

# FUJITSU Component Thermal Printer

## FTP-68E Series (8-inch thermal printer)

Fujitsu 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-68EMCL001/101/112: it can print at 80mm/s  
**LOW SPEED:** FTP-68EMCL051/151/162: 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)
		FTP-68EMCL101/151 (with adaptor board, without lever cap)
		FTP-68EMCL112/162 (with adaptor board, with lever cap)
Lever cap (optional)		FTP-68EMP0495
LSI for driving		Under developmnet
Interface board		FTP-62EDSL101#01-R (Font: ANK, Thai, JIS Kanji, Traditional Chinese)
		FTP-62EDSL101#02-R (Font: ANK, Thai, Traditional Chinese)
Cables	USB	FTP-629Y301-R
	Head	FTP-62EY001-R
	Power	FTP-629Y601-R
Item		Specifications
Part number		FTP-68EMCL001/101/112/051/151/162
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	MCL001/101/112 24V ±10% current: 1 phase 0.6A, 2 phase: 1.2A
		MCL051/151/162 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.)*
	MCL051/151/162 (low speed)	10mm/min - 50mm/sec. **
Dimensions	MCL001/101/112	262.0 x 55.2 x 26.0mm (WxDxH, except lever)
	MCL051/151/162	273.8 x 57.9 x 30.0mm (WxDxH, except lever)
Weight (Printer mech)	MCL001/101/112	Approximately: 560g (MCL001), 570g (MCL101/112)
	MCL051/151/162	Approximately: 565g (MCL051), 575g (MCL151/162)
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

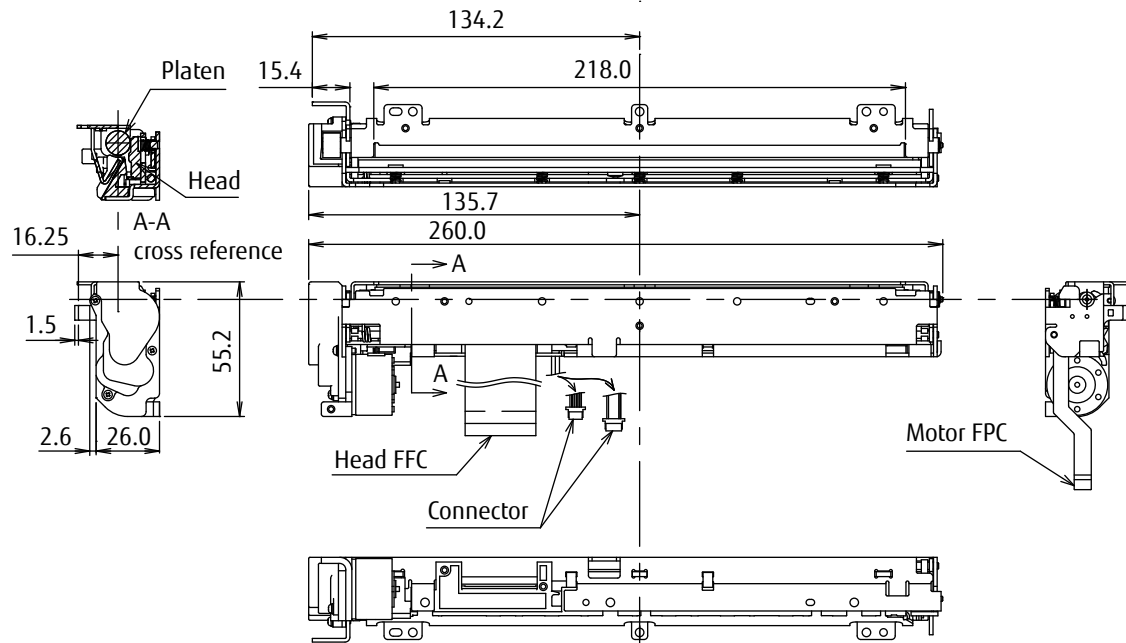
■ Part Number Specifications

Print Speed	Part Number	Paper Thickness (recommended paper)	Sensor Paper Detection	Mark (hole) Detection	FPC Adaptor	Lever Cap	Dimension Specifications
High	FTP-68EMCL001	60 to 100µm	With	None	None	None	Please see page 4
	FTP-68EMCL101		With	None	With	None	Please see page 5
	FTP-68EMCL112		With	With	With	With	Please see page 6
Low	FTP-68EMCL051		With	None	None	None	Please see page 4
	FTP-68EMCL151		With	None	With	None	Please see page 5
	FTP-68EMCL162		With	With	With	With	Please see page 6

## ■ Dimension

- Printer mechanism: 8-inch

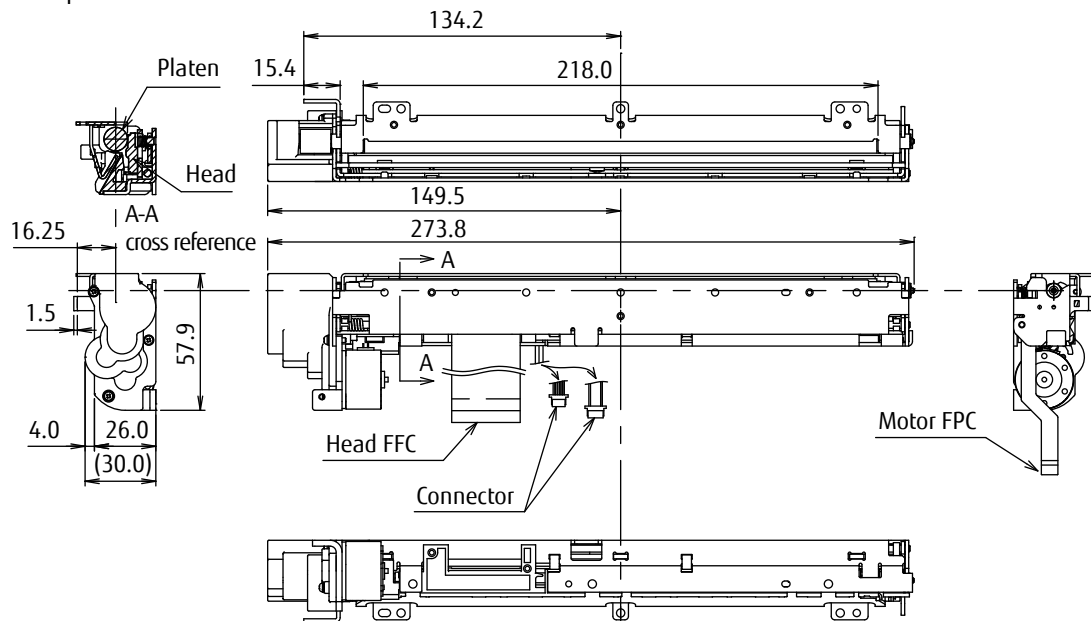
### FTP-68EMCL001 - High Speed



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

Unit: mm

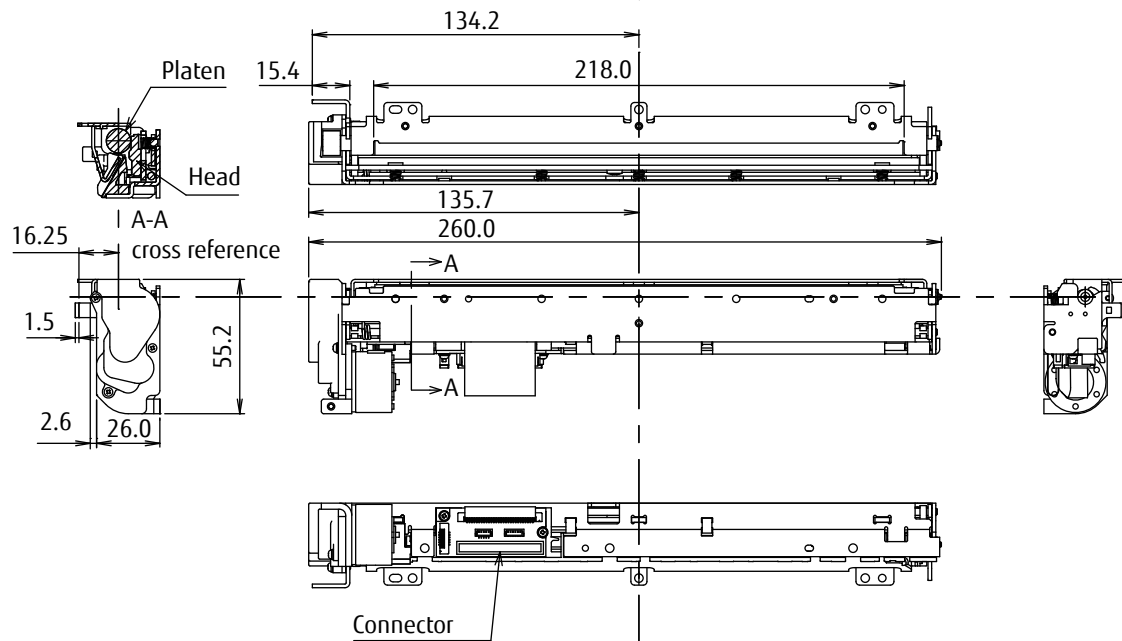
### FTP-68EMCL051 - Low Speed



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

Unit: mm

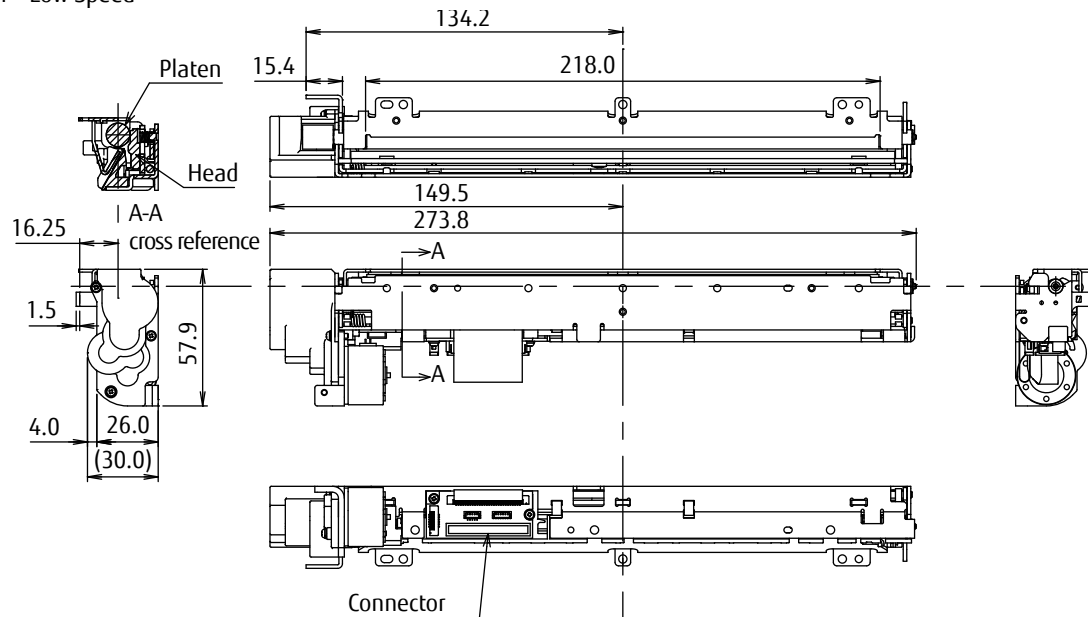
### FTP-68EMCL101 - High Speed



Unit: mm

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

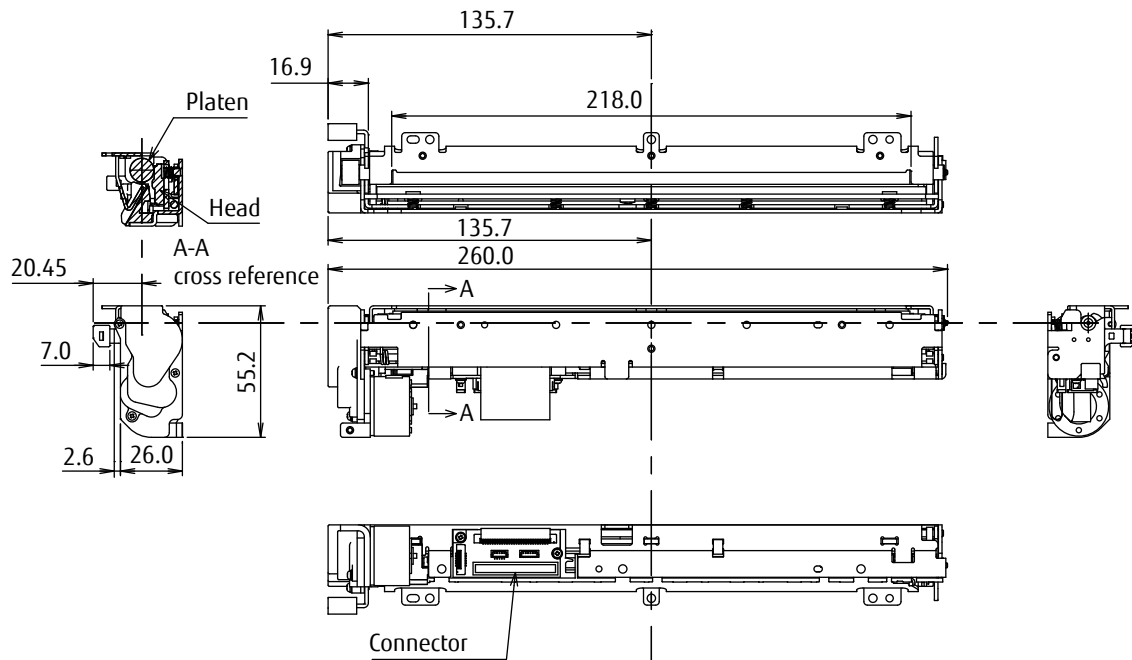
### FTP-68EMCL151 - Low Speed



Unit: mm

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

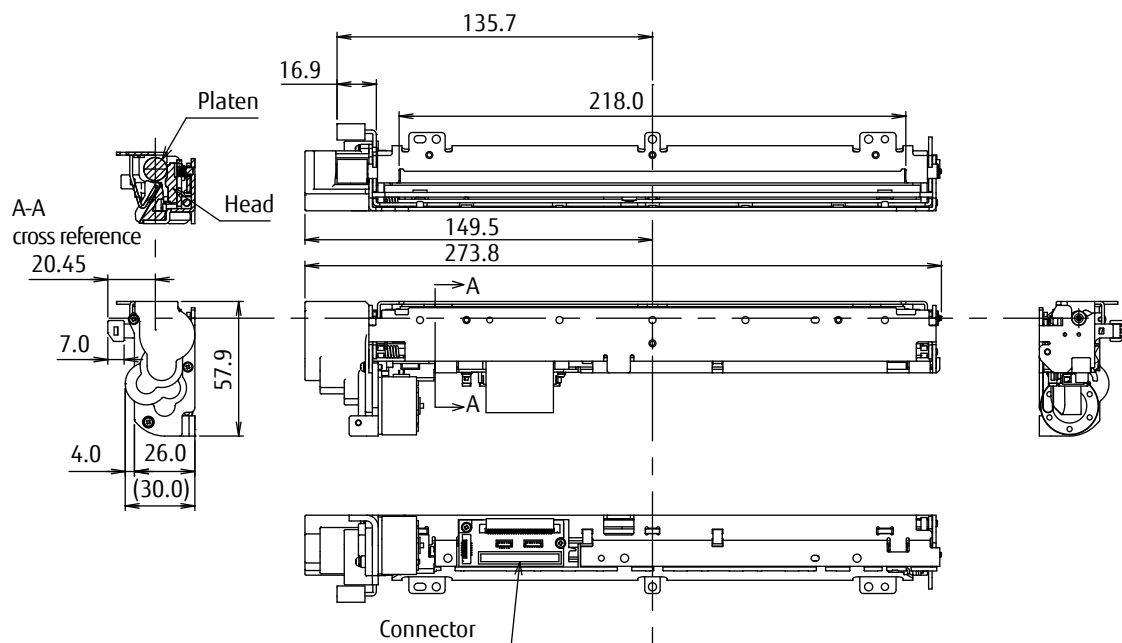
### FTP-68EMCL112 - High Speed



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	-	Thermal head power supply
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-68EMCL101/151/112/162**

## ■ 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

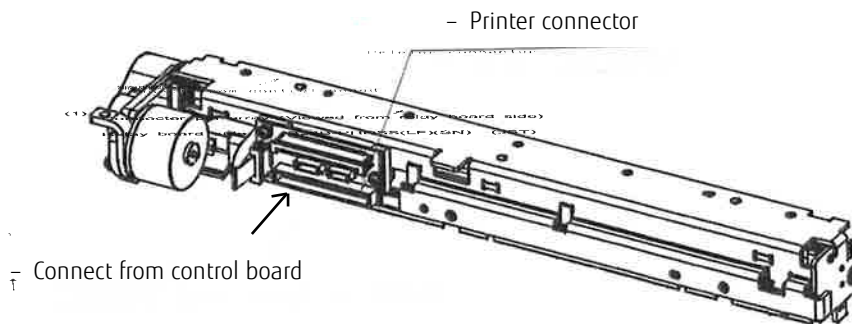
\*: Output direction from mechanism side



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

### ■ 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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