FUJITSU THE POSSIBILITIES ARE INFINITE

24V DRIVEN, FTP-607 Series

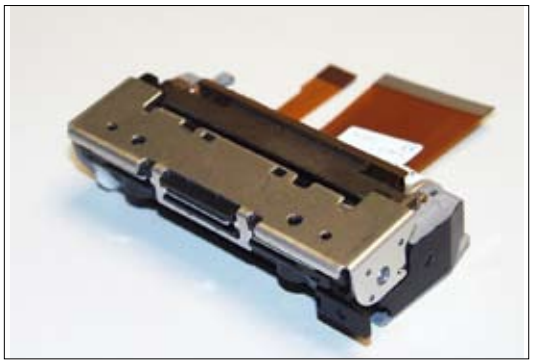
2” HIGH SPEED THERMAL PRINTER

FTP-627MCL401/601

■ OVERVIEW

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



FTP-627MCL401/601

FTP-627DSL291R

FTP-627DSL601R

■ 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 mm/s (800/1,200 dotlines/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**

■ PART NUMBERS

			Part Number
Easy Load Model with low profile cutter			FTP-627MCL401 FTP-627MCL601
LSI for driving		MCL401	FTP-627CU301R
		MCL601	FTP-627CU601R
Interface board for Mech/Cutter	Cutter supported	MCL401	FTP-627DSL291R Parallel (Centronics) /Serial (RS-232C)
		MCL401	FTP-627DSL603R USB (V1.1)
			FTP-627DSL605R Serial (RS-232C)
		MCL601	FTP-627DSL613 R USB (V1.1) FTP-627DSL615 R 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-627MCL401/601
Printing method		Thermal-line dot method
Dot structure		432 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		54 mm
Number of columns		ANK 36 columns/line (maximum 12/24 dot font)
Paper width		58 mm
Paper thickness		60 to 85 µm (some paper in this range may not be used because of paper characteristics)
Printing Speed	MCL401	Maximum 100mm/sec. (800 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), 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	
Iterface			Conforms to RS232C/Centronics / USB	
Power supply	For print head	MCL401	24 VDC average current, 0.4A (0.9 A peak) (print ratio: 12.5%, print speed 100mm/sec.)	
		MCL601	24 VDC average current 0.5 A (0.9 A peak)	
	For motor	MCL401	24 VDC ±5%, 1 A maximum	
		MCL601	24 VDC ±5%, 1.1 A maximum	
	For cutter	MCL401	24 VDC ±5%, 1 A maximum	
		MCL601	24 VDC ±5%, 1.3 A maximum	
	For logic		3.3 to 5.25 VDC, 0.1 A maximum	
Dimensions	Mechanism with cutter		81.2 x 42.2 x 21.8 mm (WxDxH)	
	Interface board	DSL291	70 x 60 x 12 mm (WxDxH)	
		DSL6xx	95 x 70 x 21.6 mm (WxDxH)	
Weight	Mechanism with cutter		Approximately 100g	
	Interface board		Approximately 50g	
Life	Head	MCL401	Pulse durability: 50 million pulses/dot (print ratio: 25%).	
		MCL601	Pulse durability: 100 million pulses/dot (print ratio: 25%).	
		MCL401	Abrasion resistance: paper traveling distance 50km	
		MCL601	Abrasion resistance: paper traveling distance 100km	
	Cutter	MCL401	500,000 cuts	
		MCL601	1,000,000 cuts	
	Platen		5,000 times (open/close)	
Operating environment	Operating temperature*		0ºC to +50ºC	
	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 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 rance.

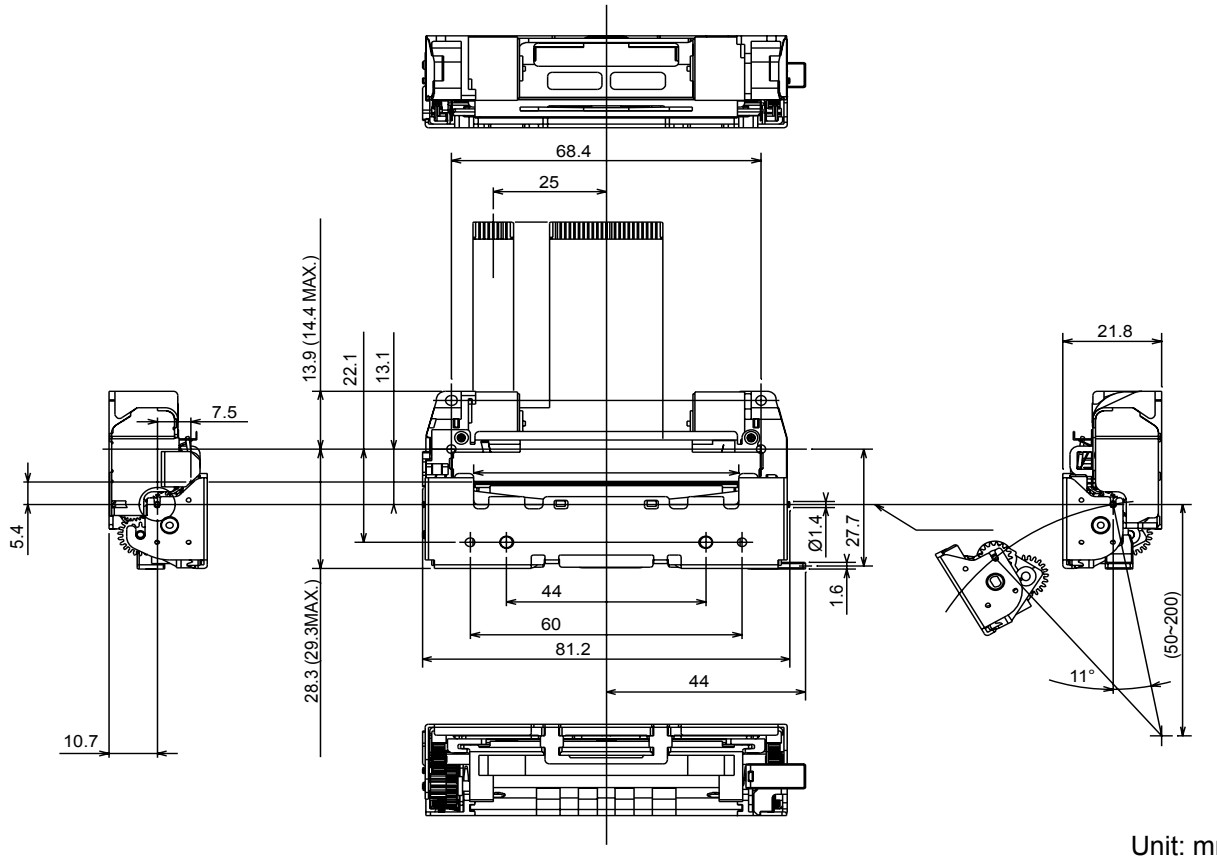
■ FUNCTION OF INTERFACE BOARD

	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

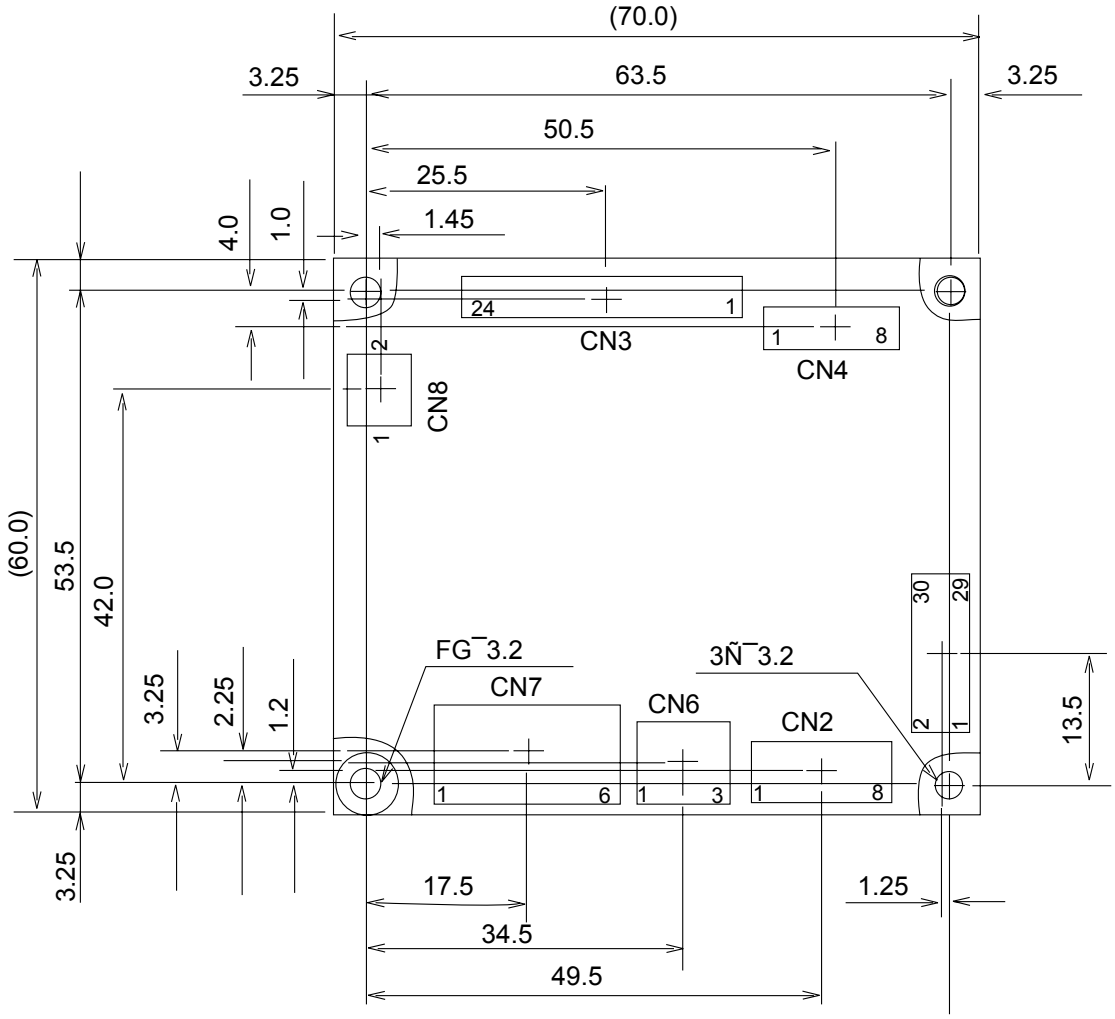
FTP-627MCL401/601

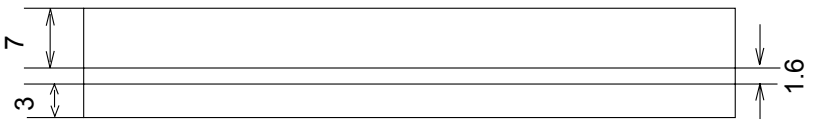


Unit: mm

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.

2. Interface board FTP-627DSL291R

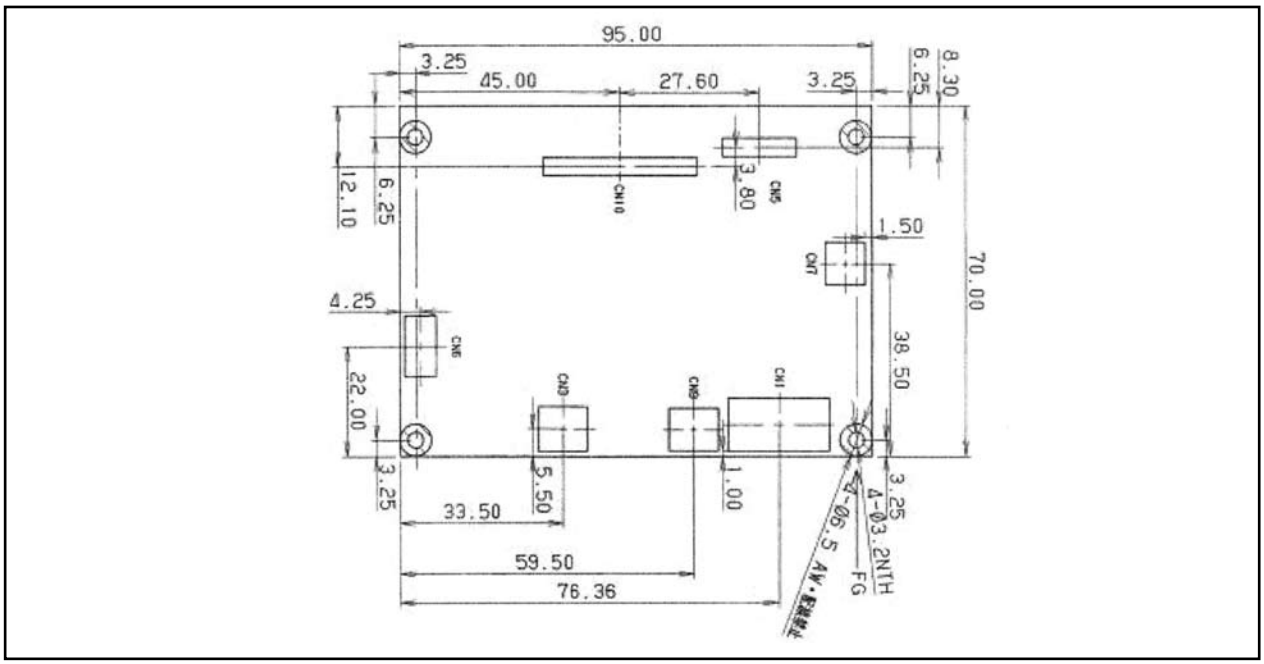




Note: all dimensions are nominal value
() means just reference
The mounting height is the max.

Unit: mm

■ INTERFACE BOARD FTP-627DSL601 Series



Connectors on Control Board

	Name	Functions	Remarks	Note
CN1	+24V power supply connector	Connection for +24V power supply		
CN2	RS-232C	Connection for serial interface		
CN3	USB I/F connector	Connection for USB interface		
CN4	-	Connection for thermal head + paper feed motor	2-inch, 30 pin	
CN5	Cutter connector	Connection for paper cutter		
CN6	Operation panel connector	Connection for operation panel		*1
CN7	Near end sensor connector	Connection for near end switch		*2
CN8	-	-		
CN9	Logic power connector	Connection for +5V power Supply		
CN10	Head/motor connector	Connection for thermal head & paper feed motor	2-inch, 24 pin	

Note: *1: Option
*2: Depends on specification

FTP-627MCL401

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 (Emittor)
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	MT $\overline{\text{A}}$	I	Motor excite signal $\overline{\text{A}}$
22	MT B	I	Motor excite signal B
23	MT $\overline{\text{B}}$	I	Motor excite signal $\overline{\text{B}}$
24	NC	—	Not connected

FTP-627MCL601

1. Connector (FPC) specification (CN4)

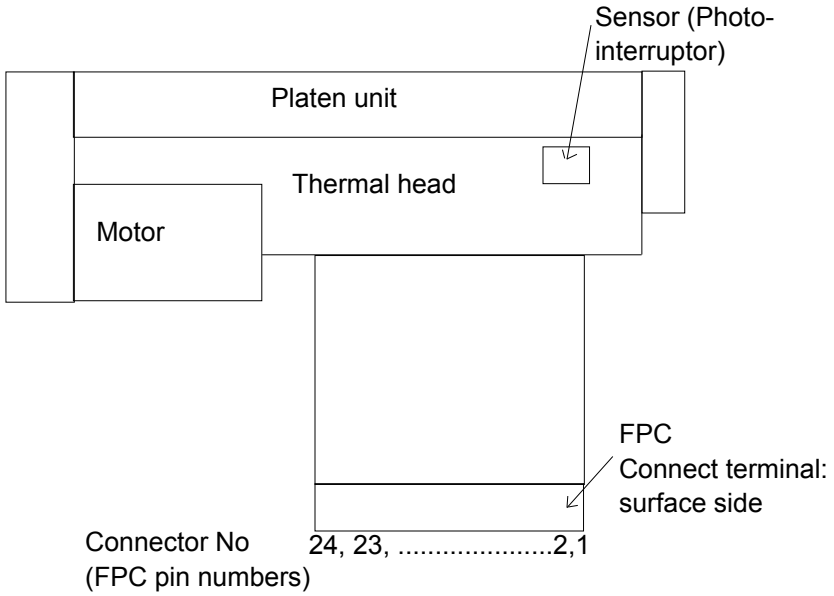
(1) Connector

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	MT $\overline{\text{A}}$	Excitation signal $\overline{\text{A}}$
28	MT A	Excitation signal A
29	MT $\overline{\text{B}}$	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 $\overline{A}$	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

Fujitsu Components International Headquarter Offices

Japan
Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@ft.ed.fujitsu.com
Web: www.fcl.fujitsu.com/en

North and South America
Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: components@us.fujitsu.com
Web: http://us.fujitsu.com/printers/

Europe
Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: emea.fujitsu.com/components/

Asia Pacific
Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: http://www.fujitsu.com/sg/services/micro/components/