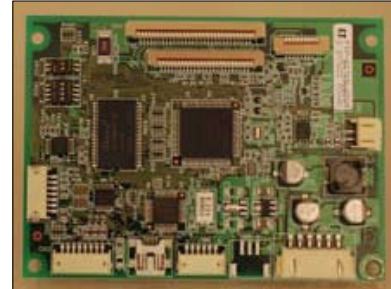


# INTERFACE BOARDS 24V

## FTP-6X7DSL291/293 SERIES

### ■ HIGHLIGHTS

- 24V FTP-607 I/F board for low profile mechanism and cutter
- Supports parallel or serial I/F
- Supports bar code and graphics
- Windows®2000/XP, Linux drivers
- UL File No. E171434
- RoHS compliant



### ■ PART NUMBERS

Part Number	Interface Type		Drivers	Mechanism Part Number
FTP-627DSL291	Serial (RS-232C)	SRAM	Windows® 2000/XP, Linux	FTP-627MCL401
FTP-627DSL293		Flash, SRAM		
FTP-637DSL291		SRAM		FTP-637MCL401
FTP-637DSL293		Flash, SRAM		FTP-637MCL421

### ■ INTERFACE SPECIFICATION AT HOST SIDE

Item	Specifications	
Centronics	Data speed:	28,000 bytes/sec.
	Synchronous method:	Extended strobe pulse
	Handshake:	BUSY/ACKNLG signal
	Input/output level:	CMOS
RS-232C	Data speed:	19,200 / 9,600 / 4,800 / 2,700 bps
	Synchronous method:	Full duplex
	Handshake:	DTR/DSR, XON/XOFF control
	Input/output level:	RS-232C

# FTP-627/637DSL291/293

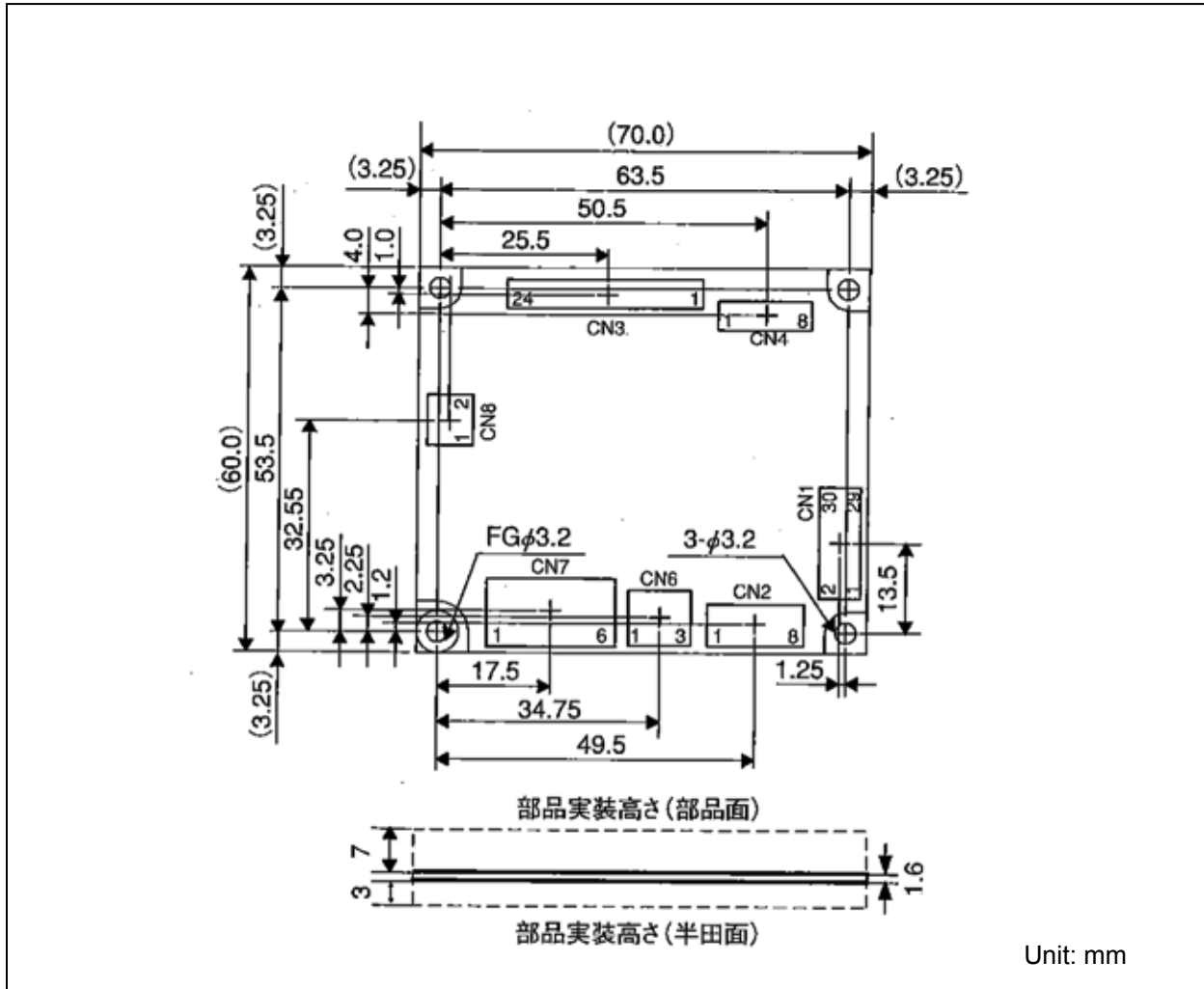
## ■ DIP SWITCH SETTING DSW1

Bit No.	Setting Function	Setting		Remarks
		Bit 1	Bit 2	
1, 2	Baud rate	OFF	OFF	19,200 bps
		ON	OFF	9,600 bps
		OFF	ON	4,800 bps
		ON	ON	2,400 bps
3	Flow control	XON/XOFF	DTR/DSR	
4	Receiving buffer size	45 byte	4k byte*	*1SRAM used
5	Even/Odd	Even	Odd	
6	Parity	Valid	Invalid	
7	Auto line feed setting	Invalid	Valid	
8	Interface Select	RS-232C*2	Centronics	*2: Length of stop bit is 1bit fixed. Data length setting is 8 bits fixed.

## ■ DIP SWITCH SETTING DSW2

Bit No.	Setting Function	Setting	
		ON	OFF
1	Size of mechanism	FTP-637MCL	FTP-627MCL
2	Reserve	-	-

## ■ DIMENSIONS



### 1.2 Control circuit board connector types

Symbol	Name	Function	FTP-627 DSL29x	FTP-637 DSL293
CN1	Parallel (Centronics)	Parallel (Centronic) connection	O	O
CN2	Serial I/F (RS232-C)	Serial (RS-232C) connection	O	O
CN3	Head/motor	FPC connection 2-inch	O	X
CN4	Auto cutter	FPC connection 2-inch	O	X
CN6	Logic	Logic (+5V) connection	O	O
CN7	Power	Power connection	O	O
CN8	Near end	Near end switch connection	O	O
CN9	Head/motor	FPC connection 3-inch	X	O
CN10	Auto cutter	FPC connection 3-inch	X	O

Note: CN 5 is not mounted  
CN 8 detect switch is optional / user responsibility

## ■ CONNECTOR PIN ASSIGNMENT OF INTERFACE BOARD

### ■ INTERFACE

#### 1. Connector for Logic, Head, Motor Power supply (CN1)

##### 1. Centronics interface

Board side: SM0GB-PASS-TBT (J.S.T) or equivalent

Other side: PARP-08V (J.S.T)

##### (1) Connector (CN1)

Connector part number	No. 1	Signal	+3V	I/O	O	Contents	Power for logic	
Mating connector part number	5V SHDR-30V-G-TF (J.S.T) or equivalent	2	GND	-	-	5V ground		
(2) Connector pin assignment	1	GND	-	Ground of 24V	6-8	+24V	I	+24V power

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
<b>2. RS-232C</b> <b>(1) Connector (CN2)</b> Connector part number : S8B-ZR-SM4A-TF (J.S.T) or equivalent Mating connector part number : ZHR-8 (J.S.T) or equivalent							
1	PRSTB	—	Connected to logic GND	2	PRSTB-RET	—	Connected to logic GND
3	PRDT0	—	Connected to logic GND	4	PRDT0-RET	—	Connected to logic GND
5	PRDT1	—	Connected to logic GND	6	PRDT1-RET	—	Connected to logic GND
7	PRDT2	—	Connected to logic GND	8	PRDT2-RET	—	Connected to logic GND
9	PRDT3	—	Connected to logic GND	10	PRDT3-RET	—	Connected to logic GND
11	PRDT4	—	Connected to logic GND	12	PRDT4-RET	—	Connected to logic GND
13	PRDT5	—	Connected to logic GND	14	PRDT5-RET	—	Connected to logic GND
15	PRDT6	—	Connected to logic GND	16	PRDT6-RET	—	Connected to logic GND
17	PRDT7	—	Connected to logic GND	18	PRDT7-RET	—	Connected to logic GND
19	ACKNLG	O	Data input acknowledge	20	ACKNLG-RET	—	Connected to logic GND
<b>3. USB standard</b> <b>(1) Connector (CN4)</b> Connector part number : UX60-MB-5ST (Hirose) Mating connector part number : UX40-MB-5P (Hirose)							
21	BUSY	—	Connected to logic GND	22	BUSY-RET	—	Connected to logic GND
23	RINF2	—	Connected to logic GND	24	RINF2-RET	—	Connected to logic GND
25	SLCTIN	I	Printer select	26	INPRM	I	Reset
27	RINF1	O	Printer status 1	28	RINF3	O	Printer status 3
29	ATF	I	Power supply	GND	—	—	Logic GND

Notes: • Symbol “—” means a negative logic signal.  
 • “-RET” signal is a return signal to the differential pairable D+ terminal.  
 • “I” or “O” means a signal direction from the interface board side.

##### (3) Connector pin number

##### (4) Data input signal timing

Notes: • Symbol “—” means a negative logic signal.  
 • “I” or “O” means a signal direction from the interface board side.

**2. Connector for Paper Near-End Sensor (CN3)**  
 Board side: B3B-PH-SM4-TBT (J.S.T) or equivalent (P.C.B. side)  
 Other side: PHR-3 (J.S.T.)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	+3V	O	Power for logic	2	NES	I	Paper near-end signal
3	NC	I	Not used				

## (5) Printer status signals

	Error status	RINF1	RINF2	RINF3
1.	Paper out	Low	High	Low
2.	Paper near end	High	High	Low
3.	Head up	High	Low	Low
4.	Head temperature abnormality	High	Low	High
5.	Head voltage abnormality	Low	High	High
6.	Hardware abnormality	High	High	High
7.	Mark detection abnormality	Low	Low	Low
8.	Normal	Low	Low	High

## 2. RS-232C

### (1) Connector (CN2)

Connector part number : B8B-ZR-SM3A-TF (J.S.T.) or equivalent

Mating connector part number : ZHR-8 (J.S.T.) or equivalent

### (2) Connector pin assignment

No	Signal	I/O	Contents No.	No	Signal	I/O	Contents No.
1	RD		Receive data	2	TD	O	Transmission data
3	DTR	O	Data terminal ready	4	GND	-	Signal ground
5	DSR		Data set ready	6	SLCTN		Printer Select
7	$\overline{\text{INPRM}}$		Reset	8	ATF		Paper feed request

#### Notes:

- Symbol “ $\overline{\text{—}}$ ” means a negative logic signal.
- “I” or “O” means a signal direction from the interface board side.

## ■ CONNECTOR PIN ASSIGNMENT OF MECHANISM (FPC)

### 1. Thermal Head (CN 3)

Part number : 52610-2471 Molex or equivalent

#### FTP-627MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	PHK	—	Cathode
2	VSEN	O	Logic power supply
3	PHE		Paper out detection signal
4	+24 V	—	Power supply for thermal head
5	DO	O	Print data out signal
6	$\overline{\text{STB2}}$	O	Head energizing control signal
7	$\overline{\text{STB3}}$	O	
8	+5V	O	Logic power supply
9	GND	—	Ground of power supply
10	GND	—	
11	GND	—	
12	TM	I	Thermistor
13	STB1	O	Head energizing signal
14	LAT	O	Print data latch signal
15	CLK	O	Datacomm clock signal
16	+24V	—	Power supply for thermal head
17	+24V	—	
18	SW	O	Platen open detection signal
19	SW	—	
20	MT A	—	Phase signal for motor
21	$\overline{\text{MT A}}$	—	
22	MT B	—	
23	$\overline{\text{MT B}}$	—	
24	NC	—	Not connected

### 2. Cutter unit (CN 4)

Part number : 52610-0890 Molex or equivalent

#### FTP-627MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	VSEN	O	Logic power supply
2	PHE	I	Home Position Signal
3	PHK	-	Cathode side of sensor
4	MT A	-	Cutter drive signal
5	$\overline{\text{MT A}}$	-	Cutter drive signal
6	MT B	-	Cutter drive signal
7	$\overline{\text{MT B}}$	-	Cutter drive signal
8	N.C.	-	Not connected

## ■ CONNECTOR PIN ASSIGNMENT OF MECHANISM (FPC)

### 1. Thermal Head (CN 9)

Part number : 52610-3071 Molex or equivalent

#### FTP-637MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	PHK	—	Cathode
2	VSEN	O	Logic power supply
3	PHE		Paper out detection signal
4	+24 V	—	Power supply for thermal head
5	+24V	—	
6	+24V	—	
7	DO	O	Print data out signal
8	STB3	O	Head energizing signal
9	STB4	O	
10	+5V	O	Logic power supply
11	GND	—	Ground for thermal head
12	GND	—	
13	GND	—	
14	GND	—	
15	GND	—	
16	GND	—	
17	TM		Thermistor
18	STB1	O	Head energizing signal
19	STB2	O	
20	LAT	O	Print data latch signal
21	CLK	O	Datacomm clock signal
22	+24V	—	Power supply for thermal head
23	+24V	—	
24	+24V	—	
25	SW		Platen open detection signal
26	SW	O	
27	MT A	—	Phase signal for motor
28	MT $\bar{A}$	—	
29	MT B	—	
30	MT $\bar{B}$	—	

### 2. Cutter unit (CN10)

Part number : 52610-0871 Molex or equivalent

#### FTP-637MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	VSEN	O	Logic power supply
2	PHE		Home Position Signal
3	PHK	-	Cathode side of sensor
4	MT A	-	Cutter drive signal
5	MT $\bar{A}$	-	Cutter drive signal
6	MT B	-	Cutter drive signal
7	MT $\bar{B}$	-	Cutter drive signal
8	N.C.	-	Not connected

## ■ INTERFACE BOARD CONNECTOR PIN ASSIGNMENT

### 1. Connector for logic power supply (CN6)

Part number : S3B-PH-SM4-TB (J.S.T) or equivalent (board side)

Mating connector part number: PHR-3 (J.S.T.) or equivalent (board side)

No.	Signal	I/O	Contents No.	No.	Signal	I/O	Contents No.
1	+5V	O	Power supply for logic	2	NC	-	No connection
3	GND	-	Ground				

### 2. Connector for power supply for head/motor (CN7)

Part number : S6B-XH-SM4-TB (J.S.T) or equivalent (board side)

Mating connector part number: XHR-6 (J.S.T.) or equivalent (board side)

No.	Signal	I/O	Contents No.	No.	Signal	I/O	Contents No.
1	+24V	I	Power supply for head	2	+24V	I	Power supply for head
3	+24V	I	Power supply for head	4	GND	-	Ground
5	GND	-	Ground	6	GND	-	Ground

### 3. Connector for paper near-end sensor detection (CN8)

Part number : B2B-PH-SM3-TB (J.S.T) or equivalent (board side)

Mating connector part number: PHR-2 (J.S.T.) or equivalent (board side)

No.	Signal	I/O	Contents No.	No.	Signal	I/O	Contents No.
1	+5V	O	Power supply for logic	2	$\overline{\text{NES}}$	I	Paper near-end detection signal



## ■ COMMANDS

Command	Contents
HT	Moves print position to the next tab.
LF	Line feed.
FF	Feeds forms (new page).
ESC EM+n	Setting the amount of the feeding at automatic paper feed.
ECS RS	Sets reverse printing.
ESC US	Resets reverse printing.
ESC ! + n	Sets print mode.
ESC % + n	External registration character specification/cancellation.
ESC &+y+c <sub>1</sub> +c <sub>2</sub> +X+d <sub>1</sub> ~d <sub>N</sub>	Download character definition.
ESC *+m+n <sub>1</sub> +n <sub>2</sub> +d <sub>1</sub> ~d <sub>N</sub>	Sets bit image mode.
ESC 2	Sets 1/6 inch line feed length.
ESC 3+n	Sets the line feed length.
ESC ? + n	External registration character deletion.
ESC @	Printer initialization.
ESC A+n	Sets the space between the line.
ESC C+n	Sets the page length by character line.
ESC D+d <sub>1</sub> ~d <sub>N</sub> +NUL	Sets the tab position.
ESC J+n	Feeds paper in forward direction and prints.
ESC K+n	Reverse paper feed.
ESC R +n	International character specification.
ESC V+n	Right rotation 90°.
ESC X+m+n	Setting the turning time of the motor excitation.
ESC c+1+n	Sets internal processing (including auto paper loading).
ESC d+n	Printing and n-line feeding.
ESC e +n	Prints and reverse feeds n-lines.
ECS s+n	Sets printing speed.
ECS t+n	Character code table selection.
ESC {+n	Sets/resets upside down printing.

Commands continued

Command	Contents
FS !+n	Kanji printing mode collective specification.
FS &	Kanji printing mode specification.
FS *+m+n <sub>1</sub> +n <sub>2</sub> +d <sub>1</sub> ~d <sub>N</sub>	High speed collective image printing specified.
FS .	Kanji printing mode cancellation.
FS 9+n	Detection function enable/disable setting.
FS C+n	Kanji code system selection.
FS E+n	Correction of impressed energy.
FS W+n	Kanji double height and width mode specification/cancellation.
GS &+m+x+y <sub>1</sub> +y <sub>2</sub> +d <sub>1</sub> ~d <sub>N</sub>	Registration of image data.
GS '+m+n	Prints registered image data.
GS <	Line feeds to the next mark.
GS A+m+n	Sets the line feed length after mark detection.
GS E+n	Sets print quality.
GS V+n+m	Paper cutting (for pending cutter models only).
GS e+n+m	Sets bar code width.
GS h+n	Sets bar code height.
GS k+m+n+d <sub>1</sub> ~d <sub>N</sub> +NUL	Selects bar code type and prints.
GS w+n	Sets bar code width magnification.
GS a+n	Setting and cancellation of auto status transmission (serial mode only).
FS r+n	Parameter transmission. (Serial Mode only).

# FTP-627/637DSL291/293

## ■ OPTIONS

### 1. Cables

Name		Part Number	Length (mm)
Interface Cable (between board and equipment)	For Centronics (CN1)	FTP-628Y202	500 (19.7 inches)
	For RS232C (CN2)	FTP-628Y302	500 (19.7 inches)
Power supply cable	Logic (CN6)	FTP-629Y401	300 (11.8 inches)
	Head / motor (CN7)	FTP-629Y601	

### 2. Driver LSI of Control Board

Name	Part Number	Quantity / Tray	Remarks
MCU	FTP-627CU351	90	On board Flash/SRAM

### 3. Paper holder

Name	Part number
Paper Flange	FTP-040HF
Paper Stand	FTP-040HS

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Rev. February 26, 2009.