

Operating manual

Label printer
Spectra series

December 2011



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

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Carl Valentin label printers comply with the following safety guidelines:

CE EG Low-Voltage Directive (73/23/EEC)
EG Electromagnetic Compatibility Directive (89/336/EEC)

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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 two-line display shows the current status.

By the use of a 32 Bit processor and a large main memory of 4MB also for large labels (optional up to a length of 3000 mm) a large 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 300 mm/s can be achieved. Time-saving update of the printer software is possible via the interface. The label printer can be adapted by the large selection of options to each function.

As default, printers of this series are equipped with a parallel and serial interface. 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 equipments are obliged to take-back and dispose old equipment which was manufactured after 13 August 2005. In principle, these old equipments may not be delivered to communal collecting points. They may only be organised used and disposed by the manufacturer. Valentin products accordingly labelled can therefore in future be returned to Carl Valentin GmbH.

Thereupon old equipment is professionally disposed.

Thereby Carl Valentin GmbH observes all obligations in the context of old equipment disposal in time and makes therewith the smooth selling of products furthermore possible. Please understand that we can only take-back equipment that is send free of carriage charges.

Further information is available from WEEE directive or our web site.

1.3 Connector pin assignment (printer rear)

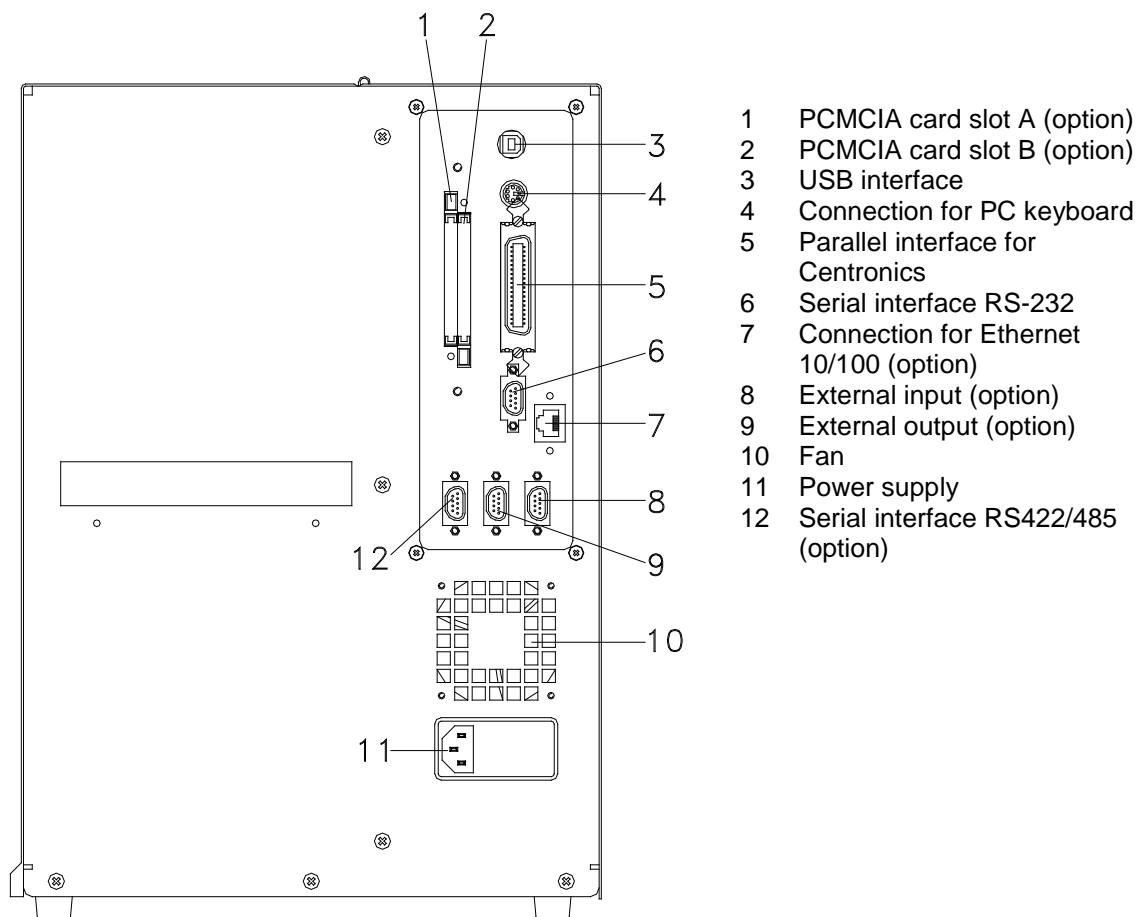


Figure 1

2 Safety notes

The label printer is designed for power supply systems from 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!

⇒ 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 safe 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.



Perform trainings regularly.

Content of the training are chapter 2.2 (Operating conditions), chapter 5 (Loading media) and chapter 8 (Maintenance and cleaning).

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

Only use original spare and exchange parts.

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

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!

⇒ 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: $\leq 5\%$

Anti-Interference measures

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

- Provide separate power supply to our 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 61000-6-4: 08-2002

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

Immunity to interference according to EN 61000-6-2: 03-2006

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



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 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

Spectra 107/12

Print	
Passage width	116 mm
Min. label width	15 mm
Min. label height	6 mm / 15 mm*
Max. label height	1200 mm / 1100 mm**
Print width	106,6 mm
Label material	max. 220 gr/m ² (others on demand)
Resolution	305 dpi
Print speed	max. 300 mm/s
Printhead	Corner Type
Built-in fonts	
Vector fonts	6 free scaleable BITSTREAM® fonts
Bitmap fonts	6
Proportional fonts	6
Font height	min. 1 mm - max. 99 mm
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	
Interface	
Serial: RS-232C (up to 57600 bauds), RS-422 + RS-485 (option) Parallel: Centronics - USB: 1.1 - Ethernet: 10/100 Base-T (option)	
Labels	
Roll diameter	internal unwinder: max. 200 mm internal rewinder: max. 160 mm (option)
Core diameter	40 mm
Creation	online
Transfer ribbon	
Core diameter	25,4 mm / 1"
Length	Ø 90 mm res. approx. 450 m
Label sensor	
Standard	transmission + reflexion from bottom
Option	transmission + reflexion from top, transm. w/o refl., ultrasonic photocell
Dimensions in mm	
width x height x depth	275 x 380 x 475
Weight	19 kg
Connection values	
Nominal voltage	standard 230 V / 50-60 Hz option 115 V / 50-60 Hz
Power consumption	max. 320 VA
Safety values	230 V / 3.15 AT - 115 V / 6,3 AT
Operating conditions	
Temperature	5-35 °C
Relative humidity	max. 80% (non-condensing)

* in cutter or dispenser mode

** with option Ethernet

Spectra 108/12

Print	
Passage width	116 mm
Min. label width	15 mm
Min. label height	6 mm / 15 mm *
Max. label height	1200 mm / 1100 mm **
Print width	108,4 mm
Label material	max. 220 gr/m ² (others on demand)
Resolution	300 dpi
Print speed	max. 300 mm/s
Printhead	Flat Type
Built-in fonts	
Vector fonts	6 free scaleable BITSTREAM® fonts
Bitmap fonts	6
Proportional fonts	6
Font height	min. 1 mm - max. 99 mm
1D bar codess	
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	
Interface	
Serial: RS-232C (up to 57600 bauds), RS-422 + RS-485 (option)	
Parallel: Centronics	
USB: 1.1	
Ethernet: 10/100 Base-T (option)	
Labels	
Roll diameter	internal unwinder: max. 200 mm internal rewinder: max. 160 mm (option)
Core diameter	40 mm
Creation	online
Label sensor	
Standard	transmission + reflexion from bottom
Option	transmission + reflexion from top, transm. w/o refl., ultrasonic photocell
Transfer ribbon	
Core diameter	25,4 mm / 1"
Length	Ø 90 mm res. approx. 450 m
Dimensions in mm	
width x height x depth	275 x 380 x 475
Weight	19 kg
Connection values	
Nominal voltage	standard 230 V / 50-60 Hz option 115 V / 50-60 Hz
Power consumption	max. 320 VA
Safety values	230 V / 3.15 AT - 115 V / 6,3 AT
Operating conditions	
Temperature	5-35 °C
Relative humidity	max. 80% (non-condensing)

* in cutter or dispenser mode

** with option Ethernet

Spectra 160/12

Print	
Passage width	176 mm
Min. label width	50 mm
Min. label height	15 mm / 25 mm *
Max. label height	800 mm / 700 mm **
Print width	160 mm
Label material	max. 220 gr/m ² (others on demand)
Resolution	305 dpi
Print speed	max. 150 mm/s
Printhead	Corner Type
Built-in fonts	
Vector fonts	6 free scaleable BITSTREAM® fonts
Bitmap fonts	6
Proportional fonts	6
Font height	min. 1 mm - max. 99 mm
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	
Interface	
Serial: RS-232C (up to 57600 bauds), RS-422 + RS-485 (option)	
Parallel: Centronics	
USB: 1.1	
Ethernet: 10/100 Base-T (option)	
Labels	
Roll diameter	internal unwinder: max. 200 mm internal rewinder: max. 160 mm (option)
Core diameter	40 mm
Creation	online
Label sensor	
Standard	transmission + reflexion from bottom
Option	transmission + reflexion from top, transm. w/o refl., ultrasonic photocell
Transfer ribbon	
Core diameter	25,4 mm / 1"
Length	Ø 90 mm res. approx. 450 m
Dimensions in mm	
width x height x depth	335 x 380 x 475
Weight	21 kg
Connection values	
Nominal voltage	standard 230 V / 50-60 Hz option 115 V / 50-60 Hz
Power consumption	max. 320 VA
Safety values	230 V / 3.15 AT - 115 V / 6,3 AT
Operating conditions	
Temperature	5-35 °C
Relative humidity	max. 80% (non-condensing)

* in cutter or dispenser mode

** with option Ethernet

Spectra 162/12

Print	
Passage width	176 mm
Min. label width	50 mm
Min. label height	15 mm / 25 mm *
Max. label height	800 mm / 700 mm **
Print width	162,6 mm
Label material	max. 220 gr/m ² (others on demand)
Resolution	300 dpi
Print speed	max. 150 mm/s
Printhead	Flat Type
Built-in fonts	
Vector fonts	6 free scaleable BITSTREAM® fonts
Bitmap fonts	6
Proportional fonts	6
Font height	min. 1 mm - max. 99 mm
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	
Interface	
Seriell: RS-232C (up to 57600 bauds), RS-422 + RS-485 (option)	
Parallel: Centronics	
USB: 1.1	
Ethernet: 10/100 Base-T (option)	
Labels	
Roll diameter	internal unwinder: max. 200 mm internal rewinder: max. 160 mm (option)
Core diameter	40 mm
Creation	online
Label sensor	
Standard	transmission + reflexion from bottom
Option	transmission + reflexion from top, transm. w/o refl., ultrasonic photocell
Transfer ribbon	
Core diameter	25,4 mm / 1"
Length	Ø 90 mm res. approx. 450 m
Dimensions in mm	
width x height x depth	335 x 380 x 475
Weight	21 kg
Connection values	
Nominal voltage	standard 230 V / 50-60 Hz option 115 V / 50-60 Hz
Power consumption	max. 320 VA
Safety values	230 V / 3.15 AT - 115 V / 6,3 AT
Operating conditions	
Temperature	5-35 °C
Relative humidity	max. 80% (non-condensing)

* in cutter or dispenser mode

** with option Ethernet

Spectra 216/12

Print	
Passage width	226 mm
Min. label width	100 mm
Min. label height	15 mm / 25 mm *
Max. label height	600 mm / 500 mm **
Print width	216,8 mm
Label material	max. 220 gr/m ² (others on demand)
Resolution	300 dpi
Print speed	max. 100 mm/s
Printhead	Flat Type
Built-in fonts	
Vector fonts	6 free scaleable BITSTREAM® fonts
Bitmap fonts	6
Proportional fonts	6
Font height	min. 1 mm - max. 99 mm
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	
Interface	
Serial: RS-232C (up to 57600 bauds), RS-422 + RS-485 (option)	
Parallel: Centronics	
USB: 1.1	
Ethernet: 10/100 Base-T (option)	
Labels	
Roll diameter	internal unwinder: max. 200 mm internal rewinder: max. 160 mm (option)
Core diameter	40 mm
Creation	online
Label sensor	
Standard	transmission + reflexion from bottom
Option	transmission + reflexion from top, transm. w/o refl., ultrasonic photocell
Transfer ribbon	
Core diameter	25,4 mm / 1"
Length	Ø 90 mm res. approx. 450 m
Dimensions in mm	
width x height x depth	385 x 380 x 475
Weight	28 kg
Connection values	
Nominal voltage	standard 230 V / 50-60 Hz option 115 V / 50-60 Hz
Power consumption	max. 320 VA
Safety values	230 V / 3.15 AT - 115 V / 6,3 AT
Operating conditions	
Temperature	5-35 °C
Relative humidity	max. 80% (non-condensing)

* in cutter or dispenser mode

** with option Ethernet

Standard equipment

- Tear off edge
- Datum / time
- integrated unwinder
(max. outside diameter 200 mm / 8")
- IBM keyboard connection
- Thermal and thermal transfer version
- Label photocell
(transmission and reflexion from bottom)
- Windows printer driver

Optional equipment

- Ribbon save (not 216/12)
- Integrated rewinder
(max. outside diameter 160 mm)
- Cutting unit (rotation)
- Dispensing unit
(with/without photocell)
- Ultrasonic photocell (not 107/12, 160/12, 216/12)
- Alphanumeric keyboard
(German, English, French, Spanish)
- External rewinder/unwinder
Core diameter labels: 75 mm)
- Memory Card and PCMCIA card slot
- RS422 interface
- RS485 interface
- Ethernet interface
- Input/output board
- Ethernet interface
- Twinax / Koax connection (external box)
- Label creation software Labelstar PLUS

3.1 Control inputs and outputs (option I)

Control outputs

Via signal outputs various operating modes of the printer can be demanded.

The signal outputs are made available via two 9-pin D-Sub-sockets (Output 1) at the rear of the Control Unit. They consist of opto-integrator semiconductor lines which are switched through res. blocked out corresponding to the different operating modes.

In case a control output is active, then the corresponding output is to strain with a maximum current of 30mA.

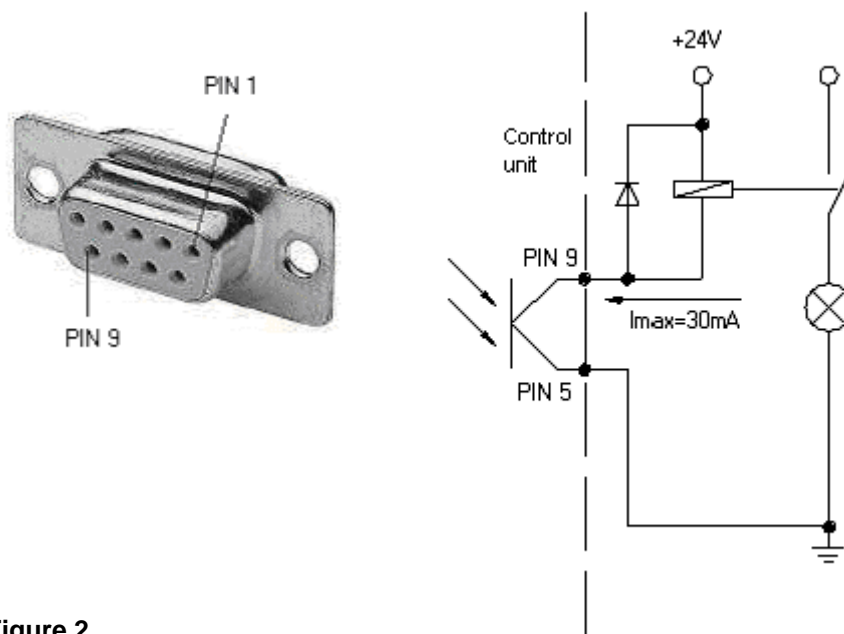


Figure 2

PIN (socket)	Output I
	Out 1: Error message Each error status such as ribbon error is displayed.
	Out 2: Print order The printer was activated with a print order. Now print start by IN1 is possible.
	Out 3: Label generation The printer is filled with current label data. In case in dispensing mode either dispensing photocell or dispensing photocell continuous is selected it is indicated if a label is under photocell and ready to pick up.
	Out 4: Single print The contents of printer memory is printed to the corresponding medium by printhead.

Control inputs

Via the control input the print start signal is lead to the control unit. The control input is electroplated separated and has to be provided with an external tension source. The signal level is active "HIGH".

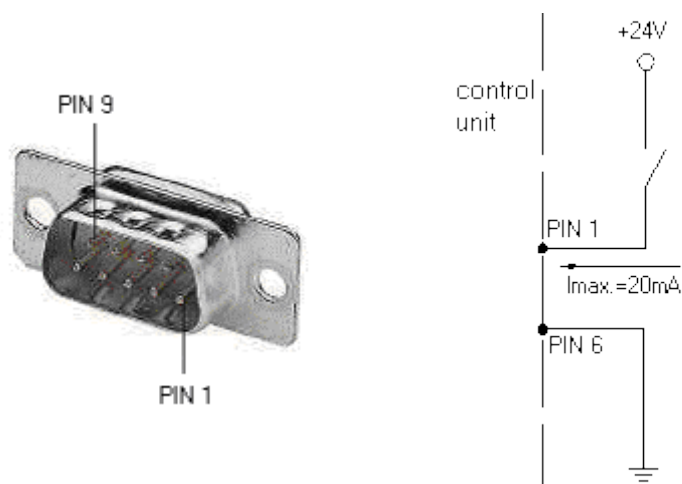


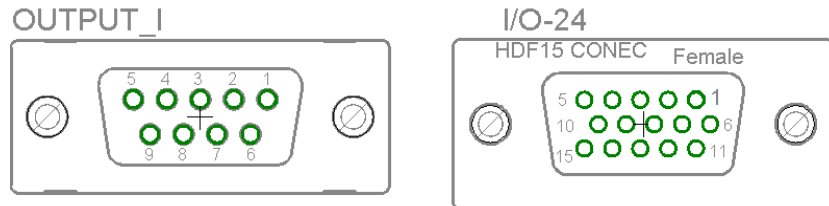
Figure 3

PIN	Input I	Input II
	In 1: cutter mode = cut is activated dispenser mode = print start	In 5: Not used
	In 2: Not used	In 6: Not used
	In 3: Not used	In 7: Not used
	In 4: Not used	In 8: Not used

3.2 Control inputs and outputs (option II)

For special applications, an I/O plate with 24 V supply and special options is available.

Back view of I/O connector.



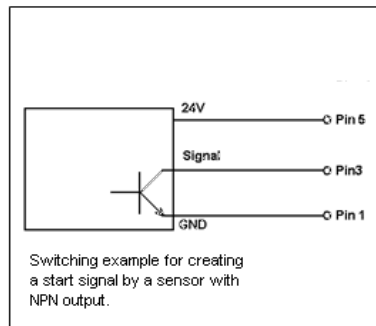
Output I is identical to option I.

The I/O-24 connector is 15-pole and provides user-sided 24 V for pins 5 and 10 for supplying the sensors (max. 200 mA).

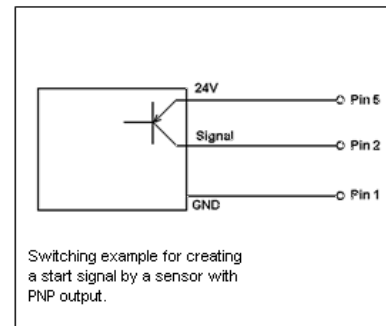
Pin 1, 6 and 11 are equipped with GND. In case of using I/O-24 signals, exist no galvanic separation.

The other connection possibilities of I/O-24 connector can be noticed from the below switching examples.

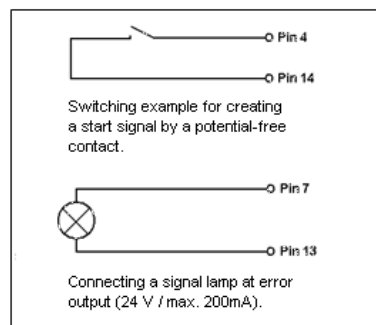
Example 1:



Example 2:



Example 3:



3.3 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
LPT	Support	✓	✓	✓	✓	✓	✓
	Recognition by	Boot procedure, device manager			x	Installation	
USB	Support	x	✓	✓	s.b.	✓	✓
	Recognition by	x	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. The following possibilities exist for parallel port:

- Windows 95 / 98 / Me
Printers are recognised during the start procedure by Windows or by the search for new hardware by means of the hardware wizard.
- Windows 2000 / XP
Printers can be recognised during the start procedure by 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 printers' is set in the printer installation wizard. For Windows XP the Hot Plug & Play when switching on the printer is obviously possible.



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)
888-820-4500
sales @bsquare.com

BSQUARE (Europe)
+49 (811) 600 59-0
europe@bsquare.com

4 Installation

Unpack the label printer

- ⇒ Lift the label printer out of the box.
- ⇒ Check the label printer for transport damages.
- ⇒ Check delivery for completeness.

Scope of delivery

- Label printer.
- Empty core, mounted on transfer ribbon rewinder.
- Tear-off edge (basic printers only).
- Dispenser edge (printers with dispenser option only).
- Power cable.
- Documentation.
- Printer driver CD.



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.

- ⇒ Set up the label printer only in a dry place protected from sprayed water.
- ⇒ Set up label printer on a level, vibration-free and air draught-free surface.
- ⇒ Open cover of label printer.
- ⇒ 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 230 V / 50-60 Hz without any adjustments or modifications.



CAUTION!

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

⇒ Set the power switch (1) to '0' before plugging in the label printer.

⇒ Insert power cable into power connection socket (2).

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

Connecting to a computer or to a computer network



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 with 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, on page 27).

Start measuring in menu item 'Label layout/Measure label' (see chapter 6.4 Label layout, on page 40).

Press key  to finish measuring.



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 the menu 'Label layout/Label and Gap'.

5 Loading media

5.1 Loading label roll

Loading label roll in tear-off mode

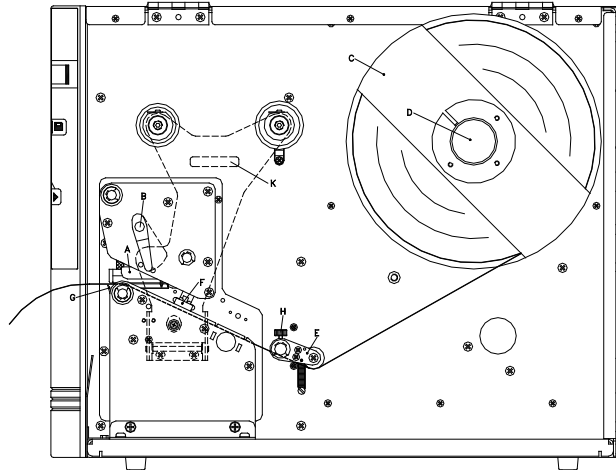


Figure 4

1. Open the printer cover.
2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.
Spectra 216! Pull centring plate (K) outwardly.
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.
6. Lead the label material below the label guiding (E).
Pay attention that the label runs through the photocell (F).
Spectra 216! Lift centring plate (K) again upwards.
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 (G) 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 rings (H) of the label guiding to the width of material.
11. Close the printer cover.

Loading label roll in rewind mode

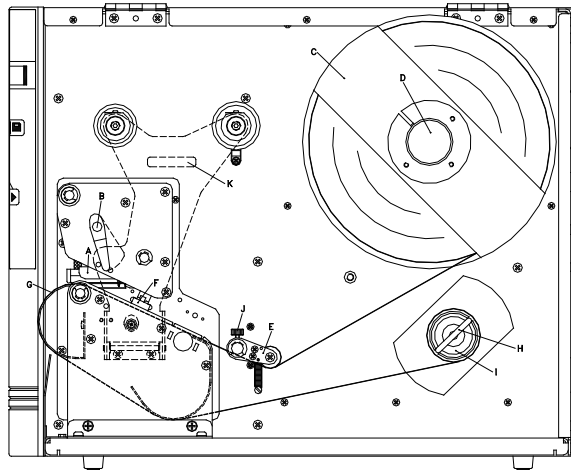


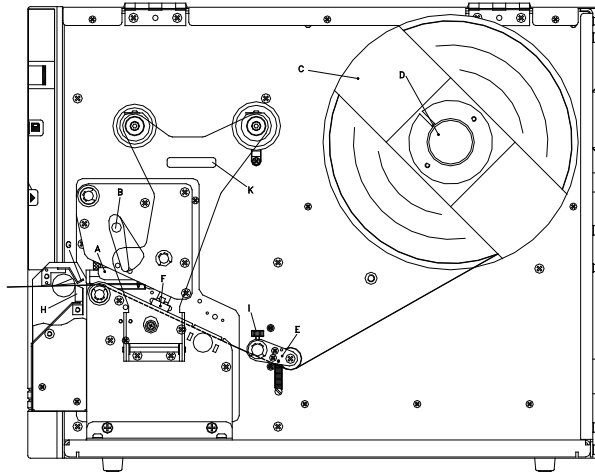
Figure 5

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

1. Open the printer cover.
2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.
- Spectra 216!** Pull centring plate (K) outwardly.
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.
6. Lead the label material below the label guiding (E). Pay attention that the label runs through the photocell (F).
7. Place the labels around the front sheet (G) and lead them below the mechanics to the rear.
8. Clamp the label material, with the handle (H) designated for it, at the rewinding roll (I).

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

9. In order to move the printhead (A) down, turn the red pressure lever (B) in clockwise direction until it locks.
10. Adjust the adjusting rings (J) of the label guiding to the width of material.
11. Close the printer cover.

**Loading label roll in
cutter mode****Figure 6**

1. Open the printer cover.
2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.
Spectra 216! Pull centring plate (K) outwardly.
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.
6. Lead the label material below the label guiding (E) and printhead (A).
Pay attention that the label runs through the photocell (F).
7. Lead the label material between the inserting angle (G) and the cutter ledge (H).
Spectra 216! Lift centring plate (K) again upwards.
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 rings (J) of the label guiding to the width of material.
10. Close the printer cover.

Loading label roll in dispenser mode

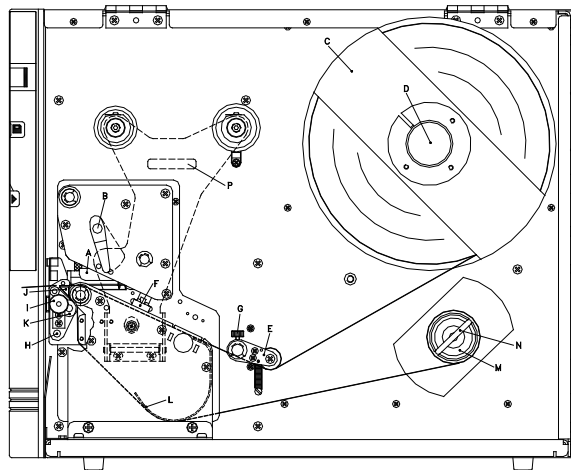


Figure 7

1. Open the printer cover.
2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.
Spectra 216! Pull centring plate (P) outwardly.
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.
6. Lead the label material below the label guiding (E) and printhead (A).
 Pay attention that the label runs through the photocell (F).
7. Lift the dispensing whip (H) by pulling the knurled knob (I) outwards to front/to the bottom.
Spectra 216! Lift centring plate (P) again upwards.
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 rings (G) of the label guiding to the width of material.
10. Strip some labels from the backing paper and lead the backing material over the dispensing whip (J) and behind the plastic roll (K).
11. Press again the dispensing whip (H) to the top and lock it.
12. Place the backing material around the cover sheet below (L) and fix it with the clamp (N) at the rewinding unit (M).
13. Enter the offset value in 'Dispenser I/O' menu.
14. Close the printer cover.

5.2 Loading fanfold labels

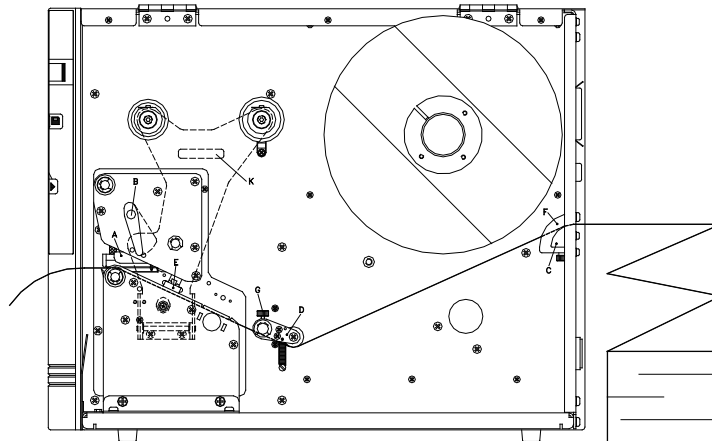


Figure 8

1. Open the printer cover.
2. Open printhead (A) by turning the red pressure lever (B) anticlockwise.
Spectra 216! Pull centring plate (K) outwardly.
3. Load the fan-fold material from the back in the corresponding guiding (C).
4. Lead the fan-fold material below the label guiding (D). Pay attention that the label runs through the photocell (E).
Spectra 216! Lift centring plate (K) again upwards.
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 rings (F) + (G) of the respective label guiding to the width of material.
7. Close the printer cover.

5.3 Loading transfer ribbon



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

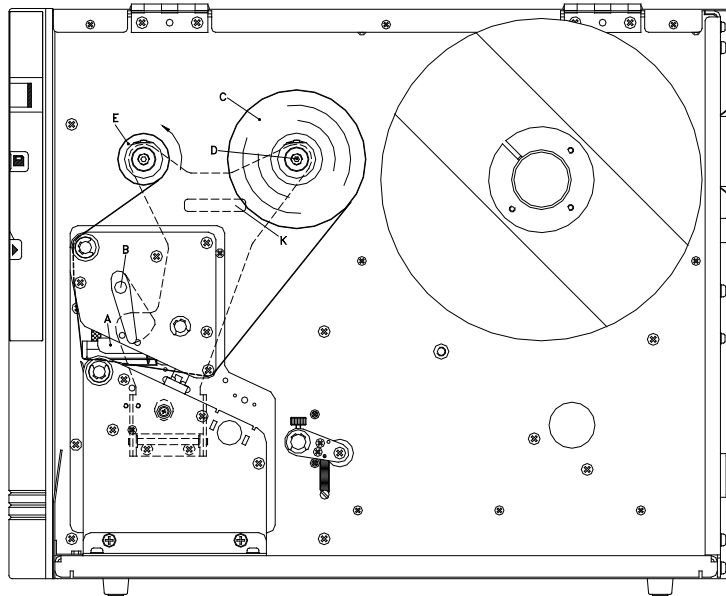


Figure 9



Before a new transfer ribbon roll is loaded, the printhead must be cleaned using printhead and roller cleaner (97.20.002). For detailed information, please see page 69. 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.
- Spectra 216!** Pull centring plate (K) outwardly.
4. Load the transfer ribbon roll (C) with outer winding onto the unwinding roll (D).
5. Place an empty ribbon roll on the rewinding roll (E) and lead the transfer ribbon below the printhead.
6. Fix the ribbon with an adhesive tape in rotating direction at the empty roll of the rewinding roll (E). Pay attention to the rotation direction of transfer ribbon rewinder anticlockwise.

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

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




















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.

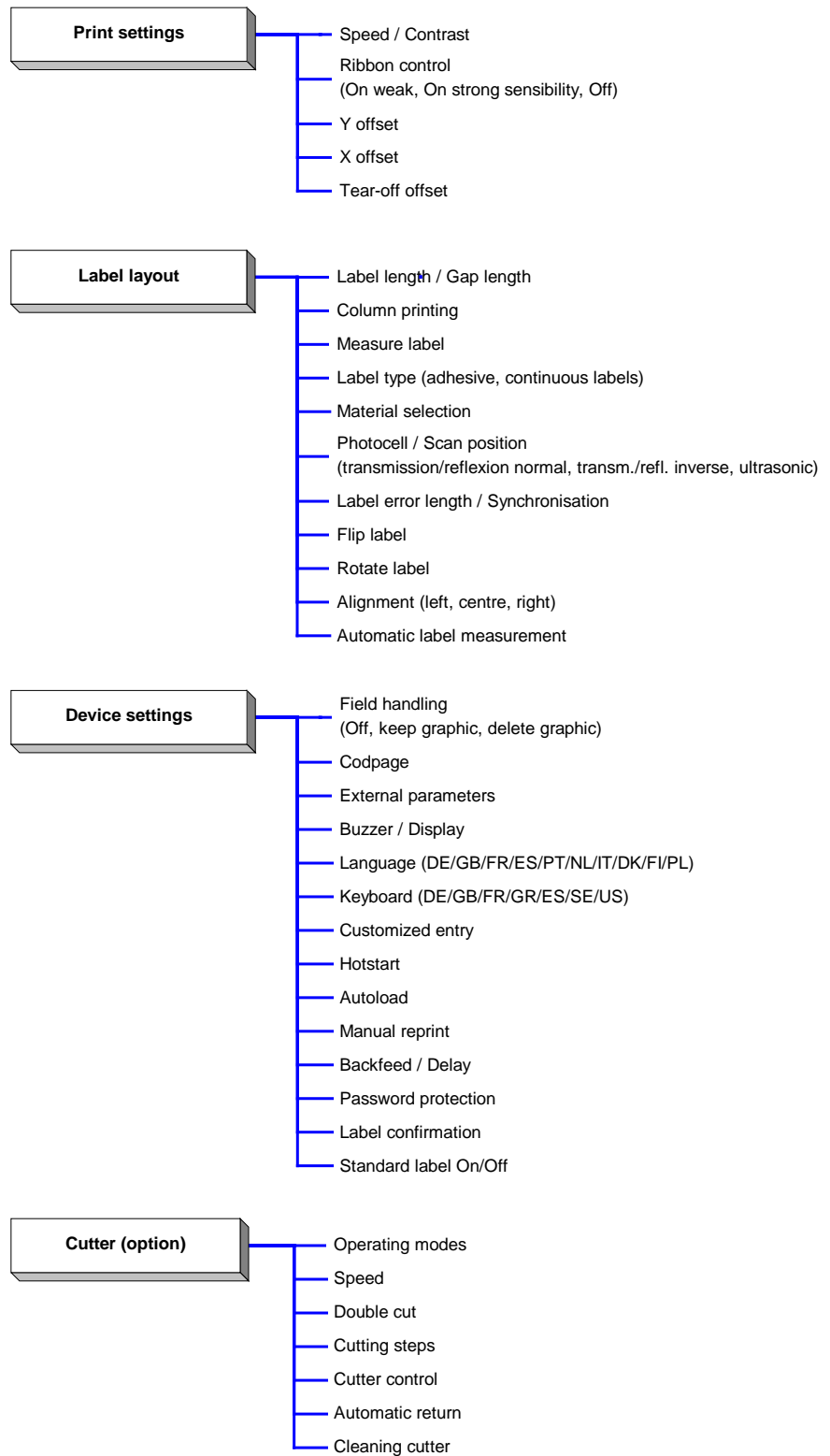
6 Function menu

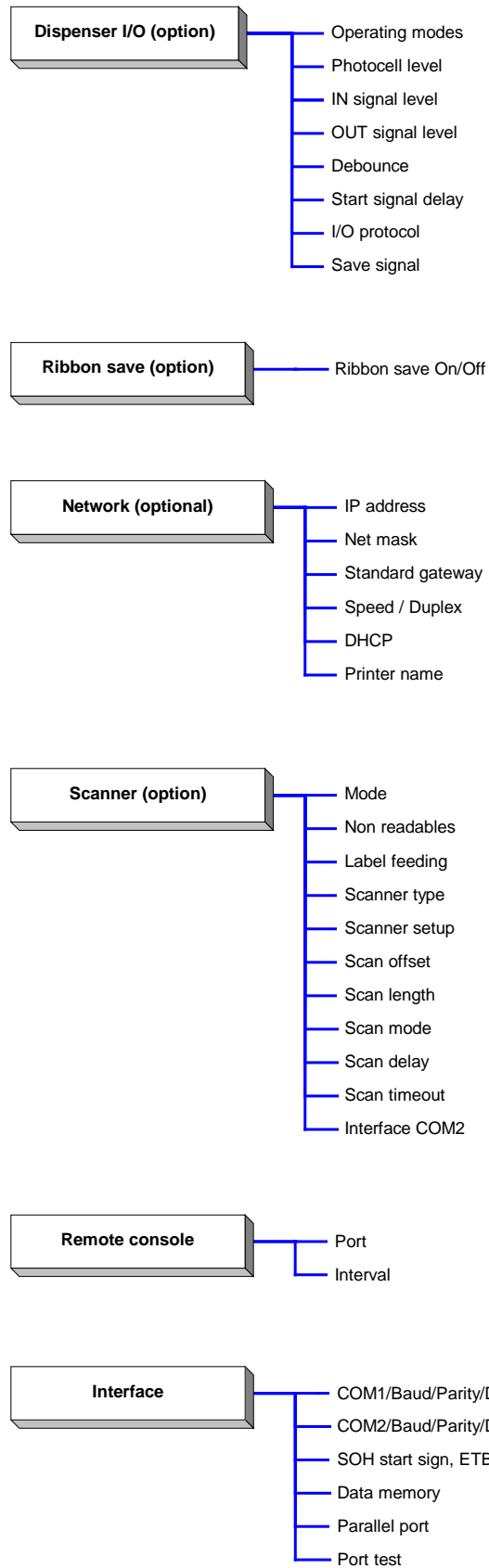
6.1 Keyboard

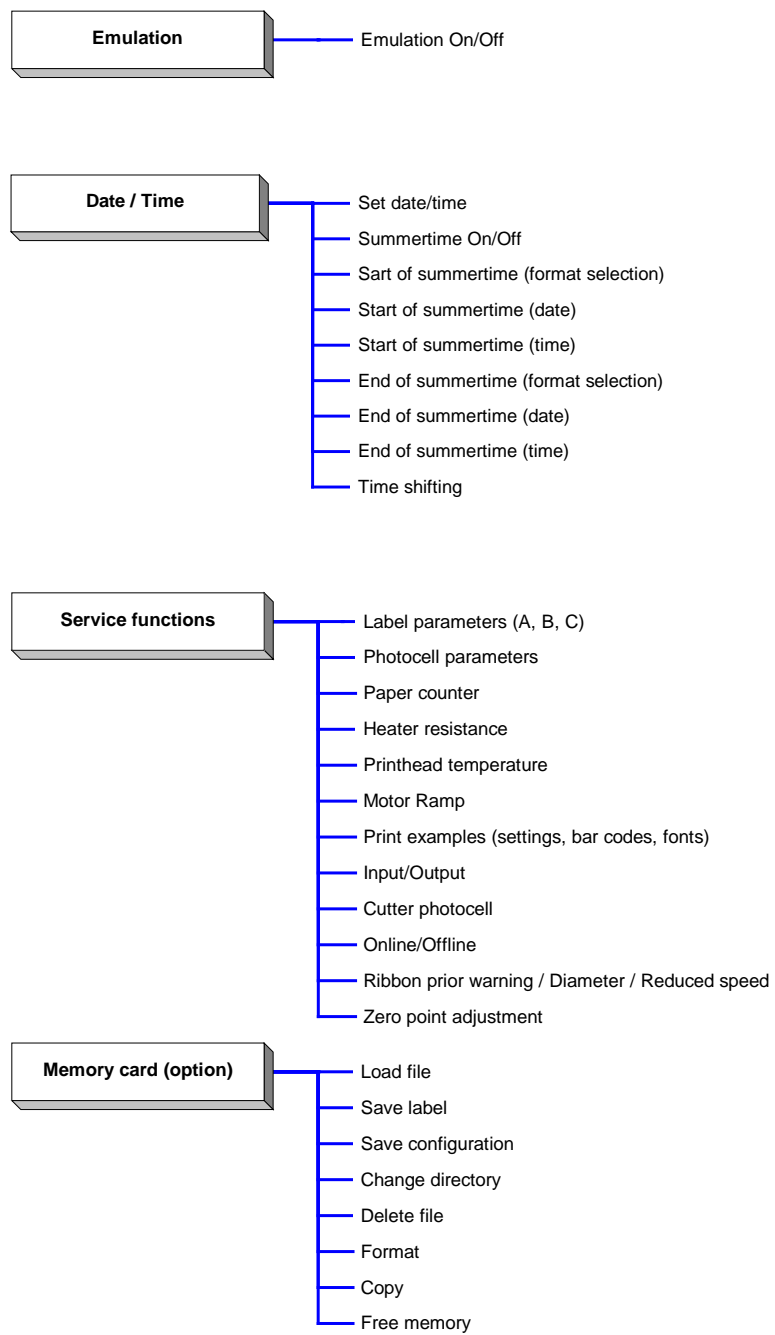
By means of the foil keyboard of the label printer you can make modifications in the function menu. The set parameters are saved in the label printer and are available after switching on the machine.

Key	Meaning	Function
	Main menu	Back to the main menu. Activate test print. Delete stopped print order.
	Up	Increase values.
	Down	Decrease values.
	Function menu	Change to the function menu. In function menu one menu item back.
	Feed	In main menu one label feed. In the function menu change to the next menu item.
	Start/stop	Confirm settings in function menu. Stop and continue current print order. Delete stopped print order with key  . No further label of the print order is printed.
	Memory	Change to memory menu.
	Quant	Change to quantity menu. Use keys  and  to select the number of labels you want to print.
	Backwards	Change to previous input field. Use keys  and  to change values.
	Forwards	Change to next input field. Use keys  and  to change values.

6.2 Menu structure







6.3 Print settings

After switching on the label printer, the display shows the following:

** POS 108-12 **
06/09/07 14:48

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

Function Menu
Print Settings

Press key **●** to select the menu.

Speed: 100
Contrast: 100

Speed:

Indication of print speed in mm/s (see Technical data, on page 13).

Contrast:

Indication of contrast in %.

Value range: 10% to 200 %.

Step size: 10%

Press key **▶** to arrive at the next menu item.

Ribbon Control
ON strong sens.

Transfer 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 at the next menu item.

Y Displacement
Offs (mm): 1.5

Y displacement:

Indication of initial point displacement in mm. The label is moved vertically.

Value range: -30.0 to +90.0.

Press key **▶** to arrive at the next menu item.

X Displacement
Offs (mm): -1.5

X displacement:

Indication of displacement in X direction. The fields on the label are moved.

Value range: -90.0 to +90.0.

Press key **▶** to arrive at the next menu item.

Tear off
Offs (mm): 7.5

Tear off:

Indication of value to which the last label of a print order is moved forward and is moved back to the label start at a new print start.

Labels can be torn after termination of the print order without a loss of labels by tearing.

Default: 12 mm.

Value range: 0 to 50.0 mm.

6.4 Label layout

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

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

Press key **●** to select the menu.

Function Menu
Label layout

Label: 50.3
Gap: 2.0

Label:

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

Gap:

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

Minimum value: 1 mm.

Press key **▲** to arrive at 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 10.1 Column printing, on page 87).

Press key **▲** to arrive at the next menu item.

Label Width 20.0
Columns: 4

Measure Label
Start measure

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 at the next menu item.

Label type
Adhesive labels

Label type:

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

Press key **▲** to arrive at the next menu item.

Material
Typ 2

Material:

Selection of the used label and transfer ribbon material.

Press key **▲** to arrive at the next menu item.

Photocell SP
Trans.normal 10

Photocell:

The selection of one of the following photocell types is possible:
Transmission photocell normal and inverse, reflexion photocell normal and inverse and ultrasonic photocell (option)
(see chapter 10.5 Photocells, on page 94).

Scan position (SP):

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

Errorlength Sync
mm: 149 ON

Press key  to arrive at 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 at the next menu item.

Flip label
Off

Flip label:

The axis of reflection is in the middle of the label. 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 at the next menu item.

Label type
Adhesive labels

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 at the next menu item.

Alignment
Left


Alignment:

The adjustment of label is effected only after 'flip/rotate label', i.e. the adjustment is independent of the functions flip 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 at the next menu item.

Auto measure
On

Measure label automatically:

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

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

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

Press key **●** to select the menu.

Function Menu
Device Settings

Field Handling
OFF

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 at the next menu item.

Codepage
GEM German

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 at the next menu item.

ext. Parameters
ON

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 at the next menu item.

Buzzer Display
ON 3

Buzzer:

On: An acoustic signal is audible when pressing a key.

Off: No signal is audible.

Display:

Setting of display contrast.

Value range: 0 to 7.

Press key **▶** to arrive at the next menu item.

Printer Language
English

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.

Keyboard Layout
England

Press key  to arrive at 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 at the next menu item.

Customized Entry
On

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 at the next menu item.

Hotstart
Off

Hotstart:

On: Continue an interrupted print order after switching on the printer anew.

(Only if printer is equipped with option memory card)

Off: After switching off the printer the complete data is lost (see chapter 10.3 Hotstart, on page 90).

Press key  to arrive at the next menu item.

Autoload
On

Autoload:

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

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



The last loaded label from memory 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 memory card.





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 at the next menu item.

manual reprint
Yes

Manual reprint:

Yes: 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 at the next menu item.

Backfd. Standard
Delay (s): 0.60

Backfeed / Delay:

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 10.4 Backfeed/delay, on page 92).

Password Prot.
Active

Press key  to arrive at 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 10.2 Password, on page 88).

Press key  to arrive at the next menu item.

Label confirm.
On

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 at the next menu item.

Standard label
Off

Standard label:

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

POS 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 Remote console

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

Press key  as long as you arrive at the 'Remote console' menu.

Function Menu
Remote Console

For more information please contact our sales department.

6.7 Interface

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

Press key **▲** as long as you arrive at the 'Interface' menu.

Press key **●** to select the menu.

Function Menu
Interface

COM1 BAUD P D S
0 9600 N 8 2

COM1:

0 - serial interface Off.

1 - serial interface On.

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

Baud rate:

Indication of bits which are transferred per second.

Following values are possible: 1200, 2400, 4800, 9600, 19200, 38400 and 57600.

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 at the next menu item.

COM2 Baud P D S
0 9600 N 8 2

0 - serial interface Off.

1 - serial interface On.

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

Baud rate:

Indication of bits which are transferred per second.

Following values are possible: 1200, 2400, 4800, 9600, 19200, 38400 and 57600.

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.

Start (SOH): 01
End (ETB): 17

Press key  to arrive at the next menu item.

SOH: Start of data transfer block → Hex format 01

ETB: End of data transfer block → Hex format 17

Two different start / end 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 at the next menu item.


Data Memory
Advanced

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 at the next menu item.


Parallel Port
SPP

Parallel port:

SPP - Standard Parallel Port

ECP - Extended Capabilities Port (grants a fast data transmission but it is only to set at PCs of newer version).




Please observe that the settings correspond to those of the PC.

Press key  to arrive at the next menu item.

Port test Off


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.

6.8 Emulation

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

Press key  as long as you arrive at the 'Emulation' menu.

Function menu
Emulation

Press key  to select the menu.

Protocol
ZPL

Protocol:


CVPL: Carl Valentin Programming Language

ZPL: Zebra® Programming Language

Change between CVPL protocol and ZPL II® protocol.

Press key  to confirm the selection.

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

Press key  in menu protocol to arrive at the next menu item.

Head Resolution
11.8 (Dot/mm)

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).



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 at the next menu item.

Drive mapping
B:->A: R:->R:

Drive mapping:

The access to Zebra® drives

B: Memory Card

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

is rerouted to the corresponding Valentin drives

A: Memory Card (slot 1) and/or Compact Flash

B: Memory Card (slot 2)

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.



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

6.9 Date & time

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

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

Press key **●** to select the menu.

Function menu
Date/Time

Date 17.11.04
Time 13:28:06

Summertime
On

ST start format
WW/WD/MM

WW WD MM
last sunday 03

ST start time
02:00

ST end format
WW/WD/MM

WW WD MM
last sunday 10

ST end time
03:00

Time shifting
01:00

Set date and time:

The upper line of display shows the current date, the second line the current time.

With keys **◀** and **▶** you can change to the next or previous field. With keys **▲** and **▼** you can increase and/or decrease the displayed values.

Press key **▶** to arrive at 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 at 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 at 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 at 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 at the next menu item.

End of summertime (format):

Select the format in which you want to define end of 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 at 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 at 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 at 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.

6.10 Service functions




So that the distributor res. the printer manufacturer at the case of service can offer fast support, the printer is equipped with the Service functions menu.

Necessary information such as set parameter can read directly at the printer (see chapter 6.11, on page 52).

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

Press key  as long as you arrive at the 'Service functions' menu.

Press key  to select the menu.

Function Menu
Service Function

Label-Para. 3.0
A:0.3 B:3.0 C1.6

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 at the next menu item.

DLS RLS SLS TR H
3.5 1.5 0.0 0 0

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 at the next menu item.

Paper Counter
D000007 G000017

Paper counter:

D: Indication of printhead attainment in meters.

G: Indication of printer attainment in meters.

Press key  to arrive at the next menu item.

Heater Resist.
1250

Heater resistance:

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

Press key  to arrive at the next menu item.

Printhead Temp.
23

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 at the next menu item.

Motor Ramp
++ 2 -- 2

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.

Print Examples
Settings

Press key  to arrive at 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 at the next menu item.

Input: 11111111
Output: 00000000

Input/Output:

Indication of signal level which indicates the signal a print order is started.

0 - Low

1 - High

Press key  to arrive at the next menu item.

Cutter-LS CH
1 1

Cutter photocell:

1 - Printer is equipped with a cutter

0 - Printer is not equipped with a cutter

CH:


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 at the next menu item.

On/Offline
Off

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 at the next menu item.

TR advance warn.
On ø: 40 v: 100

TRB = Transfer ribbon advance warning:

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

Warning diameter:

Setting of transfer ribbon advance warning diameter.

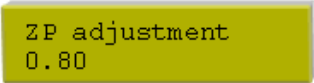
In case you enter a value in mm then a signal appears via control output when reaching this diameter (measured at transfer ribbon roll).

v = Reduced print speed:


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'.



ZP adjustment
0.80

Press key  to arrive at 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.



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


6.11 Main menu

After switching on the printer, the display shows the following:

The first line of main menu indicates used printer type.

The second line indicates current date and time.


```
** POS 108-12 **
06/09/07 14:48
```

Press key  for display the following:

The second line of display indicates version number of firmware.


After a short time the indication of display returns automatically to main menu.

```
** POS 108-12 **
V1.49a
```

Press key  once more for display the following:


Indication of software Build version.

```
** POS 108-12 **
Build 0005
```

Press key  once more for display the following:


Indication of firmware creation date.

```
** POS 108-12 **
Aug 07 2007
```

Press key  once more for display the following:


Indication of firmware creation time.

```
** POS 108-12 **
11:27:25
```

Press key  once more for display the following:


Indication of font version of bitmap fonts.

```
** POS 108-12 **
B-Font V5.01
```

Press key  once more for display the following:


Indication of font version of vector fonts.

```
** POS 108-12 **
V-Font V6.01
```

Press key  once more for display the following:


Indication of version numbers of both FPGA
(P = printhead; I = I/O)

```
** POS 108-12 **
FPGA P:02 I:01
```

Press key  once more for display the following:

Indication of boot software version number.

```
** POS 108-12 **
BOOT-SW V1.4d
```

Press key  once more for display the following:

Indication of memory space of FLASH in MB.

```
** POS 108-12 **
4 MB FLASH
```

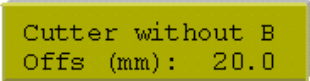
7 Options

7.1 Cutter

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

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

Press key **▶** as long as you arrive at the 'Cutter' menu.



Cutter without B
Offs (mm): 20.0

Press key **●** to select the menu.

In the first line of the display the cutter mode can be selected.

In the second line the cutter offset which is approx. 20 mm can be set.
Press key **▲** to change to the next operating mode.

Cutter 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.

Press key **▶** to select additional parameters or press keys **F** and/or **●** to return to the main menu

Cutter additional functions

After the selection of the desired cutter operating mode you have the possibility by pressing key  to select additional functions.

Cut speed
2

Cut speed:

Selection of speed to execute a cut.

The cut speed depends on the thickness of used label material, i.e. the thicker the material the slower the cut should be executed.

Value range: 0 - 4

Press key  to arrive at the next function.

Doublecut
2.0 (mm)



Double cut:

When using this function, after the first cut a feed with the set offset is effected and then cut anew. After the cut a back feed to the printing position is effected.

Press key  to arrive at the next function.

Cutter Steps
60 (mm)

Cutter steps:

In case of using thin labels or if the user only wants to cut into a certain part of the label, press keys  and  to reduce res. increase in 20.0 mm steps the cutter steps.

Start cutting a label is only recommended when using a cutter mode without backfeed as otherwise at the backfeed the labels tear.

Press key  to arrive at the next function.

Cut control
Cut ext.

Cutter control:

Automatic: After each printed label a cut is released.

External: A cut is released by an external I/O. External can only be selected if the label printer is equipped with option external I/O.

Press key  to arrive at the next function.


Automatic return
On

Automatic return:


On: The label is pulled back immediately after the cut.


Off: The label is pulled back only before the next print.

Press key  to arrive at the next function.

Cutter Clean
Arrow 


Cleaning:

Press key  to move the cutter in the appropriate cleaning position.


The cutter is moved stepwise as set in the menu cutter steps. Press key  to move the cutter again in the start res. cutting position.

**CAUTION!**

Danger of injury by positioning the cutter!

⇒ Before starting a new print order, press key  to move the cutter again in the initial position.

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

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.

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

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

```
Dispense IO ST
Offs (mm): 0.0
```

Press key **●** to select the menu.

In the first line of the display the dispenser mode can be selected. In the second line the dispenser offset which is approx. 18 mm can be set.

Press key **▲** to arrive at the next operating mode.

Dispenser I/O 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:

You can find the description of this operating mode in chapter 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:

You can find the description of this operating mode in chapter 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:

You can find the description of this operating mode in chapter photocell.

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

Press key **▲** to select additional parameters or press keys **F** and/or **●** to return to the main menu.

Additional parameters for dispenser I/O

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

PC-switch-level
0.1 0 1.2

Photocell switch level:

First value = Indication of current photocell level.

Second value = Indication if a label (value = 1) or if no label (value = 0) was found.

Third value = Indication of switch level. The modification of this value is only taken into consideration for the operating modes Photocell and Photocell continuous.

Press key  to arrive at the next parameter.

IN signal level
1s2x3+4x5x6x7x8x

IN signal level:

Indication of signal at which a print order is started.

+ = active signal level is 'high' (1)

- = active signal level is 'low' (0)

x = not activated signal level

s = status can be affected by interface*

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

Press key  to arrive at the next parameter.

OUT signal level
1+2+3+4+5+6+7+8+

OUT signal level:

Indication of signal level for output signal.

+ = active signal level is 'high' (1)

- = active signal level is 'low' (0)

s = status can be affected by interface*

Press key  to arrive at the next parameter.

Debounce (ms)
50

Debounce:

Indication of debounce time of the dispenser input. The setting range of the debounce time is between 0 and 100 ms.

In case the start signal is not clear then you can debounce the input by means of this menu item.

Press key  to arrive at the next parameter.

Start delay (s)
1.00

Start signal delay:

Indication in time per second of the delay for the start signal.

Value range: 0.00 to 9.99.

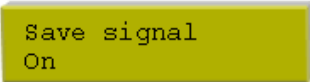
Press key  to arrive at the next parameter.

IO protocol
Port: Off


IO protocol:

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

* in combination with Netstar PLUS



Save signal
On

Press key  to arrive at 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.

7.3 Ribbon save

The menu item ribbon save is only displayed if the printer recognizes the option by the ribbon save photocell when switching on the printer.

Ribbon save = maximum utilisation of transfer ribbon



The above example shows that the consumption of transfer ribbon is much lower when using the ribbon save option.

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

Press key **▲** as long as you arrive at the 'Ribbon save' menu.

Press key **●** to select the menu.

Press key **▲** so switch the ribbon savings function On or Off.

Function Menu
Ribbon save

7.4 Network

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

Press key **▲** as long as you arrive at the 'Network' menu.

Function Menu
Network

This menu item can only be selected if a network card is recognised at switching on the printer, otherwise a message appears that the option is not available.

For more information, please see the separate manual.

7.5 Scanner

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

Press key **▶** as long as you arrive at the 'Scanner' menu.

Function Menu
Scanner

Press key **●** to select the menu.

Mode NoRd FLti
1 1 1

Mode:

- 0 Off
- 1 Mode 1 (data comparison)
i.e. bar code data which was read by the scanner is compared with the printed data.
- 2 Mode 2 (check readability)
i.e. it is only checked if the scanner can read the printed bar codes.

NoRd = Non readables:

Indication of number of successive non readables, i.e. when the printer indicates an error message.

Value range: 0 - 9

1 = the printer stops at the first label which cannot be read from the scanner and shows an error message.

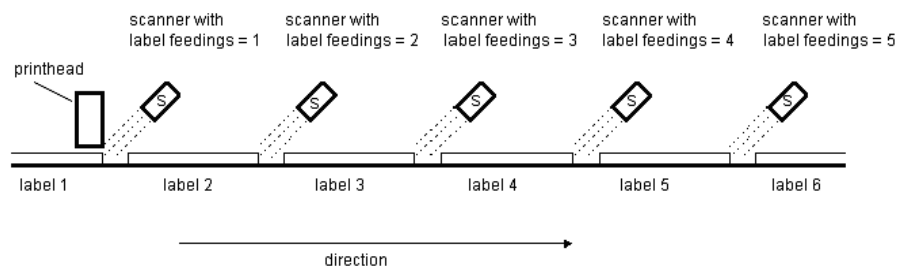
0 = the printer does not stop at non-readable. A message appears at the display only.

VEtik = Label feeding:

In many cases it is impossible to position the scanner directly at the printhead, and therefore with this setting a feeding can be set

Value range: 1 - 5

The illustration below clarifies the meaning of this parameter.



Press key **▶** to arrive at the next menu item.

Scanner Type

Scanner type:

Selection of the connected scanner type.

For more information about the different scanner models, please contact our sales department.

Press key **▶** to arrive at the next menu item.

Scanner-Setup
Start

Scanner setup:

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

Scan Offset (mm)
0.2

Scan Length (mm)
0.0 Auto

Press key **▶** to arrive at the next menu item.

Scan offset:

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

Press key **▶** to arrive at the next menu item.

Scan length:

If this parameter is set to 0 (AUTO), the switch on and off position of scanner is calculated by means of position and height of bar code onto the label.

If the parameter Scan Length is not 0, so this defines the length of scan sector. The start of scan sector is then set by the parameter Scan Offset. The following drawing shows the meaning of parameter.

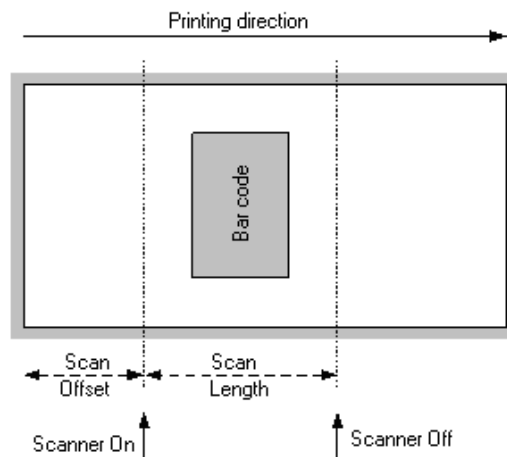


Figure 10

Press key **▶** to arrive at the next menu item.

Scan Mode
while print

Scan Delay
(ms) 0

Scan Timeout
(ms) 0

COM2 Baud P D S
0 9600 N 8 2

Scan mode:

With this parameter can be adjusted, at which time the scanning of the bar code is to be effected - during printing or after printing.

Press key **▶** to arrive at the next menu item.

Scan delay:

In scan mode 'after print' the scanner is switched On after the label was printed. With this value the time can be specified between printing the label and switching On the scanner.

Press key **▶** to arrive at the next menu item.

Scan timeout:

In scan mode 'after print' can be specified with this value the time which is available for scanning the label.

Press key **▶** to arrive at the next menu item.

Interface:

In order to use a scanner, the COM interface must be set to 1.

For more information, please see the separate manual.

7.6 Memory Card

This label printer is equipped at the rear with two memory card slots. By means of this memory card you can permanently save via interface graphics, text, label data or information from database.

Insertion and removal of memory card

Insert memory card with contact side forwards to the slot that was planned for it. Take care that the memory card engaged and the marking is on the left side (see illustration).

To take the memory card out of device A you have to press the upper ejector knob, to take out the card of device B press the lower one.

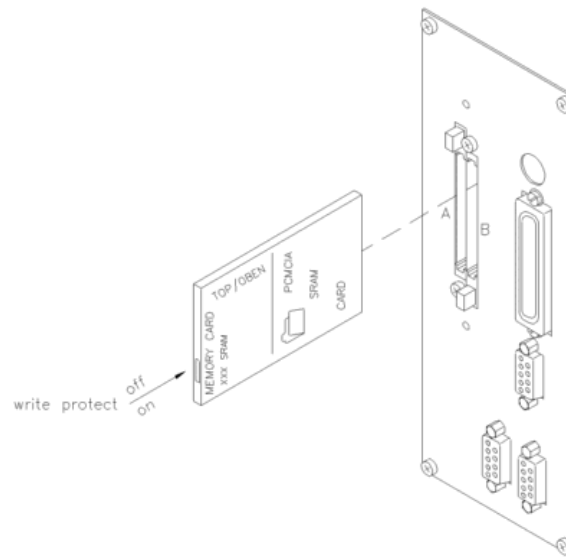


Figure 11

File and/or directory name

```
□→ SCREWS    <
A:\
```

The printer handles your memory card as a DOS compatible file system.

After formatting the memory card the STANDARD directory is automatically available. After switching on the printer or inserting the memory card, this directory is the current one. The directories are displayed with capital letters and the '<' sign. The indication of single files is effected in small letters.


```
□→ screw04.prn
A:\SCREWS
```

The first line of the display shows the directory in capital letters res. the selected file, the second line shows the currently selected device with the corresponding path indication.


Key assignment

Press key  to indicate the saved labels onto the memory card.



Press key **F** to enter the memory card menu.

Press key  to arrive at the next menu item.

Press key **F** to return to the previous menu item.

Press key  to select a menu and/or to confirm a query.

Press key **F** to change between drive A and B inside a selected function.



Press key  and  to browse the contents of the current directory.


Press key  and  to change to the indicated directory.

Selecting label


Keys: 

```
→label01      0
A:\STANDARD\
```

Press key  and  to select the desired label in STANDARD directory.

Press key  to select the label.


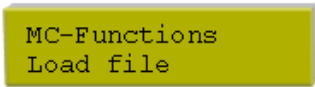

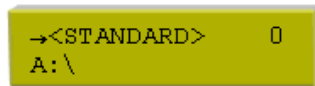
Select the number of labels which you want to print


Press key  to start the print order.

After finishing the print order the display shows again the main menu.

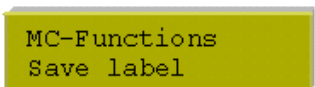


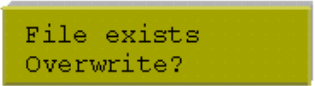


It is NOT possible to change the directory. Enter the menu 'Change dir' to change the directory.




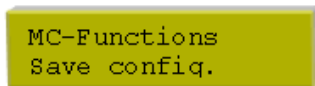
Loading file from memory cardKeys: , **F**

 MC-Functions
Load file
Press key  to select the 'Load file' menu item.

 →<STANDARD> 0
A:\

Select the file you want to load and confirm the selection with key .


The loaded label is now in the printer internal storage and after the loading procedure the display shows the main menu.

Saving label onto memory cardKeys: , **F**, 

 MC-Functions
Save label
Press key  to select the 'Save label' menu item.Select the directory and/or label you want to save and confirm the selection with key .

 File exists
Overwrite?
Confirm the query with  and the label will be saved.

After the saving procedure the display shows again the main menu.

Saving configurationKeys: , **F**, , 

 MC-Functions
Save config.
Press key  to select the 'Save configuration' menu item.

As standard, the proposed file name is config.cfg. This name can be changed by the user. In this file the printer parameters are saved which are not saved permanent in the internal Flash.


Press key  to start the saving procedure.

After the saving procedure, the display shows again the main menu.

Changing directory/drive



Keys: , **F**, , , 



MC-Functions
Change directory


Press key  to select the 'Change directory' menu item.

←<.> M
A:\STANDARD\

The lower line of display shows the directory which is selected at the moment.

Press key  and  to change the directory in the upper line.

Press key  and  to show all available directories.


Press key  to confirm the selected directory.

After changing the directory the display shows again the main menu.


Deleting file from memory card

Keys: , **F**, , , , 

MC-Functions
Delete file

Press key  to select the 'Delete file' menu item.

x<.> M
A:\STANDARD

Select directory and/or label you want to delete and confirm the selection with key .


The selected label is deleted from the memory card.

After the deleting procedure the display shows again the first menu item 'load file'.

Formatting memory card

Keys: , **F**, , , , 

MC-Functions
Format MC

Press key  to select the 'Format' menu item.

Format A:

Press key  to confirm the selection and the procedure is started.


When formatting the memory card the STANDARD directory is automatically created.


After the formatting procedure the display shows again the 'load file' menu item.

Copying memory card


Keys: , **F**, , , , , , 

MC-Functions
Copy MC

Press key  to select the 'Copy' menu item.

Press key  to select the copy function.
Drive A to A, A to B, B to A or B to B.

Copy MC A: ->B:
Ins. Src.+Dest.

Insert source and destination card and press key  to confirm the selection. The content of the source card is transferred to the destination card.



When copying from A to A and B to B, please observe that the memory cards have the same storage capacity.

When copying from A to A res. B to B first of all the query regarding the destination card appears on the display.

Insert card and confirm the query. If the content of the card is loaded into the printer-internal memory, a prompt appears to insert the destination card.



Depending on the storage capacity of memory card, this procedure is to be repeated.

After the copying procedure the display shows again the 'Load file' menu item.

Indication of free memory space

Keys: , **F**, , , , , , 

MC-Functions
Free memory

Press key  to select the 'Free memory' menu item.

Free memory
A: 253920 KB

The still available memory space onto memory card is indicated.

Press key  to display again the 'Load file' menu item.

8 Maintenance and cleaning



DANGER!

Risk of death by electric shock!



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



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 8.1, on page 68).	As necessary.
Cleaning print roller (see section 8.2, on page 68).	Each time the label roll is changed or when the printout and label transport are adversely affected.
Cleaning printhead (see section 8.3, on page 69).	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 8.4, on page 70).	When exchanging the label roll.
Replacing printhead (see section 8.5, on page 71).	When errors in the printout occur.



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



WARNING!

Risk of fire by easily inflammable label soluble!



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

8.1 General cleaning



CAUTION!

Abrasive cleaning agents can damage the label printer!

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

8.2 Cleaning the printer roller

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

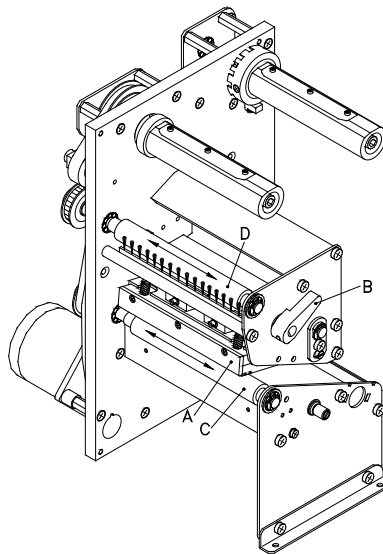


Figure 12

1. Open printer cover.
2. Turn red lever (B) counter clockwise to lift up the printhead (A).
3. Remove labels and transfer ribbon from the label printer.
4. Remove deposits with roller cleaner and a soft cloth.
5. Turn the roller (C) 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).

8.3 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!

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

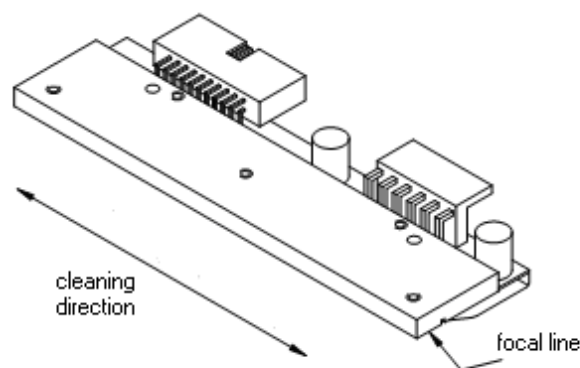


Figure 13

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.

8.4 Cleaning the label photocell



CAUTION!

Label photocell can be damaged!

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

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

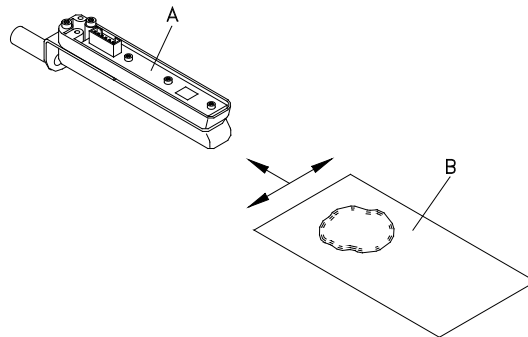


Figure 14

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

8.5 Replacing the printhead (general)



The printhead (4) is preinstalled on a head plate (1) and precisely aligned at the factory.

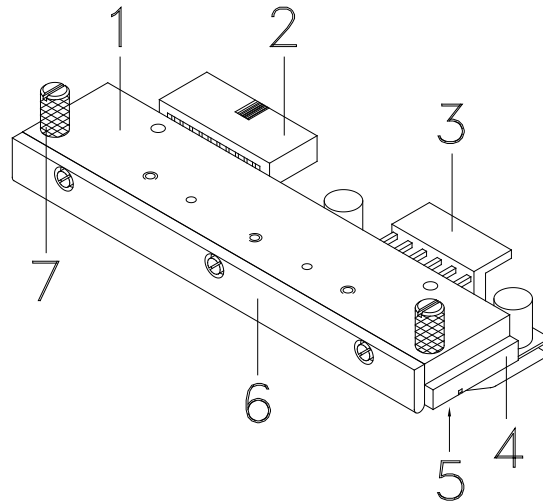


Figure 15

- 1 Head plate
- 2 Plug connection signal
- 3 Plug connection tension
- 4 Printhead
- 5 Focal line
- 6 Guiding
- 7 Knurled screw



CAUTION!

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

- ⇒ Set up printer on a grounded, conductive surface.
- ⇒ Ground your body, e.g. by wearing a grounded wristband.
- ⇒ Do not touch contacts on the plug connections (2, 3).
- ⇒ Do not touch printing line (5) with hard objects or your hands.

8.6 Replacing FlatType printhead

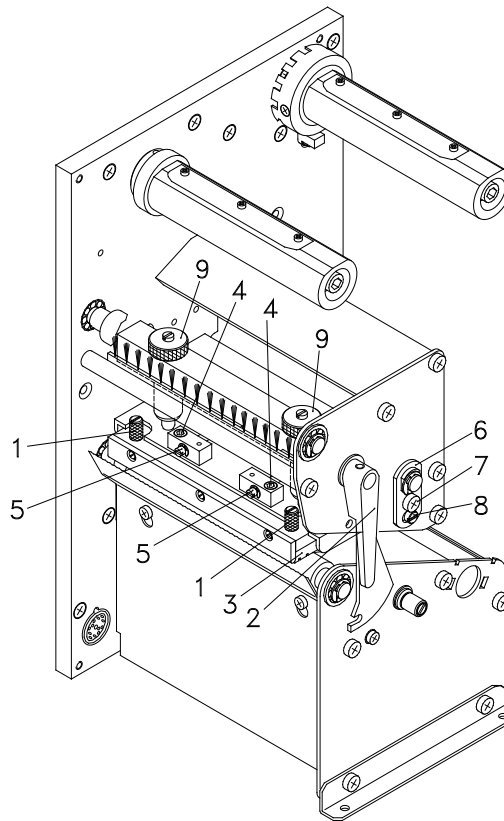


Figure 16

Removing the printhead

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

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 screw (4) 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, on page 27).

8.7 Adjusting FlatType 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 screws (4, Figure 16) with a hexagon key by approx. $\frac{1}{4}$ rotations.
2. Adjust the parallelism with the adjusting screws (5, Figure 16).
Clockwise = printhead moves backwards
Counter clockwise = printhead moves forwards
3. Adjust the parallelism as long as the printing result comes up to your full expectation.
4. Tighten again screws (4, Figure 16).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure balance right/left

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (6) you can set the balance as follows:

1. Loosen screw (7, Figure 16) with a screwdriver by approx. $\frac{1}{4}$ rotations.
2. In order to achieve a pressure balance, turn the excentric bolt (8, Figure 16) as long as the printing result comes up to your full expectation.
3. Tighten again screw (7, Figure 16).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure

Increasing the head contact pressure leads to an improvement of the print image density on the corresponding side and to a shifting of the ribbon feed path in the corresponding direction.

**CAUTION!**

Damage of printhead by unequal use!

⇒ Change factory settings only in exceptional cases.

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

1. Turn pressure screws (9, Figure 16) to change the pressure of printhead.
2. Turning the pressure screws (9, Figure 16) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (9, Figure 16) exactly one rotation from the right stop position counter clockwise results in the factory settings.



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

8.8 Replacing CornerType printhead

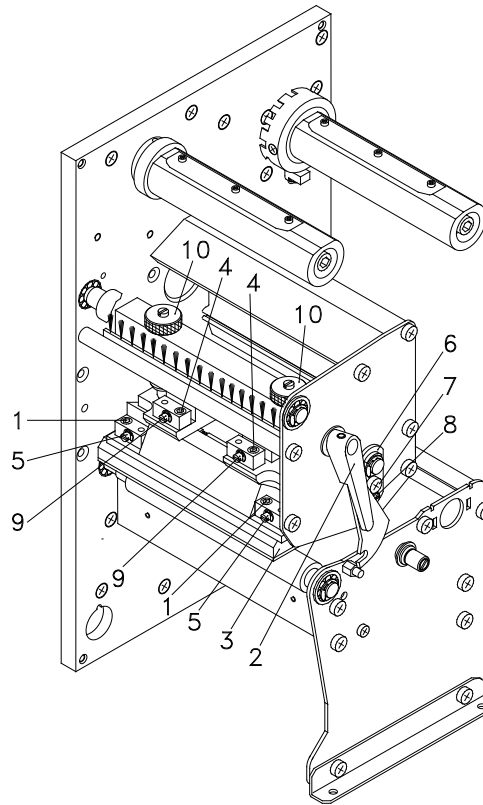


Figure 17

Removing the printhead

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

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 screw (1) 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, on page 27).

8.9 Adjusting CornerType 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.

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

1. Loosen the screws (1 or 4, Figure 17) with a hexagon key by approx. ¼ rotations.
2. Adjust the parallelism with the adjusting screws (5 or 9, Figure 17).
Clockwise = printhead moves backwards
Counter clockwise = printhead moves forwards
3. Adjust the parallelism as long as the printing result comes up to your full expectation.
4. Tighten again screws (1 or 4, Figure 17).
5. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure balance right/left

After adjusting parallelism and no even strong pressure exists over the complete print width, by means of a plate (6) you can set the balance as follows:

1. Loosen screw (7, Figure 17) with a screwdriver by approx. ¼ rotations.
2. In order to achieve a pressure balance, turn the excentric bolt (8, Figure 17) as long as the printing result comes up to your full expectation.
3. Tighten again screw (7, Figure 17).
4. Start a print order with approx. 10 labels and control the correct passage of transfer ribbon.

Pressure

Increasing the head contact pressure leads to an improvement of the print image density on the corresponding side and to a shifting of the ribbon feed path in the corresponding direction.

**CAUTION!**

Damage of printhead by unequal use!

⇒ Change factory settings only in exceptional cases.

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

1. Turn pressure screws (10, Figure 17) to change the pressure of printhead.
2. Turning the pressure screws (10, Figure 17) as far as they will go in clockwise direction results in a pressure increase of 10N in contrast to the factory setting.
3. Turning the pressure screws (10, Figure 17) exactly one rotation from the right stop position counter clockwise results in the factory settings.



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

9 Error correction

Error 01 Line too high	Line rises up completely or partly over the upper edge of layout.	Move line down (increase Y value). Check rotation and font.
Error 02 Line too low	Line rises up completely or partly over the bottom edge of layout.	Move line up (reduce Y value). Check rotation and font.
Error 03 Character set	One res. several characters of the text is res. are not available in the selected font.	Change text. Change font.
Error 04 Unknown codetype	Selected code is not available.	Check code type.
Error 05 Illegal rotation	Selected position is not available.	Check position.
Error 06 Font	Selected font is not available.	Check font.
Error 07 Vector font	Selected font is not available.	Check font.
Error 08 Measuring label	While measuring no layout was found. Set layout length is too large.	Check layout length and if layouts are inserted correctly. Restart measuring anew.
Error 09 No label found	No layout available. Soiled layout photocell. Layouts not inserted correctly.	Insert new layout roll. Check if layouts are inserted correctly. Clean the layout photocell.
Error 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).
Error 11 COM Framing	Stop bit error.	Check stop bits. Check baud rate. Check cable (printer and PC).
Error 12 COM Parity	Parity error.	Check parity. Check baud rate. Check cable (printer and PC).

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

Error 27 Printhead temp.	Printhead temperature is too high. Defective printhead sensing device.	Reduce contrast. Change printhead.
Error 28 Error cutter	With cut an error occurred. Paper jam.	Check layout run. Check cutter run.
Error 29 Inv. parameter	Entered data do not correspond to the characters allowed from the application identifier.	Check code data.
Error 30 Appl. Identifier	Selected application identifier is not available in GS1-128.	Check code data.
Error 31 HIBC Definition	F Missing HIBC system sign. Missing primary code.	Check definition of HIBC code.
Error 32 System clock	Real Time Clock function is selected but the battery is empty. Defective RTC.	Change battery. Change RTC component.
Error 33 No interface	Interrupted connection CPU - memory card. Defective memory card interface.	Check connection CPU - memory card interface. Check memory card interface.
Error 34 No print memory	No print memory found.	Check memory assembly on CPU.
Error 35 Cover open	At start of a print order the printhead is open.	Close the printhead and start print order anew.
Error 36 BCD inv format	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
Error 37 BCD Overflow	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
Error 38 BCD Division	BCD error Invalid format for the calculation of Euro variable.	Check entered format.
Error 39 FLASH Error	Flash component error.	Run a software update. Change CPU.

Error 40 Length command	Invalid length of the received command statement.	Check data sent. Check connection PC - printer.
Error 41 No drive	Memory card not found / not correctly inserted.	Insert memory card correctly.
Error 42 Drive error	Impossible to read memory card (faulty).	Check memory card, if necessary change it.
Error 43 Not formatted	Memory Card not formatted.	Format memory card.
Error 44 Delete act. dir.	Attempt to delete the actual directory.	Change directory.
Error 45 Path too long	Too long indication of path.	Indicate a shorter path.
Error 46 Drive WP	Memory Card is write-protected.	Deactivate write protection.
Error 47 Dir. not file	Attempt to indicate a directory as file name.	Correct your entry.
Error 48 File alrdy open	Attempt to change a file during an access is active.	Select another file.
Error 49 No file/dir	File does not exist on memory card.	Check file name.
Error 50 Invalid filename	File name contains invalid characters.	Correct entry of name, remove special characters.
Error 51 Int. file error	Internal file system error.	Please contact your distributor.
Error 52 Root full	The max. number (64) of main directory entries is reached.	Delete at least one main directory entry and create subdirectories.
Error 53 Drive full	Maximum memory capacity is reached.	Use new Memory Card, delete no longer required files.

Error 54 File/dir exists	The selected file/directory already exists.	Check name, select a different name.
Error 55 File too large	During copying procedure not enough memory space onto target drive available.	Use a larger target card.
Error 56 No update file	Errors in update file of firmware.	Start update file anew.
Error 57 Inv. graph. file	The selected file does not contain graphic data.	Check file name.
Error 58 Dir not empty	Attempt to delete a not empty directory.	Delete all files and sub-directories in the desired directory.
Error 59 No interface	No memory card drive found.	Check connection of memory card drive. Contact your distributor
Error 60 No card	No memory card is inserted.	Insert memory card in the slot.
Error 61 Webserver error	Error at start of web server.	Please contact your distributor.
Error 62 Wrong PH-FPGA	The direct print module is equipped with the wrong FPGA.	Please contact your distributor.
Error 63 End position	The layout length is too long. The number of layouts per cycle is too much.	Check layout length res. the number of layouts per cycle.
Error 64 Zero point	Defective photocell.	Change photocell.
Error 65 Compressed air	Pressure air is not connected.	Check pressure air.
Error 66 Ext. release	External print release signal is missing.	Check input signal.
Error 67 Row too long	Wrong definition of column width res. number of columns.	Reduce the column width res. correct the number of columns.

Error Scanner 68	The connected bar code scanner signals a device error.	Check the connection scanner/printer. Check scanner (dirty).
Error Scanner NoRd 69	Bad print quality. Printhead completely soiled or defective. Print speed too high.	Increase contrast. Clean printhead or exchange (if necessary). Reduce print speed.
Error Scanner Data 70	Scanned data does not correspond to the data which is to print.	Exchange printhead.
Error Invalid page 71	As page number either 0 or a number > 9 is selected.	Select a number between 1 and 9.
Error Page selection 72	A page which is not available is selected.	Check the defined pages.
Error Page not defined 73	The page is not defined.	Check the print definition.
Error Format user quid 74	Wrong format for customised entry.	Check the format string.
Error Format date/time 75	Wrong format for date/time.	Check the format string.
Error Hotstart MC 76	No memory card found.	If option hotstart was activated, a memory card must be inserted. Switch off the printer before inserting the memory card.
Error Mirror/Rotate 77	Selection of print of several columns and also mirror/rotate.	It is only possible to select one of both functions.
Error System file 78	Loading of temporary hotstart files.	Not possible.
Error Shift variable 79	Faulty definition of shift times (overlapping times).	Check definition of shift times.
Error RSS Code 80	General RSS bar code error.	Check definition and parameter of RSS bar code.

Error 81 IGP error	Protocol error IGP.	Check sent data.
Error 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.
Error 83 Transport prot.	Both DPM position sensors (start/end) are active.	Displace zero point sensor Check sensors in service functions menu
Error 84 No font data	Font and web data is missing.	Run a software update.
Error 85 No layout ID	Layout ID definition is missing.	Define layout ID onto the layout.
Error 86 Layout ID	Scanned data does not correspond to defined ID.	Wrong layout loaded from memory card.
Error 87 RFID no label	RFID unit cannot recognise a layout.	Displace RFID unit or use an offset.
Error 88 RFID verify	Error while checking programmed data.	Faulty RFID layout. Check RFID definitions
Error 89 RFID timeout	Error at programming the RFID layout.	Layout positioning. Faulty layout.
Error 90 RFID data	Faulty or incomplete definition of RFID data.	Check RFID data definitions.
Error 91 RFID type	Definition of layout data does not correspond with the used layout.	Check storage partitioning of used layout type
Error 92 RFID lock	Error at programming the RFID layout (locked fields).	Check RFID data definitions. Layout was already programmed.
Error 93 RFID program.	Error at programming the RFID layout.	Check RFID definitions.

Error 94 Scanner timeout	The scanner could not read the bar code within the set timeout time. Defective printhead. Wrinkles in transfer ribbon. Scanner wrong positioned. Timeout time too short.	Check printhead. Check transfer ribbon. Position scanner correctly, corresponding to the set feeding. Select longer timeout time.
Error 95 Scan layout diff	Scanner data does not correspond to bar code data.	Check adjustment of scanner. Check scanner settings / connection.
Error 96 COM break	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
Error 97 COM general	Serial interface error.	Check settings for serial data transmission as well as cable (printer-PC).
Error 98 No SW PH-FPGA	No printhead-FPGA data available.	Please contact your responsible distributor.
Error 99 Load SW PH-FPGA	Error when programming printhead-FPGA.	Please contact your responsible distributor.
Error 100 Upper position	Sensor signal up is missing (option APL 100).	Check input signals / compressed-air supply.
Error 101 Lower position	Sensor signal down is missing (option APL 100).	Check input signals / compressed-air supply.
Error 102 Vac. plate empty	Sensor does not recognise a label at vacuum plate (option APL 100).	Check input signals / compressed-air supply.
Error 103 Start signal	Print order is active but device not ready to process it.	Check start signal.
Error 104 No print data	Print data outside the defined layout. Selection of wrong module type (design software).	Check selected module type. Check selection of left/right version.

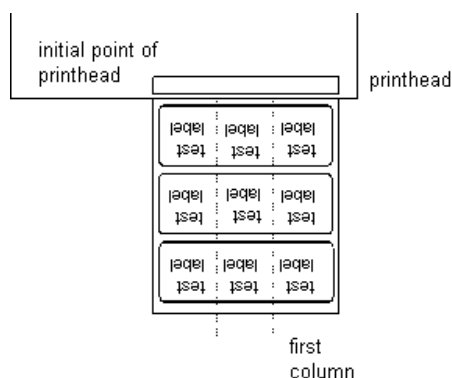
Error 105 Printhead	No original printhead is used.	Check the used printhead. Contact your distributor.
Error 106 Invalid Tag type	Wrong Tag type. Tag data do not match the Tag type in the printer.	Adapt data or use the correct Tag type.
Error 107 RFID inactiv	RFID module is not activated. No RFID data can be processed.	Activate RFID module or remove RFID data from label data.
Error 108 GS1-128 invalid	Transferred GS1-128 bar code is invalid.	Verify bar code data (see GS1-128 bar code specification).
Error 109 EPC Parameter	Error at EPC calculation.	Verify data (see EPC specification).
Error 110 Housing open	When starting the print order the housing cover is not closed.	Close the housing cover and start the print order anew.
Error 111 EAN.UCC Code	Transferred EAN.UCC code is invalid.	Verify bar code data (see corresponding specification).
Error 112 Print carriage	Printing carriage does not move.	Check gear belt (possibly broken).
Error 113 Applicator error	Applicator error.	Check applicator.
Error 114 Left position	Applicator Left end position	Check LEFT final position switch for correct function and position. Check function of pneumatics for cross traverse.
Error 115 Right position	Applicator: Right end position	Check RIGHT final position switch for correct function and position. Check function of pneumatics for cross traverse.
Error 116 Print position	Applicator: Not in print position	Check TOP and RIGHT final position switch for correct function and position. Check function of pneumatics.
Error 117 XML Parameters	Parameter error XML file.	Please contact your responsible distributor.

10 Additional information

10.1 Column printing

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

For example 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 change to the function menu.

Press key **▲** as long as to the 'Label layout' menu.

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

Press key **▲** as long as the menu item (see illustration) appears.

Press key **▲** and **▼** to set the label width. As column width the width of one label is entered, e.g. 20.0 mm.

Press key **◀** and **▶** to enter the number of columns.

Press keys **▲** and **▼** to change the number of columns,

e.g. 4 columns at a label width of 20.0 mm.

Press key **■** to start a print with indication of number of labels and number of lines. The number of labels corresponds to the number of labels that are to print.

e.g. columns: 3, items: 4

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

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

10.2 Password

Example 1: The supervisor programs a Memory 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 memory 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. Memory Card: With the functions of your Memory Card labels can be stored, loaded,
Here the password protection has to separate, if none or only reading functions are 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.

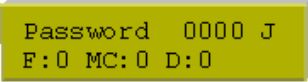
Because of these different function groups the password protection is very flexible. The printer can be adjusted best to its actual order, as only certain functions are blocked.

Define 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  as long as to the 'Password' menu item.

Press key  to confirm the selection.




Password 0000 J
F:0 MC:0 D:0



Meaning of abbreviations:

F	Function menu
MC	Memory Card
D	Print functions

In case the password protection is active, but the function menu is not protected, the password



(4-digit number between 0000 and 9999) has to be entered first, so the above shown display appears. Now changes can be done. In the first line the user can define the password (4-digit number).

Press key  to switch to the next.

Press key  and  to activate/deactivate the password protection (yes/no).

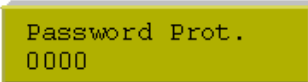
Press key  to change to the second line.

Press key  and  to block/release individual function groups.

(Press key  and  to change from one group to the next one.)

F:	Function menu	0...open 1...locked
MC:	Memory 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:



Password Prot.
0000

In case the user wants to perform a blocked function, he has to enter the valid password first.

The entered password has to be confirmed with **E**. In case the correct password has been entered the desired function can be performed. If the entered password was invalid no error message appears but the main menu will be displayed.

10.3 Hotstart



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 memory card. Therefore the option memory 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.



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

However the following conditions have to be fulfilled:

- Memory card inserted in drive A
- Memory card not write protected
- Enough free storage space onto memory card
- An error message appears in case these conditions are not fulfilled.

Saving the printer order state

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

However the following conditions have to be fulfilled:

- Memory card inserted in drive A
- Memory card not write protected
- Enough free storage space onto memory card

Loading a label and print order state

In case the hotstart function is set to On, at a new start of printer the saved label data and the print order state is loaded from the corresponding file on the memory card. Because of this reason a memory card has to be inserted at switching on the printer. In case it is impossible to load the data 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.



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

10.4 Backfeed/delay

Backfeed operating modes

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

With activated double cut no optimised backfeed is possible.

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

Standard

- Peel off:** After printing the label, it is driven into the dispensing offset and waited there, until the label was removed (photocell) or a new start signal is given (IO dynamic). Afterwards it is again backtracked to the beginning of label and then the next label is printed.
- Cutter:** After printing the label, it is driven into the cutter offset; the label is cut and then backtracked immediately to the beginning of label (if an operating mode with backfeed is selected). Afterwards the next label is printed, if necessary.
- Tear off edge:** After printing the last label of a print order it is driven into the tear-off offset and the label res. labels can be taken away. When starting a new print order, first it is backtracked again to the beginning of label and then the next label is printed.
If a following print order is available before driving into the tear-off offset, then it is not driven into tear-off offset but the following label is directly printed.

Automatic

- Peel off:** After printing the label it is driven into the dispensing offset and then backtracked to the beginning of label either immediately or after the set delay time. When releasing a new start signal (IO dynamic) the next label is immediately printed.
- Cutter:** This is the same function as for 'backfeed standard' as it is always backtracked immediately to the beginning of label.
- Tear off edge:** After printing the last label of a print order it is driven into the tear-off offset and then backtracked to the beginning of label either immediately or after the set delay time. When starting a new print order then the next label is immediately printed.
If a following print order is available before driving into the tear-off offset, then it is not driven into tear-off offset but the following label is directly printed.

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

10.5 Photocells



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.



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

10.6 Ultrasonic photocell (option)



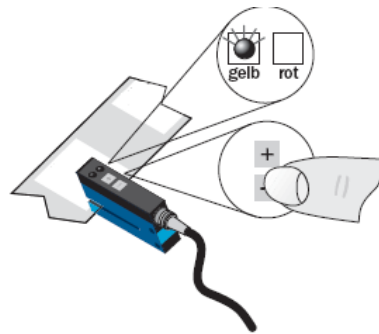
The printer may not be equipped with the option ribbon save.

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



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

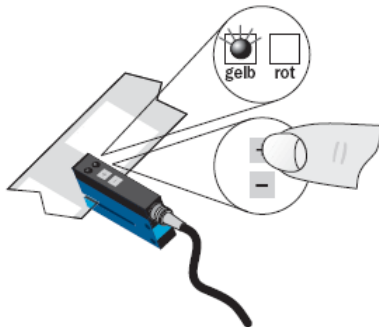
Adjustment of photocell



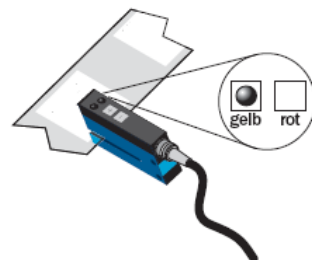
Adjustment of switching point in 'light-switching' mode:

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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