

200mm/sec High-Speed Line Thermal Printer Mechanism for POS/Kiosk Applications

FTP-609 Series

FUJITSU COMPONENT has developed the 200mm/sec high-speed line thermal printer FTP-609 Series constructed with a die-cast frame that allows the same advantages of the battery-powered FTP-608 Series and is oriented for POS/kiosk market applications.

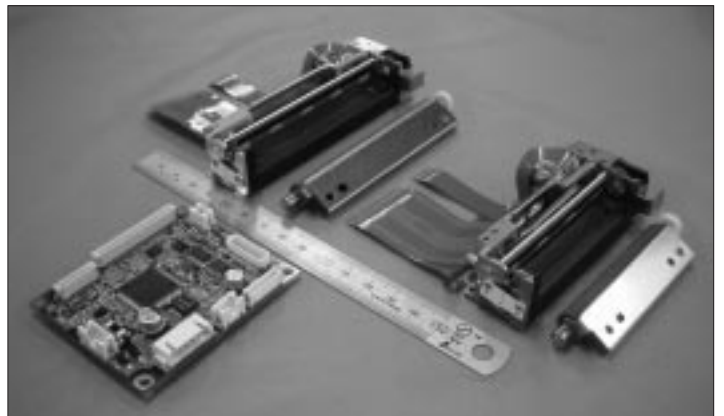
Product Overview

Recently, line thermal printers featuring high-speed and low-noise printing have attracted much interest for use in POS, multimedia kiosk (MMK) and other ticketing market applications due to their potential for improved fading of printed thermal paper over an extended period of time. There are a wide variety of printers available in the markets, though the impact printers are used specifically in the applications focusing on carbonless copy paper. In addition, the ink-jet printers are not yet widespread though increasingly glowing in these days because of less drying speed, higher running costs including ink, troublesome maintenance procedures and other such disadvantages. In receipt-printing applications, for example, the slow drying-speed of an ink-jet printer may lead to stained clothing after a receipt is placed in a shirt or suit pocket. For the present, therefore, line thermal printers are expected to merit the fullest consideration due to their ease of maintenance and high-speed printing ability. In the future, should the demand for color printing increase, ink-jet printers may once again be in demand.

Market Trend and Needs

Among the greatest concerns of customers in the POS market are high-speed printing and easy paper loading. This results from the fact that the workers in this field include many part-time or relatively inexperienced employees. For this reason, the paper drop-in system, rather than the conventional automatic paper loading system, prevails in the present POS market.

Photo 1 External View



Along with the spread of the paper drop-in system, however, additional problems have arisen. One of them involves the platen-securing roll-paper cover set that is opened while paper is pulled out during the manual cutting of paper in certain cutting directions, and/or the paper cover set that is opened in the event of jammed roll paper. As a solution to this problem, a method of locking the platen to either side of the cover or printer mechanism has attracted much attention. Another problem is the increasing number of mistakes by workers-such as catching the paper on the roll paper cover-that are considered to result from overly increased flexibility in the loading of printing paper.

In the POS market, printers are primarily used for ticketing, and thus the cutter is an indispensable component. For kitchen printers or other applications involving continuous issue of several tickets, partial cutting is essential in order to preserve a part of each printed ticket. In the MMK market, on the other hand, the presenter method is the prevailing method for the transfer and discharge of tickets after full cutting. This is intended to protect the cutter and other mechanical components against possible damage resulting from attempts by the receiver of the ticket to pull the paper out while printing or cutting. In the presenter method, paper is retained in the printer from the printing process through the end of cutting, when it is discharged, thereby eliminating any possible effects on the printer.

In the POS market, reduced size is also a critical design consideration. A trade-off is required between printing

speed, cutter size and the size of the entire system, and thus the manufacturer must achieve an optimal design for the particular application. In the MMK market, there is an increasing need for paper rolls of larger diameter (10 inches), and thus for a higher-torque transfer mechanism. In addition, either a presenter or discharge transfer path will be an essential option.

Key Specifications

FUJITSU COMPONENT has developed the compact-sized, high-speed FTP-609 Series to fit the varying needs of customers.

Table 1 shows the key features and Fig.1, 2, 3 and 4 give the outside dimensions.

Product Features

FTP-609 Series adopts a die-cast frame that allows the same advantages of the battery-powered Series FTP-608. The major features are described below.

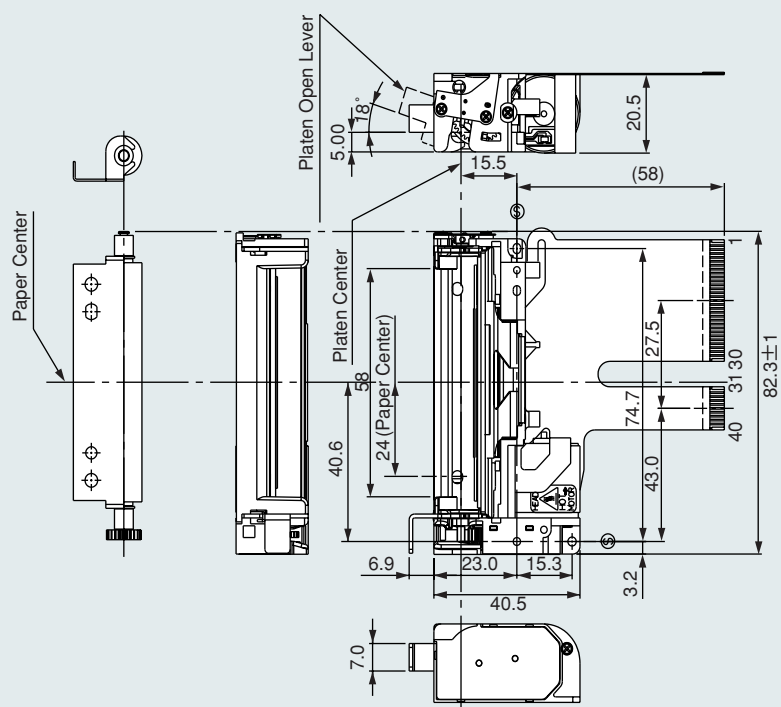
■ Enhancements achieved by the die-cast (multi-function frame)

- Excellent resistance to electrostatic discharge owing to absorbed discharge peak voltage into the electrical

Table 1 Key Features

Model	FTP-629MCL103	FTP-639MCL103
Printing method	Thermal-sensitive line dot method	
Dot structure	432 dots/line	576 dots/line
Effective printing area	54mm	72mm
Power supply	24V	
Maximum Printing speed	200 mm/sec	
Dot pitch	8 lines/mm	
Roll paper	58 to 60mm×Max. dia. 10 in.	80 to 82.5mm×Max. dia. 10 in.
Paper thickness	Max. 150 μm	
Paper loading	Easy loading system	
Locking option	Standard furnished	
Dimensions (W×D×H)	82.2×40.5×20.5 (mm)	109.1×40.5×20.5 (mm)
Weight	110 g (Without cutter installed)	125 g (Without cutter installed)
Operating temperature	0°C to 50°C (Applicable to temperature range from -25°C to 70°C)	
Life expectancy	100km, 100 million pulse	

Figure 1 Dimensional Outline Drawing (FTP-629MCL103)

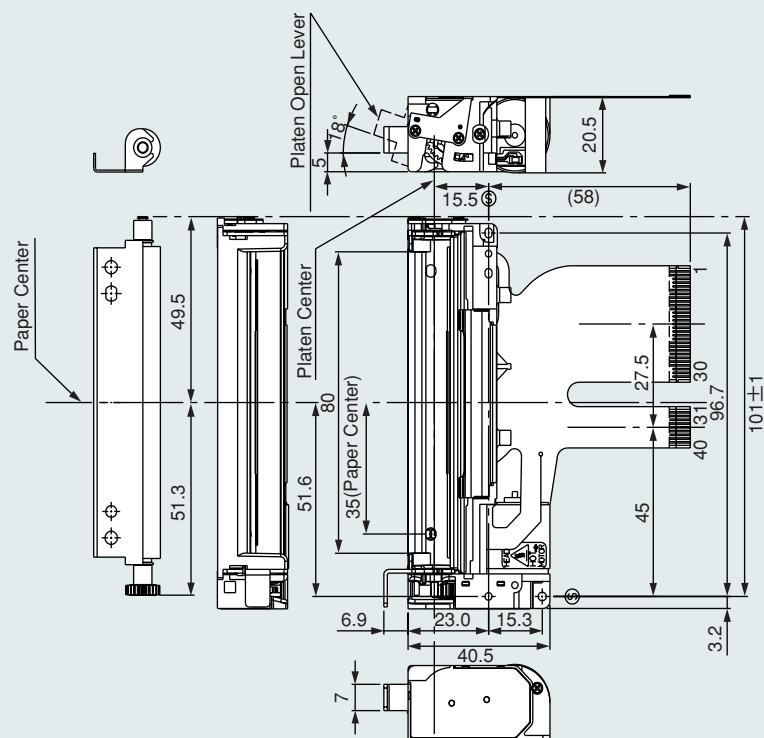


Notes)

1. All dimensions refer to nominal values and dimensional tolerance is ± 0.5 unless otherwise specified.
2. Ⓢ indicates the reference for installation.

Unit: mm

Figure 2 Dimensional Outline Drawing (FTP-639MCL103)



Notes)

1. All dimensions refer to nominal values and dimensional tolerance is ± 0.5 unless otherwise specified.
2. Ⓢ indicates the reference for installation.

Unit: mm

Figure 3 Dimensional Outline Drawing (FTP-629MCL103 + FTP-629CT001 *)

*: Cutter

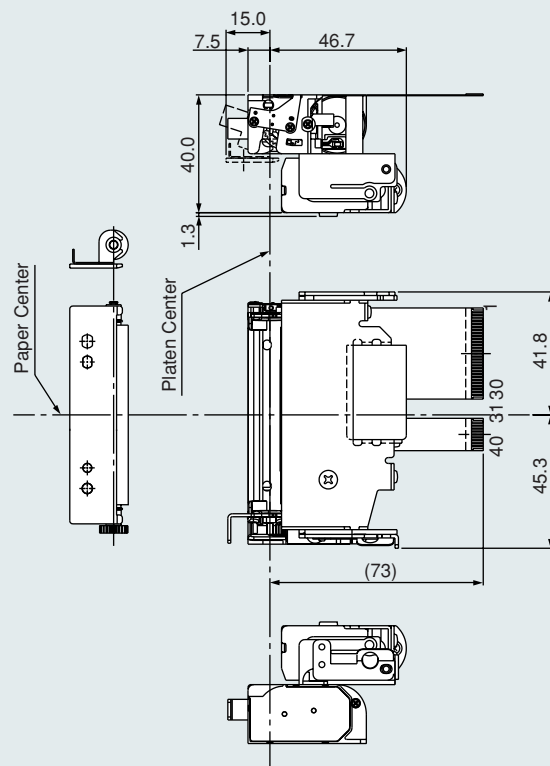
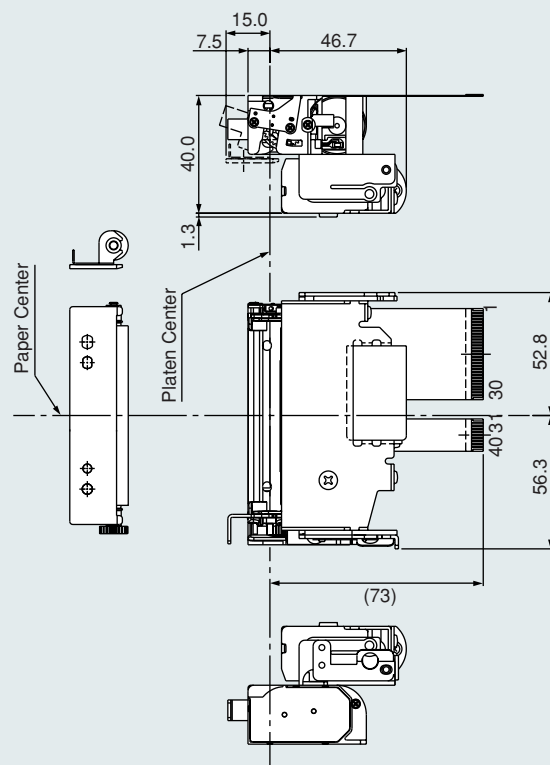


Figure 4 Dimensional Outline Drawing (FTP-639MCL103 + FTP-639CT001 *)

*: Cutter



earthing path (Table 2)

- Easy design of a cooling system in combination with a radiating fin to provide a heat transfer path under any continuous motor operation condition (Fig.5)
- Heater capability under very low temperatures making the most of heat generation from motor based on the heat transfer principle
- Features as rigid basement
 - a) Installed cutter with piles into the die-cast top panel (allowing removal and reinstallation of the cutter without removal of the mechanical unit in the printer) (Fig.6)
 - b) Compatibility with labels and other paper materials requiring tight contact owing to higher head pressure available from utilization of rigid characteristics
 - c) Proper quality maintained even in outdoor and other elevated temperature environments

Other features

- High-speed printing at 200mm/sec owing to the smallest mechanism in the industry
- Low-profile mechanical unit having a height of 20.5mm
- Easy paper loading due to FUJITSU COMPONENT's original paper easy loading mechanism
- Platen locking mechanism that eliminates floating of paper during the pull-out operation or in the event of jamming
- Applicable to a wide range of temperatures due to the silicone platen
- Easy head cleaning

Summary

FUJITSU COMPONENT has expanded the sales of FTP-609 Series as a high-end model to the POS market, kiosk, ATM and other ticketing markets, and outdoor applications (parking, tollgate) requiring weather resistance. In addition, the unit products of FTP-609 Series are marketed with the presenter incorporated as a core mechanism. ★

Table 2 Comparison of ESD Resistance (Between our products)

		8kv	10kv	12kv	14kv
Molded frame	+	○	×	×	×
	—	○	×	×	×
Die-cast frame	+	○	○	○	×
	—	○	○	○	×

Figure 5 Heat Radiation Effect from Motor

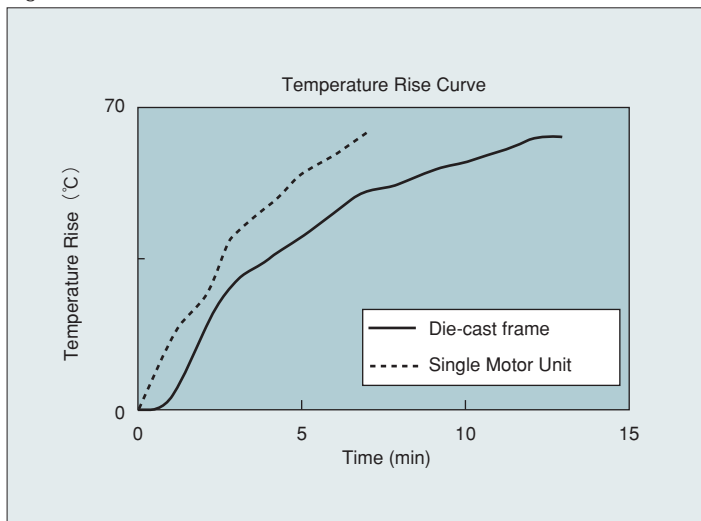


Figure 6 Cutter Installed Type (FTP-629MCL)

