FUJITSU THE POSSIBILITIES ARE INFINITE

24V DRIVE, HIGH SPEED LINE THERMAL PRINTER 2” MECHANISM, WITH OR WITHOUT CUTTER

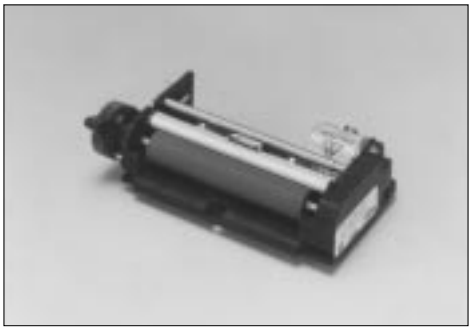
FTP-622MCL001/002/303/304

■ OVERVIEW

FTP-622MCL/FTP-622DCL Series is an ultra high speed line thermal printer driven by 24 VDC, printing on 2-inch wide paper (58 mm/60 mm).

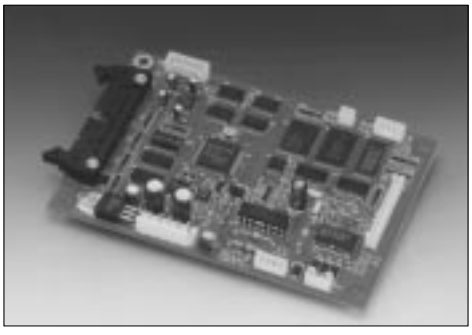
This printer is compact and light weight, and the design allows easy head maintenance, easy head cleaning and easy head replacement.

This printer is suitable for a variety of applications, such as POS terminals, ticket machines, coupon machines, label printers, medical instruments, etc. A printer with a specially designed cutter is also available.



FTP-622MCL001

FTP-622MCL303/304



FTP-622DCL001

■ HIGHLIGHTS

- **Ultra high speed printing**
  It can print at 80 mm/s (640 dotlines/s) maximum by using Fujitsu Components' unique head drive control.
- **Compact and lightweight**
  This printer has a low profile of only 20 mm, and a light weight of approximately 81 g.
- **Low power consumption**
  The peak current for head driving is approximately 2.3 A (at 80 mm/s printing speed, 50% printing ratio).
- **Easy head access**
  It is designed for easy head cleaning and head replacement.
- **Paper auto loading function**
  Thermal paper can be loaded without head-up lever operation.
- **ESC/POS™*1 Commands**
  The commands conform to ESC/POS™.
- **Auto Cutter**
  Printer with auto cutter (full cut/partial cut) is also available.
- **UL Recognized**
  File No.E171434

*1 ESC/POS™ is a registered trademark of SEIKO EPSON Corp.

■ DESIGNATION

Item		Part number
Printer mechanism	Standard	FTP-622MCL001/002*1
Printer mechanism with cutter		FTP-622MCL303/304*3
Interface board	Centronics Standard	FTP-622DCL001/011*2
	Serial (RS-232C)	FTP-622DSL001/011/012*3
LSI(MCU)		FTP-622CU101*4
Cables	Thermal head cable	FTP-622Y001
	Parallel (centronics) Interface cable	FTP-622Y201
	Serial (RS-232C) Interface cable	FTP-622Y301
	Power cable	FTP-622Y401

*1: 001/303 is for front paper insertion (curl path) and 002/304 is for rear paper insertion (straight path).
*2: 001/011 supports ANK and 101 supports ANK+Kanji.
*3: 001/011 supports ANK and 112 supports ANK+Kanji.
*4: CU101 supports Kanji and cutter control.

■ GENERAL SPECIFICATIONS

Item		Specifications	
Part number		FTP-622MCL001/002	FTP622MCL303/304
Printing method		Thermal-sensitive line dot method	
Dot structure		448 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		56 mm	
Paper width	MCL001/303	58 mm	
	MCL002/304	60 mm	
Paper thickness		60~100 μm*1	
Cutting tyoe		---	60-100mm full or partial
Number of columns		37 columns/line (24×12 dot font)	
Maximum printing speed		640 dotlines/s (80 mm/s)	
Character types		Alphanumeric KANA: 159 International characters: 195 JIS KANJI (FTP-622DCL101/111): approximately 6800	
Character composition, dimensions (H×W), Number of characters		24 × 12 dots, (3.0 × 1.5 mm), 37 columns 24 × 24 dots, (3.0 × 3.0 mm), 18 columns 16 × 8 dots, (2.0 × 1.0 mm), 56 columns 16 × 16 dots, (2.0 × 2.0 mm), 28 columns	

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Item		Specifications	
Part number		FTP-622MCL001/002	FTP-622MCL303/304
Interface		Centronics (ESC/POS™), RS232C	
Power supply	For head	24VDC ± 5%, Voltage Current : average*2 ( ): Peak 0.87 (1.16) A (at 80 mm/s printing speed, 25% printing ratio) 0.63 (1.16) A (at 50 mm/s printing speed, 25% printing ratio) 0.58 (0.58) A (at 30 mm/s printing speed, 25% printing ratio)	
	For motor	24VDC ± 5%, 1.0 A maximum	
	For cutter	---	24VDC ± 5%, 1.0 A maximum
	For logic	5VDC ± 5%, 0.5 A maximum	
Dimensions	Mechanism (cutter)	82(W) × 48(D) × 20(H)mm (excluding lever)	97(W) × 57(D) × 38(H)mm (w/cutter)
	Interface board	131 (W) × 89 (D) × 24 (H) mm	
Weight		approximately 81 g	approximately 280 g
Expected life	Mechanism	Pulse durability : 1×10^8 pulse/dot (using Fujitsu Takamisawa's standard driving method) Wear resistance: 50 km (at 25% printing ratio)	
	Cutter	---	500,000 cuts
Environmental conditions	Operating temperature	0 to +50°C*3	
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	–20 to +60°C (excluding paper)	
	Storage humidity	5 to 95% RH (no condensation)	
Detection	Head temperature	By thermistor (applied energy control, abnormal temperature detection)	
	Paper out/Mark detect	By photointerrupter	
	Head-up	By microswitch	
Recommended thermal sensitive paper		For front insertion use (58 mm width) : FTP-020PU001,FTP-020P0701 For rear insertion use (60 mm width) : FTP-020P0020,FTP-020P0702 *Recommended papers · Oji Paper : PD150R,PD160R,PD170R · NIPPON Paper : TF50KS-E,TF60KS-E,TF60KJ-R · MITSUBISHI Paper Mills : P220VBB-1,AFP-235	

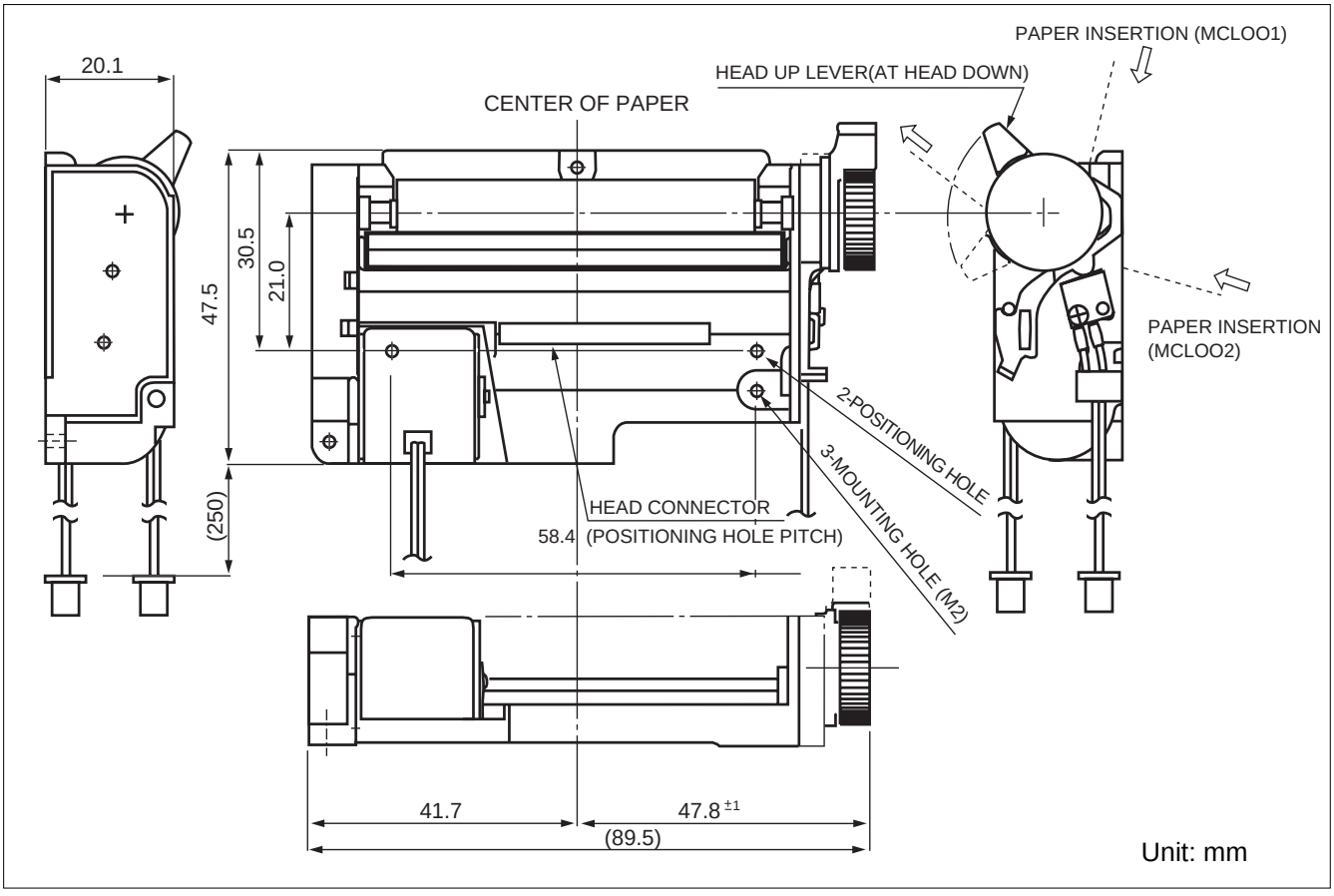
*1: There may be exceptions.

*2: 24VDC, minimum head resistance.

*3: Guarantee: +5°C ~+40°C.

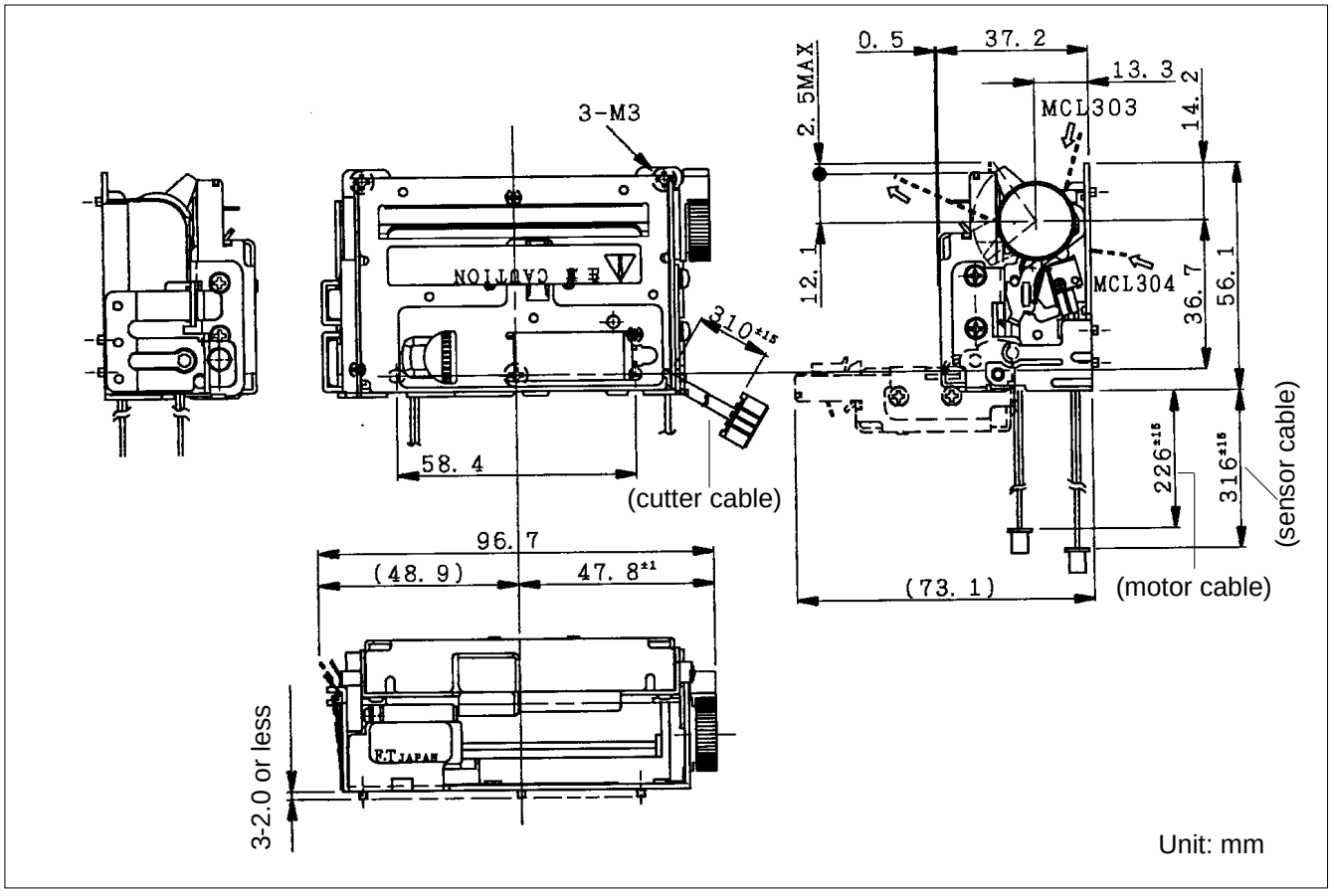
■ DIMENSIONS

Mechanism

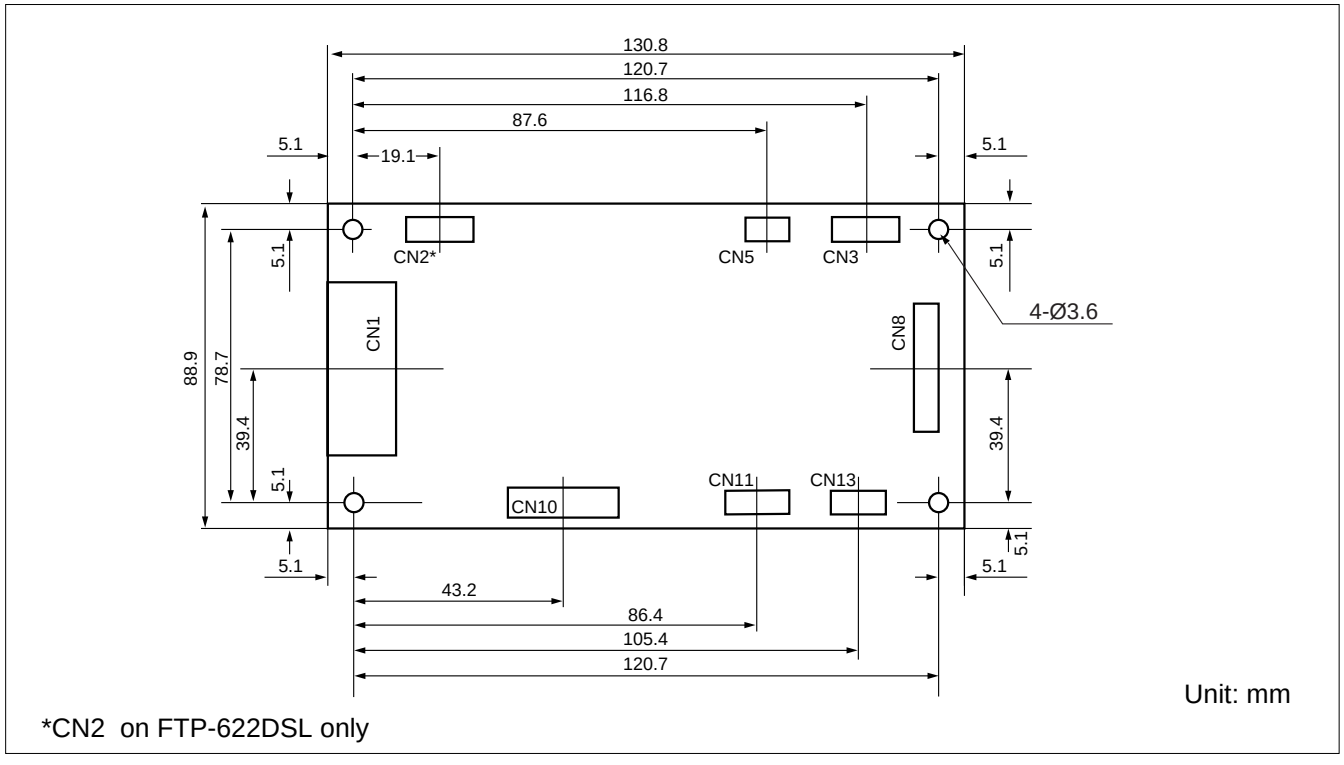


■ DIMENSIONS

Mechanism



Interface board



*CN2 on FTP-622DSL only

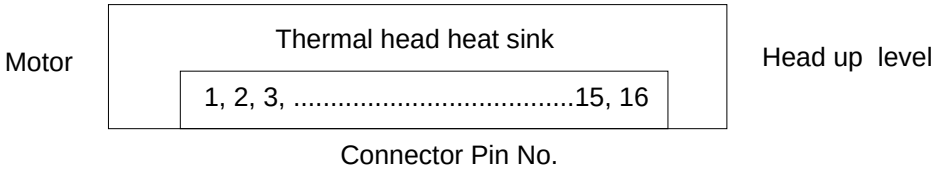
■ CONNECTOR PIN ASSIGNMENT OF PRINTER MECHANISM

1. Thermal Head

Head side : B16B-PH-K-S-2.2 (J.S.T.) or equivalent
Board side : -PHR-16 (J.S.T.) or equivalent

No.	Signal	Comment
1	VH	Power for head
2	VH	Power for head
3	GND	Head ground
4	GND	Head ground
5	$\overline{\text{STB1}}$	Print enable signal 1
6	$\overline{\text{STB2}}$	Print enable signal 2
7	$\overline{\text{STB3}}$	Print enable signal 3
8	TH*1	Temperature detection
9	$\overline{\text{STB4}}$	Print enable signal 4
10	$\overline{\text{LAT}}$	Print data latching signal
11	$\overline{\text{STB5}}$	Print enable signal 5
12	VDD	Power for logic
13	CLK	Data transmission clock
14	DIN	Print data output signal
15	GND	Head ground
16	VH	Power for head

*1: Symbol: "—" means a negative logic signal



2. Motor connectors

Motor side : PHR-4 (J.S.T.) or equivalent
Board side : B4B-PH-K-S (J.S.T.) or equivalent

No.	Signal	Comment
1	$\overline{\text{B}}$	Stepping motor coil excitation
2	B	Stepping motor coil excitation
3	$\overline{\text{A}}$	Stepping motor coil excitation
4	A	Stepping motor coil excitation

3. Sensor connectors

Sensor : PHR-5 (J.S.T.) or equivalent
Board side : B5B-PH-K-S (J.S.T.) or equivalent

No.	Signal	Comment
1	VSEN	Power for paper sensor
2	PHE	Photo interrupter emittor
3	PHK	Photo interrupter cathode
4	SW1	Head up detect switch 1
5	SW2	Head up detect switch 2

4. Cutter

Mech side : EHR-4 (J.S.T.) or equivalent
Board side : B4B-EH (J.S.T.) or equivalent

No	Cable Color	Name
1	White	Home position 1
2	White	Home position 2
3	Red	Motor energizing signal M+
4	Black	Motor energizing signal M-

■ FUNCTIONS

	Item		Item
1.	Test print function	8.	Cutter abnormality detection
2.	Paper out detection	9.	Motor power saving function
3.	Paper near end detection	10.	Mark detection function
4.	Head up 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

■ INTERFACE, COMMAND, OPTIONS

Please refer to the FTP-622DCL DATA SHEET and the FTP-622DSL DATA SHEET for Interface, Commands, and Options.

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