Operating Manual

INPUT/OUTPUT DEVICES

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Thermal Printer

GeBE-MULDE Mini GPT-4352(-60)

OPERATING MANUAL

Compact front panel thermal printer

C32

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GeBE-document-no. GPT-4352-60-C32-E-SMAN-V1.1-0901
date November 2, 2017

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1 SAFETY INSTRUCTIONS

1.1 SYMBOLS AND THEIR MEANING

Carefully read the safety instructions!

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.

It is essential to forward these instructions to all other personnel using this device.

ATTENTION!
concerns your personal safety and must be observed at all times.

CAUTION hot surfaces!
concerns your personal safety and signals a risk of being burned on touch.

HINT!
concerns equipment safety and will help you to utilize your printer to its fullest.

SUPPORT!
For technical questions, please contact GeBE Technical Support.

TECHNICS!
requires consultation with GeBE Technical Support.

INFORMATION!
refers to more detailed or additional information, such as documents or internet links.

1.2 DEVICE INFORMATION

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 continuously 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 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 8.4 GeBE-TECHNIK SUPPORT.

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.

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 8.4 GeBE-TECHNIK SUPPORT.

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.

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.

- The device may only be opened or repaired by authorized personnel. Never open the device or carry out repairs yourself. Always contact the GeBE technical support, see chapter 8.4 GeBE-TECHNIK SUPPORT.
- 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 12 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.
- Assure, that the printer is protected against overpower according to EN/IDC 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.
- 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 and will will make all warranty claims null and void. All parts included are listed in chapter 4 DELIVERY CONTENT and original accessories/spare parts are listed in chapter 4.3 ACCESSORIES AND SPARE PARTS.

1.3 WARRANTY

We guarantee that all goods supplied by GeBE possess the warranted features according to the intended use. 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.

1.4 DISCLAIMER OF LIABILITY

We explicitly state that all product liability and guarantee claims are null and void:

1. if the device has not been used in accordance with the instructions in this operating manual or hints on the device itself.
2. if the device has been used outside the intended use, see chapter 1.5 INTENDED USE and chapter 1.6 NON-INTENDED USE.
3. if the device has been used outside the specifications according to CE declaration.
4. 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.gebe.net (footer: AGB).
5. when opening or operating the device in a state of error.
6. for attempts by the customer to repair the device.
7. for usage/montage of parts and accessories others than the manufacturer's original.
8. for damages due to ESD or EOS.
9. for damages due to printing on the wrong paper (side).
10. for damages through overloading and foreign influence.
11. for normal wear and tear.
12. for visual defects.
13. for damages through force majeure of any kind.

1.5 INTENDED USE

Protocol printing, e.g. for measuring technologies in medicine, in the field or logistics. Receipt printing, e.g. for accounting systems in gastronomy or POS.

1.6 NON-INTENDED USE

- Usage/montage of parts and accessories others than the manufacturer's original's.
- Usage of the printer in non-compliance to this manual. Changes/modifications not approved by GeBE could void the user's authority to operate the equipment.
- Not complying to the safety instructions.
- Usage of the printer outside the intended use, see chapter 1.5 INTENDED USE.

2 SYSTEM DESCRIPTION

TYPICAL APPLICATION

Protocol printing, e.g. in machines, for measurement technical targets or documentation /
Receipt printing e.g. at POS or in accounting systems at hotel receptions

CONFIGURATION

The front panel thermal printer GeBE-MULDE Mini GPT-4352(-60) adapts to diverse preconditions and integration situations. The space-saving printer is compatible to PCL3 graphics.

The fiberglass reinforced plastic housing supports stationary montage for industrial usage.

The operation foil can be designed customer-specific.

TEMPERATURE RANGE

Through extended temperature range of -20°C to +60°C (14°F to 140°F), the GeBE-MULDE Mini is also suitable for outdoor application.

PAPER

The paper-insert is easily solved, via easy paper loading technology. The paper supply flap closes vibration-proofed (tested according to DIN EN 60068-2-6 vibration and DIN EN 60068-2-29 permanent shock). The paper roll of ø 31 mm (1.22 inch) serves 11 m (12.03 yd) printouts, the ø 60 mm (2.36 inch) paper roll stores approximately 43 m (47.03 yd) length – the quadruple amount. The GeBE-MULDE Mini GPT-4352-60 also prints on self-adhesive labels.

INTERFACES

An USB and a RS232 interface are available
.

3 LAYOUT AND FUNCTIONS

Figure 1: GeBE-MULDE Mini GPT-4352-31 parts and functions

Figure 2: GeBE-MULDE Mini GPT-4352-60 parts and functions

Description
(Features dependend on printer version)

1	Opening lever for paper tray
2	Paper tray
3	Button FEED
4	optionale button (free programable)
5	LED green

3.1 KEY FUNCTIONS

The keys have different functions depending on the status - normal operation or print settings menu. The time for which the buttons are held down is also an issue.

FEED (3)
The FEED button serves to feed the paper forwards. When pressing the FEED button the paper feeds first only one line of the set font. When holding the button down for more than two seconds, the paper feeds continuously.

SELF TEST *(not yet implemented)*
The printer is checked for its inner function by starting a printout in the self-test. For this purpose, the FEED (3) paper feed key is pressed when the voltage supply is connected. A printout showing software version and character set is output automatically. The interfaces are not checked. For OEMs, special functions and printouts can be activated during the self-test.

OPTIONAL BUTTON (4)
A makro can be programed to the optional button -> batch file T1.

A detailed description is available from our software manual C32-E-SoMAN-0793.

3.2 STATUS MESSAGES

The integrated STATUS LED (green) indicates three printer states:

- LED permanently on: all functions are in order
- LED flashing: case of error

Bits are defined as follows:

1. Status byte

Bit	LED	Status	0	1
0	on	Near Paper End sensor (NPE)	less paper	paper available
1	1:1	paper sensor	paper available	no paper
2	1:1	temperature	temperature OK	print head too hot/cold
3	1:1	print head	closed	open
4	1:1	paper/cutter jam	no error	error
5	on	Rx error	no error	Rx error (e.g. buffer overflow)
6			*always 0 (identifier)*	
7				*always 1 (identifier)*

In addition to the optical status messages of the STATUS LED, messages are also sent via the serial interface. These are usually individual ASCII characters that can be evaluated by the host computer.

In order for the remaining print jobs not to be printed immediately after the easyload mechanism has been closed and to cause a paper jam, an error follow-up of approx. 2 seconds has been installed. So if there is an error, then the printing unit remains locked until approx. 2 seconds after fixing the last error. This gives enough time to close the lid without the printer starting up immediately.

3.3 CHARACTER SETS

A character set is already stored in the flash memory of the controller. Other character sets are available on request.

Standard character sets ar listed in the software manual C32-E-SoMAN-0793.

3.4 OEM OPTIONS

- customized housing colour
- customized operation foil
- program variants
- special fonts
- special functions

3.5 CONTROLLER AND DRIVERS

Following drivers support the printer controller GCT-4361x:

- Windows® CE 5.0, 6.0, 7.0 and XP, 7, 8, 8.1, 10
- Unix via Cups for Linux and Mac OS
- Other systems on request

3.6 CONNECTIONS

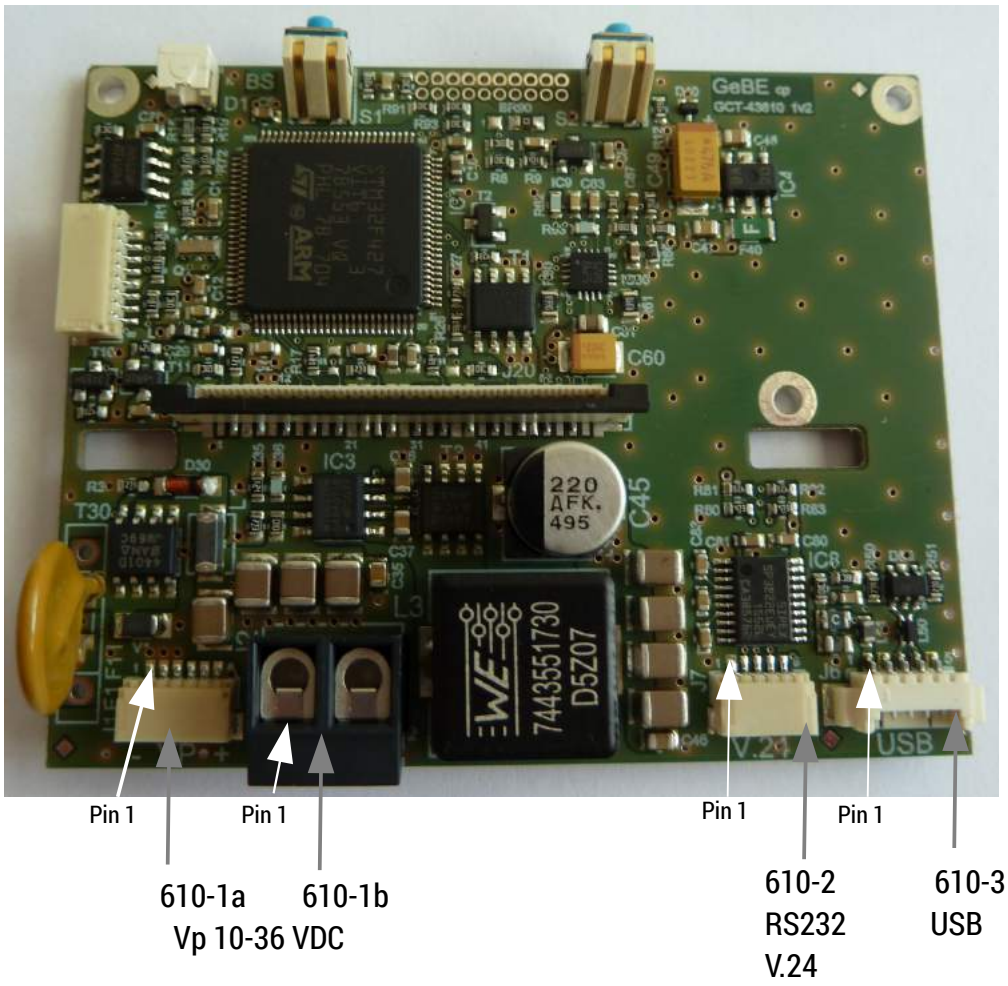


Figure 3: GCT-43610 with DC/DC (for 10-36 VDC)

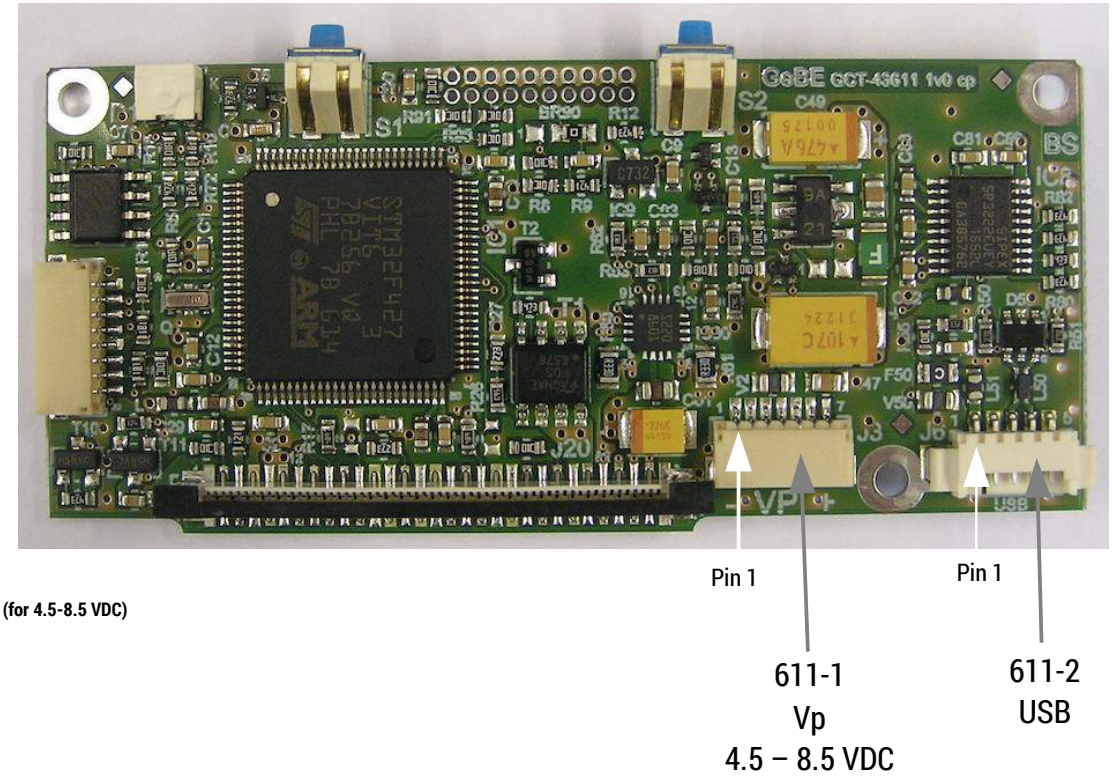


Figure 4: GCT-43611 (for 4.5-8.5 VDC)

4 DELIVERY CONTENT

4.1 UNPACKING

Please check during the unpacking process, if all parts have been delivered completely and undamaged.
Make sure to remove all parts from the packaging. 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.

4.2 STANDARD LAYOUT

The standard OEM-printers of series GeBE-MULDE Mini do not include any accessories!
Please order accessories separately according to the table in chapter 4.3 ACCESSORIES AND SPARE PARTS.

Article designation:
GPT-4352-31-C32-610-V.24/USB-DC10/36 resp. **GPT-4352-60-C32-610-V.24/USB-DC10/36**

4.3 ACCESSORIES AND SPARE PARTS

4.3.1 ACCESSORIES DELIVERY CONTENT

The standard OEM GeBE-MULDE Mini does not include any accessories!

4.3.2 OPTIONALES ACCESSORIES AND SPARE PARTS

Article number	Article description	GPT-4352	GPT-4352-60
Cable			
12872	Data round cable USB 2.0, 5 pin, Molex to USB A, length 2,000 mm (78.74 inch)	x	x
11352	Data round cable RS232, 5 pin, JST SHR to Sub-D, length 1,000 mm (39.37 inch)	x	x
11387	Data cable RS232, 5 pin, JST SHR - one side open, length 500 mm (19.69 inch)	x	x
12451	Power supply cable 6-pin for 10 – 36 VDC connection, length 250 mm (9.84 inch)	x	x
11353	Power supply cable 7-pin for 4.5 – 8.5 VDC connection, length 250 mm (9.84 inch)	x	x
Power supply			
13695	Power supply 24VDC / 3A with Schuko plug and power supply cable	x	x
13696	Power supply 5VDC / 5A with Schuko plug and power supply cable	x	x
12618	DC/DC 10 - 36VDC coverter implemented for GPT-4352, alternatively use for little mounting depth	x	

Article number	Article description	GPT-4352	GPT-4352-60
Spare parts			
12774	Cover and lever anthracite	x	
12893	Cover and lever anthracite		x
11892	Exchange printer mechanism including platen roll	x	x
12116	Exchange platen roll	x	x
Options			
11414	Mounting frame for GPT-4352 in DIN housing 96x96 mm (3.78x3.78 inch)	x	
11415	Mounting frame for GPT-4352 in 3HE 19“ rack with fastening screws	x	
12610	Mounting frame for GPT-4352-60 in 3HE 19“ rack with fastening screws		x
12561	Interface converter ethernet to V.24, 8 - 36 VDC power supply, on request	x	x

5 INSTALLATION

5.1 INSTALLATION IN A FRONT PANEL

The printer GPT-4352(-60) can be installed with two screws in an easily done front panel cut-out with a thickness of up to 4 mm. The contact surface is flat. All around the housing a 1 mm got-over covers the space between the housing wall and the printer. The printer is pushed into the cut-out from the outside. Then, it can easily be mounted with screws 4xM3 onto the drill holes M3.

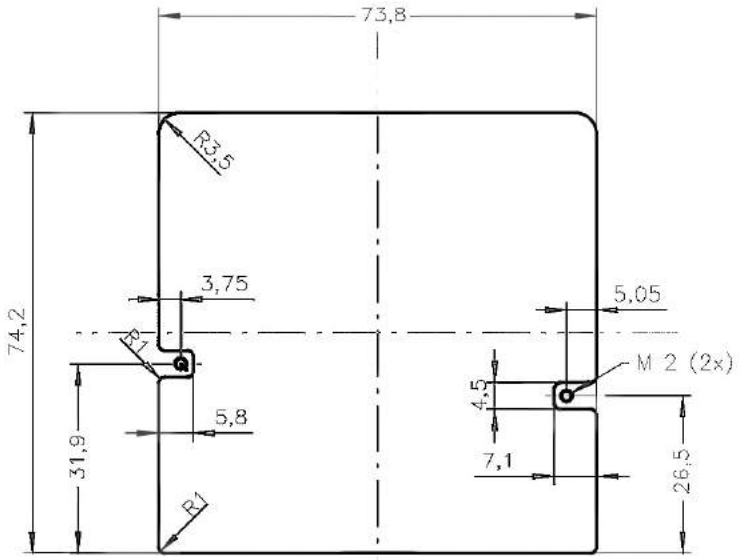


Figure 5 : Dimensions front panel installation of GPT-4352 in mm

Figure 4: Front panel installation

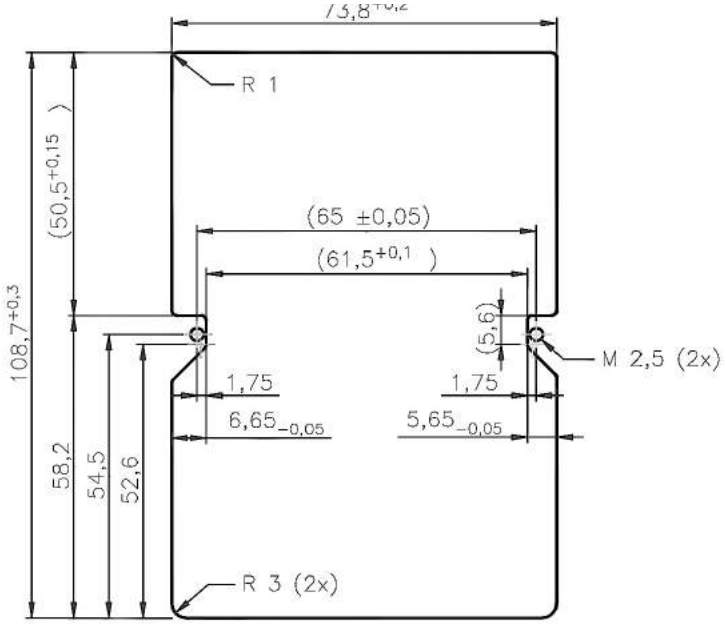


Figure 6: Dimensions front panel installation of GPT-4352-60 in mm

5.2 INSTALLATION IN DIN HOUSING

The GPT-4352(-60) can be integrated in a DIN housing. Suitable DIN housings are listed under chapter 4.3 ACCESSORIES AND SPARE PARTS.

Figure 7: GPT-4352 and GPT-4352-60 installed in a DIN housing

A plastic protection front door is optionally available:

6 POWER SUPPLY

During installation: Always disconnect system power supplies.
During installation and operation, the user (commissioning engineer) must comply with the regulations according to the regulations. IEC 60950-1: Protection against contact with parts of hazardous voltage and compliance with insulation requirements.

6.1 FIXED VOLTAGE POWER SUPPLY

The printer can be operated with a fixed voltage power supply of 10-36 VDC or 4.5-8.5 VDC.

The connected voltage supply has to be protected against overvoltage in accordance with EN/IEC 60950. Suitable power supplies for these variants 4.5-8.5 VDC or 10-36 VDC are available from GeBE.

6.1.1 FIXED VOLTAGE OPERATION 10-36 VDC

The printer GPT-4352(-60)-DC/DC contains an integrated DC/DC converter with an input voltage range of 10-36 VDC. Die DC/DC supply is connected to plug 610a or clamp 610b (see chapter 3 LAYOUT AND FUNCTIONS).

Important: Power can only be supplied either through connection 1a or 1b. Power input has to be protected via a PTC resistor!

Connection 610-1a

Pin	Function	Colour
1	GND	black
2	GND	black
3	GND	black
4	VP	red
5	VP	red
6	VP	red

Socket:	JST SM06B-SRSS-TB	J1
Mating connector:	JST SHR-06V-S	AWG 32 - 28

Suitable connection cable: article 12451 (see chapter 4.3 ACCESSORIES AND SPARE PARTS)

Connection 610-1b

Pin	Function
1	GND
2	VP

Socket:	PTR 50500020184 G	J2
Mating connector:	Einzeladern	AWG 22 - 14

6.1.2 FIXED VOLTAGE OPERATION 4.5-8.5 VDC

The printer GPT-4352(-60)-LV can be connected to socket 611-1 for operation at voltage 4.5-8.5 VDC.

Connection 611-1

Pin	Function	Colour	
1	GND	black	
2	GND	black	
3	GND	black	
4	VP	red	
5	VP	red	
6	VP	red	
7	GND	white	switch-off accu charging circuit

Socket:	JST SM07B-SRSS-TB	J3
Mating connector:	JST SHR-07V-S	AWG 32 - 28

Suitable connection cable: article 11353 (see chapter 4.3 ACCESSORIES AND SPARE PARTS)

It is recommended to select the cable length as short as possible. Long cable lengths lead to high resistance that results in a poor print image up to failure of the printer.

7 INTERFACES

The controller contains an USB full speed interface and a serial RS232 interface.
The RS232 interface can be operated with V.24 levels of up to 460kbps, with TTL levels also up to 3.6 Mbps. In case both interfaces are equipped, the USB interface has priority. When plug-in the USB interface, a reset will be performed which activates the USB interface automatically. When plug-off the USB interface, a reset will again be performed which then activates the RS232 interface.

7.1 SERIAL INTERFACE

The suitable interface cable will be connected to socket 610-2 / 611-3 see chapter 3.6 CONNECTIONS and on the other side directly to a RS232 connection (COM interface of a PC). Alternatively also a one-side open cable with 5 single wires is available (see chapter 4.3.2 OPTIONALES ACCESSORIES AND SPARE PARTS). TTL is optionally available.

Only peripherals that meet the requirements for safety low-voltage (SELV) with limited power according to EN/IEC 60950 may be connected to the interfaces and DC circuits of the printer.

7.1.1 PIN ASSIGNMENT

Pin connection 2	Signal	Input/ Output	Remarks	Assignment of Kabel art.no. 11352 (D-SUB 9-pin)
1	GND	GND		5
2	TxD	I	print data	3
3	RxD	O	error and Xon/Xoff messages	2
4	RTS	I	handshake input of controller (standard: wake up function)	7
5	CTS	O	the controller takes data as soon as the level is logic-true	8
				pin 1,4,6,9 not connected

Socket:	JST SM05B-SRSS-TB	J7
Mating connector:	JST SHR-05V-S	AWG 32 - 28

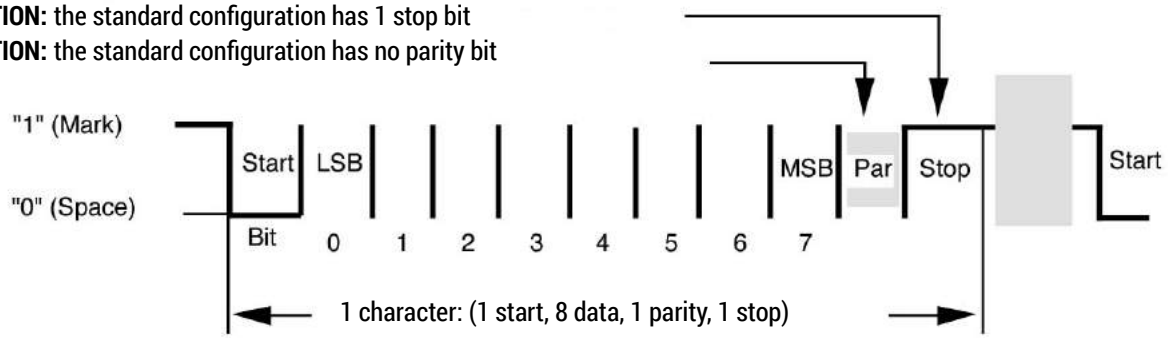
The input buffer is adjustable from minimum 1 kbyte to maximum 4 kbyte by parameter. With 1 kbyte being default (parameter 13,1). The buffer overhead is adjustable from 32 byte to 255 byte by parameter with 64 byte being default (parameter 13,2 and 13,3). In case the memory reaches the set buffer overhead size, the controller switches the CTS-line onto stop and sends the control code <XOFF> via serial data line to the host. This stops the data stream from the host to the controller. This means, that the printer sends 64 byte until the buffer is filled-up and a <XOFF> (13h) sets the busy signal.

When the buffer decreases down to 128 characters the controller releases the CTS-line (level change) and a control code <XON> (11h) will be send to the host for further data transfer.

7.1.2 TIMING OF SERIAL INTERFACE RS232

Default time refers to the graphics:

ATTENTION: the standard configuration has 1 stop bit
ATTENTION: the standard configuration has no parity bit



Signal	Level on TTL interface	Level on V.24 (RS232) interface
"1" (Mark)	+ 5 V (TTL-level)	-3 V ... -12 V
"0" (Space)	0 V (TTL-level)	+3 V ... +12 V

The data format can be adjusted in the setup menu for printers with EEPROM.

Standard data format
115200 baud
8 data bits
non parity
1 stop bit
TX line switched on
handshake: hardware and Xon/Xoff ***printer adjusts itself automatically***

Selectable data format
1200, 2400, 4800, 9600, 19200, 38400, 57600, 115.200, 230.400, 460.800 baud
7/8 data bits
odd, even, non parity bit
1,2 stop bits
TX line switched on/off
handshake: hardware and Xon/Xoff

HARDWARE-HANDSHAKE

The sending data source (host or data controller) recognizes whether the receiving side is able to accept data or not. This is usually indicated by the status of the potential level being present on the hardware wires.
At data receipt, the printer controller monitors the handshake line CTS (clear to sen d) together with the whole input buffer control. Through the data lines, the signal is simultaneously controlled together with the performed software handshake (<XON>/<XOFF> protocol). When sending data e.g. status messages to the host, parameter 10,6 can select whether the printer considers a host hardware handshake or not. Default is: not consider.

SOFTWARE-HANDSHAKE

The control of data transfer from host to controller is not only made by hardware handshake but also per <XON>/<XOFF> protocol. The decision between both methods is made according to the options and the settings of the host software.

7.2 USB INTERFACE

The interface cable has to be connected to the socket 610-3 / 611-2, according to chapter 3.6 CONNECTIONS and on the other side directly to a USB connection (COM port of a PC).

Pin	Function
1	USB-Power
2	GND
3	USB D-
4	USB D+
5	Frame

Socket:	Molex 53261-0571	J6
Mating connector:	Molex 51021-0500	AWG 30 - 26

The USB device class is "Printer Class". When plugged in, the PC will report "USB printer support" and installs a "USB001"USB port. During installation of the printer driver, it can be easily guided onto the USB port.

USB specification	V1.1 (USB 2.0 compatible)
Device type	Vendor Specific Device or Printer Class
USB	Full Speed 12 Mbit/s

The printer conforms to USB specification V1.1 for full speed units. The printer is compatible to USB V2.0 bus sys tems. The interface is implemented as bidirectional USB printer class. The printer will be operated in self powered mode. Each printer gets an individual USB serial number.

The module contains a USB printer device with a bidirectional interface.

bInterfaceClass=7
bInterfaceSubClass=1
bInterfaceProtocol=2
according to "Device Class Definition for Printing Devices Version 1.1." The device is implemented as full-speed self-powered device with GeBE-Vendor ID.
idVendor = 0x19DB (VID, GeBE)

STANDBY:	0x18 (default value with „select“=1)
SELECTED:	„select“=1(fix), „paper empty“, and "error" will be derived from system variables.
DISABLED:	0x08, „select“=0(fix) enables the USB-host/printer driver to react with a timeout in case a printing job was sent to USB device by mistake.

8 MAINTENANCE/SERVICE

The closed printer is protected against static discharges in accordance with the EMV guidelines. Since the user may come in contact with parts that are electrically sensitive, when the printer is open (like the print head during cleaning, or the electronics during a battery exchange), the user must assure that all possible static charges are discharged through sufficient grounding of the body before touching the printer (e.g. by touching grounded objects like radiators), in order to safely avoid damage to the printer.

8.1 INSERT PAPER

Which side of the thermal paper can be printed on? On the paper roll, the printable side is the outside in almost all cases.

Insert the paper:

1

1. Open the paper tray by slightly pulling the lever upwards. The paper tray can now easily be opened.

2

2. Unwind a few cm of paper from the roll. Keep the layers wound tightly when inserting the paper roll into the paper tray. The paper outside shows towards the printer machanism.

3

3. Close the cover by applying strong pressure. You can hear it snap shut. Now the paper can be torn-off at the tear-off edge without the lid opening up and without the paper sliding through the print head.

8.2 CLEANING

After lager print jobs, depending on the paper quality and adverse environmental conditions, it may be necessary to clean:

- print head
- sensors
- platen roll

Especially, when the print is no longer properly performed.

Never use sharp opjects for cleaning. This may damage the print head.

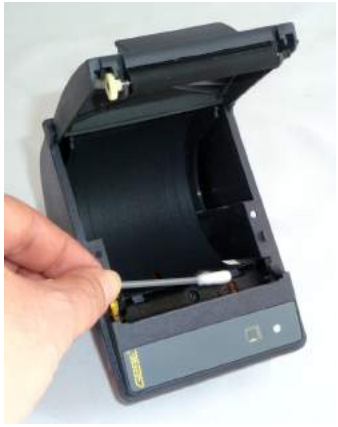
VORGANG:

1. Open cover and remove paper roll.
2. Loosen dirt particles at paper, sensor and tear bar with a small brush.
3. Forcefully blow into the paper supply compartment in order to remove the coarse dust.
4. Soak Q-tip with isopropanol (IPA) and clean the print rail. Alternatively use a head cleaning pin or cleaning card.

print rail

5. Other stubborn depris may also be removed with a Q-tip soaked with isopropanol (IPA).

platen roll



sensor

8.2.1 SUITABLE PAPER

Which thermal paper is suitable?

GeBE offers the appropriate paper roll item no. 13855, see 4.3.2 OPTIONALES ACCESSORIES AND SPARE PARTS. In general, the printer is specified for thermal papers with a width of 56.5 ± 0.5 mm, roll diameter of max. 31 mm (GPT-4352)/ max. 60 mm (GPT-4352-60) at a paper thickness of 50 - 70 µm. Labels can only be printed with GeBE-MULDE Mini type GPT-4352-60.

Other paper types may cause disturbances.

For further informationen please refer to our paper specification TI-DE-0606.

8.3 DOCUMENTS OF GPT-4352(-60)

All further documents are listed on the internet at www.gebe.net.

The software manual SoMAN-D-0792 resp. SoMAN-D-0793 (english) may be directly requested from GeBE via email (info@gebe.net).

8.4 GeBE-TECHNIK SUPPORT

For service of questions, please contact:
GeBE Elektronik und Feinwerktechnik GmbH
Beethovenstr. 15
82110 Germering
Germany
Phone: +49 (0)89/89 41 41-0
Fax: +49 (0)89/89 41 41-33
In case of questions, please find your personal contact person under www.gebe.net or send an email to info@gebe.net.

9 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 assist you:
Performing a test printout: Keep the FEED button pressed while switching-on the thermal printer (not yet implemented).

SYMPTOM	POSSIBLE CAUSE	REMEDY
Paper		
The printer seems to print, paper will be fed forward but is not blackened.	Paper: wrong side towards the print head. Only the thermosensitive side can be printed on.	Insert paper correctly: Mostly the paper outside of the roll is the thermosensitive side. You can test this with the fingernail-test: Drag the tip of a finger nail across the paper, pressing down. The frition heat causes the thermosensitive side to blacken.
	Paper is too humid.	Only use dry paper.
Power supply		
The LED only extinguishes briefly during pressure start.	The power supply is not optimal. **External power supply:** The power lead cable diameter of the external power supply is too thin. Power output of the external power supply is too low.	**External power supply:** Use short power supply lead cables in the right diameter dimensions. Test the contact restistance of all plug connections. Thermal printers often have peak currents, which creates incorrect voltage decline at little contact resistances. (No power supply will be strong enough for those cases.)
The printer only prints a few characters in one line.		
Paper feed works, but the self test doesn't.		
The printer only prints a few characters in one line. If more is entered, printing stops totally.		
Serial Interface		
After a few characters, the printout starts to be incomplete.	The printer buffer is "over-run", causing a loss of data. The print data transmitter shows no reaction to handshake.	Use or check handshake. (Software: Xon/Xoff or hardware: CTS). If necessary: slow-down transmission speed, e.g. down to 1,200 baud.
The printer prints wrong characters.	Interface problem: the transmission is faulty. (Characters of the upper area are printed).	Use correct interface level (RS232, TLL?). Transmisson cable may be too long.
	External power supply: 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.	Check and improve ground connection. Feed current through short and thick power lead lines.
USB		
The printout breaks off after a short time or is continuously repeated.	COM port settings are incorrect, or an action is enabled on the "Job end" in the Windows® driver.	Set virtual COM port according to installation instructions. Disable the "Job end" action in the Windows® driver.

10 CE CERTIFICATE

EU KONFORMITÄTSERKLÄRUNG

EU DECLARATION OF CONFORMITY

1. **Gerätetyp/Produkt** (*Apparatus model/Product)*: Drucker *(Printer)*

2. **Name und Anschrift des Herstellers:** GeBE Elektronik und Feinwerktechnik GmbH
   (Name and address of the manufacturer) Beethovenstr. 15, 82110 Germering, Germany

3. **Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.**
   (This declaration of conformity is issued under the sole responsibility of the manufacturer.)

4. **Gegenstand der Erklärung:** beginnend mit Seriennummer *(begining with serial number)*: 1710xxxx
   (Object of the declaration) **GPT-4352-31-C32-610-V.24/USB-DC10/36**
   GPT-4352-60-C32-610-V.24/USB-DC10/36

5. **Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union.** *(The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.)*

   RICHTLINIE 2014/30/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26.2.2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit.
   (DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.)

6. **Angabe der einschlägigen harmonisierten Normen**, die zugrunde gelegt wurden, einschließlich des Datums der Norm oder Angabe anderer technischer Spezifikationen, für die die Konformität erklärt wird, einschließlich des Datums der Spezifikation:*(References to the relevant harmonised standards used, including the date of the standard or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared:)*

   DIN EN 55022; VDE 0878-22:2011-12
   EN 55022:2010 Deutsche Fassung
   (German edition)
   Einrichtung der Informationstechnik *(Information technology equipment)*
   – Funkstöreigenschaften *(Radio disturbance characteristics)*
   – Grenzwerte und Messverfahren *(Limit value and measuring method)*
   CISPR 22:2008, modifiziert *(modified)*

   DIN EN 55024; VDE 0878-24:2011-09
   EN 55024:2010 Deutsche Fassung
   (German edition)
   Einrichtung der Informationstechnik *(Information technology equipment)*
   – Störfestigkeitseigenschaften *(Immunity characteristics)*
   – Grenzwerte und Messverfahren *(Limit value and measuring method)*
   (CISPR 24:2010)

7. **Nicht zutreffend** *(Not applicable)*: ---
8. **Zusatzangaben** *(Additional information)*: ---

Unterzeichnet für und im Namen von: GeBE Elektronik und Feinwerktechnik GmbH
(Signed for and on behalf of:) Beethovenstr. 15, 82110 Germering, Germany
Ort und Datum der Ausstellung: Germering, 26.10.2017
(Place and date of issue:)

Name und Funktion *(Signed for and on behalf of:)* ppa. Klaus Baldig / Entwicklungsleiter *(head of R&D)*

11 DIMENSIONS

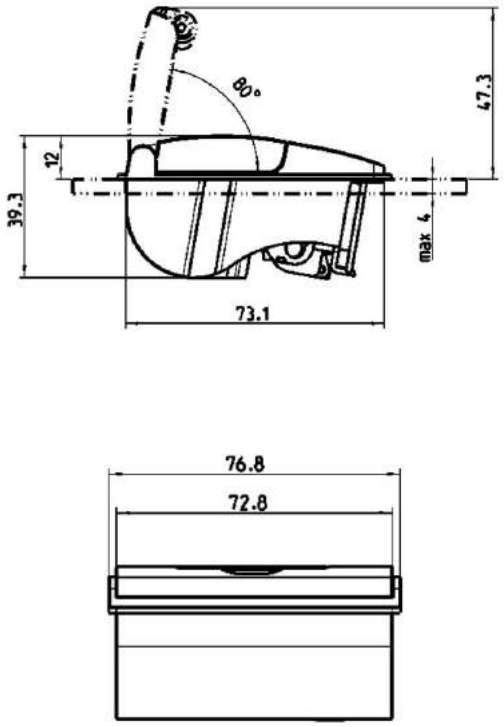


Figure 8: Dimensions GeBE-MULDE Mini GPT-4352-31 in mm

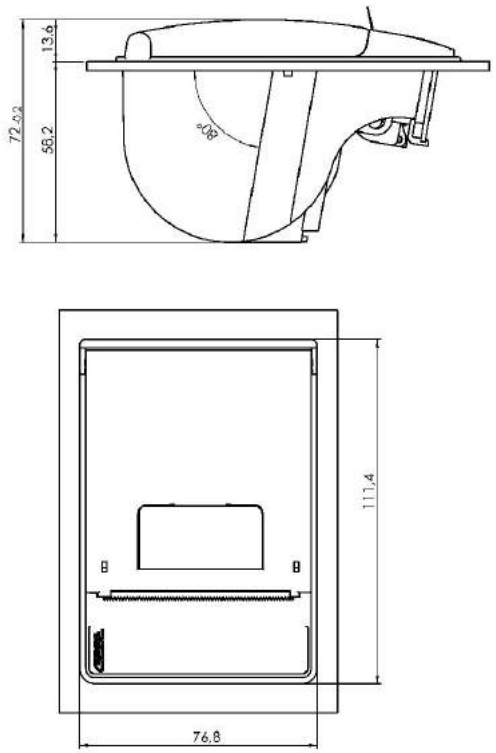


Figure 9: Dimensions GeBE-MULDE Mini GPT-4352-60 in mm

12 TECHNICAL DATA

	GPT-4352-31-C32	GPT-4352-60-C32
Insert paper	easy paper loading	
Print procedure	thermal direct print	
Resolution	8 dots/mm (203dpi), 384 dots/line	
Print Speed	max. 90 mm/s	
Paper width	56.5 ±0.5 mm (2.22 ±0.02 inch)	
Print width	48 mm (1.89 inch)	
Paper thickness	50 - 70 µm (1.97 - 2.76 mil) or GeBE thin labels	
Paper length	approx. 11 m	approx. 43 m
Paper roll diameter	max. 31 mm	max. 60 mm
Supply voltage	4.5 – 8.5 VDC or 10 – 36 VDC with DC/DC converter	
Current consumption print	adjustable via command: approx. 0.7 - 6.0 A (peak)	
Current consumption without print	approx. 60 mA	
Available interfaces	USB and RS232, optional TTL 3.3 V	
Fonts	23 fonts, extendable, UTF-able	
Barcode	EAN8, EAN13, UPCA, Code39, 2of5int, Code 128, QR Code	
MTBF*)	50 km (31 mile)	
Dimensions (WxHxD)	76.8 x 77.4 x 39.3 mm (3.02 x 3.05 x 1.55 inch)	76.8 x 111.4 x 72 mm (3.02 x 4.39 x 2.83 inch)
Weight incl. paper roll	approx. 150 g	approx. 260 g
Housing	ABS, similar to RAL 7016	PA6 with 15% glass fiber, similar to RAL 7016
Environment)**	-20°C – +60°C (-4°F – +140°F) with specified paper	
Humidity	10 – 90 % rel. humidity, without condensation	
Storage condition	-20°C – +70°C (-4°F – +158°F) at 10 – 90 % rel. humidity, without condensation	

*) Life cycle according to mechanism testing conditions of the manufacturer with specified paper only. Please inquire. The life cycle of the print head is an averaged expectable performance and no guaranteed data. Under optimum conditions, the above listed data can be achieved using specified paper according to our documentation TI-606.
**) In case the print head reaches the maximum ambient temperature, the printer will interrupt operation until cooling down and sends an error message.