Presenter Printer

GeBE- MOTION®

GPT-6776

Up to 200 mm/s fast
High Resolution 203 dpi
Text • Graphics • Barcode
Interfaces: RS232 and USB
60/82 mm Paper Width • Anti-Jam-Unit
Integrated Cutter

GeBE®

Elektronik und Feinwerktechnik GmbH

Modules and devices for input, analysis, display and printing of analog and digital data.

GeBE Document No.:
SMAN-E-685-V1.4
Article No. 13262
Status: 25.07.2012
Printed: 25.07.2012
German: SMAN-D-684

Operating Manual

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Contents

1 Safety Instructions

1.1 Symbols and their meaning

Carefully read all safety instructions!

ATTENTION

concerns your **personal safety** and **must be observed at all times.** It is essential to forward these instructions to all other personnel using this device.

CAUTION hot surfaces

concerns your **personal safety** and signals a **risk of being burned** on touch. It is essential to forward these instructions to all other personnel using this device.

TIP

concerns **equipment safety**.

The adherence of all instructions, as well as the appropriate application and use in accordance with the operating instructions are binding for product liability and product warranty. Attempts by the customer to repair the device will make all warranty claims null and void.

For technical questions, please contact GeBE Technical Support.

Instructions marked with a require consultation with GeBE Technical Support.

Tips marked with a will help you to utilize your printer to its fullest.

Documents or Internet links are marked with a , referring to more detailed or additional information.

1.2 Device Information

TIP

- The device may only be opened or repaired by authorized personnel. Never open the device or carry out repairs yourself. Always contact an authorized technical service. You can find all necessary service information in the chapter "Service and Maintenance".
- Before the device is turned on, make sure that the system voltage of your installation matches the supply voltage of the device. The device characteristics are printed on the name plate and in the technical data.
- The name plate is located on the underside of the device.
- For the technical data of this device, refer to the chapter "Technical Data".
- Peripheral devices that are connected to the interfaces and the DC circuits of this device have to meet the requirements for low safety voltage in accordance with EN/IEC 60950.
- Switching off the device does not completely disconnect it from the power supply. Your device is only disconnected completely, when the power is unplugged.

ATTENTION

- Please make sure that the power supply cable is run in such a way that nobody trips over it, and it cannot be damaged by other devices.

CAUTION hot surfaces

- During operation, surfaces in the surrounding area of the print head may heat up. Therefore, direct contact with the print head must be avoided to prevent burning accidents. Do not put heat sensitive objects close to this heat source.

Safe operation of this device is only warranteed, if the instructions in this operating manual have been complied with.
For installation: Always disconnect system power supplies.
Only use manufacturer's parts and accessories.

TIP

- Avoid constant high humidity and condensation. Protect the device from being splashed and from coming in contact with chemicals.
- Only use spare parts and accessories supplied or authorized by GeBE. The use of unauthorized parts or accessories may considerably affect the function and safety of the device. All parts included are listed in the chapter "Packing List", while the original accessories are listed in the chapter "Parts and Accessories ".
- It is no longer possible to safely operate the device, if:
- the housing has been damaged due to mechanical overload.
- moisture reached the inside of the device
- smoke is coming from the inside of the device
- the power supply cord is damaged
- the device stopped working properly

Unplug or turn off the device immediately, when such a failure occurs, and contact GeBE customer service. See chapter "Service and Maintenance".

We explicitly state that all product liability and guaratee claims are null and void, if the device has not been used in accordance with the instructions in this operating manual or on the device itself, or if it has been used inappropriately.

2 Description

Small and compact
Nowadays most kiosk terminals are constructed in a smaller and compacter way. If the built-in situation allows only little space the GeBE-MOTION® GPT-6776 with its dimensions of 122x82x108 mm (including presenter) is the optimum selection for this purpose. No matter if feeding paper from roll or tickets from stable, it will be transported to the printer mechanism and therefore automatically unwound. The paper status will be detected by the installed paper end sensor.

Perfect Presentation
First the printout is completed and cut. Afterwards the output is presented for removal with high-speed of up to 400 mm/s. As soon as the user pulls the ticket the presenter recognizes the tension and moves the printout forward. In case the user does not remove the printout within a certain time (programmable), the present&retract-function causes tracking back the ticket.

GeBE Controller
The Controller GCT-6799, developed by GeBE, controls these fast printouts reliably. It has been combined with a robust printer mechanism based on the mechanics of the established industrial printer module family INFO from GeBE to form a new product. The presenter printer GeBE-MOTION® printer for the kiosk field is impressive not only because of its speed, but also because of its extremely compact format as well as its ease of servicing and versatility.

Anti-Jam-Unit
The GeBE-MOTION® is equipped with an Anti-Jam-Unit. It will stop a printing process in case the printout is external constrained through retaining or holding up the ticket. After remedying the jam, the printout will continue. Otherwise the printer automatically switches off after 1 minute waiting time.

Paper width
60 or 82 mm, adjustable with slide-in adjuster

Extensive Layout Commands
The availability of extensive layout commands and the selection of eight character sizes allow an attractive design of the ticket printout.

Easy Software Adaption
The user himself is able to change the setup settings for e.g. blackening, text size, RS232-control, et cetera. If desired, command and font adaptions will be delivered factory-made.

2 Different Interfaces
Serial RS232 and USB interfaces are installed.

Downloads
Firmware, fonts, logos, macros, settings, etc. can easily be sent via PC as a file to the printer through the active interface and can permanently be stored.

3 Delivery content

3.1 Unpacking

Please check during the unpacking process that all parts have been delivered completely and undamaged. Make sure to remove all parts from the packaging material. Claims for damages caused during transport can only be asserted, if the carrier is informed without delay. Please prepare a survey report and send it back to the supplier along with the damaged part.

3.2 Standard version

Thermal printers (OEM) will be delivered without accessories. Please order accessories seperately.

Delivery content:

- Operation Manual SMAN-D-684 in German or SMAN-E-685 in English. All actual documents are also available from our website www.oem-printer.com/motion for download.
- Thermal paper: 1 roll fitting to adjusted width
- Interface cable for RS232 and USB
- Power supply
- Fastening screws

3.2.1 Standard paper

(A=outside coated WR=water resistent):

- GPR-T01-060-070-025-080A/WR:
  50 pcs. thermal paper rolls w: 60 mm, th: 80 µm, diameter: 70 mm, core diameter: 25 mm, life: 7 years
- GPR-T01-082-070-025-080A/WR:
  50 pcs. thermal paper rolls w: 82 mm, th: 80 µm, diameter: 70 mm, core diameter: 25 mm, life: 7 years

3.2.2 Cables

- GKA-245-1-500
  power supply, 2 single wires, 1.0 mm^2, 500 mm, one end open, wire end sleeves
- GKA-406-2-1000
  round cable, 1,000 mm, 5pin to JST plug at controller, with 9 pin SUB-D socket to RS232 interface at the host (PC)
- GKA-570-USB-FS-MOLEX-2,0 m
  cable USB to Molex, length 2.0 m, for full speed transmission
- GKA-322-1-190
  cable NPE, 3 pins plug to JST-S03-B-XH-A
  JST S03-B-XH-A

In order to ensure the CE standard, it is recommended to use a type 74271132 snap ferrite from Würth on the USB cable or equivalent filter elements. The component has to be placed as close as possible to the printer.

3.2.3 Power Supply

- GNG-24V-6.5A-AC:
  open frame power supply 24 V / 6,5 A

In order to ensure the CE standard, it is recommended to use the indicated power supply or equivalent filter elements. The component has to be placed as close as possible to the printer.

3.3 Driver software

The printer controller GCT-6799 is supported by following Windows® drivers:
Windows® CE / 2000 / XP / VISTA / 7
The driver software can be downloaded from the GeBE website: www.oem-printer.com

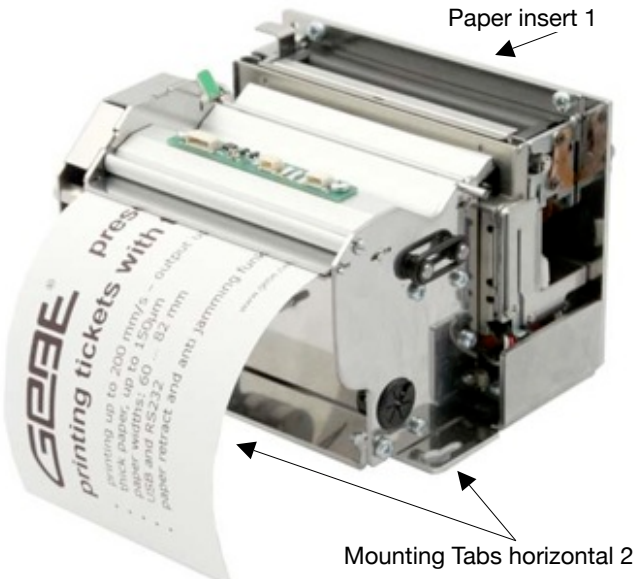
3.4 Options

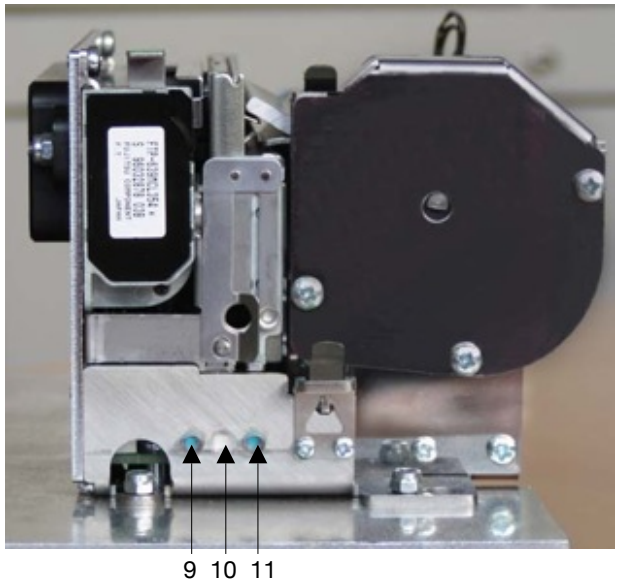
- Paper Exit Sensor
- Anti Jam Unit
- Mini-USB, Mini Device Socket for 24 V connection
- Customer specific roll holder for rolls Ø > 80 mm
- Power supply via mini device plug
- Paper Rest Sensor

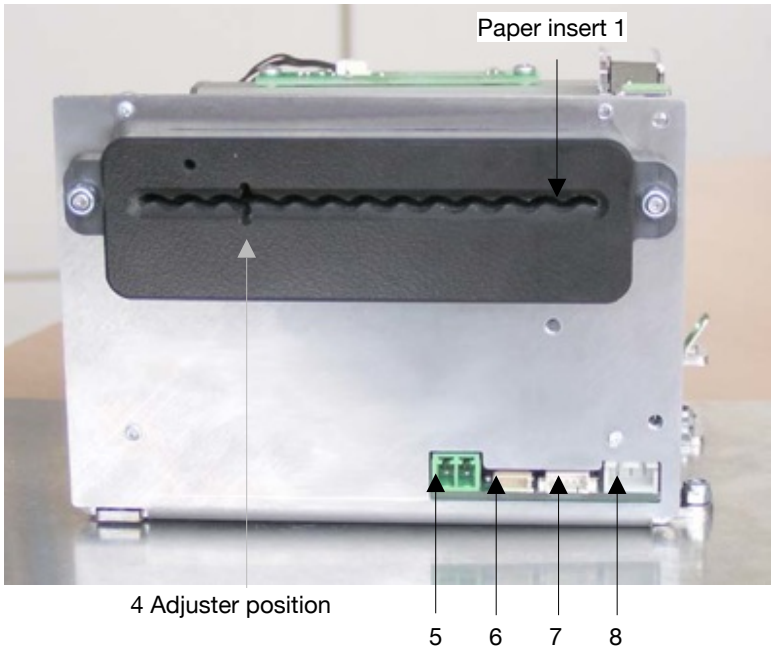
4 Layout and Functions

TIP

The technology and equipment of the product described in this manual are in accordance with the latest state of national and international requirements in regard to function and safety. Further developments and advancements are continously being considered. For this reason, illustrations, dimensions, technical data, and general content shown in the following may change without prior notice.
This operating manual is designed to help you operate our product, which has been developed and manufactured according to the most modern technology standards, with its multiple options, optimally and securely. Please read this manual carefully before initial operation and store it in close proximity of the device, so it will be available if needed.
Should you have any further questions, please contact our personnel. Phone numbers and email addresses are listed in the chapter "Service and Maintenance".





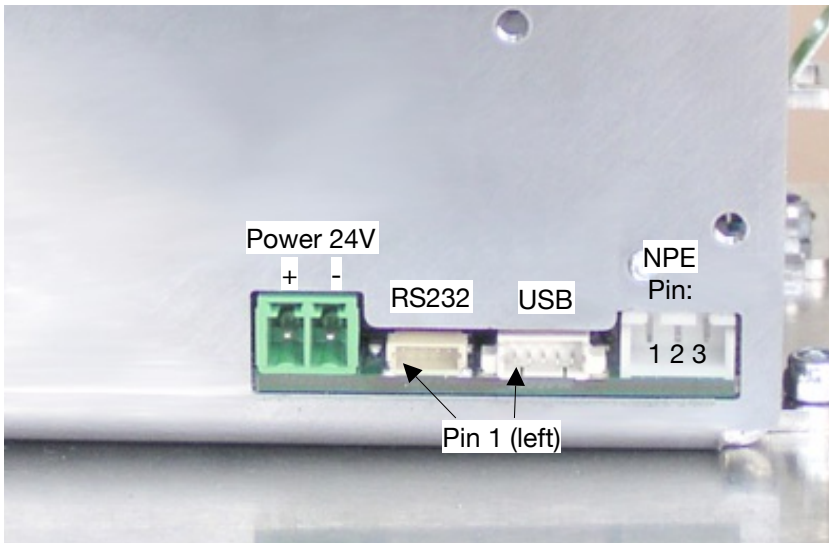


Description

1 Paper insert
2 Mounting Tabs horizontal 2x
3 Bezel for paper insert
4 Adjuster position
5 Power supply
6 24V RS232 serial
7 USB
8 NPE-Sensor connection
9 Test LED
10 Status LED
11 FEED button

5 Connecting the Printer

For installation:
Always disconnect system power supplies!



	no.	connections		printer	counter part
(5)	J13	power supply	+/-	Phoenix 1803277, MC1,5/2-G-3,81	Phoenix 1803578, MC1,5/2-ST-3,81
(6)	J12	RS232	5-pins	JST SM05B-SRSS-TB	JST SHR-05V-S
(7)	J4/J2	USB	5-pins	Molex 53261-0571	Molex 51021-0500
(8)	J26	NPE	3-pins	JST S3B-XH-A	JST XHP-3

5.1 Power Supply (5)

The power supply is connected through commercial connectors from the supplier Phoenix.
The connectors are equipped with screw clamps.
Mounting merely requires a size 1 screw driver.
Wires have to be covered with wire end sleeves.

Cable Diameter

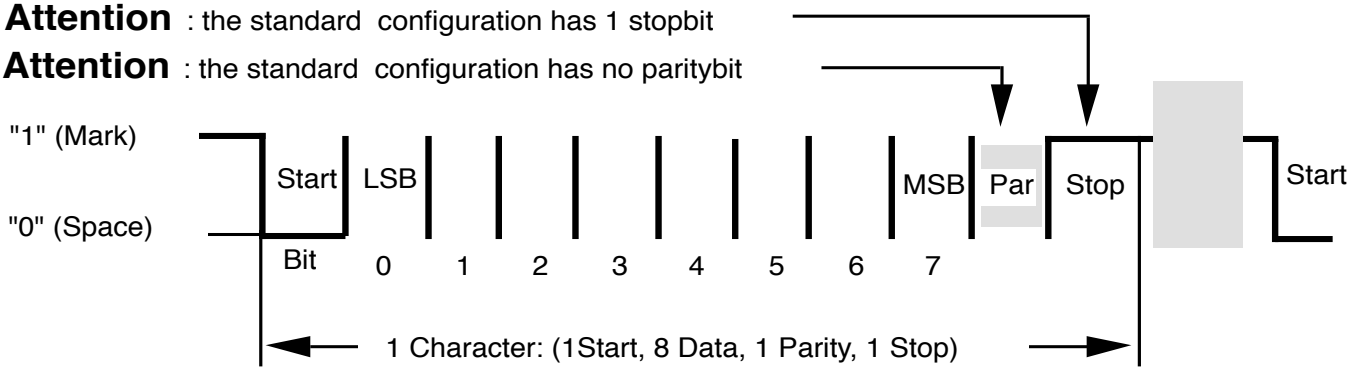
0.5 mm^2 for cable length < 0,5 m
0.8 mm^2 for cable length < 1.5 m
1.0 mm^2 for cable length < 2.0 m

5.2 Serial Interface (6)

The RS232 is connected through a commercial Sub-D connector. 5 pin to JST connector at controller, with 9 pin SUB-D socket to RS232 interface at the host (PC).
The pin assignment is 1:1, whereas no null-modem line is needed.

Pin	Signal	Input/ Output	Comment
1	GND	-	Ground
2	TXD	I	Print data
3	RXD	0	Error signals and Xon/Xoff messages
4	RTS	I	Handshake input of the controllers
5	CTS	0	Controller handshake output

Attention : the standard configuration has 1 stopbit
Attention : the standard configuration has no paritybit



5.3 USB Interface (7)

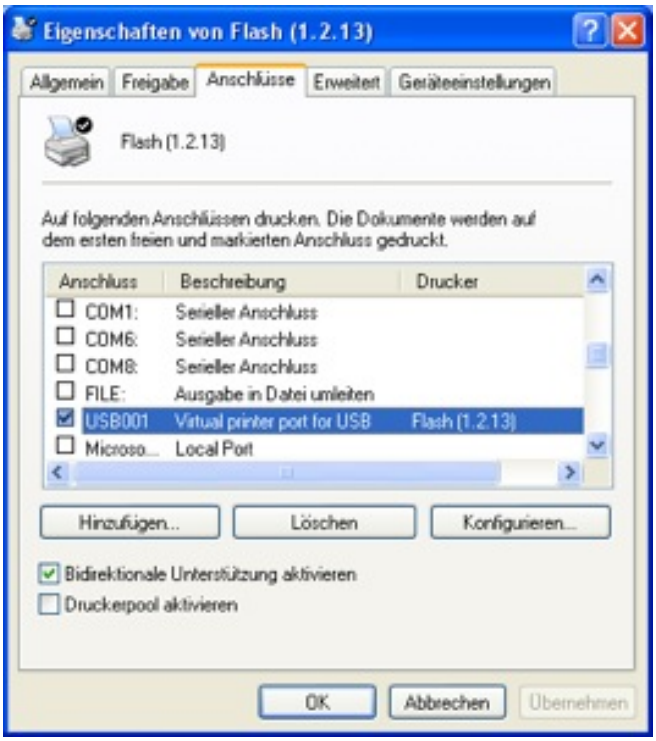
USB specification:
V1.1 (V2.0 compatible)
USB full speed, 12 Mbit/s
Cable USB to Molex, Length 2,0 m, for full speed data transfer. Plug connector Molex to USB Typ A.

Device Type:
vendor specific device or printer class

USB printer class:
The USB Device Class corresponds to a "Printer Class". After having connected the device, the PC reports the message "USB printer support" and installs a "USB001" USB port.

Typical power consumption (no printing):
30 mA - USB active / printer active
25 mA - USB active / printer sleep
0,3 mA - USB suspend / printer sleep

Pin	Signal	Input/ Output	Comment
1	Vcc	-	
2	GND	-	
3	D-	I/0	
4	D+	I/0	
5	GND	-	



Achtung! Windows XP and Windows CE handle the numeration of a printer differently. Therefore, the printer must be configurated to the operating system before delivery.

Never activate an action in the printer driver at the job end. This can cause a loss of data.

5.4 Activation of the interface

USB:
The USB interface will be actviated through plug in of USB connector and performing a RESET.
This automatically deactivates the RS232 interface.

RS232:
The RS232 interface will be activated through plug in of RS232 connector and performing a RESET.
This automatically deactivates the USB interface.

With both interfaces (USB and RS232) being connected, the USB interface has first priority.

5.5 Near Paper End Sensor (8) optionally

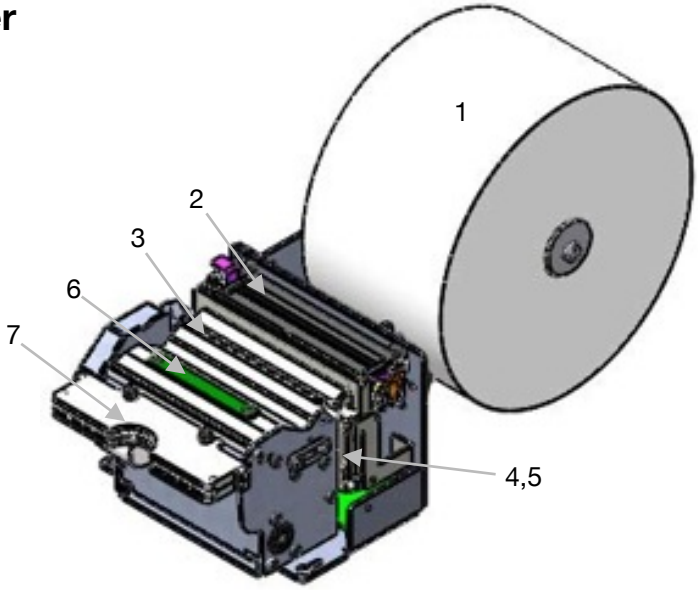
The optical sensor will be screws sideways at the paper roll holder. Detectable distance to the paper roll is in a range of 0.5 to 1.0 mm.

Pin	Signal	Comment
1	GND	
2	NPE_IN	
3	NPE_LED	

6 Function principle of the presenter

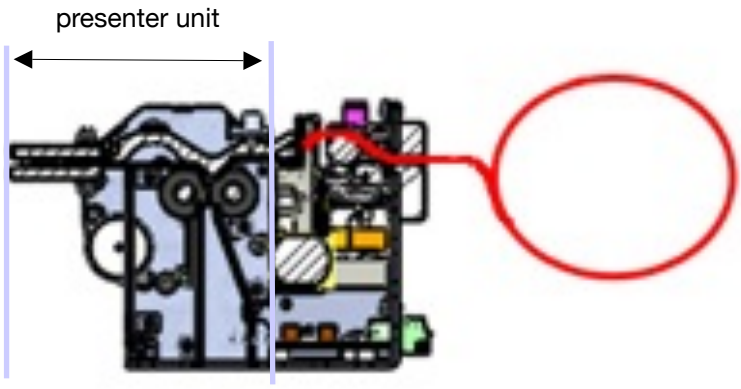
6.1 Functional elements

1. Paper insert, here: insert from roll holder
2. Printer
3. Cutter
4. Insert mechanism
5. Presenter sensor
6. Anti Jam Unit
7. Output beak

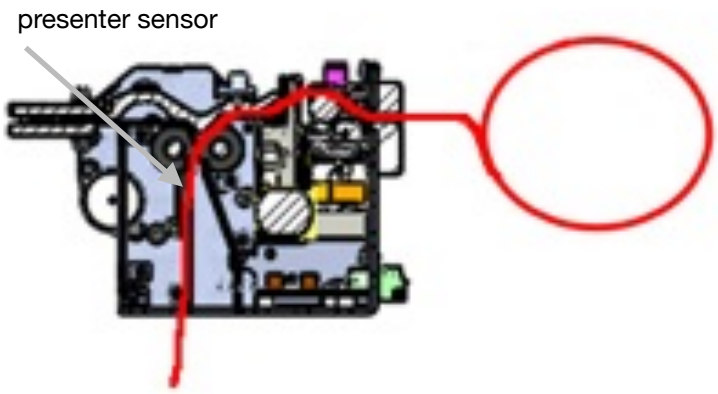


6.2 Functional routine

1. Paper insert
The paper/ticket will be inserted until the print position at the print head is reached. The exact insert length/print position will be defined either through setting a fixed insert length or via imprinted black marks on the paper/ticket which will be detected by a black mark sensor.

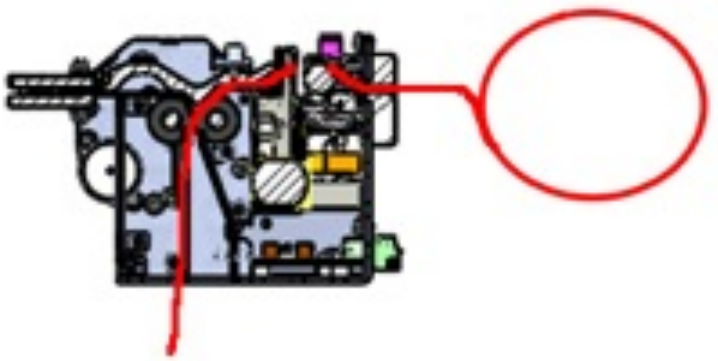


2. Ticket print
During the print process the ticket will be transported downwards into the presenter unit.

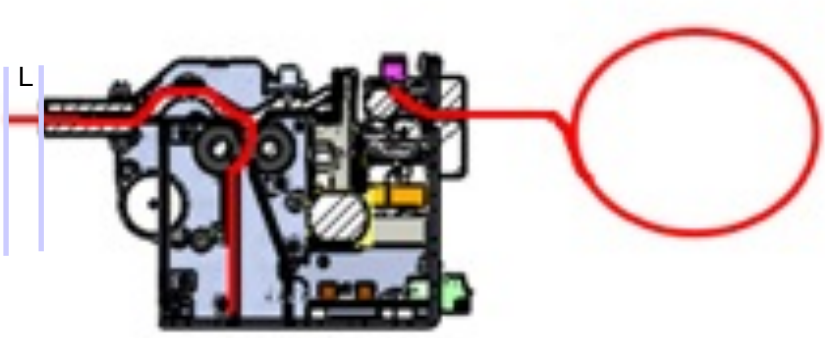


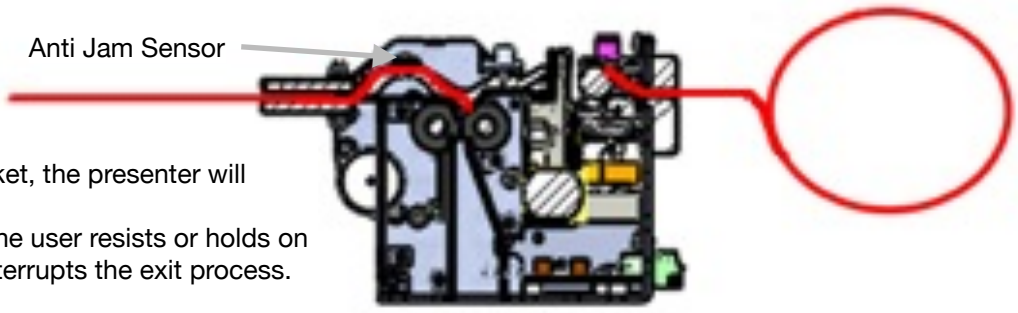
3. Cutter
After the print has been finished the paper/ticket will be cut by the integrated cutter.

Potential errors:
- during the printing process:
In case the paper/ticket does not reach/pass the presenter sensor because of any error or jam, the cutter will not cut off the paper/ticket.
At that instance the paper/ticket will first be slowly (90 mm/s) backtracked by 10 mm and then pushed forwards by 50 mm. After this procedure the cutter performs the cut. The paper/ticket snip falls down into the internal trash.
If this routine has not been successfully performed, it will be repeated once. If the second attempt also fails, the printer stops and indicates an ERROR.
In case of an ERROR, the status LED flashes and a message will be sent to the connected PC/host system.



4. Presenting the paper
The completed imprinted paper/ticket will be transported to the exit position at a speed of 400 mm/s.
The presentation length "L" determines how far the paper/ticket comes out off the output beak.
"L" is programmed in parameter 29:
Lmin. = 10 mm - Lmax. = 400 mm

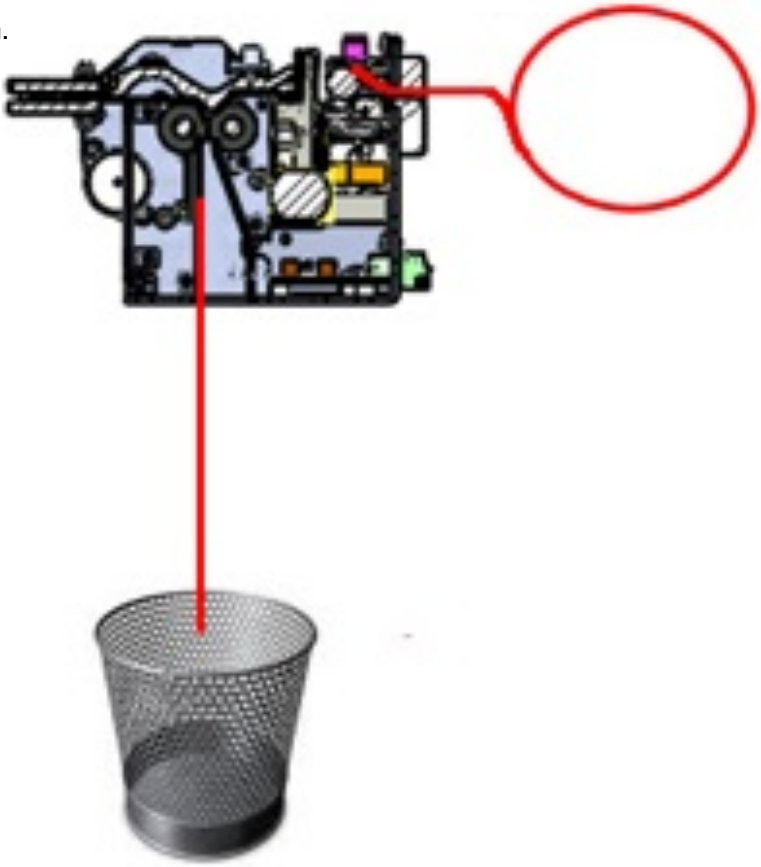




5. Take the ticket
With only lightly pulling on the ticket, the presenter will immediately push out the ticket.
In case of any jam (for example: the user resists or holds on the ticket) the anti jam function interrupts the exit process.

Potential errors:
- during the exit process:
In case a jam occurs during the exit and the anti jam sensor stays occupied (sees paper), the paper/ticket will be slowly (90 mm/s) backtracked by 10 mm. With command ESC f the paper will be fed out.
If this routine has not been successfully performed, it will be repeated once. If the second attempt also fails, the printer stops and indicates an ERROR.
The ERROR situation has to be remedied manually. As soon as the anti jam sensor is free, the printer is ready for printing again.
In case of an ERROR, the status LED flashes and a message will be sent to the connected PC/host system.

6. Backtracking function
In case the presented paper is not taken within a certain time period (programmed in parameter 30), the presenter will backtrack the ticket and transport it into the internal trash.
Adjustable time period: 0 (never) to 255 seconds.



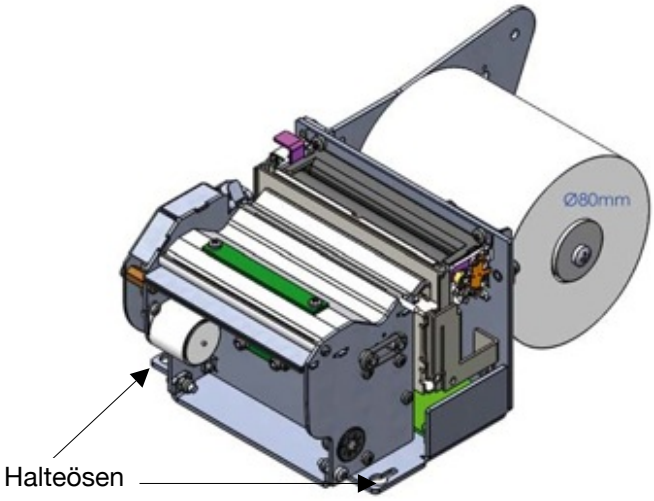
Potential errors:
- during the backtracking process:
In case a jam/error occurs during the backtracking process and the presenter sensor is not getting free (still sees paper), the paper/ticket propably got stuck in the presenter or is held on from outside.

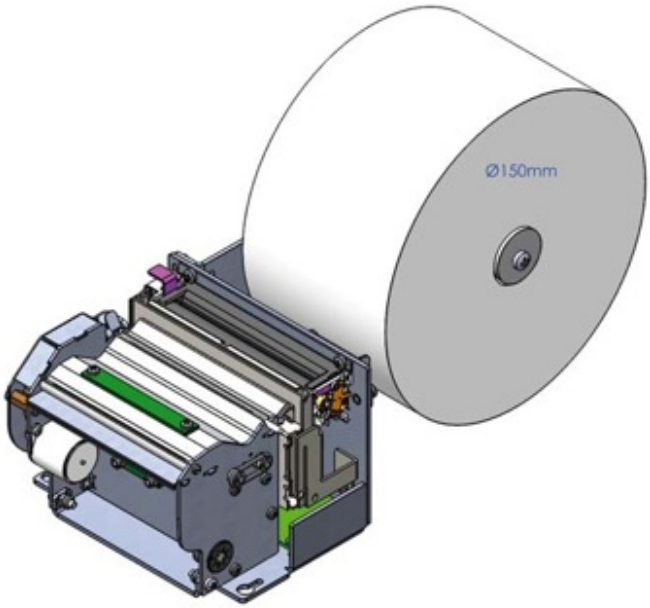
If this happens, the backtrack will be repeated once. If the second attempt also fails, the printer stops and indicates an ERROR.
The ERROR situation has to be remedied manually. As soon as the presenter sensor is free, the printer is ready for printing again.
In case of an ERROR, the status LED flashes and a message will be sent to the connected PC/host system.

7 Installation

7.1 Installation using mounting tabs M4

The GPT-6776 can be installed horizontally with two mounting tabs. For a service-friendly disassembly, the printer can be taken off by pushing it up after untightening the srcews (M4) .





7.2 Mounting the paper holder

The paper holder can be mounted on the left side of the printer. Paper rolls of diameter 80 or 150 mm diameter can be used.

Assembly:

1. Mount the paper hold onto the printer with 3x M3x6 screws DIN7985.
2. Screw near-paper-end sensor onto the holder with 1x M2x5 screw DIN7985 and connect the sensor cable.

Attention:

Make sure to use right screw lengths.

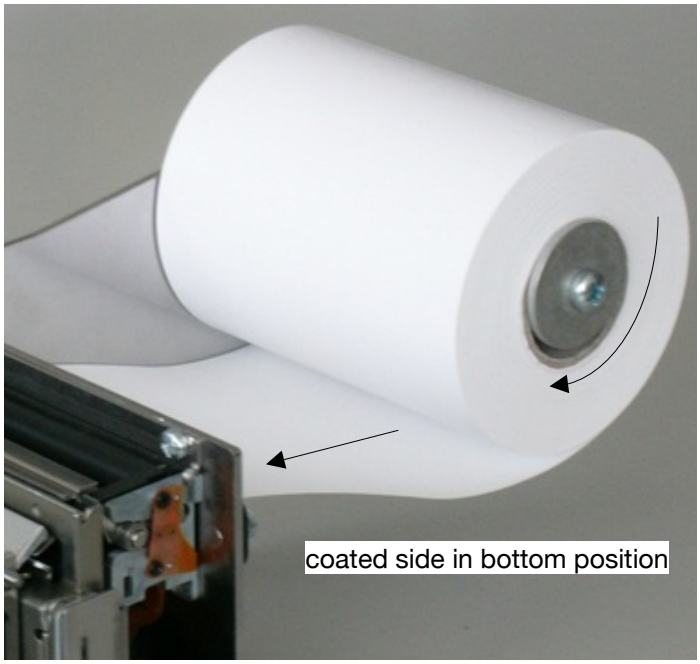
8 Exchange of paper

Which Thermal Paper is Suitable?
The printers are specified for 60 mm and 82 mm +/- 0.5 paper widths, up to 150 µm paper thickness.

Other papers may cause failures:
Thermal papers that are resistant against water, grease, or alcohol are available for special applications. We will gladly assist you in selecting the right thermal paper for your purposes.

Which side of the thermal paper can be printed on?
The inside of the paper roll is often the printable side. The thermal paper of the Compact printer is outside coated. In case of doubts, try the finger nail test: Quickly run the tip of a finger nail across the paper, applying pressure. The friction heat will cause blackening on the thermo-sensitive side.

Inserting the paper:
- Pull empty paper roll core off of the paper axle.
- Replace with new paper roll. Please take care, that the coated side (printable side) is the bottom side.
- Position paper on the paper feeding tray and push it toward the printer mechanism
- As soon as the printer mechanism recognizes the paper, it is automatically pulled inside.
- The paper is now inserted.



9 Status signals of the printer

The bits are defined as follows:

Status Byte 1

Bit	LED	Status	0	1
0	on	paper near end	paper low	paper OK
1	1:1	paper	present	not present
2	1:1	temperature	OK	print head too hot/cold
3	1:1	head	closed	open
4	1:1	paper jam/cutter	no error	error
5	on	Rx error	no error	Rx error
6		always 0		
7		always 1.		

Mode 2 is activated through bit 1 in parameter 23. To signal an error status, two bytes are sent to the host at all times.

Die beiden Bytes sind durch Bit 7 unterscheidbar:

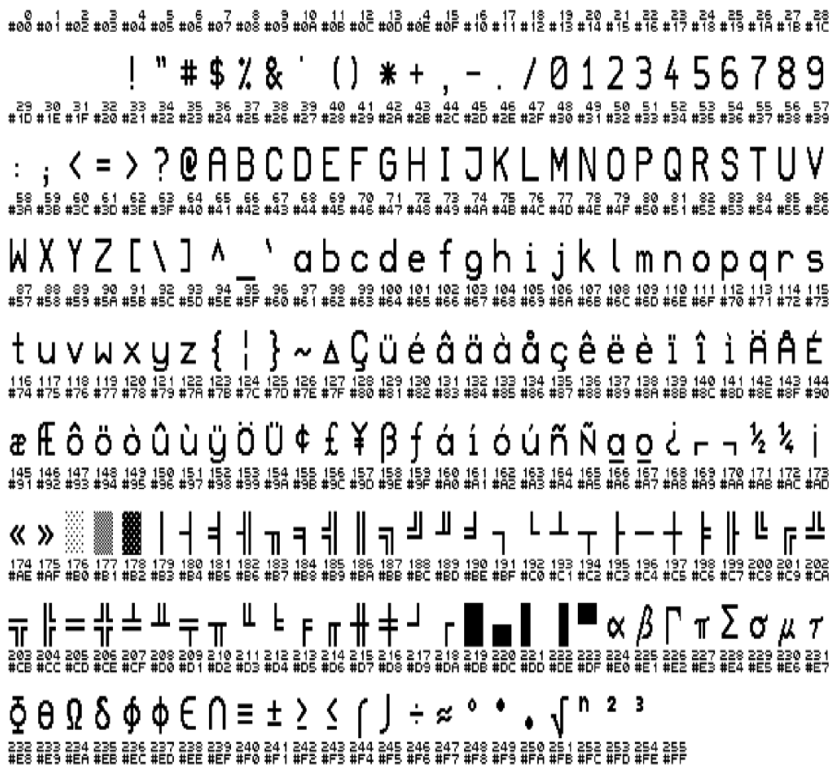
Status Byte 2

Bit	LED	Status	0	1
0	on	AUX1 label, black mark	closed	open
1	on	AUX2	closed	open
2	on	AUX3	closed	open
3	on	AUX4	closed	open
4		always 0 (identifier)		
5		always 0 (identifier)		
6		always 1 (identifier)		
7		always 1 (identifier)		

Status Byte 3 (Presenter)

Bit	LED	Status	0	1
0	on	timeout ticket removal	default	timeout: ticket will be backtracked
1	on	ticket in exit position	default	ticket waits in exit position for removal
2	on	error ticket removal	default	problem at ticket removal
3	1:1	error ticket removal	default	Jam at ticket removal
4		always 1 (identifier)		
5		always 0 (identifier)		
6		always 1 (identifier)		
7		always 1 (identifier)		

10 Character Sets



Optional Character Sets

The following character sets are currently available and can replace other character sets in the flash memory of the µ-processor. Please contact us with your inquiry. GeBE will gladly create additional character sets.

Cyrillic

Font Sizes

The number of printable characters per line depends on the physical features of the printer used. Below are some examples:

Font		**576 Dots/Line**	**Width**	**Height**
Small Font	(8x16)	72 CPL	normal	normal
Low Font	(16x16)	36 CPL	double	normal
Narrow Font	(8x32)	72 CPL	normal	double
Normal Font	(16x32)	36 CPL	double	double
Wide Font	(32x32)	18 CPL	quadruple	double
High Font	(16x64)	36 CPL	double	quadruple
Large Font	(32x64)	18 CPL	quadruple	quadruple
Xlarge Font	(64x128)	9 CPL	eight times	eight times

11 Troubleshooting and Recovery

Not every failure means that there is an error that cannot be cleared by the user himself. You will save time and money by recognizing and fixing simple errors on your own. The following tips are meant to help you with this:
Hardware RESET: Activated by unplugging and reconnecting the power supply after a short break.
This sets the printer in accordance with the TINIT-F and/or the TINIT-E in the batch file.

Symptom	Possible Cause	Remedy
The printer seems to be printing, but the paper is not blackened.	Paper inserted incorrectly.	Insert paper correctly.
The printer only prints a few characters in one line. If more is entered, it stops printing altogether.	The power supply is not optimal.	Use sufficiently sized power supply and short feed lines. Check all connections for possible transfer resistances. Since high peak currents occur with thermal printers, even the smallest transfer resistances can result in intolerable voltage drops. In this case, no power supply would be strong enough. Buffering with capacitors is possible, if the power supply is only too weak by a small margin and large capacitors (e.g. 4,700 µF; high switching capability) are used.
The printer only prints a few dots in one line.		
After a few characters, the printout starts to be incomplete.	The printer buffer is "over-run" (160 bytes), causing loss of data.	Solution: Use or check handshake. (software: Xon/ Xoff or hardware). If necessary: slow down transmission speed, e.g. down to 1,200 baud. (See MAN-D-376 Interface Settings)
The printer prints the wrong characters.	TTl instead of RS232 interface or vice-versa. (Characters of the upper area are printed).	Use correct interface.
	Bad ground connection that causes a part of the printing current to flow through the interface cable. This leads to an increase in potential there, which results in data corruption.	Repair ground connection.
	Host sends a break signal after print job (only "?" are printed).	GeBE can adjust this. Please give us a call.
Printer works with a PC, but not at the machine.	Printer is electrically incompatible with the host.	Measure level of the line signaling the erros. GeBE can adjust this.

12 Service

Warranty

We guarantee that all goods supplied by GeBE possess the warranted features. The guarantee period for OEM's is 12 months unless other terms have been agreed upon in writing, and is calculated from the date of shipment. The warranty is null and void, if the customer fails to claim an occuring defect without delay and in writing. Detailed information on our warranty is part of our terms of delivery and payment, which can be seen and downloaded at www.oem-printer.com/lzb (home page chapter: About Us).

Service

For service or questions, please contact: GeBE Elektronik und Feinwerktechnik GmbH
Beethovenstr. 15 • 82110 Germering • Germany • www.gebe.net
Phone: +49 (0 89/894141-31 • Fax: +49 (0)89/8402168 • Email: sales.ef@gebe.net

Further Information

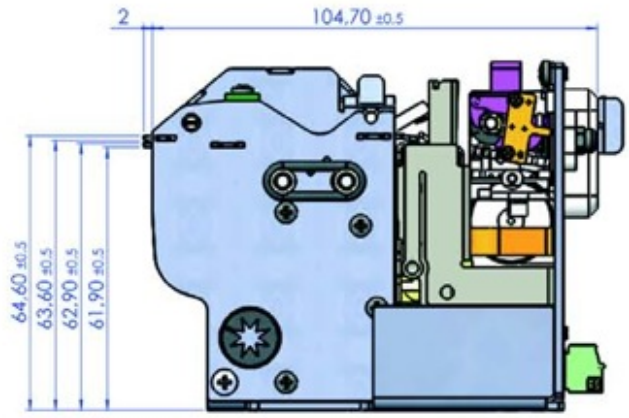
Further information on the INFO printer series is available at www.oem-printer.com/compact.
At this address, you can also find a personal consultant you can turn to with your questions.
Or, simply send an email to the GeBE sales team: sales.ef@gebe.net
For orders you can use this fax number: +49 (0) 89/894141-33

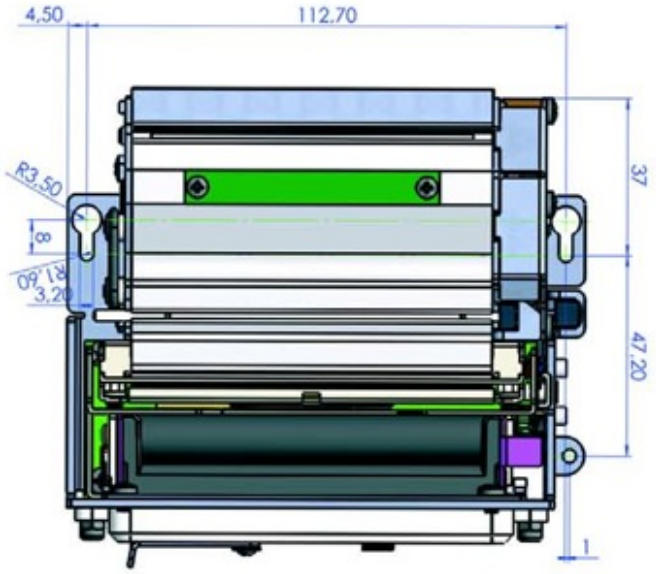
13 Declaration of conformity

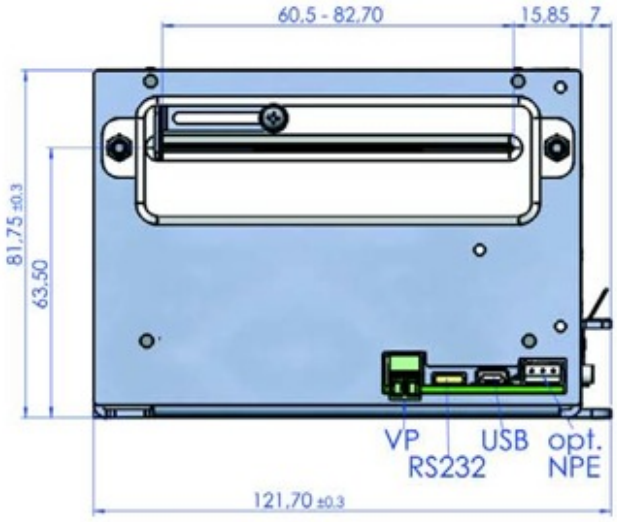
on request

In order to ensure the CE standard, it is recommended to use a type 74271132 snap ferrite from Würth on the USB cable plus the power supply no. GNG-24V-6.5A-AC or equivalent filter elements. Both components are to be placed as close as possible to the printer.

14 Mechanical Dimensions







15 Technical Data

	GPT-6776
Dots per mm	576, optional 640
Cutter	Full and partial cut (small connection remains)
Printer Buffer	256
Near-Paper-End Sensor	Serial signal to host system
Paper Exit Sensor	optional, serial signal to host system
Print Speed	up to 200 mm/s
Paper / Print Width	60 or 82 /up to 72, optional 80 mm
Supply Voltage	24 V DC
Max. Current Standby	ø 5 A (up to 20 A peak current)
Max. Printing Current app.	3 - 15 A, adjustable by command
Interfaces	RS232 bis 460 kbps, USB
Baud Rates (standard: bold)	1,200/2,400/4,800/9,600/19,200/38,400/57,600/**115,200 (115, n, 8, 1)**/230,400/460,800 Mode: selectable: 7, **8** data bits **/ 1**, 2 stop bit / **none**, odd, even parity Handshake: **Hardware handshake and XON / XOFF**
Data Compression	Factor app. 3 :1 (for graphics commands); PC compatible; Windows driver
Character Sets, CPL	36, 72 optional 40, 80
Bar Code	Code39 / EAN13 / 2of5 interleaved / optional 128c oder PDF417
Environment	-10°C to +60°C with specified paper 10% to 80% relative humidity, no moisture condensation
MTBF	100 km printed paper / 500,000 cuts
Roll Diameter	80 or 150 mm
Paper Thickness	80 - 120 µm (60 - 150 µm on request)
Housing	stainless steel
Standards	CE : see declaration of conformity
Weight	approx.:. 1.100 g
Dimensions without Holder	130 x 81,7 x 121,7 mm