FUJITSU

24V DRIVEN, FTP-607 Series

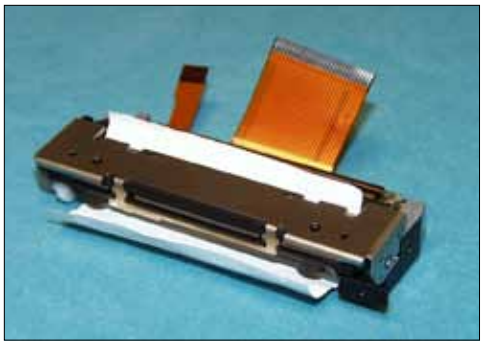
3” HIGH SPEED THERMAL PRINTER

FTP-637MCL401/411/601

■ OVERVIEW

The FTP-637 MCL Series are 24V driven high-speed printers with a ultra low profile auto cutter and long life.

The FTP-637 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.



FTP-637MCL401/411/601

■ HIGHLIGHTS

- **Ultra low profile**
  Height 21.8 mm, width 103.2/104.5 mm, depth 42.2 mm
- **High speed printing**
  It can print at 100/150/170 mm/s maximum by using Fujitsu's unique head drive control.
- **Auto Cutter**
  Long life and high reliable guilotine with dedicated motor.
- **Easy paper setting**
  Our lever platen release mechanism allows a wide paper route, so paper can be easily inserted. Conventional auto loading is also available.
- **Multifunctional die-cast frame**
  Wide operating temperature range, long continuous printing, high ESD absorbtion and discharge of static electricity vibration and shock resistant.
- **RoHS compliant**

FTP-637DSL291

FTP-637DSL601R

■ PART NUMBERS

			Part Number
Easy Load Model with low profile cutter			FTP-637MCL401 FTP-637MCL411 FTP-637MCL601
LSI for driving		MCL401	FTP-627CU301R
		MCL601	FTP-627CU601R
Interface board for Mech/Cutter	Cutter supported	MCL401	FTP-637DSL291R Parallel (Centronics) /Serial (RS-232C)
		MCL411	FTP-637DSL111R (RS-232C/USB) FTP-637DSL413R (USB Ver. 2.0) FTP-637DSL415R High speed serial(RS-232C)
		MCL601	FTP-627DSL601R Medium-speed serial (RS-232C) / USB
		MCL401	FTP-637DSL623R USB (V 1.1) FTP-637DSL625R Medium-speed serial (RS-232C)
		MCL601	FTP-637DSL633R USB (V 1.1) FTP-637DSL635R Medium-speed serial (RS-232C)/
Interface cables	Parallel (Centronics)		FTP-628Y202
	Serial (RS232C)		FTP-628Y302
	USB		FTP-629Y301
Power cables	Logic		FTP-629Y401
	Head, motor		FTP-629Y601

■ SPECIFICATIONS

Item		Specifications
Part number		FTP-637MCL401/411/601
Printing method		Thermal-line dot method
Dot structure		576 dots/line
Dot pitch (Horizontal)		0.125 mm (8 dots/mm)—Dot density
Dot pitch (Vertical)		0.125 mm (8 dots/mm)—Line feed pitch
Effective printing area		72 mm
Number of columns		ANK 48 columns/line (maximum 12 x 24 dot font)
Paper width		80 mm
Paper thickness paper characteristics)		60 to 85 µm (some paper in this range may not be used because of
Printing Speed	MCL401	Maximum 100mm/sec. (800 dot line/sec.)
	MCL411	Maximum 170mm/sec. (1,360 dot line/sec.)
	MCL601	Maximum 150mm/sec. (1,200 dot line/sec.)
Character types		Alphanumeric, kana: 159 types International characters: 195 types JIS Kanji (Kanji CG loaded board): about 6800 types
Character, dimensions (W×H), number of columns		12 × 24 dots, (1.5 × 3.0 mm), 48 columns: ANK 24 × 24 dots, (3.0 × 3.0 mm), 24 columns: ANK 8 × 16 dots, (1.0 × 2.0 mm), 72 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 36 columns: ANK

■ SPECIFICATIONS

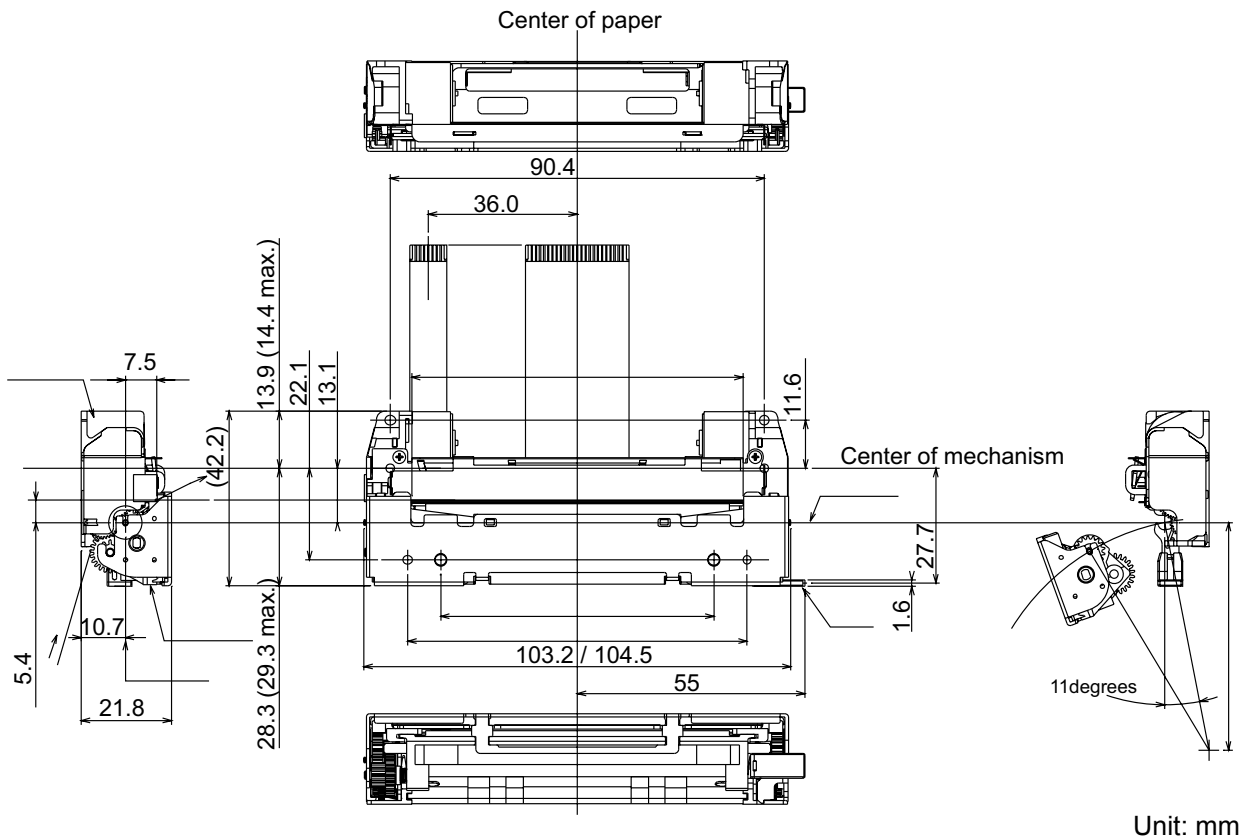
Item			Specification	
Interface			Conforms to RS232C/Centronics/USB	
Power supply	For print head	MCL401/411	24 VDC average current, 0.7A (1.3A peak)	
		MCL601	24 VDC average current, 1.3A (2.5 A peak) (print ratio: 12.5%, print speed 100mm/sec.)	
	For motor		24 VDC ±5%, 1.0 A maximum	
	For cutter	MCL401	24 VDC ±5%, 1.1 A maximum	
		MCL411	24 VDC ±5%, 1.2 A maximum	
		MCL601	24 VDC ±5%, 1.3 A maximum	
	For logic	MCL401/601	4.75 to 5.25 VDC, 0.2 A maximum	
		MCL411	3.3 to 5.25 VDC, 0.1 A maximum	
Dimensions	Mechanism with cutter		104.5 x 42.2 x 21.8 mm (WxDxH)	
	Interface board	DSL291	70 x 60 x 12 mm (WxDxH)	
		DSL4xx	69 x 52 x 21.2mm (WxDxH)	
		DSL6xx	95 x 70 x 21.6 mm (WxDxH)	
Weight	Mechanism with cutter		Approximately 118g/122g/124g	
	Interface board		Approximately 50g / 50g	
Life	Head	MCL401	Pulse durability: 50 million pulses/dot (print ratio: 12.5% or less).	
		MCL411	Pulse durability: 100 million pulses/dot (print ratio: 12.5% or less).	
		MCL601	Pulse durability: 100 million pulses/dot (print ratio: 12.5% or less).	
		MCL401	Abrasion resistance: paper traveling distance 50km	
		MCL411	Abrasion resistance: paper traveling distance 100km	
		MCL601	Abrasion resistance: paper feed length 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		0ºC to +50ºC (+5˚C to +40˚C printing density assurance range)	
	Operating humidity		20 to 85% RH (no condensation)	
	Storage temperature		-20ºC to +60ºC (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 paper	TF60KS-F1 (Nippon paper), FTP-020P0102 (58mm), PD170R (Oji paper), P220VBB-1 (Mitsubishi paper)
			Long life paper	PD160R (Oji paper), AFP-235 (Mitsubishi paper), TP50KJ-R (Nippon paper), HA220AA (Nippon paper)

■ FUNCTION OF INTERFACE BOARD

	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.	Paten 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



Unit: mm

Note: 1. Dimensions are nominal value (tolerance ±5 unless otherwise specified).
2. Platen unit (lever, platen, etc) moves by approximately 0.7mm toward paper insertion direction when platen is open.

1. Connector (FPC) specification (CN4)

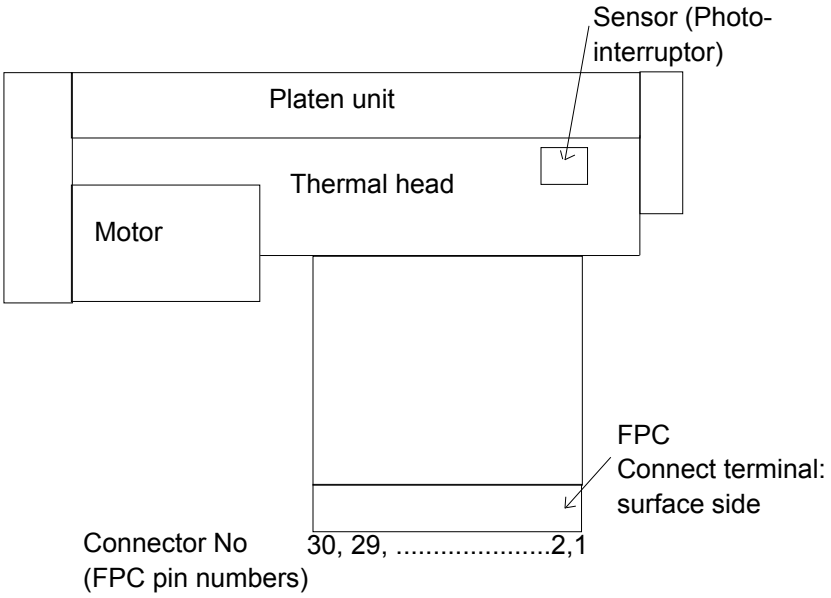
(1) Connector

Mechanical unit side: FPC connector

Remote side (housing site): 52610-3071 (made by Molex)

(2) Pin assignment on the mechanical side

No	Signal	I/O	Contents
1	PHK	—	Photointerrupter (Cathode)
2	VSEN	I	Ground power supply for paper sensor
3	PHE	O	Photointerrupter (Emittor)
4	VH	I	Head drive power
5	VH	I	Head drive power
6	VH	I	Head drive power
7	DI	I	Data input
8	$\overline{\text{STB3}}$	I	Strobe 3
9	$\overline{\text{STB4}}$	I	Strobe 4
10	VDD	—	Logic Power
11	GND	—	Head ground
12	GND	—	Head ground
13	GND	—	Head ground
14	GND	—	Head drive power
15	GND	—	Head drive power
16	GND	—	Head drive power
17	TM	O	Thermistor
18	$\overline{\text{STB1}}$	I	Strobe 1
19	$\overline{\text{STB2}}$	I	Strobe 2
20	$\overline{\text{LAT}}$	I	Data Latch
21	CLK	I	Clock
22	VH	I	Head drive power
23	VH	I	Head drive power
24	VH	I	Head drive power
25	SW	—	Platen open switch
26	SW	—	Platen open switch
27	MT A	I	Motor excite signal A
28	MT $\overline{\text{A}}$	I	Motor excite signal $\overline{\text{A}}$
29	MT B	I	Motor excite signal B
30	MT $\overline{\text{B}}$	I	Motor excite signal $\overline{\text{B}}$



2. Cutter (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	—	Photo interruptor (cathode)	4	MT A	I	Motor excite signal A
5	MT $\overline{A}$	I	Motor excite signal A	6	MT B	I	Motor excite signal B
7	MT $\overline{B}$	I	Motor excite signal B	8	NC	—	Not connected

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