

The ERM – 8010 Thermal Printer by Vetronic Services Ltd

Contents Page

Introduction.....	2
Contents.....	2
Component Parts.....	3
Front Cover Panel.....	3
Printer Control Panel.....	4
Control Panel Buttons and Features.....	4
Replacing the Paper Roll.....	5
Connecting to another Device.....	5
Using the Printer with the Supplied Charger.....	5
Using the Printer for the First Time.....	6
Running the Self Test.....	6
Initialising the Printer Settings.....	7
Summary of the ERM – 8010.....	7
Using the printer Without the Paper Supply Connected.....	7

Introduction

The Battery operated Thermal Printer is a self-contained printer for use with a variety of products from Vetronic Services. The printer uses a galvanically isolated optocoupler to print real-time data. The printer is capable of printing at paper speeds of 12.5, 25.0 and 50.0 mm/S and at 3 levels of sensitivity. A shift-trace feature is also incorporated.

Printing is by means of a heated printer head on thermal paper. Thermal paper can either be lined or plain and it is on the outside of the paper that the image is printed.

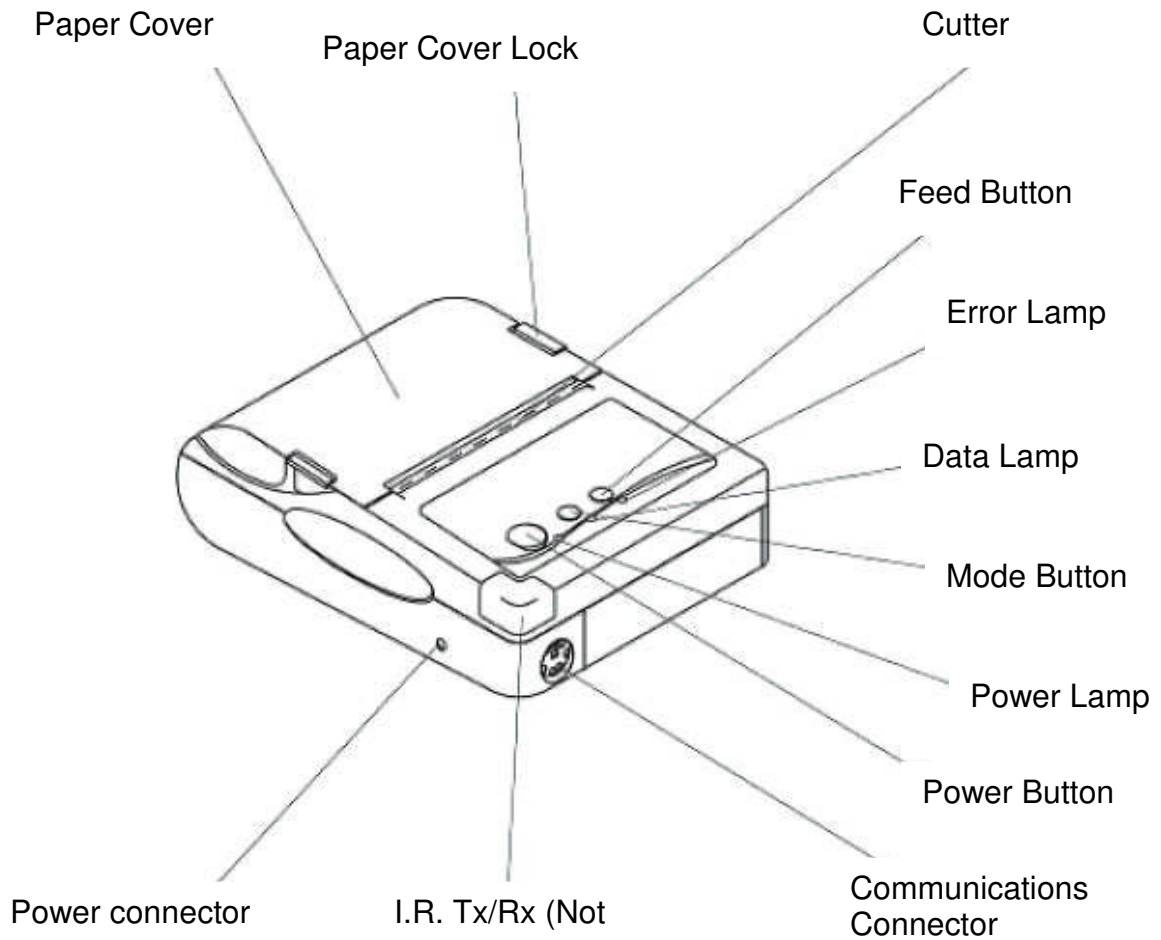
The printer uses an internal lithium rechargeable battery, which can be charged whilst in use. A charger, connecting cables and sample paper are provided.

Contents

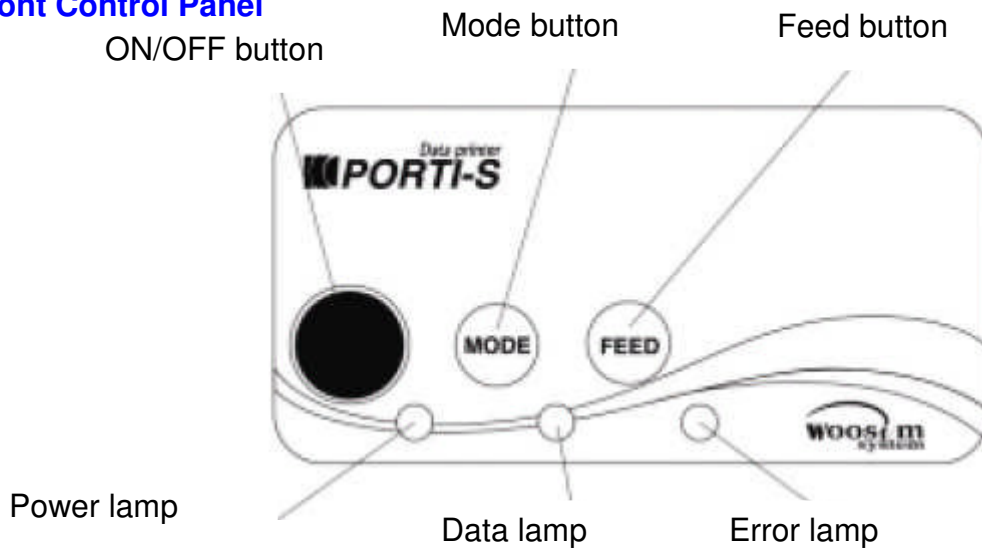
The Thermal printer kit supplied contains the following Items:

- 1 x Thermal printer with integral battery
- 1 x mains charger with mains cable
- 1 x 3.5mm plug to 3.5mm plug connecting cable
- 1 x rolls plain paper
- 2 x rolls lined paper

Component Parts



Front Control Panel



Printer control panel



Control Panel buttons & features

ON/OFF: Turns the printer power ON or OFF

MODE button: Used to set the printing Mode. See “Setting the Printing Mode”

FEED button: Press and hold to advance the paper

Power lamp: Lamp is green when the printer is ON. Lamp will glow red when the battery is discharged.

Error lamp: When lit, this indicates an error such as out-of paper, cover open or data error.

Data lamp: This lamp is on whenever data is being sent to the printer.

Sensitivity: Use the ADJ button on the left of the panel to change the print sensitivity. The default setting is at 1.0. To double the print size, change the setting to 2.0. To halve the print size, change the setting to 0.5.

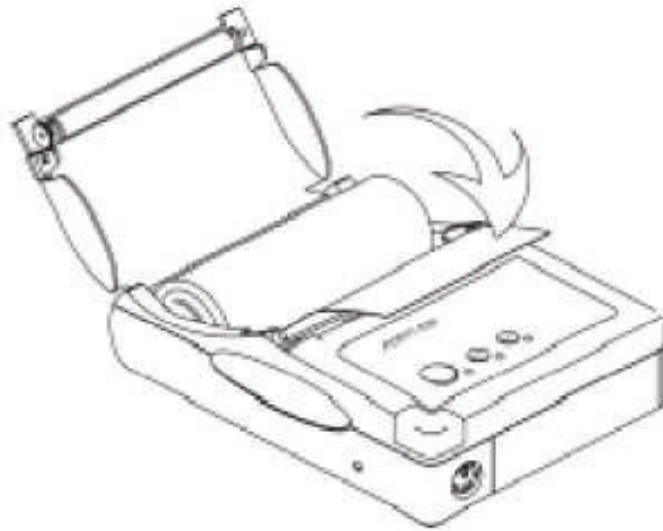
Paper Speed: Use the ADJ button on the right of the panel to change the print speed. The default speed is 25.0mm/S. To print at 50mm/S press the ADJ button to light the LED next to the 50. To print at 12.5 mm/S press the ADJ button to light the LED next to the 12.5

Shift Trace: To shift the trace to the right, press the right hand SHIFT TRACE button. To shift the trace

Print: To start printing, press the red PRINT button. The yellow LED will come on to show that the unit is printing. To stop printing, press the red PRINT button again. The yellow LED will go off. –Note that when printing at 50mm/S the printer may continue to print after the yellow PRINT LED goes out as the print buffer is emptied.

Replacing the paper roll

Open the paper roll cover by squeezing the lugs on either side of the paper roll cover and lifting the cover. Insert the paper roll as shown below:



Connecting to another device

Use the 3.5mm to 3.5mm cable connector to connect a device to the printer for printing. Make sure the plugs are pushed fully into the sockets otherwise the lights on the printer control panel may not light up.

Using the printer with the supplied charger

The supplied charger provides power to the thermal printer for charging the battery and/or for continuous use. Plug the small power plug into the power connector on the side of the printer. The LED on the charger will glow RED or GREEN. A RED LED indicates the internal battery is charging, a GREEN LED indicates the internal battery is fully charged.

Using the printer for the first time

Connect the printer to the device you wish to print from, e.g. ERM-8010 monitor using the 3.5mm plug to 3.5mm plug connecting cable.

Turn the printer ON by pressing the large black ON/OFF button.

Ensure the printer is correctly set up by running a self-test – see “Running the Self-Test”

Running the Self-Test

Hold down the FEED button whilst turning ON the printer. The self-test prints the current printer status together with some test patterns and character patterns. The following settings must be active for the printer to print correctly:

MODE = RS232C
SERIAL = 57600 BAUD
8 DATA BIT
NO PARITY
1 STOP BIT
DENSITY = HIGH

The MARK and SENSOR settings do not affect the printing of data. Following these settings are 2 bar graph printouts some full-width and $\frac{3}{4}$ width dot patterns, a cross-hatch pattern and 20 lines of alphanumeric characters. All patterns and characters should be clearly visible.

If the MODE, SERIAL and DENSITY settings are not as above you will need to reset them using the following method.

Initialising the Printer Settings

With the printer turned ON, press and hold the MODE button until the Error lamp (RED) flashes at least 5 times. When this button is released the Data lamp will flash once followed by the Error lamp flashing. The Data lamp flashing once indicates that this is setting 1. The number of times the Error lamp flashes indicates the value of setting 1. The correct number of flashes for setting 1 is 1. Press the FEED button to move on to the next setting. The Error lamp will flash to indicate the value for setting 2. Press FEED to move to setting 3 etc. If, at any time the incorrect number of flashes is received, then press the MODE button until the correct number of flashes are seen in the Error lamp. Each setting has a number of possible values. Each time the MODE button is pressed the next setting is used. Therefore it may be necessary to press the MODE button several times until the correct setting is found.

The following summarises the procedure:

Turn printer ON Press and hold MODE button down until Error Lamp has flashed at least 5 times. On release of the MODE button the Data lamp will flash a number of times:

Data Lamp flashes once:	Error lamp flashes once
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes twice:	Error lamp flashes 7 times
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 3 times:	Error lamp flashes twice
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 4 times:	Error lamp flashes once
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 5 times:	Error lamp flashes 3 times
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 6 times:	Error lamp flashes once or twice
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 7 times:	Error lamp flashes once
If correct, Press FEED button otherwise	press MODE button until correct.
Data Lamp flashes 8 times:	Error lamp flashes once – procedure ended.

To save the changes made it is necessary to now press and hold the MODE and the FEED buttons simultaneously. Hold them down for 5 seconds before releasing them. On release the printer will print a summary of the settings for confirmation. Confirm that they match the required settings specified on page 6.

Using the printer with the power supply connected

In some circumstances, using the power supply for the printer whilst performing an ECG reading for example, may result in mains interference on the printed trace. This may not always be apparent and will vary from location to location. If interference is noted then disconnect the charger whilst printing ECG traces.