

# FCL Components Thermal Printer FTP-68E Series (8-inch thermal printer)

FCL Components 24V, 8" high or low speed, easy loading thermal printer

## Overview

The FTP-68EMCL Series is an 8", ultra compact 24V thermal printer . Our unique platen removal design allows easy access for both loading paper and maintenance. Both high speed and low speed versions are available.

The FTP-68EMCL Series can be used for a variety of applications such as test & measurement equipment, informational kiosks, ticket issuing terminals, label printers and medical equipment.



FTP-68EMCL101 (lever cap is optional)

## Features

- Platen open structure  
Paper jam-free / easy maintenance
- Multi-feature metal frame  
The rugged metal frame provides excellent ESD performance, is shock/vibration resistant and the heat-sink allows for continuous printing
- 8-inch (A4) wide paper width
- Label paper available  
Straight paper pass
- Printing speed  
HIGH SPEED: FTP-68EMCL101/112: it can print at 80mm/s  
LOW SPEED: FTP-68EMCL151/161/162: it can print at 10mm/minute (max. 50mm/s)
- UL File No. E171434
- RoHS compliant

Item	Part Number	
Printer mechanism	FTP-68EMCL001/051 (without adaptor board, without lever cap) (DISCONTINUED)	
	FTP-68EMCL101/151 (with adaptor board, without lever cap)	
	FTP-68EMCL161 (with adaptor board, without lever cap, with blackmark detection)	
	FTP-68EMCL112/162 (with adaptor board, with lever cap, with blackmark detection)	
Lever cap (optional)	FTP-68EMP0495	
LSI for driving	Under developmnet	
Interface board	FTP-62EDSL201 (For high speed mechanism)	
	FTP-62EDSL202 (For low speed mechanism)	
Cables	USB	FTP-629Y301-R
	Head	FTP-62EY001-R
	Power	FTP-629Y601-R

Item	Specifications		
Part number	FTP-68EMCL101/112/151/161/162		
Printing method	Thermal-line dot method		
Dot structure	1728 dots/lines (effective printing dot number 1696 dot/lines)		
Dot pitch (horizontal)	0.125mm (dot density 8 dots/mm)		
Dot pitch (vertical)	0.125mm (dot density 8 dots/mm)		
Effective printing area	212 mm		
Paper	Width	210-216mm	
	Thickness	60-100µm	
Operating voltage	For print head	24V ±10% (480 dots, current peak 8.0A )	
	For motor	MCL101/112	24V ±10% current: 1 phase 0.6A, 2 phase: 1.2A
		MCL151/161/162	24V ±10% current: 1 phase 0.4A, 2 phase: 0.8A
	For logic	3.3V or 5V ±5% (3.3 ±5%, 5V ±5%) 0.2A maximum	
Printing speed	MCL001/101/112 (high speed)	Max. 80mm/sec. (640 dotlines/sec.)*	
	MCL051/151/161/162 (low speed)	10mm/min - 50mm/sec. **	
Dimensions	MCL001/101/112	262.0 x 55.2 x 26.0mm (WxDxH, except lever)	
	MCL051/151/161/162	273.8 x 57.9 x 30.0mm (WxDxH, except lever)	
Weight (Printer mech)	MCL001/101/112	Approximately: 560g (MCL001), 570g (MCL101/112)	
	MCL051/151/161/162	Approximately: 565g (MCL051), 575g (MCL151/161/162)	
Head life	Pulse resistance: 100 million pulse/dot		
	Abrasion resistance: paper traveling distance 100km (print ratio: 12.5% or less)		
Operating environment	Operating temperature***	0°C to 50°C	
	Operating humidity****	20 to 85% RH	
	Storage temperature	-10°C to +60°C	
	Storage humidity	5 to 90% RH	
Detection function	Head temperature detection	Thermistor	
	Paper out / mark detection	Photo sensor	
Recommended thermal sensitive paper	High sensitive paper	TF50KS-E	
	Standard paper	PD150R, TF60KS-E	
	Medium life storage paper	PD170R, TP60KS-F1, P220VBB-1	
	Long life storage paper	PD160R	

\*: At 25°C high speed mode, using specified thermal paper

\*\*: At 25°C batch printing mode, using specified thermal paper

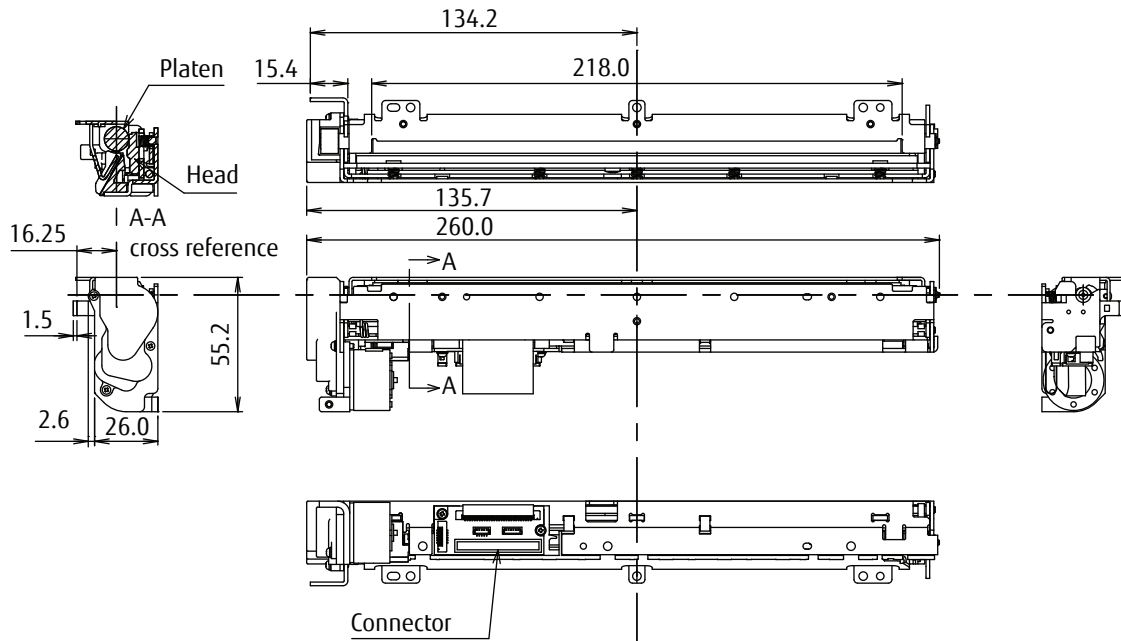
\*\*\*: +5° to +40°C printing density assurance range

\*\*\*\*: Gradual decrease 12 to 52%RH in the range of +40°C to +50°C

■ Part Number Specifications

Print Speed	Part Number	Paper Thickness (recommended paper)	Sensor		FPC Adaptor	Lever Cap	Dimension Specifications
			Paper Detection	Mark (hole) Detection			
High	FTP-68EMCL101	60 to 100µm	With	None	With	None	Please see page 4
	FTP-68EMCL112		With	With	With	With	Please see page 5
Low	FTP-68EMCL151		With	None	With	None	Please see page 4
	FTP-68EMCL161		With	With	With	None	Please see page 5
	FTP-68EMCL162		With	With	With	With	Please see page 6

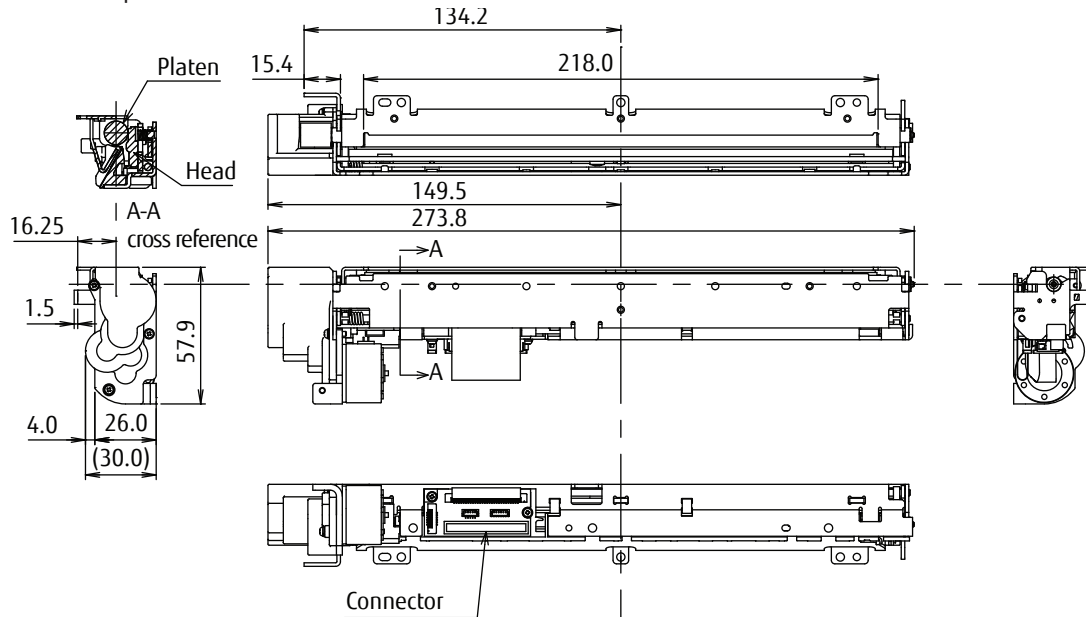
FTP-68EMCL101 - High Speed



Note: 1. Dimensions are nominal value, tolerance  $\pm 0.5\text{mm}$  unless otherwise specified.

Unit: mm

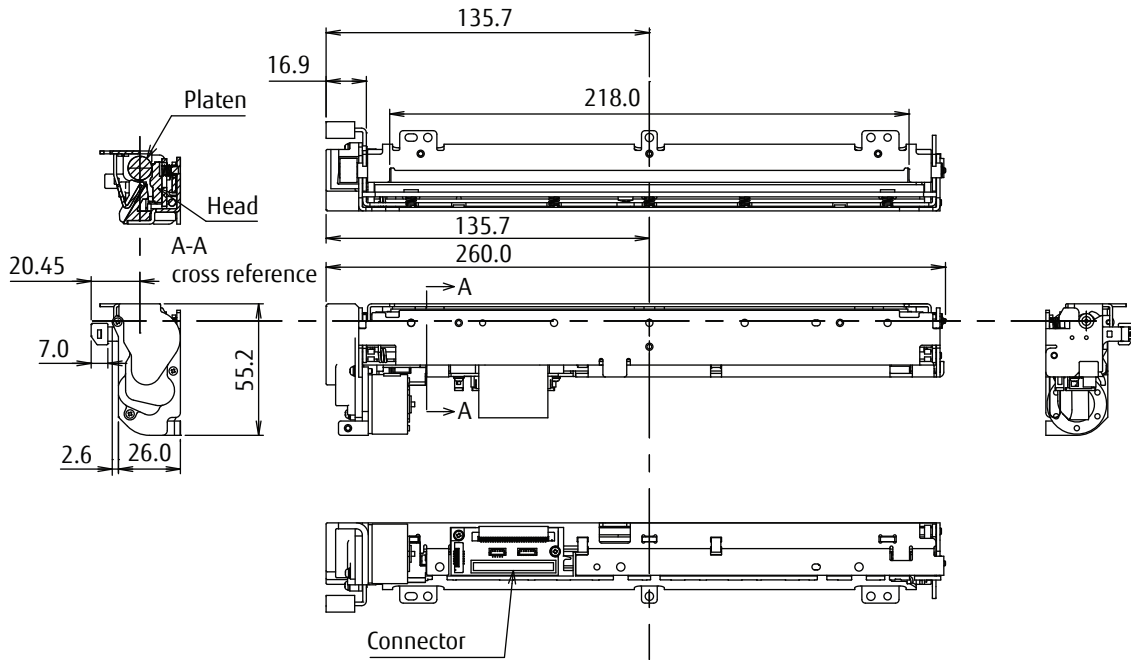
FTP-68EMCL151 - Low Speed



Note: 1. Dimensions are nominal value, tolerance  $\pm 0.5\text{mm}$  unless otherwise specified.

Unit: mm

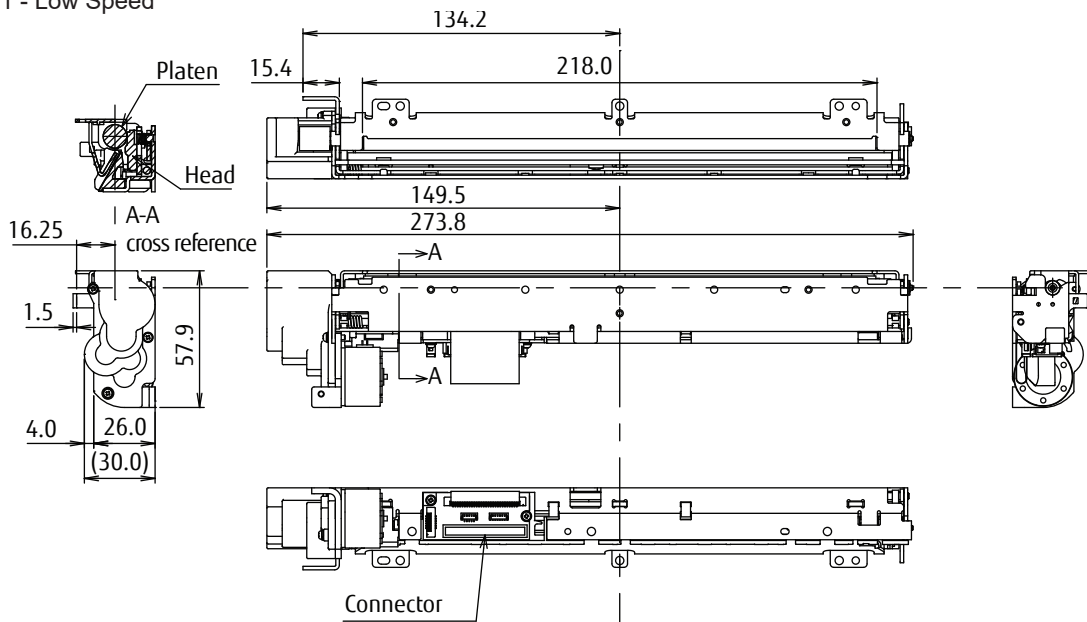
FTP-68EMCL112 - High Speed



Note: 1. Dimensions are nominal value, tolerance  $\pm 0.5\text{mm}$  unless otherwise specified.

Unit: mm

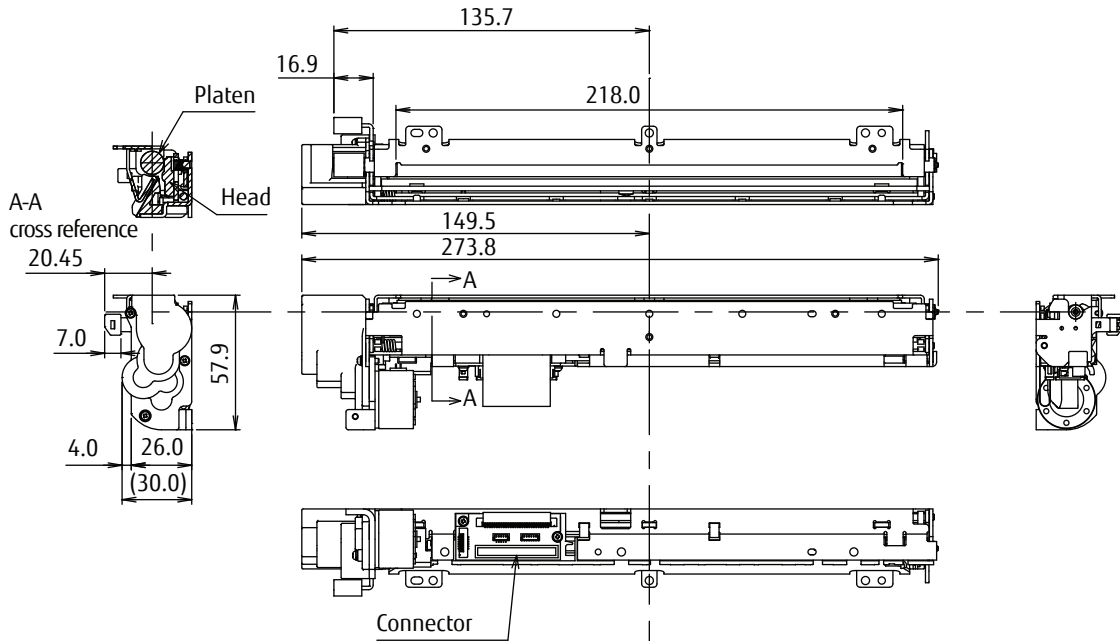
FTP-68EMCL161 - Low Speed



Note: 1. Dimensions are nominal value, tolerance  $\pm 0.5\text{mm}$  unless otherwise specified.

Unit: mm

FTP-68EMCL162 - Low Speed



Note: 1. Dimensions are nominal value, tolerance  $\pm 0.5\text{mm}$  unless otherwise specified.

Unit: mm

## FTP-68EMCL001/051

## ■ Printer FFC

- Thermal head FPC (contact pitch 1mm)

No	Signal	I/O	Contents
1	VH	I	Thermal head power supply
2	VH	I	
3	VH	I	
4	VH	I	
5	DO	I	Data out
6	/LAT	I	Data latch
7	CLK	I	Clock
8	VDD	I	Logic power
9	/STB1	I	Head strobe 1 signal
10	/STB2	I	Head strobe 2 signal
11	/STB3	I	Head strobe 3 signal
12	GND	-	Thermal head power supply
13	GND	-	
14	GND	-	
15	GND	-	
16	GND	-	
17	GND	-	
18	GND	-	
19	GND	-	
20	HTMP	-	Thermistor
21	/STB4	I	Head strobe 4 signal
22	/STB5	I	Head strobe 5 signal
23	/STB6	I	Head strobe 6 signal
24	DI	I	Data in
25	VH	I	Thermal head power supply
26	VH	I	
27	VH	I	
28	VH	I	

## ■ Printer FFC

- Mechanism side: 52610-0672 (Molex)

No	Signal	I/O	Contents
1	MTMP	-	Motor temperature detection
2	GND	-	Motor temperature detection ground
3	MT_/A	I	Transporter motor /A excitation signal
4	MT_A	I	Transporter motor A excitation signal
5	MT_B	I	Transporter motor B excitation signal
6	MT_/B	I	Transporter motor /B excitation signal

### FTP-68EMCL101/151/112/161/162

#### ■ Printer connector (head extension connector board) PIN arrays

- Adaptor board side: B34B-PHDSS (LF) (SN) (JST)  
Remote side: PHDR-34VS (JST)

No	Signal	I/O	Contents
1	MTMP	I	Motor temperature detection
2	GND	-	Motor temperature detection ground
3	MT_/A	I	Transporter motor /A excitation signal
4	MT_A	I	Transporter motor A excitation signal
5	MT_B	I	Transporter motor B excitation signal
6	MT_/B	I	Transporter motor /B excitation signal
7	VSEN	I	Paper sensor power
8	PHE	O	Paper sensor out
9	PHK	O	Paper sensor cathode
10	VSEN	I	Mark (hole) sensor power terminal*
11	PHE	O	Mark (hole) sensor output terminal*
12	PHK	O	Mark (hole) sensor cathode terminal*
13	HUP	O	Platen open detection
14	GND	-	3.3V ground for the platen open sensor
15	VH	I	Thermal head power supply
16	VH	I	
17	DO	O	Thermal head data output

No	Signal	I/O	Contents
18	/LAT	I	Thermal head latch input
19	CLK	I	Thermal head clock
20	VDD	I	Thermal head logic power supply
21	/STB1	I	Head strobe 1 signal
22	/STB2	I	Head strobe 2 signal
23	/STB3	I	Head strobe 3 signal
24	GND	-	Power ground
25	GND	-	
26	GND	-	
27	GND	-	
28	HTMP	O	Thermal head temperature detection
29	/STB4	I	Head strobe 4 signal
30	/STB5	I	Head strobe 5 signal
31	/STB6	I	Head strobe 6 signal
32	DI	I	Thermal head data input
33	VH	I	Thermal head power supply
34	VH	I	

Do not plug or unplug the FPC when power is on.

\*: FTP-68EMCL101/151: #10, 11, 12 are NOT CONNECTED

### FTP-68EMCL001/051

#### ■ Paper sensor and platen open detection switch (1)

- Connector used: BM03B-SRSS-TB (JST or equivalent)

No	Signal	I/O*	Contents
1	GND	-	Ground
2	HUP	O	Platen open detection switch
3	PHK	O	Cathode for photo interruptor (paper sensor)
4	PHE	O	Emitter for photo interruptor (paper sensor)
5	VSEN	I	Paper sensor power

\*: Output direction from mechanism side

#### ■ Platen open detection switch (2)

- Connector used: BM06B-SRSS-TB (JST or equivalent)

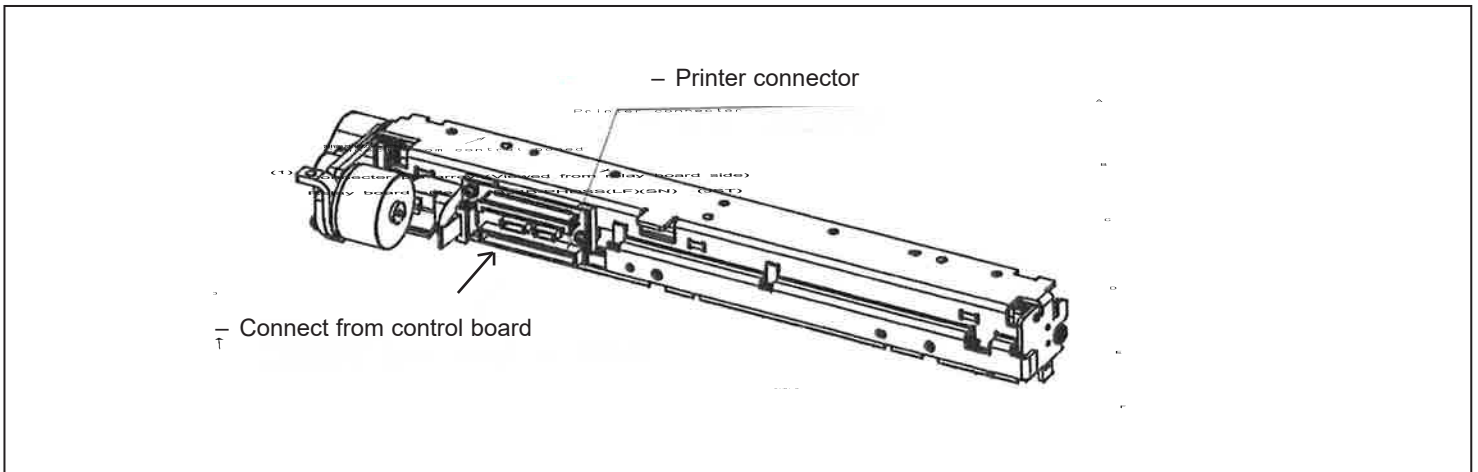
No	Signal	I/O*	Contents
1	GND	-	Ground
2	NC	-	Not connected
3	NC	-	
4	NC	-	
5	NC	-	
6	HUP	O	Platen open detection switch

\*: Output direction from mechanism side



## FTP-68EMCL101/112/151/161/162

- **Adaptor board type (connector specification)**
  - Connector pin array (viewed from relay board side)
    - Adaptor board side: B34B-PHDSS (LF) (SN) (JST)
    - Remote side: PHDR-34VS (JST)



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