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1 Introduction

The P-56RUE and P-58RUE are easy-to-handle direct thermal printers for METTLER TOLEDO instruments. These high-value printers guarantee long-term traceability.

Feature	P-56RUE	P-58RUE
Auto connection	✓	✓
USB interface	✓	✓
RS232 interface	✓	✓
Ethernet interface	✓	✓
Application Statistics	—	✓
Application Formulation	—	✓
Application Totaling	—	✓
Application Labels	— ¹⁾	✓
Access Protection	✓	✓

¹⁾ Label printing is possible only from host device e.g. PC.

Software version

These operating instructions are based on the initially installed firmware (software) version V1.04.

Finding more information

► www.mt.com/lab-printers

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 information in these Operating Instructions before you use the instrument.
- Keep these Operating Instructions for future reference.
- Include these Operating Instructions if you pass on the instrument to other parties.

If the instrument is not used according to the information in these Operating Instructions 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. Ignoring the safety notes may lead to personal injury, damage to the instrument and malfunctions.

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 instrument, other material damage, malfunctions and erroneous results, or loss of data.

Note (no symbol)
for useful information about the product.



General hazard



Electrical shock



Hot surface

2.2 Product specific safety notes

General Safety Information

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.

Safety Notes



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 cable with equipment grounding conductor which was supplied with your instrument and only a 3-pin grounded outlet must be used.



NOTICE

Data Loss

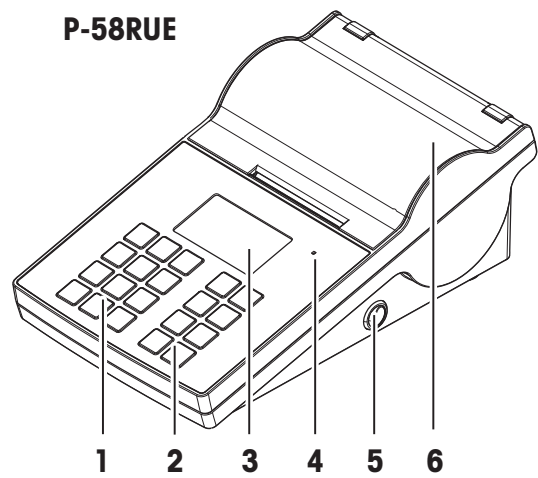
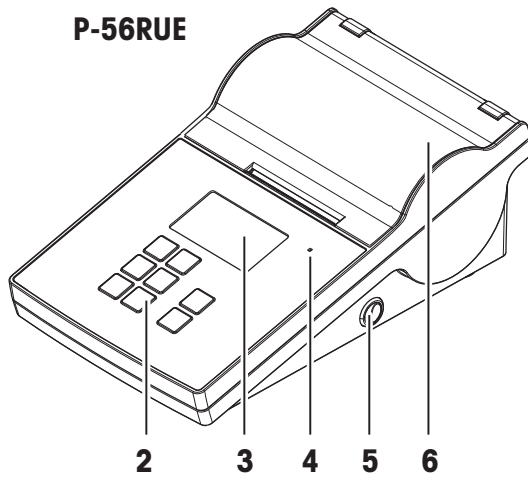
Continuous printing can lead to a overheating of the print head. The printing process stops until the print head has cooled down. During this cooling down phase the printer must not be switched off, otherwise the buffer data will be lost.

Operating conditions

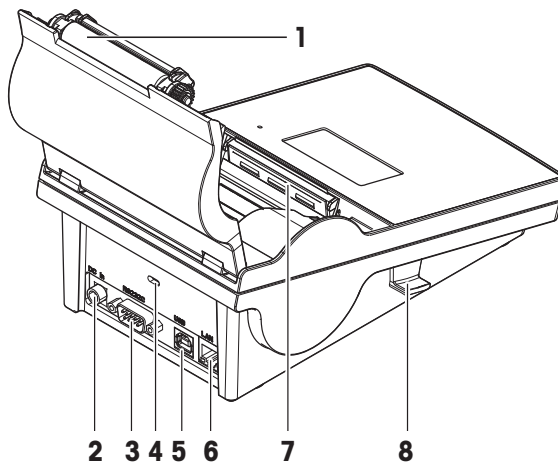
- The printer must be used in dry interior rooms only.
For the ambient conditions **see** [General technical Data ▶ Page 35].
- The printer should be acclimated to room temperature.
- The printer should not be used in the presence of humidity and liquids.

3 Design and Function

3.1 Overview

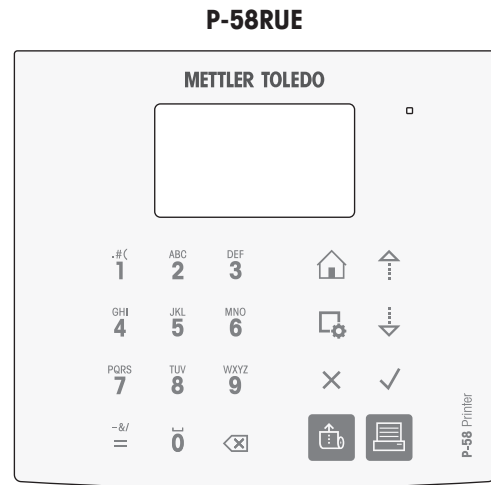
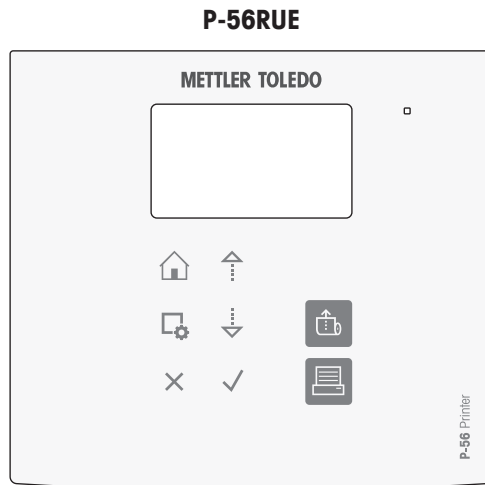


1	Alphanumeric keys	4	Triple status indicator
2	General control keys	5	Power switch
3	Display	6	Printer cover



1	Platen roller	5	USB device connection
2	Socket for AC adapter	6	Ethernet RJ45 connection
3	RS232 serial interface (9-pin)	7	Thermal printhead
4	Anti-theft slot	8	Handler to open the printer cover

3.2 General keys



General Control keys

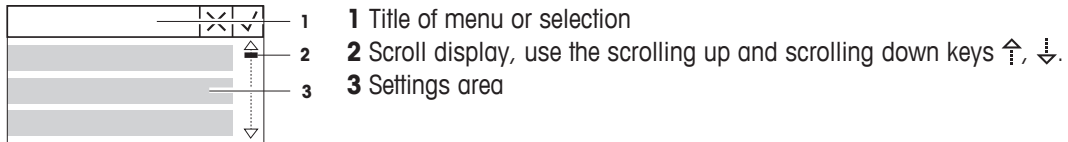
	Name	Explanation
	Home key	To return to the printer home screen.
	Menu key	To open the section Settings (P-56RUE). To open the section Main menu (P-58RUE).
	Scroll up key	To scroll up through a list or to move the cursor to the left in a string or number entry screen.
	Scroll down key	To scroll down through a list or to move the cursor to the right in a string or number entry screen.
	Cancel key	To cancel a running process/application or the last step.
	Confirmation key	To confirm the current selection.
	Paper feed key	To feed the paper.
	Print key	To print parameters or weighing results.

Alphanumerical keys (P-58RUE)

.#(1	1 . # () , :	PQRS 7	7 P Q R S p q r s
ABC 2	2 A B C a b c	TUV 8	8 T U V t u v
DEF 3	3 D E F d e f	WXYZ 9	9 W X Y Z w x y z
GHI 4	4 G H I g h i	0	0
JKL 5	5 J K L j k l	-&/ =	= - & / + * @ % Last entry recall of ID
MNO 6	6 M N O m n o		Delete key To delete the last character.

3.3 Display elements and dialogs

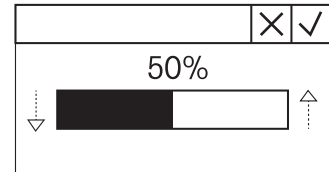
3.3.1 Basic elements on display



3.3.2 Entry Dialogs

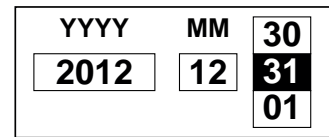
Slider bar

- To increase or decrease the current field value, press the scroll up key or the scroll down key (\uparrow or \downarrow). Speed up by pressing and holding the key.
- Press the confirmation key \checkmark to confirm.
- To cancel and for switching back to the last active screen, press the cancel key \times .



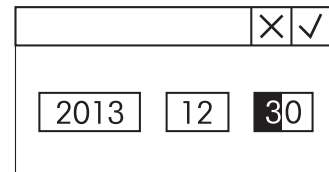
Numbers (P-56RUE)

- To increase or decrease the current field value, press the scroll up key or the scroll down key (\uparrow or \downarrow). Speed up by pressing and holding the key.
- To move to the next field when it is not the last field, press the confirmation key \checkmark . If the current selected field is the last field then the current valid entry is accepted.
- To cancel and to switch back to the last active screen press the cancel key \times .



Numbers (P-58RUE)

- To remove last character, press briefly the delete key $\leftarrow \times$.
- To remove all entries, press and hold the delete key $\leftarrow \times$.
- To move position of blinking cursor by pressing the scroll up key or the scroll down key (\uparrow or \downarrow).
- Press the numerical keys for entering a value.
- Press the confirmation key \checkmark .
- To cancel and for switching back to the last active screen, press the cancel key \times .



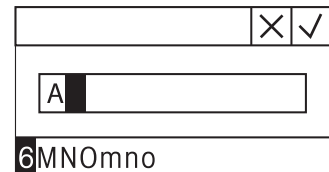
Alphanumerical strings (P-58RUE)

- To remove a single character, press briefly on the delete key $\leftarrow \times$.
- To remove a whole character string, press and hold the delete key $\leftarrow \times$.
- To move position of blinking cursor, press the scroll up key or the scroll down key (\uparrow or \downarrow).
- Repeatedly press a numerical key to select the needed character.

Note

The maximum entry length is 20 characters.

- To confirm an entry, press the confirmation key \checkmark .
- To cancel and to switch back to the last active screen, press the cancel key \times .



4 Installation and Putting into Operation

4.1 Scope of delivery

The following accessories are part of the equipment:

- P-56RUE or P-58RUE thermal printer
- Set of paper rolls
- Universal AC adapter
- Country-specific power cable
- USB cable
- RS232 cable
- User Manual
- Declaration of conformity
- CD-ROM (containing documents in different languages, software and drivers)

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 cable with equipment grounding conductor which was supplied with your instrument and only a 3-pin grounded outlet must be used.

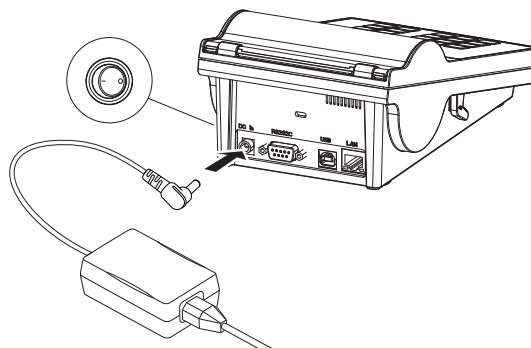


NOTICE

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.

- 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.
- 5 Switch the printer on.



4.3 Inserting the paper roll



CAUTION

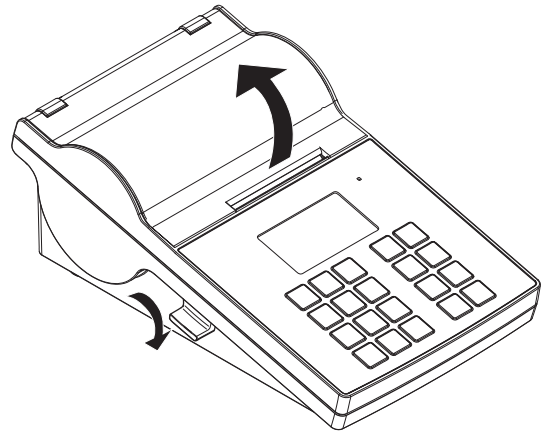
Danger of burns

The thermal printhead is getting hot during the printing process. Wait until the printhead has cooled down before opening the printer cover.

Note

We recommend to use only specified paper from METTLER TOLEDO, **see** Accessories and spare parts in the Operating Instructions.

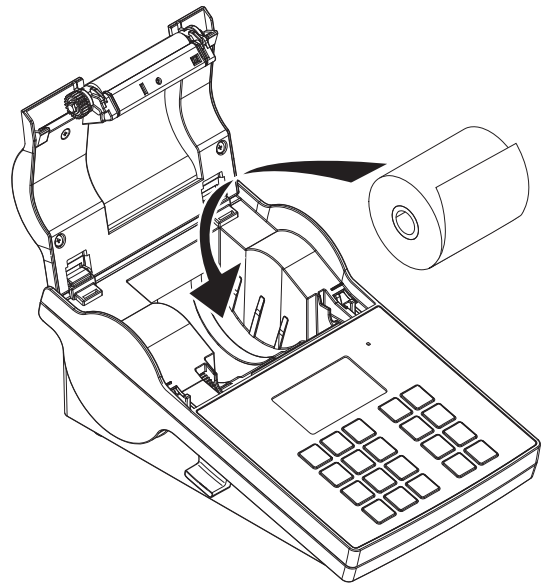
- 1 Switch on the printer.
- 2 Press down the release key.
⇒ The printer cover opens.




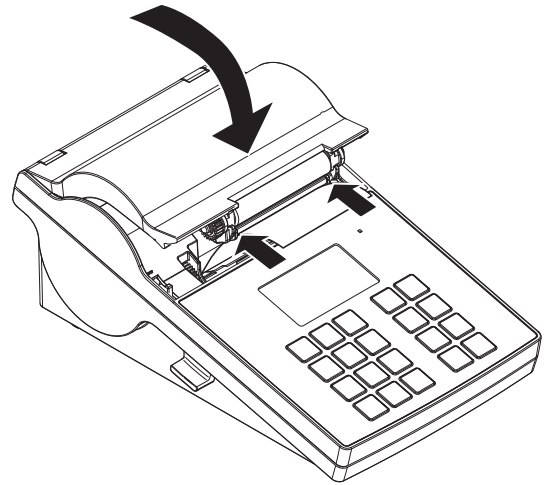
- 3 Insert the paper roll into the printer frame.

Note

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



- 4 Make sure that the paper is in the middle of the paper guides.
- 5 Close the printer cover. Firmly press down until it snaps.
- 6 Press the paper feed key  to check the paper feed.



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.

Note

The printer automatically detects the settings of the connected instrument if the instrument supports this function.

4.4.1 Connecting the printer via the RS232 connection

- 1 Connect the printer to the power supply.
- 2 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.

- 3 Switch on the printer.

Note

The function **Auto connection** 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. For more information about activating the function **Auto connection** see [RS232 ▶ Page 18].

Printer default settings

Baudrate:	9600	Stop bits:	1 Bit
Bits / Parity:	8 / None	Handshake:	XOn/XOff

4.4.2 Connecting the printer via the USB connection

- 1 Connect the printer to the power supply.
- 2 Use the USB cable to connect the printer to a METTLER TOLEDO instrument.
- 3 Switch on the printer.

Note

The system identifies the USB printer automatically. The connected devices can be managed in the connections settings of the connected METTLER TOLEDO instrument.

4.4.3 Connecting the printer via the Ethernet connection

- 1 Connect the printer to the power supply.
- 2 Use an Ethernet cable to connect the printer directly to a METTLER TOLEDO instrument or indirectly over the company's Ethernet.

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.

4.5 Connecting the printer to a host computer

Note

Before connecting the printer to a PC, the printer driver must be installed first.

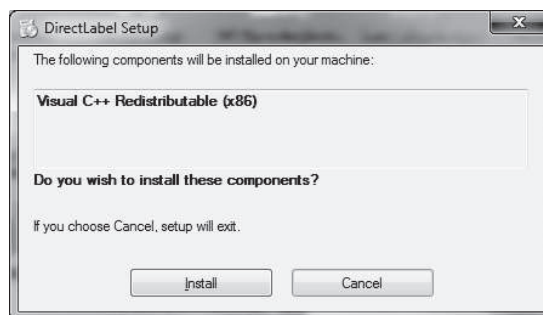
Installing the USB driver

- 1 Go to the site <http://www.fidichip.com/Drivers/VCP.htm>
- 2 Click the windows printer driver (.zip version) or as "setup executable (.exe version).
- 3 Click save to save it on your specified storage location.
- 4 Unzip the file if required.
- 5 Right-click on the *.exe and select **Run as Administrator** from the menu.
- 6 Follow the instructions.
⇒ The installation process was successful, the driver has been installed.
- 7 Switch off the printer.
- 8 Connect the printer to the PC with the USB connection.
- 9 Switch on the printer.

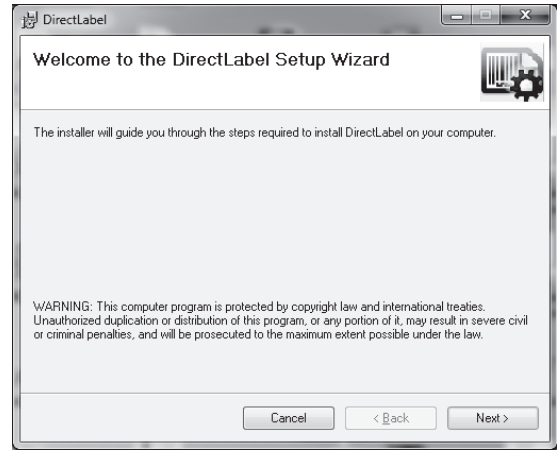
4.5.1 Installing DirectLabel

With the software DirectLabel labels can be individually designed on a PC. The software can be found on the CD-ROM.

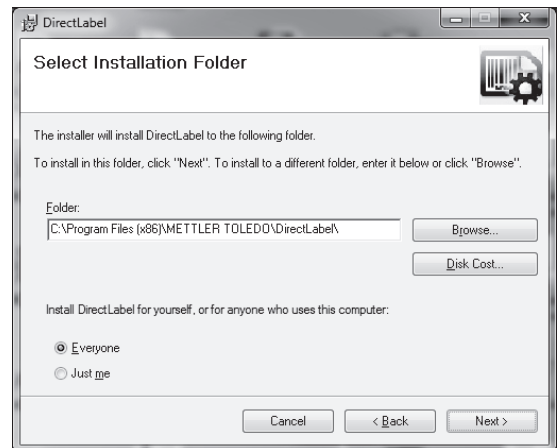
- 1 Select the DirectLabel software from the CD-ROM.
- 2 Save the *.exe file on the local drive.
- 3 Right-click on the *.exe file, select **Run as Administrator**.
- 4 Follow the installation instructions.
- 5 Click on **Install** to install the Visual C++ components.



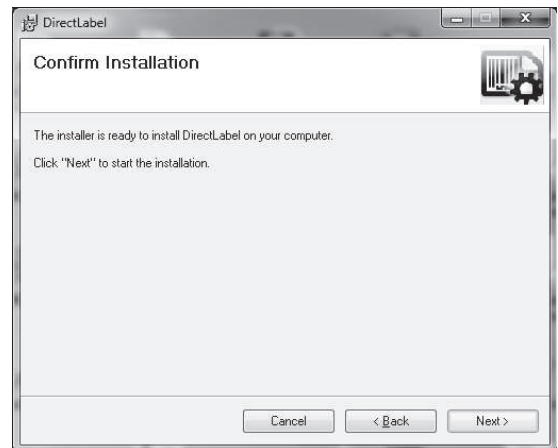
- 6 Follow the instructions in the installation wizard.
- 7 Click on **Next** to continue.



- 8 Select the folder for the program installation.
- 9 Click on **Next** to continue.

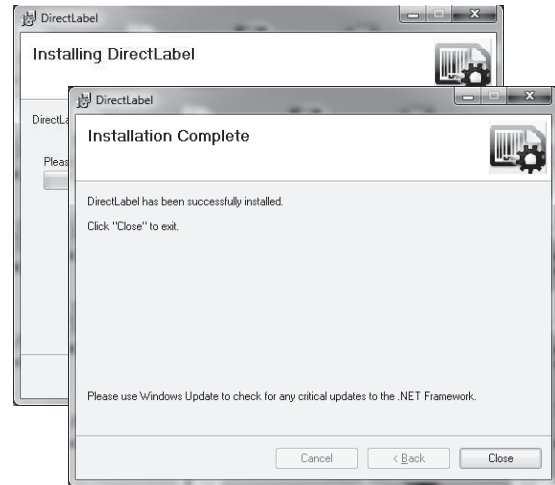


- 10 Click on **Next** to start the installation.



The software DirectLabel has been successfully installed.

11 Click on **Close** to exit.



The software DirectLabel is installed on the host computer and ready to use.

12 Double click **DirectLabel** icon.



Note

If a Windows security message appears when starting the software, the Windows firewall has blocked the software. Re-define the firewall rules to unblock the software.

4.6 Defining language, date and time

When using the printer for the first time, we recommend to define the printer language, the current time and date.

- 1 Switch on the printer.
 - ⇒ The message **Set language & date / time first!** is indicated.
- 2 Use the scroll keys (↓, ↑) to chose a language from the list.
 - ⇒ Press the confirmation key ✓.
- 3 Chose a date format.
- 4 Define the date.
- 5 Chose a time format.
- 6 Define the time.
 - ⇒ The language, time and date have been defined.

Note

- These settings are retained even if you disconnect your printer from the power supply.
- Date and time will be changed from a connected instrument if the connected instrument supports date and time.
- If the connected instrument supports date and time, the menu items are not available.

4.7 Printer test

The printer is equipped with a self-test function. We recommend to use the self-test function regularly to make sure that the printer is fully operational.

Printing the settings

To print the current settings, the application settings (only for P-58RUE) and the printer firmware settings:

- Switch on the printer while holding the print key .

Printing the character table

To print the character table with all fonts and character sets:

- Switch on the printer while holding the paper feed key .

Printing the character table endlessly


To print the character table with all fonts and character sets:

- Switch on the printer while holding the paper feed key  and the print key .

Note

The character table will be automatically printed until the printer is switched off.

5 Settings

By pressing the menu key , the P-56RUE printer opens directly the section **Settings**. The P-58RUE printer opens the section **Main menu** that contains the sub-sections **Settings** and **Applications**. For more information about the section **Applications** see [Applications (only for P-58RUE models) ▶ Page 22].

Navigation P-56RUE:  **Settings**

Navigation P-58RUE:  **Main menu > Settings**

The section **Settings** does have the following sub-sections:

- **System**
- **Data connection**
- **Access Protection**
- **Application** (for P-58RUE only)

5.1 System settings

Navigation P-56RUE:  **Settings > System**

Navigation P-58RUE:  **Main menu > Settings > System**

5.1.1 Date / Time

Parameters	Explanation	Values
Date	To set the date.	Numerical
Time	To set the time.	Numerical
Date format	To define the date format.	D. MMM YY* MMM DD YY DD.MM.YY MM / DD / YY YY-MM-DD
Time format	To define the date format.	24:MM* 12:MM 24.MM 12.MM

* Factory setting

5.1.2 Language

In this section the printer display language can be defined. The following languages can be chosen:

English	Русский
Deutsch	中文
Français	日本語
Italiano	한국어
Español	

5.1.3 Printing

Parameters	Explanation	Values
Darkness	To set the darkness of the print.	1 - 100% (80%*)
Speed	To set the speed of the printing process. Low (4 inch/second) Medium (3 inch/second) Low (2 inch/second)	High Medium* Low

* Factory setting

Contents

Parameters	Explanation	Values
Header	To print and to define the header in the print.	No header* Date / Time D / T / Balance
Sample weight	To print the sample weight.	Off On*
Signature	To print a signature line.	Off* On

* Factory setting

5.1.4 Display / Audio

Parameters	Explanation	Values
Brightness	A control bar to set the display brightness.	1 - 100% (50*)
Contrast	A control bar to set the display contrast.	1 - 100% (60*)
Key beep	To set the volume of the key beep. Off (0 % volume) Low (33 % volume) Medium (66% volume) High (100 % volume)	Off Low Medium* High
Message beep	To set the volume of the message beep. Off (0 % volume) Low (33 % volume) Medium (66% volume) High (100 % volume)	Off Low Medium* High

* Factory setting

5.1.5 Auto features

Parameters	Explanation	Values
Standby	To switch to standby mode after the preset time. The standby mode can be finished by pressing any key.	Off* 2 minutes 5 minutes 10 minutes 30 minutes
Backlight	To define the time after which the backlight turns automatically off.	On* 30 seconds 2 minutes 5 minutes 10 minutes 30 minutes

* Factory setting

5.1.6 System reset

Parameters	Explanation	Values
System reset	To reset the printer to factory settings.	Yes No*

* Factory setting

5.2 Data connection settings

Navigation P-58RUE:  Settings > Data connection

Navigation P-58RUE:  Main menu > Settings > Data connection

5.2.1 Char set

Parameters	Explanation	Values
Char set	To choose the character set for printing. The selected character set must match with the defined printer language.	IBM/DOS IBM/DOS Cyrillic IBM/DOS Japanese Ansi/Win Latin 1* Ansi/Win Cyrillic Ansi/Win Japanese UTF-8

* Factory setting

5.2.2 RS232

Parameters	Explanation	Values
Auto connection	To automatically detect the settings of the connected device. The connected device must support this function.	On Off*
Baudrate	To select the baudrate. This menu item is only visible when the option Auto connection is not activated.	600 1200 2400 4800 9600* 19200 38400 57600 115200
Bits / Parity	To select the Bits / Parities. This menu item is only visible when the option Auto connection is not activated.	8 / None* 7 / None 7 / Even 7 / Odd 7 / Mark 7 / Space
Stop bits	To select the stop bits. This menu item is only visible when the option Auto connection is not activated.	1 Bit* 2 Bits
Handshake	To define the synchronization for the data transfer. This menu item is only visible when the option Auto connection is not activated.	XOn / XOff* RTS / CTS None
Monitoring	To detect the connection status.	On* Off

* Factory setting

5.2.3 Ethernet

Parameters	Explanation	Values
DHCP	To activate or deactivate the Dynamic Host Configuration Protocol (DHCP) . If this option is activated, all network parameters assign to this interface automatically.	On* Off
IP address	To define the IP address of the printer. If the option DHCP is not activated the system sets the default value 192.168.000.001.	Numerical (192.168.000.001*)
Subnet mask	To define the subnet within which the ethernet device is addressable. If the option DHCP is not activated the system sets the default value 255.255.255.000.	Numerical (255.255.255.000*)
Gateway	To define the gateway. If the option Auto connection is not activated the system sets the default value 192.168.000.254.	Numerical (192.168.001.000*)
Port	To define the port number. The connected instruments must have the identical port numbers.	Numerical (9100*)
Alias name	To define the port number. The connected instruments must have the identical port numbers.	Numerical (9100*)

* Factory setting

5.3 Access protection

With the function **Access Protection** the settings can be protected with a password to prevent the settings from unauthorized changes. The password can be defined and changed by the user.

Parameters	Explanation	Values
Lock	To protect the system settings by a password. If the option Lock is activated, the password must be entered before the system settings can be accessed.	On Off*
Password	To define a password. The password length is restricted to 12 digits.	Alphanumeric (12345678*)

* Factory setting

5.3.1 Defining the password

- 1 Open the section **Settings > Access Protection > Password**.
- 2 Enter the old password.

Note

If you define the password for the first time, the default password is 12345678.

- 3 Enter the new password and press the confirmation key ✓.
- 4 Confirm the new password and press the confirmation key ✓.

Note

The new password and the confirmed password must be identical.

5.4 Application settings (only for P-58RUE)

Navigation:  **Main menu > Settings > Application**

5.4.1 Statistics

Parameter	Explanation
Off*	No sample ID is prompted.
Input once	To prompt the sample ID once when activating the application (max. 20 characters).
Input for each	To prompt the sample ID every time when requesting the sample weight (max. 20 characters).
From balance	To transfer the sample ID from the connected balance, if the balance supports that feature (max. 20 characters).

* Factory setting

5.4.2 Formulation

Parameter	Explanation
Off*	No sample ID is prompted.
Input once	To prompt the sample ID once when activating the application (max. 20 characters).
Input for each	To prompt the sample ID every time when requesting the sample weight (max. 20 characters).
From balance	To transfer the sample ID from the connected balance, if the balance supports that feature (max. 20 characters).

* Factory setting

5.4.3 Totaling

Parameter	Explanation
Off*	No sample ID is prompted.
Input once	To prompt the sample ID once when activating the application (max. 20 characters).
Input for each	To prompt the sample ID every time when requesting the sample weight (max. 20 characters).
From balance	To transfer the sample ID from the connected balance, if the balance supports that feature (max. 20 characters).

* Factory setting

5.4.4 Labels

In this section labels for printing can be defined.

5.4.4.1 Defining templates

5 different templates can be defined. Every template consists of 4 lines and a barcode. The information for each line can be defined separately. The barcode can be selected from a list. If the information for each line are not defined, the printer selects default values for each line. Also the number of copies can be defined.

Lines 1 - 4

Parameters	Explanation	Values
Empty	To set an empty line	ON OFF*
Weight	To set the weight value with the chosen unit.	ON OFF*
Sample ID	<p>Input once To prompt the sample ID only once when activating the application Labels.</p> <p>Input for each To prompt the sample ID every time when printing the template.</p> <p>From balance To transfer the sample ID from the balance every time when printing the template.</p>	Input once* Input for each From balance (max. 20 characters)
Lot ID	<p>Input once To prompt the Lot ID only once when activating the application Labels.</p> <p>Input for each To prompt the Lot ID every time when printing the template.</p>	Input once* Input for each (max. 20 characters)
Date / Time	To print the current date and time (as defined in the system settings see [Date / Time ► Page 16]).	ON* OFF
Expiry date	<p>Offset To set a specific number of days.</p> <p>Fixed Date To set a specific date.</p>	Offset (30 days*) Fixed Date
Counter	To set a counter (10 digits).	ON OFF*

Note

If no line is defined, the printer sets the following default values: **Line 1: Date / Time**, **Line 2: Sample ID**, **Line 3: Weight**, **Line 4: Empty**.

Barcode

Parameters	Explanation	Values
Font	To chose a barcode type. For details about the barcode types see [Labels ▶ Page 24].	Code 39 ext. Code 128 PDF417 Aztec QR code Data matrix
Data	To define which data from Line 1-4 are being included in the barcode.	No Line 1 Line 2 Line 3 Line 4 Include all

Copies

A specific number of copies can be set by the user (default value: 1 copy).

Design by PC

For the option **Design by PC**, the DirectLabel software has to be installed and the option has to be activated.

Print templates

With the option **Print templates** all templates are being printed without real data.

6 Applications (only for P-58RUE models)

In this section it is described how to use the applications for the P-58RUE printer.

Navigation:  **Main menu > Applications**

The P-58RUE printer contains the following applications:

- **Statistics**
- **Formulation**
- **Totaling**
- **Labels**

6.1 Statistics

With the application **Statistics**, statistics of weighing values can be generated. 1 to 999 values are possible.

Navigation:  **Main menu > Applications > Statistics**




6.1.1 Evaluation values




- number of samples, n
- average, \bar{x}
- standard deviation, s
- relative standard deviation, s_{rel}
- sum of all values, Sum
- lowest value (minimum), $Min.$
- highest value (maximum), $Max.$
- difference between the minimum and the maximum, $Diff$

6.1.2 Functions

Selection	Action
Add sample	Request for adding a sample and printing out of ID and value.
Tare	Request for adding a tare.
Zero	Request for zeroing the balance.
Sample ID	Entering a sample ID and printing out.
Display result	Display of the current result.
Delete last	Delete of last added sample in memory and printing out.


6.1.3 Performing Statistics

- 1 Open the application **Statistics**.
- 2 Select **Continue last** to continue the last evaluation.
OR
Select **Start new** to start a new evaluation.
- 3 Press the confirmation key  to confirm.
⇒ **Add sample / Tare** appears.
- 4 If you use a container, select **Tare**.
- 5 Place the container on the weighing pan and press the confirmation key .
- 6 Select **Add sample**.
- 7 Place the first sample and press the confirmation key .
- ⇒ The stable weight value is displayed, added to the statistics and printed.

- 8 Unload sample.
- 9 To continue, follow the same procedure as for the first sample weight.
- 10 Press the print key  for printing results.
- 11 Press the home key  or the menu key  to exit the application.

6.2 Formulation

With the application **Formulation**, 999 individual component weights and container weights can be defined and printed individually and as a total.

Navigation:  **Main menu** > **Application** > **Formulation**








6.2.1 Evaluation values

- number of samples, n
- total sample value, Sum
- total gross value, $SumGross$
- total tare value, $SumTare$

6.2.2 Functions

Selection	Action
Add sample	Request for adding a sample and printing out of ID and value.
Tare	Request for adding a tare and printing out of ID and value.
Zero	Request for zeroing the balance.
Sample ID	Entering a sample ID and printing out.
Display result	Display of the current result.
Delete last	Delete of last added sample or tare value in memory and printing out.

6.2.3 Performing Formulation

- 1 Open the application **Formulation**.
- 2 Select **Continue last** to continue the last evaluation.
OR
Select **Start new** to start a new evaluation.
- 3 Press the confirmation key  to confirm.
⇒ **Add sample / Tare / Zero ...** appears.
- 4 Select **Zero** and press the confirmation key  to zero the balance if needed.
- 5 If you use a container, select the option **Tare**.
- 6 Place the container on the weighing pan and press the confirmation key .
- 7 Select **Add sample**.
- 8 Place the first sample and press the confirmation .
- ⇒ The stable weight value is displayed and printed.
- 9 Unload sample.
- 10 To continue, follow the same procedure as for the first sample weight.
- 11 Press the print key  for printing results.
- 12 Press the home key  or the menu key  to exit the application.

6.3 Totaling

With the application **Totaling** weighing results can be totaled. 1 to 999 results can be totaled.

Navigation:  **Main menu** > **Application** > **Totaling**




6.3.1 Evaluation values

- number of samples, n
- sum of all values, Sum

6.3.2 Functions

Selection	Action
Add sample	Request for adding a sample and printing out of ID and value.
Tare	Request for adding a tare and printing out of ID and value.
Zero	Request for zeroing the balance.
Sample ID	Entering a sample ID and printing out.
Display result	Display of the current result.
Delete last	Delete of last added sample or tare value in memory and printing out.

6.3.3 Performing Totaling

- 1 Open the application **Totaling**.
- 2 Select the option **Continue last** to continue the last evaluation.
OR
Select the option **Start new** to start a new evaluation.
- 3 Press the confirmation key \checkmark to confirm.
 \Rightarrow **Add sample / Tare** appears.
- 4 If you use a container, select the option **Tare**.
- 5 Place the container on the weighing pan and press the confirmation key \checkmark .
- 6 Select **Add sample**.
- 7 Place the first sample and press the confirmation key \checkmark .
 \Rightarrow The stable weight value is displayed and printed.
- 8 Unload sample.
- 9 To continue, follow the same procedure as for the first sample weight.
- 10 Press the print key  for printing results.
- 11 Press the home key  or the menu key  to exit the application.

6.4 Labels

With the application **Labels** predefined label templates can be selected and printed.

Navigation: Main menu  > **Application** > **Labels**

Note

Before using a label it must be defined via **Main menu** > **Settings** > **Application** > **Labels**. With the application **Labels** the labels can only be selected but they cannot be edited.

Application Selections	Actions
Continue last	Continue with label printing.
Start auto sensing	Starts gap sensing between the labels and adjusts them into the correct position e.g. after changing a roll.

Application Selections		Actions
	Template 1	Request values and print out Template 1 label
	2...4	2...4
	Template 5	Request values and print out Template 5 label
	Design by PC1	Request values and print out Design by PC 1 label (only visible if present)
	2...9	2...9
	Design by PC10	Request values and print out Design by PC 10 label (only visible if present)

6.4.1 Label printing with pre-defined printer templates


6.4.1.1 Information on templates

See details below for each template:


Without barcode layout

1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	1	Print Information Line 1
2	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	2	Print Information Line 2
3	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	3	Print Information Line 3
4	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	4	Print Information Line 4

With 1-D barcode layout

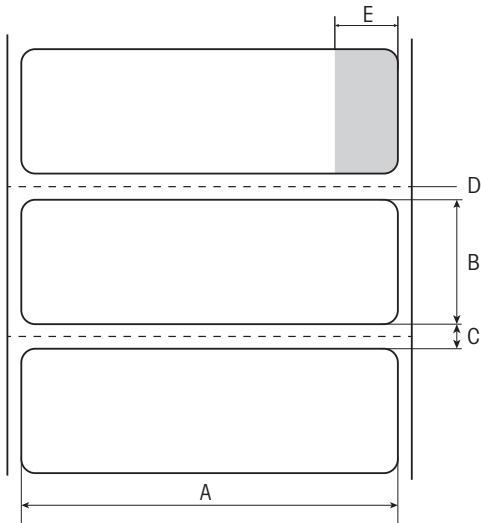
1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	1	Print Information Line 1
2	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	2	Print Information Line 2
3	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	3	Print Information Line 3
4		4	1-D Barcode Line Reserve

With 2-D barcode layout

1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	1	Print Information Line 1
2	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	2	Print Information Line 2
3	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	3	Print Information Line 3
4	XXXXXXXXXXXXXXXXXXXXXXXXXXXX 	4	Print Information Line 4

6.4.1.2 Label Specifications

the label templates have fixed sizes according to the labels on the paper roll.



- A** Label width 56 mm
- B** Label height 18 mm
- C** Gap between labels
- D** Perforation
- E** Non adhesive area 10 mm

6.4.1.3 Barcode types

Code	Example	Width x height in dots
Code 39 ext. (1-D)		432 x 32
Code 128 (1-D)		432 x 32
PDF417 (2-D) Note Same layout as 1-D barcode.		432 x 32
Aztec (2-D)		120 x 120
QR code (2-D)		120 x 120
Data matrix (2-D)		120 x 120

6.4.2 Label printing of user-defined labels designed by PC

DirectLabel software

With the DirectLabel software customer-specific labels can be designed and stored with an external host computer. The software can be found on the CD-ROM. After installing and starting the software, go to the section **Others**, chose a language and open the online help. The online help contains information about how to define costumer-specific labels.

Note

User-defined labels cannot be stored to P-56RUE printers. A host computer is needed to print these labels.

7 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.

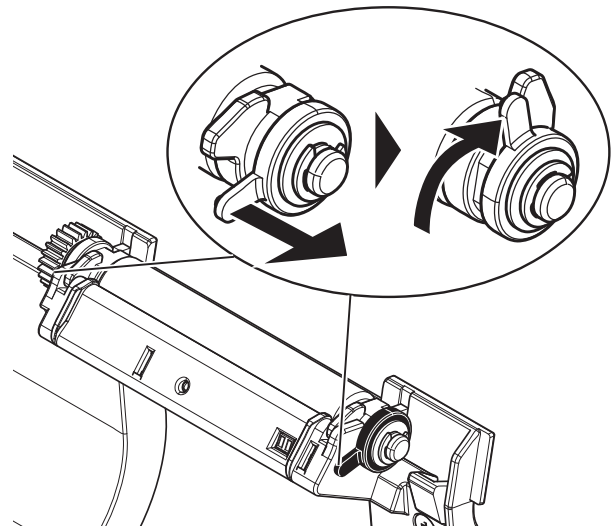
7.1 Replacing the platen roller

Replace the platen roller if the paper feed does not work correctly and cleaning has no effect.

Removing

Printer is switched-off.

- Printer cover is open.
- 1 Pull the two black lock holders (left and right) outwards for releasing and push them upwards.
⇒ Both lock holders are facing up.
 - 2 Remove platen roller.



Inserting

- 1 Hold the new platen roller as shown on figure 1 and insert it into the holder.
- 2 Pull the two black lock holders (left and right) outwards and push them downwards until they are attached (figure 2).
- 3 Make sure that both black lock holders are in correct position before closing the printer cover.

Figure 1:

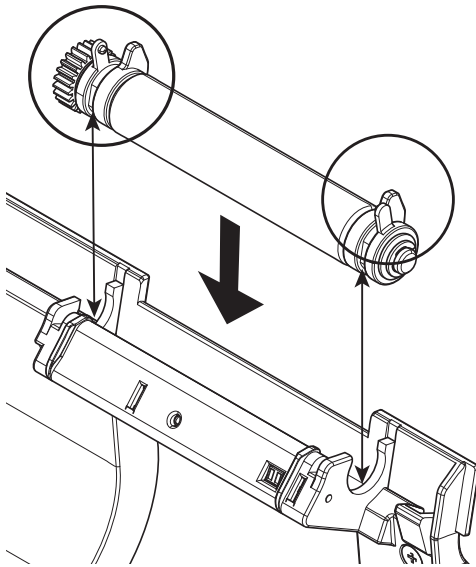
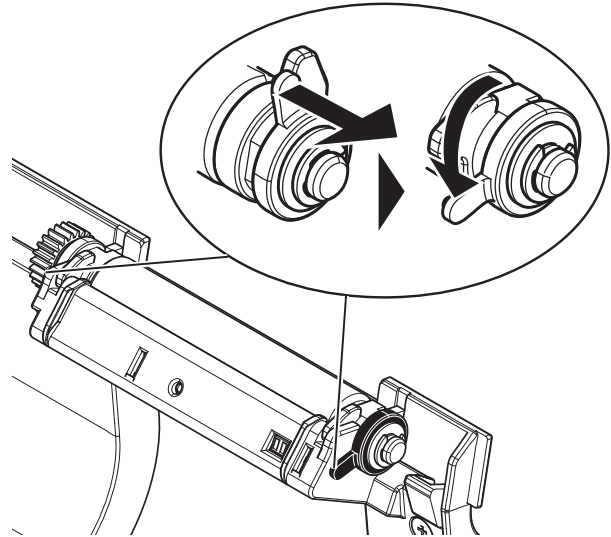


Figure 2:



7.2 Cleaning the housing

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

7.3 Cleaning the printhead and the platen roller



CAUTION

Danger of burns

The thermal printhead is getting hot during the printing process. Wait until the printhead has cooled down before opening the printer cover.

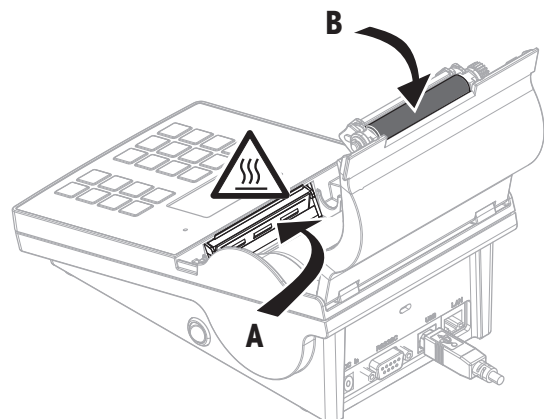
Note

Dirt on the printhead or glue residue from the label may result in inadequate print quality. The printer cover must therefore always be closed. Keeping dirt and dust away from the paper or labels ensures a good print quality and a longer lifespan of the print head.

- 1 Switch-off the printer.
- 2 Open the printer cover.
- 3 Remove any label residue or other dirt from the printhead (A) using a soft lint-free cloth dipped in alcohol.
- 4 If necessary, clean the platen roller (B) using a soft lint-free cloth dipped in alcohol.

Note

- It is suggested to clean the printhead frequently.
- Make sure that there are no metal fragments or other hard particles on the soft cloth.



7.4 Disposal

In conformance with the European Directive 2012/19/EU 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.




8 Troubleshooting







Legend

LED	Triple status indicator (green, orange, red)
	LED on
	LED flashing
	Beeper voice 5 seconds
	Beeper voice twice for 3 seconds

8.1 Information messages

Note

The message appears on the display for 3 seconds or until error is solved. Press  to close the message.

Message	Alert	Issue	Solution
Detecting connection! Please wait...	Green LED 	Detecting connection!	Please wait...
Zero is done!	—	Zero is done!	—
Tare is done!	—	Tare is done!	—
Data receiving...	Green LED 	Data receiving...	Please wait...
Auto connection detection canceled!	—	After 90 seconds timeout of the message No connection found or auto connection was canceled by pressing  .	<ul style="list-style-type: none"> Set Auto connection to off. Connect the instrument and switch the printer off/on.
No connection found! Printout: -- No Connection found – *Please connect device and switch the printer off/on. *Alternatively you can change the settings of the printer or device. Printer settings: Baudrate 9600 Bit/ Parity 8 Bit/None Stop bit 1 bit Handshake Xon/Xoff	Orange LED 	Auto connection failed.	<ul style="list-style-type: none"> Set correct printer/instrument settings.
Set language & date / time first!	Orange LED 	Language, date and time are not set.	Set language, date and time.
Waiting for stability!	Orange LED 	The balance displays unstable values.	Please wait...

8.2 Warning messages

Note

The message appears on the display for 3 seconds or until error is solved. Press **X** to close the message.

Message	Alert	Issue	Solution
Underload!	Orange LED ⚡	Balance application error: underload.	<ul style="list-style-type: none"> Check that the weighing pan is positioned correctly.
Overload!	Orange LED ⚡	Balance application error: The weight on the pan exceeds the weighing capacity of the balance.	<ul style="list-style-type: none"> Reduce the weight on the weighing pan.
Load / Unload!	Orange LED ⚡	Balance application error: no variation on the sample	<ul style="list-style-type: none"> Change sample.
Out of range!	Orange LED ⚡	Balance application error: Sample weight is outside the allowed range.	<ul style="list-style-type: none"> Unload the pan and load a new sample weight.
No last sample to delete!	Orange LED ⚡	Balance application error: sample value cannot be deleted from the memory by pressing ✓ .	<ul style="list-style-type: none"> Only the last stored value can be deleted.
Over heating protection!	Red LED 🔊	Printhead too hot. Continuing to print may damage the printhead.	<ul style="list-style-type: none"> Wait a few seconds until printhead is cooled.
Near end of paper!	Orange LED 🔊	The sensor has detected that the paper is close to the end.	<ul style="list-style-type: none"> The paper roll should be replaced.
Firmware updating... Do not switch off!	Green LED ⚡	Firmware update is running.	<ul style="list-style-type: none"> Do not switch off the printer while updating.
Date / time not set!	Orange LED 🔊 When try to print: Red LED 🔊 🔊	<ul style="list-style-type: none"> Date and time not set. Date and time lost; backup battery which stores date and time is empty. 	<ul style="list-style-type: none"> Set date and time. For charging the built-in backup battery, we recommend to connect the printer to the power supply and switch on for approximately 24 hours e.g. <ul style="list-style-type: none"> when the printer is taken into operation for the first time. when the printer was out of use for a longer periode.
Memory error!	Orange LED 🔊	Non-volatile memory and its data format.	<ul style="list-style-type: none"> Contact your METTLER TOLEDO representative.

8.3 Error messages




Note

The message appears on the display for 5 seconds or until error is solved. Press **X** to close the message.

Message	Alert	Issue	Solution
No connection!	Red LED / \ 🔊	Connection monitor detects no connection.	<ul style="list-style-type: none"> Check connection.
Transmission error!	Red LED / \ 🔊	Transmission failed.	<ul style="list-style-type: none"> Check connection.
Not executable!	Orange LED / \ 🔊	Balance application error: Command understood but currently not executable.	<ul style="list-style-type: none"> Try again later. Check the balance.
Action is not allowed!	Orange LED / \ 🔊	Action not allowed.	—
Barcode print failed!	Orange LED / \ 🔊	Wrong setting for barcode in DirectLabel, e.g. too much information included for low resolution.	<ul style="list-style-type: none"> Increase the resolution of barcode font setting in DirectLabel.
Time out!	Orange LED / \ 🔊	Action canceled. Waiting time was longer than 60 seconds.	<ul style="list-style-type: none"> Repeat this action.
Memory full!	Red LED / \ 🔊	Tare count is higher than 1000 (Formulation, Totaling, Statistics).	<ul style="list-style-type: none"> Start a new evaluation and clear the memory.
Unit change!	Orange LED / \ 🔊	Balance application error: The weighing unit on the balance has been changed during the application by the user.	<ul style="list-style-type: none"> Change it back. Repeat this action.
Buffer overflow!	Red LED / \ 🔊	During data transmission, the cache data exceed the capacity of the buffer. The buffer has been flushed and the transmitted data was lost!	<ul style="list-style-type: none"> Activate handshake (Interface setting). Reduce baudrate (interface setting).
Access denied!	Orange LED / \ 🔊	The access to the settings have been denied by the system.	<ul style="list-style-type: none"> Enter the correct password.
Wrong password!	Orange LED / \ 🔊	The entered password was wrong.	<ul style="list-style-type: none"> Enter the correct password.
No match!	Orange LED / \ 🔊	The new password and the new confirmed password are not identical.	<ul style="list-style-type: none"> Make sure that the new password and the confirmed password are identical.

System errors

Message	Alert	Problem	Solution
Paper run out!	Red LED / \ 🔊	Out of paper. The printing job is blocked to protect the print head but the data are stored.	<ul style="list-style-type: none"> Insert a new paper roll.
Paper error!	Red LED / \ 🔊	<ul style="list-style-type: none"> Wrong paper type in use. Roll type has been exchanged. 	<ul style="list-style-type: none"> Replace the paper/endless label roll with label roll. Start auto sensing (Label applications).

Message	Alert	Problem	Solution
Cover open!	Red LED " \ 	Printer cover is open.	<ul style="list-style-type: none"> Close printer cover.
----- Display Error ----- (Print out)	Red LED " \ 	Display error. Printer is blocked.	<ul style="list-style-type: none"> Please contact METTLER TOLEDO representative.
Keypad error! Please call service	Red LED " \ 	No keypad detected. Printer is blocked.	<ul style="list-style-type: none"> Please contact METTLER TOLEDO representative.

8.4 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 LED lights up red (ERROR) and printing is interrupted.	<ul style="list-style-type: none"> • Check whether this is an error in the software settings or the print commands. • Check if the used paper roll is suitable. • Check whether there is a paper jam. • Check whether the paper roll is finished. • Check whether the printer cover is closed (the print head is not positioned correctly). • Check whether the paper is covering the sensor.
The paper roll passes through the printer but no image is printed.	<ul style="list-style-type: none"> • Make sure that the label roll is loaded the right way up and that it is suitable material. • Use the correct power supply (24V).
The paper roll jams during printing.	<ul style="list-style-type: none"> • Clear the paper jam. • Clean the print head. • Clean or replace the platen roller.
The paper roll does not move correctly and there is no printed image on some parts of the label.	<ul style="list-style-type: none"> • Check whether any label material is stuck to the thermal print head. • Check whether the starting position has been set incorrectly. • Check the power supply. • Check if the platen roller needs cleaning. • Check if the platen roller needs replacing
There is no printed image on part of the paper.	<ul style="list-style-type: none"> • Check the thermal print head for dust or other dirt. • Check the quality of the paper.
The printed image is positioned incorrectly.	<ul style="list-style-type: none"> • Check whether there is paper or dust covering the sensor. • Check whether the paper roll is suitable. • Make sure that the paper roll is loaded correctly.
A label is missed out during printing.	<ul style="list-style-type: none"> • Check the label height. • Check whether there is dust covering the sensor.
The printed image is blurred.	<ul style="list-style-type: none"> • Check the darkness setting. • Check the thermal print head for glue residue or other dirt.
Printer can't connect balance anymore until restart balance.	<ul style="list-style-type: none"> • Switch the printer off and on (restart printer).

9 Technical Data

9.1 General technical Data

Power Supply

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

Printer Features

Print technology	Direct Thermal
Resolution	8 dots/mm (203 dpi)
Print speed	Max. 101.6 mm/s (4 IPS)
Printable width	54 mm (2.12")
Real time clock	Date and time
Resident fonts	7 Windows bit map fonts: 6 pt, 7 pt, 10 pt, 12 pt, 24 pt, 16x26, OCR A & B
Barcodes	<ul style="list-style-type: none">1-D Bar codes: Code 39, Code 1382-D Bar codes: PDF417 (layout as 1-D), Datamatrix code, QR code, Aztec code
Graphics	<ul style="list-style-type: none">Support BMP and PCXSupport ICO, WMF, JPG, EMF file through softwareSupport image resize, rotating, mapping and inverse through DirectLabel software
Interfaces	<ul style="list-style-type: none">RS232 port (Male DB 9)USB 2.0 device port (B-type)Ethernet 10/100base-TX port (Rj-45)
Control Panel	<ul style="list-style-type: none">Triple color LED: green, orange or red for status indicating8 tactile keys (P-56RUE), 20 tactile keys (P-58RUE)
Display	LCD, backlight, 128 x 64 dots
Display languages	English, German, French, Italian, Spanish, Russian, Chinese (simplified), Japanese, Korean

Materials

Top housing	Die-cast zinc, chromed and plastics (PBT)
Bottom housing	Plastics (PBT)
Platen-roller	

Media

Width	Max. 58 mm (2.28")
Thickness	Min. 0.06 mm (0.003") ~ Max. 0.2 mm (0.008")
Roll diameter	Max. 60 mm (2.36")
Core diameter	12.7 mm (0.5")
Paper roll wound direction	Outwards

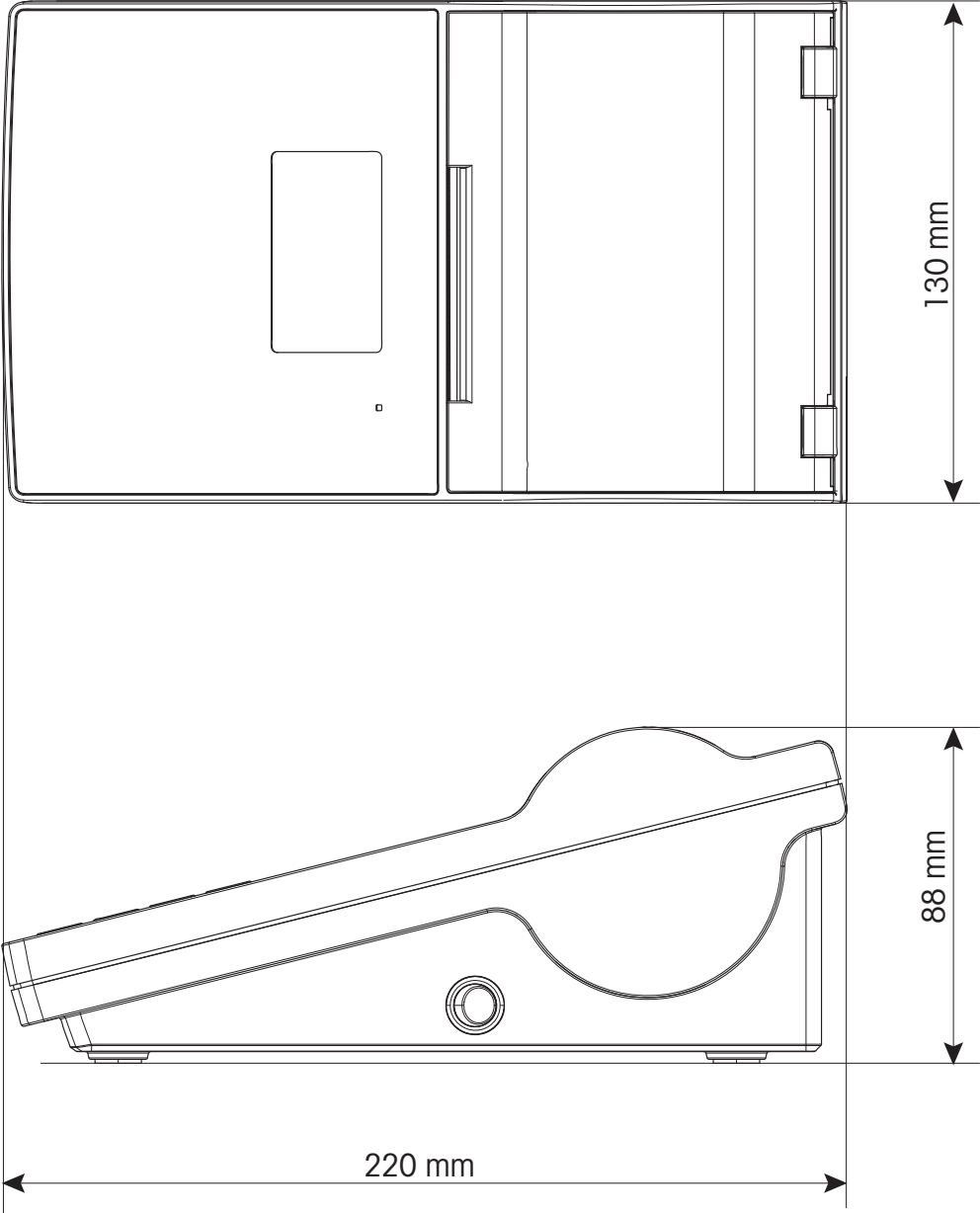
USB driver

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

Dimension / Weight

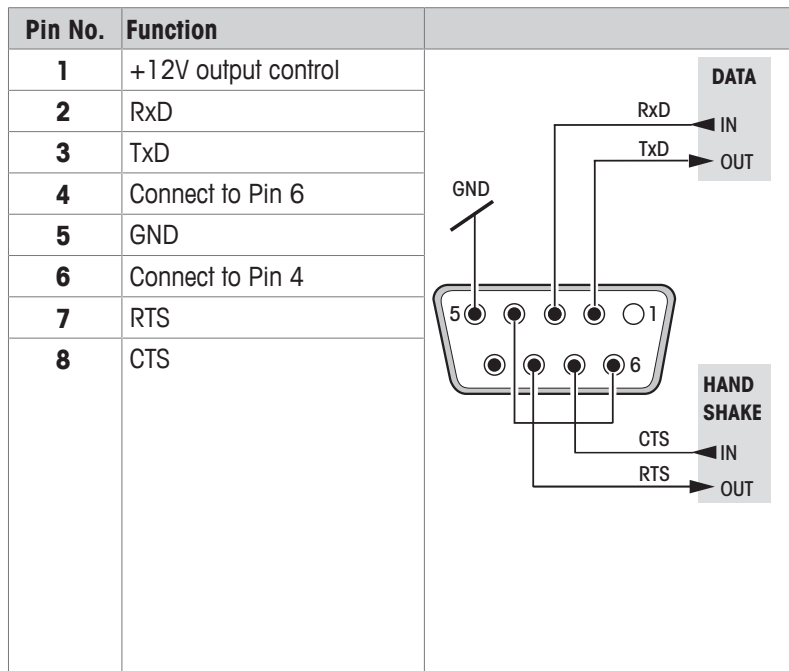
Length	220 mm
Height	88 mm
Width	130 mm
Net Weight	1.4 kg, without AC/DC adapter

9.2 Dimensions



10 Interface Specifications

10.1 RS232C serial port



Note

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

10.2 USB device port

USB connector type B

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

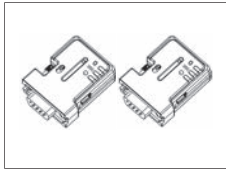
10.3 Ethernet 10/100base-TX RJ45 port

RJ45 connector

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

11 Accessories and spare parts

11.1 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

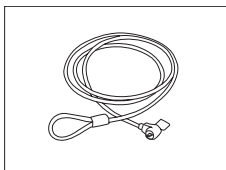
- 2 Bluetooth RS232 serial adapter paired (slave/master)
- 1 MT-DB9 male to female connector
- 1 MT-DB9 male to male connector



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

30237797

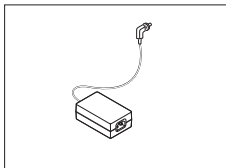
- Paired set of Bluetooth adapters
- RS232 option with 12V power



Anti-theft steel cable

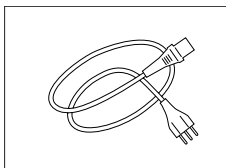
11600361

11.2 Spare parts



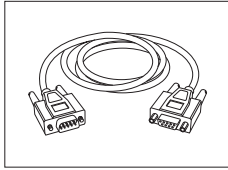
AC/DC adapter (without power cable) 100–240 V AC, 50/60 Hz, auto switching, 24 V DC, 2.5 A

30094772



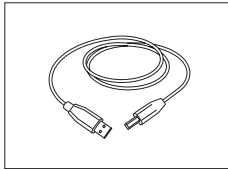
Country-specific 3-Pin power cable with grounding conductor.

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



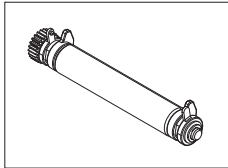
RS9 – RS9 (m/f): connection cable for PC, length = 1 m

11101051



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

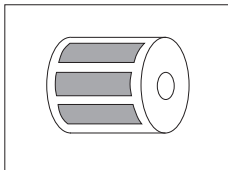
30241476



Platen roller

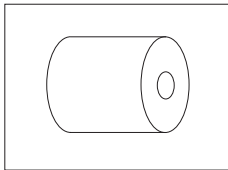
30094770

11.3 Consumables



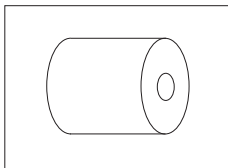
Thermal labels
Label size: 56 mm x 18 mm, 6 rolls with 550 labels per roll, durability: up to 10 years

30094725



Thermal continuous label
58 mm, length: 13 m, 10 rolls, durability: up to 10 years

30094724



Thermal paper
58 mm, length: 27 m, 10 rolls, durability: up to 25 years

30094723

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- Calibrate and operate your weighing equipment with security
- Comply with quality and compliance standards in laboratory and manufacturing

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