

FUJITSU Component Thermal Printer FTP-628DSL311/312 series Interface Boards

Fujitsu interface boards for FTP-628MCL05x, FTP-628MCL1xx, FTP-638MCLxxx series

Features

- USB (full speed) and RS-232C serial interface
- Various detection features: Paper out, mark, platen open, thermal head temperature, power supply voltage, near end
- Various alarm and protective functions: Thermal head temperature, power supply voltage, MCU operation, motor over current protection
- Print quality stabilization by the thermal head temperature and power supply voltage monitoring
- Thermal head energization can select fix division or automatic division
- Character set: ANK (Alphabet, number, Kana)
- Supports barcode printing
- Wide range of power supply voltages



FTP-628DSL311

■ Part numbers

| Part number | Supply voltage | Interface type | Mechanism part number |
|-----------------|----------------|----------------|-----------------------|
| FTP-628DSL311-R | 4.2 to 9.5V | USB/RS-232C | FTP-628MCL05x |
| FTP-628DSL312-R | 21.6 to 26.4V* | | FTP-628MCL1xx |
| | | | FTP-638MCL1xx |

*: The FTP-628DSL312 will convert the input voltage, 21.6V - 26.4V, to 9.5V to drive the FTP-6x8MCL mechanisms

■ Interface specification at host side

| Item | Specifications | | | | | | | | | | | | |
|------------------|---|---------------|----------------|------------------|---------|------------|---------|-----------|--------------------------|------|---------|------|----------|
| RS-232C | Data speed: 9.6k, 19.2k, 38.4k, 115.2k, 230.4k bps** Synchronous method: Asynchronous Handshake: RTS (DTR) / CTS (DSR) control, XON/XOFF control Parity: Non, even, odd** Input/output level: RS-232C level | | | | | | | | | | | | |
| USB V2.0 | Data speed: USB ver 2.0 full speed (12Mbps max.) USB interface class: <table border="0" style="margin-left: 20px;"> <tr> <td>Device class:</td> <td>Printer device</td> </tr> <tr> <td>Interface class:</td> <td>Printer</td> </tr> <tr> <td>Sub class:</td> <td>Printer</td> </tr> <tr> <td>Protocol:</td> <td>Unidirectional interface</td> </tr> </table> Endpoint: <table border="0" style="margin-left: 20px;"> <tr> <td>EPO:</td> <td>Control</td> </tr> <tr> <td>EP1:</td> <td>Bulk OUT</td> </tr> </table> | Device class: | Printer device | Interface class: | Printer | Sub class: | Printer | Protocol: | Unidirectional interface | EPO: | Control | EP1: | Bulk OUT |
| Device class: | Printer device | | | | | | | | | | | | |
| Interface class: | Printer | | | | | | | | | | | | |
| Sub class: | Printer | | | | | | | | | | | | |
| Protocol: | Unidirectional interface | | | | | | | | | | | | |
| EPO: | Control | | | | | | | | | | | | |
| EP1: | Bulk OUT | | | | | | | | | | | | |

** : Selectable by RS-232C communication conditions setting command GS (+E(fn=67))

■ Specifications

1.1 Base specifications

| Item | Specifications |
|------------|---------------------|
| Dimensions | 67.2 x 32.0mm (WxD) |
| Weight | Approx. 15g |

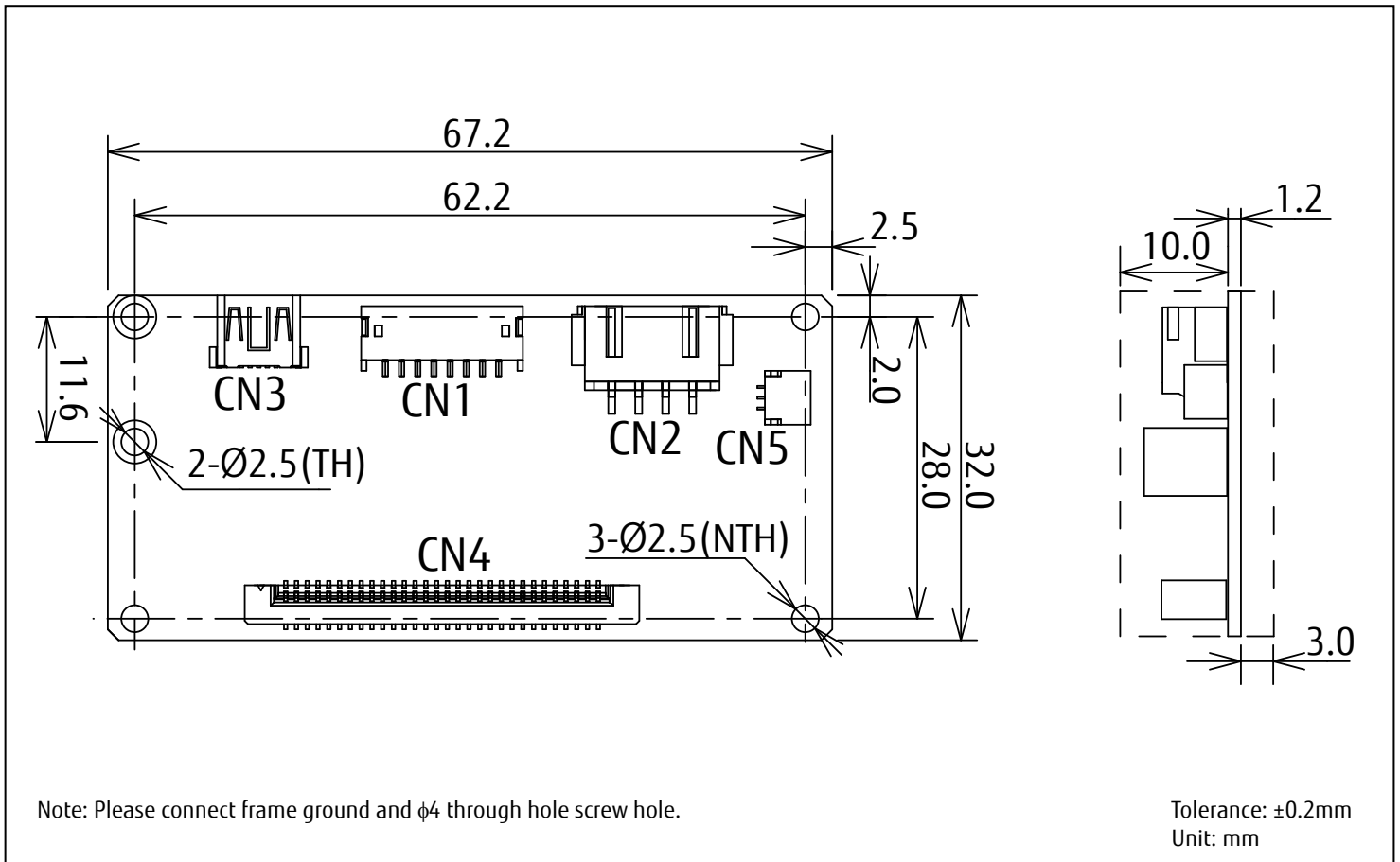
1.2 Print/paper feed specifications

| Item | Specifications |
|-------------------------|--|
| Part number | FTP-628MCL (2-inch) FTP-638MCL (3-inch) |
| Dot pitch | 0.125mm (H) x 0.125mm (W) |
| Number of dots | 384 dots/line 576 dots/line |
| Max. printing width | 48mm 72mm |
| Line space | Approx. 1/8 inch (26 dots line) |
| Print speed*1 | 100mm/s 60mm/s |
| Paper feed speed (/ATF) | Approx. 30mm/s |

*1: Conditions:

| | |
|---------------------------------|----------------------------------|
| Paper: | PD150R or equivalent |
| Voltage: | 9.5V |
| Print ratio: | Up to 12.5% |
| Operating temperature/humidity: | 25°C, 60+/-15% (no condensation) |

■ Dimensions



■ Control circuit board and connector types

| Symbol | Name | Function | Note |
|--------|-----------------------------|----------------------------|------|
| CN1 | Serial interface connector | Serial connection | - |
| CN2 | Power connector | Power connection | - |
| CN3 | USB connector | USB connection | - |
| CN4 | Printer mechanism connector | Printer connection | - |
| CN5 | Near end connector | Near end switch connection | - |

■ Connector Pin Assignment of interface board

Note: Symbol "-" means a negative logic signal.

"I" or "O" means a signal direction from the interface board side.

- Serial interface connector (CN1)

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

Recommended cable: AWG#26 to 32, cable length max. 500mm

| No. | Signal | I/O | Content | No. | Signal | I/O | Content |
|-----|-----------|-----|------------------------|-----|---------|-----|-----------------------------------|
| 1 | RXD | I | Receive data signal | 2 | TXD | O | Transmission data signal |
| 3 | RTS (DTR) | O | Request to send signal | 4 | GND | - | Signal ground |
| 5 | CTS (DSR) | I | Clear to send signal | 6 | /SLCTIN | I | Decision function disabled signal |
| 7 | /INPRM | I | Initialization signal | 8 | /ATF | I | Paper feed |

- Power connector (CN2)

Mating connector part number: XHP-4 (J.S.T.) or equivalent

Recommended cable: AWG#22 to 30, cable length max. 300mm

| No. | Signal | I/O | Content | No. | Signal | I/O | Content |
|-----|--------|-----|-------------|-----|--------|-----|-------------|
| 1 | Vp | I | Power input | 2 | Vp | I | Power input |
| 3 | GND | - | Ground | 4 | GND | - | Ground |

- USB Connector (CN3)

Mating connector part number: USB mini-B type

Recommended cable: Cable conforming to USB standards (V2.0 full speed)

| No. | Signal | I/O | Content | No. | Signal | I/O | Content |
|-----|--------|-----|---------------|-----|--------|-----|---------------|
| 1 | Vbus | I | Vbus signal | 2 | D- | I/O | D- signal |
| 3 | D+ | I/O | D+ signal | 4 | N.C. | - | Not connected |
| 5 | GND | - | Signal ground | 6 | FG | - | Frame ground |

- Printer mechanism connector(CN4)

Please refer to the printer mechanism datasheet

- Near end Connector (CN5)

Mating connector part number: SHR-03V-S (J.S.T.) or equivalent

Recommended cable: AWG#28to 32, cable length max. 300mm

| No. | Name | I/O | Description | No. | Name | I/O | Description |
|-----|------|-----|-----------------------|-----|------|-----|-----------------|
| 1 | NVcc | O | Near end sensor power | 2 | /NES | I | Near end signal |
| 3 | GND | - | Signal ground | | | | |

■ Connector pin assignments of printer mechanism (2-inch)

| Command | Content |
|----------------------------------|--|
| HT | Moves print position to the next tab |
| LF | Line feed |
| FF | Feeds forms (new page) |
| DC2 | Power down |
| ESC RS | Black/white reverse printing specification |
| ESC SP+n | Character space setting |
| ESC US | Black/white reverse printing cancellation |
| ESC !+n | Sets print mode |
| ESC *+m+nL+nH+d1 to dk | Bit image print |
| ESC -n | Undeline setting |
| ESC 2 | Sets default line spacing |
| ESC 3+n | Line pitch setting |
| ESC @ | Printer reset |
| ESC A+n | Line spacing setting |
| ESC C+n | Sets the page length line mode |
| ESC D+n1 to nk+NUL | Sets horizontal tab position |
| ESC J+n | Feeds paper in forward direction and prints |
| ESC R+n | Selects international character |
| ESC V+n | Right rotation 90° specification/cancellation |
| ESC X+m+n | Setting the turning time of the motor excitation |
| ESC a+n | Positional alignment |
| ESC c+1+n | Sets internal processing |
| ESC c+5+n | External input signal valid/invalid setting |
| ESC d+n | Printing and n-line feeding |
| ESC s+n | Sets printing speed |
| ESC t+n | Character code table selection |
| ESC {+n | Sets/resets upside down printing |
| FS 9+n | Sets the detection functions |
| FS E+n | Standard energy setting |
| FS r+n | Reply parameter setting |
| GS !+n | Character size setting |
| GS (+E+pL+PH+fn+d1 to d9 (fn=67) | RS-232C communication setting *1 |
| GS (K+pL+pH+fn | Print control setting |
| GS(K+pL+pH+fn+n (fn=49) | Print density setting |
| GS(K+pL+pH+fn+n (fn=50) | Print speed setting |
| GS(K+pL+pH+fn+n (fn=97) | Number of head division setting |
| 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 L+nL+nH | Left margin setting |
| GS W+nL+nH | Sets print area width |

| Command | Content |
|-------------------|--------------------------------------|
| GS a+n | Set auto status transmission |
| GS e+m+n | Sets bar code width |
| GS h+n | Barcode height setting |
| GS k+m+n+d1 to dn | Bar code print |
| GS w+n | Bar code width magnification setting |

*1: Makes write/erase to the nonvolatile memory.

Contact

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|--|--|---|--|
| <p>Japan FUJITSU COMPONENT LIMITED Shinagawa Seaside Park Tower 12-4, Higashi-shinagawa 4-chome, Tokyo 140 0002, Japan Tel: (81-3) 3450-1682 Fax: (81-3) 3474-2385 Email: fcl-contact@cs.jp.fujitsu.com Web: www.fujitsu.com/jp/group/fcl/en/</p> | <p>Europe FUJITSU COMPONENTS EUROPE B.V. Diamantlaan 25 2132 WV Hoofddorp Netherlands Tel: (31-23) 5560910 Fax: (31-23) 5560950 Email: info@fceu.fujitsu.com Web: emea.fujitsu.com/components/</p> | <p>China FUJITSU ELECTRONIC COMPONENTS (SHANGHAI) CO., LTD. Unit 4306, InterContinental Center 100 Yu Tong Road, Shanghai 200070, China Tel: (86 21) 3253 0998 / Fax: (86 21) 3253 0997 Email: fcsh@cn.fujitsu.com www.fujitsu.com/cn/products/devices/ components/</p> | <p>Korea FUJITSU COMPONENTS KOREA, LTD. Alpha Tower #403, 645 Sampyeong-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, 13524 Korea Tel: (82 31) 708-7108 Fax: (82 31) 709-7108 Email: fcal@fcal.fujitsu.com www.fujitsu.com/sg/products/ devices/components/</p> |
| <p>North and South America FUJITSU COMPONENTS AMERICA, INC. 2290 North First Street, Suite 212 San Jose, CA 95131 U.S.A. Tel: (1-408) 745-4900 Fax: (1-408) 745-4970 Email: components@us.fujitsu.com Web: https://us.fujitsu.com/components/</p> | <p>Asia Pacific FUJITSU COMPONENTS ASIA, Ltd. 102E Pasir Panjang Road #01-01 Citilink Warehouse Complex, Singapore 118529 Tel: (65) 6375-8560 / Fax: (65) 6273-3021 Email: fcal@fcal.fujitsu.com www.fujitsu.com/sg/products/devices/ components/</p> | <p>Hong Kong FUJITSU COMPONENTS HONG KONG Co., Ltd. Room 06, 28/F, Greenfield Tower, Concordia Plaza, No.1 Science Museum Road, Tsim Sha Tsui East, Kowloon, Hong Kong Tel: (852) 2881 8495 Fax: (852) 2894 9512 Email: fcal@fcal.fujitsu.com www.fujitsu.com/sg/products/devices/ components/</p> | |

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