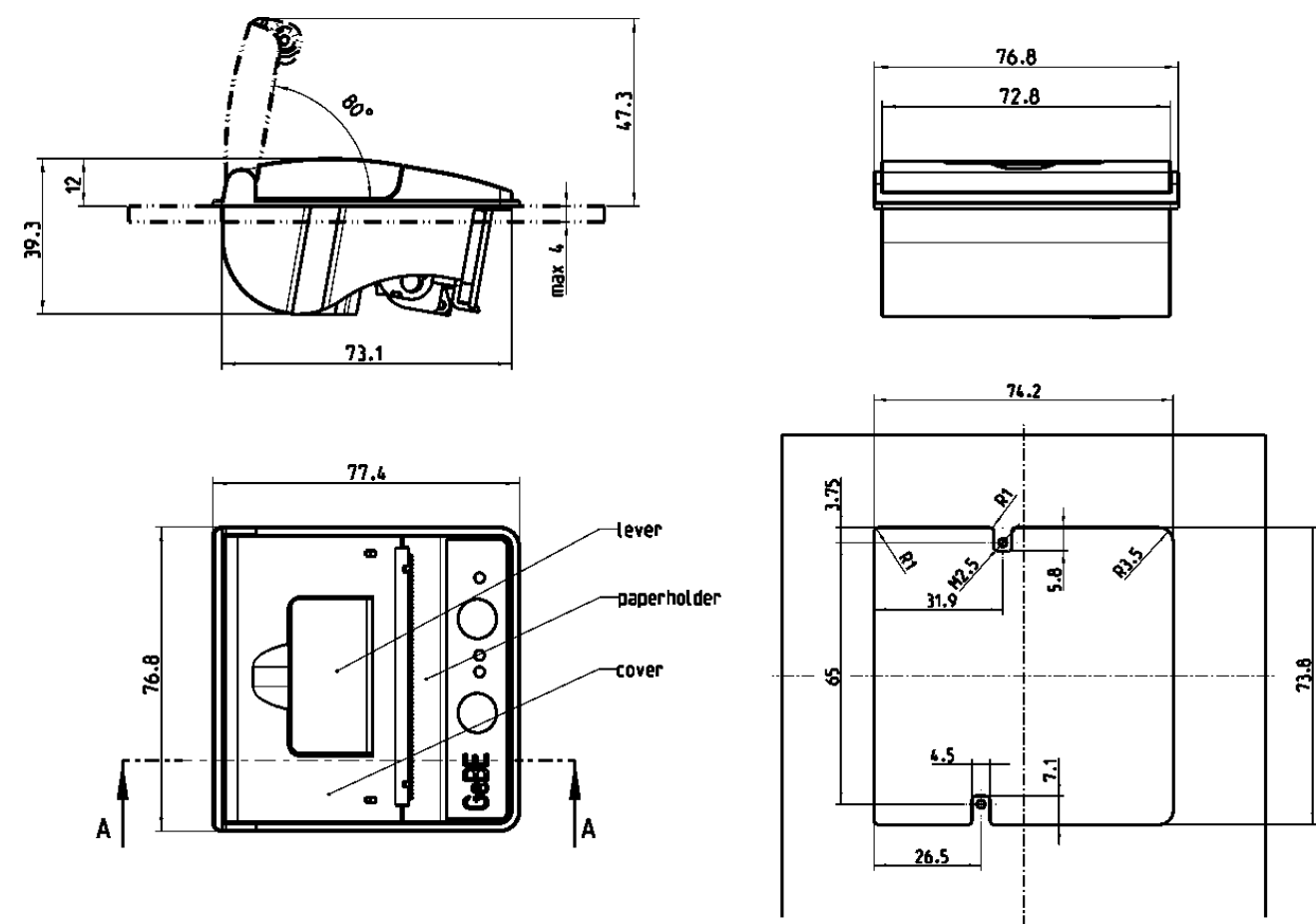


Housing Dimesions:



	GPT-4352-V.24	GPT-4352-TTI
Print technique	Fixed thermal print line	
Paper / printing width	57.5 ± 0.5 mm / 48 mm	
Resolution	8 dots / mm , 384 dots / line	
Print Speed	up to 50 mm/s	
Voltage supply	(3.0) 3.5 - 7.2 V	4.5 - 7.2 V
	Optional: charging circuit for one Li-Ion cell (3.6V) ,or for 3,4 , or 5 NiMH cells	
Current max. sleep mode	app. 0 µA or 150µA /infrared	
Current max. idle:	app. 3 mA depending on components	
Current max. printing app	Adjustable to max. 0.7 A - 6 A at 5 V	
Interfaces	RS232 up to 57.6 kbps Optional: Infrared on board or with external adapter	TTI through SPI: Centronics, USB (in preparation), throughTTL: RS422/485, TTY
Interfaces	Baud rates:1,200; 2,400; 4,800; ,600; 19,200; 38,400; 57,600 Mode: adjustable: 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 graphic commands); PC-compatible; Windows driver	
Characters, cpl	24, 32, 42, and 54	
Bar Code	Code39, 2 out of 5 int, EAN13, EAN 8	
Environment	0 °C to 50 °C ( -10 °C to +60 °C with GeBE HQpaper) 10% to 80% rel. humidity, no moisture condensation	
MTBF	50 km printed paper	
Dimensions in mm	76.8 mm x 77.4 mm x 39.3 mm / installation depth: 27 mm	
Roll Diameter	max. 31 mm	
Weight	150 g incl. paper roll	
Housing Material	ABS	
Norms	CE : see conformity declaration	

GeBE Elektronik und Feinwerktechnik GmbH  
Beethovenstr 15 • D-82110 Germering near Munich • Germany  
Phone ++49 (089) 89 41 41-0 • Fax: ++49 (089) 84 021 68 • Email: sales.ef@gebe.net

Protocol Printer

GPT-4352



Operating Manual

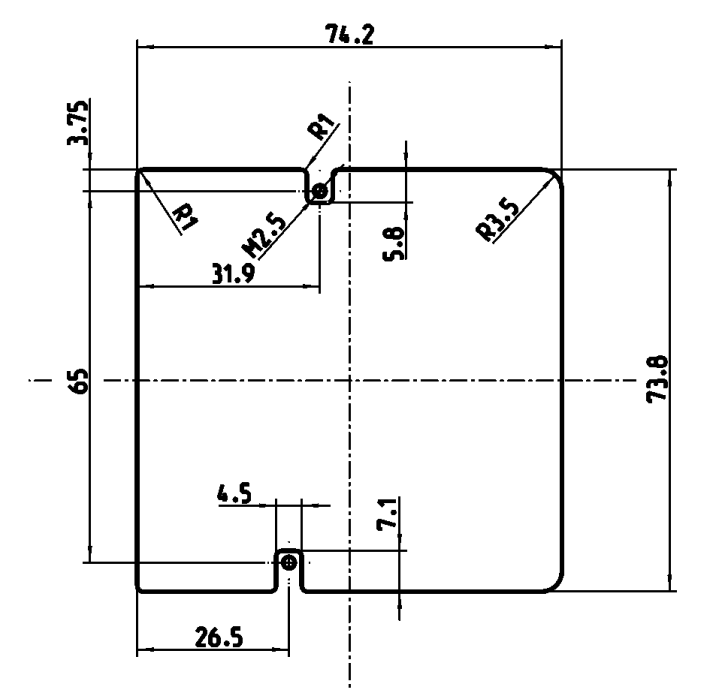
- Installation, Safety Instructions
- Connecting the Printer
- Operation
- Error Detection
- Product List and Accessories
- Technical Data

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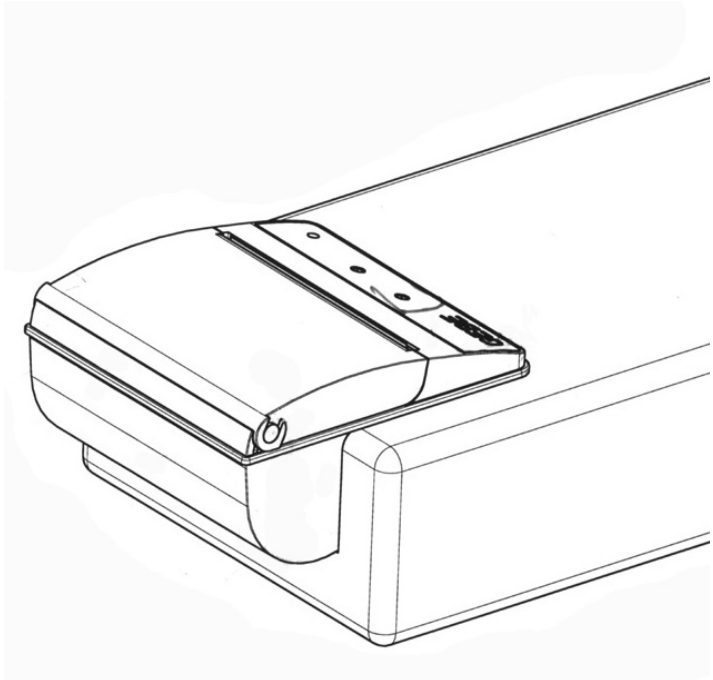
Elektronik und  
Feinwerktechnik GmbH  
Module und Geräte zum Eingeben,  
Auswerten, Anzeigen und Ausdrucken ana-  
loger und digitaler Daten.

GeBE Document No.:  
**SMAN-E-413**

**Installation in a Front Panel**  
The housing of the GPT-4352 printer can be installed with two screws in a cut-out that is easy to make. The contact surface is flat. The edge of the housing juts out, covering the space between panel and housing. The housing is pushed from the outside into the cut-out, and then easily screwed to two fish-plates in the cut-out..  
Two holes of 2.8 mm diameter allow the use of M 2.5 screws.



**Partial installation in a plastic casing**  
As shown in the picture, the printer housing can also be installed at the edge of the device casing. This installation variant has the part of the printer housing that contains the paper roll extending beyond the unit casing. This saves room in the device casing. Since the shapes of casings will vary, the design provides no additional cover for installation underneath the bearing edge. Therefore, a clean cut-out on the side of the casing needs to be made in accordance with the unit design. The outer wall of the paper storage can be used up to the slanting slot for the fish-plate, allowing the housing to project about 17 mm, or including the edge, approx. 19 mm.



**Safety Information:**

**Read operating manual carefully before operation.**  
**During installation: Always disconnect the power.**

Usage in accordance with the operation manual is required for product warranty.  
If the user attempts to repair the product, all factory warranties will be null and void.  
For technical questions please contact the GeBE Technical Support.

Errors and changes reserved.  
The technical data given are non-committal information and do not represent any assurance of certain features.  
Our terms of payment and delivery apply. All rights reserved.

Article No.	Controller for ELM-205-LV	Interface					Memory	Batt.	Features						
		RS-232	TTL	Infrared (Connector for IR Adapter)	Infrared on Board	SPI (for Centronics Adapter)	2 kByte EEPROM	16 kByte EEPROM	Li-Ion Charging Circuit	NiMH Charging Circuit	Power Down	Rewinder	CPL: 24, 42, 54, 32	Color: Anthracite RAL7016	Color: Silk Grey RAL7044
11292	GPT-4352-LV-82-24-V.24-sw	X									X		X	X	
11335	GPT-4352-LV-82-24-V.24-EVAL-sw	X					X			X	X	X	X	X	
11382	GPT-4352-LV-82-24-TTI-EVAL-sw		X			X	X			X	X	X	X	X	
11336	GPT-4352-LV-82-24-IR-EVAL-sw			X			X			X	X	X	X	X	

- Options:**
- 16 kByte EEPROM for LOGO download
  - 32 kByte EEPROM for LOGO download
  - 64 kByte EEPROM for LOGO download

- Accessories:**
- Interface adapters:**
- Centronics : GCT-4382-10
  - Infrared : GCT-4382-20
- Mounting Frames**
- 3HU front für 19" Racks ,18TE width : GMS-4352-3HE-18TE
  - 96x96 front for DIN housings : GMS-4352-96x96

- Paper:**  
GeBE is offering standard paper rolls with outside coating, 60 g/sq m
- Thermal paper standard; 5 years : GPR-T01-057-031-007-060A ex stock
  - Thermal paper standard; 15 years : GPR-T11-057-031-007-060A on request
  - Thermal paper standard; 99 years : GPR-T21-057-031-007-060A on request
  - Thermal paper; two-ply : GPR-T02-057-031-007-100A on request
  - Thermal paper; adhesive : GPR-Tx1-057-031-007-110A on request
  - Thermal paper; low sensibility : GPR-Tx1-057-031-007-060A on request

- Power supply and charging devices:**
- desk power supply (7V) : GNG-7V-3A-T
  - plug-in power supply for 4 Ni-MH cells : GNG-6.0V-0,5A-U

- Batteries:**
- 4 cells Ni-MH 1200 mAh : GNA-4,8-1,2-Ni-MH
  - 1 cells Li-Ion 800 mAh : GNA-3,6-0,8-Li-Ion

- Cables:**
- power supply; 7 wires; 250 mm : GKA-410
  - RS232 1:1 SuB-D 9 pin; 1000 mm : GKA-406
  - TTI, 5 wires; 500 mm : GKA-414
  - charging supply; 250 mm : GKA-409
  - SPI-Bus (Centronics); 250 mm : GKA-407

Not every error is a printer error.  
You will save time and money by clearing simple errors yourself.  
The following tips are supposed to help you with that:  
Following hints might help you:

Symptom	Cause	Remedy
The print seems to print, but there is no blackening	Paper inserted wrong	Insert paper correctly
At the start of printing, the LED goes out shortly	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 dots in one line.		
The paper feed works, but the self test does not.		
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" (256 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-400, "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.
	Host sends a break signal after print job (printing only "?")	Turn off "framing error ". See MAN-D-400 "Interface Settings"
My Centronics printer works with a PC, but not with my machine.	Printer is electronically not compatible with host.	Measure level of the line that is reporting the error. GeBE can adjust this.

During installation:

Always disconnect the power.



- 1

**Connecting the Power Supply:**  
The printer can be supplied with a fixed voltage from a power supply or from a battery. Battery or power supply are plugged in at the same connector. Through the voltage supply connection, the printer can be supplied with voltages between 3.5 V and 7.2 V. The supply of the logic chip is produced on the board. The power supply cable GKA-406, included in all sets, is connected to connector J4. ( 3 red wires for + 3.5 -7.2 VDC , 3 black grounding cables, and 1 white cable for a NTC 6.8 KOhm of a NI-MH battery) . The white wire has no function with Li-Ion batteries or power supply . We recommend to keep the length of the line as short as possible. A line that is too long can cause bad print quality, or even printer failure.  
**Attention:** Avoid confusing the poles of the connections, because it would cause immediate damage to the printer.. Carefully check the connections of the power supply after the wiring is done, before you turn on the power.
- 2

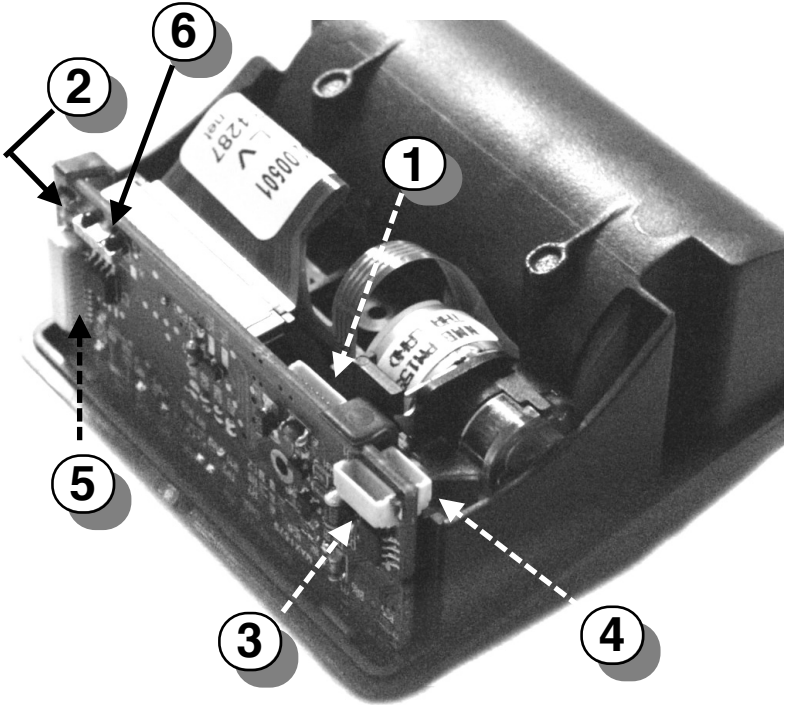
**Power Down:** As a standard, the printer is supplied with the power down mode turned off. The power down mode can be activated by removing resistor R37 or jumper J3 (PWDN) .  
**Attention :** In the power down mode, the printer will sleep even when the power has been applied.
- 3

**Connecting the Battery Charger:**  
EVAL printers have a battery charging circuit for one Li-Ion battery (3.6 V), or for 3, 4, or 5 Ni-MH cells. For the charging, you only need an uncontrolled plug-in power supply GNG-6V-0,5A-U. The charger is connected to the connector J1 and through the cable GKA-409. The maximum charging current depends on the battery voltage (app. 0.7-0.3 A). The charging time for a 1200 mA/h battery will be app. 4 - 5 hours. During the charging process, the operation LED will display the charging status. Fast charging and trickle charging will be displayed.  
**ATTENTION !**  
Never use a fixed-voltage power supply for charging the batteries. The charging circuit is a "simple - switch" control, meaning that the current limiting is not done in the charging control of the printer, but in the plug-in power supply. Use the suitable GeBE power supply or call us for information.
- 4

**Serial Interface:**  
The interface cable GKA-410 that is included in all sets is connected to the connector J2. With RS232 versions, this cable can be connected directly to a PC. A cable with 5 single wires and one open end is available as an option.
- 5

**Parallel Interface:**  
The printer type GPT-4352-LV-82-TTL-EVAL can be connected to the Centronics interface adapter GCT-4382-10 through the cable GKA-407.
- 6

**Infrared Interface**  
The printer type GPT-4352-LV-82-IR-EVAL can be connected to the infrared interface adapter GCT-4382-20 through the cable GKA-4xx. Optionally, the IR-transceiver can also be installed directly on the board.





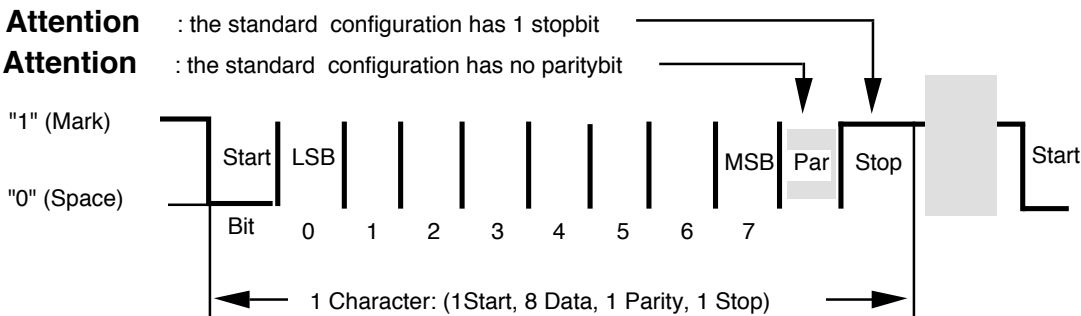
Serial Interface RS232

Standard Setting: 9600, n, 8,1

Connector: JST-SH at the printer.

GKA-406: SuB-D 9 pin socket with einer 1:1 assignment to the PC, no 0-modem circuit.

Pin	Signal	Input/Output	Comment	Assignment GKA-406 D-SUB 9pin
1	GND signal			5
2	TXD	I	Print data	3
3	RXD	O	Error messages and Xon/Xoff messages	2
4	RTS	I	Wake-up / Handshake input of the controller (standard:without function)	7
Auswahl-über BR5	+3,0V digital	O	Supply for external adapter	
	+3,0 -7,2V Power	O	Supply for external adapter	
5	CTS	O	When the controller can receive data, the level will be logic 0	8



Status Messages of the Printer:

Messages	Serial Interface	Busy	Fault	Select	P.End	Status LED on /off ; flashing frequency y := 0 y := 1	Comments
<b>Faultless operation:</b>			1	1	0	LED on 1:31;0.5 Hz	
Reset	"R"	0	0	0			Message: < XON R X (or error) >
Watchdog-reset	"R"	0	0	0			After program crashed
End of error	"X"	1	1	0	LED on 1:31;0.5 Hz		Also after reset. When an error is cleared, the corresponding small letter will be sent, followed by an "X".
Buffer empty	X ON						Buffer emptied by 33 characters <DC1> = \$11
Buffer full	X OFF	1					Buffer has room for 33 more char. <DC3> = \$13
Synchronous feedback	alle Zeichen						Processing synchronization commands; each character sent
<b>Errors:</b>	OK		1	1	0		
Paper end	"P" "p"	1	0	1	1:1 ;0.5 Hz 1:1 ;0.5 Hz		
Temp. low	"K" "k"	0	1	0	1:1 ;0.5 Hz 1:1 ;0.5 Hz		Temperatur e of print head too low
Temp. high	"T" "t"	0	1	0	1:1 ;0.5 Hz 1:1 ;0.5 Hz		Temperatur e of print head too high
Vp too low	"U" "u"	0	1	0	1:1 ;0.5 Hz 1:1 ;0.5 Hz		
Vp too high	"M" "m"	0	1	0	1:1 ;0.5 Hz 1:1 ;0.5 Hz		
EE-OK	"E0"						EEPROM command completed error-free
EE-invalid	"E1"						Invalid text file no.
EE-password	"E2"						Wrong passwort for EEProm access
EE-overflow	"E3"						Text file memory overflow
EE-time-out	"E4"						EEPROM byte programming time exceeded.
<b>Charge battery:</b>							
Fast charging	"I" "L"				1:1 ; 0.1 Hz LED on	L := charging start I := charging end	
Trickle charging	"I" "F"				1:7 ; 0.1 Hz	F := charging start f := charging end	

Which thermal paper is suitable?

The printer is specified for a paper width of 57.5 ± 0.5 mm, with a weight of 60 g/sq m. GeBE is offering a suitable paper roll as part of the standard program ( GPR-T01-057-031-007-060A). Other papers may cause trouble. Thermal papers that are resistant against water, grease, or alcohol are available for special applications. We will gladly assist you in your selection of the suitable thermal paper.

Which side of the thermal paper can be printed on ?

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

How do I Insert the Paper ?

- Use paper rolls with the paper coated on the outside, 57 mm ± 0.5mm with a winding diameter of 31 mm.
1. Unwind about 10 cm (4") of paper from the roll. Keep the layers wound tightly.
  2. Open the printer cover by slightly pressing the lever in the cover up. The print roll gets lifted from the mechanism together with the cover. The cover can now be opened easily.
  3. Insert the paper roll in the paper *supply*, so the outside shows toward the printer mechanism. Only the outside is printable.
  4. Close the cover by applying strong pressure. You will be able to hear it snap shut. Now, you can rip off the paper at the tear bar without the cover opening again and the paper sliding back into the printer.

The Control Elements of the Printer:

- 1 Paper feed button:** This button wakes up the printer from the sleep mode and feeds the paper.  
**Self test:** Before a connection between printer and host (PC) is established, the function of the printer can be tested by starting a self test. Keep the paper feed button pressed while turning on the power supply. When the feed button is released, the self test will begin. The test will only check the functions of the inner circuit, but not the interface.
- 2 Status LED:** This LED shows the status of the printer during operation, and - if it is equipped with a charging circuit and a battery - the charging status of the battery during the charging process. See "Messages of the Printer".

