

Thermal Printer with Ultra-Low-Profile Cutter Supporting Easy Paper Loading

FTP-607/608 Series

A thermal printer for incorporation in terminals. A newly developed ultra-low-profile cutter that supports easy paper loading has been mounted. This product is optimal for application in receipt issuance, ticket issuance in various retail equipment, data output in kiosk terminals, etc.

Product Description

The application of thermal printers in POS and financial terminals is spreading rapidly due to their printing speed, easy maintenance, improved thermal paper conservation, etc. In addition, there are strong demands for further miniaturization and easier handling together with the expansion of its adoption in retail terminals such as low-end POS/ECR and financial terminals such as CAT/EFT/debit. It is also essential that it contains an automatic cutter in the low-end POS to high-end ECR markets. FCL has thus developed a new series of products equipped with an ultra-low-profile automatic cutter utilizing our original mechanism by mounting it on the miniature thermal printer FTP-627/628 series, which has high reliability and a good market track record.

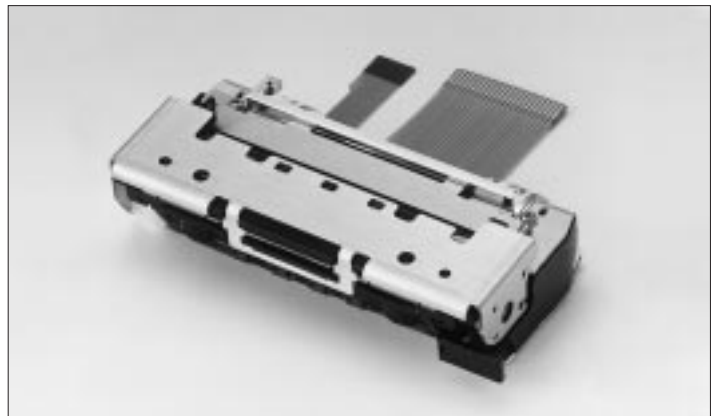
This product incorporates a printer mechanism that adopts a die-cast frame with high reliability and a good reputation in the market as well as an ultra-low-profile cutter utilizing our original mechanism in one body. This enables it to be the world's smallest cutter-mounted machine in this class. Furthermore, it has an easy paper-loading mechanism with a straightforward paper-setting procedure and simple maintenance. It also supports high-speed printing (FTP-627 series: 100mm/sec., FTP-628 series: 80mm/sec.) in a miniaturized body.

Application

This product offers an optimal solution for a wide range of applications including mobile terminals, measuring equipments, and medical equipments in addition to receipt issuance, ticket issuance in various retail terminals, and data output in multimedia kiosk terminals.

Fig.1 presents some application examples of this product.

Photo 1 External View



Special Features

■ Ultra-low-profile cutter form

Mounting the newly developed ultra-low-profile cutter (incorporated in a case) on the super-small printer FTP-627/628 series, a low height profile of 21.8mm has been achieved. It offers the world's smallest size of 42.2mm depth and 81.2mm width (12% capacity miniaturization compared to an equivalent miniature product made by another manufacturer).

■ Support for easy paper loading

An easy paper-loading system is adopted to facilitate the exchange of different types of printing paper, release of paper jams, and cleaning of the printing head. In addition, our original structure design, which positions the cutter's movable blade on the platen side (cover opening/closing side), enables the opening/closing of the cover in the case of a paper jam or a locked cutter and it is thus possible to fix the paper jam.

■ Support for full/partial cutting

The highly reliable guillotine method has been adopted. The cutter's special motor enables switching between full cutting and partial cutting (with one point remaining in the center) using a program.

■ Die-cast frame

With the adoption of the die-cast frame, heat accumulation in the motor and the head can be reduced during long periods of

continuous printing. Furthermore, easy and secure grounding leads to high static resistance and its rigidity leads to a high-reliability mechanism that is vibration and impact resistant.

Table 1 presents the product lineup; **Table 2** lists its principal specifications; **Fig.2** depicts the printer dimensions; and **Table 3** presents the list of commands.

Future Development

FUJITSU plans to develop a series of 3-inch products with a paper width of 80mm in the future. *

Table 1 Product Lineup

Product type		Model
Printer	24V-driven	FTP-627MCL401
	Battery-driven	FTP-628MCL401
Interface board	24V-driven	FTP-627DSL299
	Battery-driven	FTP-628DSL299

* Provision of a control CPU as a single product is also possible.

Table 2 Principal Specifications

Model		FTP-627MCL401	FTP-628MCL401
Printing method		Direct thermal printing	
Resolution		8 lines/mm	
Paper width		58mm	
Dots/printing width		432 dots/54mm	384 dots/48mm
Printing speed		Max. 100mm/sec.	Max. 80mm/sec.
Size (W×D×H)		81.2mm×42.2mm×21.8mm	
Weight (g)		100g (approx.)	
Operation voltage	Head/paper-feeding motor	DC24V	DC 4.2 to 8.5V
	Cutter	DC24V	DC 4.75 to 8.5V
	Logic	DC5V	DC5V
Lifetime	Head	Pulse resistance: 5×10^7 pulse/dot, wear resistance: paper-feeding distance 50km (printing rate 12.5% or smaller)	
	Cutter	0.5 million times	

Figure 1 Application Examples

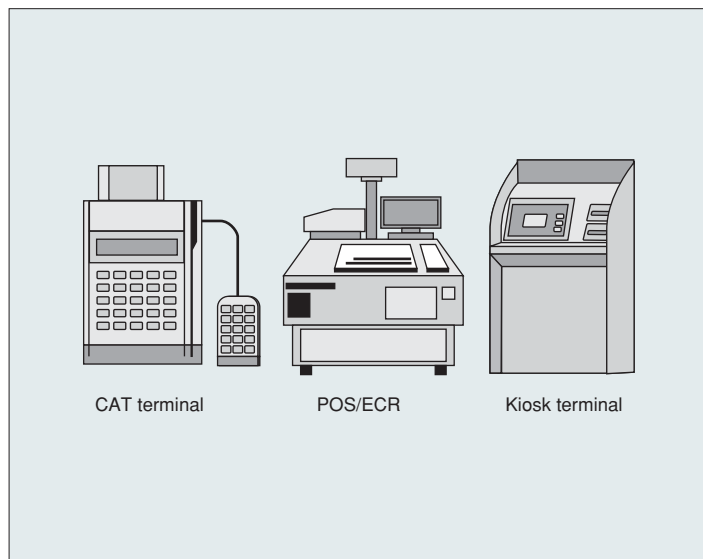


Figure 2 Printer Dimensions

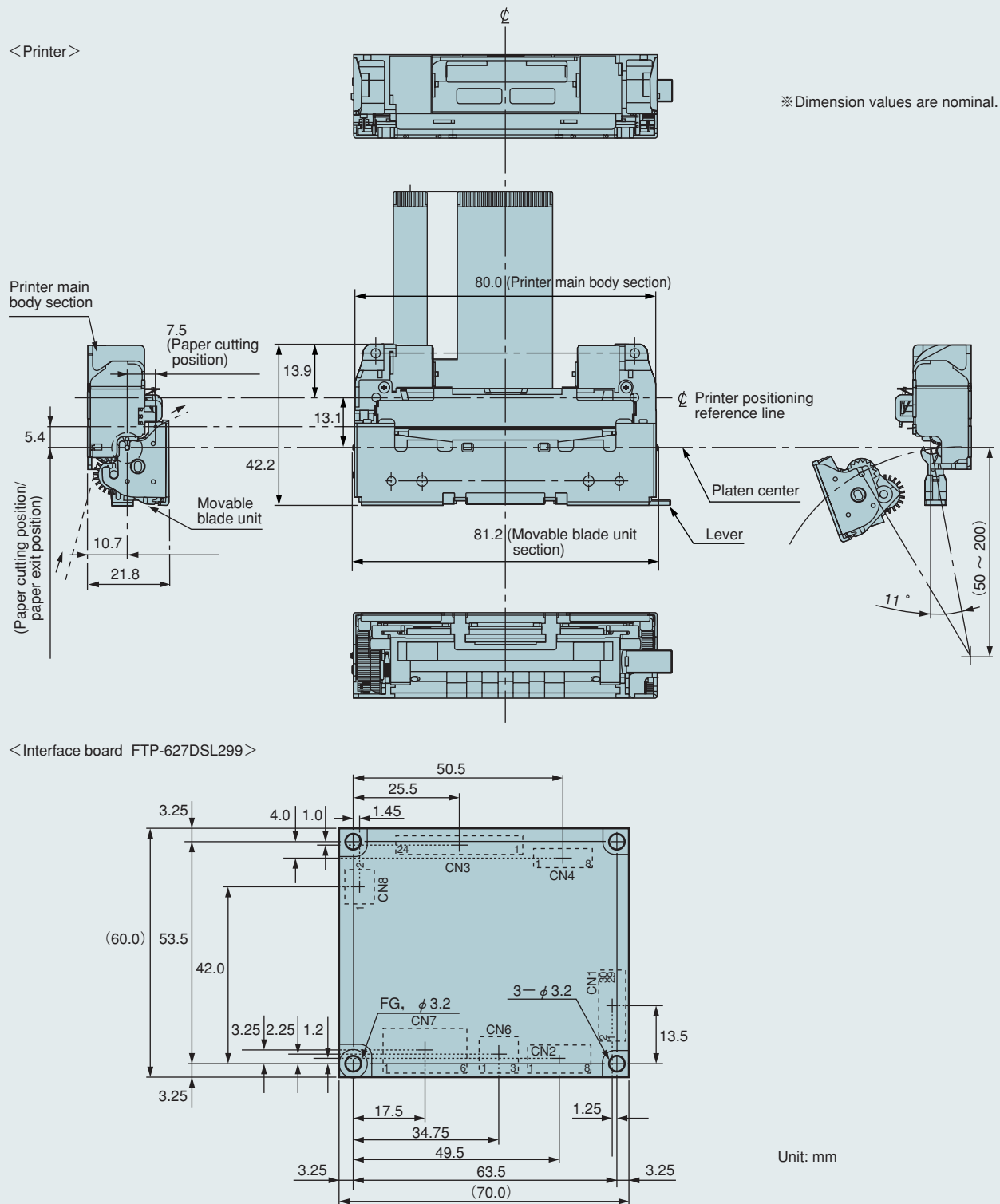


Table 3 List of Commands

	Command	Description		Command	Description
1	HT	Horizontal tab	25	ESC e+n	Feeding n lines backward
2	LF	Line feed	26	ESC s+n	Printing speed setup
3	FF	Page feed	27	ESC t+n	Selection of character code table
4	ESC EM+n	Automatic paper-loading setup	28	ESC {+n	Upside-down printing setup
5	ESC RS	Specification of reverse printing	29	FS !+n	Collective specification of kanji printing mode
6	ESC US	Cancellation of reverse printing	30	FS &	Specification of kanji printing mode
7	ESC !+n	Specification of printing mode	31	FS *+m+n ₁ +n ₂ +d ₁ ~d _n	Specification of high-speed collective image printing
8	ESC %+n	Specification/cancellation of external registration characters	32	FS .	Cancellation of kanji printing mode
9	ESC &+y+c ₁ +c ₂ +x+d ₁ ~d _n	Definition of external registration characters	33	FS 9+n	Detecting function valid/invalid setup
10	ESC *+m+n ₁ +n ₂ + [d ₁ ~d _n]	Bit image printing	34	FS C+n	Selection of kanji code system
11	ESC 2	1/6-inch line-pitch setup	35	FS E+n	Applied energy correction
12	ESC 3+n	Line-pitch setup	36	FS W+n	Specification of fourfold kanji printing
13	ESC ?+n	Elimination of external registration characters	37	GS &+m+x+y ₁ +y ₂ +d ₁ ~d _n	Image registration
14	ESC @	Printer reset	38	GS ‘+m+n	Printing of registered images
15	ESC A+n	Line-space setup	39	GS <	Execution of mark detection
16	ESC C+n	Page-length setup by the lines	40	GS A+m+n	Mark detection access setup
17	ESC D+d ₁ ~d _n +NUL	Horizontal tab position setup	41	GS E+n	Printing quality setup
18	ESC J+n	Printing and paper feeding in the forward direction	42	GS V+n+m	Paper cutting
19	ESC K+n	Printing and paper feeding in the backward direction	43	GS e+n+m	Barcode width setup
20	ESC R+n	International character specification	44	GS h+n	Barcode height setup
21	ESC V+n	90° clockwise rotation	45	GS k+m+N+d ₁ ~d _n	Barcode printing
22	ESC X+m+n	Motor OFF period setup	46	GS w+n	Barcode width magnification setup
23	ESC c+1+n	Internal process setup	47	GS a+n	Setup and cancellation of automatic status transmission
24	ESC d+n	Feeding n lines	48	FS r+n	Reply parameter setup
			49	ESC Y+1+xa+0+n	Kanji data check