

24V DRIVEN, FTP-607 Series

2" HIGH SPEED THERMAL PRINTER

FTP-627MCL401/411/601

Not Recommended for New Design: FTP-627MCL601

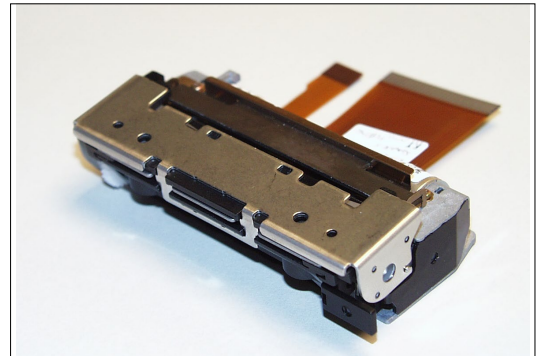
■ OVERVIEW

The FTP-627 MCL Series are 24V driven high-speed printers with a ultra low profile auto cutter with long life.

The FTP-627 MCL Series can be used for a variety of applications, such as POS terminals, ticket vending machines, label printers, banking terminals, and measurement and medical equipment.

■ HIGHLIGHTS

- **Ultra low profile**
Height 21.8 mm, width 81.2 mm, depth 42.2 mm
- **High speed printing**
It can print at 100/150/200mm/s (800/1200/1600 dotlines/s) maximum by using Fujitsu's unique head drive control.
- **Auto Cutter**
Long life and high reliable guillotine style auto cutter (full/partial cut) with dedicated motor.
- **Easy paper**
Our lever platen release allows for easy paper insertion.
- **Curved paper path**
- **Platen detect switch**
- **Multi die-cast frame**
The rugged die-cast frame provides excellent ESD performance, is shock/vibration resistant and the heat-sink allows for continuous printing.
- **RoHS compliant**



FTP-627MCL401/601

■ PART NUMBERS

			Part Number
Easy Load Model with low profile cutter			FTP-627MCL401 FTP-627MCL411 FTP-627MCL601
Interface board for Mech/Cutter	Cutter supported	MCL401	Under development
		MCL411	Under development
		MCL601	N/A
		MCL401	Under development
		MCL601	N/A
Interface cables	Serial (RS232C)		Under development
	USB		Under development
Power cables	Logic		N/A
	Head, motor		N/A

■ SPECIFICATIONS

Item	Specifications	
Part number	FTP-627MCL401/411/601	
Printing method	Thermal-line dot method	
Dot structure	432 dots/line	
Dot pitch (horizontal)	0.125 mm (8dots/mm) - dot density	
Dot pitch (vertical)	0.125 mm (8dots/mm) - line feed pitch	
Effective printing area	54 mm	
Number of columns	ANK 36 columns/line (max. 12/24 dot font)	
Paper width	58 mm	
Paper thickness	60 to 85µm (some paper in this range maby not be used because of paper characteristics)	
Printing speed	MCL401	Maximum 100mm/sec. (800dot line/sec.)
	MCL411	Maximum 200mm/sec. (1,600dot line/sec.)
	MCL601	Maximum 150mm/sec. (1,200dot line/sec.)
Character types	Alphanumeric, kana: 159 types International characters: 195 type JIS Kanji (Kanji CG loaded board): about 6800 types	
Character, dimensions, (WxH), number of columns	12 × 24 dots, (1.5 × 3.0 mm), 36 columns: ANK 24 × 24 dots, (3.0 × 3.0 mm), 18 columns: ANK 8 × 16 dots, (1.0 × 2.0 mm), 54 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 27 columns: ANK	

■ SPECIFICATIONS

Item			Specification	
Interface			Conforms to RS232C/Centronics / USB	
Power supply	For print head	MCL401 MCL411	24 VDC average current, 0.5A (0.9 A peak) (print ratio: 12.5%, print speed 100mm/sec.)	
		MCL601	24 VDC average current 1.0 A (1.9 A peak)	
	For motor	MCL401/411	24 VDC ±5%, 1 A maximum	
		MCL601	24 VDC ±5%, 1.1 A maximum	
	For cutter	MCL401	24 VDC ±5%, 1 A maximum	
		MCL411/601	24 VDC ±5%, 1.3 A maximum	
	For logic	MCL401/601	3.3 to 5.25 VDC, 0.1 A maximum	
		MCL411	2.7 to 5.25 VDC, 0.1 A maximum	
Dimensions	Mechanism with cutter		82.5 x 42.2 x 21.8 mm (WxDxH)	
	Interface board		70 x 40 x 15 mm (WxDxH)	
Weight	Mechanism with cutter		Approximately 97-107g	
	Interface board		Approximately 20g	
Life	Head	MCL401	Pulse resistance: 50 million pulses/dot (print ratio: 12.5%).	
		MCL411	Pulse resistance: 150 million pulses/dot (print ratio: 12.5%).	
		MCL601	Pulse resistance: 100 million pulses/dot (print ratio: 12.5%).	
		MCL401	Abrasion resistance: paper traveling distance 50km	
		MCL411	Abrasion resistance: paper traveling distance 150km	
		MCL601	Abrasion resistance: paper traveling distance 100km	
	Cutter	MCL401	500,000 cuts	
		MCL411	500,000 cuts	
		MCL601	1,000,000 cuts	
	Platen		5,000 times (open/close)	
Operating environment	Operating temperature*		0°C to +50°C	
	Operating humidity		20 to 85% RH (no condensation)	
	Storage temperature		-20°C to +60°C (paper not included)	
	Storage humidity		5 to 95% RH (no condensation)	
Detection function	Head temperature detection		Detected by thermistor	
	Paper out/mark detection		Detected by photo-interruptor	
	Platen release		Detected by sliding switch	
Recommended thermal sensitive paper			High sensitive paper	TF50KS-E4 (Nippon paper)
			Standard paper	TF60KS-E (Nippon paper), FTP-020PU001 (58mm), PD150R (Oji paper), FTP-020PU701 (58mm)
			Medium life storage paper	TF60KS-F1 (Nippon paper), FTP-020P0102 (58mm), PD170R (Oji paper), P220VBB-1 (Mitsubishi paper)
			Long life storage paper	PD160R (Oji paper), AFP-235 (Mitsubishi paper), TP50KJ-R (Nippon paper), HA220AA (Nippon paper)

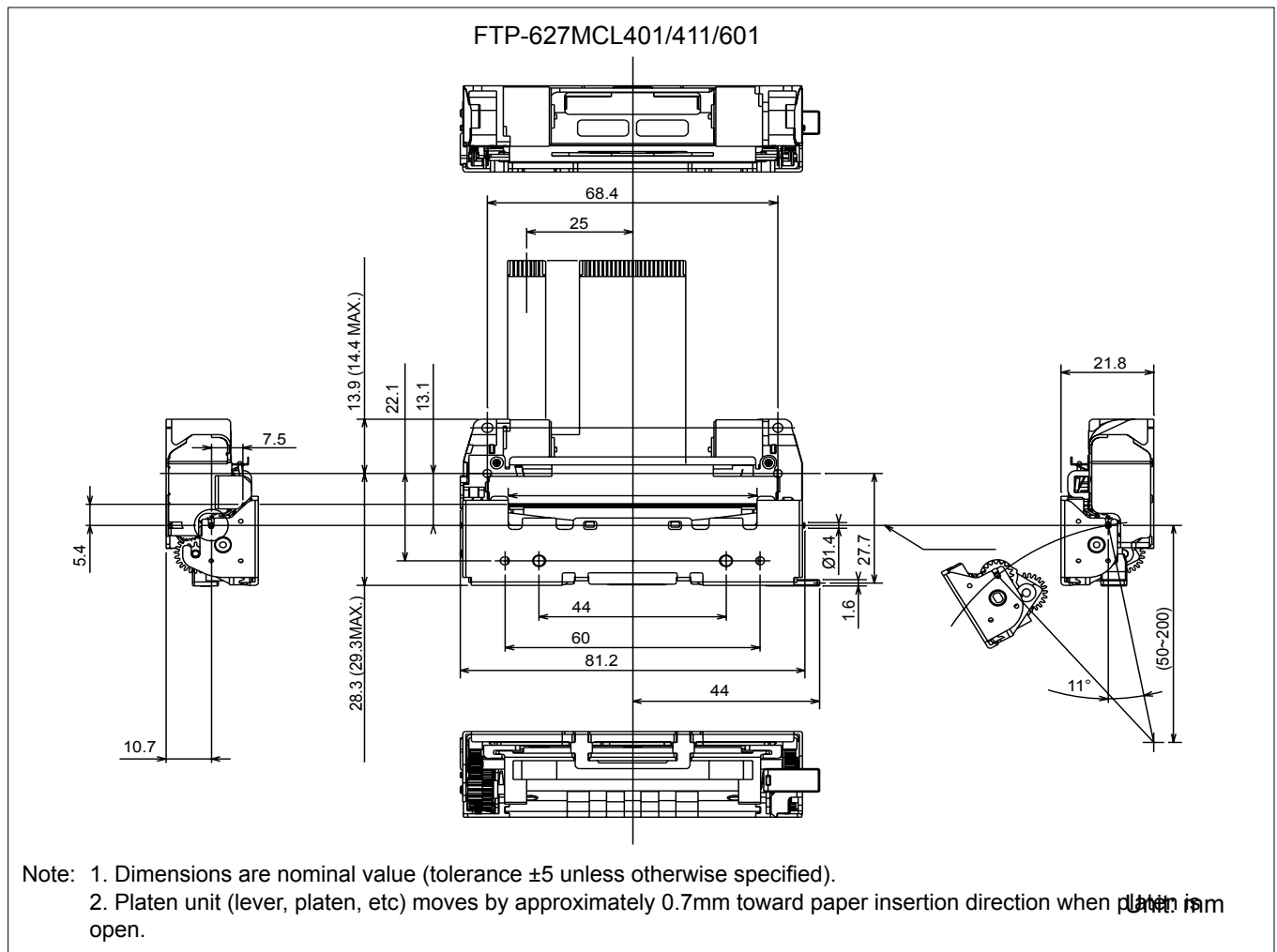
*+5°C to +40°C printing density assurance range.

FUNCTION OF INTERFACE BOARD

Item	Item	Item	Item
1. Test print function	8. Cutter trouble detect		
2. Paper out detection	9. Motor power saving function		
3. Paper near end detection	10. Mark detection function		
4. Platen open detection	11. MCU operation abnormality detection		
5. Thermal head temperature abnormality detection	12. Power ON/OFF sequence protection		
6. Blow-out fuse detection	13. Motor over-current protection		
7. Head voltage abnormality detection	14. Hardware timer		

DIMENSIONS

1. Printer mechanism



FTP-627MCL401/411

1. Connector (FPC) specification (CN3/CN10)

(1) Connector

Mechanical unit side: FPC connector

Remote side (housing site): 52610-2471 (made by Molex)

(2) Pin assignment on the mechanical side

No	Signal	I/O	Contents
1	PHK	—	Photointerrupter (Cathode)
2	VSEN	I	Ground power supply for paper sensor
3	PHE	O	Photointerrupter (Emitter)
4	VH	I	Head drive power
5	DI	I	Data input
6	$\overline{\text{STB2}}$	I	Print enable signal 2
7	$\overline{\text{STB3}}$	I	Print enable signal 3
8	VDD	I	Logic Power
9	GND	—	Head ground
10	GND	—	Head ground
11	GND	—	Head ground
12	TH	O	Thermistor
13	$\overline{\text{STB1}}$	I	Print enable signal 1
14	$\overline{\text{LAT}}$	I	Data Latch
15	CLK	I	Clock
16	VH	I	Head drive power
17	VH	I	Head drive power
18	SW	—	Platen open switch
19	SW	—	Platen open switch
20	MT A	I	Motor excite signal A
21	$\overline{\text{MT A}}$	I	Motor excite signal $\overline{\text{A}}$
22	MT B	I	Motor excite signal B
23	$\overline{\text{MT B}}$	I	Motor excite signal $\overline{\text{B}}$
24	NC	—	Not connected

FTP-627MCL601

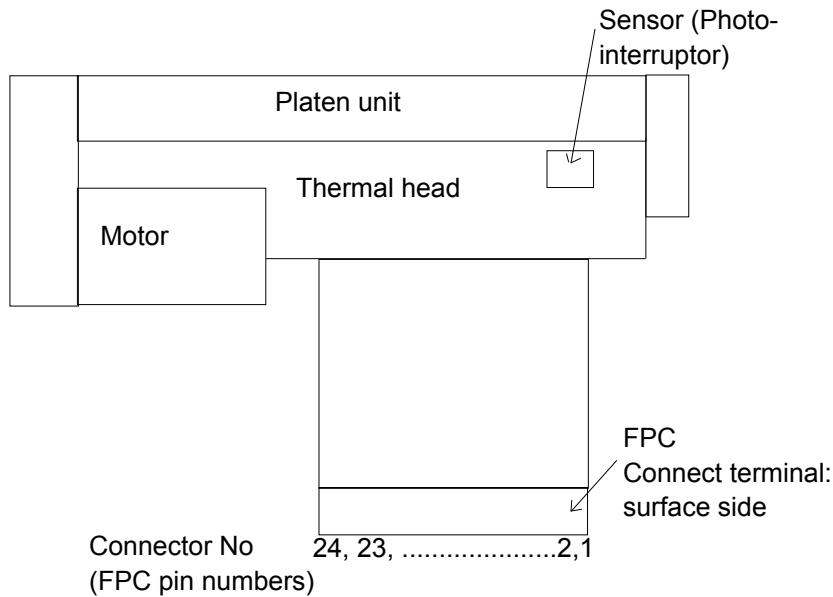
1. Connector (FPC) specification (CN4)

(1) Connector

Mechanical unit side: FPC connector
 Remote side (housing site): 52610-3071 (made by Molex)

(2) Pin assignment on the mechanical side

No.	Symbol	Signal Name
1	PHK	Cathode for photo interrupter
2	VSEN	Paper sensor power
3	PHE	Emitter for photo interrupter
4	VH	Head drive power
5	VH	Head drive power
6	VH	Head drive power
7	DI	Data in
8	$\overline{\text{STB2}}$	Strobe 2
9	$\overline{\text{STB3}}$	Strobe 3
10	Vdd	Logic power
11	GND	Head ground
12	GND	Head ground
13	GND	Head ground
14	GND	Head ground
15	GND	Head ground
16	GND	Head ground
17	TM	Thermistor
18	NC	NC
19	$\overline{\text{STB1}}$	Strobe 1
20	$\overline{\text{LAT}}$	Data latch
21	CLK	Clock
22	VH	Head drive power
23	VH	Head drive power
24	VH	Head drive power
25	SW	Platen switch
26	SW	Platen switch
27	$\overline{\text{MT A}}$	Excitation signal $\overline{\text{A}}$
28	MT A	Excitation signal A
29	$\overline{\text{MT B}}$	Excitation signal $\overline{\text{B}}$
30	MT B	Excitation signal B



2. Cutter (CN4/CN5)

Connector on control circuit side: 52610-0871 Molex or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	VSEN	I	Paper sensor power	2	PHE	O	Photo interruptor (emittor)
3	PHK	O	Photo interruptor (cathode)	4	MT A	I	Motor excite signal A
5	MT \bar{A}	I	Motor excite signal A	6	MT B	I	Motor excite signal B
7	MT \bar{B}	I	Motor excite signal B	8	NC	—	Not connected

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