

FCL COMPONENTS

24V DRIVE, FTP-609 SERIES

ULTRA HIGH SPEED (200mm/s)

3" TYPE MECHANISM (Cutter option)

FTP-639MCL103/383#02 *ACTIVE*

FTP-639MCL383#01 *Discontinued*

■ 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.

■ HIGHLIGHTS

- **Ultra high speed printing**
It can print at 200 mm/s (1600 dotlines/s) maximum by using FCL Components' unique head drive control.
- **High resolution**
8 dots/mm head provides clear print out.
- **ELM (Easy Loading Mechanism) with lock type**
FCL Components' unique platen release mechanism allows easy paper setting 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, continuous print by function of heat-sink, high ESD stand by function of earth frame and shock/vibration stand by function of solid frame are valid.
- **Compact size**
Depth: 40.5mm, width: 82.2mm, height: 20.5mm for the 2-inch model. The 3-inch model has a width of 104.2mm
- **RoHS compliant**



FTP-639MCL103



FTP-639MCL383



FTP-629DSL301

FTP-639MCL103/383#01/383#02

■ PART NUMBERS

Name		Part Number
Printer mechanism	Detachable platen	FTP-639MCL103 (with flex tail)
Mechanism with cutter	Detachable platen	FTP-639MCL383#01 (full cut)/ FTP-639MCL383#02 (partical cut)
LSI		FTP-629CU301
Interface board	Serial (RS232C)	FTP-629DSL301
	USB	FTP-629DSL301
Thermal head cable extension		-
Interface cable	Serial	FTP-629Y302
	USB	FTP-629Y301
Power supply cable		FTP-629Y602

■ GENERAL SPECIFICATIONS

Item		Specifications	
Part number		FTP-639MCL103	FTP-639MCL383#01/#02
Printing method		Thermal sensitive line dot method	
Dot structure		576 dots/line	
Dot pitch (horizontal)		0.125mm (8dots/mm) - Dot density	
Dot pitch (vertical)		0.125mm (8dots/mm) - Line feed pitch	
Effective printing area		72 mm	
Number of columns		ANK 48 columns/line (12 x 24 dot font) OCR 24 columns	
Paper width		80mm +0/-1	
Paper thickness		60 to 100µm (there may be exceptions)	
Cutting type		---	ELM full or partial
Printing speed	FTP-629DCL/DSL series	80mm/sec. (640 dot lines/sec.) line mode 200mm/sec. (1600 dot lines/sec.) image mode	
	FTP-629DSL100 series	125mm/sec. (1000 dot lines/sec.) line mode	
	FTP-629DSL300 series	200mm/sec. (1600 dot lines/sec.) page mode	
Character types	Alphanumeric, Kana:	159 types	159 types
	International:	195 types	195 types
	JIS Kanji (Kanji CG loaded board):	about 6,800 types	about 6,800 types
	OCRI		103 types
	OCRIII		23 types
	OCRIV		103 types
	Extended numeric		11 types
Character, dimensions (WxH), number of columns	24x12 dots, (3.0x1.5mm)	48 columns: ANK	24 columns, OCRI
	16x16 dots, (2.0x2.0mm)	24 columns: ANK	24 columns, OCRIII
	24x24 dots, (3.0x3.0mm)	72 columns: ANK	16 columns, OCRIV
	8x16 dots, (1.0x4.0mm)	36 columns: ANK	24 columns, extended numeric
Interface standard		Centronics / RS232C /USB	Serial/USB

FTP-639MCL103/383#01/383#02

(Continued)

Item		Specifications	
Part number		FTP-639MCL103	FTP-639MCL383#01/#02
Power supply	For head	24 VDC \pm 5%, 1.9A (4A) (24V, 25% printing ratio)	
	For printer motor	24 VDC \pm 5% 1A maximum	
	For cutter motor	---	24 VDC \pm 5% 1A maximum
	For logic	5 VDC \pm 5% 0.2A maximum	
Dimension W x D x H	Printer mechanism	104.2 x 40.2 x 20.5mm	---
	Printer mechanism with cutter	---	112.5 x 70.3 x 37.4mm
	Interface board	77 x 50 x 21.5mm	
Weight	Printer mechanism	Approximately 125g	---
	Printer mechanism with cutter	---	Approximately 300g
	Interface board	Approximately 30g	
Life	Head	Pulse durability: 100M pulse/dot (using FCL Components standard driving method) Wear resistance: 100km (at 12.5% print ratio)	
	Cutter	---	1,000,000 cuts minimum
	Platen	5,000 times (open/close)	
Environmental conditions	Operating temperature	-10°C to +60°C (guarantee)	0°C to +50°C (guarantee)
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	-40°C to +70°C	-20°C to +60°C
	Storage humidity	5 to 95% RH (no condensation)	
Detection	Head temperature	By thermistor	
	Paper out/Mark detect	By photointerruptor	
	Head release	By slide switch	
Recommended thermal sensitive paper	High sensitive paper	TF50KS-E4 (Nippon paper)	
	Standard paper	TF60KS-E2 (Nippon paper), FTP-030P0104 (80mm) PD150R (Oji paper), FTP-030P0701 (80mm)	
	Medium life storage paper	TF60KS-F1 (Nippon paper), FTP-030P0102 (80mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper) PD160R-N (Oji paper)	
	Long life storage paper	AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper)	

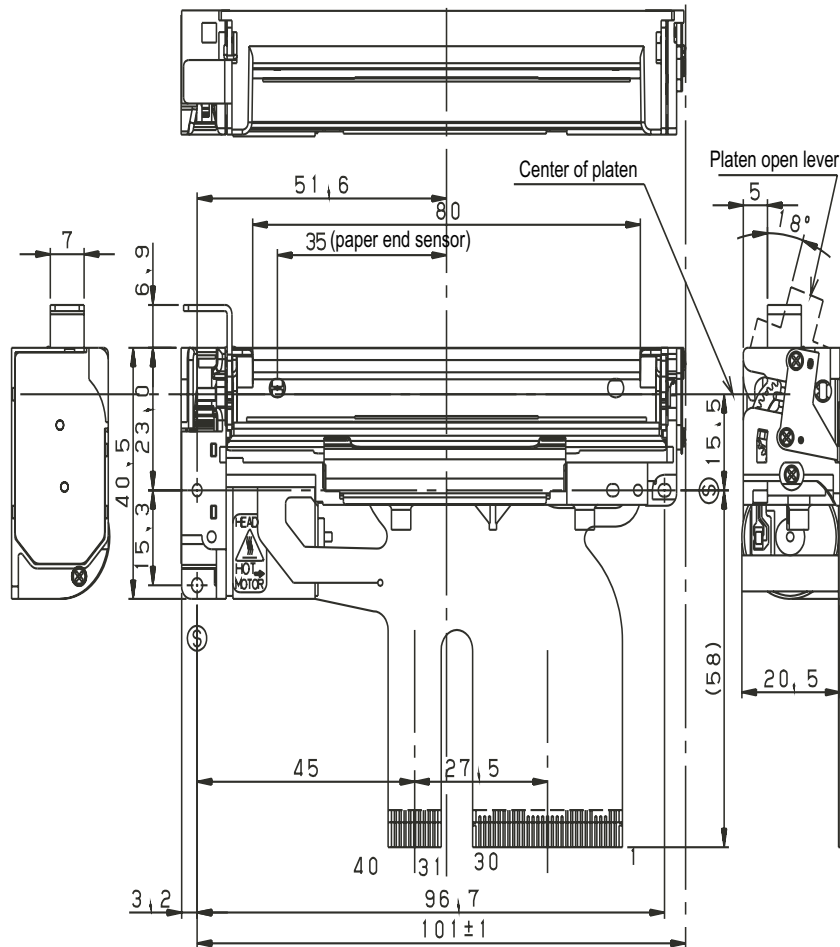
FUNCTION

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 without cutter

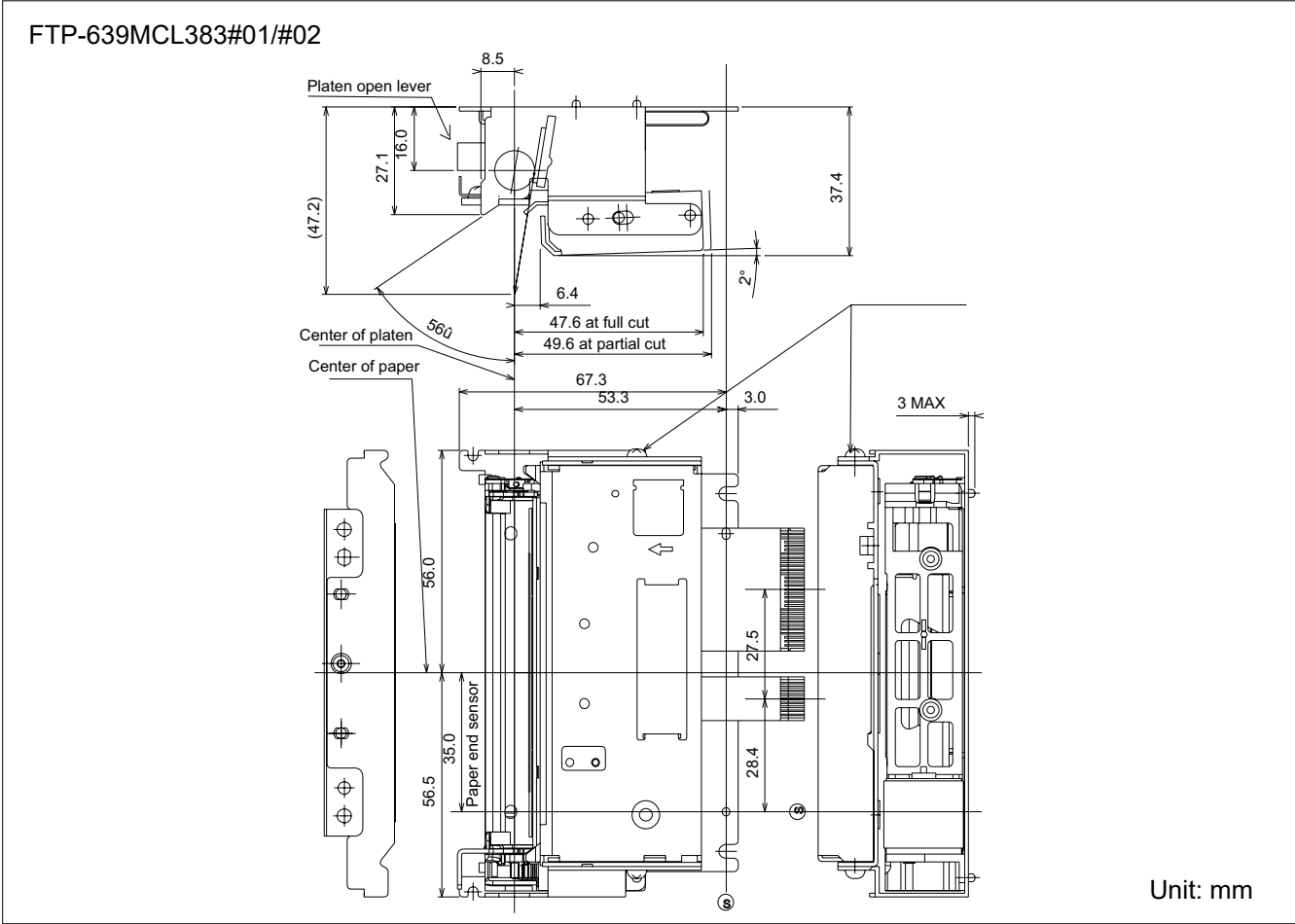
FTP-639MCL103



Unit: mm

FTP-639MCL103/383#01/383#02

2. Printer mechanism with cutter



■ CONNECTOR PIN ASSIGNMENT OF PRINTER MECHANISM (FPC)

1. Thermal head, motor, sensor

* FPC type (FTP-639MCL103/383#01/383#02)

No 1 to 30: 52610-3071 (Molex), No 31 to 40: 52610-1071 (Molex)

* Cable extension type (FTP-639MCL105) LY20-DC40 (JAE)

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	19	GND	-	Head GND
19	GND	-	Head GND	20	GND	-	Head GND
121	TH	-	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
31	NC	-	Not connected	32	TM	O	Motor temperature sensor
33	TM	-	Motor temperature sensor	34	$\overline{\text{MT A}}$	I/O	Motor coil excitation /A
35	MT A	I	Motor coil excitation A	36	$\overline{\text{MT B}}$	I/O	Motor coil excitation /B
37	MT B	I	Motor coil excitation B	38	PHK	-	Paper out sensor cathode
39	VSEN	I	Power for paper sensor	40	$\overline{\text{PHE}}$	O	Paper out sensor emitter

2. Cutter (CN5)

With cutter type (FTP-639MCL3836#01/#02)

Connector type: B4B-PH-SM4-TB (J.S.T.) or equivalent

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

■ INTERFACE COMMAND OPTIONS

Please refer to the FTP-629DSL301 series datasheet.

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