

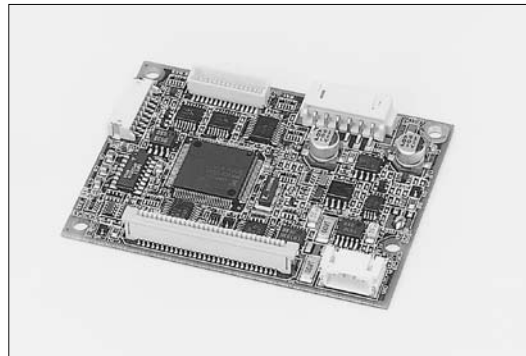
# INTERFACE BOARD

## FTP-608 SERIES

### FTP-628DCL300/301, DSL305/306 SERIES

#### ■ HIGHLIGHTS

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



#### ■ PART NUMBERS

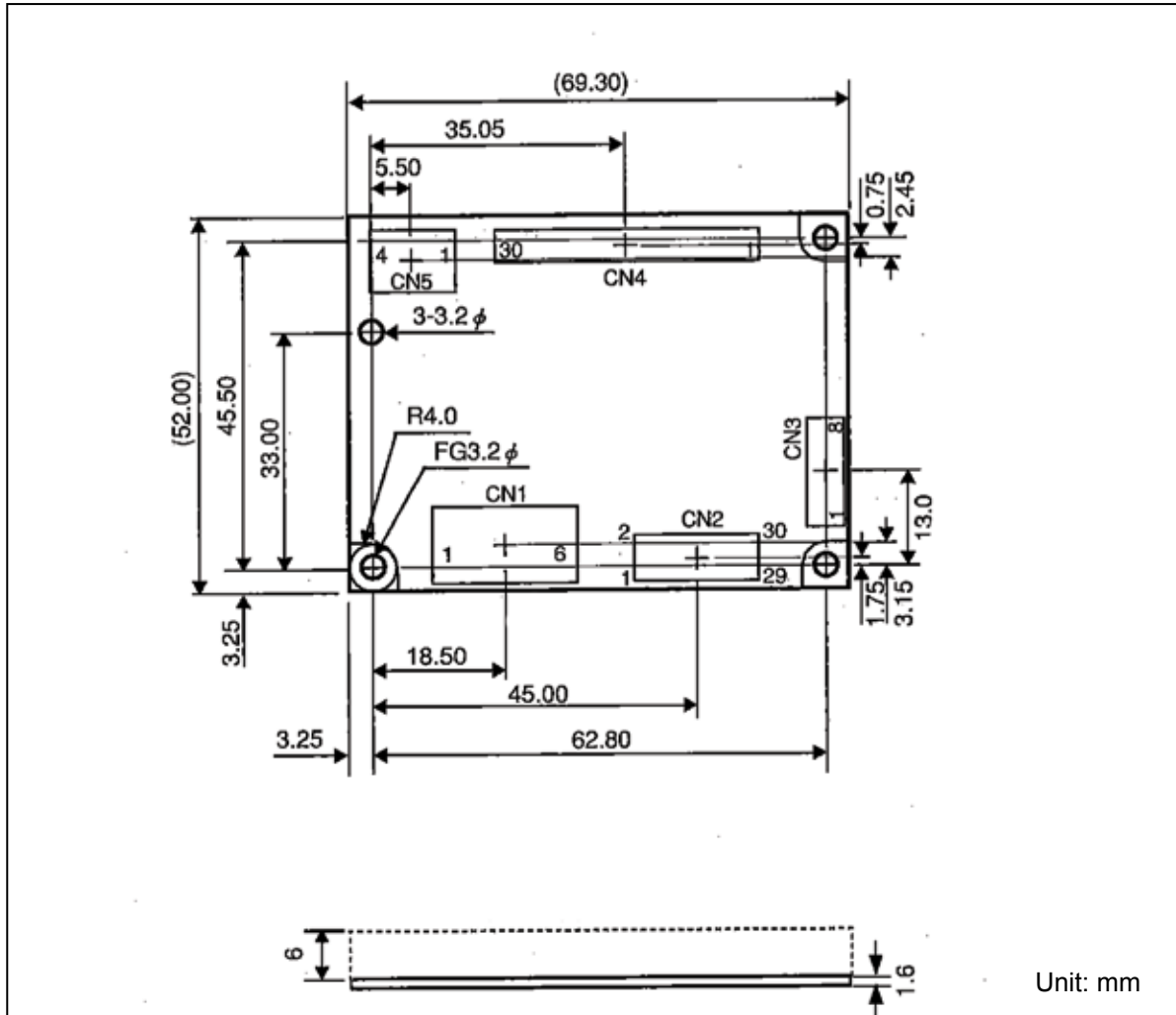
| Part Number    | Interface Type        | Cutter | Mechanism Part Number                                                                     |
|----------------|-----------------------|--------|-------------------------------------------------------------------------------------------|
| FTP-628DCL300R | Parallel (Centronics) | No     | FTP-628MCL053<br>FTP-628MCL054<br>FTP-628MCL101/103<br>FTP-628MCL113<br>FTP-638MCL101/103 |
| FTP-628DCL301R |                       | Yes    | FTP-628MCL353#01, #02<br>FTP-628MCL354#01, #02                                            |
| FTP-628DSL305R | Serial (RS-232C)      | No     | FTP-628MCL053<br>FTP-628MCL054<br>FTP-628MCL101/103<br>FTP-628MCL113<br>FTP-638MCL101/103 |
| FTP-628DSL306R |                       | Yes    | FTP-628MCL353#01, #02<br>FTP-628MCL354#01, #02                                            |

FTP-628MCL101 / FTP-638MCL101: Platen detection function must be disabled to use mechanism without platen switch.

#### ■ 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 bps            |
|            | Synchronous method: | Full duplex           |
|            | Handshake:          | DTR/DSR, control      |
|            | Input/output level: | RS-232C               |

## ■ DIMENSIONS



| No  | Name         | FTP-628<br>DCL300 | FTP-628<br>DCL301 | FTP-628<br>DSL305 | FTP-628<br>MCL306 |
|-----|--------------|-------------------|-------------------|-------------------|-------------------|
| CN1 | Power        | O                 | O                 | O                 | O                 |
| CN2 | Centronics   | O                 | O                 | X                 | X                 |
| CN3 | RS-232C I/F  | X                 | X                 | O                 | O                 |
| CN4 | Head / motor | O                 | O                 | O                 | O                 |
| CN5 | Auto cutter  | X                 | O                 | X                 | O                 |

## ■ INTERFACE

### 1. Centronics interface

#### (1) Connector (CN2)

Connector part number : BM30B-SRDS-G-TFC (JST) or equivalent

Mating connector part number : SHDR-30V-S-B (JST) or equivalent

#### (2) Connector pin assignment

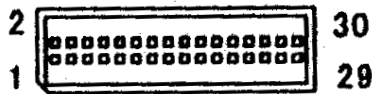
| No. | Signal                     | I/O | Contents               | No. | Signal                         | I/O | Contents               |
|-----|----------------------------|-----|------------------------|-----|--------------------------------|-----|------------------------|
| 1   | $\overline{\text{PRSTB}}$  | I   | Data strobe            | 2   | $\overline{\text{PRSTB-RET}}$  | —   | 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  | $\overline{\text{ACKNLG}}$ | O   | Data input acknowledge | 20  | $\overline{\text{ACKNLG-RET}}$ | —   | Connected to logic GND |
| 21  | BUSY                       | O   | Busy                   | 22  | BUSY-RET                       | —   | Connected to logic GND |
| 23  | RINF2                      | O   | Printer status 2       | 24  | $\overline{\text{INPRM-RET}}$  | —   | Connected to logic GND |
| 25  | $\overline{\text{SLCTIN}}$ | I   | Printer select         | 26  | $\overline{\text{INPRM}}$      | I   | Reset                  |
| 27  | RINF1                      | O   | Printer status 1       | 28  | RINF3                          | O   | Printer status 3       |
| 29  | $\overline{\text{ATF}}$    | I   | Paper feed request     | 30  | GND                            | —   | Logic GND              |

Notes:

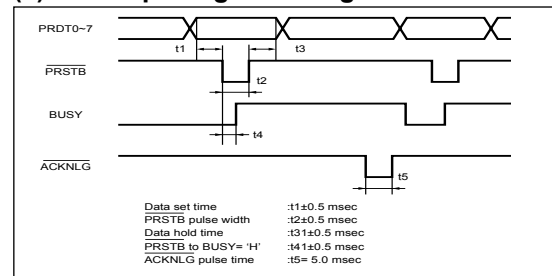
- Symbol “—” means a negative logic signal.
- “-RET” signal is a return signal of the twisted pair cable.
- “I” or “O” means a signal direction from the interface board side.

#### (3) Connector pin number

BM30B-SRDS-G-TF (JST)



#### (4) Data input signal timing



## (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 (CN3)

Connector part number : S8B-ZR-SM4B-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   | SLCTIN | I   | Printer select     |
| 7   | INPRM  | I   | Reset               | 8   | ATF    | 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

### 1. Connector for power supply (CN1)

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

Mating connector part number: XHP-6

| No. | Signal | I/O | Contents No.                | No. | Signal | I/O | Contents No.                |
|-----|--------|-----|-----------------------------|-----|--------|-----|-----------------------------|
| 1   | +V5    | -   | Power supply for logic      | 2   | GND    | -   | Ground for power supply     |
| 3   | GND    | -   | Ground for head / motor     | 4   | GND    | -   | Ground for head / motor     |
| 5   | Vdd    | -   | Power supply for head motor | 6   | Vdd    | -   | Power supply for head motor |

# FTP-628DCL/DSL Series

## 2. Connector for printer mechanism connection (CN4) FTP-628MCL053/054/101/ 103/353/354

Part number : 52610-3090 (made by Molex)

| No. | Name of Signal | Direction | Note                                   | No. | Name of Signal | Direction | Note                                          |
|-----|----------------|-----------|----------------------------------------|-----|----------------|-----------|-----------------------------------------------|
| 1   | PSGND          | -         | Paper sensor power supply              | 16  | TM1            | Input     | Thermally sensitive resistor input terminal 1 |
| 2   | PSVD           | -         | Paper sensor power supply grand        | 17  | TM2            | Input     | Thermally sensitive resistor input terminal 2 |
|     |                |           |                                        |     | (STB2)         | (Output)  | (Thermal head energizing control signal)      |
| 3   | *PES           | Input     | Signal of paper sensor                 | 18  | STB3 (STB1)    | Output    | Thermal head energizing control signal        |
| 4   | HUP            | Input     | Signal of head up sensor               | 19  | STB2 (AE02)    | Output    |                                               |
| 5   | HSVD           | -         | Head up sensor power 5 supply          | 20  | STB1 (AE01)    | Output    |                                               |
| 6   | VH             | -         | Thermal head power supply              | 21  | GND            | -         | Thermal head power supply grand               |
| 7   | VH             | -         |                                        | 22  | GND            | -         |                                               |
| 8   | HD             | Input     | Input signal of print data             | 23  | LAT            | Output    | Thermal head data latch signal                |
| 9   | HCLK           | Output    | Synchronous clock for communication    | 24  | HDO            | Output    | Print data signal                             |
| 10  | GND            | -         | Thermal head power supply grand        | 25  | VH             | -         | Thermal head power supply                     |
| 11  | GND            | -         |                                        | 26  | VH             | -         |                                               |
| 12  | STB6 (STB5)    | Output    | Thermal head energizing control signal | 27  | MT/A           | -         | Stepping motor drive signal                   |
| 13  | STB5 (STB4)    | Output    |                                        | 28  | MT/A           | -         |                                               |
| 14  | STB4 (STB3)    | Output    |                                        | 29  | MT/B           | -         |                                               |
| 15  | 5VH            | -         | Power supply for thermal head control  | 30  | MT/B           | -         |                                               |

Note: Two-inch mechanism besides ( ) (Three-inch mechanism in).

## 3. Auto-cutter (CN5)

Part number : S4B-PH-SM3-TB (JST or equivalent)

| No | Signal | I/O | Note                      | No | Signal    | I/O | Note                    |
|----|--------|-----|---------------------------|----|-----------|-----|-------------------------|
| 1  | CHP    | I   | Auto cutter home position | 2  | GND (+5V) | -   | Logic ground            |
| 3  | MT+    | O   | Motor control signal      | 4  | MT-       | O   | Auto-cutter motor drive |

## ■ COMMANDS

| Command              | Contents                                                      |
|----------------------|---------------------------------------------------------------|
| HT                   | Moves print position to the next tab.                         |
| LF                   | Line feed.                                                    |
| FF                   | Feeds forms (new page).                                       |
| DC 2                 | Power down.                                                   |
| ECS RS               | Sets reverse printing.                                        |
| ESC US               | Resets reverse printing.                                      |
| ESC ! + n            | Sets print mode.                                              |
| ESC *+m+n1+n2+[d]k   | Sets bit image mode.                                          |
| ESC 2                | Sets 1/6 inch line feed length.                               |
| ESC 3+n              | Sets the line feed length.                                    |
| ESC @                | Printer initialization.                                       |
| ESC A+n              | Sets the space between the line.                              |
| ESC C+n              | Sets the page length by character line.                       |
| ESC D+[n]k+NUL       | Sets the tab position.                                        |
| ESC J+n              | Feeds paper in forward direction and prints.                  |
| ESC K+n              | Reverse paper feed.                                           |
| ESC R+n              | Selects international character.                              |
| ESC c+1+n            | Sets internal processing.                                     |
| 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.                             |
| ESC V+n              | Right Rotation 90° specification / cancellation.              |
| ESC EM+n             | Setting the amount of the feeding at automatic paper feed.    |
| ESC X+m+n            | Setting the turning time of the motor excitation.             |
| ESC %+n              | External registration character specification / cancellation. |
| ESC &+y+c+c2+x+d1~dn | External registration character definition.                   |
| ESC ?+n              | External registration character deletion.                     |

# FTP-628DCL/DSL Series

Commands continued

| Command       | Contents                                                   |
|---------------|------------------------------------------------------------|
| FS E+n        | Correction of impressed energy.                            |
| FS 9+n        | Sets the detection functions.                              |
| FS r+n        | Parameter transmission (valid only for DSL).               |
| 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 (this command is only available for chip).   |
| GS e+n+m      | Sets bar code width.                                       |
| GS h+n        | Sets bar code height.                                      |
| GS k+m+n+[d]k | Selects bar code type and prints.                          |
| GS w+n        | Sets bar code length.                                      |
| GS a+n        | Sets and cancels status transmission (valid only for DSL). |

## ■ OPTIONS

### 1. Cables

| Name                                             |                      | Part Number | Length (mm)       |
|--------------------------------------------------|----------------------|-------------|-------------------|
| Interface Cable<br>(between board and equipment) | For Centronics (CN2) | FTP-628Y202 | 500 (19.7 inches) |
|                                                  | For RS232C (CN3)     | FTP-628Y302 | 500 (19.7 inches) |
| Power supply cable (CN1)                         |                      | FTP-628Y402 | 300 (11.8 inches) |

### 2. Driver LSI of Control Board

| Name | Part Number   | Quantity / Tray | Remarks |
|------|---------------|-----------------|---------|
| MCU  | FTP-628CU301R | 90              |         |

### 3. Paper holder

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

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