FUJITSU THE POSSIBILITIES ARE INFINITE

BATTERY DRIVEN, FTP-608 Series 2” HIGH SPEED THERMAL PRINTER

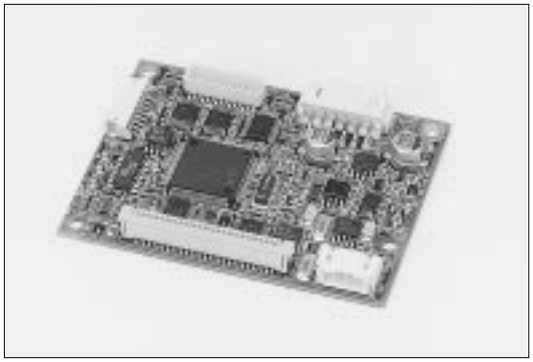
FTP-628MCL353/354 #01 / #02

■ OVERVIEW

The FTP-628 MCL Series are battery driven high-speed printers with a 2-inch paper width equivalent.

The FTP-628 MCL Series can be used for a variety of applications, such as portable terminals, POS, ticket issuing machines, label printers, banking terminals, and measurement and medical equipment.

FTP-628MCL354



FTP-628DSL306

■ HIGHLIGHTS

- **Ultra compact**
  Height 26.4 mm, width 83.5 mm, depth 43.0 mm
- **High speed printing**
  It can print at 60 mm/s (480 dotlines/s) maximum by using Fujitsu's unique head drive control.
- **Auto Cutter**
  Full cut type (#01) and partial cut type (#02) printers are available.
- **Easy paper setting**
  Our unique platen release mechanism allows a wide paper route even if the printer is ultra-compact, so paper can be easily inserted. Conventional auto loading is also available.

■ PART NUMBERS

		Part Number
Printer mechanism with Cutter		FTP-628MCL353#01 (front paper insertion, full cut type with knob) FTP-628MCL353#02 (front paper insertion, partial cut type with knob) FTP-628MCL354#01 (bottom paper insertion, full cut type without knob) FTP-628MCL354#02 (bottom paper insertion, partial cut type without knob)
LSI for driving		FTP-628CU301 (ANK only)
Interface Board for Mech/Cutter	Cutter supported	FTP-628DCL301 Parallel (Centronics) FTP-628DSL306 Serial (RS232C)
Interface cables	Parallel (Centronics)	FTP-628Y202
	Serial (RS232C)	FTP-628Y302
Power cable	Head, motor, logic	FTP-628Y402

■ SPECIFICATIONS

Item	Specifications
Part number	FTP-628MCL353#01/#02, FTP-628MCL354#01/#02
Printing method	Thermal-line dot method
Dot structure	384 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	48 mm
Number of columns	ANK 32 columns/line (maximum 12 x 24 dot font)
Paper width	58 mm
Paper thickness	60 to 80 μ m (some paper in this range may not be used because of paper characteristics)
Printing Speed	Maximum 60mm/sec. (480 dot line/sec.) at 8.5V
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), 32 columns: ANK 24 × 24 dots, (3.0 × 3.0 mm), 16 columns: ANK 8 × 16 dots, (1.0 × 2.0 mm), 48 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 24 columns: ANK

■ SPECIFICATIONS

Item		Specification	
Interface		Conforms to RS232C / Centronics	
Power supply	For print head	4.2 - 8.5 VDC average current, 0.78A (0.93A) peak value (print ratio: 12.5%, print speed: 50mm/sec. at 7.2V)	
	For motor	4.2 - 8.5 VDC, 1A maximum	
	For cutter	5 VDC ± 5%, 1A maximum	
	For logic	5 VDC ± 5%, 0.1 A maximum	
Dimensions	Mechanism with cutter	83.5 x 43.0 x 26.4 mm (WxDxH)	
	Interface board	69.3 x 52 x 15mm	
Weight	Mechanism with cutter	Approximately 120g	
	Interface board	Approximately 20g	
Life	Head	Pulse resistance: 100 million pulses/dot (under our standard conditions); Abrasion resistance: paper traveling distance 50km (print ratio: 25% or less)	
	Cutter	300,000 cuts	
Operating environment	Operating temperature*	0˚ C to 50˚ C	
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	-20˚ C to +60˚ C (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-interrupter	
	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), PD105R (Oji Paper), FTP-020P0701 (58mm)
		Medium Life Paper	TF60KS-F1, FTP-020P0102 (58mm), PD170R (Oji Paper), P220VBB-1 Mitsubishi Paper)
		Long Life Paper	PD160R-N (Oji Paper), AFB-235 (Mitsubishi Paper), TP50KJ-R (Nippon Paper), HA220AA (Nippon Paper)

*+5˚C to +40˚C printing density assurance rance (-25 to 70˚C capability)

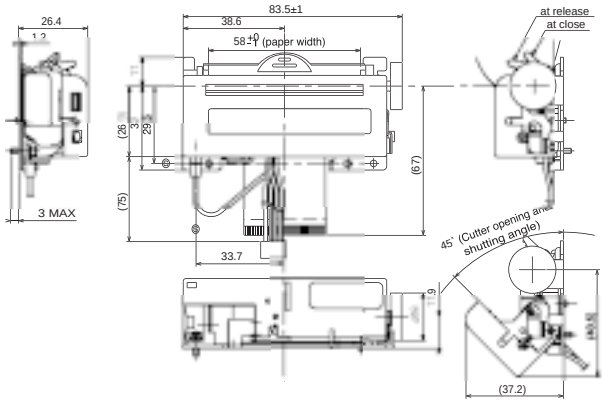
■ FUNCTION OF INTERFACE BOARD

	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.	Platen 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-628MCL353



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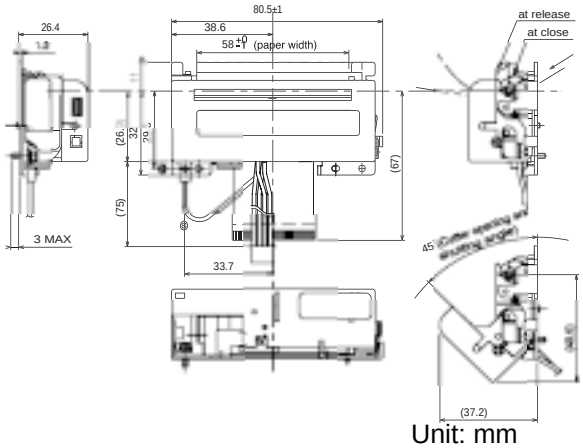
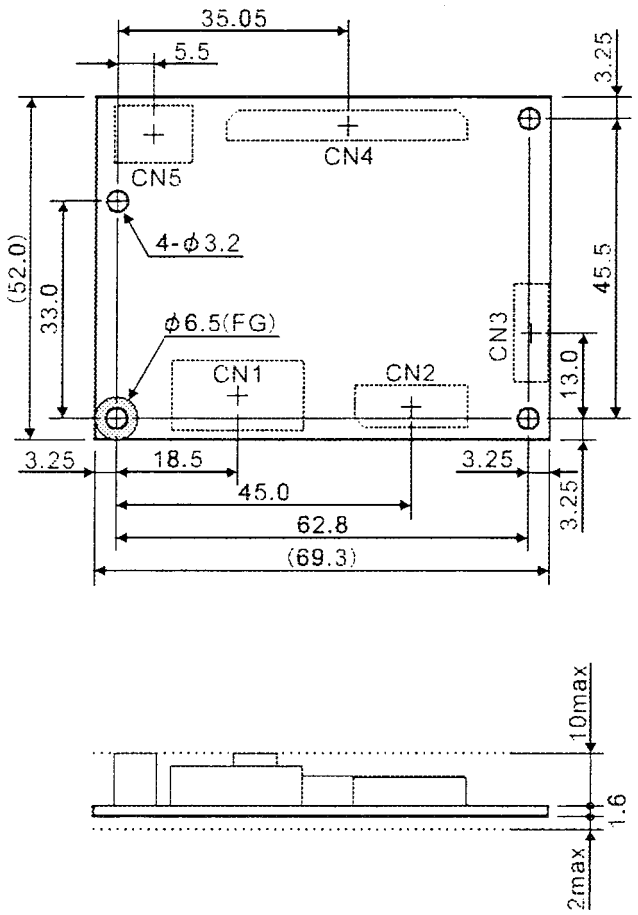


Unit: mm

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



Unit: mm

1. Connector (FPC) specification (CN4)

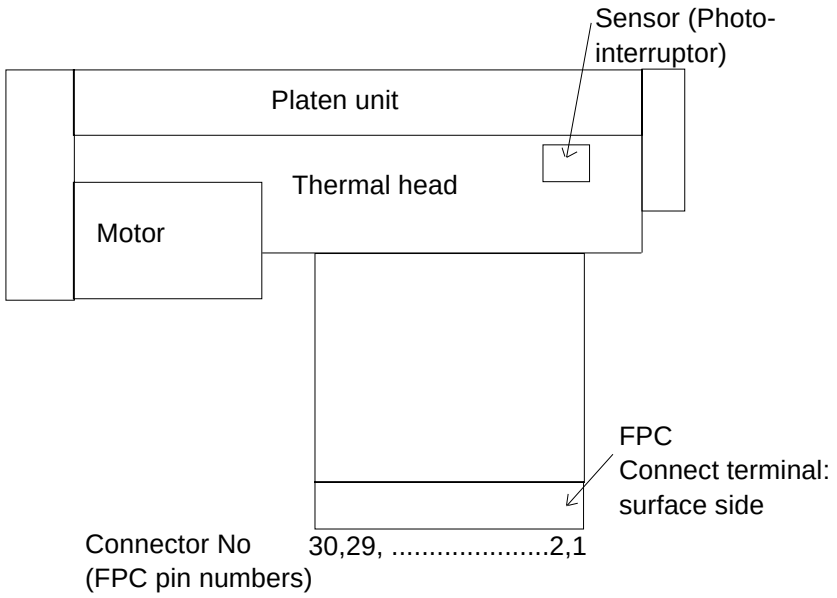
(1) Connector

Mechanical unit side: FPC connector

Remote side (housing site): 52610-3090 (made by Molex)

(2) Pin assignment on the mechanical side

No	Signal	I/O	Contents
1	PHK	—	Cathode for photo interruptor
2	VSEN	I	paper sensor power
3	PHE	O	Emittor for photo interruptor
4	SW1	O	Platen release switch
5	SW2	I	Platen release switch
6	VH	I	Head drive power
7	VH	I	
8	DI	I	Data in
9	CLK	I	Synchronous clock for communication
10	GND	—	Ground power supply for thermal head
11	GND	—	
12	STB6	I	Thermal head energizing control signal
13	STB5	I	
14	STB4	I	
15	VDD	I	Logic power
16	TM	O	Thermally sensitive resistor input termnial 1
17	TM	O	Thermally sensitive resistor input termnial 2
18	STB3	I	Thermal head energizing control signal
19	STB2	I	
20	STB1	I	
21	GND	—	Ground power supply for thermal head
22	GND	—	
23	$\overline{\text{LAT}}$	I	Data latch
24	DO	O	Data out
25	VH	I	Power supply for thermal head
26	VH	I	
27	MT/A	I	Stepping motor excitation signal
28	MT/$\overline{\text{A}}$	I	
29	MT/B	I	
30	MT/$\overline{\text{B}}$	I	



2. Cutter (CN5)

Connector on control circuit side: B4B-PH-K-S (J.S.T. or equivalent)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	CHP	I	Cutter position detect signal	2	GND	-	Logic ground
3	MT+	O	Stepping motor coil excitation A	4	MT-	O	Not connected

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