FUJITSU THE POSSIBILITIES ARE INFINITE

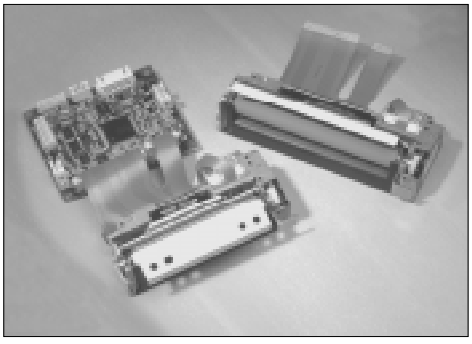
24V DRIVE, FTP-609 SERIES ULTRA HIGH SPEED (200mm/s) 3" TYPE MECHANISM (Cutter option)

FTP-639MCL054/353/354

■ OVERVIEW

The FTP-609MCL Series thermal printer (driven by 24VDC) provides ultra-high speed printing (200mm/s) for 2-inch and 3-inch wide paper.

This series is suitable for a variety of applications, such as POS/ ECR, kiosk terminals, ticket machines, label printers, banking machines, measuring devices, medical equipment, etc.



FTP-6x9MCL054 with FTP-629DCL014

■ HIGHLIGHTS

- **Ultra high speed printing**
  It can print at 200 mm/s (1600 dotlines/s) maximum by using Fujitsu Components' unique head drive control.
- **Rear paper insertion with lock type**
  Fujitsu Components' unique platen release mechanism allows straight paper path and easy head maintenance.
- **Auto Cutter**
  Printer with auto cutter (full cut/ partial cut) is available. It can be mounted on top of the mechanism.
- **Multi-featuring diecast frame**
  By application of multi-featuring diecast frame, continous print by function of heat-sink, high ESD with stand by function of earth frame and shock/vibration resistance by function of solid frame are valid.
- **Compact size**
  Depth: 40.5mm, width: 104.2mm, height: 20.5mm
- **High resolution**
  8 dots/mm head provides clear print out.
- **2 Color printing**
  It can print 2 colors: blue/ black or red/black.

■ PART NUMBERS

Name		Part Number		
Printer Mechanism	bottom insertion	FTP-639MCL054	FTP-639MCL074	FTP-639MCL054
Mechanism with Cutter	front insertion	FTP-639MCL353		
	bottom insertion	FTP-639MCL354	FTP-639MCL374	FTP-639MCL354
LSI		FTP-629CU101 or 629CU151	FTP-629SR201	
Interface Board	Parallel	FTP-629DCL014	FTP-629DSL181*	FTP-629DCL183*
	Serial (RS-232C)	FTP-629DSL034 (19.2k bps)	FTP-629DSL181*/183* (115k bps)	
	USB	---	FTP-629DSL112	FTP-629DSL132
Thermal Head Cable	Extension	---	FTP-629Y001	---
Interface Cable	Parallel	FTP-628Y202		
	Serial	FTP-628Y302	FTP-629Y302	
	USB	---	FTP-629Y301	
Power supply cable	Logic	FTP-629Y401	---	
	Head, motor	FTP-629Y601		

*: Interface is selectable by DIP switch

■ GENERAL SPECIFICATIONS

Item		Specifications	
Part number		FTP-639MCL054	FTP-639MCL353/354
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	
Number of columns		ANK 48 columns (12X24 dot font max.)	
Paper width		82.5mm$\pm^{0}_{1}$	
Paper thickness		60 to 150 μ m	60 to 100 μm
Cutting type		---	full or partial
Printing speed		FTP-629DCL/DSL series	FTP-629DSL100 series
	Text	80 mm/s (640 dotlines/s) line mode	125mm/s (1000 dotlines/s) line mode
	Bitmap Images	200mm/s (1600 dotlines/s) image mode	200mm/s (1600 dotlines/s) page mode
Character types		Alphanumeric KANA :159 International :195 JIS Kanji (Kanji CG loaded board) :approx. 6800	
Character, dimensions(H×W), number of characters	24×12 dots,(3.0×1.5mm)	48 columns	
	24×24 dots,(3.0×3.0mm)	24 columns	
	16×8 dots,(2.0×1.0mm)	72 columns	
	16×16 dots,(2.0×2.0mm)	36 columns	

(Continued)

Item		Specifications	
Part number		FTP-639MCL054	FTP-639MCL353/354
Interface		Centronics / RS-232C standard / USB	
Power supply	For head	24 VDC ±5% 1.9A (4A,)(24V , 25% printing ratio)	
	For printer motor	24VDC±5% 1A maximum	
	For cutter motor	---	24VDC±5% 1.2A maximum
	For logic	5VDC±5% 0.2 A maximum	
Dimensions W x D x H	Printer Mechanism	104.2 × 40.2 × 20.5mm ---	
	Printer Mechanism with cutter	---	109.7 × 62.5 × 37.7mm
	Interface board (standard)	70 × 60 × 24 mm	
	Interface board (hi speed)	95.1 x 73.6 x 18.6mm	
Weight	Printer Mechanism	Approximately 125g	---
	Printer Mechanism with cutter	---	Approximately 320g
	Interface board (standard)	Approximately 30g	
	Interface board (hi speed)	Approximately 45g	
Life	Head	Pulse durability: 1×10^8 pulse/dot (using Fujitsu Components' standard driving method) Wear resistance: 100 km (at 12.5% print ratio)	
	Cutter	---	500,000 cuts
Environmental conditions	Operating temperature	-25°C to +70°C (Guarantee)	-10˚C to +55°C (Guarantee)
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	–40°C to +85°C (excluding paper)	–20°C to +60°C
	Storage humidity	5 to 95% RH (no condensation)	
Detection	Head temperature	By thermistor	
	Paper out/Mark detect	By photointerrupter	
	Head release	By slide switch	
	Cutter position	By microswitch (inside cutter)	
Recommended thermal sensitive paper	High sensitivity paper	TF50KS-E4 (Nippon paper)	
	Standard paper	TF60KS-E (Nippon paper), FTP-030P0104 (80mm), PD150R (Oji paper), FTP-030P0701 (80mm)	
	Medium term paper	TP60KS-F1 (Nippon paper), FTP-030P0102(80mm), PD170R (Oji paper) P220VBB-1 (Mitsubishi paper) PD160R-N (Oji paper)	
	Long term paper	AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper)	

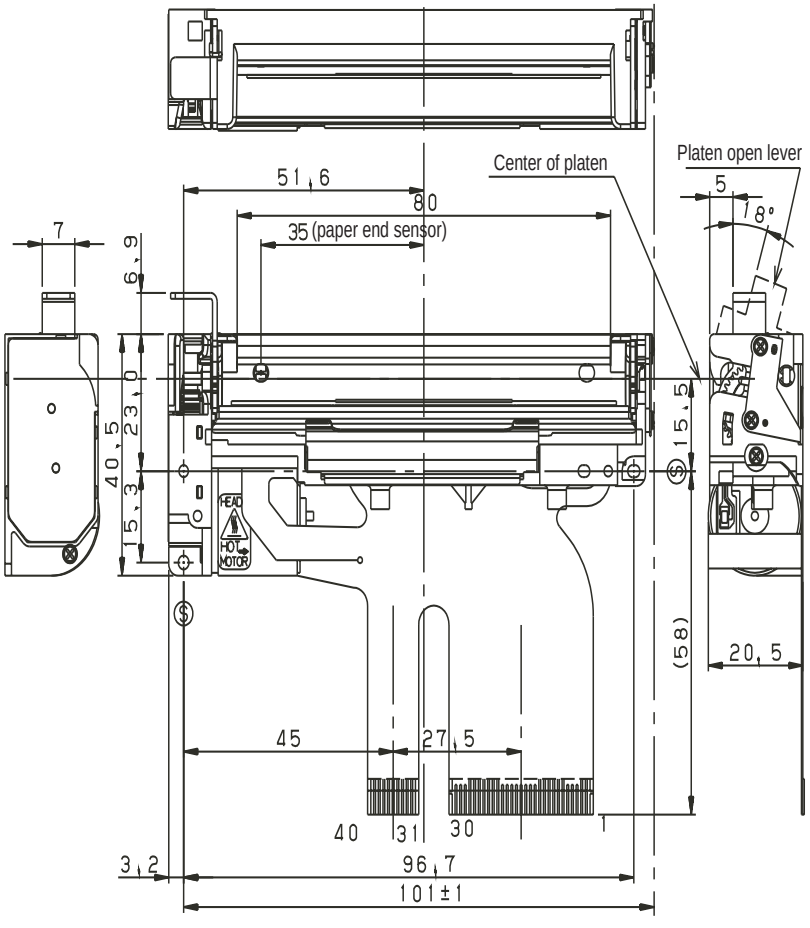
■ FUNCTION

	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 temp. of thermal head detection	12.	Power on/off sequence protection
6.	Blown fuse detection	13.	Motor protection
7.	Abnormal voltage detection of head	14.	Hardware timer

■ DIMENSIONS

1. Printer mechanism

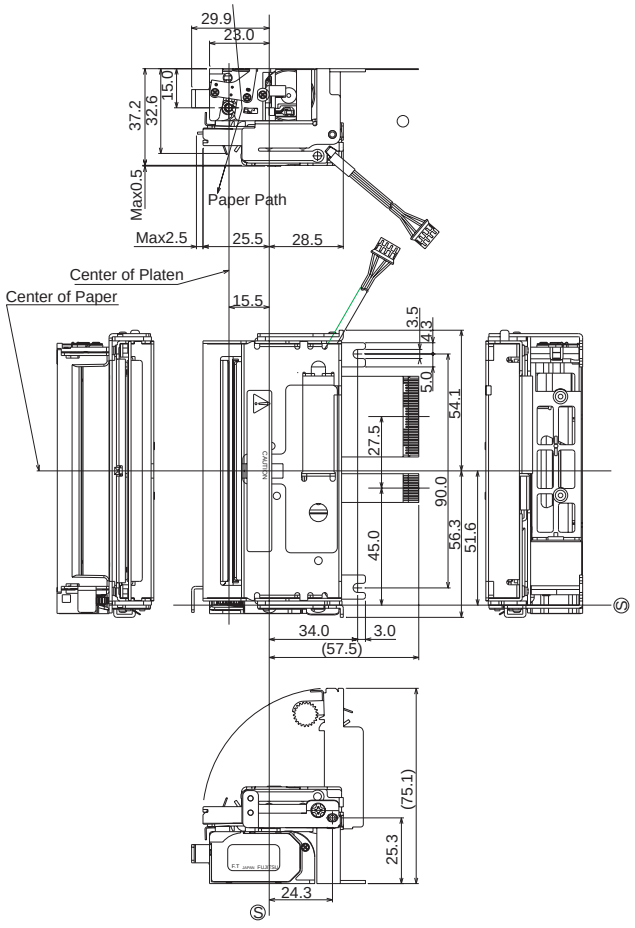
FTP-639MCL054



Unit: mm

Printer with cutter

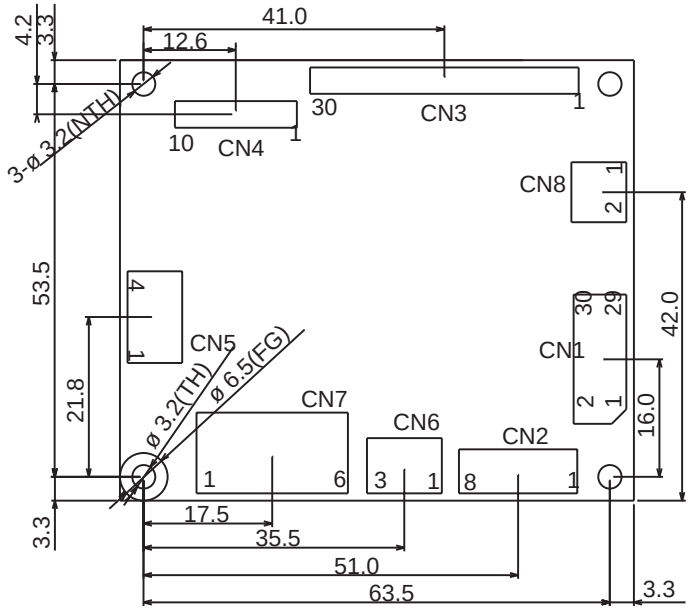
FTP-639MCL353/354



Notes: 1. Nominal value (Tolerance +0.5, -0.5)
2. S is the base line of installing (Tolerance +0.5, -0.5)

Unit: mm

Interface board - FTP-629DCL/DSL0xx

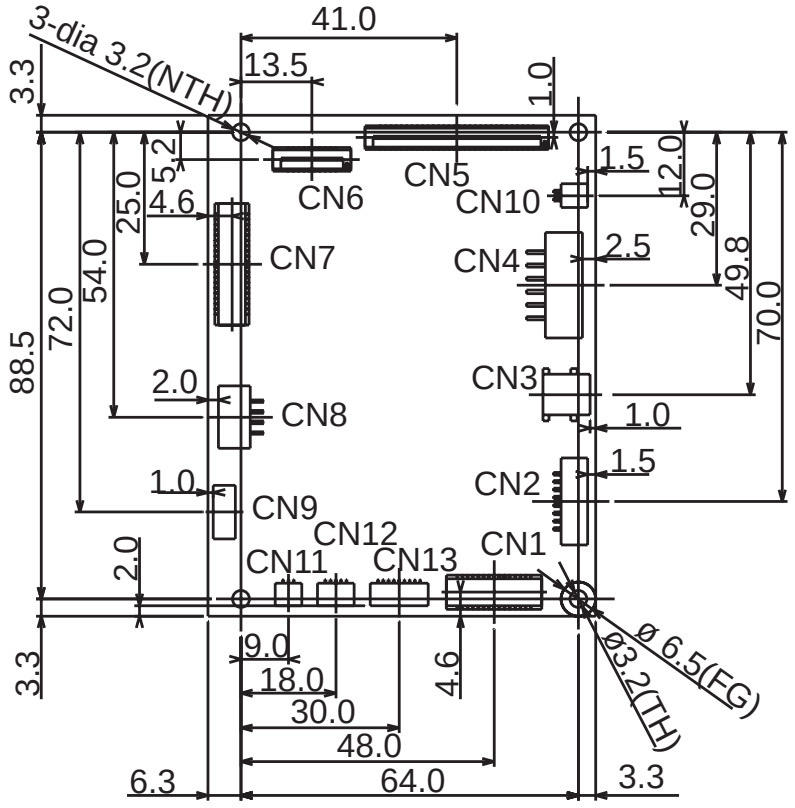


Unit: mm

Connectors on Control Board - FTP-629DCL/DSL0xx

No.	Name	Function
CN1	Centro I/F Connector	Connection for Centronics Interface
CN2	RS-232C I/F Connector	Connection for RS-232C Interface
CN3	Thermal Head Connector	Connection for Thermal Head (FPC)
CN4	Printer Motor Connector	Connection for Printer Motor (FPC)
CN5	Cutter Connector	Connection for Paper Cutter
CN6	Logic Power Connector	Connection for +5V Power Supply
CN7	Head Motor Power Connector	Connection for +24V Power Supply
CN8	Near End Sensor Connector	Connection for Near End Sensor

3. Control Board - FTP-629DCL/DSL100 Series



Unit: mm

Connectors on Control Board - FTP-629DSL100 Series

No.	Name	Function	Remark
CN1	Centro I/F Connector	Connection for Centronics Interface	
CN2	RS-232C I/F Connector	Connection for RS-232C Interface	
CN3	USB I/F Connector	Connection for USB Interface	
CN4	Power Connector	Connection for +24V Power Supply	
CN5	Thermal Head Connector	Connection for Thermal Head (FPC)	*1
CN6	Printer Motor Connector	Connection for Printer Motor (FPC)	*1
CN7	Head/Motor Connector	Connection for Thermal Head/Printer Motor	*1
CN8	Cutter Connector	Connection for Paper Cutter	
CN9	Conveyance Motor Connector	Connection for Conveyance Motor	
CN10	Near End Sensor Connector	Connection for Near End Sensor	
CN12	Mecha-Tilte/Mark Sensor Connector	Connection for Mecha-Tilte/Mark Sensor	
CN13	Conveyance Motor Connector	Connection for Conveyance Motor	

*1: When CN5 and CN6 are mounted, CN7 is not mounted. When CN7 is mounted, CN5 and CN6 are not mounted.

■ CONNECTOR PIN ASSIGNMENT OF PRINTER MECHANISM (FPC)

1. Thermal head control circuit side

Part number : 52610-3090 (Molex) or equivalent

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	SW	O	Platen open switch	2	SW	-	Platen open switch
3	VH	-	Power for thermal head	4	VH	-	Power for thermal head
5	VH	-	Power for thermal head	6	VH	-	Power for thermal head
7	DI	I	Data in	8	$\overline{\text{STB3}}$	I	Print enable 3
9	$\overline{\text{STB4}}$	I	Print enable 4	10	VDD	-	Power for logic
11	TM	-	Head Thermistor	12	GND	-	Head GND
13	GND	-	Head GND	14	GND	-	Head GND
15	GND	-	Head GND	16	GND	-	Head GND
17	GND	-	Head GND	18	GND	-	Head GND
19	GND	-	Head GND	20	GND	-	Head GND
21	TH	O	Thermistor	22	$\overline{\text{STB1}}$	I	Print enable 1
23	$\overline{\text{STB2}}$	I	Print enable 2	24	$\overline{\text{LAT}}$	I	Print data latch
25	CLK	I	Clock	26	DO	O	Data out
27	VH	-	Power for thermal head	28	VH	-	Power for thermal head
29	VH	-	Power for thermal head	30	VH	-	Power for thermal head

2. Motor, Sensor

Connector on circuit side : 52610-1090 (Molex) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	NC	-	Not connected	2	TM	O	Motor temperature sensor
3	TM	-	Motor temperature sensor	4	MT/A	I/O	Motor coil excitation /A
5	MTA	I/O	Motor coil excitation A	6	MT/B	I/O	Motor coil excitation /B
7	MTB	I/O	Motor coil excitation B	8	PHK	-	Paper out sensor cathode
9	VSEN	-	Power for paper sensor	10	$\overline{\text{PHE}}$	O	Paper out sensor emittor

3. Cutter

Connector type: B4B-PH (J.S.T.) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	SW1	O	Cutter home position switch	2	SW2	O	Cutter home position switch
3	M+	I/O	Cutter motor drive	4	M-	I/O	Cutter motor drive

■ INTERFACE COMMAND OPTIONS

Please refer to the FTP-629DCL/DSL or FTP-629DCL/DSL100 datasheet series datasheet.

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