

# 24V DRIVE, HIGH SPEED LINE THERMAL PRINTER 3" MECHANISM, WITH OR WITHOUT CUTTER

## FTP-632MCL001/002/303/304

### ■ OVERVIEW

FTP-632MCL/FTP-622DCL Series is an ultra high speed line thermal printer driven by 24 VDC, printing on 3-inch wide paper (80 mm/85 mm).

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

### ■ HIGHLIGHTS

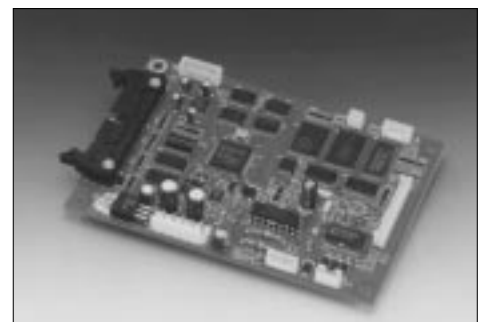
- **Ultra high speed printing**  
It can print at 80 mm/s (640 dotlines/s) maximum by using Fujitsu Components' unique head drive control.
- **Compact and lightweight**  
This printer has a low profile of only 20 mm, and a light weight of approximately 94 g.
- **Low power consumption**  
The peak current for head driving is approximately 2.9 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



FTP-632MCL001



FTP-632MCL303/304



FTP-622DCL001

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

# FTP-632MCL001/002/303/304

## ■ DESIGNATION

Item		Part number
Printer mechanism	Standard	FTP-632MCL001/002 <sup>*1</sup>
Printer mechanism with cutter		FTP-632MCL303/304 <sup>*1</sup>
Interface board	Parallel (Centronics Standard)	FTP-622DCL001/011 <sup>*2</sup>
	Serial (RS232C)	FTP-622DSL001/011/012 <sup>*3</sup>
LSI(MCU)		FTP-622CU101 <sup>*4</sup>
Cables	Thermal head cable	FTP-622Y001
	Parallel interface cable	FTP-622Y201
	Serial 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: 001/011/012 supports ANK and 111 supports ANK + Kanji.

\*4: CU101 supports Kanji and cutter control.

## ■ GENERAL SPECIFICATIONS

Item		Specifications	
Part number		FTP-632MCL001/002	FTP-632MCL303/304
Printing method		Thermal-sensitive 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	
Paper width	MCL001/303	80 mm	
	MCL002/304	85 mm	
Paper thickness		60~100 μm <sup>*1</sup>	60~100 μm <sup>*1</sup>
Cutter type		---	full or partial
Number of columns		48 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), 48 columns 24 × 24 dots, (3.0 × 3.0 mm), 24 columns 16 × 8 dots, (2.0 × 1.0 mm), 72 columns 16 × 16 dots, (2.0 × 2.0 mm), 36 columns	

(Continued)

# FTP-632MCL001/002/303/304

(Continued)

Item		Specifications	
Part number		FTP-632MCL001/002	FTP-632MCL303/304
Interface		Centronics (ESC/POS™), RS232C	
Power supply	For head	24 VDC ± 5%, Voltage Current : average <sup>2</sup> ( ): Peak 1.11 (1.45) A (at 80 mm/s printing speed, 25% printing ratio) 0.81 (1.45) A (at 50 mm/s printing speed, 25% printing ratio) 0.75 (0.87) A (at 30 mm/s printing speed, 25% printing ratio)	
	For motor	24 VDC ± 5%, 1.0 A maximum	
	For cutter	---	24 VDC ± 5%, 1.0 A maximum
	For logic	5 VDC ± 5%, 0.5 A maximum	
Dimensions	Mechanism	108 (W) × 48 (D) × 20 (H) mm (Excluding lever)	117 (W) × 57 (D) × 38 (H) mm
	Interface board	131 (W) × 89 (D) × 24 (H) mm	
Weight		approximately 94 g	approximately 330 g
Expected life	Mechanism	Pulse durability : 1 × 10 <sup>8</sup> pulse/dot (using Fujitsu's standard driving method) Wear resistance : 50 km (at 25% printing ratio)	
	Cutter	---	500,000 cuts
Environmental conditions	Operating temperature	0 to +50°C <sup>3</sup>	
	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 (80 mm width) For rear insertion use (85 mm width) *Recommended papers · Oji Paper · NIPPON Paper · MITSUBISHI Paper Mills	: FTP-030PU001, FTP-030P0701 : FTP-030P0020, FTP-030P0702 : PD150R, PD160R, PD170R : TF50KS-E, TF60KS-E, TF60KJ-R : P220VBB-1, AFP-235

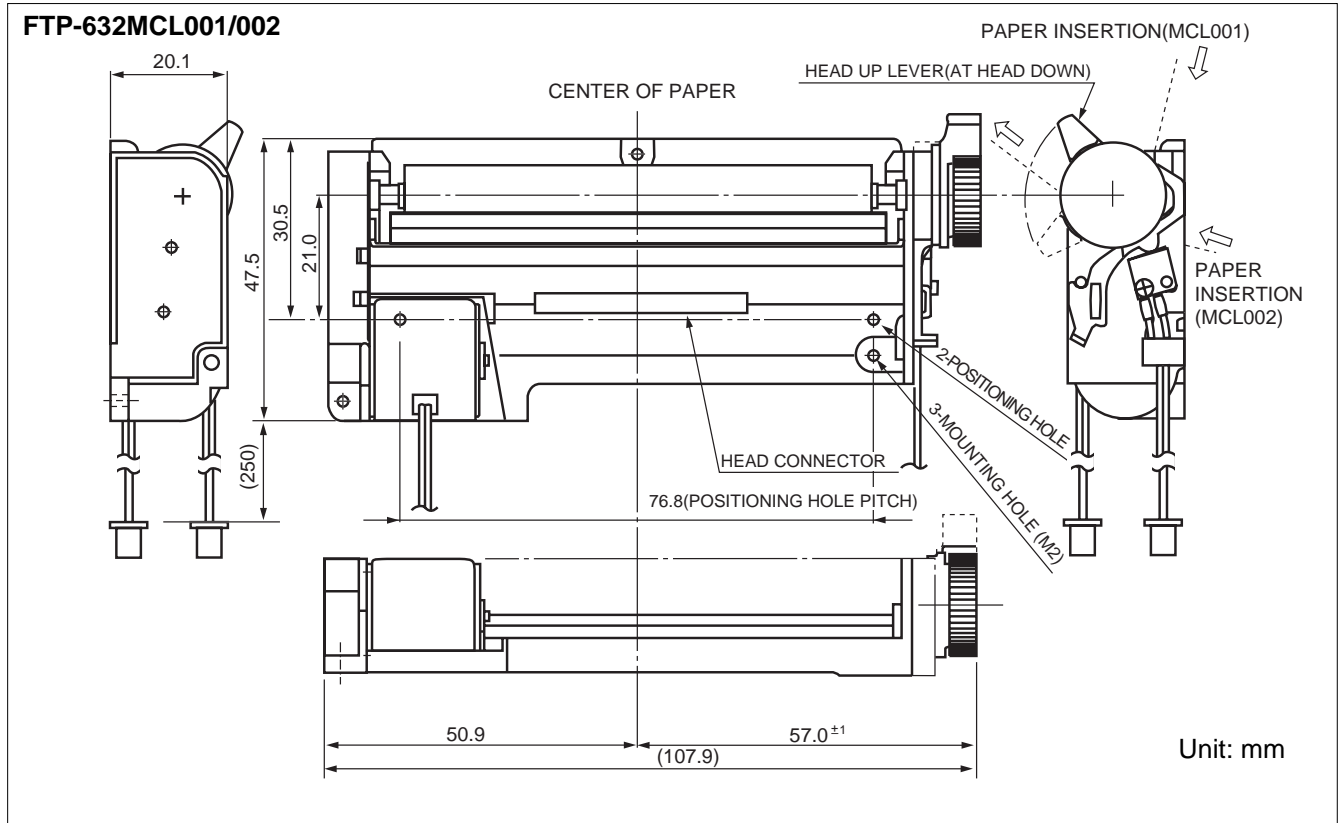
\*1: There may be exceptions.

\*2: 24 VDC, minimum head resistance.

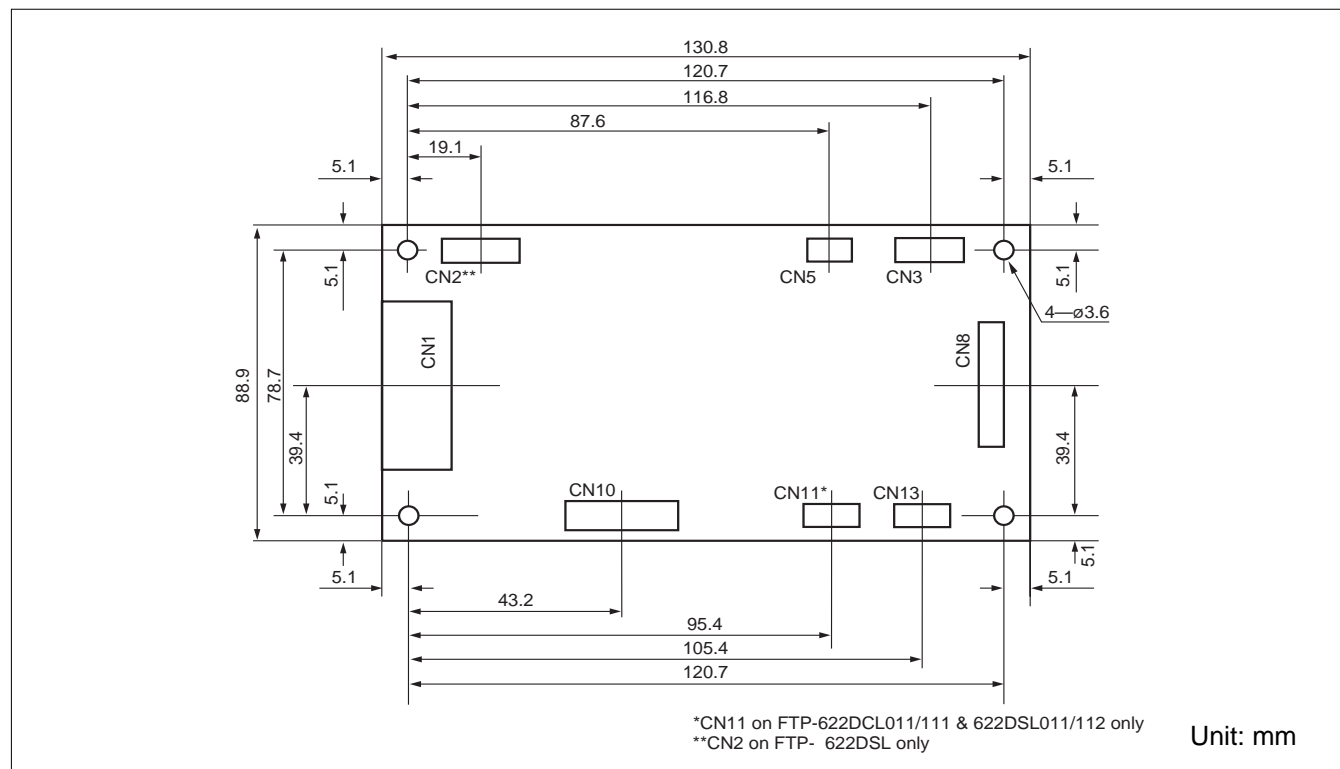
\*3: Guarantee: +5°C ~+40°C.

## ■ DIMENSIONS

### Mechanism



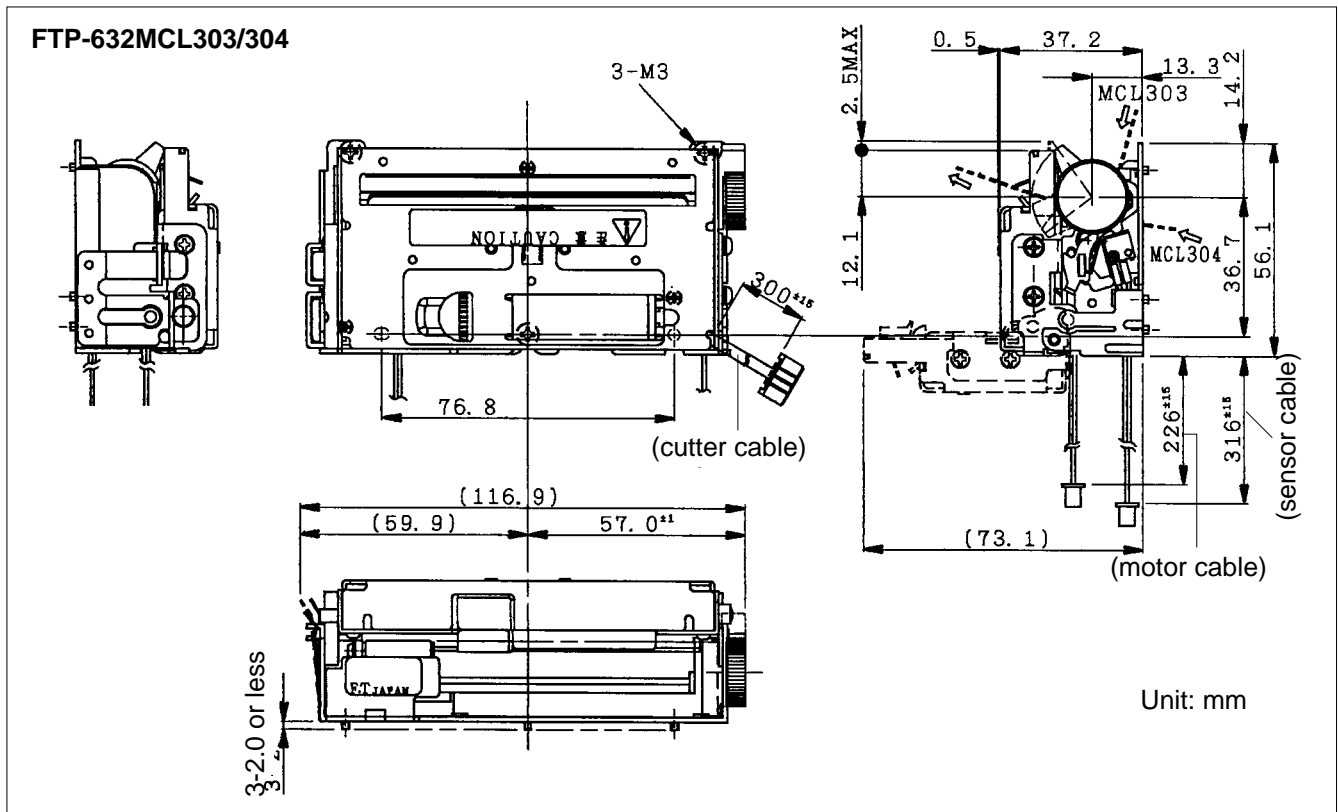
### Interface board



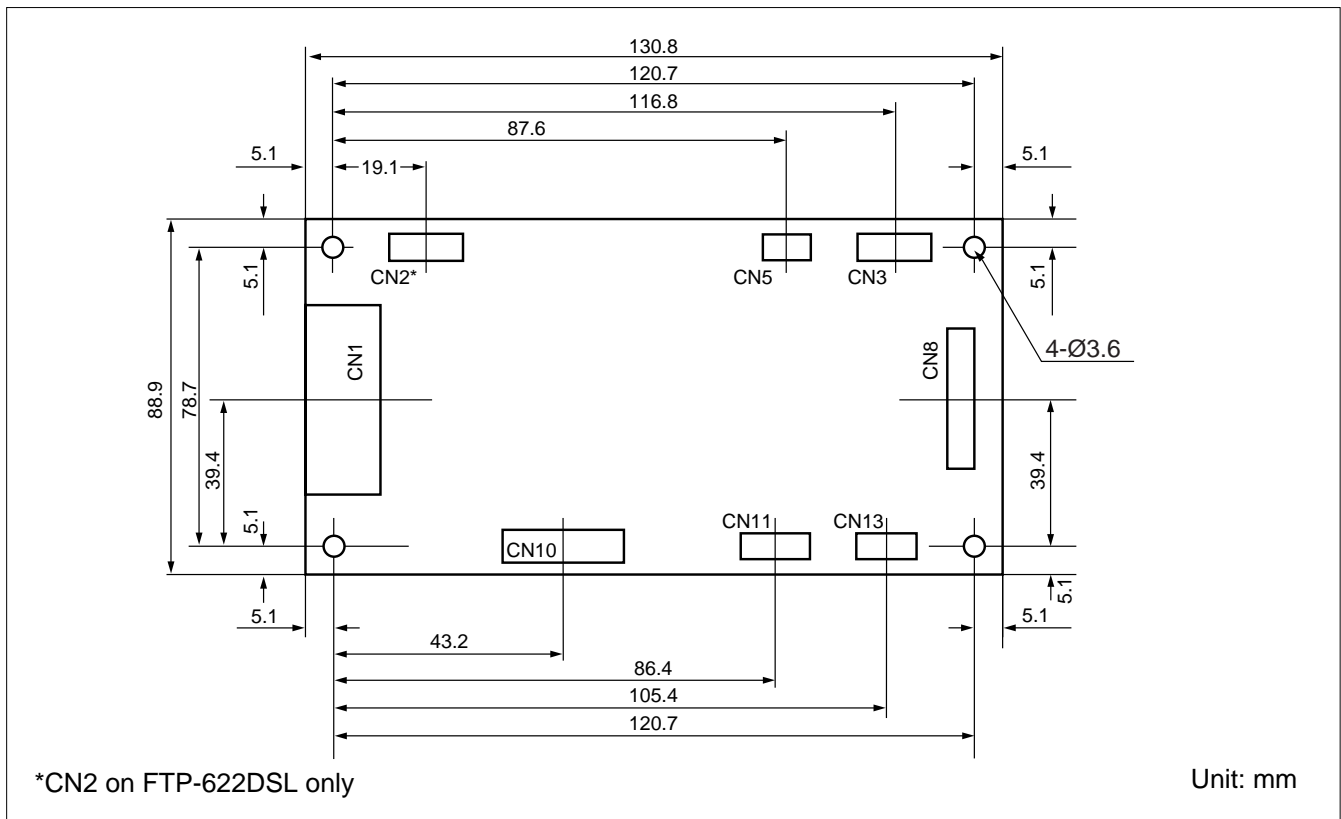
# FTP-632MCL001/002/303/304

## ■ DIMENSIONS

### Mechanism



### Interface board



## ■ CONNECTOR PIN ASSIGNMENT FOR PRINTER MECHANISM

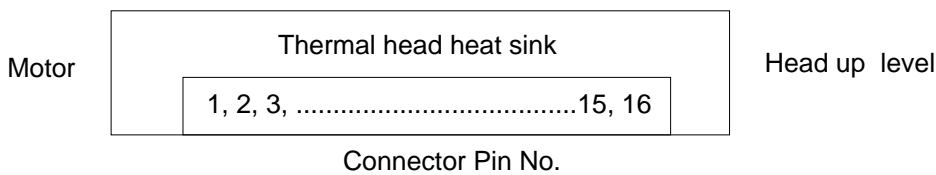
### 1. Thermal Head

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

Board side : PHR-16 (J.S.T.) or equivalent



\*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

### 3. Sensor connectors

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



## 4. Cutter

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

## ■ FUNCTION

	ITEM		ITEM
1.	Test printing	8.	Cutter trouble detection
2.	Paper-out detection	9.	Motor power save
3.	Paper near end detection	10.	Mark detection
4.	Head-up detection	11.	MCU trouble detection
5.	Abnormal temperature detection of thermal head	12.	Power on/off sequence protection
6.	Blown fuse detection	13.	Motor protection
7.	Abnormal voltage detection of head	14.	Hardware timer

## ■ INTERFACE, COMMAND, OPTIONS

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

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