

Protocol Printer

GeBE®

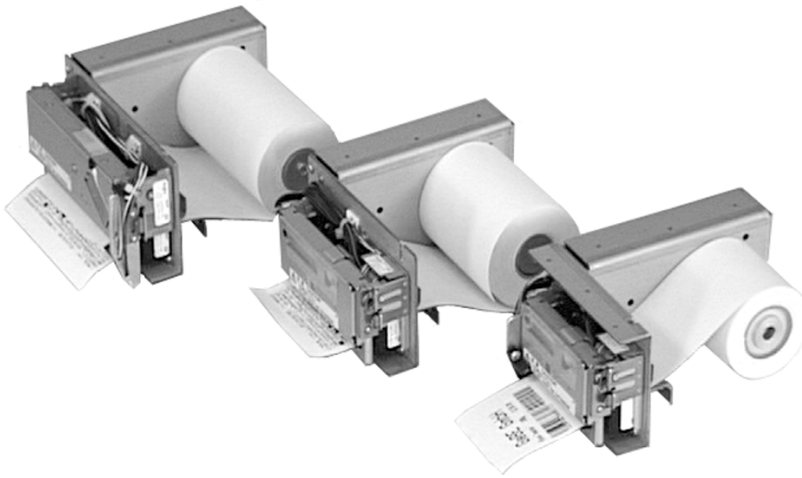
**Elektronik und
Feinwerktechnik GmbH**

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

GPT-686x/6262
**Printer for Frontpanel Solutions
or Paper Catch Systems**
**RS232 • Centronics • 203 dpi • Text and
Graphics Barcode • Logoprint**
Extensive Status Messages

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Operating Manual

Activities at GeBE

Printers: GeBE Elektronik und Feinwerktechnik GmbH • Email: sales.ef@gebe.net • www.GeBE.net
Keyboards: GeBE Computer & Peripherie GmbH • Email: sales@tastaturen.com • www.tastaturen.com
Internet Applications: www.GeBE.net

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The technology and configuration of the product described herein meets the latest national and international requirements with regards to functionality and safety. Further development and improvements are incorporated constantly. For this reason, illustrations, measurements, technical data, and general information that are part of this brochure may change due to product enhancement.

This manual will help you to operate our product, which has been developed and manufactured using the latest technology. Please read these instructions carefully before initial operation, and store them in a place close to the device, so they are on hand when needed.

Should you have any further questions, please contact our staff. You can find the necessary phone numbers and email addresses in the chapter, "Service and Maintenance".

Symbols and their Meaning

Please carefully read all safety instructions marked with a  as well as all important information marked with a .

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


Important information  refers to **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 are marked with a  and 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 Safety Instructions



Safe operation of this device is only warranted, 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.

- 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 servicer.
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 the device, refer to the chapter "Technical Data".
- The 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.
- 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.



- 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 guarantee 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.



- 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.
- 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".

1 Unpacking • Delivery content

While unpacking, make sure that all parts are present and undamaged, and that you remove everything from the packaging. Claims for compensation due to transport damages can only be accepted, if the delivery agent is notified immediately. Please write a damage report and send it back to the supplier with the defective part(s).

The standard versions of this thermal printers (OEM) will be delivered in 2", 3" and 4" width without accessories. The delivery contains the operating manual: SMAN-E-349 resp. SMAN-D-348 in German language. Please order the accessories separately.

The set-versions of GPT-686x/6262 contains the following accessories:



GPT-686x/6262-Set - Packing List:

- Printer
- Thermalpaper 1 Roll (depending on printer width)
- Interface cable for RS232 or Centronics
- Power Supply
- Paper Catch
- Mounting Bolts
- Operating Manual SMAN-E-439 in English resp.
Operating Manual SMAN-D-438 in German

Paper (standard)

GeBE offers paper rolls that are coated on the inside, 76 g/m²

- GPR-T01-060-070: GPT-6862 thermal paper 70 mm Ø (approx. 40m)
- GPR-T01-085-070: GPT-6863 thermal paper 70 mm Ø (approx. 40m)
- GPR-T01-114-070: GPT-6864 thermal paper 70 mm Ø (approx. 40m)

Cable

- GKA-271-240: Mechanism to controller, 16 single wires, 240mm, JST
- GKA-245: Power supply 2 single wires, 50mm
- GKA-304: RS232 1:1 SuB-D 9 pol. 2000mm
- GKA-468: Centronics cable, 2m, plug 15pol SuB-D-HD to 25pol SuB-D

Power Supply

- GNG-24V-2.5A-AC-T: Desktop power supply 24V/2,5A
- GNG-24V-6.5A-AC: Power Supply Open Frame 24V/6,5A

Options

- Centronics
- Active Paper Roll Break for mobile applications
- Paper Guide at the side to stabilize the paper roll
- Paper Exit Sensor
- 32 KByte EEPROM for LOGO-Download

Drivers for the printer series INFO

Drivers are available on the Internet.

Please download at www.oem-printer.com/info

Documentation about the System GPT-686x/6262

All further documents can be found on the Internet at www.oem-printer.com/info. The user manual for the Controller is available from GeBE via email (sales.ef@GeBE.net).

3 Description

The printer system INFO was designed for industrial applications. Equipped with top-quality Fujitsu thermal printer mechanisms with fixed print lines, this printer system meets the high demanded requirements.

The thermal printer mechanisms are completely maintenance-free, only the paper has to be exchanged for operation. The series INFO was mainly developed for paper catch systems, however, it can also be used for front panel solutions. The serial RS232 interface and the 24 V power supply are carried out on the back through standard connectors.

Service-Friendly

The paper path is easily accessible throughout its entire length. This makes it easier to change the paper and considerably speeds up the removal of faults. It also allows the printer to be installed in places without easy access. The cutter can be opened up with one hand and will also remain in the open position. The insertion of paper is supported by an insertion guide and an auto paper load.

Closed System Solution

Extensive sensors und self diagnose routines will constantly monitor the print system after it is turned on and during operation. They report the status online or on request to the host system. With the

synchronizing command, the printer reports the current processing status of the print buffer. This way, the host can be informed on what has just been printed, even if the buffer is filled. The printer will detect the fed paper length, since the last change of paper, in 1/10 meter increments and will display this information on request. - In addition, a remaining-paper sensor will report, when about 10% paper is left on the roll.

An optional paper output sensor reports whether the cutting was successful and the ticket fell into the paper catch. The total output, the operating time, total cuts and the last ten error messages will be stored. Logos, initializations or even macros can be filed in 13 stored text files in the EEPROM. They can be called by command. On request (licence), the printer can be prepared for firmware updates through the RS232.

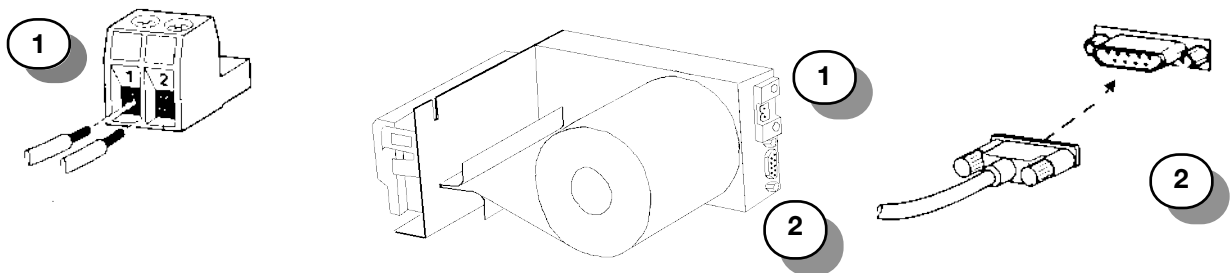
Powerful Interfaces

As a standard, the printer has a RS232 interface that can be operated with baud rates up to 115 kbps. In the graphics mode, the printer supports PCL5 compatible compression procedures and can therefore reach calculated transmission rates up to 400 kbps. This allows printing of full graphics with up to 80 mm/s. Optionally, the printers are available with Centronics, serial TTL , RS422/485, Current Loop, or USB (in pre-paration).

For mobile applications, we offer an active paper roll brake as well as a paper guide on the side.

4 Connecting the Printer

During installation:
Always disconnect the power.



Power Supply

The power supply is connected through a standard power connector from Phönix.

The connector has screw clamps. For installation, only a screw driver size 1 is required.

Litz wires have to be terminated with multicore cable ends.

Connector type MSTB-2.5/2-ST-5.08

Cable diameters

0.5 mm² if cable length < 0.5 m

0.8 mm² if cable length < 1.5 m

1.0 mm² if cable length < 2.0 m

Serial Interface

The RS232 is connected through standard Sub-D connectors.

A connection to a PC only requires a 1:1 cable (connector / socket) (no 0-modem).

Line length max. 9 m (twisted: 15 m)

5 Installation

5.1 Installation as a Printer with Paper Catch

The GPT-686x/6262 has six M3 mounting holes each on the upper and the lower mounting plane of the housing. Please select the mounting plane according to the paper bend and the arrangement of the paper catch. The mounting plane is clear in the area around the paper roll. Therefore, paper roll diameters up to 150mm can be used. The GPT-686x/6262 has 3 alternative paper roll inputs to optimize the roll diameters and the mounting plane. Please indicate, which mounting plane you want to use. For mobile applications, the cutter may have to be secured against opening on its own.

Problems with Paper Catch Solutions

1. Static Charging of the Receipt:

The friction of the paper against plastic or ungrounded areas may cause static build-up. This build-up can cause stickiness during the feeding process.

Preventative

Action:

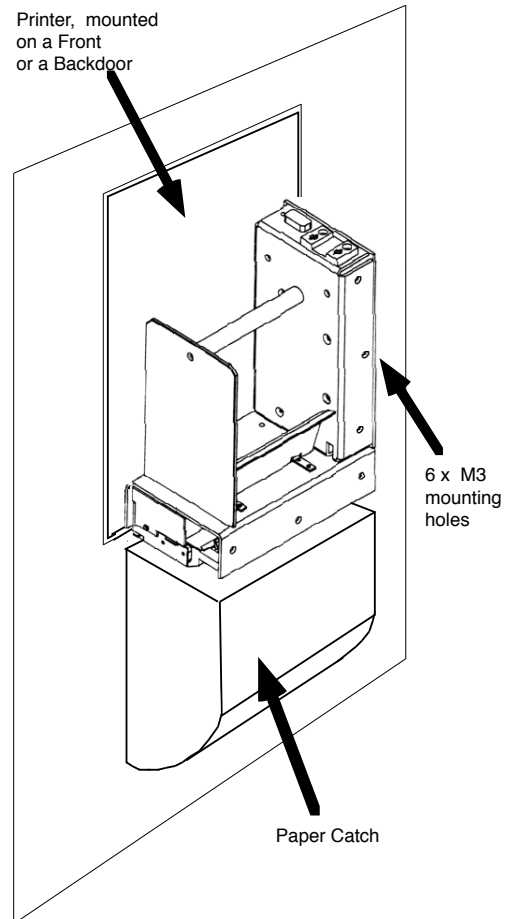
Potential equalization of metal areas, possibly installation of additional metal areas. Use of anti-static paper.

2. Humidity in the Paper

Operation at the dew point during lower temperatures results in the paper absorbing moisture. This can cause stickiness during the feeding process.

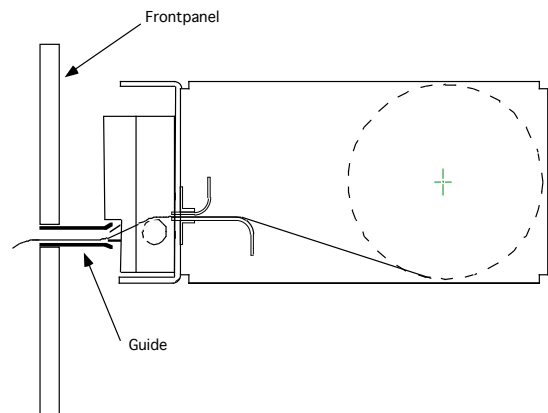
Preventative Action:

Climatization of the device.
Use top coat paper.



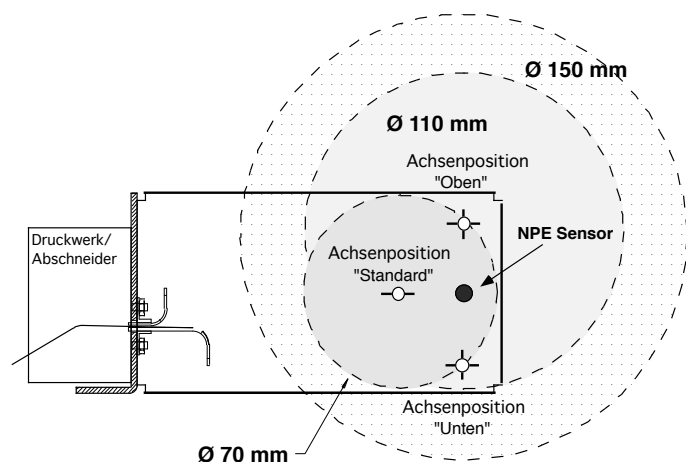
5.2 Installation as a Front Panel Printer

The GPT-686x/6262 has six M3 mounting holes each on the top and bottom of the housing. For the paper path from the mechanism to the front slot a guide is required. If all the receipts have the same length, the guide can be about 1 cm shorter than the receipt. This will prevent the paper from getting obstructed during the print process.



5.3 Moving the paper axle for large diameter paper rolls

The GPT-686x/6262 provides three axle positions for the use of paper rolls with different diameters. The default setting is "standard axle position" (-AS). A paper roll diameter of 70 mm does not exceed the exterior dimensions in the standard axle position. The maximum roll diameter for this position is 130 mm. The top (-AO) and bottom (-AU) axle positions allow a roll diameter of up to 150 mm. With the use of 110 mm diameter rolls, the mounting surfaces of the printer across from the axle are not exceeded. To change positions, the axle is to be loosened counterclockwise and remounted in the new position. The new screw joint is to be secured with threadlocker compound and tightened.



6 Status Messages of the Printer

Every error is reported through the serial interface.

When an error is cleared, the corresponding small letter will be sent, followed by an "X".

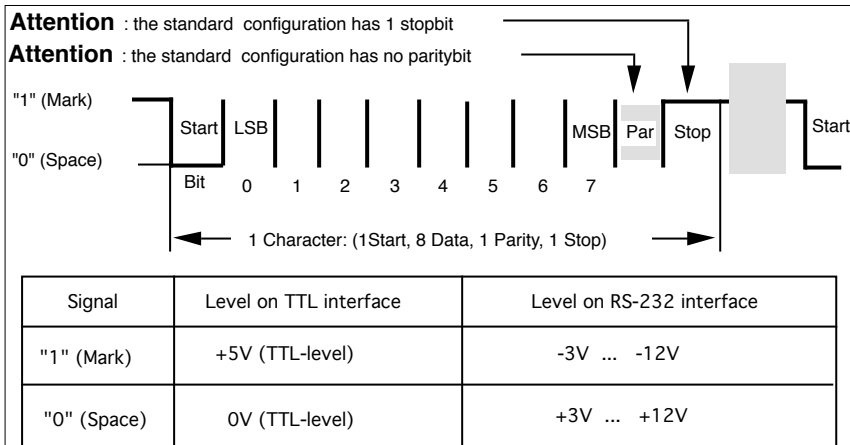
Meassges	Error Occured	Error Cleared	Comments
Reset	"R"		
Watchdog reset	"R"		
End of error		"X"	always, also after hardware, software, and watchdog reset
Buffer empty	<Xon> = \$11		
Buffer full	<Xoff> = \$13		
Synchr. message	all char.		Each sent character is reported back
Paper end	"P"	"p"	
Paper <10%	"Z"	"z"	
Head open	"H"	"h"	
Paper output	"G"	"g"	
Cutter blocked	"C"	"c"	
Temp. low	"K"	"k"	Temperature at the print head too low
Temp. high	"T"	"t"	Temperature at the print head too high
Vp too low	"U"	"u"	
Vp too high	"M"	"m"	
Motor temp. high	"E"	"e"	Temperature at the printer motor too high
EE-OK	"E0"	"E0"	Faultless completion of EEPROM command
EE-invalid	"E1"	"E1"	Invalid stored text file or statistics variable no
EE-password	"E2"	"E2"	Wrong password for EEPROM access
EE-overflow	"E3"	"E3"	Overflow of text file memory
EE-time out	"E4"	"E4"	EEPROM byte programming time exceeded
EE-KO	"E5"	"E5"	EEPROM not found

7 Serial Interface RS232 (V24)

Connector SuB-D 9 pin socket with a 1:1 assignment to the PC.

Therefore, a 0-modem connection is not necessary

Pin	Signal	Input/Output	Comment
1	DCD	O	Connected with CTS and DTR
2	RXD	O	Error messages and Xon/Xoff messages
3	TXD	I	Print data
4	DTR	I	Connected to DCD and CTS
5	GND signal		
6	DSR	O	Level logic 0 := controller ready
7	RTS	I	Handshake input of the controller
8	CTS	O	Connected to DCD and DTR
9	RI		not connected



8 Operation: Inserting Paper

Which thermal paper is suitable?

The printers are specified for paper widths of 59.5, 84.5, and 113.5 mm +/- 0.5, up to 100 (120) g/m².

Other papers can be problematic.

As a standard, GeBE is offering paper rolls with a diameter of 70 mm (app. 40 m length) with 76g/m². Thermal papers that are resistant against water, grease, and alcohol are available for special applications. We will gladly assist you in your selection of the suitable thermal paper.

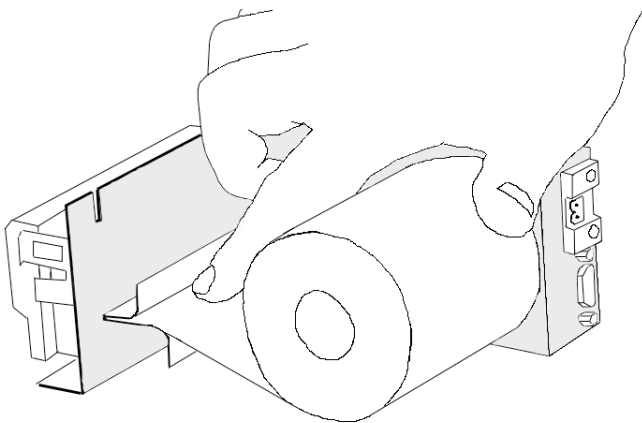
Which side of the GeBE thermal paper can be printed on?

On the paper roll, the inner side is always the side to print on. If you should still have doubts, just do the fingernail test. The thermosensitive side will turn black under the pressure of a sharp object.

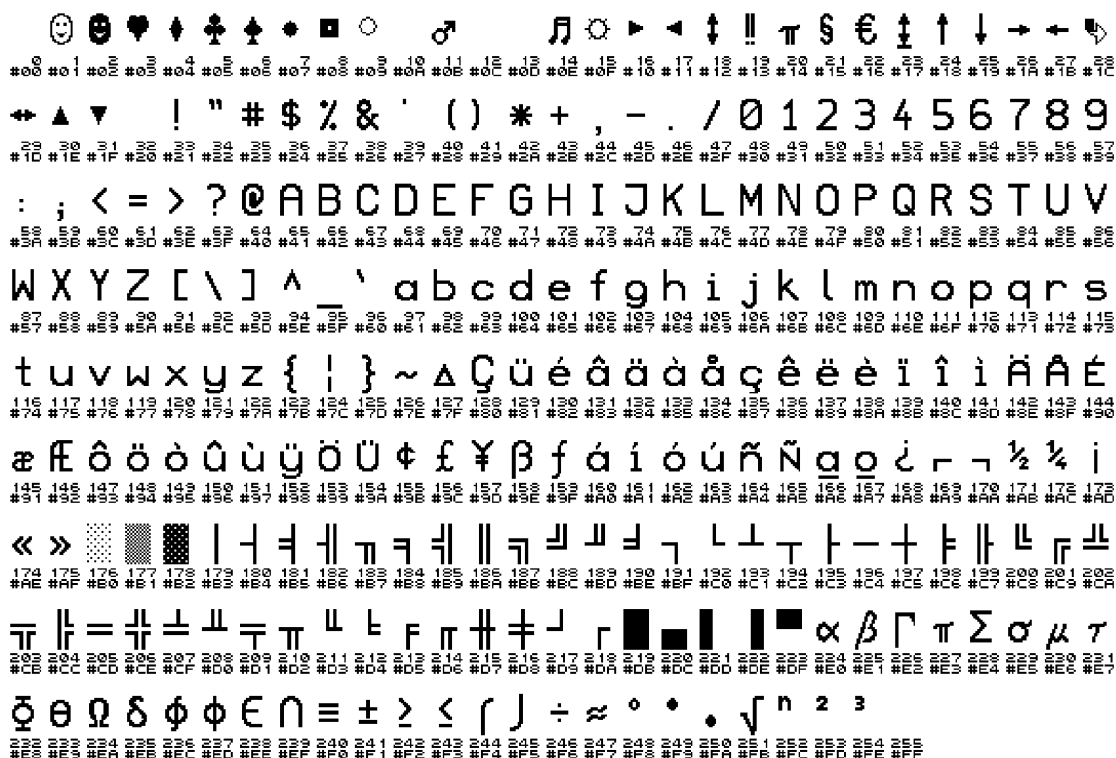
How to insert the paper?

For printers with the side paper guide:

- Open quick-release fastener and lift off metal sheet for paper insertion.
- Pull off the empty paper roll from the roll holder.
- Insert new paper roll.
- Put paper on the paper guide, and push it toward the mechanism (see draft).
- As soon as the mechanism recognizes the paper, it will automatically be pulled in.
- After the paper was pulled in, reassemble the side guide, having the paper run under the guide axle.
- The paper is now inserted.



9 Character Sets



The flash memory of a standard controller contains four character sets that can be selected by command. Other character sets available on request. The Euro character is located at 16 hex.

Font Sizes of the Character Sets

Font Nr.	Dots (horiz./vert.)	Characters/Line
1	16 / 24	24
2	9 / 22	42
3	7 / 16	54
4	12 / 24	32

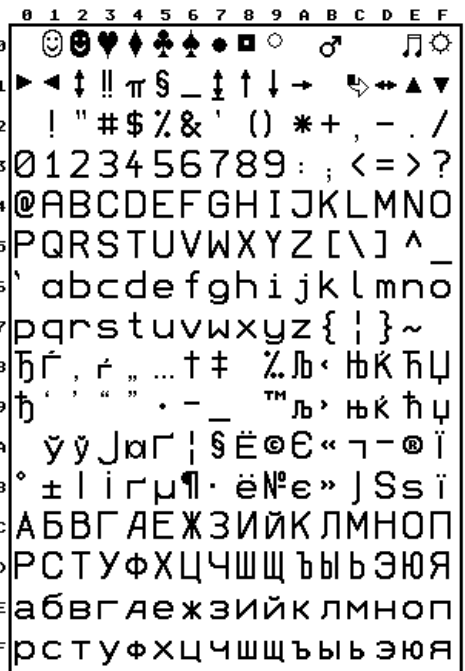
GeBE-standard character set: similiar IBM II Code table 850

Optionally Available Character Sets

The following character sets are currently available and can be programmed into the Flash memory of the µ-processor in exchange for other character sets. Please contact us with your inquiry. On request, GeBE can also create other character sets.

	Dots (horiz./vert.)	Characters/Line
IBM II	16x24	24
IBM II	14x 22	27
IBM II	11x22	34
IBM II	9x 22	42
IBM II	7x 16	54
IBM II 90°	16x11	
Kyr	16x24	24
Kyr	14x 22	27
Kyr	11x22	34

Optional Character Set: Cyrillic



10 Error Detection and Recovery

Not every error means that there is a printer error that cannot be cleared by the user.

Users will save time and money by recognizing and clearing simple errors on their own.

The following tips are meant to help with this:

Hardware RESET: Triggered by disconnecting the printer from power supply and connecting again after a short time. This causes the printer to be set to the parameters in the batch file TINIT-F or TINIT-E

Symptom	Cause	Remedy
The print seems to print, but there is no blackening	Paper inserted wrong	Insert paper correctly
The printer only prints a few dots in one line.	The power supply is not optimal.	Use a suitable power supply and short lines. Check all plug-in connections for transfer resistances. Since high peak currents occur with thermal printers, even the smallest transfer resistances result in excessive voltage drops. In this case, no power supply would be strong enough. A buffering with capacitors is possible, if the power supply is only slightly too weak, and large capacitors are used (e.g. 4,700 µF).
The printer only prints a few characters in one line. When I enter more, it won't print at all.		
The print-out is incomplete after a few characters	The printer buffer is "run over" (160 bytes), so data are getting lost.	Solution: Check or start using handshake. (XON/XOFF, or hardware). If necessary, lower output speed, e.g. go down to 1,200 baud. See MAN-D-376, "Interface Settings"
The printer prints wrong characters.	RS232 instead of TTL interface or reverse. (Characters of the upper area are printed).	Use correct interface
	Wrong baud rate was selected. (A lot of "?" are printed)	Set baud rate through solder bridges or TINIT
	Bad ground connection of the printer. If the printer is not grounded right, a part of the printing current will flow through the interface, causing a voltage rise and therefore, a data falsification.	Repair ground connection.
	The Host system is sending a break signal after print job. (only "?" printed)	Please call us. GeBE can adjust this.
The Centronics printer works with a PC, but not with the machine.	Printer is electronically not compatible with host.	Measure level of the line that is reporting the error. GeBE can adjust this.

11 Service

Warranty

We guarantee, that the delivered goods will show the assured properties. The warranty for OEM products is 6 months starting with date of delivery. Other terms have to be confirmed in writing.

Liability is excluded if defects are not claimed immediately with appearance of the fault in written form.

Please find detailed information about warranty in our delivery and payment terms, which is available on our homepage www.oem-printer.com/lzb (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) 89/894141-0 • Fax: ++49 (0) 89/8402168 • e-mail: sales.ef@GeBE.net



Further informations

Further information on the INFO-Drucker series is available at www.oem-printer.com/info.

At this address, you can also find a personal consultant who 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 the **fax number : 0049 (0) 89/894141-33**, which is located in the sales department.

12 Declaration of conformity**DECLARATION OF COMFORMITY**

in compliance with EN45014

KONFORMITÄTSERKLÄRUNG

in Übereinstimmung mit EN45014

Supplier: **GeBE Elektronik und Feinwerktechnik GmbH**
Anbieter:

Address: **Beethovenstr.15**
Anschrift: **82110 Germering**
Germany

Products: beginning with Serial Number: **0802xxxx**
Produkte: beginnend mit Seriennummer: **0802xxxx**
GPT-6862-83-28-V.24
GPT-6863-83-36-V.24
GPT-6864-83-52-V.24

The Product described above are in conformity with:

Das oben beschriebene Produkte ist konform mit:

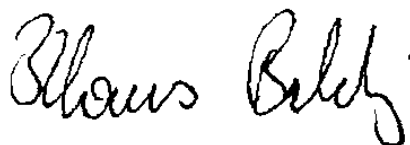
DIN EN 55022 1998

DIN EN 55024 2003

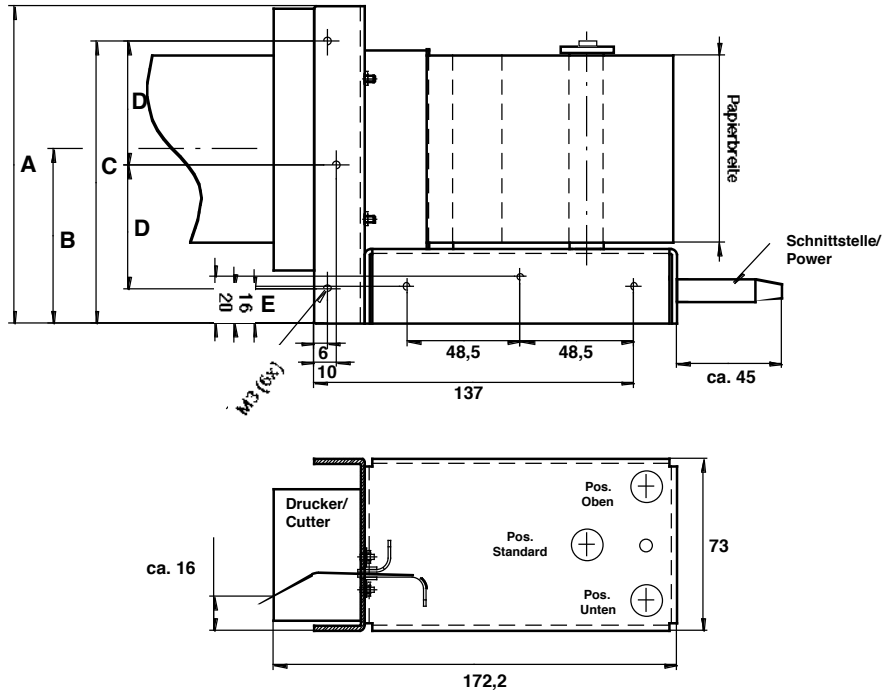
Germering, the 07/18/2005

Germering, den 18.07.2005

Klaus Baldig
Head of R&D/



13 Mechanical Dimensions



14 Technical Data

	GPT-6262	GPT-6862	GPT-6863	GPT-6864
A	109,7	109,7	135,6	162,7
B	55,3	55,3	74,7	81,3
C	94,7	94,7	120,5	147,7
D	39,4	39,4	52,8	66,3
E	15	15	15	15
Resolution	384	448	576	832
Cutter	Full and half cut (remaining bar)			
Print buffer	256	160 characters, extended buffer on request		
EEPROM	8 KByte, optional 32 KByte			
Near paper end sensor	message serial to host system			
Paper exit sensor	optional, message serial to host system			
Print speed	up to 55 mm/s	up to 80 mm/s		
Paper / printing width	60 / 48 mm	60 / 56 mm	85 / 72 mm	114 / 104 mm
Voltage supply	10 - 36 V	16 - 26,5 V		
Current max. idle:	20 mA	40 mA		
Current max. printing app	2 A	2 A	3 A	4 A
Interfaces	RS232 up to 115kbps, optional (Centronics, TTL, RS422/485, TTY ...)			
Interfaces Standard = bold	Baud rates: 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (115, n, 8, 1) Mode: selectable: 7, 8 data bits / 1, 2 stop bit / none , odd, even parity Handshake: Hardware handshake und XON / XOFF			
Data Compression	factor ca. 3 : 1 (for graphic commands); PC-compatible; windows driver			
Characters, cpl	24, 42, 54	28, 49 and 64	36, 64 and 82	52, 92 and 118
Bar Code	Code39, 2 of 5 int, EAN13, EAN 8			
Environment	0°C to +50°C (-10°C to +60°C with GeBE paper) 10% to 80% rel. humidity, no moisture			
MTBF	50 km printed paper / 500.000 cuts			50 km printed paper / 300.000 cuts
Roll Diameter	max. 150 mm in position "up" or "down" (25 mm core)			
Paper	60 - 100 g/m ²			
Housing Material	steel ,anodized, 2mm			
Norms	CE : see declaration of conformity			
Weight	995g	995g	1.100g	1.350g
Dimensions in mm	172,2 x 73 x 109,7	172,2 x 73 x 109,7	172,2 x 73 x 135,6	172,2 x 73 x 162,7