

METTLER TOLEDO

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1 Introduction

The P-52RUE is an easy-to-handle dot matrix printer for METTLER TOLEDO instruments. This high-value printer guarantees long-term traceability.

Features

- Robust, high-value design
- Easy-to-use and fully compliant
- Long-term traceability due to dot matrix technology
- Versatile connectivity with USB, RS232 and Ethernet interface

Finding more information

► www.mt.com/lab-printers

Software version

These instructions are based on the initial firmware (software) version 1.00.

1.1 Conventions and symbols used in these operating instructions

These symbols indicate an instruction:

- prerequisites
- 1 steps
- 2 ...
- ⇒ results

2 Safety Information

- Read and understand the instructions in this manual before you use the instrument.
- Keep this manual for future reference.
- Include this manual if you pass on the instrument to other parties.

If the instrument is not used according to the instructions in this manual or if it is modified, the safety of the instrument may be impaired and Mettler-Toledo GmbH assumes no liability.

2.1 Definition of signal warnings and symbols

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

WARNING	for a hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.
CAUTION	for a hazardous situation with low risk, resulting in minor or moderate injury if not avoided.
NOTICE	for a hazardous situation with low risk, resulting in damage to the balance, other material damage, malfunctions and erroneous results, or loss of data.
Note	(no symbol) for useful information about the product.



General hazard



Electrical shock

2.2 Product specific safety notes

Your instrument corresponds to the state of the art technology and complies with all recognized safety rules, however, certain hazards may arise in extraneous circumstances. Do not open the housing of the instrument: It does not contain any parts which can be maintained, repaired or replaced by the user. If you ever have problems with your instrument, contact your authorized METTLER TOLEDO dealer or service representative.

This printed document must be read and understood before using the instrument. This printed document must be retained for future reference.

Always operate and use your instrument only in accordance with the instructions contained in this document. The instructions for setting up your new instrument must be strictly observed.

If the instrument is not used according to the Operating Instructions, protection of the instrument may be impaired and METTLER TOLEDO assumes no liability.

The instrument must not be altered or modified in any way. Only use METTLER TOLEDO original spare parts and accessories.



WARNING

Risk of electric shock

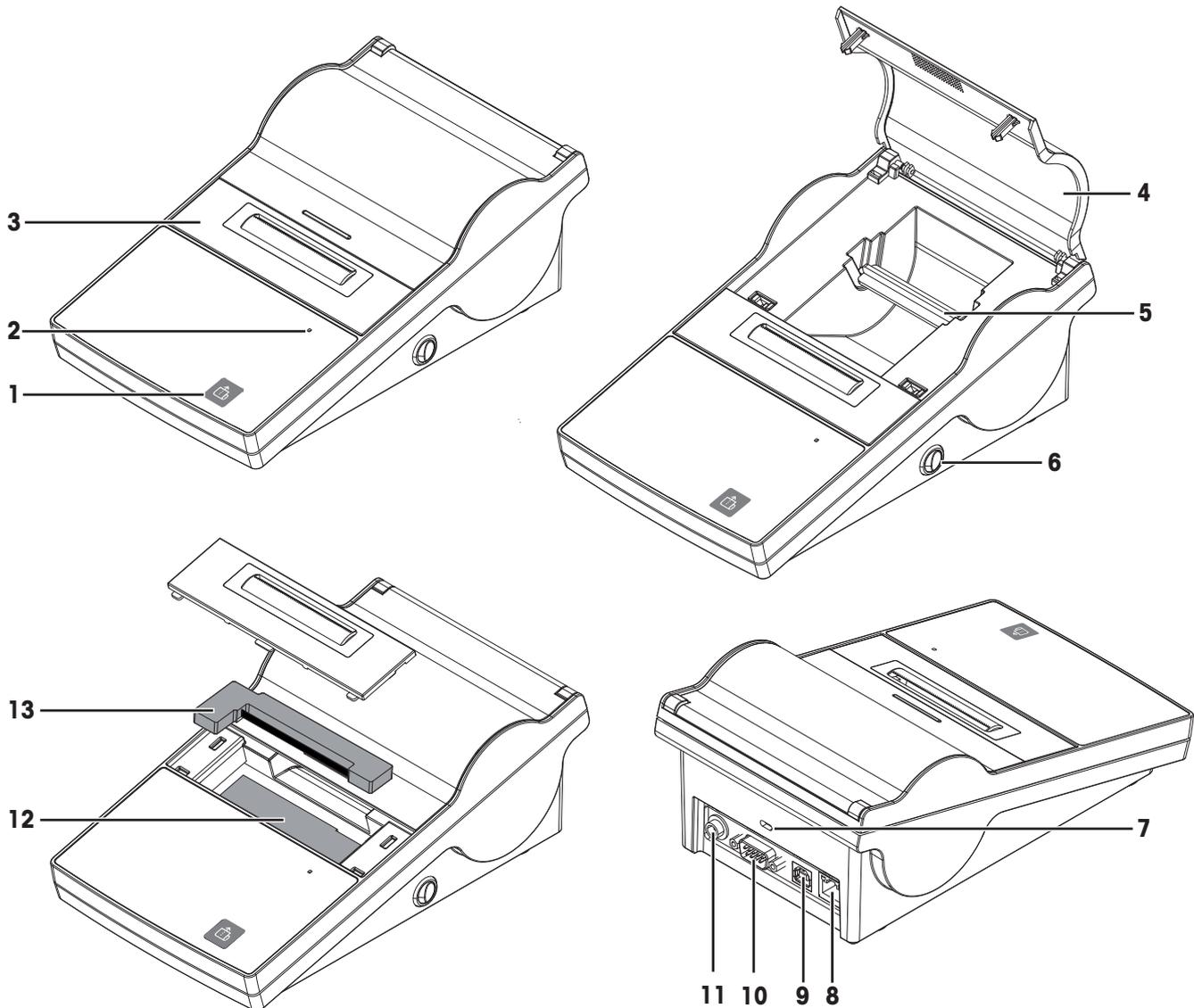
- 1 Do not open the AC adapter housing. Make sure that the AC adapter does not come in contact with liquids.
- 2 Use only the 3-pin power cord with equipment grounding conductor which was supplied with your instrument and only a 3-pin grounded outlet must be used.

Operating conditions

- The printer must be used in dry interior rooms only.
For the ambient conditions see at section [General technical data ▶ 17].
- The printer should be acclimated to room temperature.
- The printer should not be used in the presence of humidity and liquids.

3 Design and Function

3.1 Overview



1	Paper feed button	8	Ethernet RJ45 connection
2	Status indicator	9	USB device connection
3	Paper cutter	10	RS232 connection
4	Printer cover	11	Socket for AC adapter
5	Paper rotary axis	12	Print head
6	Power switch	13	Ribbon cartridge
7	Anti-theft slot		

3.2 Paper feed button

The paper feed button  is the only control button of the P-52RUE printer. The printer has two modes: Operation mode and Menu mode. The button can have different functions depending on the chosen mode.

Operation mode

The operation mode is the standard mode. It is always activated, except when the Menu mode is activated.

- Press briefly on : one line feed
- Hold : continuous feed

Menu mode

The menu mode must be activated specifically, see section [Opening the menu mode ▶ 12].

- Press briefly on : go to the next menu item
- Hold : Store a menu item as default setting

Note

The printing process can be paused/continued by pressing .

4 Installation and putting into operation

4.1 Scope of delivery

- 1 Open the package and remove the printer and the accessories.
- 2 Check the completeness of the delivery.

The following accessories are part of the equipment:

- P-52RUE dot matrix printer
- Paper rotary axis (already installed)
- 1 ribbon cartridge (already installed)
- 2 rolls of paper
- Universal AC adapter
- Country-specific power cable
- USB cable
- RS232 cable
- User Manual
- Declaration of conformity
- CD-ROM (containing software and operating instructions in different languages)

4.2 Connecting the printer to the power supply



WARNING

Risk of electric shock

- 1 Do not open the AC adapter housing. Make sure that the AC adapter does not come in contact with liquids.
- 2 Use only the 3-pin power cord with equipment grounding conductor which was supplied with your instrument and only a 3-pin grounded outlet must be used.

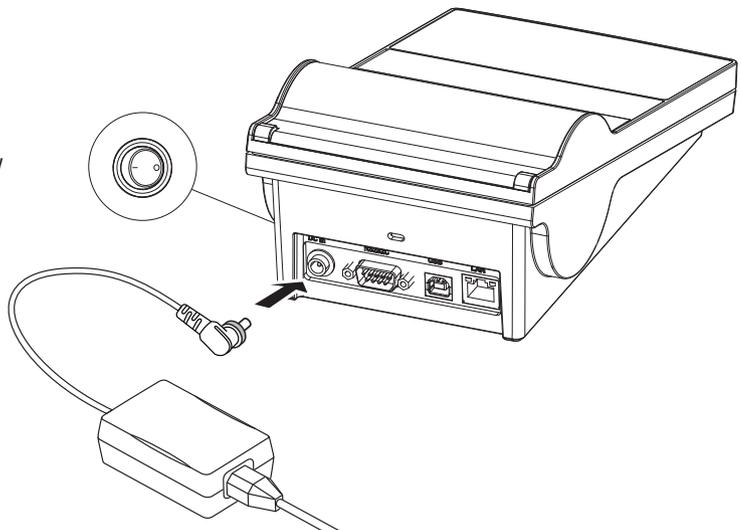


NOTICE

Use only the original AC adapter delivered with your printer.

- Do not try to use this AC adapter for other METTLER TOLEDO instruments, otherwise they could be damaged.

- The printer must be switched off.
- 1 Connect the AC adapter to the connection socket on the back of the printer.
 - 2 Lock the connector with the screw nut.
 - 3 Connect the 3-pin grounded power cable to the socket for the AC adapter.
 - 4 Connect the power cable to the mains.



4.3 Inserting the paper roll

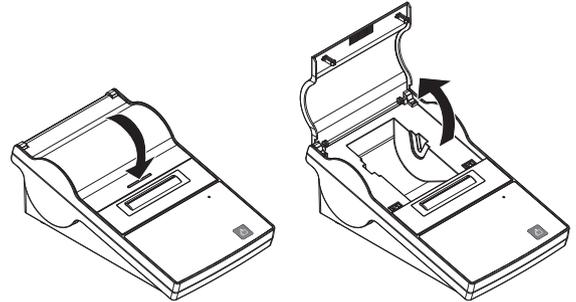
Note

We recommend to use only specified paper from METTLER TOLEDO (see at section [Accessories and spare parts ▶ 20]).

Note

The printer has a push-to-open mechanism to open the printer cover. The printer cover must be pushed down in the middle at the mark.

- The printer is switched on.
- 1 Push down the printer cover.
- 2 Open the printer cover.
- 3 Remove the paper cutter.

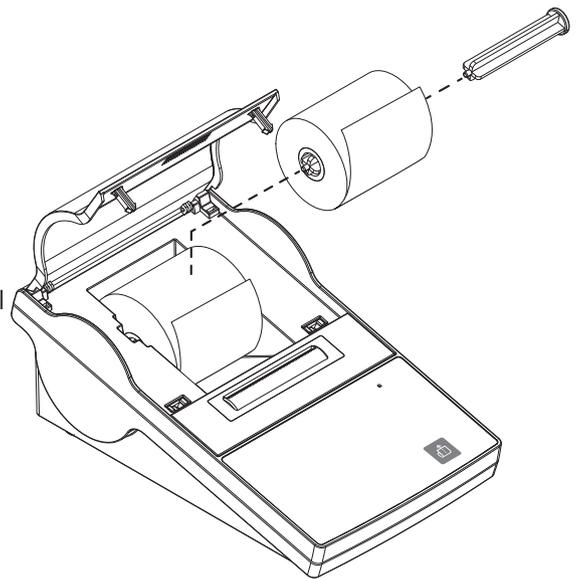


- 4 Remove the paper rotary axis from the printer frame.
- 5 Insert the rotary axis into the paper roll.

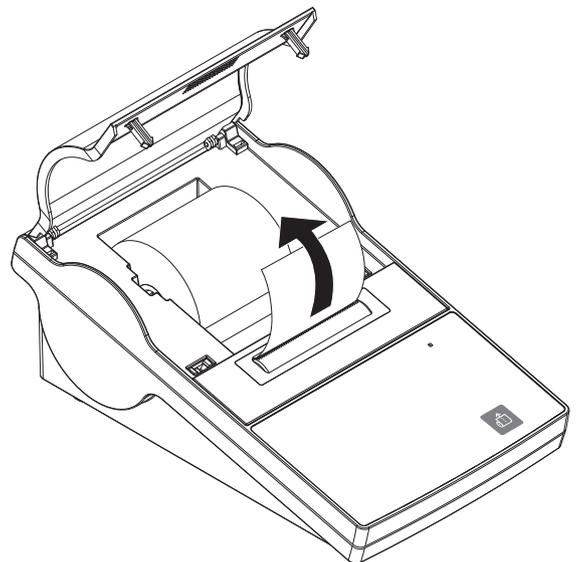
Note

The paper roll must unroll in the correct direction (see picture).

- 6 Place the paper roll into the printer frame.
- 7 Unroll the paper and stick the paper end into the 5 mm slot between the printer head and the metal plate.



- 8 Press .
- ⇒ The printing head pulls the paper in.
- 9 Press and hold  until some paper has been fed.
- 10 Close the printer cover.



4.4 Connecting the printer to a METTLER TOLEDO instrument



NOTICE

We recommend connecting the printer to only one instrument at a time. If several instruments are connected to the printer at the same time METTLER TOLEDO cannot assume the correct functionality of the printer.

4.4.1 Connecting the printer via the RS232 connection

- The printer has been connected to the mains.
- 1 Use the RS232 cable to connect the printer to the METTLER TOLEDO instrument.

Note

The RS232 connection settings of the printer and of the instrument must be identical.

- 2 Switch on the printer.

Note

The function **Auto baudrate detection** is switched off by default. It can be switched on if the printer is connected with the RS232 connection and if the connection settings (**Baudrate**, **Bits / Parity**, **Handshake**) of the printer differ from the settings of the balance. More information about activating the function **Auto baudrate detection** can be found in the section Menu.

System default settings

Baudrate:	9600	Stop bits:	1 Bit
Bits / Parity:	8 / None	Handshake:	XOn/XOff
Auto Baudrate	Off	Char Set	UTF-8

4.4.2 Connecting the printer via the USB connection

Use the USB connection cable to connect the printer to a balance or a PC.

Note

For connecting the printer to a PC, a printer driver must be installed on the PC. The printer driver should automatically be installed by the operating system when the printer is connected to the PC with the USB cable. If there is an issue with the printer driver, it can be downloaded from <http://www.ftdichip.com/Drivers/VCP.htm>. If there is still an issue, please contact your IT expert or a local METTLER TOLEDO representative.

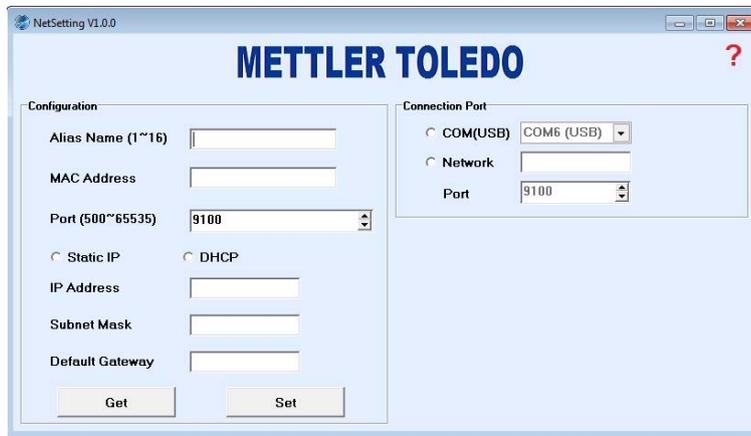
4.4.3 Connecting the printer via the Ethernet connection

The printer can be connected to an instrument via Ethernet. Before connecting to the Ethernet, the printer network settings must be configured with the software **NetSettings** that can be found on the CD-ROM or ordered at your METTLER TOLEDO representative.

Note

For installation and configuration of the Ethernet interface you need to have basic knowledge of TCP/IP-based networks, and of network technology in general. If necessary, contact the network administrator of your IT department or your IT support.

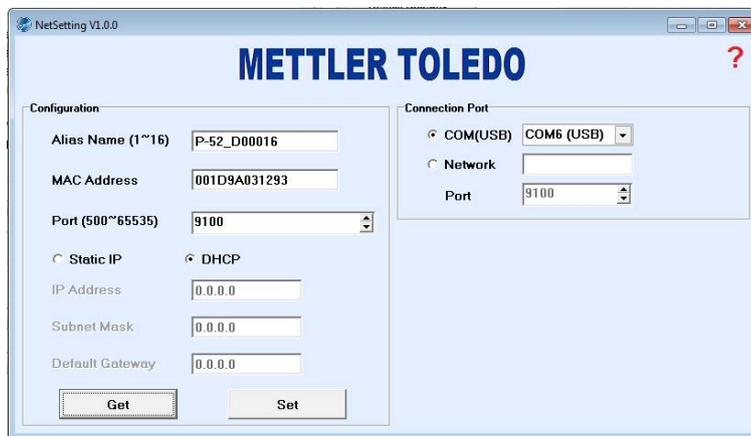
- The **NetSettings** software has been saved on the PC.
- 1 Switch on the printer
- 2 Connect the printer to the PC with the USB connection cable.
 - ⇒ The PC installs the printer driver.
- 3 Start the **NetSettings** software.
 - ⇒ The following window opens:



4 Chose **Connection port / COM (USB)**.

5 Press **Get**.

⇒ The system automatically fills out the settings. The value for **Alias Name** and **MAC Adress** are automatically generated from the system.



6 Select **Static IP** or **DHCP** to define the values for **IP Address**, **Subnet Mask** and **Default Gateway**.

⇒ The Ethernet definition of the printer has been defined. The printer can be connected to the Ethernet.

5 Menu

5.1 Opening the menu mode

- The printer is switched off.

1 Press and hold .

Note

 must be hold down during the whole process.

2 Switch the printer on.

3 Hold  until the status indicator flashes and the printer starts printing.

4 Release .

⇒ The printer is in menu mode and the menu settings can be defined.

Note

If  is not pressed for 45 seconds, the printer automatically goes back to operation mode.

5.2 Defining the menu settings

When the menu mode is activated (how to activate the menu mode see at section [Opening the menu mode ▶ 12]), the settings can be defined. By pressing briefly on  the printer goes step-wise through the parameters and their values. To define a value as default, wait until the value is printed and hold  to confirm it as default value.

The following settings can be defined

Parameter	Explanation	Values
Settings	The settings can be reset to the default values.	Reset
Auto Baudrate	Activates/deactivates the function Auto baudrate detection .	On Off*
Char Set	To chose the character set.	UTF-8* IBM/DOS IBM/DOS Cyrillic IBM/DOS Japanese ANSI/WIN Latin 1 ANSI/WIN Cyrillic ANSI/WIN Japanese

* System default settings

Note

The default value for **Char Set** is **UTF-8**. If the connected device is not using **UTF-8**, it must be changed in the printer settings.

Setting a default value

The value **UTF-8** is defined as default value (marked with the symbol *). We want to show how a default value can be changed/set. In this example, we change the default value **UTF-8** into **ANSI/WIN Latin 1**.

```
----- MENU -----
Settings
  Reset

Auto Baudrate:
  On
  *Off

Char Set:
  *UTF-8
  IBM/DOS
  IBM/DOS Cyrillic
  IBM/DOS Japanese
  ANSI/WIN Latin 1
```

- The printer is set to menu mode.
- 1 Use  to scroll through menu until the value **ANSI/WIN Latin 1** is printed.
- 2 Press and hold  until the printer prints a confirmation of the current settings.
 - ⇒ The value for **Char Set** is now **ANSI/WIN Latin 1**.

```
----- STORED -----
Current settings:
Baudrate:      9600
Parity:        8 Bit None
Handshake:     Xon/Xoff
Auto Baudrate: Off
Char Set:
  ANSI/WIN Latin 1
```

Note

After the stored settings have been printed, the printer returns automatically into operation mode.

6 Maintenance



WARNING

Risk of electric shock

- 1 Before cleaning or performing maintenance work, disconnect the printer and the AC adapter from the power supply.
- 2 Take care that no liquid penetrates into the printer or the AC adapter.



NOTICE

Never open the housing of the printer or the AC adapter – they contain no components, which can be cleaned, repaired or replaced by the user.
Use only the power cable from METTLER TOLEDO.

6.1 Replacing the ribbon cartridge

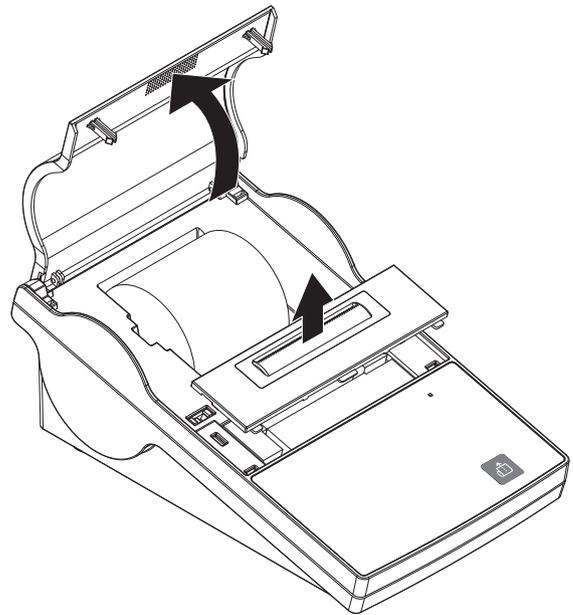
Note

The ribbon cartridge must be changed when the printings start to fade.

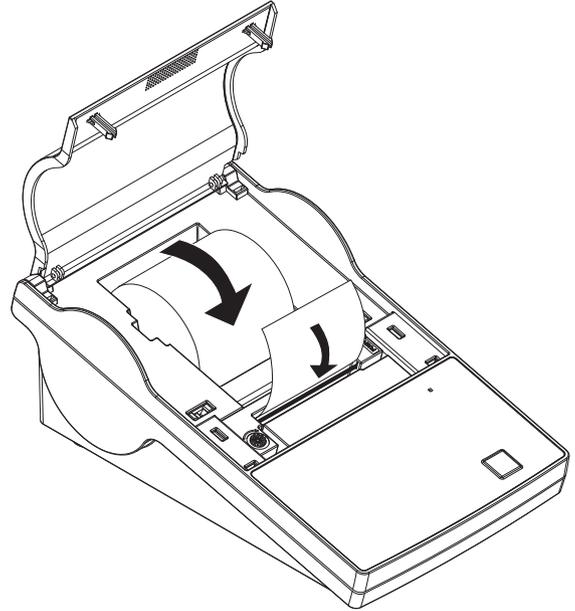
Note

The ribbon cartridge can dry out when the printer is not being used for some time. Ribbon cartridges that have been dried out cannot be used anymore and must be replaced.

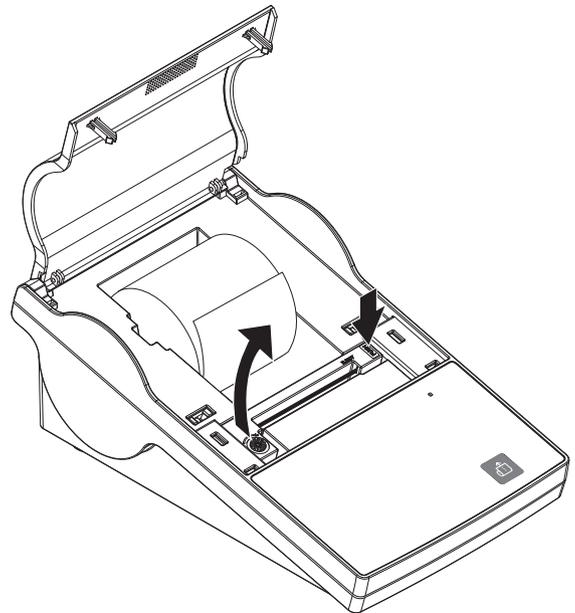
- The printer is switched off.
- 1 Open the printer cover.
 - 2 Remove the paper cutter.



- 3 Remove the paper from the print head by pulling the paper back.



- 4 Press **PUSH** on the right side of the ribbon cartridge.
⇒ The ribbon cartridge can be removed.
- 5 Insert the new ribbon cartridge. Use the tension wheel for taking up slack.



6.2 Cleaning the housing

Note

The printer housing is made of top grade, resistant materials. Therefore, all commercially available mild cleaning agents can be used.

6.3 Disposal

In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device. Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.



7 Troubleshooting

7.1 What to do if...

Note

If any issue occurs that is not described in this section, please contact your METTLER TOLEDO representative.

Problem	Solution
The printer is switched on but the LEDs do not light up.	<ul style="list-style-type: none">• Check the power supply.
The paper roll is correctly installed but nothing is printed.	<ul style="list-style-type: none">• Make sure that the ribbon cartridge is correctly installed.• Check if the ribbon cartridge needs replacing.
The paper roll does not move correctly and there is no print on some parts of the paper.	<ul style="list-style-type: none">• Check the power supply.• Check if the ribbon cartridge needs replacing.
The printed image is fading.	<ul style="list-style-type: none">• Check if the ribbon cartridge needs replacing.
Printer can't connect balance anymore until restart balance.	<ul style="list-style-type: none">• Switch the printer off and on.
The connection cable is correctly installed but the printer does not print.	<ul style="list-style-type: none">• Check the connection settings of the printer and/or the connected device.
The status indicator is flashing but the printer is not printing.	<ul style="list-style-type: none">• Check if the connection cable is correctly installed.

8 Technical data

8.1 General technical data

AC/DC Adapter:	Primary: 100 V - 240 V, $\pm 10\%$, 50/60 Hz Secondary: 24 V DC, 2.5 A (with electronic overload protection)
Power supply to the printer:	24 V DC, 2.5 A

Protection and Standards

Overvoltage category	II
Degree of pollution	2
Standards for safety and EMC	Declaration of Conformity (part of standard equipment)
Range of application	Indoor use only

Environmental Conditions

Height above mean sea level	up to 4000 m
Ambient temperature range	Operation: 5°C ~ 40°C Storage: -25°C ~ 60°C
Relative air humidity	20% ~ 80% up to 31°C decreasing linearly to 50% at 40°C, non-condensing
Connections	<ul style="list-style-type: none">• RS232 port (Male DB 9)• USB device port (B-type)• Ethernet 10/100base-TX port (RJ-45)

Printer Features

Print technology	Dot matrix
Printing unit	Dot matrix printer 5x7, 24-character line length
Printing speed	2.3 lines per second
Print quality	Light resistant and thermally stable printing (GLP, GMP, ISO 9001)

Materials

Top housing	Die-cast zinc, chromed and plastics (PBT)
Bottom housing	Plastics (PBT)
Paper cutter	Plastics (PBT)
Paper cutter slot	Polycarbonate plastics (PC)

Software NetSettings

System requirements	PC with Microsoft Windows 7, 8, 10
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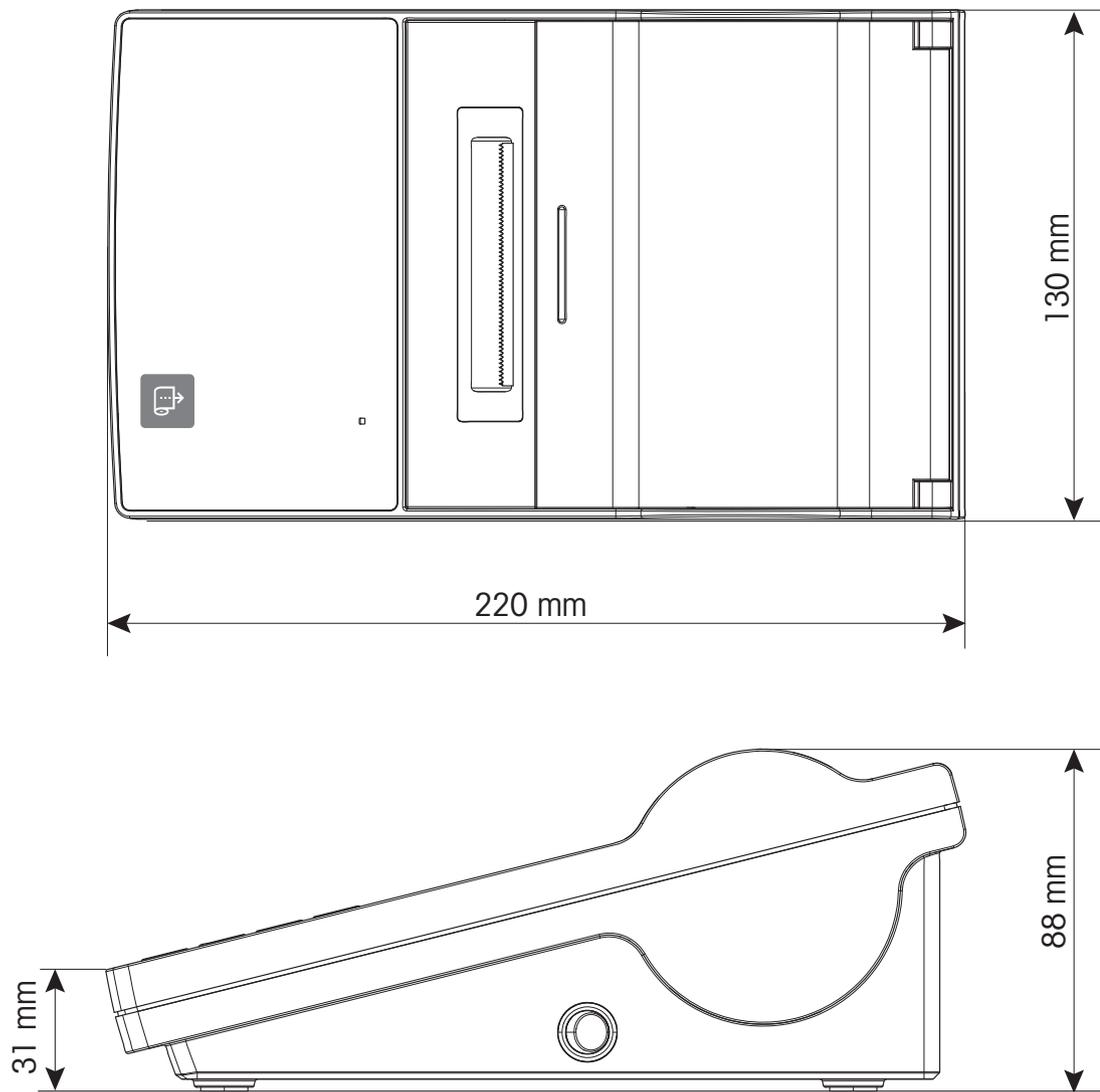
Printer driver

Link	http://www.ftdichip.com/Drivers/VCP.htm
------	---

Dimension / Weight

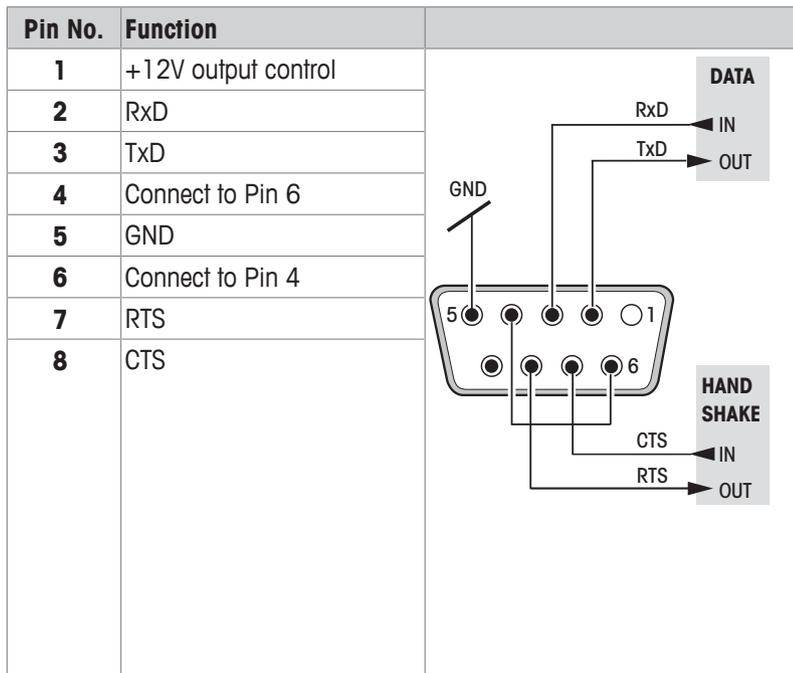
Length	220 mm
Height	88 mm
Width	130 mm
Net Weight	1.25 kg, without AC/DC adapter

8.2 Dimensions



9 Interface Specifications

9.1 RS232C Serial port



Note

The total current to the serial port may not exceed 250 mA.

9.2 USB Device port

USB connector type B

Pin No.	Function
1	VBUS
2	D-
3	D+
4	GND

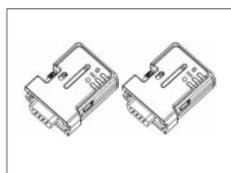
9.3 Ethernet 10/100base-TX RJ45 port

RJ45 connector

Pin No.	Signal
1	TX+
2	TX-
3	RX+
4	
5	
6	RX-
7	
8	

10 Accessories and spare parts

10.1 Accessories



Bluetooth RS232 serial adapter set ADP-BT-P for wireless connection between printer and balance. Compatible with the following balance models (SW V2.20 or higher required): JP, JS, MS, MS-S, MS-L, ML, MS-TS, ML-T, ME-T, PHS, PL-E.

30086495

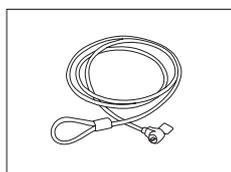
- 2 Bluetooth RS232 serial adapter paired (slave/master)
- 1 MT-DB9 male to female connector
- 1 MT-DB9 male to male connector



Bluetooth RS232 serial adapter set for wireless connection between XPE/XSE/XS balances and P5x printers.

30237797

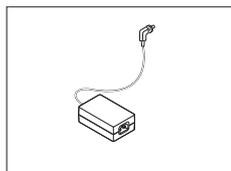
- Paired set of Bluetooth adapters
- RS232 option with 12V power



Anti-theft steel cable

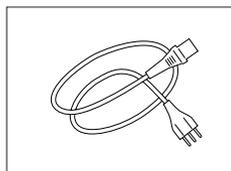
11600361

10.2 Spare parts



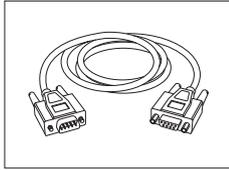
AC/DC adapter (without power cable) 100–240 V AC, 50/60 Hz, auto switching, 24 V DC, 2.5 A

30094772



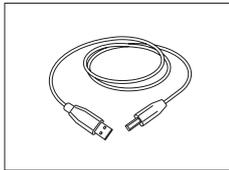
Country-specific 3-Pin power cable with grounding conductor.

Power cable AU	00088751
Power cable BR	30015268
Power cable CH	00087920
Power cable CN	30047293
Power cable DK	00087452
Power cable EU	00087925
Power cable GB	00089405
Power cable IL	00225297
Power cable IN	11600569
Power cable IT	00087457
Power cable JP	11107881
Power cable TH, PE	11107880
Power cable US	00088668
Power cable ZA	00089728



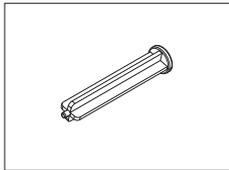
RS9 – RS9 (m/f): connection cable for PC, length = 1 m

11101051



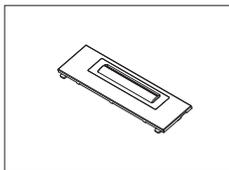
USB (A –B) connection cable, length = 1 m

30241476



Paper rotary axis

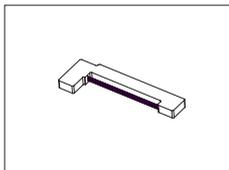
12120735



Paper cutter

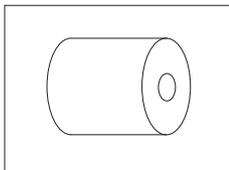
30237295

10.3 Consumables



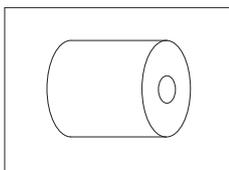
Ribbon cartridge, black

00065975



Paper roll, white,
57 mm x 20 m, 5 pcs

00072456



Paper roll, white, self-adhesive,
58 mm x 13 m, 1 pc

11600388

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GWP®

Good Weighing Practice™

GWP® is the global weighing standard, ensuring consistent accuracy of weighing processes, applicable to all equipment from any manufacturer. It helps to:

- Choose the appropriate balance or scale
- Calibrate and operate your weighing equipment with security
- Comply with quality and compliance standards in laboratory and manufacturing

▶ www.mt.com/GWP

www.mt.com/lab-printers

For more information

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