FUJITSU

THE POSSIBILITIES ARE INFINITE

INTERFACE BOARDS FOR

FTP-628DCL/ DSL490 / 491 / 493 SERIES

■ HIGHLIGHTS

- FTP-608 series I/F board for low profile mech/cutter

- Supports parallel or serial I/F

- Supports barcode and graphics
- Windows®2000/XP, Linux drivers

- UL File No. E171434

- RoHS compliant

FTP-628DSL491R

■ PART NUMBERS

Part Number	Interface Type		Driver	Mechanism Part Number
FTP-628DSL490R	Parallel (Centronics) Serial (RS-232C)	No SRAM	Windows® 2000/XP, Linux	FTP-628MCL401 FTP-638MCL401
FTP-628DSL491R		SRAM		
FTP-628DSL493R		Flash SRAM		

■ INTERFACE SPECIFICATION AT HOST SIDE

Item	Specifications	
Centronics	Data speed: Synchronous method: Handshake: Input/output level:	28,000 bytes/sec. Extended strobe pulse BUSY/ACKNLG signal CMOS
RS-232C	Data speed: Synchronous method: Handshake: Input/output level:	19,200, 9,600, 4,800, 2,400 bps Full duplex DTR/DSR, XON/XOFF control RS-232C

■ **EXTERNAL SPECIFICATIONS**
   1.1 External View of control circuit board

FTP-628DSL490/491/493

部品実装高さ（部品面）

部品実装高さ（半田面）

Unit: mm
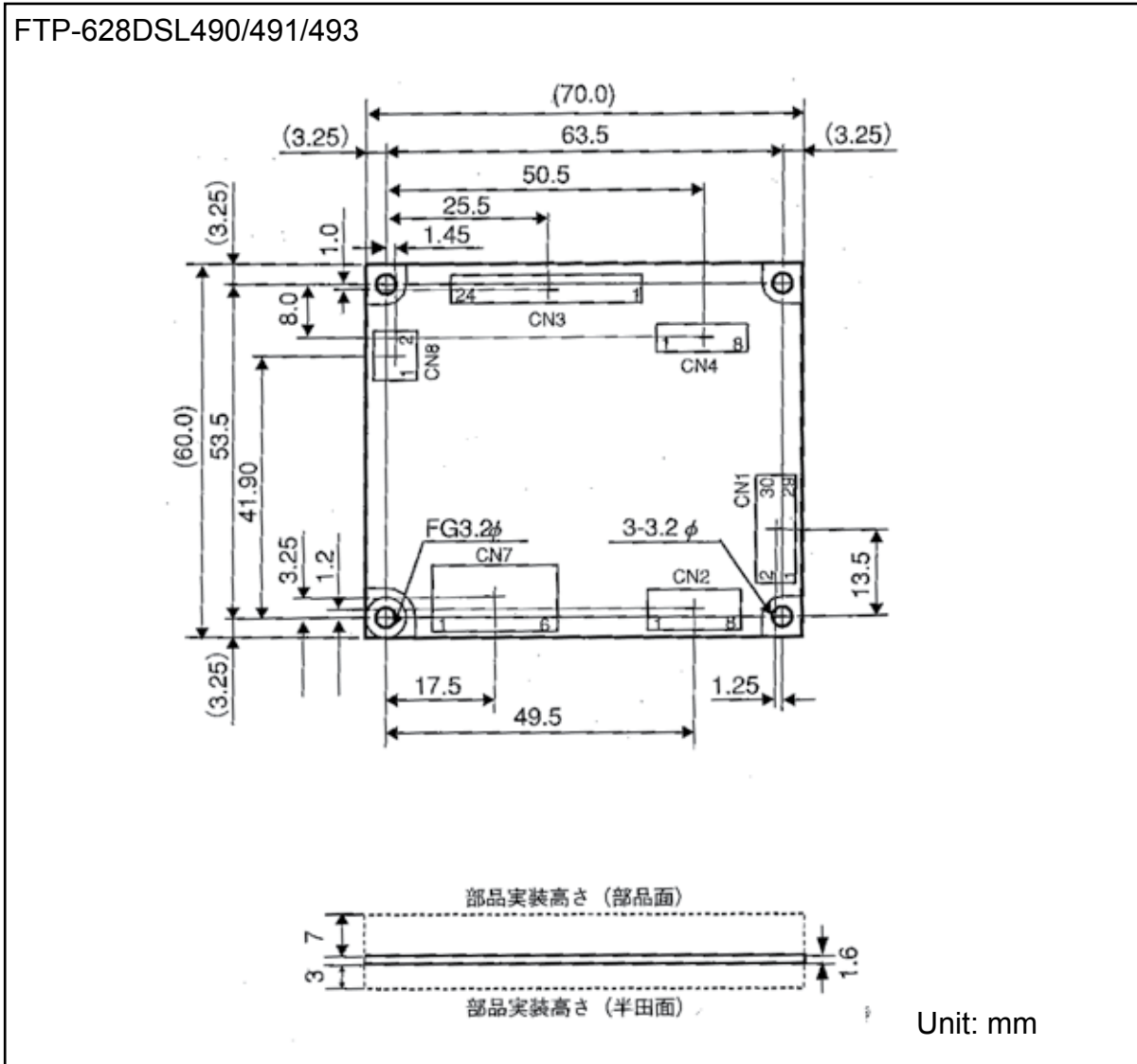
1.2 Control circuit board connector types

Symbol	Name	Function	FTP-628 DSL490	FTP-628 DSL491	FTP-628 DSL493
CN1	Parallel (Centronics)	Parallel connection	O	O	O
CN2	Serial I/F (RS232-C)	Serial (RS-232C) connection	O	O	O
CN3	Head / motor	FPC connection	O	O	O
CN4	Auto cutter	Auto cutter connection	O	O	O
CN7	Logic / power	Logic/head/motor connection	O	O	O
CN8	Near end detect	Near end switch connection	O	O	O

Notes: CN 5 and CN6 are not connected
CN8: detect switch is optional / user responsibility

■ INTERFACE

1. Centronics interface

(1) Connector (CN1)

Connector part number   : SM30B-SRDS-G-TFC (JST) or equivalent
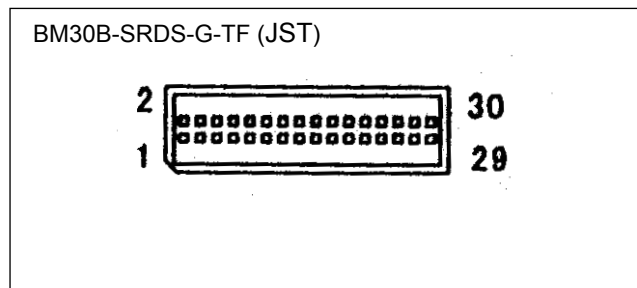Mating connector part number : SHDR-30V-S-B (JST) or equivalent

(2) Connector pin assignment

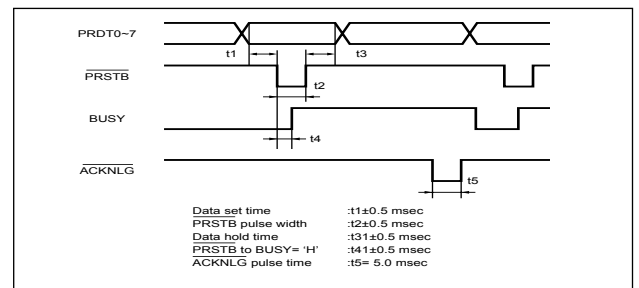| No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	$\overline{PRSTB}$	I	Data strobe	2	PRSTB-RET	—	Connected to logic GND
3	PRDT0	I	Data 0	4	PRDT0-RET	—	Connected to logic GND
5	PRDT1	I	Data 1	6	PRDT1-RET	—	Connected to logic GND
7	PRDT2	I	Data 2	8	PRDT2-RET	—	Connected to logic GND
9	PRDT3	I	Data 3	10	PRDT3-RET	—	Connected to logic GND
11	PRDT4	I	Data 4	12	PRDT4-RET	—	Connected to logic GND
13	PRDT5	I	Data 5	14	PRDT5-RET	—	Connected to logic GND
15	PRDT6	I	Data 6	16	PRDT6-RET	—	Connected to logic GND
17	PRDT7	I	Data 7	18	PRDT7-RET	—	Connected to logic GND
19	$\overline{ACKNLG}$	O	Data input acknowledge	20	$\overline{ACKNLG}$-RET	—	Connected to logic GND
21	BUSY	O	Busy	22	BUSY-RET	—	Connected to logic GND
23	RINF2	O	Printer status 2	24	$\overline{INPRM}$-RET	—	Connected to logic GND
25	$\overline{SLCTIN}$	I	Printer select	26	$\overline{INPRM}$	I	Reset
27	RINF1	O	Printer status 1	28	RINF3	O	Printer status 3
29	$\overline{ATF}$	I	Paper feed request	30	GND	—	Logic GND

Notes: • Symbol "—" means a negative logic signal.
• "–RET" signal is a return signal of the twisted pair cable.
• "I" or "O" means a signal direction from the interface board side.

(3) Connector pin number

BM30B-SRDS-G-TF (JST)

(4) Data input signal timing

Data set time :t1±0.5 msec
PRSTB pulse width :t2±0.5 msec
Data hold time :t31±0.5 msec
PRSTB to BUSY= 'H' :t41±0.5 msec
ACKNLG pulse time :t5= 5.0 msec

(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   : S8B-ZR-SM4A-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	I	Receive data	2	TD	O	Transmission data
3	DTR	O	Data terminal ready	4	GND	-	Signal ground
5	DSR	I	Data set ready	6	$\overline{\text{SLCTIN}}$	I	Printer select
7	$\overline{\text{INPRM}}$	I	Reset	8	$\overline{\text{AFT}}$	I	Paper feed request

Notes:
- Symbol "——" 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 : 52610-3071 Molex or equivalent

FTP-628MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	PHK	—	Cathode
2	VSEN	O	Logic power supply
3	PHE			Paper out detection signal
4	VH	O	Power supply for thermal head
5	VH	O	
6	DO	O	Print data output
7	CLK	O	Datacomm clock
8	GND	—	Gound of power supply
9	GND	—	
10	STB6	O	Head energizing signal
11	STB5	O	
12	STB4	O	
13	Vcc	—	Logic power
14	TM	—	Head thermistor input
15	TMR	O	Head thermistor ground
16	STB3	O	Head energizing signal
17	STB2	O	
18	STB1	O	
19	GND	—	Ground of thermal head
20	GND	—	
21	LAT	O	Print data latch
22	DI			Print data input
23	VH	—	Power supply for thermal head
24	VH	—	
25	SW	O	Platen open detection
26	SW			
27	MT-A	—	Phase signal for motor
28	MT-/A	—	
29	MT-B	—	
30	MT-/B	—	

2. Cutter unit (CN 4)

Part number : 52610-0871 Molex or equivalent

FTP-628MCL401 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	MTA	-	Cutter drive signal
5	MT/A	-	Cutter drive signal
6	MTB	-	Cutter drive signal
7	MT/B	-	Cutter drive signal
8	N.C.	-	Not connected

■ CONNECTOR PIN ASSIGNMENT OF MECHANISM (FPC)

1. Thermal Head (CN 3)
Part number : 52610-3071 Molex or equivalent
FTP-638MCL401 PIN ASSIGNMENT

No	Signal	I/O	Contents
1	PHK	—	Cathode
2	VSEN	O	Logic power supply
3	PHE	|	Paper out detection signal
4	VH	O	Power supply for thermal head
5	VH	O	
6	DO	O	Print data output signal
7	CLK	O	Datacom clock
8	GND	—	Ground for thermal head
9	GND	—	
10	STB5	O	Head energizing signal
11	STB4	O	
12	STB3	O	
13	Vcc	—	Logic power
14	TM	—	Head thermistor
15	STB2	O	Head thermistor
16	STB1	O	
17	AE02	O	
18	AE01	O	
19	GND	—	Ground for thermal head
20	GND	—	
21	LAT	O	Print data latch
22	DI	|	Print data input signal
23	VH	—	Power supply for thermal head
24	VH	—	
25	SW	O	Platen open detection signal
26	SW	|	
27	MT-A	—	Phase signal for motor
28	MT-/A	—	
29	MT-B	—	
30	MT-/B	—	

2. Cutter unit (CN4)
Part number : 52610-0871 Molex or equivalent
FTP-638MCL401PIN 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	MTA	-	Cutter drive signal
5	MT/A	-	Cutter drive signal
6	MTB	-	Cutter drive signal
7	MT/B	-	Cutter drive signal
8	N.C.	-	Not connected

■ INTERFACE BOARD CONNECTOR PIN ASSIGNMENT

1. 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	Vcc	|	Power supply for logic	2	GND (Vcc)	-	Ground for logic
3	GND (Vdd)	-	Ground for head/motor	4	GND (Vdd)	-	Ground for head /motor
5	Vdd	|	Power for head/motor	6	Vdd	|	Power for head /motor

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

Part number : B2B-PH-SM4-TBT (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	Vcc +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).
DC2	Power down
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 $+n1+n2	Specify start point of printer from left bit margin.
ESC % + n	External registration character specification/cancellation.
ESC &+y+c_1+c_2+x+d_1~d_N	Download character definition.
ESC *+m+n_1+n_2+d_1~d_N	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_1~d_N+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 S	Select printing mode.
ESC T+n	Select printing direction per print mode
ESC V+n	Right rotation 90˚.
ESC X+m+n	Setting the turning time of the motor excitation.
ESC a+n	Sets the alignment printing position.
ESC c+1+n	Sets internal processing (including auto paper loading).
ESC d+n	Printing and n-line feeding.

Commands continued

Command	Contents
ESC e +n	Prints and reverse feeds n-lines.
ESC	Final cut.
ESC m	Partial cut.
ECS s+n	Sets printing speed.
ECS t+n	Character code table selection.
ESC {+n	Sets/resets upside down printing.
FS !+n	Kanji printing mode collective specification.
FS &	Kanji printing mode specification.
FS *+m+n_1+n_2+d_1~d_N	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_1+y_2+d_1~d_N	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 a+n	Select automatic status.
GS e+n+m	Sets bar code width.
GS h+n	Sets bar code height.
GS k+m+n+d_1~d_N	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).

■ 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 (CN7)		FTP-628Y402	300 (11.8 inches)

2. Driver LSI for Control Board

Name	Part Number	Quantity / Tray	Remarks
MCU	FTP-628CU451	90	

3. Paper holder

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

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