

# 24V DRIVEN, FTP-607 Series

# 2" HIGH SPEED THERMAL PRINTER

## FTP-627MCL401/601

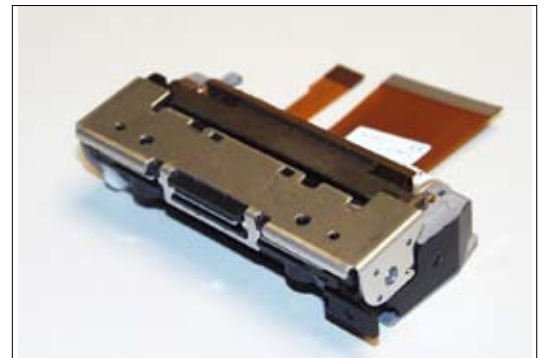
### ■ OVERVIEW

The FTP-627 MCL Series are 24V driven high-speed printers with a ultra low profile auto cutter and long life.

The FTP-627 MCL Series can be used for a variety of applications, such as POS terminals, ticket vending machines, label printers, banking terminals, and measurement and medical equipment.

### ■ HIGHLIGHTS

- **Ultra low profile**  
Height 21.8 mm, width 81.2 mm, depth 42.2 mm
- **High speed printing**  
It can print at 100/150 mm/s (800 dotlines/s) maximum by using Fujitsu's unique head drive control.
- **Auto Cutter**  
Long life and high reliable guilotine with dedicated motor.
- **Easy paper setting**  
Our lever platen release mechanism allows a wide paper route, so paper can be easily inserted.  
Conventional auto loading is also available.
- **Multifunctional die-cast frame**  
Wide operating temperature range, long continuous printing, high ESD absorption and discharge of static electricity vibration and shock resistant.
- **RoHS compliant**



FTP-627MCL401/601



FTP-627DSL291R



FTP-627DSL601R

## ■ PART NUMBERS

		Part Number	
Easy Load Model with low profile cutter		FTP-627MCL401 FTP-627MCL601	
LSI for driving	MCL401	FTP-627CU301R	
	MCL601	FTP-627CU601R	
Interface board for Mech/Cutter	Cutter supported	MCL401	FTP-627DSL291R Parallel (Centronics) /Serial (RS-232C)
		MCL601	FTP-627DSL603R (USB) FTP-627DSL605R Serial (RS-232C)
Interface cables	Parallel (Centronics)		FTP-628Y202
	Serial (RS232C)		FTP-628Y302
	USB		FTP-629Y301

## ■ SPECIFICATIONS

Item	Specifications	
Part number	FTP-627MCL401/601	
Printing method	Thermal-line dot method	
Dot structure	432 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	54 mm	
Number of columns	ANK 36 columns/line (maximum 12/24 dot font)	
Paper width	58 mm	
Paper thickness	60 to 100 μ m (some paper in this range may not be used because of paper characteristics)	
Printing Speed	MCL401	Maximum 100mm/sec. (800 dot line/sec.)
	MCL601	Maximum 150mm/sec. (1,200 dot line/sec.)
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), 36 columns: ANK 24 × 24 dots, (3.0 × 3.0 mm), 18 columns: ANK 8 × 16 dots, (1.0 × 2.0 mm), 54 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 27 columns: ANK	

## ■ SPECIFICATIONS

Item			Specification	
Interface			Conforms to RS232C/Centronics / USB	
Power supply	For print head	MCL401	24 VDC average current, 0.38A (0.88A peak) (print ratio: 12.5%, print speed 100mm/sec.)	
		MCL601	24 VDC average current TBD A (TBD A peak)	
	For motor	MCL401	24 VDC $\pm 5\%$ , 1 A maximum	
		MCL601	24 VDC $\pm 5\%$ , 1.1 A maximum	
	For cutter	MCL401	24 VDC $\pm 5\%$ , 1 A maximum	
		MCL601	24 VDC $\pm 5\%$ , 1.1 A maximum	
For logic			4.75 to 5.25 VDC $\pm 5\%$ , 0.1 A maximum	
Dimensions	Mechanism with cutter		81.2 x 42.2 x 21.8 mm (WxDxH)	
	Interface board		70 x 60 x 12 mm (WxDxH)	
Weight	Mechanism with cutter		Approximately 97g	
	Interface board		Approximately 25g	
Life	Head		Pulse resistance: 50 million pulses/dot (print ratio: 25%).	
		MCL401	Abrasion resistance: paper traveling distance 50km	
		MCL601	Abrasion resistance: paper traveling distance 100km	
	Cutter	MCL401	500,000 cuts	
		MCL601	1,000,000 cuts	
Platen		5,000 times (open/close)		
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-interruptor	
	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) PD150R (Oji paper) FTP-020PU701 (58mm)
			Medium life storage paper	TF60KS-F1 (Nippon paper) FTP-020P0102 (58mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper)
			Long life storage paper	PD160R (Oji paper) AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper)

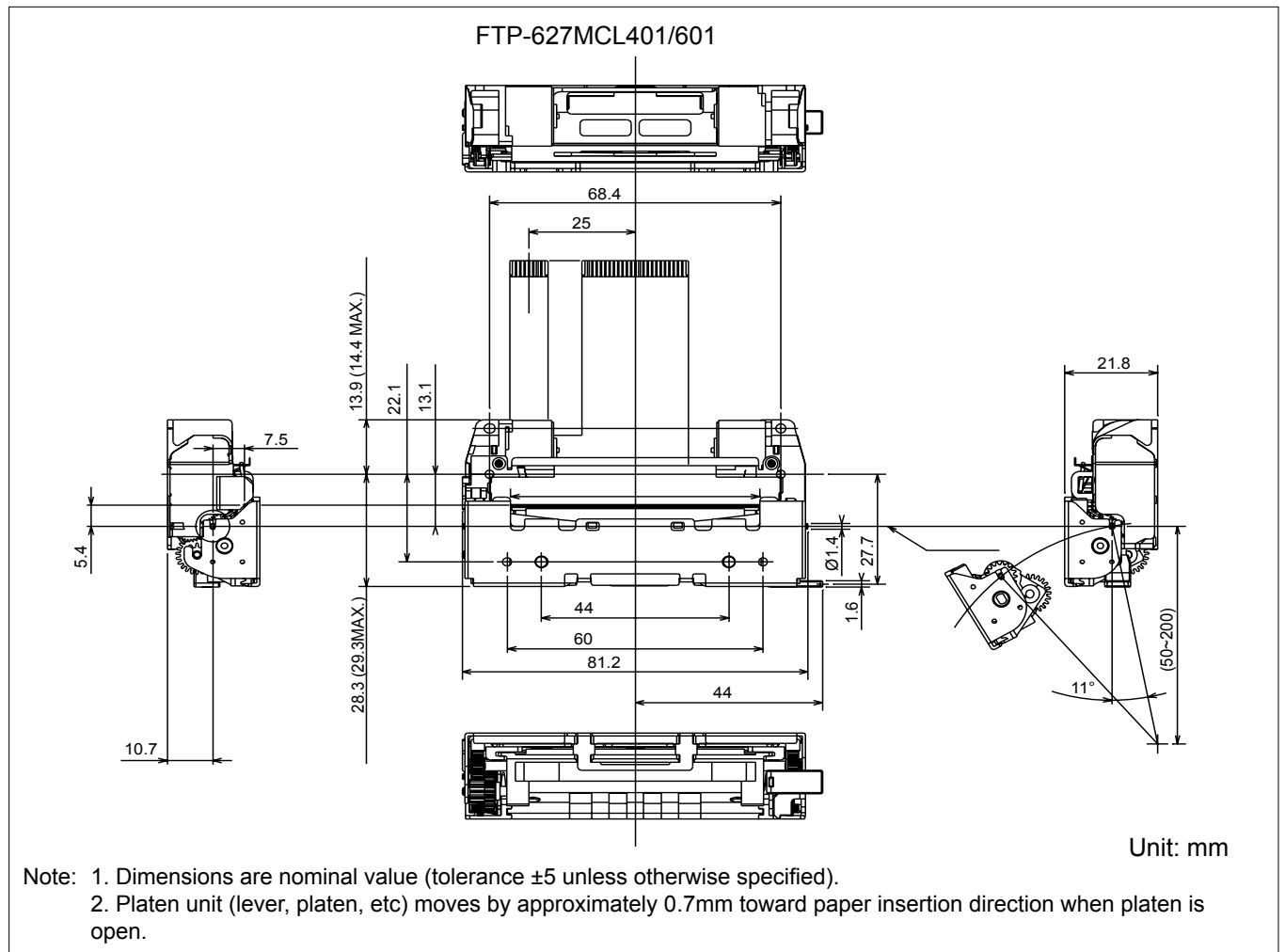
\*+5°C to +40°C printing density assurance range.

## ■ FUNCTION OF INTERFACE BOARD

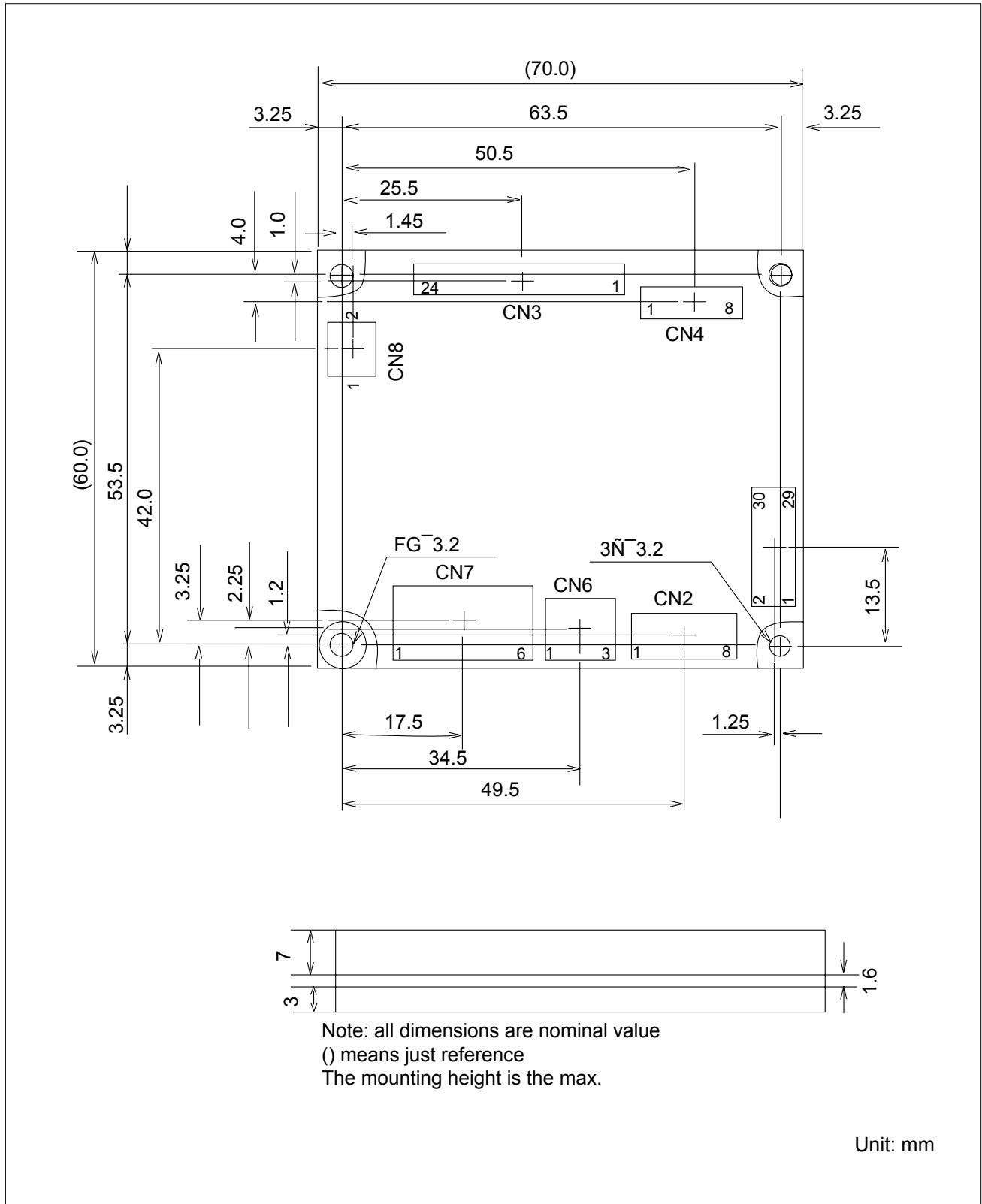
Item	Item	Item	Item
1. Test print function	8. Cutter trouble detect		
2. Paper out detection	9. Motor power saving function		
3. Paper near end detection	10. Mark detection function		
4. Paten open detection	11. MCU operation abnormality detection		
5. Thermal head temperature abnormality detection	12. Power ON/OFF sequence protection		
6. Blow-out fuse detection	13. Motor over-current protection		
7. Head voltage abnormality detection	14. Hardware timer		

## ■ DIMENSIONS

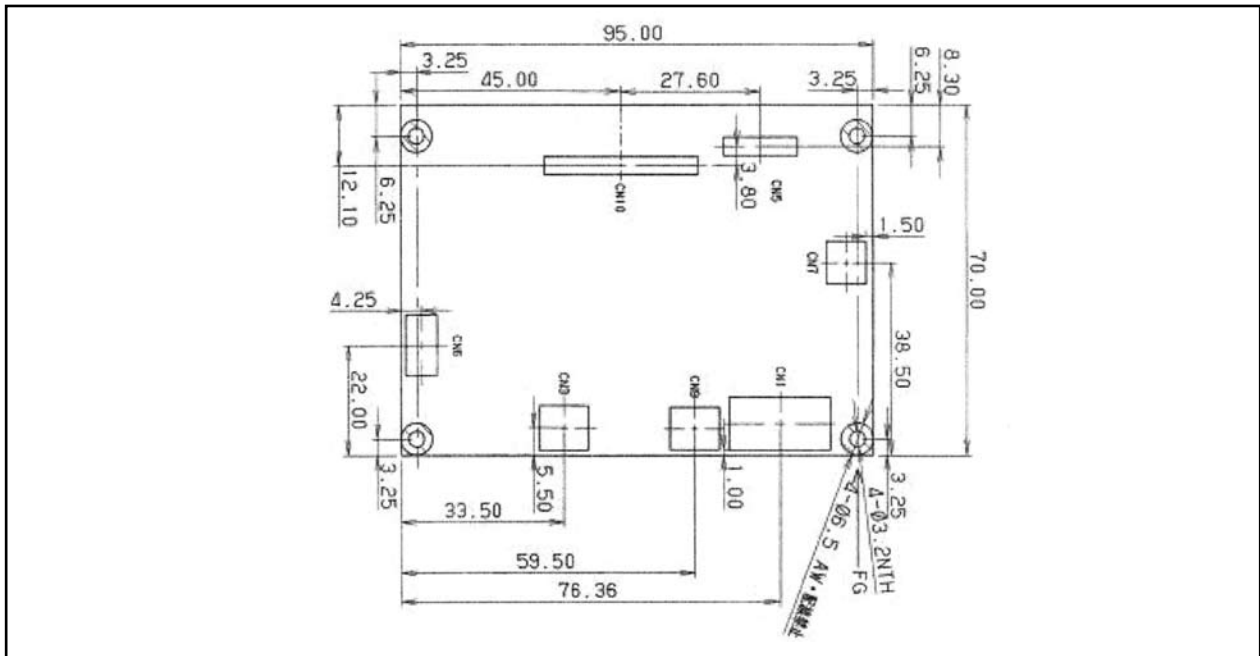
### 1. Printer mechanism



## 2. Interface board FTP-627DSL291R



## ■ INTERFACE BOARD FTP-627DSL601 Series



### Connectors on Control Board

	Name	Functions	Remarks	Note
CN1	+24V power supply connector	Connection for +24V power supply		
CN2	RS-232C	Connection for serial interface		
CN3	USB I/F connector	Connection for USB interface		
CN4	-	Connection for thermal head + paper feed motor	2-inch, 30 pin	
CN5	Cutter connector	Connection for paper cutter		
CN6	Operation panel connector	Connection for operation panel		*1
CN7	Near end sensor connector	Connection for near end switch		*2
CN8	-	-		
CN9	Logic power connector	Connection for +5V power Supply		
CN10	Head/motor connector	Connection for thermal head & paper feed motor	2-inch, 24 pin	

Note: \*1: Option  
\*2: Depends on specification

## FTP-627MCL401

### 1. Connector (FPC) specification (CN3/CN10)

(1) Connector

Mechanical unit side: FPC connector

Remote side (housing site): 52610-2490 (made by Molex)

(2) Pin assignment on the mechanical side

No	Signal	I/O	Contents
1	PHK	—	Photointerrupter (Cathode)
2	VSEN	I	Ground power supply for paper sensor
3	PHE	O	Photointerrupter (Emittor)
4	VH	I	Head drive power
5	DI	I	Data input
6	$\overline{\text{STB2}}$	I	Print enable signal 2
7	$\overline{\text{STB3}}$	I	Print enable signal 3
8	VDD	I	Logic Power
9	GND	—	Head ground
10	GND	—	Head ground
11	GND	—	Head ground
12	TH	O	Thermistor
13	$\overline{\text{STB1}}$	I	Print enable signal 1
14	$\overline{\text{LAT}}$	I	Data Latch
15	CLK	I	Clock
16	VH	I	Head drive power
17	VH	I	Head drive power
18	SW	—	Platen open switch
19	SW	—	Platen open switch
20	MT/A	I	Motor excite signal A
21	MT/ $\overline{\text{A}}$	I	Motor excite signal $\overline{\text{A}}$
22	MT/B	I	Motor excite signal B
23	MT/ $\overline{\text{B}}$	I	Motor excite signal $\overline{\text{B}}$
24	NC	—	Not connected

## FTP-627MCL601

### 1. Connector (FPC) specification (CN4)

(1) Connector

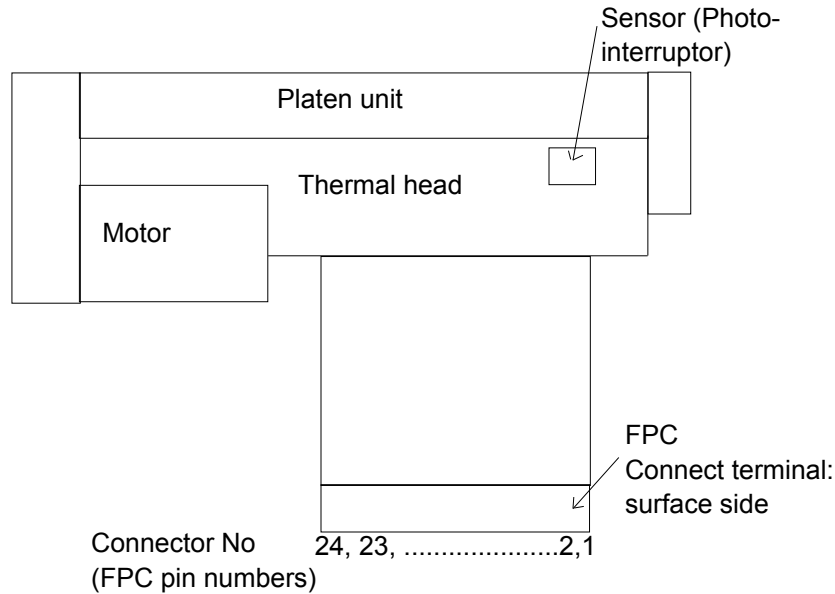
Mechanical unit side: FPC connector

Remote side (housing site): 52610-3071 (made by Molex)

(2) Pin assignment on the mechanical side

No.	Symbol	Signal Name
1	PHK	Cathode for photo interrupter
2	VSEN	Paper sensor power
3	PHE	Emitter for photo interrupter
4	VH	Head drive power
5	VH	Head drive power
6	VH	Head drive power
7	DI	Data in
8	$\overline{\text{STB2}}$	Strobe 2
9	$\overline{\text{STB3}}$	Strobe 3
10	Vdd	Logic power
11	GND	Head ground
12	GND	Head ground
13	GND	Head ground
14	GND	Head ground
15	GND	Head ground
16	GND	Head ground
17	TM	Thermistor
18	NC	NC
19	$\overline{\text{STB1}}$	Strobe 1
20	$\overline{\text{LAT}}$	Data latch
21	CLK	Clock
22	VH	Head drive power
23	VH	Head drive power
24	VH	Head drive power
25	SW	Platen switch
26	SW	Platen switch
27	$\text{MT}/\overline{\text{A}}$	Excitation signal $\overline{\text{A}}$
28	$\text{MT}/\text{A}$	Excitation signal A
29	$\text{MT}/\overline{\text{B}}$	Excitation signal $\overline{\text{B}}$
30	$\text{MT}/\text{B}$	Excitation signal B





## 2. Cutter (CN4/CN5)

Connector on control circuit side: 52610-0890 Molex or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	VSEN	I	Paper sensor power	2	PHE	O	Photo interruptor (emittor)
3	PHK	O	Photo interruptor (cathode)	4	MT/A	I	Motor excite signal A
5	MT/ $\bar{A}$	I	Motor excite signal A	6	MT/B	I	Motor excite signal B
7	MT/ $\bar{B}$	I	Motor excite signal B	8	NC	—	Not connected

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 Rev. December 21, 2007