THERMAL PRINTER

TPR

User Manual

TPR_08.10_IT

GENERAL INDEX

PRECAUTIONS

- Read and keep the following instructions.
- Follow all warnings and instructions marked on the printer.
- Before cleaning the printer, unplug the power cord.
- To clean the printer, use a damp cloth. Do not use liquid or aerosol products.
- Do not use the printer near water.
- Make sure that the frame, the cover and the frame of the printer, which are made of polycarbonate, do not come out in contact:

• with ammonia •	• hydrocarbons
methanol • acetone	• dichloromethane
• dishwasher	• perchlorethylene
detergents • benzene •	• ethyl ether
laundry detergents	• tricolorethylene
	• toluodo

Do not place the printer on an unstable surface. It could fall and be seriously damaged.
Use the type of power source indicated on the printer label. If in doubt, contact your dealer.

Position the printer so that the cables connected to it are not damaged.
Make sure that the maximum current absorbed by the printer does not exceed the maximum current allowed by the type of cable used for the power supply.
Do not put objects inside the printer as they can either short-circuit or damage parts that could affect the operation of the printer.

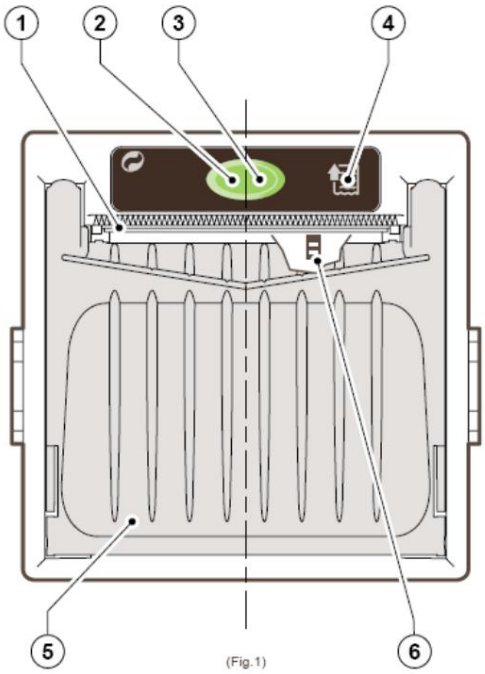
Do not spill liquids on the printer.
Do not intervene on the printer yourself, except for the routine maintenance operations, expressly described in the user manual.

Disconnect the printer from the power line and have it repaired by a qualified technician under the following conditions:

A. The power connector is damaged.
B. Liquid has entered the printer;
C. The printer has been exposed to rain or water;
D. The printer does not operate normally despite having followed the instructions in the user manual.
E. The printer was dropped and the container was damaged.
F. The printer exhibits a noticeable decline in performance.
G. The printer does not work.

1. PARTS OF THE PRINTER

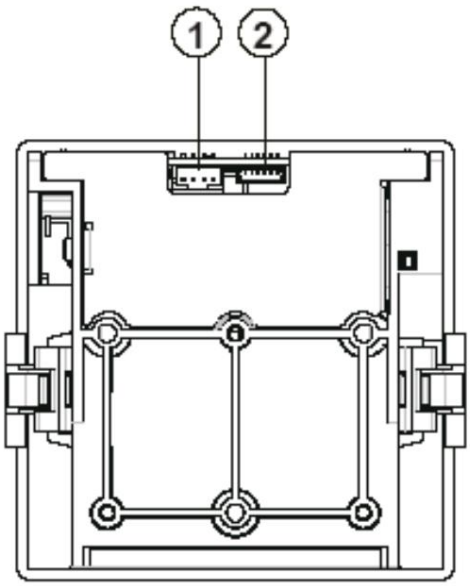
A) External front view



(Fig.1)

1- Block paper exit
2- Status LED
3-OPEN key to open the paper roll compartment
4- FEED key
5- Paper roll compartment
6- Paper end sensor

B) External rear view



1- Power connector
2- Serial interface connector

2. GENERAL FEATURES

The printer is powered at 5 Vdc and is available with RS232 / TTL serial interface and paper presence sensor.
It is equipped with a 203 dpi thermal printing mechanism, which uses 57.5 mm wide roll paper. It can print 24, 40
0 42 characters per line selectable in setup or with software command; it is not possible to manage label printing.

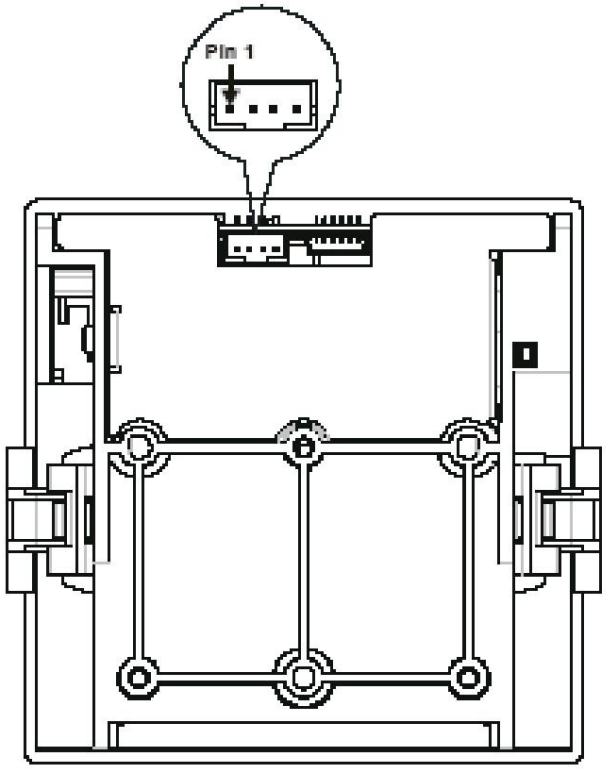
- FEED key. When pressed, it allows the manual advancement of the paper. During the ignition phase, if you hold it when the FEED key is pressed, the printer enters the setup procedure.
- OPEN key. When the OPEN button is operated, the paper compartment door lowers to allow access to the paper roll.
- The green STATUS led displays the operating status of the printer; the check is performed "on line". In table 1 shows the operating status in relation to the type of LED lighting.

Tab.1

STATUS OF LED	**DESCRIPTION**
Always off	Printer turned off
Always on	Printer on - no failure
Slow flashing	Out of paper message
Fast flashing	Resettable error (Incorrect power supply head , voltage overtemperature)

3. PRINTER CONNECTIONS

(Fig.1.1)



3.1 Power supply

The printer is equipped with a 4-pole male JST connector (90 °) for power supply. The signals on the pins of the power connector are as follows:

Connector Type: Male: S4B-PH-KS 90 ° degree (JST)
Female: PHR-4 (JST) or equivalent

TAB.1.1

PIN	GND	**NOTE**
1 2	**SIGNAL**	
3 4	GND	
	+ VP: from 3.5 Vdc to 8 Vdc	(head power supply)
	+ VC: from 3.5 Vdc to 8 Vdc	(logic board power supply)

ATTENTION

Respect the polarity of the power supply

3.2 Self-diagnosis

The printer signals the operating condition in the configuration printout (see fig.1.4).
The following indications are shown: • for
the *HEAD TEMPERATURE* item the value of the head temperature is shown. • for the *HEAD VOLTAGE* item , the value of the head voltage is shown.

*** PRINTER SETUP ***

HEAD TEMPERATURE [° C] = 32.5
HEAD VOLTAGE [V] = 5.0

Baud Rate: **38400 bps**
Data length: **8 bits /**
chr Parity: **None**
Handshaking: **Xon /**
Xoff Autofeed: **CR**
disabled Columns: **24 col.**
Print Mode: **Normal**
Chars Mode: **Normal**
Alignment: **Disabled**
Print Density: **0**

[PUSH] ENTER SET-UP
[FASTPUSH] EXIT

3.3 Printer configuration

The printer allows the configuration of the following parameters:

- **Baud Rate:** 38400, 19200, 9600, 4800, 2400, 1200, 600.
- **Data length:** 7, 8 bits / car.
- **Parity:** None, even or odd.
- **Flow Control:** XON / XOFF or Hardware.
- **Automatic feed:** CR disabled or CR enabled.
- **Columns:** 24 col , 40 col. and 42 col.
- **Print mode:** Normal or Reverse.
- **Character mode: Normal** , Double width (2 x Width), Double height (2 x Height), Expanded.
- **Alignment:** Disabled or Enabled.
- **Print density:** -2, -1, 0, +1, +2.

General notes: The settings made are saved on non-volatile memory and are loaded automatically at start-up.

During the start-up phase, if the FEED key is held down, the printer enters the self-test procedure and prints the setup report. Until a key is pressed or characters are received from the communication port, the printer waits in Hexadecimal dump mode (see par. 3.4).

By keeping the FEED key pressed, the printer enters the parameter configuration.
Each time the FEED key is pressed quickly, the parameter is changed and the current value is printed. Once the desired value has been obtained, keeping the FEED key pressed for at least one second, you move on to the next parameter. The printing of the printer setup report signals the end of the setting.

3.3.1 CONFIGURATIONS FOR CONNECTION WITH DFW-DFWK-CPW03-TRS03-3590XX / 0X

*** PRINTER SETUP ***

HEAD TEMP [° C] = 27.5
HEAD VOLT [V] = 4.6

Baud Rate: 9600 bps
Data Length: 8 Bits / chr
Parity: None
Hanshaking: RTS / CTS
Autofeed: CR Enabled
Columns: 24 col.
Print Mode: Reverse
Chars Mode: **Normal**
Alignment: Disabled
Print Dens. + 1

3.4 Hexadecimal dump

This function is used to display the characters received from the communication port. Every 8 characters received from the communication port, the printer prints both the received hexadecimal code and the corresponding ASCII code. Below is an example of printing the Hexadecimal Dump

```
48  65  78  61  64  65  63  69      Hexadeci
6D  61  6C  20  64  75  6D  70      mal dump
20  66  75  6E  63  74  69  6F       functio
6E  20  30  31  32  33  34  35      n 012345
36  37  38  39  61  62  63  64      6789abcd
65  66  67  68  69  6A  6B  6C      efghijkl
6D  6E  6F  70  71  72  73  74      mnopqrst
75  76  77  78  79  7A              uvwxyz
```

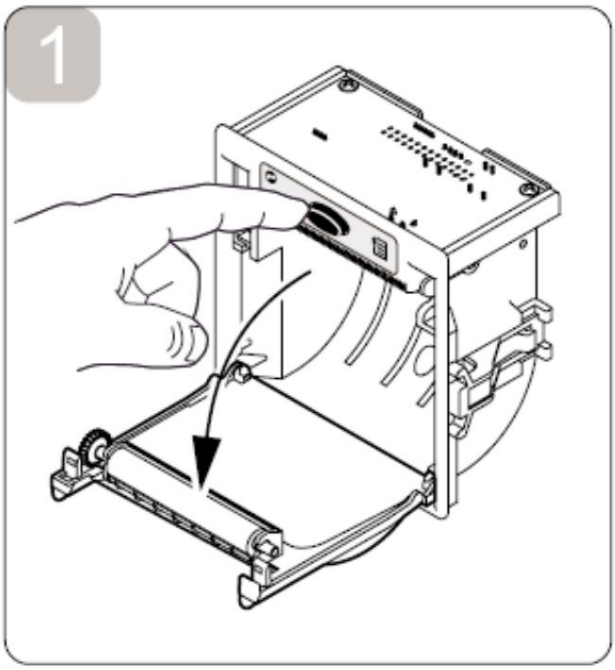
3.5 Maintenance

• PAPER ROLL CHANGE

To change the paper roll, proceed as follows:

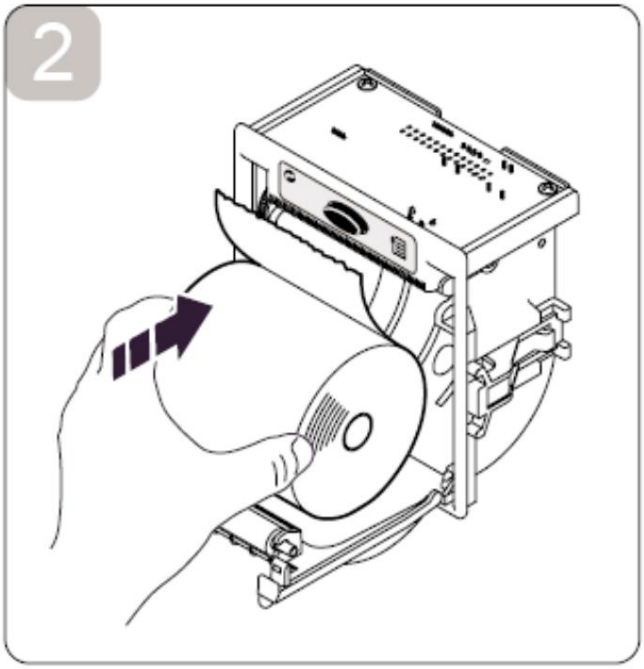
1) Open the printer cover by pressing the OPEN key as shown in fig. 1.5;

FIG.1.5



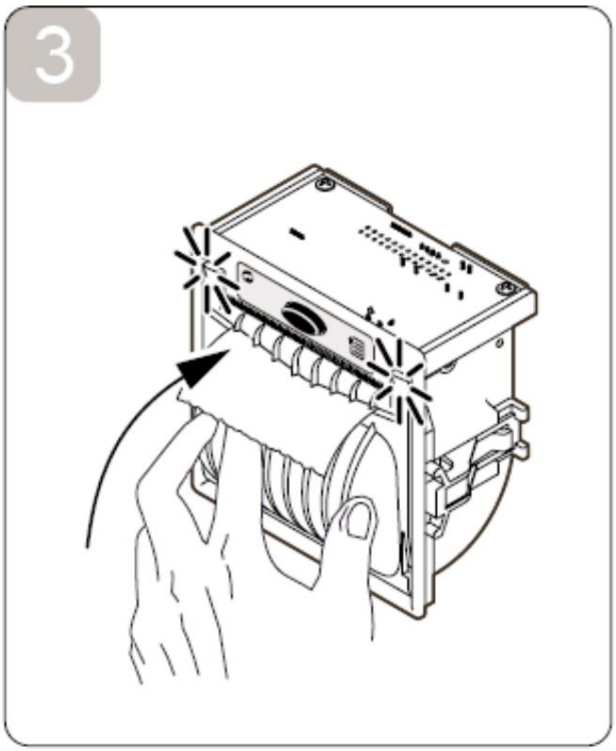
2) Place the paper roll inside the compartment, respecting the direction of rotation indicated in fig. 1.6;

FIG. 1.6



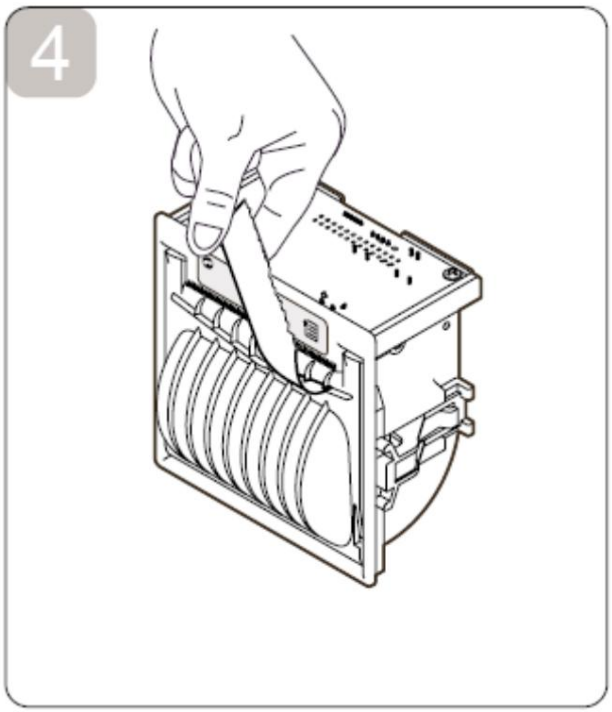
3) Pull the paper until it comes out of the compartment as shown in fig. 1.7 and close the door; the door locks.

FIG. 1.7



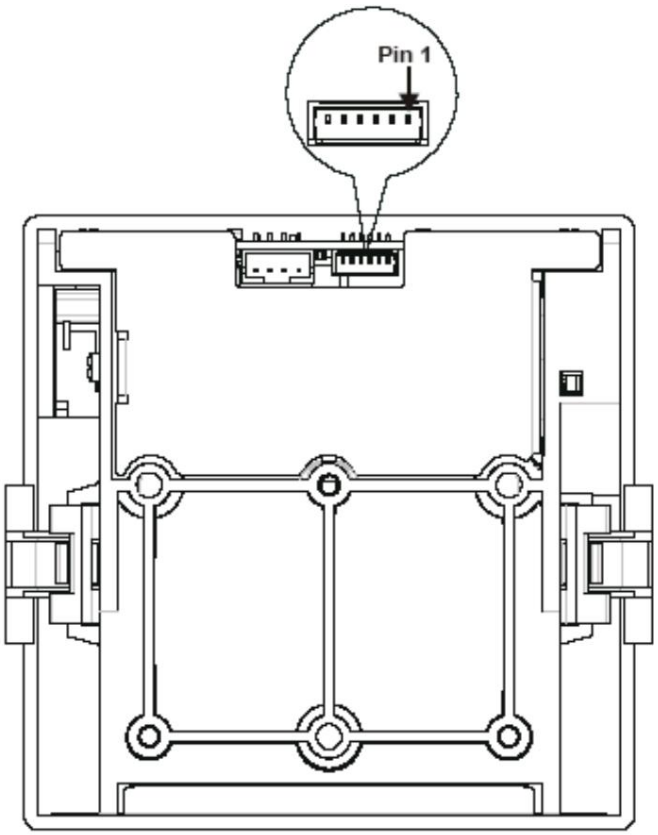
4) Tear off the excess paper using the spaghetti edge (see Fig. 1.8).

FIG. 1.8



5) The printer is ready for printing.

3.6 Interfaces



3.6.1 RS232 SERIAL

The printer has an RS232 interface and has a 6 pin male (90 °) 53261 series molex connector. The signals present on the connector pins are the following:

Connector type: Male: Molex series 53261 6 pins
Female: Molex series 51021 6 pin (no. 51021-0600)

SIGNAL PIN		IN / OUT	DESCRIPTION
1	DTR	OUT	Data setup ready
2	TX	OUT	Data transmission
3	RX	IN	Data reception
4	GND		Ground signal
5	FEED	IN	FEED signal (Active at low level)
6	LED	OUT	External LED signal

3.6.2 CONNECTION OF PRINTER TO INDICATOR

Below is the connection between various types of PRINTERS and the indicator:

SERIAL PORTS:

STANDARD CABLE TPR	DFW06	3590M3
GND (Black)	GND	15 GND
RTS (Yellow)	CTS	16 RXD
RX (Gray)	TXD	17 TXD

POWER SUPPLY:

STANDARD CABLE TPR	COLOR
+ 6 Vdc	Red
GND	Black

4. PRINTER FUNCTIONS •

CONTROL CHARACTERS

The following table contains the list of commands, sorted according to their hexadecimal value.

LEGEND:

Symbol Function

$ indicates the representation of the command's hexadecimal value (eg $ 40 corresponds to HEX 40).

{} indicates an unrepresentable ASCII character.

n, m, t, x, **y** are additional and / or optional parameters that can take on different values depending on the case.

The following table lists all the commands for managing printer functions. The commands can be transmitted to the printer at any time, but they will be executed only when the previously transmitted characters are printed or the previous commands executed. Therefore there are no priority commands, but all are executed when the circular buffer makes them available.

COMMANDS TABLE

Com. HEX Description	Com. ASCII	
$ 00 Small print		
$ 01 Double-width writing		
$ 02 Double height writing		
$ 03 Expanded type writing		
$ 04 Reset small print		
$ 0A Run a line feed		
(n) $ 0B Execute (n) line feed		
$ 0D Print the line buffer. $ OF Sets the CRLF mode		
$ 11 Graphic mode		
$ 1B $ 23 ESC # n Send	printer ID $ 1B $ 40 ESC @ Reset	
printer $ 1B $ 41 ESC A Advance [n] dot line		
$ 1B $ 49 ESC I Select 24 columns		
(dd) $ 1B $ 4D (dd) ESC M Writes the value (dd) in the print mode $ 1B $ 4E ESC		
N $ 1B $ 51 ESC Q n $ 1B $ 52 ESC R n $ 1B $ 56 ESC V n $ 1B $ 69 ESC i n $ 1B $		Set the printout in normal mode (n) ESC
6D ESC m $ 1B $ 71 ESC q n $ 1B $ 72 ESC r n $ 1B $ 76 ESC v $ 1B SFA n1 n2		Turn on underlining
		Set the print in reverse mode
		Graphic line printing at 200 dpi
		Select the number of dot spaces
		Bar code printing management
		Select 42 columns
		Select 40 columns
		Serial transmission of the print mode
		Turn off underlining
		Transmits the next character in the evening
		Transmits the status of the printer
$ 1D $ 24 n GS $ n Set	absolute displacement within the graphic line $ 1D $ 49 (n)	
	GS I n Send printer ID $ 1D $ 55 GS U Reset	
printer parameters to default		
$ 1D $ 57 (n)	GS W n Print n Bytes of a graphic line at 200 dpi	

A more detailed description of each command follows the table.

$ 00

[First name]	**Small print**
[Format]	ASCII Hex00 Decimal 0
[Description]	Printing is done in small size (normal)
[Note]	Commands 00H to 09H do not clear the print buffer Commands that change the direction of characters are active only at the beginning of the line
[Default]	Setting of the “Char mode” parameter in the set-up.
[Reference]	**$ 01, $ 02, $ 03, $ 04, $ 1B $ 4D**

$ 01

[First name]	**Double-width writing**
[Format]	ASCII - Hex 01 Decimal 1
[Description]	Printing is done in double width format
[Note]	Commands 00H to 09H do not clear the print buffer Commands that change the direction of characters are active only at the beginning of the line
[Default]	Setting of the “Char mode” parameter in the set-up.
[Reference]	**$ 00, $ 02, $ 03, $ 04, $ 1B $ 4D**

$ 02

[First name]	**Double-height writing**
[Format]	ASCII - Hex 02 Decimal 2
[Description]	Printing is done in double height format
[Note]	Commands 00H to 09H do not clear the print buffer Commands that change the direction of characters are active only at the beginning of the line
[Default]	Setting of the “Char mode” parameter in the set-up.
[Reference]	**$ 00, $ 01, $ 03, $ 04, $ 1B $ 4D**

$ 03

[First name]	**Expanded type writing**
[Format]	ASCII - Hex 03 Decimal 3
[Description]	Character printing is performed in expanded mode
[Note]	Commands 00H to 09H do not clear the print buffer The commands that change the font size are active only at the beginning of the line
[Default]	Setting of the “Char mode” parameter in the set-up.
[Reference]	**$ 00, $ 01, $ 02, $ 04, $ 1B $ 4D**

$ 04

[First name] **Reset small print**

[Format] ASCII -
Hex 04
Decimal 4

[Description] Go back to writing in small print

[Note] Commands 00H to 09H do not clear the print buffer
The commands that change the font size are active only at the beginning of the line

[Default] Setting of the “Char mode” parameter in the set-up.

[Reference] **$ 00, $ 01, $ 02, $ 03, $ 1B $ 4D**

$ 0A

[First name] **Run a line feed**

[Format] ASCII -
Hex 0A
Decimal 10

[Description] Performs a line feed equivalent to a print line

[Note] This command causes the content to be printed

[Reference] **$ 0B**

n $ 0B

[First name] **Run (n) line feed**

[Format] ASCII -
Hex 0B
Decimal 11

[Description] It performs as many line feeds as are specified in number n

[Note] The number n must be ASCII and between 0 and 9 (when n = 0 the command is null)
This command clears the line buffer

[Reference] **$ 0A**

[Example] If you want fast forwarding of 5 line feeds:
$ 35 $ 0B (i.e. 5 and the $ 0B command)

$ 0D

[First name] **Print the line buffer**

[Format] ASCII -
Hex 0D
Decimal 13

[Description] This command causes the line buffer to be printed

[Note] If the buffer is empty, the command is null
If the CRLF option is set, this command is ignored and printing occurs only through the $ 0A command

[Reference] **$ 0F**

$ 0F

[First name] **Set the CRLF mode**

[Format] ASCII -
Hex 0F
Decimal 15

[Description] It inhibits the $ 0D command, keeping only the $ 0A command active for printing

[Note] To disable this option, reset the printer
This command clears the line buffer
At start-up, the default value is in the Option Register

[Default] Setting in the option register using the front keys

[Reference] **$ 0D**

$ 11

[First name] **Graphic way**

[Format] ASCII -
Hex 11
Decimal 17

[Description] Enable graphics mode:
one row in 24 column mode corresponds to 144 divided horizontal points
in 24 blocks of 6 points; a row in 40-column mode equals 240
horizontal points divided into 40 blocks of 6 points.

[Note] To obtain a graphic print, enter the command $ 11 at the beginning of each
line. The format of the byte in the graphic configuration is:

X	R.	P6	P5	P4	P3	P2	P1
D7	D6	D5	D4	D3	D2	D1	D0

where is it:

X is not used (0 is recommended);
R must be fixed at level 1;
P1, .P6 are the data of the graphic points (1 prints, 0 does not print).
Bit P6 of the transmitted dot string is printed on the left and the
others to follow (P5, P4, P3, P2, P1) to the right as shown:

1st byte ÿ 2nd byte ÿ **3rd byte** ÿ
P6 P5 P4 P3 P2 P1P6 P5 P4 P3 P2 P1P6 P5 P4 P3 P2 P1

[Example] To print a line of dots, it is necessary to transmit:
$ 11, nx $ 7F (where n is the number of characters per line), $ 0D.
To print a blank line, it is necessary to transmit:
$ 11, $ 40, $ 0D.

$ 1B $ 23 n

[First name] **Broadcast Printer ID.**

[Format] ASCII ESC #n
Hex 1B 23n
Decimal 27 73n

[Interval] 1 ÿn ÿ3, 49 ÿn ÿ51

[Description] Transmits the printer ID specified by n as follows:

n	ID stampante	Specifica
1, 49	Identificazione mod. stampante	$1B
2, 50	Non utilizzato	Fisso su $00
3, 51	Identificazione versione ROM	Dipende dalla versione ROM (4 car)

[Notes] This command is executed when the data is processed in the receive buffer. Therefore, there can be a time difference between the moment the command is received and the data transmission, which depends on the status of the reception buffer.

$ 1B $ 40

[First name] **Reset the printer**

[Format] ASCII ESC @
Hex 1B 40
Decimal 27 64

[Description] Clears all data in the print buffer and resets the printer mode back to the one that was active at the time of power up

[Note] Same as hard reset
Once the command has been sent, wait about 1.5 seconds before
get the printer back active

$ 1B S41 nH nL

[First name] **Advance (N) dot line**

[Format] ASCIIESCAnHnL
Hex 1B41nH nL
Decimal 27 65 nH nL

[Interval] 0 ÿnH, nL ÿ255

[Description] Feed (N) dot line where N = 256 x nH + nL.

[Note] 1 mm corresponds to 8 dot lines.

[Example] The following example shows the command sequence to perform a 40mm advance:

$ 1B $ 41 $ 01 $ 40 (i.e. the ESC A command and the value 40 mm x 8 dot)

$ 1B $ 49

[First name] **Select 24 columns**

[Format] ASCII ESC I
Hex 1B 49
Decimal 27 73

[Description] After receiving this command, the printer is set up for printing at 24 columns per line

[Reference] **$ 1B $ 69, $ 1B $ 68**

(dd) $ 1B $ 4D

[First name] **Writes the value (dd) in the print mode**

[Format] ASCII dH dLESC M
Hex dH dL 1B 4D
Decimal dH dL 2777

[Interval] dH = 0
0 ÿdL ÿ3

[Description] Set the default parameters of the print mode. (dd) are two ASCII characters that identify a hexadecimal byte and correspond to the following

Settings:

$ 00 small print
$ 01 double-width writing
$ 02 double height writing
$ 03 expanded writing

[Default] Setting of the “Char mode” parameter in the set-up.

[Reference] **ESC m, $ 00, $ 02, $ 03, $ 04**

[Example] To print in double height, you must transmit:
$ 30 $ 32 $ 1B $ 4D

$ 1B $ 4E

[First name] **Set the printout in normal mode**

[Format] ASCII ESC N
Hex 1B 4E
Decimal 27 78

[Description] Select printing in normal mode: the receipt comes out of the printer with the writing upside down and from right to left

[Default] Setting of the “Print mode” parameter in the set-up.

[Reference] **$ 1B $ 52**

$ 1B $ 51

[First name] **Enable underlined printing**

[Format] ASCII ESC Q
Hex1B 51
Decimal 27 81

[Description] After receiving this command, the characters are printed underlined

[Reference] **$ 1B $ 71**

$ 1B $ 52

[First name] **Set the printer in reverse mode**

[Format] ASCII ESC R
Hex 1B 52
Decimal 27 82

[Description] Select printing in reverse mode: the receipt comes out of the printer with the writing straight and from left to right

[Default] Setting of the “Print mode” parameter in the set-up.

[Reference] **$ 1B $ 4E**

$ 1B $ 57

[First name] **Prints a 203 dpi line of graphics**

[Format] ASCII ESC W
HEX 1B 57
Decimal 27 87

[Description] After receiving this command, the printer waits 48 bytes which correspond to the entire graphic line. In fact, 48 bytes for 8 bits each correspond to 384 dots per line.

(dd) $ 1B $ 61

[First name] **Select the number of dot spaces**

[Format] ASCII (dd) ESC a
Hex (dd) 1B61
Decimal (dd) 27 97

[Description] (dd) are two ASCII characters that identify a hexadecimal byte e
correspond to the number of dot lines between one print line and the next

[Default] = 0

$ 1B $ 63

[First name] **Bar code printing management**

[Format] ASCII ESCc [code] [height] [position] [options] [length] [data]
Hex 1B63
Decimal 2799

[Description] This command prints a barcode according to the settings of the following parameters:

[code] Specify the type of bar code using an ASCII character. Possible values are:

I Interleved 2/5
C Code 39
B CodaBar
and EAN8
AND EAN13

[height] Specify the height of the barcode using a byte expressed as the number of dot lines in units of 1/8 of mm.

[position] Specify the top-of-form position, as the margin from the left edge, using a byte expended in units of 1/8 of a mm.

[options] Specify the barcode options using a byte. The following tables list all the possible values of the individual bits within the byte:

Bit 0	Function	Description
0	The check digit is not printed	Check digit
1	The check digit is printed	

Bit 1	Function	Description
-	Not used	-

Bit 3	Bit 2	Function	Description
0	0	Nobody	HRI position
0	1	Over	
1	0	Under	
1	1	Over and under	

Bit 5	Bit 4	Function	Description
0	0	Normal	Barcode length
0	1	Double	
1	0	Triple	
1	1	Not used	

Bit 6	Function	Description
-	Not used	-

Bit 7	Function	Description
-	Not used	-

[length] Specify the number of characters to be printed using one byte; the maximum lengths allowed are indicated below:

Interleaved 2/5 = 12 characters
Code 39 = 10 characters
CodaBar = 10 characters
EAN8 = 7 characters
EAN13 = = 12 characters

[data] Specify the characters to be printed expressed in ASCII.

[Example] The following example shows the command sequence to print a barcode:

$ 1B, 'N', $ 1B, 'c', 'C', $ 50, $ 3C, $ 14, $ 06, 'PLUS'

where is it :

$ 1B, 'N' (set printing in normal mode)
$ 1B, 'c', (barcode print command)
'C', (barcode type = Code 39)
$ 50, (barcode height = 10mm)
$ 3C, (starting position = 7.5mm)
$ 14, (HRI print below, double barcode width)
$ 06, (number of characters to print)
'PLUS' (characters to print)

$ 1B $ 68

[First name] **Select 42 columns**

[Format] ASCII ESC h
Hex 1B 68
Decimal 27 104

[Description] After receiving this command, the printer is set up for printing at 42 columns per line

[Reference] **$ 1B $ 49, $ 1B $ 69**

$ 1B $ 69

[First name] **Select 40 columns**

[Format] ASCIIESCi
Hex 1B 69
Decimal 27 105

[Description] After receiving this command, the printer is set up for printing at 40 columns per line

[Reference] **$ 1B $ 49, $ 1B $ 68**

$ 1B $ 6D

[First name] **Serial transmission of the print mode**

[Format] ASCII ESC m
Hex 1B 6D
Decimal 27 109

[Description] It transmits the configuration of the printing mode on the serial line.

[Note] If the printer uses the parallel protocol, nothing will be transmitted.
If the print mode setting is **$ 04** you will receive **$ 30 $ 30** (normal character) as a response .

[Default] Setting in the option register using the front keys

[Example] The answer occurs in two bytes. For example, if you receive:
$ 30, $ 32 means the print is double height

$ 1B $ 71

First name] **Disable underline printing**

[Format] ASCII ESC q
Hex 1B 71
Decimal 27 113

[Description] Cancel underlined printing

[Reference] **$ 1B $ 51**

$ 1B $ 73

[First name] **Serial transmission of the next character**

[Format] ASCII ESC s
Hex 1B 73
Decimal 27 115

[Description] It transmits the next character it will receive on the serial line

[Example] If broadcasting: $ 1B $ 73 $ 41
the last character, A ($ 41), will not be printed, but will be immediately transmitted over the serial line.

$ 1B $ 76

[First name] **Transmits the status of the printer.**

[Format] ASCII ESC v
Hex 1B 76
Decimal 27 118

[Description] Transmits the current status of the printer upon receipt of this command.

[Note] This command is executed immediately, even when the receive buffer is full (Busy).

The status to be transmitted is indicated in the table below

Bit	Off/On	Hex	Decimale	Funzione
0,1	Off	00	0	Coperchio chiuso, carta presente
	On	03	3	Coperchio aperto oppure sensore carta non funzionante
2,3	Off	00	0	Sensore di fine carta Carta presente
	On	0C	12	Sensore di fine carta Carta non presente
4	Off	00	0	Non utilizzato. Fisso su Off
5	Off	00	0	Temperatura testina corretta
	On	20	32	Errore sovratemperatura testina
6	Off	00	0	Tensione alimentazione corretta
	On	40	64	Errore tensione alimentazione
7	Off	00	0	Non utilizzato. Fisso su Off

$ 1B $ FA n1 n2

[First name] **Graphic bench printing (384 85 dots).**

[Format] ASCII ESC {} n1 n2
Hex 1B FA n1 n2
Decimal 27 250 n1 n2

[Interval] 0 ÿ n1, n2 ÿ 255

[Description] Print the graphics bank from the flash.
n1 specifies the starting dot line (1 85).
n2 specifies the number of dot lines to be printed.

[Note] • If *n1* + *n2* > 85 the printer prints only 85 - *n1* +1 dot line.

[Example] To print the graphic desk from dotline 10 to dotline 40, send:
$ 1B $ FA $ 0A $ 1E

$ 1D $ 24 n

[First name] **Sets absolute displacement within the graphic line.**

[Format] ASCII GS $ n
Hex 1D 24 n
Decimal 29 36 n

[Interval] 0 ≤ n ≤ 47

[Description] Sets the print start position within the graphic line based on the value of n which indicates the number of bytes to shift from the left margin.

[Note] Settings outside the specified printable area are ignored.

$ 1D $ 49 n

[First name] **Broadcast Printer ID.**

[Format] ASCII GS I n
Hex 1D 49 n
Decimal 29 73 n

[Interval] 1 ÿ n ÿ 3, 49 ÿ n ÿ 51

[Description] Transmits the printer ID specified by n as follows:

n	ID stampante	Specifica
1, 49	Identificazione mod. stampante	$1B
2, 50	Non utilizzato	Fisso su $00
3, 51	Identificazione versione ROM	Dipende dalla versione ROM (4 car)

[Note] This command is executed when the data is processed in the receive buffer. Therefore, there may be a time lag between the moment the command is received and the data transmission, which depends on the state of the reception buffer.

$ 1D $ 55

[First name] **Reset printer parameters to default.**

[Format] ASCII GS U
Hex 1D 55
Decimal 29 85

[Description] Reset printer parameters to default configuration.

[Note] After executing this command the printer is reset.

$ 1D $ 57 n d1… dn

[First name] **Prints n bytes of a 203 dpi line of graphics**

[Format] ASCIIGS W nd1 ... dn

Hex 1D 57 n d1 ... dn

Decimal 29 87 n d1 ... dn

[Interval] 1 ÿn ÿ48

0 ÿd1… dn ÿ255

[Description] Prints n bytes of a graphic line at 203 dpi where:

• n indicates the number of bytes to be printed;

• d1 ... dn represent the bytes to be printed.

[Note] If the data is greater than the number of dots to be printed on a line, the excess data is interpreted as printable characters.

• *d* indicates the data to be printed. Set a corresponding bit to 1 to print a dot or to 0 to not print the dot.

This command is not affected by the expanded, double strike and underline (etc.) print modes, with the exception of the upside-down mode.

[Example] To print 12 bytes, the command sequence to be sent is as follows:

$ 1D $ 57 $ 0C $ FF $ 00 $ FF $ 00 $ FF $ 00 $ FF $ 00 $ FF $ 00 $ FF $ 00

5. TECHNICAL SPECIFICATIONS

The table shows the main technical characteristics of the printer.

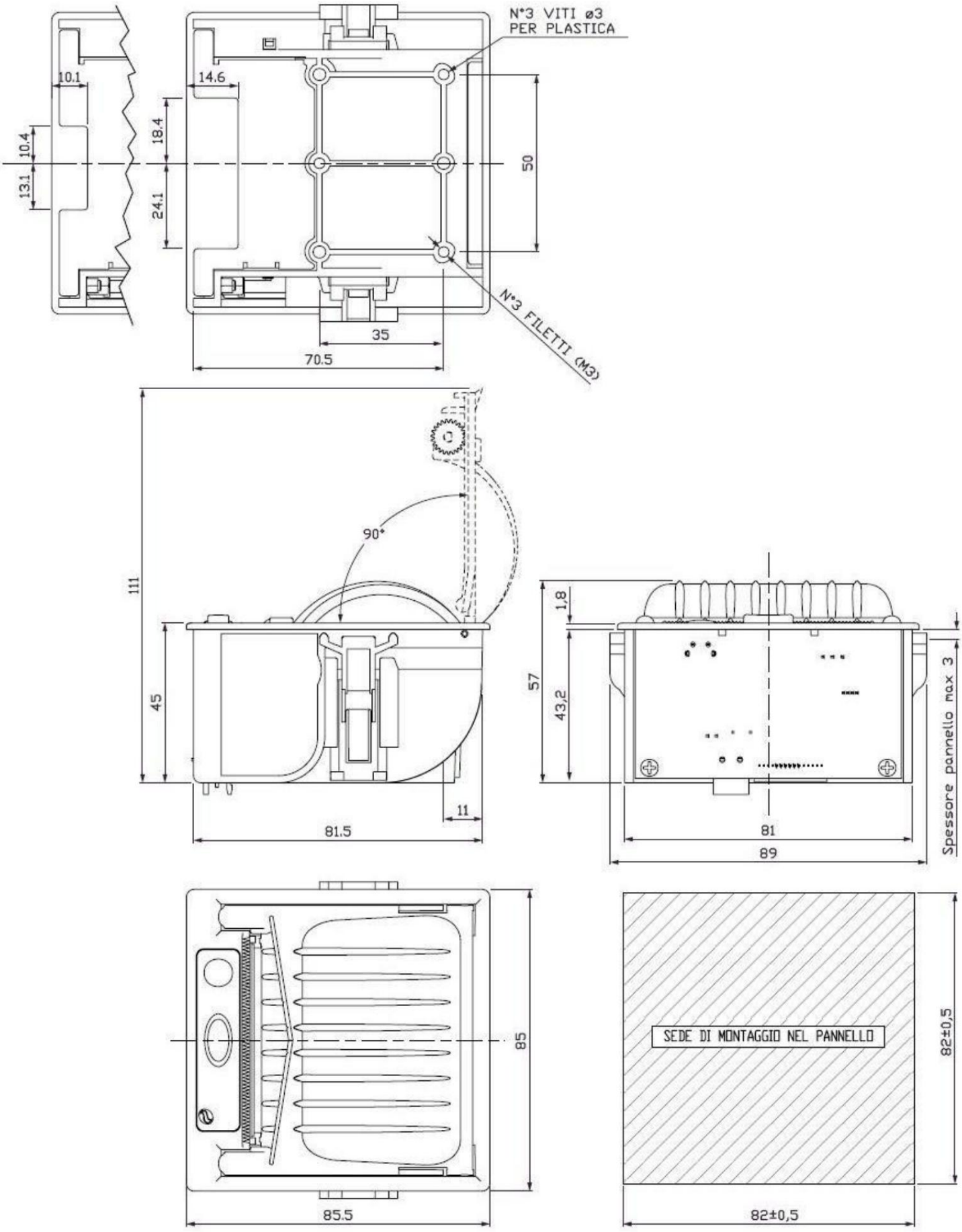
Print method	Thermal, Fixed head	
Resolution	203 DPI (8 dot / mm)	
Card features		
Card type	Thermal roll paper (Thermal side outside the roll)	
Length	57.5 mm ± 0.5 mm	
Internal roll core diameter	13mm	
Roll outer diameter	Max ÿ 50 mm	
Soul type	Cardboard or plastic	
Sensors	Head temperature , paper end, cover open sensor	
Way of writing	Straight, overturned	
Print formats	Normal / width 1 to 2, bold, negative, underline	
Font of characters	ASCII standard, international	
Interface available	RS232 /	
Baud Rate	600 to 38400 bps	
Reception buffer	128 bytes	
Flash memory	32 Kbytes	
Graphics memory	1 logo of 384 x 85 dots	
Diet	3.5 ÷ 8 V (Vcc) 3.5 ÷ 8 V (+ VP)	
Absorption (with 5 Volt power supply)		
Average consumption	0.2 A (Vcc) 3.3 A (+ VP)	
Stand by Consumption	0.1 A	
Absorption (Normal)	9 Vdc	48 Vdc
	3 A	0.7 A
Medium	0.1 A	
Stand by **Printer Weight (1)**	141 g.	

Notes: (1) Refers to without paper roll.

Environmental conditions		
Operating temperature	0 - 50 ° C	
Relative humidity Storage	10 - 85% Rh	
temperature / Humidity **Number of**	-20 ° C - 70 ° C / 10% - 90% Rh	
columns Character matrix Printing	24	40
speed Lines / sec Characters / sec	16 x 24	8 x 24
Character (W x H)		
	13	
	307	512
Normal	2 x 3	1 x 3

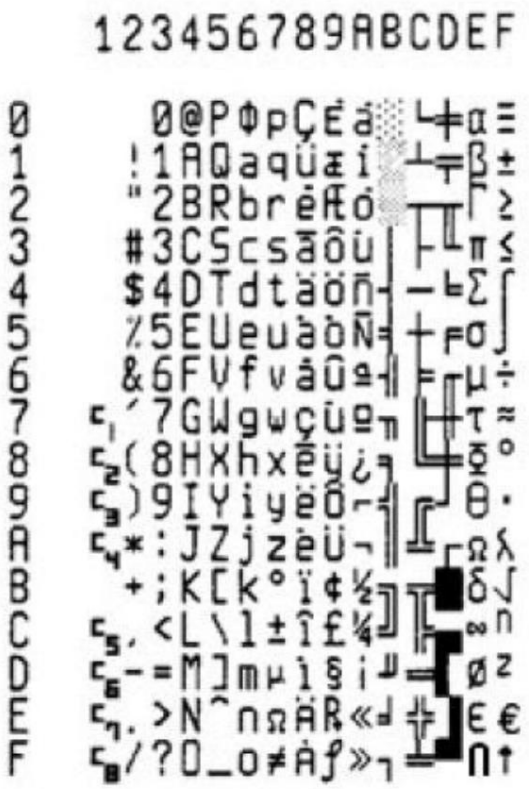
5.1 Printer dimensions

The figure shows the dimensions of the printer.



5.2 Character sets

The printer has two sets of 224 characters each. The following figure shows an example.



(Fig.5.1)

DECLARATION OF CONFORMITY

This device complies with the essential standards and other relevant regulations of the applicable European regulations. The Declaration of Conformity is available at the internet address www.diniargeo.com

WARRANTY

The warranty is ONE YEAR from the delivery of the instrument and consists in the free coverage of labor and spare parts for TOOLS RETURNED BY THE SELLER'S HEADQUARTER and in case of failures NOT attributable to the Customer (e.g. improper use) and NOT attributable to transport .

If, for any reason, the intervention is requested (or is necessary) at the place of use, the costs for the technician's travel will be borne by the Customer: travel times and expenses and possibly board and lodging.

If the instrument is sent by courier, the transport costs (a / r) are charged to the Customer.

The WARRANTY VOIDS in the event of failures due to interventions by unauthorized personnel or connections to equipment applied by others or for incorrect insertion to the power supply network.

Any indemnity for damages, direct or indirect, caused to the Customer by the failure or partial functioning of the instruments or implants sold, even during the warranty period, is EXCLUDED.

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