No print mechanics	No print mechanics connected.	Check connection (print mechanics – control unit)

10 Additional Information

10.1 Column Printing

With this printer 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 four columns with a width of 25 mm or two columns with a width of 50 mm can be printed onto a label with a width of 100 mm. Please note that the first label is always the one with the largest x coordinate, i.e. it has the largest distance to the printhead.



10.2 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 printer 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.

Save 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.
- Enough free storage space onto CF card.

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

Save print order state

At switching off the printer 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.
- Enough free storage space onto CF card.

Load label and print order state

When restarting the label printer (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 label printer a CF card has to be inserted in the appropriate drive. If the data cannot be loaded an error message appears.

Start print order

In case at switching off the label printer 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 label printer, it is again set to the stopped mode after switching on the label printer anew.
In case a customized entry was active during switching off the label printer, the window for the first customized variable is displayed.

Refresh 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.

10.3 Backfeed/Delay

Backfeed modes

In continuous dispenser 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

Dispenser: After printing the label, it is driven into the dispenser 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

Dispenser: After printing the label it is driven into the dispenser 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 of 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	**Dispenser:**	After printing the label it is driven into the dispenser 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	**Dispenser:**	After printing the label, during driving into dispenser 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.

10.4 Photocells

NOTICE!

When using reflection photocells you should observe that the label printer cover is closed and in this way other light (e.g. working lamp) on the photocell is prevented.

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.

Reflexion photocell normal

For this photocell type the transmitter and receiver are at the bottom, i.e. the light is reflected by the label and taken over from the receiver. This photocell type is used for white (light) continuous labels with a black (dark) bar. The bar is the separator, i.e. it indicates the position of gap and in this way the label start.

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 label printer recognizes the opaque place as gap. This photocell type is used frequently when printing foils.

Reflexion photocell inverse

For this photocell type the transmitter and receiver are at the bottom, i.e. the light is reflected by the label and taken over from the receiver. This photocell type is used for black (dark) continuous labels with a white (light) bar. This bar is the separator, i.e. it indicates the position of gap and in this way the start of label.

NOTICE!

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

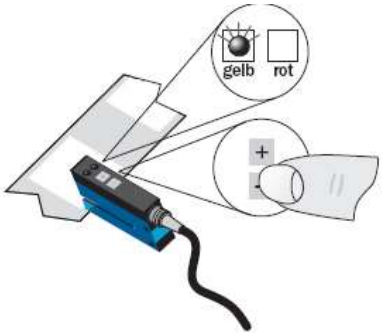
10.5 Ultrasonic photocell (option)

NOTICE!

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

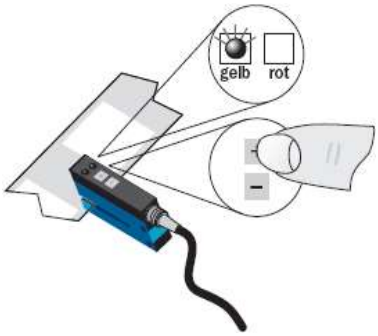
This photocell type is particularly suitable for the use of transparent labels on transparent backing paper.

Adjustment of photocell

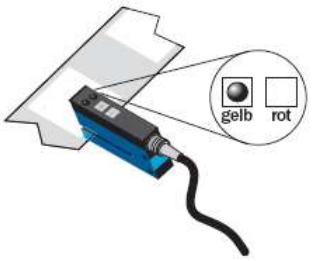


Adjustment of switching point in 'light-switching' mode:
The switching output Q is active if the backing paper is detected between the labels (gap detection).

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.

11 Touch-Screen Display

11.1 Touch-screen display structure

The touch-screen display shows an intuitive graphic user interface with well-defined symbols and buttons.

The touch-screen display informs about the current device status and status of the print order, alerts in case of an error and indicates the device settings in the menu.

The desired settings are made by selecting the buttons on the touch-screen display.

Current date & time
Printer name (in the network parameters)

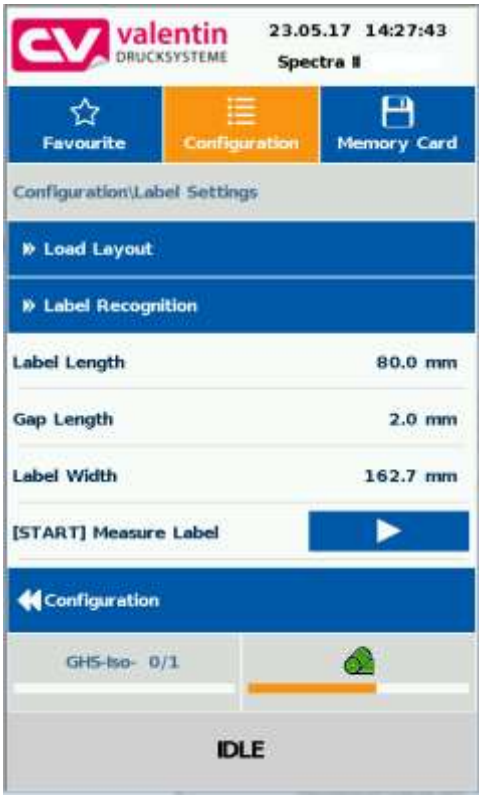
Transfer ribbon state

Customized info field

Favorites	Display favorites list
Configuration	Select parameter settings
Memory Card	Access to memory card menu
Print	Start print job
Test print	Start test print
Formfeed	Start layout feed

11.2 Indication of Menus

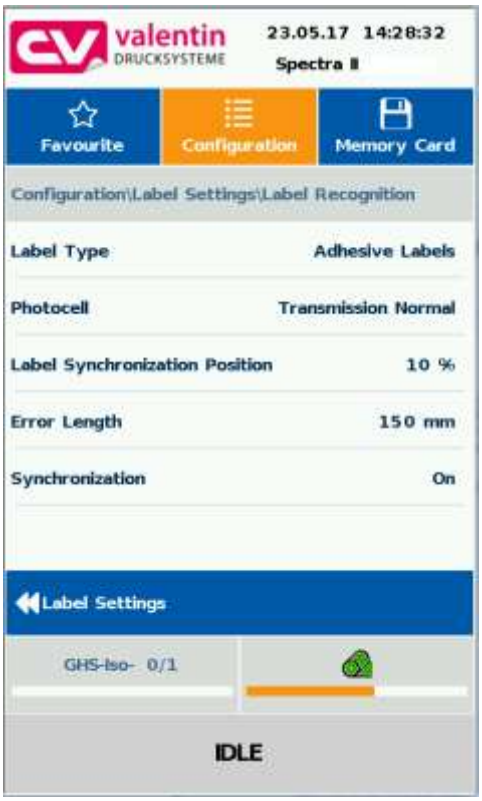
Indication of main menus



The selected (active) menu is highlighted on orange background.

If a selected menu contains so-called submenus, these are blue highlighted.

Indication of submenus



Different parameters are combined in a submenu.

The selected submenu is displayed in the address line (example: label recognition).

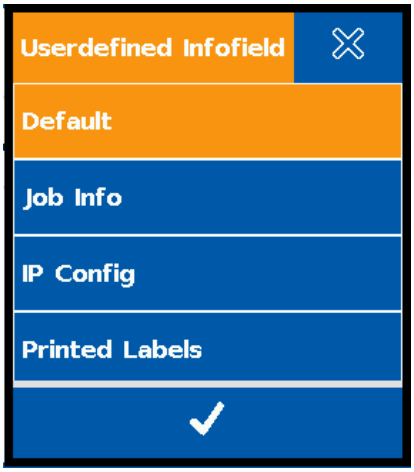
Press  to return one level.

11.3 User-Defined Info Field

From the predefined contents, the user can define the display of the user-defined info field (green).

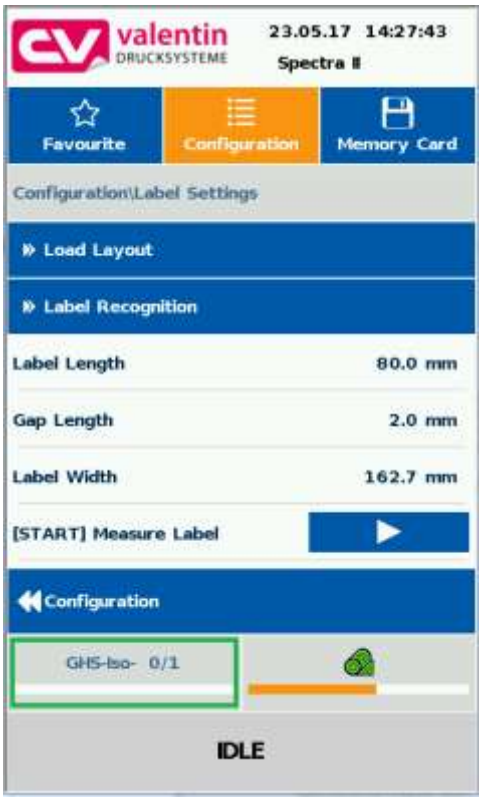
Select menu *Maintenance/System settings/User-defined info field* to specify what is to be displayed in the user-defined info field.

Selection of parameters



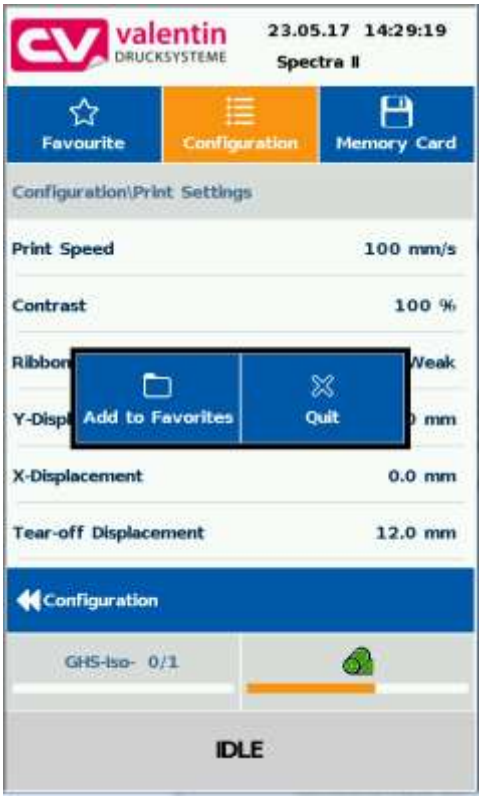
Standard:	Horizontale display orientation: Empty info field **Vertical display orientation:** Indication of job info (label name and number of printed labels)
Job info:	Indication of label names and the number of already printed
IP configuration:	Indication of IP address and MAC address of printing system
Printed labels:	Indication of printed labels as enlarged text output

Display of predefined configuration



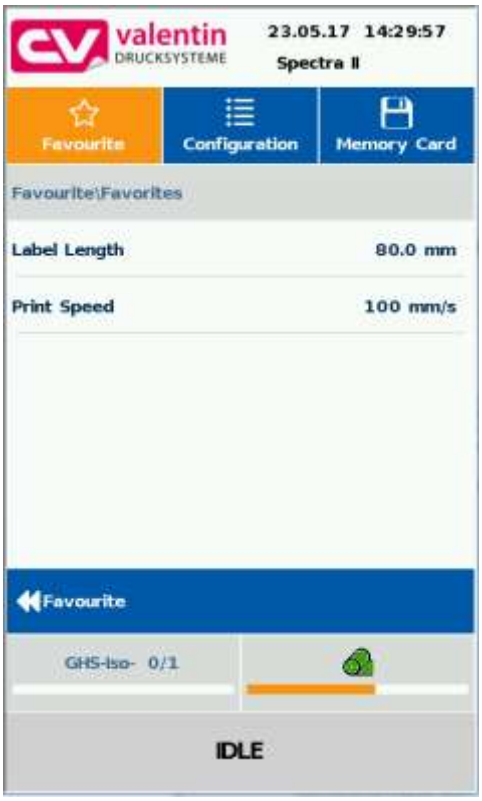
11.4 Favorites List

Add parameters to favorites



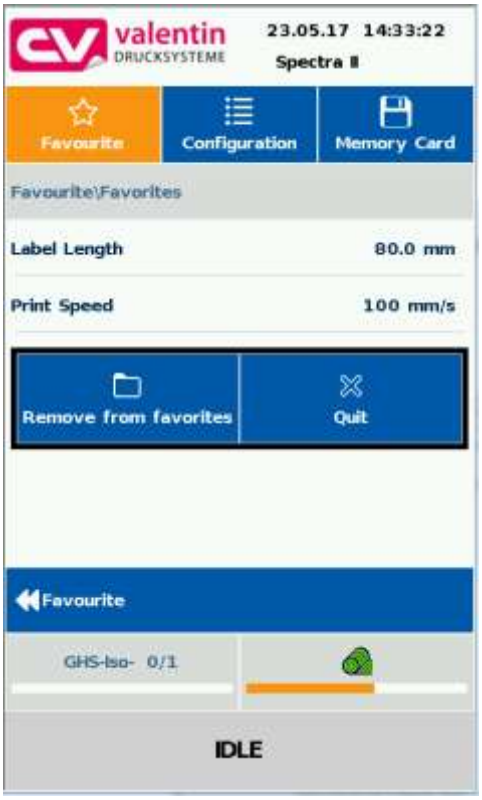
The user can store the most important parameters for his application into a favorites list to have a fast as possible access.

Press long (2 s) on a parameter (e.g. print speed) to display the *Add to favorites* button.



Press *Add to favorites* to add the selected parameter to the favorites list.

Remove parameters from favorites



Press long (2 s) on a parameter (e.g. print speed) to display the appropriate selection. Press *Remove from favorites* to remove the selected parameter from the favorites list.

11.5 Parameter Input

Numeric input

Select the parameter for which the value is to be modified.

In the header of input dialog the name of the parameter and the permissible value range are shown. The input is checked for validity. If the entered value not permissible, the button is blocked.

Selection from list

Select the parameter for which you want to change the selection.

The currently selected value is highlighted on orange background.

Press to confirm the selection.

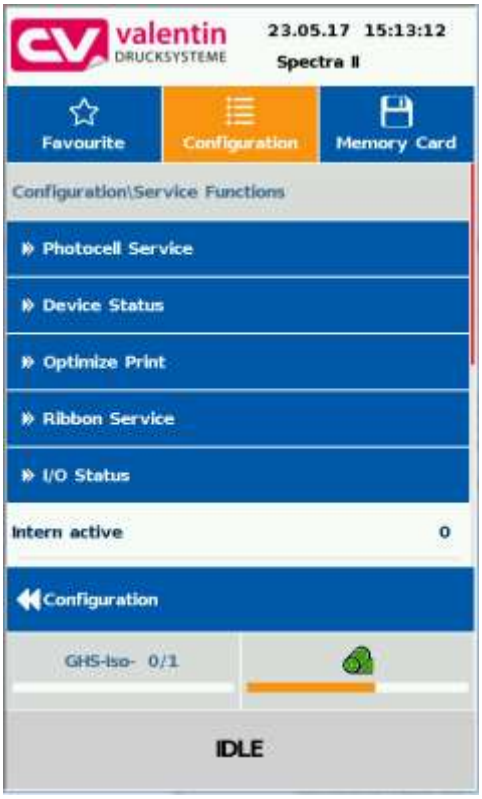
Alphanumeric input / Special characters input

Select the parameter for which you want to change the selection.

The alphanumeric input is shown in the header of input dialog.

Press to confirm the selection.

11.6 Navigation Zones



The respective navigation zone can be moved with an appropriate swipe movement from top to bottom or from the bottom up.

NOTICE!

With the used resistive touch screen variant a certain pressure on the display is needed. With the swipe movement to the left and right (well-known from smartphones) with the finger, cannot be navigated on the display.

The position indications signalise the detail of the total list currently visible. If no position indication is visible then the total list can be displayed on the display. A swipe movement from top to bottom and/or from the bottom up is not possible.

11.7 Maintenance Zone

Maintenance - Print preview

Different settings for the display indication can be done.

Print preview activated On/Off

With activated print preview a picture of the currently printed layout is shown on the display. If the function is not activated, the field remains empty.

Print preview - Zoom

Selection of a certain zoom value for the representation of print preview.

Label:	The complete layout is fit to the indication zone.
Fields:	Only the print range is fit to the indication zone.
1 .. 8:	Manual zoom factor to scale the complete layout down.

Print preview – Preview rotated

The display of label preview can be rotated on the touch-screen display.

On:	The label preview is shown rotated by 180° on the display.
Off:	The label preview is represented in read direction.

Print preview – Print preview interval

During a running print order the preview is refreshed in the set interval.

Value range: 2 .. 10 secondes

Maintenance - LCD

In the LCD maintenance sector, different parameters ro the touch-screeen display can be set.

LCD - Background light

Setting of contrast of background lighting.
Value range: 0 .. 100 %.

LCD - Orientation

Landscape 180°:
The display is represented turned by 180 degres to the function 'Landscape'.

Landscape:
The display is represented turned by 90 degres to the reading direction.

Portrait:
The display is represented in reading direction.

Portrait 180°:
The display is represented turned by 180 degres.

Maintenance – System settings

Different system settings such as set printer type, reset paper counter etc. can be made.

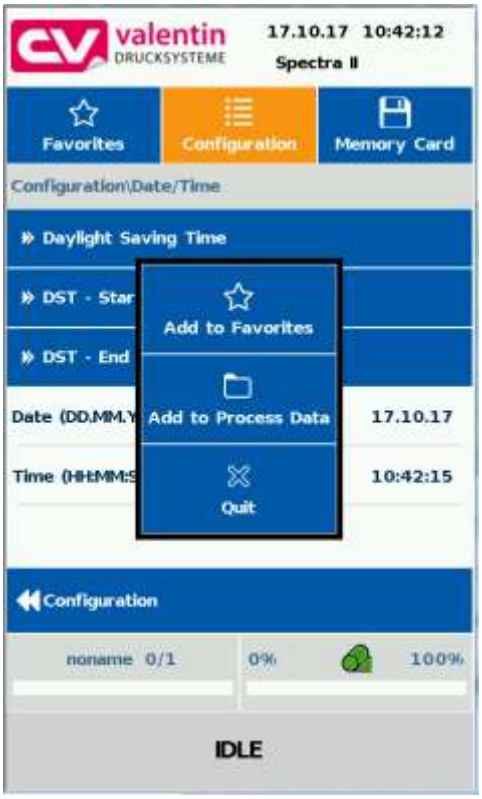
However, for the settings the corresponding password is necessary.

11.8 Process Data

Activation of display for process data

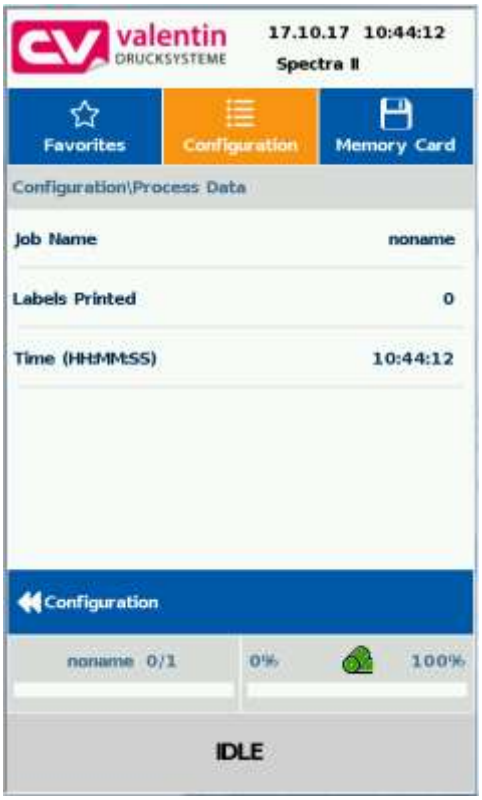
In order to show the process data, the parameter must be activated before in the menu *Maintenance/Print preview*.

Add parameter to process data

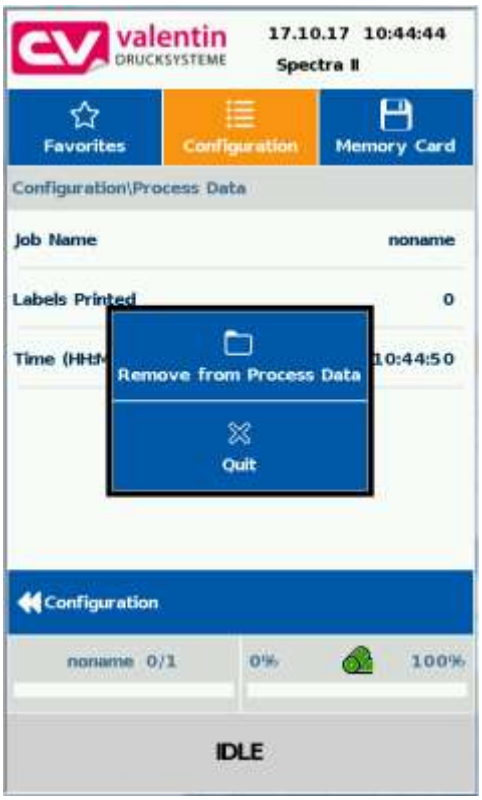


Press long (2 s) on a parameter (e.g. current time) to display the appropriate selection.

Press *Add to process data* to add the selected parameter to the process data list.



Remove parameter from process data



Press long (2 s) on a parameter (e.g. current time) to display the appropriate selection. Press *Remove from process data* to remove the selected parameter from the process data list.

Change of display vies Process data – Print preview

With activated print preview, the display shows a picture of the currently printed layout. The change to the process data view is effected by wiping to the right.

11.9 Memory Menu

Compact Flash Card

On the left side, the content of the currently selected directory is shown one below the other.

The preview zone in on the right side is. If available, the preview of the selected layout is shown.

Load:	The selected layout is loaded and the print order is started.
Administrative Tools:	Change to the file manager (Explorer)

Input of variables

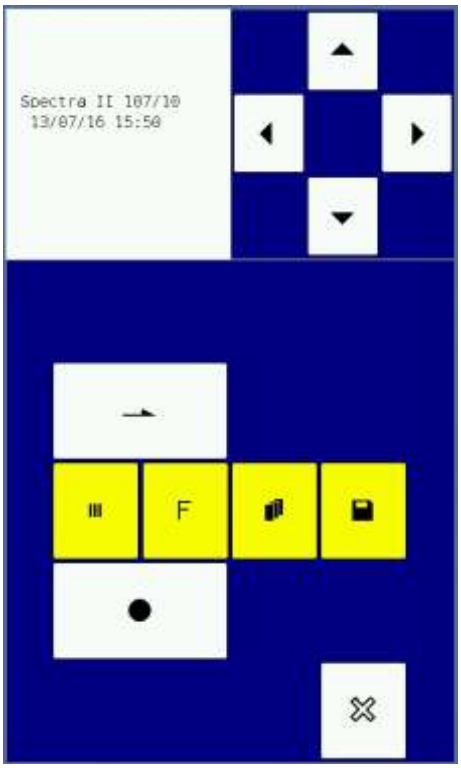
The user query can be entered at the cursor position.

Press to change to the input of number of copies.

11.10 Info Zone

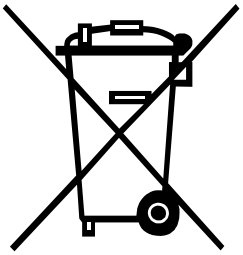
The information zone shows details such as printer type, firmware version, printer name in network etc.

11.1 Change to Foil Keyboard



Press long (> 3 s) on the company logo left above, and the display changes to the indication of a conventionalize foil keyboard. The settings can be done by the standard operating panel. Press to change to the previous view.

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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valentin
DRUCKSYSTEME

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