valentin
ETIKETTENDRUCKSYSTEME

Vita II Series
OPERATING MANUAL

March 2012

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Carl Valentin label printers comply with the following safety guidelines:

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

ETIKETTENDRUCKSYSTEME

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1   Important notes

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

The label printer is equipped with 6 vector, 6 bitmap and 6 proportional fonts. It can be printed inverse, in italic format or 90 degrees turned fonts.

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

By the use of a 32 Bit processor and a large main memory of 16MB also for large labels (6000 mm) a fast print is possible.
An enormously high print quality is obtained by most modern printhead technology.

By a new-developed electronics a maximum print speed of up to 200 mm/s can be achieved.

As default, printers of this series are equipped with a parallel, serial, USB and Ethernet interface. Additionaly, the label printer is equipped with an USB Host that permits the connection of an external USB keyboard and/or an USB memory stick. The label printer automatically recognizes by which interface it is controlled.

Time-saving printer update is possible by interface.

Thanks to the large number of options the label printer can be adapted to each task.

1.1   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.

1.2   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.

Further information on the WEEE directive is available on our website.

1.3   Connector pin assignment (printer rear)

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

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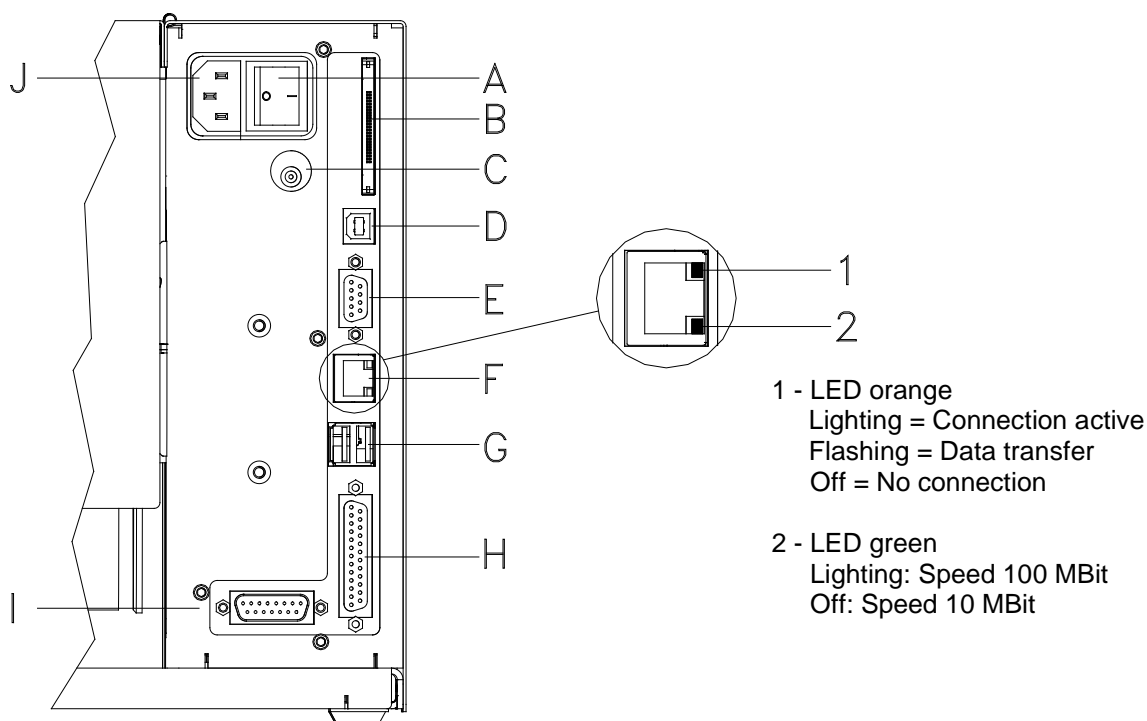   Off: Speed 10 MBit

Figure 1

A   Power supply
B   Plug-in for CF card
C   Winder connection
D   USB interface
E   Serial interface RS-232
F   Ethernet 10/100 interface
G   USB host for USB keyboard and USB memory stick
H   Parallel interface for Centronics
I   External output/input (option)
J   Switch On/Off

2   Safety notes

The printer is designed for power supply systems from 110-230 V. Connect the label printer 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.).

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 can get hot during printing. Do not touch the printhead during operation. Cool down the print unit before changing material, removal or adjustment.

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

 DANGER!

Danger to life and limb from power supply!

$\Longrightarrow$ Do not open the casing.

2.1   Warnings

Warnings are presented with three signal words for the different levels of danger.

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

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

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

2.2   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 2.2 (Operating conditions), chapter 5 (Loading media) and chapter 9 (Maintenance and cleaning).

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

Only use original spare and exchange parts.

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

Instructions for lithium battery

CPU of printer is equipped with a lithium battery (type CR 2032) for which the battery regulation is to apply. This regulation plans that unloaded batteries have to be given to used battery collecting containers of trade and public carries. In case that batteries were not completely discharged you have to make arrangements for short-circuits. At a shutdown of printer the battery has to be disposed in either case separately from printer.

DANGER!

Danger of life by explosion!

$\Longrightarrow$ Use non-conducting tools.

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% to −10% of nominal value

Allowable tolerance of power line frequency:
+2% to −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: 09-2003

- Interference field power according to EN 55022: 09-2003

- System perturbation according to EN 61000-3-2: 09-2006

- Flicker according to EN 61000-3-3: 1955 + A1:2001 + A2:2005

Stray radiation and immunity from disturbance

Immunity to interference according to EN 61000-6-2: 2005 industrial sector

- Stray radiation against discharge of static electricity according to EN 61000-4-2: 12-2001

- Electromagnetic fields according to EN 61000-4-3: 11-2003, ENV 50204: 03-1995

- Fast transient burst according to EN 61000-4-4: 07-2005

- Surge according to EN 61000-4-5: 12-2001

- High-frequency tension according to EN 61000-4-6: 12-2001

- Voltage interruption and voltage drop according to EN 61000-4-11: 02-2005

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

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 to +80 °C.

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

Installation of data lines

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

Allowable lines

Shielded line:

      4 x 2 x 0,14 mm² (4 x 2 x AWG 26)
      6 x 2 x 0,14 mm² (6 x 2 x AWG 26)
      12 x 2 x 0,14 mm² (12 x 2 x AWG 26)

Sending and receiving lines have to be twisted in pairs.

Maximum line length:

      with interface V 24 (RS-232C) - 3 m (with shielding)
      with Centronics - 3 m (with shielding)
      with USB - 5 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

Printhead	Vita II 103/8 T	Vita II 104/8	Vita II 106/12	Vita II 106/24	Vita II 108/12 T
Print resolution	203 dpi	203 dpi	300 dpi	600 dpi	300 dpi
Max. print speed	200 mm/s	200 mm/s	150 mm/s	100 mm/s	150 mm/s
Print width	104 mm	104 mm	105,7 mm	105,7 mm	108,4 mm
Passage width					
Standard	116 mm	116 mm	116 mm	116 mm	116 mm
Cutter mode	112 mm	112 mm	112 mm	112 mm	112 mm
Printhead	Flat Type[1]	Flat Type[2]	Flat Type[2]	Flat Type[2]	Flat Type[1]
Labels					
Labels, continuous rolls or fan-fold	paper, cardboard, textile, synthetics				
Max. material weight	220 g/m² (larger on demand)				
Min. label width	12 mm				
Min. label height					
Standard	5 mm				
Cutter/dispenser mode	15 mm				
Max. label height (higher on demand)	6000 mm	6000 mm	3000 mm	1000 mm	3000 mm
Max. roll diameter					
Internal unwinder	180 mm				
External unwinder	300 mm				
Core diameter	40 mm / 75 mm (option)				
Winding	outside or inside				
Label sensor	transmission and reflexion from bottom				
Transfer ribbon					
Ink	outside or inside				
Max. roll diameter	Ø 80 mm				
Core diameter	25,4 mm / 1″				
Max. ribbon length	300 m				
Max. width	110 mm				
Dimensions (mm)					
Width x height x depth	236 x 238 x 374				
Weight	11 kg				
Electronics					
Processor	High Speed 32 Bit				
RAM	16 MB / 64 MB (on demand)				
Slot	for Compact Flash card Type I; for Wireless LAN card				
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	Centronics (SPP)				
USB	2.0 High Speed Slave				
Ethernet	10/100 Base T, LPD, RawIP-Printing, DHCP, HTTP, FTP				
2 x USB Master	connection for external USB keyboard and memory stick				
WLAN (option)	card 802.11b/g WEP/WPA PSK (TKIP)				
Operation data					
Power supply	110-230 V / 50-60 Hz				
Max. power consumption	max. 150 VA				
Operating temperature	5-35 °C				
Humidity	max. 80% (not condensing)				

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

Operation panel	Vita II 103/8 T	Vita II 104/8	Vita II 106/12	Vita II 106/24	Vita II 108/12 T
Keys	test print, function menu, quantity, CF Card, feed, enter, 4 x cursor				
LCD display	graphic display 132 x 64 Pixel white backlight				
Settings					
	date, time, shift times 11 language settings (others on demand) label and device parameters, interfaces, password protection, variables				
Monitoring					
Stop printing if	end of ribbon / end of labels / printhead open				
Status report	extensive status print with information about settings e.g. print length counter, runtime counter, photocell interface and network parameters printout of all internal fonts and all supported bar codes				
Fonts					
Font types	6 Bitmap fonts 6 Vector fonts/TrueType fonts 6 proportional fonts other fonts on demand				
Character sets	Windows 1250 up to1257, DOS 437, 850, 852, 857 all West and East European Latin, Cyrillic, Greek, Hebrew and Arabic 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	6 BITSTREAM® fonts size in width and height 1-99 mm variable zoom orientation 360° in steps of 90°				
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 Code, UPC-A, UPC-E				
2D bar codes	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° and 270°. Optionally with check digit and human readable line.				
Software					
Configuration	ConfigTool				
Process control	Netstar PLUS				
Label software	Labelstar LITE Labelstar PLUS				
Windows driver	Windows XP 32/64 Bit, Windows Server 2003 (R2) 32/64 Bit Windows Vista 32/64 Bit, Windows Server 2008 32/64 Bit Windows 7 32/64 Bit, Windows Server 2008 R2 64 Bit				

Standard equipment

- 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 180 mm

- Thermal and thermal transfer version

- USB host for connection of an external USB keyboard and an
  USB memory stick

- Ethernet interface

- CVPL protocol and ZPL II$^{®}$ protocol

- Label photocell
  (transmission and reflexion from below)

- Slot for CF card

- Windows printer driver on CD ROM

- Labelstar LITE on CD ROM

Optional equipment

- Cutting unit

- Dispensing unit with photocell

- Dispensing unit without photocell

- Ultrasonic photocell

- External rewinder for labels

- External rewinder for backing paper

- Unwinder

- WLAN interface

- Dispenser I/O

3.1 Control inputs and outputs

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

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

Each port can be configured as input and as output. This function however, is predefined in the printer software and cannot be changed by the user.
The following parameters can be changed and set by using the menu: debounce times and high or low active.

Printer, internal circuitry
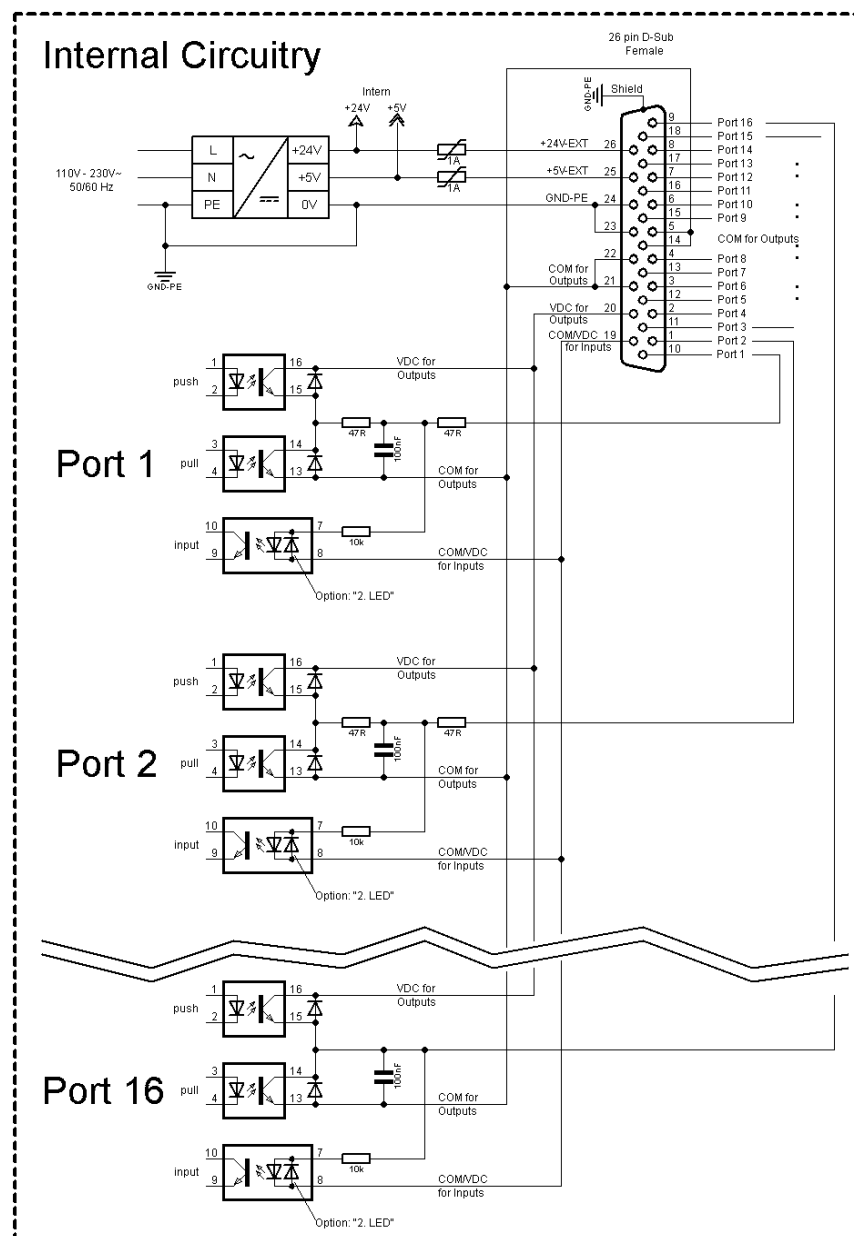
Figure 2

**Configuration of
D-Sub socket**
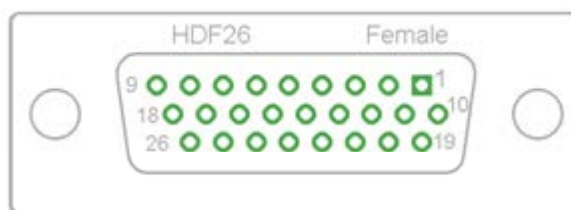
Figure 3

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

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

Technical data

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

Example 1   Device connection to a machine with S7-300 SPS.
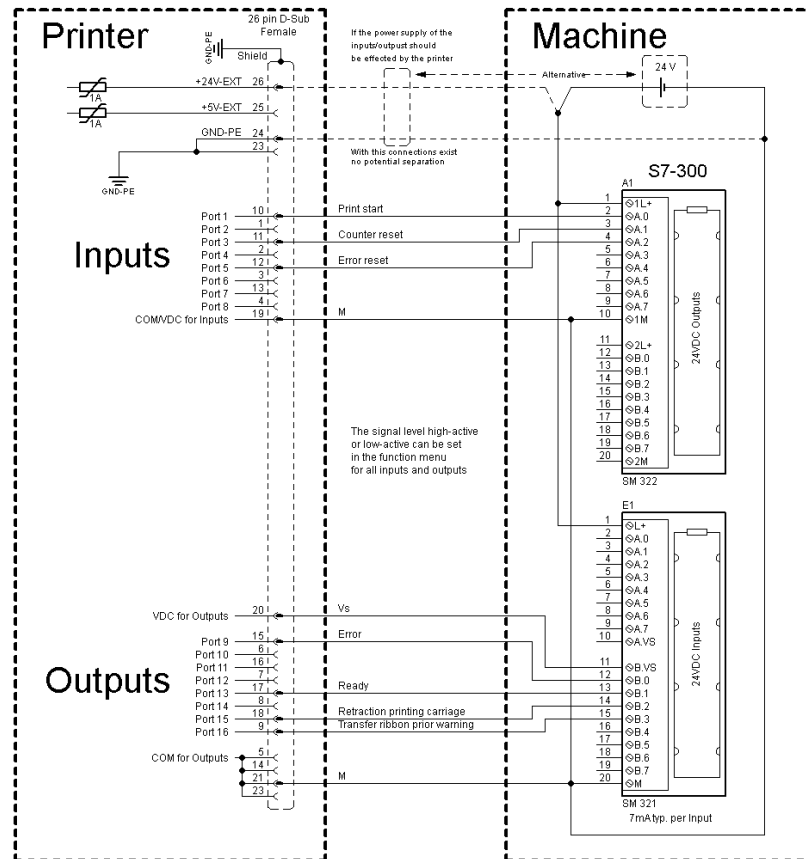
Figure 4

Example 2   Device connection to a operating panel.
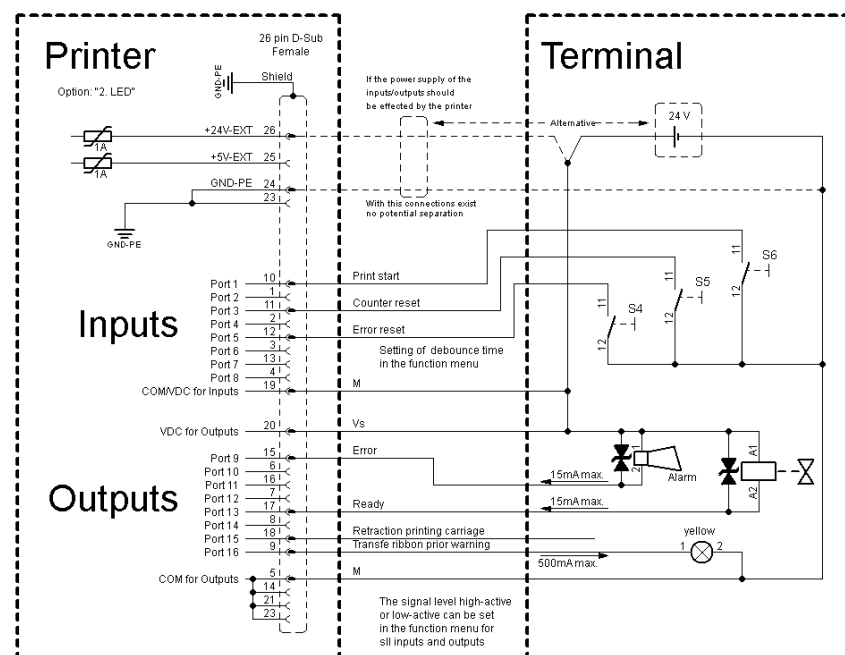
Figure 5

Example 3   Device connection version if 'Option: 2. LED'.
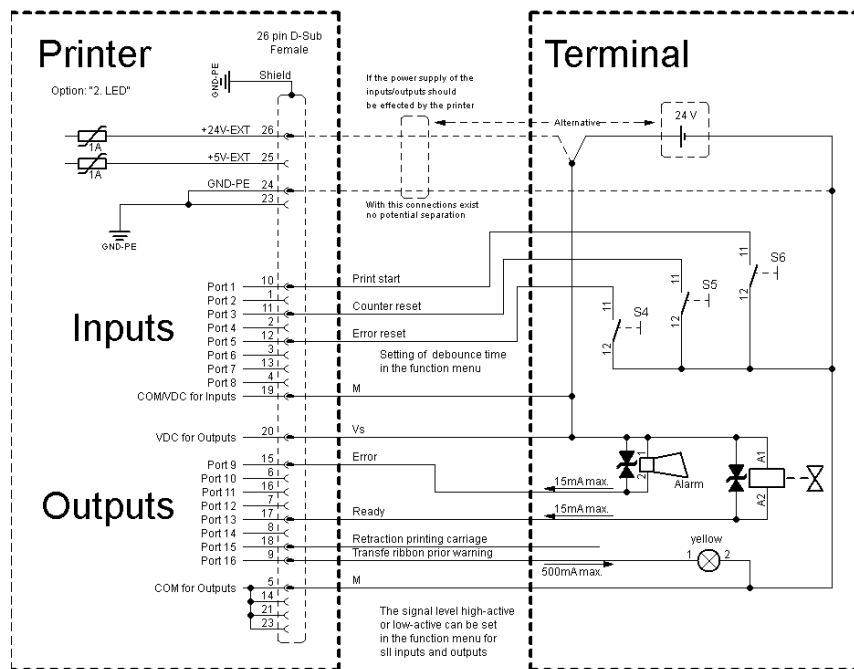
Figure 6

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.

3.2   Plug & Play

Plug & Play capable printers can be recognised automatically at parallel ports, USB-IEEE 1394- or infra-red connections but the last both are not important for our printers.

The following table shows the Plug & Play capability of the different operating systems.

Port		Windows							
		95	98	Me	NT4	2000	XP	Vista	7
LPT	Support	✓	✓	✓	✓	✓	✓	✓	✓
	Recognition by	Boot procedure, Device manager			✗	Installation			
USB	Support	✗	✓	✓	s.b.	✓	✓	✓	✓
	Recognition by	✗	Hot Plug & Play		s.b.	Hot Plug & Play			

The table above shows that USB provides the recognition during the connection in current operating mode, the so-called Hot-Plug & Play. Depending on the operating system, for the parallel interface the different possibilities are given:

- **Windows 95 / 98 / Me**
  Printers can be recognized during the starting procedure of Windows or by the Search for new hardware by means of the hardware wizard.

- **Windows 2000 / XP / Vista / 7**
  Printers can be recognized during the starting procedure of Windows or by the Search for new hardware by means of the hardware wizard or if the option 'Automatic recognition and installation of Plug&Play printer' and/or 'Search automatically for new hardware components and install' is activated.

NOTICE!

If a driver is installed outside of the Plug & Play recognition, Windows reports at each restart that a new printer was found. In this case, the driver is to be installed anew by the Wizard. If the driver is certified for Windows, the reinstallation is executed automatically.

NOTICE!

Windows NT 4.0 does not support USB devices. However, some distributors offer drivers that support USB (without Plug & Play). Such a driver which suits to our printer is offered from BSQUARE.
For more information, visit their web side: www.bsquare.com or contact

BSQUARE Headquarters (USA)   BSQUARE (Europe)
888-820-4500   +49 (811) 600 59-0
sales@bsquare.com   europe@bsquare.com

4   Installation

**Unpack the
label printer**

$\implies$ Lift the label printer out of the box.

$\implies$ Check the label printer for transport damages.

$\implies$ Check delivery for completeness.

Scope of delivery

- Label printer.

- Power cable.

- Empty core, mounted on transfer ribbon rewinder.

- Tear-off edge (basic printers only).

- Dispenser edge (printers with option dispenser only).

- Cutter unit (printers with option cutter only).

- Documentation.

- Printer driver on CD ROM.

- Labelstar LITE on CD ROM

> **i NOTICE!**
>
> Retain original packaging for subsequent transport.

4.1   Setting up the label printer

> **! CAUTION!**
>
> The label printer and the print media can be damaged by
> moisture and water.
>
> $\implies$ Set up the label printer only in a dry place protected
> from sprayed water.

$\implies$ Set up label printer on a level, vibration-free and air draught-free
surface.

$\implies$ Open cover of label printer.

$\implies$ Remove foam transportation safeguards near the printhead.

4.2   Connecting the label printer

Connecting to the power supply

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

> **CAUTION!**
>
> The label printer can be damaged by undefined switch-on currents.
>
> ⟹   Set de power switch to '0' before plugging in the label printer.

⟹   Insert power cable into power connection socket.

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

Connecting 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 label printer to computer or network with a suitable cable.

4.3   Switching the label printer on and off

Once all connections have been made:

⟹   Switch label printer on witch the power switch.
     After switching on the label printer the main menu appears which shows the printer type, current date and time.

4.4   Initiation of the label printer

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

Insert label material and transfer ribbon (see chapter 5. Loading media, page 27).

Go to menu *Label layout*, select menu item *Measure label* and start measuring (see chapter 6.4 Label layout, page 38).

Press key ⬤ to finish measuring.

ⓘ NOTICE!

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

During 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   Loading media

5.1 Loading media
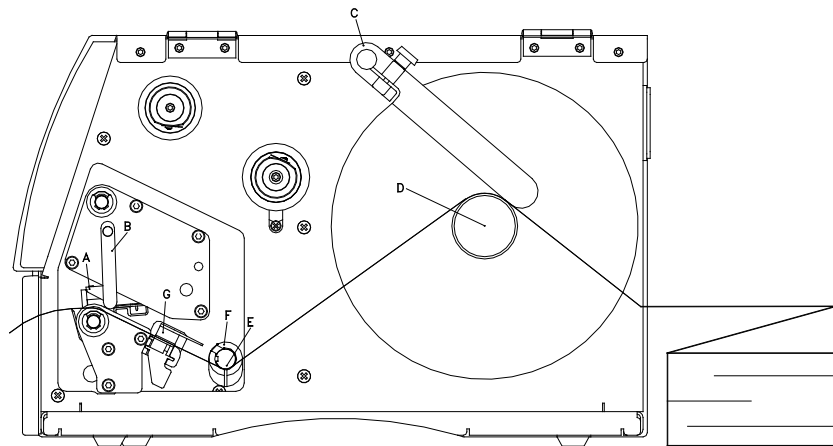
**Loading label roll
in tear-off mode**
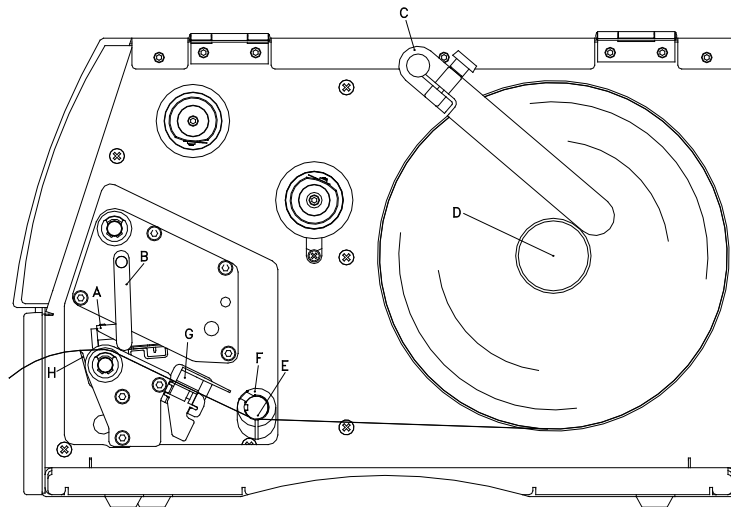
Figure 7

1. Open the printer cover.

2. Open printhead (A) by turning the red pressure lever (B)
    anticlockwise.

3. Remove the outside label mounting plate (C).

4. Load the label roll with inner winding onto the unwinding roll (D).

5. Attach again the label mounting plate (C).

6. Lead the label material below the return pulley (E) and the
    printhead (A).
    Pay attention that the label runs through the photocell (F).

7. In order to move the printhead (A) down, turn the red pressure
    lever (B) in clockwise direction until it locks.

8. In front of the printhead you can see the tear off (H) from which
    you can rip off labels to the bottom.

9. Enter the offset value in the menu *Print settings/Tear-off*.

10. Adjust the adjusting ring (F) of the return pulley (E) to the width of
    material.

11. Close the printer cover.

**Loading label roll
in cutter mode**
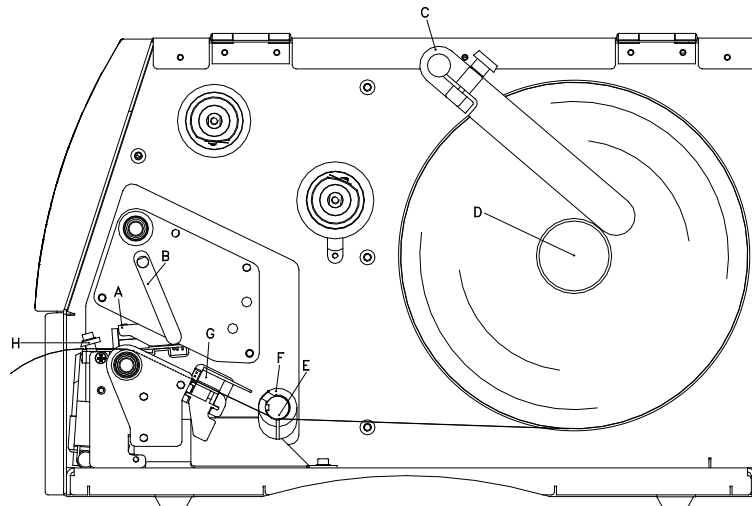
Figure 8

1. Open the printer cover.

2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.

3. Remove the outside label mounting plate (C).

4. Load the label roll with inner winding onto the unwinding roll (D).

5. Attach again the label mounting plate (C).

6. Lead the label material below the return pulley (E) and the printhead (A).
   Pay attention that the label runs through the photocell (G).

7. Lead the label material through the cutter unit with integrated inserting angle (H).

8. In order to move the printhead (A) down, turn the red pressure lever (B) in clockwise direction until it locks.
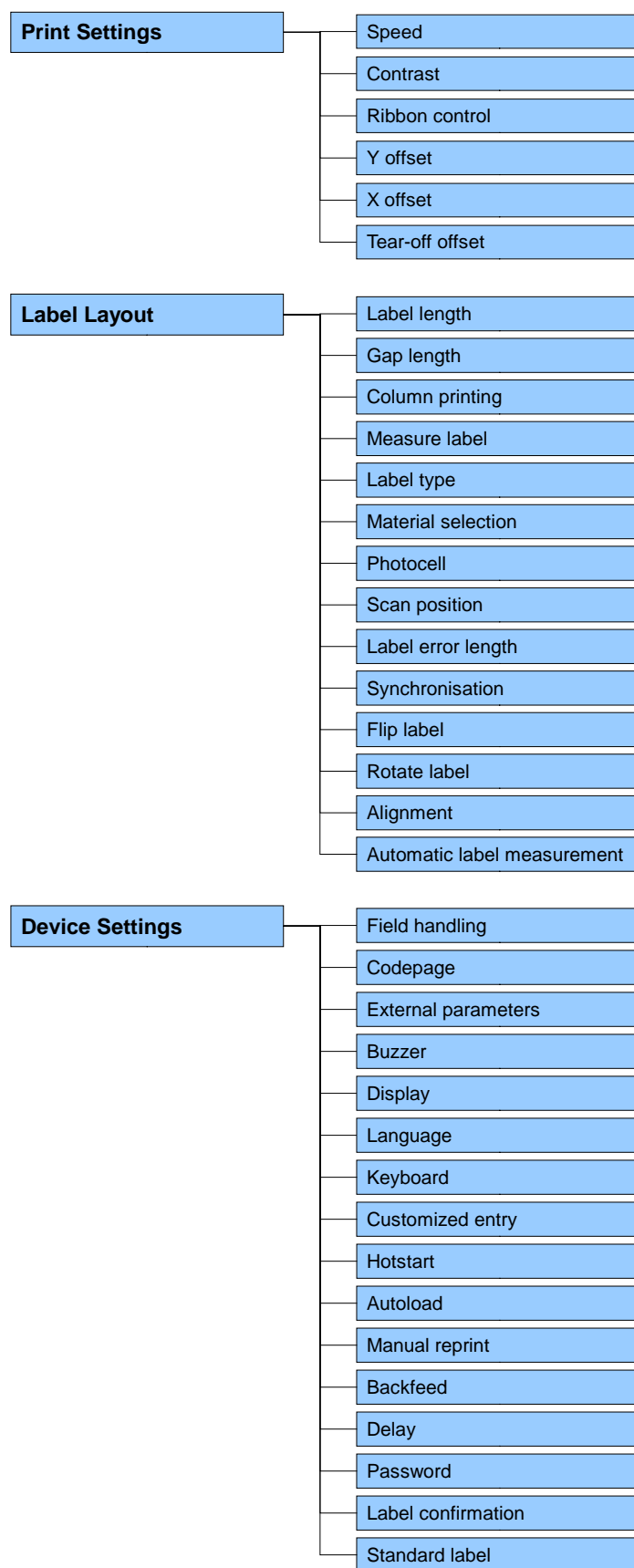
9. Adjust the adjusting ring (F) of the return pulley (E) to the width of material.

10. Close the printer cover.

Loading label in dispenser mode
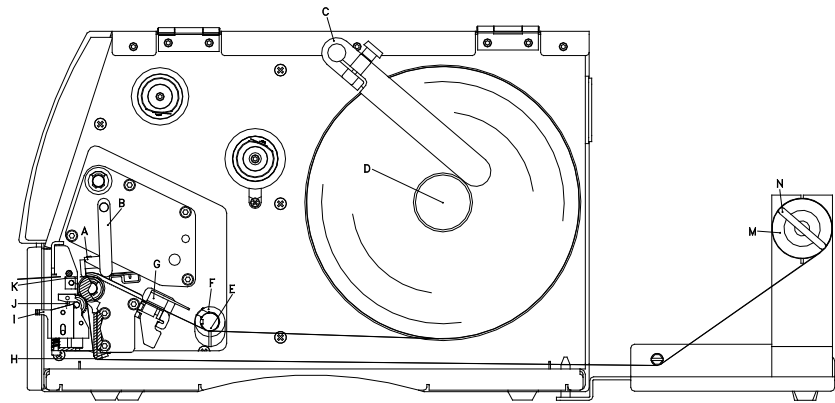
Figure 9

1. Open the printer cover.

2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.

3. Remove the outside label mounting plate (C).

4. Load the label roll with inner winding onto the unwinding roll (D).

5. Attach again the label mounting plate (C).

6. Lead the label material below the return pulley (E) and printhead (A) and hold it towards the marked stopper surface (L).
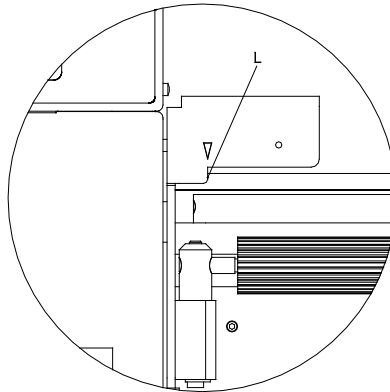
    Pay attention that the label runs through the photocell (G).

7. In order to move the printhead (A) down, turn the red pressure lever (B) in clockwise direction until it locks.

8. Adjust the adjusting ring (F) of the return pulley (E) to the width of material.
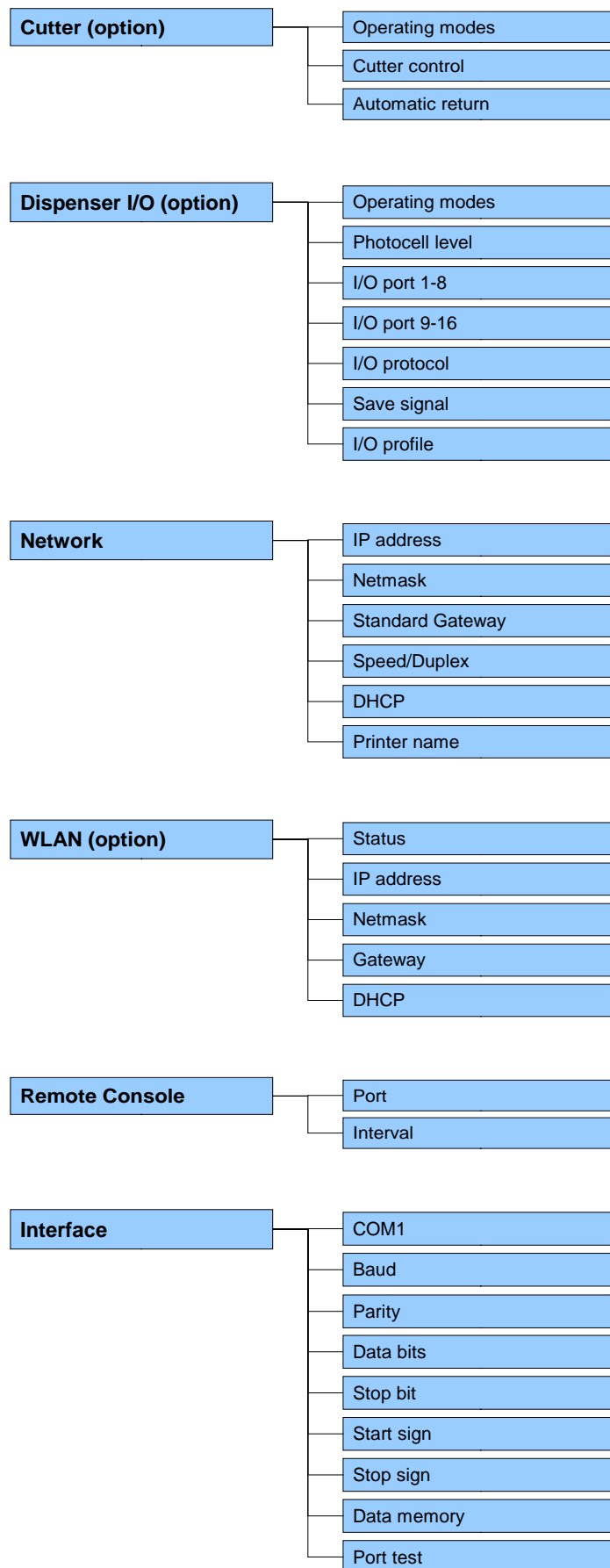
9. Start a test print with key ▐▐▐ or release a measuring procedure (see chapter 6.4, page 38), to determine the exact position of the label beginning.

10. Unlock the dispensing roll (J) by pressing the red locking part (I).

11. Strip some labels from the backing paper and lead the backing material over the dispensing whip (K).

12. Press the dispensing roll (J) backwards towards the backing paper.

13. Place the backing material under the dispensing angle (H) rearwards and fix it with the clamp (N) at the optional external rewinding unit (M).

14. Enter the offset value in *Dispenser I/O* menu.

15. Close the printer cover.

5.2   Loading fanfold labels

Figure 10

1. Open the printer cover.

2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.

3. Load the fan-fold material from the back over the unwinding unit (D).

4. Lead the fan-fold material below the return pulley (E) and the printhead.
   Pay attention that the label runs through the photocell (G).

5. In order to move the printhead (A) down, turn the red pressure lever (B) in clockwise direction until it locks.

6. Adjust the adjusting ring (F) of the return pulley (E) and the label mounting plate (C) to the width of material.

7. Close the printer cover.

5.3   Loading transfer ribbon

i **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.
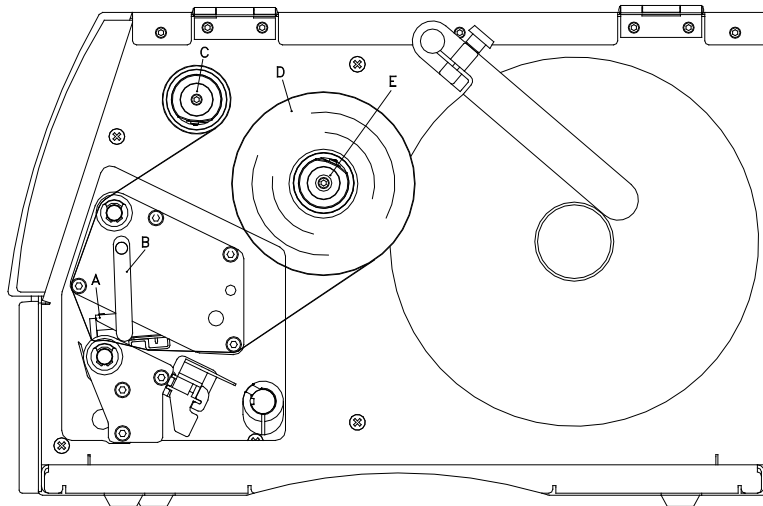
i **NOTICE!**

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.

Figure 11

i **NOTICE!**

Before a new transfer ribbon roll is loaded, the printhead must be cleaned using printhead and roller cleaner (97.20.002). 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 printhead (A) by turning the red pressure lever (B) anticlockwise.

3. Load the transfer ribbon roll (D) with outer winding onto the unwinding roll (E).

4. Place an empty ribbon roll on the rewinding roll (C) and lead the transfer ribbon below the printhead (A).

5. Fix the ribbon with an adhesive tape in rotating direction at the empty roll of the rewinding roll (C).
   Pay attention to the rotation direction of transfer ribbon rewinder anticlockwise.

6. In order to move the printhead (A) down, turn the red pressure lever (B) in clockwise direction until it locks.

7. Close the printer cover.

6   Function menu

6.1   Operation panel
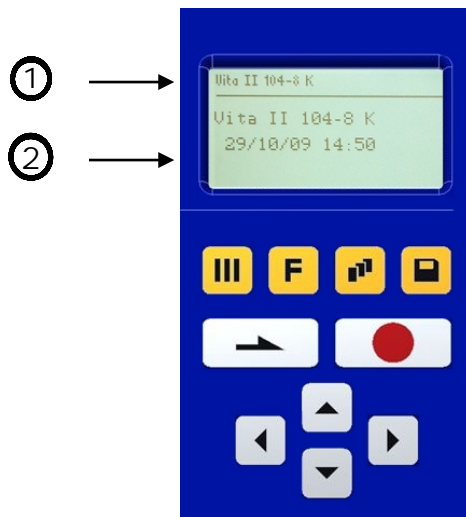
①	The top line of the graphic display shows the printer type.
②	The graphic display shows information about the current status of the printer and the print order, reports errors and shows the printer settings in the menus.
III	Back to the main menu. Start a test print. Delete a stopped print order.
F	Change to the function menu. In function menu: one menu item back.
⊓	Change to the quantity (number of pieces) menu. Press keys ▲ and ▼ to select the number of labels that should be printed.
▢	Change to the menu of the CF card.
→	In main menu: feed of one label. In function menu: skip to the next menu item.
●	Confirm settings and modifications. Stop and continue current print orders. Delete a stopped print order with key III. No further label of the print order is printed.
◄	Return to the previous input field. Press keys ▲ and ▼ to change the values.
►	Skip to the next input field. Press keys ▲ and ▼ to change the values.
▲	Increase figure at the cursor position.
▼	Decrease figure at the cursor position.

6.2   Menu structure

Print Settings		Speed
		Contrast
		Ribbon control
		Y offset
		X offset
		Tear-off offset

Label Layout		Label length
		Gap length
		Column printing
		Measure label
		Label type
		Material selection
		Photocell
		Scan position
		Label error length
		Synchronisation
		Flip label
		Rotate label
		Alignment
		Automatic label measurement

Device Settings		Field handling
		Codepage
		External parameters
		Buzzer
		Display
		Language
		Keyboard
		Customized entry
		Hotstart
		Autoload
		Manual reprint
		Backfeed
		Delay
		Password
		Label confirmation
		Standard label

Cutter (option)
- Operating modes
- Cutter control
- Automatic return

Dispenser I/O (option)
- Operating modes
- Photocell level
- I/O port 1-8
- I/O port 9-16
- I/O protocol
- Save signal
- I/O profile

Network
- IP address
- Netmask
- Standard Gateway
- Speed/Duplex
- DHCP
- Printer name

WLAN (option)
- Status
- IP address
- Netmask
- Gateway
- DHCP

Remote Console
- Port
- Interval

Interface
- COM1
- Baud
- Parity
- Data bits
- Stop bit
- Start sign
- Stop sign
- Data memory
- Port test

Emulation
- Protocol
- Printhead resolution
- Drive mapping

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
- Cutter photocell
- Online/Offline
- Transfer ribbon prior warning
- Zero point adjustment
- Print length +/-

CF Card / USB Stick
- Load label
- Change directory
- Load file
- Save label
- Save configuration
- Delete file
- Formatting
- Copying
- Firmware update

6.3   Print settings

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

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

Press key ● to select the menu *Print settings*.

Speed	Indication of print speed in mm/s (see chapter Technical data, page 13). The print speed can be determined for each print order anew. The setting of print speed affects also the test prints.
Contrast	Indication of value to set the print intensity when using different materials, print speeds or printing contents. Value range: 10% to 200 %. Step size: 10%.
	Press key ➤ to arrive the next menu item.
Ribbon control	Examination if the transfer ribbon roll is to end or if the ribbon was torn at the unwinding roll. **Off:** The ribbon control is deselected, i.e. the printer continues without an error message. **On:** The ribbon control is selected, i.e. the current print order is interrupted and an Error Message appears at the printer display. **Strong sensibility:** The printer reacts immediately to the end of the transfer ribbon. **Weak sensibility:** The printer reacts at approx. 1/3 more slowly to the end of the transfer ribbon.
	Press key ➤ to arrive the next menu item.
Y displacement	Indication of initial point displacement in mm. Displacement of the complete print in paper direction. With positive values the print in paper direction starts later. Value range: −30.0 to +90.0.
	Press key ➤ to arrive the next menu item.
X displacement	Displacement of the complete print transverse to the paper direction. The displacement is possible only up to the edges of the printing zone and is determined by the width of the focal line in printhead. Value range: −90.0 to +90.0.
	Press key ➤ to arrive the next menu item.
Tear-off	Indication of value to which the last label of a print order is moved forward and is moved back to the beginning of label at a new print start. Labels can be torn off after terminating the print order without a label loss by tearing up. Default value: 12 mm. Value range: 0 to 50.0 mm.

6.4   Label layout

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

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

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

Press key ● to select the menu.

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

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

Press key ⟶ to arrive the next menu item.

Column printing
Indication of width of one label as well as how many labels are placed
side by side (see chapter 11.1 Column printing, page 83).

Press key ⟶ to arrive the next menu item.

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

Press key ⟶ to arrive the next menu item.

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

Press key ⟶ to arrive the next menu item.

Material selection
Selection of the used label and transfer ribbon material.

Press key ⟶ to arrive the next menu item.

Photocell
Selection of the used photocell.
The selection of one of the following photocell types is possible:
transmission photocell normal and inverse, reflexion photocell normal
and inverse, ultrasonic photocell (option)
(see chapter 11.5 Photocells, page 90).

Scan position (AP)
Entry of percental label length by that the label end is searched.
Marks onto the label can be skipped.

	Press key [→] to arrive the next menu item.
Label error length	In case an error occurs, indication after how many mm a message appears in the display. Value range:1 mm to 999 mm.
Synchronisation	**On:** If a label is missed on the liner an error message is displayed. **Off:** Missing labels are ignored, i.e. it is printed into the gap.
	Press key [→] to arrive the next menu item.
Flip label	The axis of reflection is in the middle of the 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.
	Press key [→] to arrive the next menu item.
Rotate label	According to standard the label is printed ahead with a rotation of 0°. If the function is activated, the label is rotated by 180° and printed in reading direction.
	Press key [→] to arrive the next menu item.
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.
	Press key [→] to arrive the next menu item.
Automatic label measurement	**On:** After switching on the printer, the loaded label is automatically measured. **Off:** In order to start the measurement procedure you have to change to the corresponding menu.

6.5   Device settings

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

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

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

Press key ● to select the menu.

Field handling

Off: The complete print memory is deleted.
Keep graphic: A graphic res. a TrueType font is transferred to the 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.

Press key ➤ to arrive the next menu item.

Codepage

Indication of the font used in the printer.
The following possibilities are available:
ANSI character set / Codepage 437 / Codepage 850 / GEM German / GEM English / GEM French / GEM Swedish / GEM Danish.

Press key ➤ to arrive the next menu item.

External parameters

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

Press key ➤ to arrive the next menu item.

Buzzer

On: An acoustic signal is audible when pressing a key.
Off: No signal is audible.

Display

Setting of display contrast.
Value range: 35 to 85.

Press key ➤ to arrive the next menu item.

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, Portuguese, Dutch, Italian, Danish, Finnish or Polish.

Press key [⭢] to arrive the next menu item.

Keyboard layout   Selection of region for the desired keyboard layout.
                             The following possibilities are available: Germany, England, France,
                             Greece, Spain, Sweden and US.

                             Press key [⭢] to arrive the next menu item.

Customized entry   **On:** The question referring the customized variable appears once
                             before the print start at the display.
                             Auto: The question referring the customized variable appears after
                             every printed layout.
                             Off: No question appears at the display. In this case the stored default
                             value is printed.

                             Press key [⭢] to arrive the next menu item.

Hotstart   **On:** Continue an interrupted print order after switching on the printer
                             anew.
                             Off: After switching off the printer the complete data is lost (see
                             chapter 11.2 Hotstart, page 84).

                             Press key [⭢] to arrive the next menu item.

Autoload   **On:** A label which was loaded once from CF card can be loaded again
                             automatically after a restart of printer.
                             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.

> **i 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.

> **i 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.

                             Press key [⭢] to arrive the next menu item.

Manual reprint   **Yes:** I In case an error occurred and printer is in stopped mode then
                             you can reprint the last printed labels by means of keys [▲] and [▼].
                             No: Only blank labels were advanced.

                             Press key [⭢] to arrive the next menu item.

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

Delay   The adjustable deceleration time is only for mode 'backfeed automatic'
                             of importance (see chapter 11.4 Backfeed/Delay, page 88).

Press key [⟶] to arrive the next menu item.

Password

By a password several functions can be blocked, so the user cannot work with them. There are several applications in which the use of password protection makes sense (see chapter 11.3 Password, page 86).

Press key [⟶] to arrive the next menu item.

Label confirmation

On: A new print order is only printed after confirmation at the device. An already active continuing print order is printed as long as the confirmation is effected at the device.
Off: No query appears at the display of control unit.

Press key [⟶] to arrive the next menu item.

Standard label

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

```
P OS 108/12 R
V1.50 (Build 0001 )

NO LABEL DATA
```
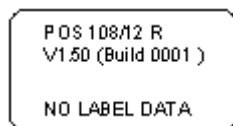
Off: If a print order is started without previous definition of label, an error message appears in the display.

6.6 Network

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

Press key [F] to access the function menu.

Press key [⟶] as long as you arrive the *Network* menu.

Press key [●] to select the menu.

For more information, please see the separate manual.

6.7 Remote console

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

Press key [F] to access the function menu.

Press key [⟶] as long as you arrive the *Remote console* menu.

Press key [●] to select the menu.

For more information please contact our sales department.

6.8   Interface

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

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

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

Press key ● to select the menu.

COM1 / Baud / P / D / S	**COM1:** 0 - serial interface Off. 1 - serial interface On. 2 - serial Interface On, no error message occurs in case of a transmission error.

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

P = Parity:
N - No parity
E - Even
O - Odd
Please observe that the settings correspond to those of the printer.

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

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

Press key ➡ to arrive the next menu item.

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

Press key ➡ to arrive the next menu item.

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

Press key ⬚ to arrive the next menu item.

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

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

6.9 Emulation

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

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

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

Press key ● to select the menu.

Protocol

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

Press key ● to confirm the selection.

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

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

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).

> **i** **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.

Press key ➤ to arrive the next menu item.

Drive mapping

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

is rerouted to the corresponding Valentin drives
A: CF
R: RAM Disk

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

> **i** **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.

6.10 Date & Time

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

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

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

Press key ● to select the menu.

Setting of date and time

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

Press key ▬ to arrive the next menu item.

Summertime

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

Press key ▬ to arrive the next menu item.

Start of summertime – Format

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

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

Press key ▬ to arrive the next menu item.

Start of summertime – Date

By means of this function you can enter the date at which summertime has to start. This entry refers to the previously selected format. Example: summertime is automatically adjusted at last Sunday in March (03).

Press key ▬ to arrive the next menu item.

Start of summertime – Time

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

Press key ▬ to arrive the next menu item.

End of summertime – Format

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

Press key ▬ to arrive the next menu item.

End of summertime – Date

By means of this function you can define the date when you want to stop summertime. The entry refers to the previously selected format. Example: summertime is automatically adjusted at last Sunday in October (10).

Press key ▬ to arrive the next menu item.

End of summertime – Time

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

Press key ▬ to arrive the next menu item.

Time shifting

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

6.11 Service functions

NOTICE!

So that the distributor res. the printer manufacturer in case of service can offer fast support, the printer is equipped with the menu *Service functions.*
Necessary information such as selected parameters can be taken directly from the printer. More details such as version of firmware or font are shown from the *Main menu.*

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

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

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

Press key ● to select the menu.

Label parameters

Indication of label parameters in Volt.
A: Indication of minimum value.
B: Indication of difference between minimum and maximum value.
C: Indication of trigger level. The value is ascertained while measuring and can be changed.

Press key ➤ to arrive the next menu item.

Photocell configuration

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

Press key ➤ to arrive the next menu item.

Photocell parameters

DLS: Indication of transmission photocell level in Volt.
RLS: Indication of reflexion photocell level in Volt.
SLS: Indication of peel off photocell level in Volt.
TR: Indication of transfer ribbon photocell status
(either 0 or 1).
H: Indication of printhead position.
0 = printhead down
1 = printhead up

Press key ➤ to arrive the next menu item.

Paper counter

D: Indication of printhead attainment in meters.
G: Indication of printer attainment in meters.

Press key ➤ to arrive the next menu item.

Heater resistance

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

Press key [→] to arrive the next menu item.

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

Press key [→] to arrive the next menu item.

Motor Ramp   This function is often used for high printing speed as the tearing of transfer ribbon can be prevented.
The higher the '++' value is set, the slower the feeding motor is accelerated.
The smaller the '−−' value is set, the faster the feeding motor is decelerated.

Press key [→] to arrive the next menu item.

Print examples   **Settings:** Printout of all 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.

Press key [→] to arrive the next menu item.

Input   Indication of input signal level
0 = Low
1 = High

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

Press key [→] to arrive the next menu item.

Output   Indication of input signal level
0 = Low
1 = High

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

Press key [⟶] to arrive the next menu item.

Cutter photocell   1 – Printer is equipped with a cutter
                       2 – Printer is not equipped with a cutter

Cutter Home   1 – The cutter is in the initial position and ready for the cutting
                       procedure.
                       0 – 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.

Press key [⟶] to arrive the next menu item.

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

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

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

Press key [⟶] to arrive the next menu item.

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

Warning diameter   Setting of transfer ribbon advance warning diameter.

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

Reduced speed (v) Setting of the reduced print speed. This can be set in the limits of the
                       normal print speed. Additionally there are the following settings:
                       −: No reduced print speed
                       0: Printer stops at reaching the warning diameter and indicates 'ribbon
                       error'.

Press key [⟶] to arrive the next menu item.

Zero point 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.

 NOTICE!

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

Press key [▶] to arrive the next menu item.

Print length +/−   Indication of print layout correction in percent.
By mechanical influences (e.g. label roll size) the print layout can be
printed increased and reduced to its original size.
Value range: +10.0% to −10.0%

6.12 Main menu

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

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

Press key [●] to arrive the next information display.

7   Options

7.1   Cutter

⚠ **CAUTION!**

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

⟹   Switch off the 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!

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

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

Press key ➤ as long as you arrive the *Cutter* menu.

Press key ● to select the menu.

ℹ **NOTICE!**

The menu item cutter is only displayed if the printer recognizes the option via cutter photocell when switching on the printer.

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

In the line below, the cutter offset (approx. 20 mm) can be set.

Press key ▲ to change to the next operating mode.

Operating modes   **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.

Select the desired cutter operating mode, then press key [→] to select additional functions.

Cutter control

Automatic: After each printed label a cut is released.
Extern: 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 Nach jedem gedruckten Etikett wird ein Schnitt ausgelöst.

Press key [→] to arrive the next menu item.

Automatic return

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 you can release a single cut by pressing key [▶].

The type of the single cut depends on the set cutter mode, offset and the value set for the double cut.

7.2 Dispenser I/O

NOTICE!

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

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

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

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

Press key ● to select the menu.

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

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

Press key ▲ to change to the next operating mode.

Operating modes

Off:
It is printed without the labels are dispensed.

I/O static:
The input signal evaluated, i.e. it is printed as long as the signal exists. The number of labels which was entered at the print start is printed.
The set dispenser offset is not taken into consideration.

I/O static continuous:
For description of this operating mode, see I/O static.
Continuous means that it is printed as long as new data is transferred via interface
The set dispenser offset is not taken into consideration.

I/O dynamic:
The external signal is evaluated dynamically, i.e. is the 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.

Additional parameters for Dispenser I/O

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

Dispenser photocell

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

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

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

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

NOTICE!

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

Press key [⭢] to arrive the next parameter.

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

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

```
Vita II 106/12
_____

I/O-Port 1-8

I+I+I+I+N+N+N+N+
```

Port   1 2 3 4 5 6 7 8

because of space reasons, the port number cannot be indicated)

The first sign specifies the following:

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

These settings cannot be modified.

The second sign specifies the following:

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

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

---

[*] in connection with Netstar PLUS

Press key ⟨→⟩ to arrive the next parameter.

I/O protocol   Indication of interface at which the modifications of input signals (I/O) are sent.

Press key ⟨→⟩ to arrive the next parameter.

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

Press key ⟨→⟩ to arrive the next menu item.

I/O Profile   Selection of the available configurations *Std_Label* (factory setting) or *StdFileSetLabel*.
The corresponding assignment is indicated on the following page.

List of registered functions for Std_Label

1	Print start and cut (Input)
2	No function
3	Counter reset (Input)
4	No function
5	No function
6	No function
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 RFID only: RFID error (Output)
15	Option scanner only: Bar code not readable (Output)
16	Transfer ribbon prior warning (Output)

List of registered functions for StdFileSetLabel

1	Print start and cut (Input)
2	Error confirmation (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	Option RFID only: RFID error (Output)
15	Option scanner only: Bar code not readable (Output)
16	Transfer ribbon prior warning (Output)

7.3 WLAN

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

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

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

Press key ● to select the menu.

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

For more information, please see the separate manual.

8 Compact Flash Card / USB Memory Stick

8.1 General Information

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

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

i **NOTICE!**

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

8.2 Display Structure
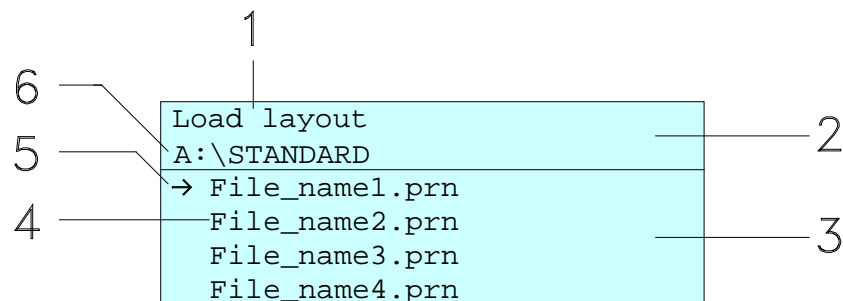
1 = Current function

2 = 2-lined header

3 = Scroll range

4 = File names / directory names

5 = Marking of the selected file (cursor)

6 = Current path (drive:\directory)

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

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

i **NOTICE!**

Three drives are available.
A:\ indicates the CF card.
U:\ indicates the USB memory stick.
   (only one stick can be inserted)
R:\ indicates the RAM (ZPL Emulation).

8.3   Navigation

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

III	[Esc]	Return to the previous menu.
F	[F2]	Function *Load layout*. Change to the File Explorer. File Explorer: Change to the 'context menu'.
	[F7]	Select a file/directory if a multiple selection is possible.
■	[F6]	Main menu: Access to the memory menu. File Explorer: Create a new file.
●	[↵]	Start the current function for the active file/directory.
◀	[←]	Change to the superordinate directory.
▶	[→]	Change to the currently marked directory.
▲	[↑]	In the current directory scroll upwards.
▼	[↓]	In the current directory scroll downwards.

8.4   Firmware Update

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

Procedure   On the CF card / USB memory stick a directory is created in which the necessary update files are stored (firmware.prn, data.prn). By means of the function *Load file* (see page 61) the file *firmware.prn* is selected/loaded. In the first step the printer executes the firmware update. After the necessary restart automatically the file *data.prn* is loaded. In this way the remaining components were updated. is After a renewed restart the update procedure is finished.

8.5   Filter

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

Without filter

```
Load layout
A:\STANDARD

→First_file.prn
  Layout_new.prn
  Sample.prn
  12807765.prn
```

With filter

```
Load layout
L

→Layout_new.prn
```

8.6   Functions

Load layout

Loads a layout in the standard directory. This function permits a fast operation as files which are not containing labels and directories are hidden.

```
Load layout
A:\STANDARD

→File_name1.prn
  File_name2.prn
  File_name3.prn
  File_name4.prn
```

Select a label in the standard directory and confirm the selection.

Select the number of copies which are to be printed.

Press key [●] to start the print order.

i **NOTICE!**

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

Change directory   Specifies the standard directory in which the files are stored for further processing.

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

Press key 💾 to access to the memory menu.

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

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

Press key **F** to call the context menu.

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

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

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

Press key 💾 to access to the memory menu.

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

Press keys ▲ and ▼ to select the file.

Press key ● to load the selected file.

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

Save layout   Saves the currently loaded layout under the selected name.

Save file
A:\STANDARD

→Save layout
  Save config.

  noname

Press key 🖫 to access to the memory menu.

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

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

Selct the function *Savel layout* and confirm the selection with key
🔴.

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

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

Save file
A:\STANDARD

  Save layout
→Save config.

  config.cfg

Press key 🖫 to access to the memory menu.

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

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

Selct the function *Save configuration* and confirm the selection with
key 🔴.

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

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

```
File Explorer              Context menu
A:\STANDARD\               2 objects marked

  layout01          *      →Delete
→layout02          *        Copying
  layout03
  layout04
```

Press key 🖫 to access to the memory menu.

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

Press keys ▲ and ▼ to select the file.

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

Press key **F** to call the context menu.

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

i   **NOTICE!**

The deleting procedure is irreversible!

Formatting   Formats irrevocably the memory card.

i   **NOTICE!**

USB sticks cannot be formatted at the printer!

```
File Explorer              Context menu
DRIVES                     A:\

→A: 954Mb free               Set as user dir
  U: No media              →Formatting
                             Copy
```

Press key 🖫 to access to the memory menu.

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

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

Press key **F** to call the context menu.

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

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

```
File Explorer          Context menu
A:\STANDARD\            2 objects marked

  layout01        *       Delete
→layout02         *     →Copying
  layout03
  layout04
```

Press key 🖫 to access to the memory menu.

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

Press keys ▲ and ▼ to select the file.

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

Press key **F** to call the context menu.

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

```
Select Destination
DRIVES

→A:  954Mb free
```

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

9   Maintenance and cleaning

DANGER!

Risk of death by electric shock!

$\Longrightarrow$ Disconnect the label printer from power supply
before performing any maintenance work.

NOTICE!

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

**Maintenance
schedule**

Maintenance task	Frequency
General cleaning (see section 9.1, page 66).	As necessary.
Cleaning print roller (see section 9.2, page 66).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Cleaning printhead (see section 9.3, page 67).	**Direct thermal printing:** Each time the label roll is changed. **Thermal transfer printing:** Each time the transfer ribbon is changed or when the printout is adversely affected.
Cleaning label photocell (see section 9.4, page 68).	When exchanging the label roll.
Replacing printhead (see section 9.5, page 69).	In case of errors in printout.

NOTICE!

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

WARNING!

Risk of fire by easily inflammable label soluble!

$\Longrightarrow$ When using label soluble, dust must be completely
removed from the label printer and cleaned.

9.1 General cleaning

> **!** **CAUTION!**
>
> Abrasive cleaning agents can damage the label printer!
>
> $\Rightarrow$ Do not use abrasives or solvents to clean the outer surface of the label printer.

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

$\Rightarrow$ Clean outer surfaces with an all-purpose cleaner.

9.2 Cleaning the printer roller

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

Figure 12

1. Open printer cover.

2. Turn red lever (B) counter clockwise to lift up the printhead (A).

3. Remove labels and transfer ribbon form the label printer.

4. Remove deposits with roller cleaner and a soft cloth.

5. Turn the roller (C + D) manually step by step to clean the complete roller (only possible when printer is switched off, as otherwise the step motor is full of power and the roller is kept in its position).

9.3   Cleaning the printhead

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

> **CAUTION!**
>
> Printhead can be damaged!
>
> $\Longrightarrow$ Do not use sharp or hard objects to clean the printhead.
>
> $\Longrightarrow$ Do not touch protective glass layer of the printhead.
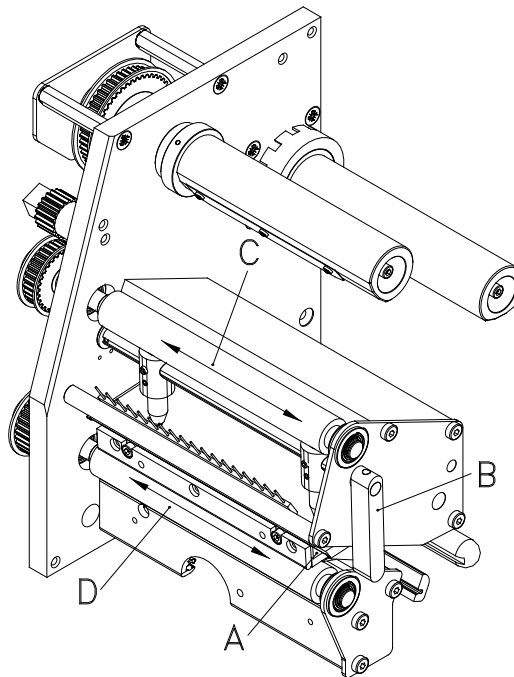

Figure 13

1.   Open printer cover.

2.   Turn red lever (B, in Figure 12) counter clockwise to lift up the printhead.

3.   Remove labels and transfer ribbon from the label printer.

4.   Clean printhead surface with special cleaning pen or a cotton swab dipped in pure alcohol.

5.   Allow printhead to dry for 2-3 minutes before commissioning the printer.

9.4   Cleaning the label photocell

> **! CAUTION!**
>
> Label photocell can be damaged!
>
> $\Longrightarrow$ Do not use sharp or hard objects or solvents to clean the label photocell.

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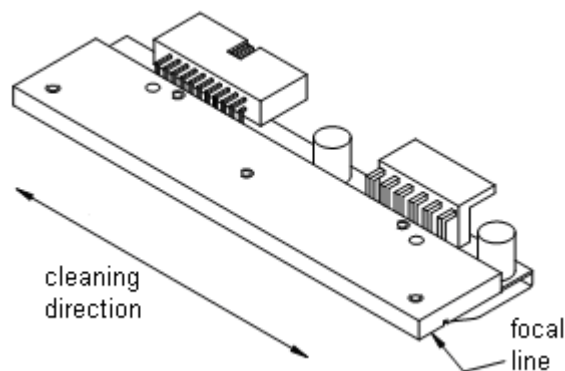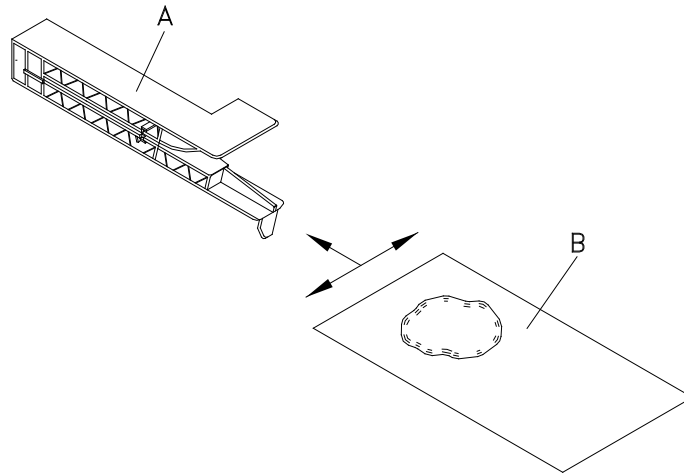

Figure 14

1.   Open printer cover.

2.   Turn red lever (B, in Figure 12) 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 the labels and transfer ribbon (see chapter 5 Loading media, page 27).

9.5   Replacing the printhead (general)

NOTICE!

The printhead (D) is preinstalled on a head plate (A) and precisely aligned at the factory. Do not loosen the screws (G) under any circumstances.
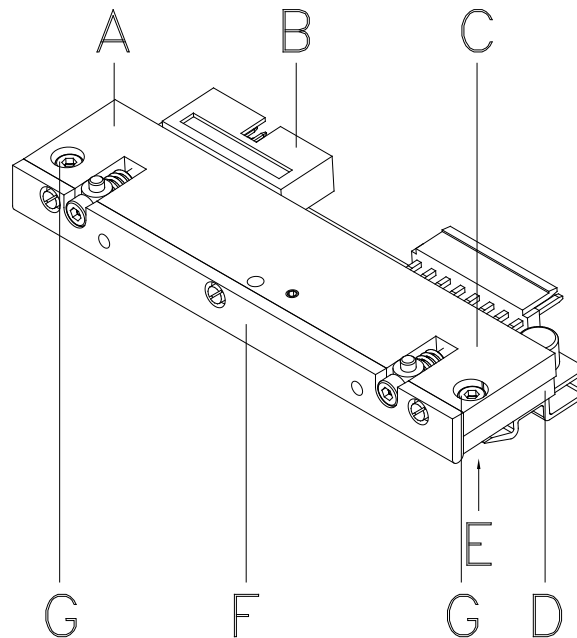
Figure 15

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

CAUTION!

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

$\Rightarrow$ Set up printer on a grounded, conductive surface.

$\Rightarrow$ Ground your body, e.g. by wearing a grounded wristband.

$\Rightarrow$ Do not touch contacts on the plug connections (B, C).

$\Rightarrow$ Do not touch printing line (E) with hard objects or your hands.

9.6   Replacing the printhead

Figure 16

Removing the printhead

1.   Remove labels and transfer ribbon from the label printer.

2.   When printhead is closed, loosen the fixing screw (2).

3.   Turn red lever (4) counter clockwise to lift up the printhead.

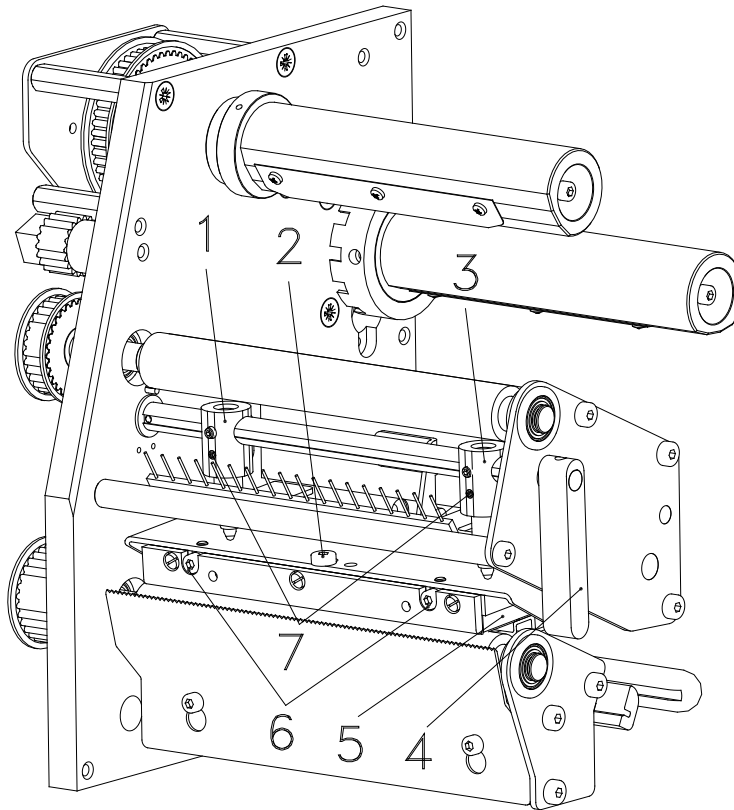4.   If the printhead (5) is not disengaged on the pressure roller, continue loosen the fixing screw (2).

5.   Remove the printhead carefully to the front until you can reach the plug connections.

6.   Remove plug connections and then remove printhead (5).

Installing the printhead

1.   Attach plug connections.

2.   Position printhead in printhead mounting bracket in such a way that the pins are secured in the corresponding holes in the head plate.

3.   Lightly keep printhead mounting bracket on the printer roller with one finger and check for correct positioning of the printhead.

4.   Screw in fixing screw (2) and tighten it.

5.   Check resistance value on the type plate of printhead and if necessary change the value in the menu *Service functions/Heater resistance*.

6.   Reload labels and transfer ribbon (see chapter 5 Loading media, page 27).

9.7   Adjusting the printhead

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 fixing screw (2, Figure 16) with a hexagon key by approx. ¼ rotations.

2. Adjust the parallelism with the adjusting screws (6, Figure 16).
   Clockwise = printhead moves forwards
   Counter clockwise = printhead moves backwards

3. Adjust the parallelism as long as the printing result comes up to your full expectation.

4. Tighten again the fixing screw (2, Figure 16).

5. 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!
>
> $\Longrightarrow$ Change factory settings only in exceptional cases.

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

6. Turn pressure screws (7, Figure 16) to change the pressure of printhead.

7. Turning the pressure screws
   in clockwise direction increases the pressure
   anticlockwise reduces the pressure.

8. The printhead is pushed on via two plungers (1+3, Figure 16). The location of the right plunger must be set to the width of the label medium used so as to:

   • achieve even print quality across the entire label width,

   • prevent wrinkles in the feed path of the transfer ribbon,

   • prevent premature wearing of the print roller and printhead.

9. Turn lever (4, Figure 16) clockwise to lock the printhead.

10. Loosen the screw (7, Figure 16) by approx. ¼ rotations.

11. Position right plunger (3 Figure 16) above the outer label edge.

12. Tighten again the screw (7, Figure 16).

10   Error correction

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

Error message	Cause	Remedy
13 COM OVERRUN	Loss of data at serial interface (RS-232).	Check baud rate. Check cable (printer and PC).
14 Field numer	Received line number is invalid at RS-232 and Centronics.	Check sent data. Check connection PC - printer.
15 Length mask	Invalid length of received mask statement.	Check sent data. Check connection PC - printer.
16 Unknown mask	Transferred mask statement is invalid.	Check sent data. Check connection PC - printer.
17 Missing ETB	No end of data found.	Check sent data. Check connection PC - printer.
18 Invalid character	One res. several characters of the text is res. are not available in the selected font.	Change text. Change font.
19 Invalid statement	Unknown transferred data record.	Check sent data. Check connection PC - printer.
20 Invalid check digit	For check digit control the entered res. received check digit is wrong.	Calculate check digit anew. Check code data.
21 Invalid SC number	Selected SC factor is invalid for EAN res. UPC.	Check SC factor.
22 Invalid number of digits	Entered digits for EAN res. UPC are invalid < 12; > 13.	Check number of digits.
23 Check digit calculation	Selected check digit calculation is not available in the bar code.	Check calculation of check digit. Check bar code type.
24 Invalid extension	Selected zoom factor is not available.	Check zoom factor.
25 Offset sign	Entered sign is not available.	Check offset value.
26 Offset value	Entered offset value is invalid.	Check offset value.
27 Printhead temperature	Printhead temperature is too high. Defective printhead sensing device.	Reduce contrast. Change printhead.

Error message	Cause	Remedy
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.
30 Application Identifier	Selected application identifier is not available in GS1-128.	Check code data.
31 HIBC definition	F Missing HIBC system sign. Missing primary code.	Check definition of HIBC code.
32 System clock	Real Time Clock function is selected but the battery is empty. Defective RTC.	Change battery. Change RTC component.
33 No CF interface	Interrupted connection CPU - CF card. Defective CF card interface.	Check connection CPU - CF card interface. Check CF card interface.
34 No print memory	No print CF card found.	Check CF assembly on CPU.
35 Cover 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.

Error message	Cause	Remedy
40 Length command	Invalid length of the received command statement.	Check data sent. Check connection PC - printer.
41 No drive	Compact Flash card not found / not correctly inserted.	Insert CF card correctly.
42 Drive error	Impossible to read CF card (faulty).	Check CF card, if necessary change it.
43 Not formatted	CF Card not formatted.	Format CF card.
44 Delete current directory	Attempt to delete the actual directory.	Change directory.
45 Path too long	Too long indication of path.	Indicate a shorter path.
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.

Error message	Cause	Remedy
57 Invalid graphic file	The selected file does not contain graphic data.	Check file name.
58 Directory not empty	Attempt to delete a not empty directory.	Delete all files and sub-directories in the desired directory.
59 No interface	No CF card drive found.	Check connection of CF card drive. Contact your distributor
60 No CF card	No CF card is inserted.	Insert CF card in the slot.
61 Webserver error	Error at start of web server.	Please contact your distributor.
62 Wrong FPGA	The direct print module is equipped with the wrong FPGA.	Please contact your distributor.
63 End position	The label length is too long. The number of labels per cycle is too much.	Check label length res. the number of labels per cycle.
64 Zero point	Defective photocell.	Change photocell.
65 Compressed air	Pressure air is not connected.	Check pressure air.
66 External releaser	External print release signal is missing.	Check input signal.
67 Row too long	Wrong definition of column width res. number of columns.	Reduce the column width res. correct the number of columns.
68 Scanner	The connected bar code scanner signals a device error.	Check the connection scanner/printer. Check scanner (dirty).
69 Scanner NoRead	Bad print quality. Printhead completely soiled or defective. Print speed too high.	Increase contrast. Clean printhead or exchange (if necessary). Reduce print speed.
70 Scanner data	Scanned data does not correspond to the data which is to print.	Exchange printhead.
71 Invalid page	As page number either 0 or a number > 9 is selected.	Select a number between 1 and 9.

Error message	Cause	Remedy
72 Page selection	A page which is not available is selected.	Check the defined pages.
73 Page not defined	The page is not defined.	Check the print definition.
74 Format user guiding	Wrong format for customised entry.	Check the format string.
75 Format date/time	Wrong format for date/time.	Check the format string.
76 Hotstart CF	No CF card found.	If option hotstart was activated, a CF card must be inserted. Switch off the printer before inserting the memory card.
77 Flip/Rotate	Selection of print of several columns and also mirror/rotate.	It is only possible to select one of both functions.
78 System file	Loading of temporary hotstart files.	Not possible.
79 Shift variable	Faulty definition of shift times (overlapping times).	Check definition of shift times.
80 GS1 Databar	General GS1 Databar error.	Check definition and parameter of GS1 Databar code.
81 IGP error	Protocol error IGP.	Check sent data.
82 Time generation	Printing creation was still active at print start.	Reduce print speed. Use printers' output signal for synchronisation. Use bitmap fonts to reduce generating time.
83 Transport protection	Both DPM position sensors (start/end) are active.	Displace zero point sensor Check sensors in service functions menu
84 No font data	Font and web data is missing.	Run a software update.
85 No layout ID	Label ID definition is missing.	Define label ID onto the label.
86 Layout ID	Scanned data does not correspond to defined ID.	Wrong label loaded from CF card.

Error message	Cause	Remedy
87 RFID no label	RFID unit cannot recognise a label.	Displace RFID unit or use an offset.
88 RFID verify	Error while checking programmed data.	Faulty RFID label. Check RFID definitions
89 RFID timeout	Error at programming the RFID label.	Label positioning. Faulty label.
90 RFID data	Faulty or incomplete definition of RFID data.	Check RFID data definitions.
91 RFID tag type	Definition of label data does not correspond with the used label.	Check storage partitioning of used label type
92 RFID lock	Error at programming the RFID label (locked fields).	Check RFID data definitions. Label was already programmed.
93 RFID programming	Error at programming the RFID label.	Check RFID definitions.
94 Scanner timeout	The scanner could not read the bar code within the set timeout time. Defective printhead. Wrinkles in transfer ribbon. Scanner wrong positioned. Timeout time too short.	Check printhead. Check transfer ribbon. Position scanner correctly, corresponding to the set feeding. Select longer timeout time.
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.

Error message	Cause	Remedy
99 Load software printhead FPGA	Error when programming printhead-FPGA.	Please contact your responsible distributor.
100 Upper position	Sensor signal up is missing (option APL 100).	Check input signals / compressed-air supply.
101 Lower position	Sensor signal down is missing (option APL 100).	Check input signals / compressed-air supply.
102 Vacuum plate empty	Sensor does not recognise a label at vacuum plate (option APL 100).	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 invalid	RFID module is not activated. No RFID data can be processed.	Activate RFID module or remove RFID data from label data.
108 GS1-128 invalid	Transferred GS1-128 bar code is invalid.	Verify bar code data (see GS1-128 bar code specification).
109 EPC parameter	Error at EPC calculation.	Verify data (see EPC specification).
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).

Error message	Cause	Remedy
113 Applicator error	Error while using applicator.	Check applicator.
114 Left position	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	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	The print position is not correct.	Check TOP and RIGHT final position switch for correct function and position. Check pneumatics for function
117 XML parameter	The parameters in the XML file are not correct.	Please contact your responsible distributor.
118 Invalid variable	Transferred variable is invalid with customized entry.	Select correct variable without customized entry and transfer it.
119 No ribbon	During the print order the ribbon roll becomes empty. Defect at the transfer ribbon photocell.	Change transfer ribbon. Check transfer ribbon photocell (service functions).
120 Wrong directory	Invalid target directory when copying.	Target directory must not be within the source directory. Check target directory.
121 No label found	No label found at the rear printhead (DuoPrint). Soiled label photocell. Labels not inserted correctly.	Insert new label roll. Check if labels are inserted correctly. Clean the label photocell.

11   Additional information

11.1 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 4 columns with a width of 25 mm or 2 columns with a width of 50 mm can be printed onto a label with a width of 100 mm. Please note that the first label is always the one with the largest x coordinate, i.e. it has the largest distance to the printhead.
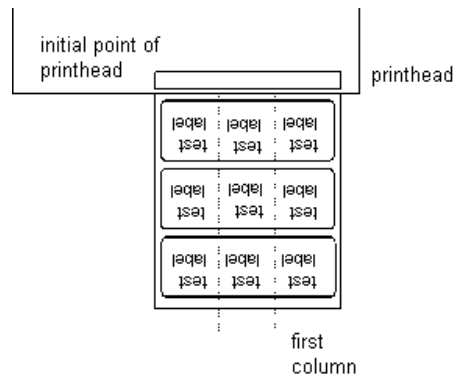
Setting the print of several columns

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

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

Press key ● to confirm the selection.

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

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

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

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

Press key to start the print with input of number of labels and number of lines. The number of labels corresponds to the number of labels that should be printed.
e.g. Columns: 3, Items: 4

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

11.2 Hotstart

i **NOTICE!**

Because of the fact that no battery-buffered SRAM is available, the necessary data has to be saved in another way, i.e. 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.

i **NOTICE!**

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

Saving the current label

In case the *Hotstart* function is set to on, at the start of a print order the data of the current label is saved to the corresponding directory of the CF card.
However the following conditions have to be fulfilled:

• CF card inserted in drive A.

• Enough free storage space onto CF card.

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

Saving the print order state

At switching off the 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.

Loading a 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.

Starting the 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.

Refreshing the variable counter

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

NOTICE!

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

11.3 Password

Example 1: The supervisor programs a CF Card directly with the printer. He stores 10 different labels. As well he adjusts the printer parameters, like contrast, speed, etc. to the corresponding values. The user is only supposed to read the labels from CF card and to print them. Therefore the supervisor blocks the function menu and the entry function by a password.

Example 2: The printer is connected to a PC. The user is only supposed to take the labels dispensed by the printer and stick them on. To prevent, that the labels or the printer set-up will not be changed, the supervisor blocks all printer functions (e.g. function menu, entry menu, etc.) by a password.

Example 3: The user has to change several texts before printing. It is not allowed to change any masks (fonts, position, etc.). Therefore the supervisor blocks the entry of mask and the function menu. By this means the user indeed can print labels, but the printer set-up and the masks of the labels can't be changed.

To receive a most flexible password protection, the printer functions will be divided into several function groups:

1. Function menu: In the function menu the printer parameters can be changed (contrast, speed, mode, ...). The password protection prevents modifications at the printer settings.

2. CF card: With the functions of your CF 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

3. Print functions: With key **quant** a print can be produced. 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.

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.

Definition of password	In case no password is defined res. the password protection is not activated, all functions can be used. In the function menu you will find the menu item 'Password', where the password can be entered and the password protection activated.

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

Press key ➤ as long as you arrived the menu *Device settings*.

Press key ● to confirm the selection.

Press key ➤ as long as you arrived the menu item *Password*.

Press key ● to confirm the selection.

F   Function menu
CF   CF functions
D   Print functions

If the password protection is active but the function menu not protected, first of all the password (four-digit number, possible values 0000 - 9999) has to be entered. Now the modifications can be made. The user can define the password in the first line (four-digit number).

Press key ▶ to continue.

Press keys ▲ and ▼ to activate/deactivate (Yes/No) the password protection.

Press key ▶ to change to the second line.

Press keys ▲ and ▼ to block/open individual function groups.

Press keys ◀ and ▶ to change to the next group.

F:	Function menu	0...open
		1...locked
CF:	CF card	0...open
		1...only reading access
		2...access blocked
D:	Printer guiding	0...open
		1...open
		2...no manual print release

Activate blocked function:	In order to execute a blocked function, first of all the valid password has to be entered.

Press key ● to confirm the entry. If the correct password is entered then the desired function can be executed. If a wrong password is entered, no error message appears but the printer returns to the main menu.

11.4 Backfeed/Delay

Backfeed modes

In continuous dispensing mode (IO dynamic continuous, IO static continuous, IO photocell continuous) no optimised backfeed is possible. Because of the fact when changing the print order, then the current label in the offset sector is already printed from the old print order.
With activated double cut no optimised backfeed is possible.
In the sector that is printed when preprint the following label, no date/time variable should be existing, because this could be refreshed before the next start impulse.

Standard

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

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

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

Automatic

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

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

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

11.5 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).

11.6 Ultrasonic photocell (option)

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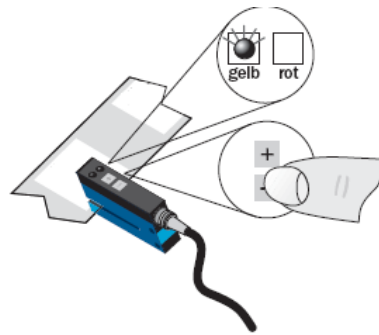
Adjustment of switching point in 'light-switching' mode:
The switching output Q is active if the backing paper is detected between the labels (gap detection).

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.
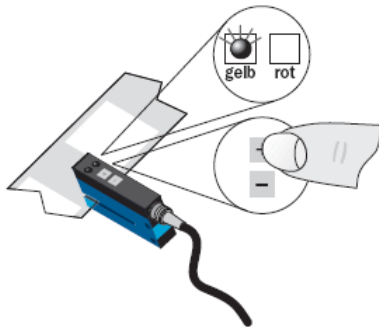
Position the backing paper in the active area of the fork sensor. The switching output indicator (yellow) must light up again. Otherwise increase the sensitivity with + until the switching threshold is correctly adjusted.
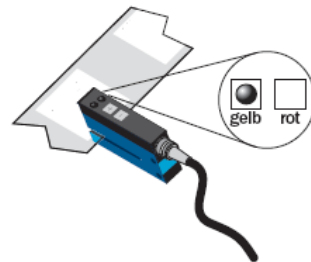
If necessary, adjust the switching point slightly in the other direction.

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.

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