



User Guide

SUMMARY

This guide provides technical specifications and information about product features, setting up the printer, and using the printer.

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Product notice

This guide describes features that are common to most models. Some features may not be available on your product. To access the latest user guide, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **Manuals**.

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About this guide

This guide provides technical specifications and information about product features, setting up the printer, and using the printer.






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-  **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in serious injury or death.
 -  **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.
 -  **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). Warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
 -  **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
 -  **TIP:** Provides helpful hints for completing a task.
-

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1 Getting started

Read this chapter to learn about safety information and where to find additional HP resources.


Important safety information

An AC adapter and power cord might be included with the product. If you use another cord, use only a power source and connection appropriate for this product. For information about the correct power cord set to use with the product, see the *Product Notices* provided in your documentation kit.


 **WARNING!** To reduce the risk of electric shock or damage to the equipment:


- Plug the power cord into an AC outlet that is easily accessible at all times.
- If the power cord has a three-pin attachment plug, plug the cord into a grounded (earthed) three-pin outlet.
- Disconnect power from the computer by unplugging the power cord from the AC outlet. When unplugging the power cord from the AC outlet, grasp the cord by the plug.


To reduce the risk of serious injury, read the *Safety & Comfort Guide* provided with your user guides. It describes proper workstation setup and proper posture, health, and work habits for product users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is also available on the web at <http://www.hp.com/ergo>.

 **IMPORTANT:** For the protection of the product, connect all power cords for the product and its peripheral devices to a surge protection device such as a power strip or uninterruptible power supply (UPS). Not all power strips provide surge protection; the power strip must be specifically labeled as having this capability. Use a power strip whose manufacturer offers a damage replacement policy so that you can replace the equipment if surge protection fails.

Use the appropriate and correctly sized furniture designed to properly support your product.

 **WARNING!** Products that are inappropriately placed on dressers, bookcases, shelves, desks, speakers, chests, or carts could fall over and cause personal injury.

 **WARNING! Stability hazard:** The device might fall, causing serious personal injury or death. To prevent injury, securely attach the monitor to the floor or wall in accordance with the installation instructions.

 **WARNING!** This equipment is not suitable for use in locations where children are likely to be present.

More HP resources

Use this table to locate resources that provide product details, how-to information, and more.

Table 1-1 Additional information

Resource	Contents
Setup Instructions	Overview of product setup and features

Table 1-1 Additional information (continued)

Resource	Contents
HP support	<p>For HP support or to resolve a hardware or software problem, go to http://www.hp.com/support, and follow the instructions to find your product.</p> <p>– or –</p> <p>Select the Search icon in the taskbar, type <code>support</code> in the search box, and then select HP Support Assistant.</p> <p>– or –</p> <p>Select the question mark icon in the taskbar.</p>
<p>NOTE: Contact customer support to replace the power cord, the AC adapter (select products only), or any other cables that shipped with your product.</p>	

Getting to know your printer

Your printer has top-rated features. This section provides details about your components, where they are located, and how they work.

Features

The HP Engage Thermal Receipt Printer is designed to work with point of sale system hardware and program applications.



Standard features

- **Interface:** USB, RS232, Ethernet, or PUSB
- **Resident character sets:** PC page codes 437 (US), 737 (Greek), 850 (Multilingual), 852 (Slavic), 855 (Cyrillic), 857 (Turkish), 858 (with Eurosymbol), 860 (Portuguese), 862 (Hebrew), 863 (French Canadian), 864 (Arabic), 865 (Nordic), 866 (Cyrillic), 874 (Thai), 932 (Kanji), 936 (Simplified Chinese), 949 (Korean - Hangul), 950 (Traditional Chinese), 1098 (Farcil), 1125 (Ukrainian), 1250 (Latin), 1251 (Cyrillic), 1252 (Windows Latin I), 1253 (Greek), 1254 (Turkish), 1255 (Hebrew), 1256 (Arabic), 1257 (Baltic), 1258 (Vietnamese), Katakana, VISCII - Vietnamese and KZ_1048 (Kazakh)

Resident character sets (with Unicode support for all localization):

- **Integrated bar codes:** UPC-A, UPC-E, EAN8, EAN13, Code 39, Code 93, Interleaved 2 of 5, Codabar, Code 128, EAN 128, GS1 Data- bar, Datamatrix, QR code and PDF 417
- **Print:** Monochrome in either 44 (standard) or 56 (compressed) columns on 58 (2.3 in) mm or 80 mm (3.2 in) wide thermal paper
- **Paper path:** 58 mm (2.3 in) or 80 mm (3.2 in)
- **Print resolution:** 203 dpi (8 dots/mm)
- **Speed:** Up to 250 mm/second (9.8 in/second) throughput (monochrome)
- **Paper sensing:** Paper presence, Paper low, Paper jam
- **Cash drawer driver:** Connector for one or two cash drawers (Obtain a Y-cable for two drawers.)
- **Knife:** Full and partial cuts supported



NOTE: For safety and regulatory information, see the *Product Notices* provided in your documentation kit. To access the latest user guide, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **Manuals**.

Printer components

To identify the components on the printer, use this illustration and table.

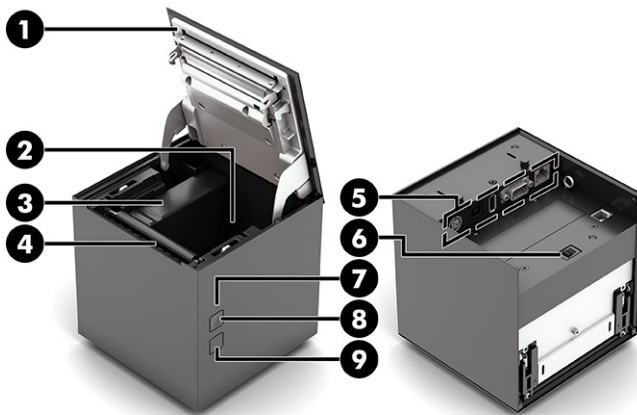
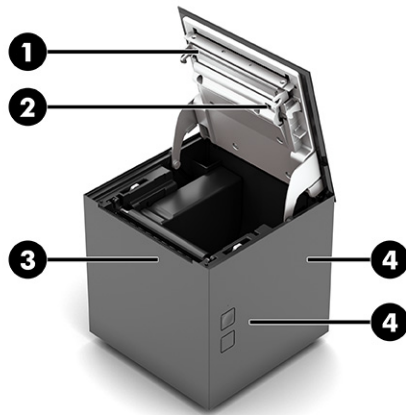


Table 1-2 Printer components and their descriptions

Component	Description
(1) Receipt cover	Snaps open so that you can easily drop the paper roll in place.
(2) Receipt paper bucket	Prints receipts using thermal print technology.
(3) Paper adapter	58 mm (2.16 in) paper width adapter.
(4) Tear bar	Tears the paper.
(5) Rear connectors	See Rear connectors on page 5 .
(6) ON/OFF button	This button turns the printer on or off.
(7) Light status	<ul style="list-style-type: none"> On: The printer is on and operating normally. Blinking: The printer needs operator assistance. The cover might not be fully shut.
(8) Opening receipt cover button	Press and hold the button to open the receipt cover.
(9) Paper feed button	<p>During normal use, the button advances the paper. Each time you press the feed button, the paper advances a distance equal to a printing line. When you press and hold the feed button, the paper advances continuously.</p> <p>You can also used to access the configuration menu with the paper feed button.</p>

**Table 1-3 Printer components and their descriptions**

Component	Description
(1) Printhead and temperature sensor	Thermal printhead of the printer. It has a thermal sensor that checks the temperature of the thermal head. When the printhead overheats, the device detects an error, and the LED blinks yellow two times. The sensor is placed on the printhead where it is not visible.
(2) Paper presence sensor	This sensor detects paper presence.
(3) Anti-jam sensor	This sensor detects the paper jam between the platen roller and the autocutter.
(4) Low paper sensors	The sensors detect low paper.

Rear connectors

To identify the connectors on the rear of the printer, use this illustration and table.

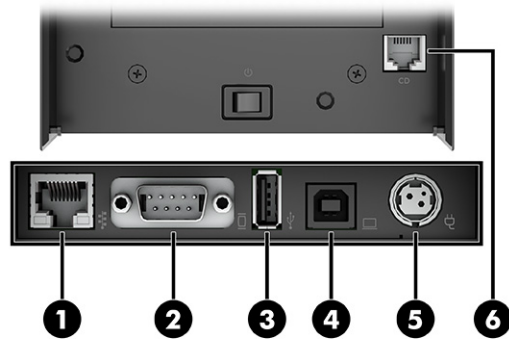


Table 1-4 Rear components and their descriptions

Component	Description
(1) RJ-45 (network) jack	Connects the printer to a network.
(2) Serial port	Connects the printer to the serial port on the point of sale (POS) computer.
(3) USB port	Connects a USB device as a passthrough to the POS computer.
(4) USB Type-B port	Connects the printer to the USB port on the POS computer.
(5) Power connector	Connects the printer to a power adapter.
(6) RJ-12 (cash drawer) jack	Connects the printer to the cash drawer.

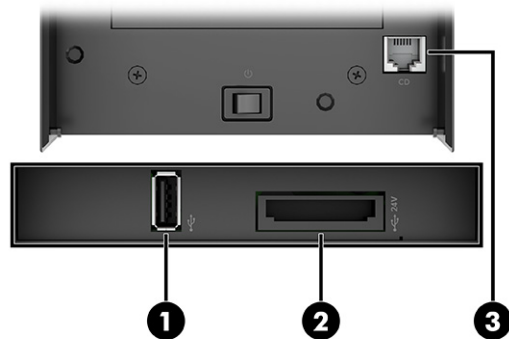


Table 1-5 Rear components and their descriptions

Component	Description
(1) USB port	Connects a USB device as a passthrough to the POS computer.
(2) Power USB port	Connects the printer to a 24 V powered USB port on the POS computer.
(3) RJ-12 (cash drawer) jack	Connects the printer to the cash drawer.

Indicators

The printer communicates various conditions with the light status. To identify the indicators, use this table.

Table 1-6 Indicators, sequences, and their conditions

Indicator	Sequence	Condition
White	On	Device on: no error
White	Blinking x1	Receive data
	Blinking x2	Reception errors (Parity, frame error, overrun error)
	Blinking x3	Command not recognized
	Blinking x4	Command reception time out
Yellow	Blinking x2	Printehead overheated
	Blinking x3	Paper end
	Blinking x4	Paper jam
	Blinking x6	Cover open
Red	Blinking x3	RAM error
	Blinking x4	EEPROM error
White	Blinking rapidly x1	AP connection

Setting up the printer

This section describes checking the packing list, connecting the cables, turning on the printer, installing the driver, the options for opening your printer, how to load or change the receipt paper, and when to change the receipt paper.

⚠ WARNING! To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and proper posture, health, and work habits for printer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is available on the web at <http://www.hp.com/ergo>.


Checking the packing list


Save the packing materials in case you need to repack the printer for shipping or storage. Before installation, confirm that all listed items below have been shipped.


- Printer
- Test printout
- Paper guide
- Sample paper roll
- Installation instruction sheet

Connecting the cables


Before setting up the receipt printer, be sure that power is turned off to the printer, POS computer, and other attached devices.

 **NOTE:** Place the printer on a level surface, and position it in a location that allows access to cables and adequate room to open the cover. Locate the printer away from traffic areas to limit the chance of being bumped or damaged.

 **IMPORTANT:** Connect cables to the printer before turning on power to the POS computer. The POS computer should always be turned off before connecting the communication cable.


 **WARNING!** Using this device without a grounded outlet is a safety hazard and voids the printer warranty, in addition to safety, FCC, and CE mark designations.

1. Turn off the POS computer.
2. Remove the fixing screw **(1)** and remove the bottom cover **(2)**. Pass the cables through the slot in the bottom cover **(3)**.
3. Plug the serial cable into the serial port **(5)** on the printer or plug the USB cable into the USB port **(7)** on the printer. Plug the other end of the serial or USB cable into the appropriate port on the POS computer.

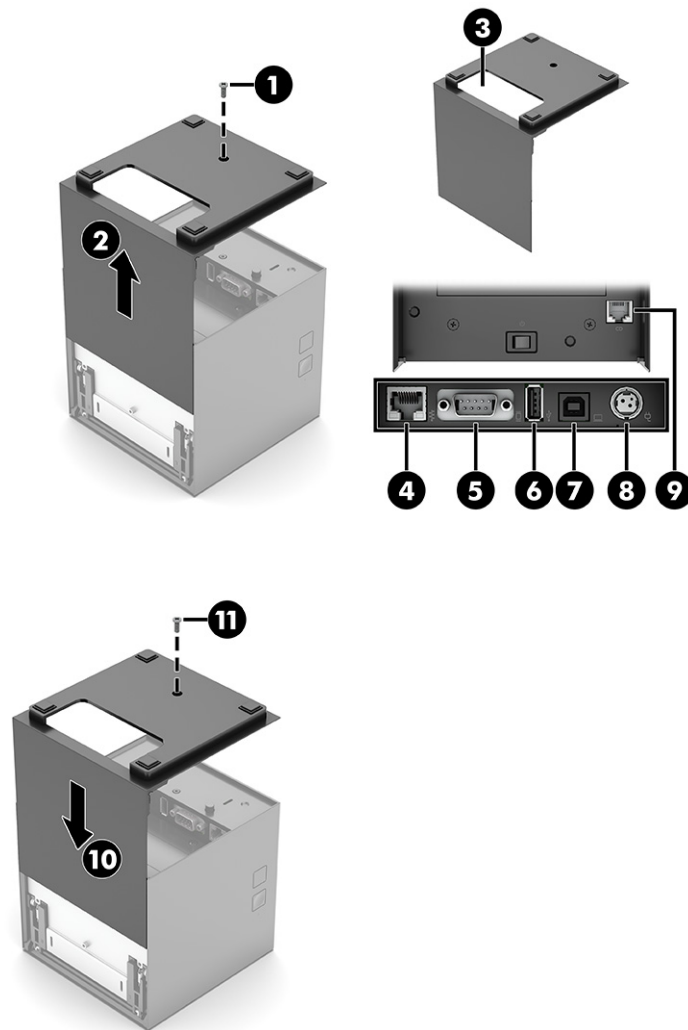
 **NOTE:** You can use either the USB cable or the serial cable as the data interface with the POS computer. Do not use both.

If you use the serial interface, you must use a 9-pin female to 9-pin female null modem serial cable between the printer and POS computer. Be sure to tighten the screws to secure the cable and ensure a stable connection.

4. Connect one end of the power cord to the power connector **(8)** on the printer. Plug the AC adapter into the wall, or if using a 24 V powered USB Y-cable plug into the 24 V powered USB port on the POS computer.
5. Connect one end of the cash drawer cable (purchased separately) to the RJ-12 (cash drawer) jack **(9)** on the printer and the other end of the cable to the RJ-45 (network) jack on the cash drawer.

 **NOTE:** The cash drawer cable connects the printer to one or two cash drawers. If installing two cash drawers, you need to obtain a Y-cable for the cash drawers.

6. Position the bottom cover according to the configuration that you want to use (10), and fix the screw (11).



Turning on the printer

Use this procedure to turn on the printer.

1. After connecting the cables to the printer and POS computer, turn on the printer.
2. If the Found New Hardware Wizard dialog box opens, select **Cancel**.

The white status light turns on, initializing the printer.

Installing the driver

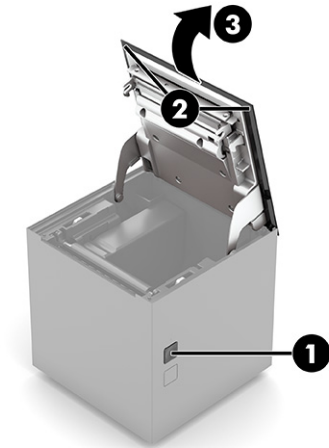
Use this procedure to install the driver.

1. Go to <http://www.hp.com> to download and install the driver.
2. Select and install the OPOS driver or the JPOS driver for your POS computer's operating system.

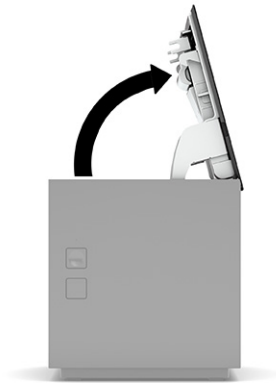
Best practices for opening the HP Engage Thermal Printer

Use caution when opening the HP Engage Thermal Printer.

To open the receipt cover, position the printer facing forward with the paper feed button toward you. Press and hold the opening receipt cover button (1) place your fingers at the front corners (2), and lift up the receipt cover (3).



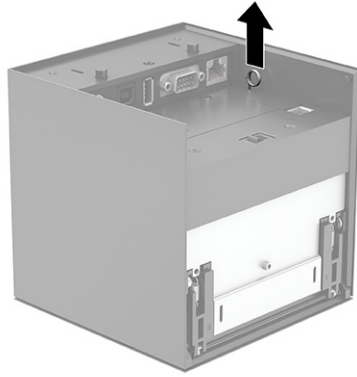
The receipt cover can open to a maximum of 80°, as shown in the following image.



Do not force the latch if it becomes jammed so that you cannot open the cover. If this event occurs, hold the printer upside down, locate the latch release lever, and pull it down to release the latch. This action opens the top cover.




NOTE: If the only way to open the cover is with the release lever, replace the printer.




Loading or changing the receipt paper

Use this procedure to load the paper during installation. You can use the same procedure to change the receipt paper. The minor difference is noted in the directions.

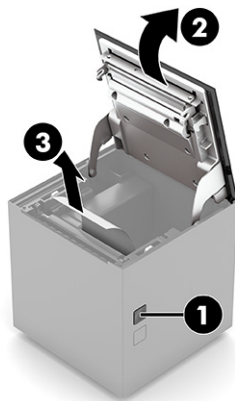
 **IMPORTANT:** You must use qualified paper rolls with HP printers. See [Qualified paper grades on page 28](#). Using unqualified paper may void the warranty.

1. Open the receipt cover by keeping the opening receipt cover button pressed until the cover unsnaps, and then rotate the cover up (1).

 **NOTE:** To avoid damaging the receipt cover, do not open the cover more than 80°.


2. If you are loading paper for the first time, remove the test printout (2). Retain the test printout until the printer is successfully installed.

If you are changing the paper roll, remove the paper roll.

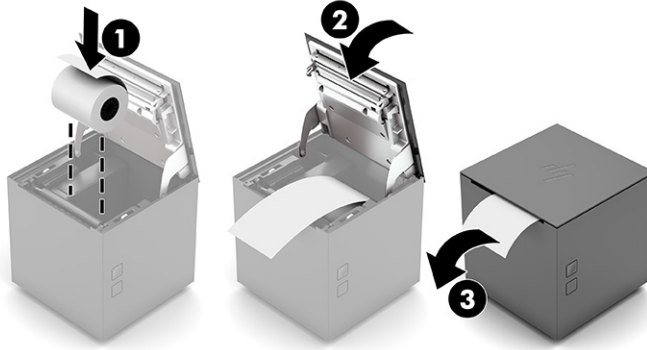


3. Tear a clean edge on the new receipt paper roll, making sure the tape has been completely removed.
4. Place the receipt paper into the paper compartment so that it unrolls from the top (1). Leave a few inches of paper sticking out of the printer.

5. While holding the paper in place, close the receipt cover (2). If turned on when the cover is closed, the printer will feed and cut the paper.

 **NOTE:** If the paper jams, be sure that the roll is inserted correctly.

6. Tear the excess paper off against the tear blade (3).



When to change the receipt paper


Change the paper when it is near the end of the roll or when the roll is empty. When the paper is low, monitor its usage to avoid running out of paper during a transaction. When there is no more paper on the roll, you must load a new roll immediately to avoid losing information.

When the paper is low:

When the paper is near the end of the roll, the Low Paper sensor is engaged and activates a flag in the status reporting of the printer. This status is provided to the application, which can use it to communicate information to the user.

When the paper is out:

The yellow status light blinks rapidly and the receipt cover opens, indicating that you must install the paper.

 **IMPORTANT:** Do not try to operate the printer or POS computer if the printer runs out of paper. The printer might accept data from the POS computer even though it cannot print. You might lose data as a result.


2 Operating the printer

This chapter describes how to use your printer and its features.

Configuring the printer

You can see and test general printer parameters from the configuration menu. The test prints the diagnostic form, which details the settings for all functions. A complete test printout might use several feet of paper.

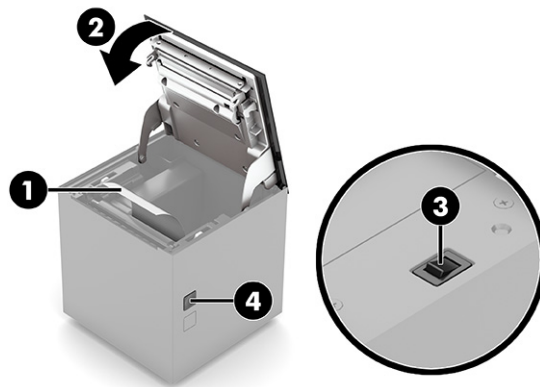
Because the printer is usually shipped preconfigured, you should not need to change the configuration. If you adjust the configuration, be careful not to inadvertently change settings that might affect the printer's performance. HP recommends that you leave the factory-set printer configuration as received.

 **NOTE:** The printer is shipped with a test printout that includes the preset configuration. If you experience problems after changing the printer configuration, use the default settings.

Entering configuration mode by keys

Use this procedure to enter configuration mode by keys.

1. Turn off the power to the printer.
2. Be sure that the receipt paper (1) is loaded in the printer. For instructions about loading the receipt paper, see [Setting up the printer on page 6](#).
3. Close the receipt cover (2).
4. Turn on power to the printer (3), and immediately press and hold the feed paper button (4) until the configuration printout begins.



5. To communicate with the printer, press the paper feed button or the open button. Use a short click of the feed button to modify parameters and a short click of the open button to go to the next parameter. Follow the printed instructions to make selections.

6. Continue through your menu selections until the printer cuts the paper.
 - Device name and firmware modules release
 - Printhead status
 - Device status
 - Network parameters
 - Device configuration parameters
 - Key functions

Entering the configuration mode by software

You can set parameters by using the HP Receipt Printer CA-Series Configuration Utility software tool.

1. Connect the device to a computer.
2. Start the HP Receipt Printer CA-Series Configuration Utility software tool.
3. Select **LOAD > From Device**, and select the device connected to the computer.
4. Select **SETUP** to access the operating parameters of the device that you want to configure.
5. Make the changes to the device operating parameters.
6. Select **SAVE > To Device**.
7. Select the device setup data field, and select **OK** to save.

Printhead status

The printer performs the printhead operating status when printing the configuration printout. The total number of dots is reported. The total number of dots of the printhead and their status are indicated. If dots are damaged, they are listed in the prints according to their position on the heating line.

Printer status

The printer operating status is indicated in the configuration printout next to the name of the components shown.

Table 2-1 Component names and their descriptions

Component	Description
Printer type	Device model.
Printing head type	Printing head model.
Interface	Interface is present.
Program memory test	OK appears if it is functioning and NOT OK appears if it is malfunctioning.
Dynamic Ram test	OK appears if it is functioning and NOT OK if it is malfunctioning.
Cutter test	OK appears if it is functioning and NOT OK if it is malfunctioning.

Table 2-1 Component names and their descriptions (continued)

Component	Description
Head voltage	Voltage of the head.
Head temperature	Temperature of the head.
Power On counter	Number of times that the printer turned on.
Paper printed	Centimeters of paper printed.
Cut counter	Number of cuts made.

Communication parameters

Communication settings remain active even after the device is turned off, and they are stored in nonvolatile memory.

You can configure the parameters that are in the following table. The parameters marked with the asterisk are the default values.

Table 2-2 Components and their descriptions

Component	Description
Serial Baud Rate	<p>Communication speed of the serial interface:</p> <p>9600 19200 38400 57600 115200*</p> <p>Parameter valid only with serial interface.</p>
Serial Data Length	<p>Number of bits used for characters encoding:</p> <p>7 bits/chr</p> <p>8 bits/chr*</p> <p>Parameter valid only with serial interface.</p>
Serial Parity	<p>Bit for the parity control of the serial interface:</p> <ul style="list-style-type: none"> • None* = parity bit omitted • Even = even value for parity bit • Odd = odd value for party bit <p>Parameter is valid only with serial interface.</p>
Serial Handshaking	<p>Handshaking:</p> <p>Xon/Xoff = software handshaking</p> <p>Hardware* = hardware handshaking (CTS/RTS)</p> <p>Parameter is valid only with serial interface.</p>
Busy Condition	<p>Activation mode for the Busy signal:</p> <p>OffLine/RxFull = Busy signal that is activated when the device is both in OffLine status and the buffer is full.</p> <p>RxFull* = Busy signal that is activated when the buffer is full.</p>

Table 2-2 Components and their descriptions (continued)

Component	Description
USB Class	<p>Parameter is valid only with serial interface.</p> <p>USB communication class definition.</p> <p>Printer* = setting the printer function.</p> <p>Virtual COM = setting the USB port as a serial port.</p>
USB Address Number	<p>Numerical address code for the unique identification of the USB device if more than one USB device is connected to the same computer:</p> <ul style="list-style-type: none"> • 0* 2 4 6 8 • 1 3 5 7 9
DHCP Client	<p>Setting of the DHCP protocol:</p> <p>Disabled* = protocol disabled</p> <p>Enabled = protocol disabled</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
IP Address	<p>IP address of the device.</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
Subnet Mask	<p>This parameter identifies the local network address.</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
Default Gateway	<p>This parameter identifies the gateway IP address used to send applications to the external network.</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
Primary DNS server	<p>This parameter identifies the Domain Name System (DNS).</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
Secondary DNS server	<p>This parameter identifies the Domain Name System (DNS).</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
TCP Printer Port	<p>This parameter identifies the TCP port number.</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>
TCP Timeout	<p>Setting the data transmission timeout of the TCP protocol.</p> <p>You can modify this parameter only during setup by software (see Entering the configuration mode by software on page 13).</p>

Operation parameters

Operation settings remain active even after the device is turned off and they are stored in nonvolatile memory.

You can configure the parameters listed in the following table. The parameters marked with the asterisk are the default values.

Table 2-3 Components and their descriptions

Component	Description
Print Mode	Printing mode: Normal* = enables printing normal writing way Reverse = enables printing rotated 180°
Autofeed	Setting of the Carriage Return character: CR disabled* = Carriage Return disabled CR enabled = Carriage Return enabled
Chars / Inch	Font selection: A = 11 cpi, B = 15 cpi A = 15 cpi, B = 20 cpi* A = 20 cpi, B = 25 cpi
Font Type	Setting of font type: International* = enables the use of the 256 characters font tables Chinese GB18030 = enables the use of the Chinese extended font GB18030 Korean CP949 = enables the use of the Korean font CP949
Code Table	Identifier number of the character code table to use. See Supported character sets resident code pages on page 26 to learn about the character tables that correspond to the identification numbers that you set with this parameter.
Speed / Quality	Setting of printing speed and printing quality: High Quality Normal High Speed*
Print Width	Width of printing area: 58 mm (2.3 in) 72 mm (3.07 in)*
Paper Threshold	Threshold value (in percent) for the recognition of paper presence by the paper presence sensor: 30%, 60%, 90% 40%*, 70%

Table 2-3 Components and their descriptions (continued)

Component	Description
	50%, 80%
PaperEnd Buffer Clear	<p>Cleaning mode of data in the receive buffer, if printing stops because of a lack of paper:</p> <p>Disabled* = data remains in the receive buffer. When the paper runs out, the device keeps the remaining data in receive buffer and prints the remaining portion of the ticket after the new paper is loaded.</p> <p>Enabled = when the paper runs out, all data in the receive buffer is deleted.</p>
PrintHead Test Power On	<p>Setting of the performing of the print head test:</p> <p>Disabled* = the test is performed only while printing the setup report.</p> <p>Enabled = the test is performed whenever the printer turns on.</p>
Print Density	<p>Adjusting the printing density:</p> <p>-25% -12% 0* +12% +25%</p> <p>The print quality is strongly influenced by the type of chemical treatment and the type of storage that the thermal paper is subjected to, as well as by its weight. You might have to adjust this parameter to obtain the print quality that you want.</p>
Power Off Time	<p>Setting the inactivity period after the printer turns off automatically:</p> <p>none, 30 min*, 1 hour, 2 hours, 4 hours, 6 hours, or 8 hours.</p>

Preventing printhead overheating

The duty cycle contains restrictions because of the heat generated by the thermal printhead during solid printing (regardless of the length of the block in relation to the print line). The restrictions are ambient temperature, the length of continuous solid printing (percentage as compared to 1 minute), and the amount of coverage.



IMPORTANT: When the duty cycle exceeds the limits shown in the following table, the receipt printhead heats up and shuts down, which can damage the printhead.

To avoid this problem, do one or a combination of the tasks:

1. Reduce the amount of coverage.
2. Reduce the time of continuous solid printing.
3. Reduce the ambient temperature.

The ambient temperature can be affected by factors such as direct exposure to sun or close proximity to heating elements.

Table 2-4 Allowable duty cycle (measured over 1 minute of continuous printing)

Amount of solid coverage	Ambient temperature		
	25°C (77°F)	35°C (95°F)	50°C (122°F)
20%	100%	50%	20%
40%	50%	25%	10%
100%	20%	10%	4%

*The duty cycle is the percentage of time that the specified amount of solid coverage can be printed during 1 minute. For example, at 20% solid coverage and 35°C temperature, use a 50% duty cycle for 30 seconds of printing and 30 seconds without printing.

For reference:

- A typical receipt with text (contains some blank spaces) is approximately 12% dot coverage.
- A full line of text characters (every cell on the line has a character in it) is approximately 25% dot coverage.
- Graphics are approximately 40% dot coverage.
- Barcodes are approximately 50% dot coverage.
- A solid black line is 100% dot coverage.

3 Maintaining the printer

Properly maintained, your printer can run for many years. These instructions provide steps you can perform to keep your printer in the best condition.

Maintenance guidelines

This chapter outlines how to enhance the performance and extend the life of the printer.

Cleaning the printer

Clean the outside of the cabinet as needed to remove dust and finger marks. Use any household cleaner made for plastics. Test it first on a small unseen area. Clean the printer paper bucket with a clean, damp cloth.


The cabinet materials and finish are durable and resistant to the following items:


- Cleaning solutions
- Cooking oils
- Lubricants
- Ultraviolet light
- Fuel

If small paper debris accumulate inside of the printer, use a can of compressed air to gently clear the debris from the printer.


Cleaning the thermal printhead

Use these instructions to clean your thermal printhead when necessary.


 **IMPORTANT:** Do not clean the inside of the printer with any cleaner. Do not allow cleaning spray to come into contact with the thermal printhead. Damage to the internal electronics or thermal printhead can occur.

 **NOTE:** The thermal printhead does not normally require cleaning when recommended paper grades are used. If unrecommended paper is used over an extended period, attempting to clean the printhead will have little effect on the print quality.

1. Turn off the printer and POS computer.
2. Unplug the printer from the POS computer and the cash drawer, if connected.
3. Wipe the printhead with a cotton swab moistened with rubbing alcohol.

 **IMPORTANT:** Do not use rubbing alcohol to clean any internal parts of the printer other than the printhead. Damage will occur.

If spotty or light printing problems persist after cleaning the thermal printhead, you might have to replace the entire thermal mechanism.

 **IMPORTANT:** Using unrecommended paper over an extended period of time can result in printhead failure. See [Qualified paper grades on page 28](#) for paper specifications.

4 Support and troubleshooting

If your printer is not working as expected, you might be able to resolve the issue by following the instructions in this section.

Solving common issues

The table in this section lists possible issues, the possible cause of each issue, and the recommended solutions.

Table 4-1 Common issues and solutions

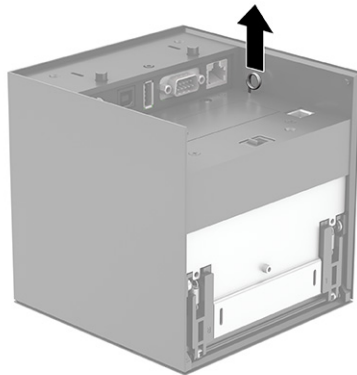
Issues	Possible cause	Solution
Blinking yellow light.	Paper is out.	Load a new paper roll. See Loading or changing the receipt paper on page 10 .
	Receipt cover is open.	Close the cover.
	Knife is malfunctioning.	Stop using the printer. Contact your regional HP-authorized service provider for more HP POS System products.
Blinking red light.	Indicates serious conditions.	Stop using the printer. Contact your regional HP-authorized service provider for more HP POS System products.
Colored stripe is on the receipt.	Paper is low.	Load a new paper roll. See Loading or changing the receipt paper on page 10 .
Receipt does not come out all the way.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear the jammed paper.
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear the jammed paper.
Receipt is not cut.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear the jammed paper.
Print is light or spotty.	Paper roll is loaded incorrectly.	Confirm that the paper roll is loaded properly. See Loading or changing the receipt paper on page 10 .
	Thermal printhead is dirty.	Use the recommended thermal print paper. See Ordering thermal paper on page 27 .
	Variations in paper.	Increase the print density. See Operation parameters on page 16 .
Vertical column of print is missing.	Indicates a serious condition with the printer electronics.	Stop using the printer. Contact your regional HP-authorized service provider for more HP POS System products.
One side of the receipt is missing.	Indicates a serious condition with the printer electronics.	Stop using the printer. Contact your regional HP-authorized service provider for more HP POS System products.
Printer does not function when it is turned on and the light is off.	The printer is not plugged in.	Confirm that the printer cables are properly connected at both ends.
		Confirm that the POS computer is turned on.

Table 4-1 Common issues and solutions (continued)

Issues	Possible cause	Solution
Printer does not function when it is turned on and the light is blinking.	Receipt cover is not fully closed.	Close and latch the receipt cover.
Printer stops functioning.	Printhead has overheated.	Allow printhead to cool down.
	Interrupted data signal over USB connection.	Be sure that the standard USB cable is no more than 5 meters long with no extensions; eliminate hubs.
	Faulty USB port.	Plug the cable into another USB port on the POS computer.
	Printer is in energy saving mode.	Press paper feed button to restore the printer to normal operation.
Interruption of data	Serial mode is not working.	The printer was previously connected to a USB host. Reset the printer, and check normal serial faults.
Printer goes offline	USB is not connected properly.	If the printer does not recover automatically after 5-20 seconds, reconnect the USB cable, reset the printer, restart the POS computer, and confirm that the USB cable is properly connected at both ends.
Printer does not open.	Receipt cover is stuck.	Release the latch failsafe.

Latch failsafe

If the receipt cover is stuck, use the failsafe to release the latches. When holding the printer upright, use your finger to pull down on the failsafe loop that is located on the underside of the printer. With enough force, the latches should release, and the receipt cover should open.



Contacting support

Use the website in this section to get more information about your product, including links to discussion forums and instructions on troubleshooting. You can also find information about how to contact HP and open a support case.

To resolve a hardware or software problem, go to <http://www.hp.com/support>.

Preparing to call technical support

If you can not solve a problem by using the troubleshooting tips in this section, you might have to call technical support.

Have the following information available when you call:

- Printer model number
- Printer serial number
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages received
- Hardware configuration
- Name and version of the hardware and software that you are using

Ordering paper rolls

To order paper rolls, contact your vendor of choice.

See [Qualified paper grades on page 28](#) for contact information.

A Technical specifications

This section contains technical specifications for the physical aspects of your printer, such as the weight and dimensions, as well as required environmental operating conditions and power source ranges.

All specifications represent the typical specifications provided by HP component manufacturers; actual performance can vary either higher or lower.



NOTE: For the latest specifications or additional specifications for this product, go to <http://www.hp.com/go/quickspecs/> and search for your specific monitor model to find the model-specific QuickSpecs.

HP Engage Thermal Receipt Printer specifications

This section provides specifications for your printer.

Table A-1 Technical specifications

Specification	International Measurement	Imperial Measurement
Reliability		
Print Head Life	150 km	93.21 mi
MCBF Knife Cuts	1 million	
Interface		
	USB, serial, or network	
Memory		
	8 MB flash memory, 8 MB RAM	
Power requirements		
Operating voltage	24Vdc \pm 10% +5 volts for logic circuit	
Power consumption	2.5 Amps maximum current draw	
Temperature		
Operating temperature	5°C to 35°C	41°F to 95°F
Operating humidity	5% to 90% 5% to 40%	
Storage temperature	-10°C to 50°C	14°F to 122°F
Storage humidity	5% to 95% (noncondensing)	
Transit temperature	-40°C to 60°C	-40°F to 140°F
Transit humidity	5% to 95%	
Condensation	Condensation can occur when the printer is moved from cold to warm areas after shipment. The printer can operate after drying and stabilizing at room temperature.	
Printing specification		

Table A-1 Technical specifications (continued)

Specification	International Measurement	Imperial Measurement
Speed - monochrome	High quality = 146 mm/s	High quality = 6 in/s
	Normal = 200 mm/s	Normal = 8 in/s
	High speed = 250 mm/s	High speed = 10 in/s
Print width	72 mm with 80 mm paper roll	3 in with 3 in paper roll
	52.5 mm with 58 mm paper roll	2 in with 2 in paper roll
Receipt - columns	44/56 for 80 mm paper width	44/56 for 3 in paper width
	32/41 for 58 mm paper width	32/41 for 2 in paper width
Paper roll width	80 mm or 58 mm	3 in or 2 in
Paper weight range	55 g/m ² – 80 g/m ²	20 lb – 30 lb
Paper thickness range	60 µm – 80 µm (micron)	0.002 in – 0.003 in
Technical specifications		
Roll core diameter	25 mm	
Paper out	Standard	
Resolution	203 DPI	
Knife	Full and partial cuts supported	

Dimensions and weight

This section provides the dimensions and weight of your printer.

Table A-2 Dimensions and weight

Specification	Measurement	
Height	136 mm (with lid closed)	5.11 in (with lid closed)
	246 mm (with lid open)	9.68 in (with lid open)
Width	127 mm	5 in
Depth	127 mm (with lid closed)	5 in (with lid closed)
	246 mm (with lid open)	9.68 in (with lid open)
Weight	1.32 kg	2.91 lb

Character appearance

You can change how text looks using the following available print modes.

- Standard

- Compressed
- Double high
- Double wide
- Upside down
- Rotated
- Underlined
- Bold
- Reverse
- Italic
- Scaled
- Strike-through

Print size

This section lists the character sizes for the standard and compressed mode.

- Standard
 - 15 characters per inch
 - 44 characters per line
 - 13 × 24 dots cell size
- Compressed
 - 20 characters per inch
 - 56 characters per line
 - 10 × 24 dots cell size

Supported character sets resident code pages

This section provides high-definition video formats.

0. 437 (US, Standard Europe)
1. Katakana
2. 850 (Multilingual Latin I)
3. 860 (Portuguese)
4. 863 (Canadian/French)
5. 865 (Nordic)
6. VISCII - Vietnamese
13. 857 (Turkish)

- 14. 737 (Greek)
- 16. 1252 (Windows Latin I)
- 17. 866 (Russian)
- 18. 852 (Latin II)
- 19. 858 (Multilingual I + Euro)
- 20. KU42 (Thai)
- 32. 720 (Arabic)
- 34. 855 (Cyrillic)
- 36. 862 (Hebrew)
- 37. 864 (Arabic)
- 39. ISO8859-2 (Latin 2)
- 40. 1098 (Farsi)
- 44. 1125 (Ukrainian)
- 45. 1250 (Central Europe)
- 46. 1251 (Cyrillic)
- 47. 1253 (Greek)
- 48. 1254 (Turkish)
- 49. 1255 (Hebrew)
- 50. 1256 (Arabic)
- 51. 1257 (Baltic)
- 52. 1258 (Vietnamese)

Ordering thermal paper

The printer requires qualified thermal paper with the following dimensions.

Table A-3 Thermal paper dimensions

Width	Diameter
80 +0/-0.6 mm (3.15 +0/-0.03 in)	83mm max. (3.27 in)
58 mm (2.28 in)	83mm max. (3.27 in)

The previous figures are based on a core diameter of 25 ±1 mm (0.98 in) outside.

The paper must not be attached at the core.

Qualified paper grades

HP recommends the following paper grades produced by their respective manufacturers.

To order paper rolls, contact your vendor of choice, and see [Monochrome \(black ink\) paper on page 28](#).

Monochrome (black ink) paper

This section provides a list of qualified manufacturers to supply monochrome (black ink) paper.

Table A-4 Qualified manufacturers and their paper grades

Qualified manufacturer	Paper grade
Jujo Thermal Ltd. P.O. Box 92 Paperitehtaantie 15 27500 Kauttua, Finland TEL: +358 (0)10 303 200, FAX: +358 (0)10 303 2419 http://www.jujothermal.com	AP45KS-ND AP50KS-ND
KANZAN Spezialpapiere GmbH Nippesstraße 5 52349 Düren Germany Voice: +49 2421 5924-0 Fax: +49 2421 5924-19	KLS46 (BPA free) KF50 KP460
Mitsubishi HiTec Paper Europe GmbH Bielefeld Mill Niedernholz 23 33699 Bielefeld Germany Voice: +49 521 2091-0 Fax: +49 521 2091-411 Mitsubishi HiTec Paper Europe GmbH Flensburg Mill Husumer Str. 12 24941 Flensburg Germany Voice: +49 461 8695-0 Fax: +49 461 8695-500	TF7067 (BPA free) PF5067 TL1000
Mitsubishi Paper Mills Limited https://www.mpm.co.jp/eng/ https://www.mpm.co.jp/	P220AGB-1
Oji Paper (Thailand) Ltd. 130-132, Sindhorn Building, Tower3 12th Floor, Wireless Road Lumpini, Pathumwan, Bangkok 10330	FT100+ FT210+ PD160R PD190R


Table A-4 Qualified manufacturers and their paper grades (continued)

Qualified manufacturer	Paper grade
Tel : +(66-2) 263-2600	
http://www.ojipaper.co.th/	

Print zones for 80 mm (3.15 in) paper

This section provides specifications of print zones for 80 mm (3.15 in) paper.

- 576 dots (addressable) at 8 dots/mm, centered on 80 mm (3.15 in)
- Top margin to knife cut: 9 mm (0.35 in)
- Paper width = 80 mm (3.15 in)
- Printable zone, 576 dots = 72 mm (2.84 in)
- Top margin = 9 mm (0.35 in)
- 44 standard columns = 71.5 mm (2.82 in)
- 56 compressed columns = 70 mm (2.76 in)

 **NOTE:** The application centers 44 standard character cells (13 x 24 dots), or 56 compressed character cells (10 x 24 dots), or 576 addressable bits of graphics across an 80 mm (3.15 in) wide receipt.

Minimum print line height is 24 dots for text or graphics.

Print zones for 58 mm (2.28 in) paper

This section provides specifications of print zones for 58 mm (2.28 in) paper.

- 420 dots (addressable) at 8 dots/mm, centered on 58 mm (2.28 in)
- Top margin to knife cut: 9 mm (0.35 in)
- Paper width = 58 mm (2.28 in)
- Printable zone, 420 dots = 52.5 mm (2.06 in)
- Top margin = 9 mm (0.35 in)
- 32 Standard columns = 52 mm (2.04 in)
- 41 compressed columns = 51.25 mm (2.01 in)

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