

*DISCONTINUED*

## BATTERY DRIVE, FTP-60D Series 2" HIGH SPEED THERMAL PRINTER

### FTP-62DMCL101/111, Easy Loading Method

#### ■ OVERVIEW

The easy loading FTP-60D MCL Series is ultra compact high speed, battery driven thermal printer, printing on 2-inch wide paper (58mm) where platens are removable. Our original platen removal mechanism improved paper loading and maintenance.

The FTP-60D MCL series can be used for a variety of applications, such as portable terminals, POS, banking terminals, and measurement and medical equipment.



FTP-62D series

#### ■ HIGHLIGHTS

- **Easy loading type**  
Our unique platen removal mechanism improved paper loading and maintenance
- **Ultra compact**  
Height 19 mm, width 69.5 mm, depth 46 mm for the 2 inch model
- **High speed printing**  
Print at 100mm/s (at 9.5VDC) maximum (FTP-62DMCL101)  
Print at 75mm/s (at 7.2 VDC) maximum (FTP-62DMCL111)
- **High resolution printing**  
8 dots/mm of resolution printing is possible
- **RoHS compliant**

## ■ PART NUMBERS

| Item                             |             | Part number                                                                                                                |
|----------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Printers                         |             | FTP-62DMCL101 (FPC length 38mm) without platen open detect switch<br>FTP-62DMCL111 (FPC length 65mm) without platen switch |
| LSI for driving                  |             | FTP-62DCUxxx                                                                                                               |
| Interface boards                 | Serial      | FTP-62DDSLxxx (RS 232C)                                                                                                    |
|                                  | USB         | FTP-62DDSLxxx (V2.0)                                                                                                       |
|                                  | USB/RS-232C | FTP-62DDS001-R                                                                                                             |
| Interface cables                 | Parallel    | FTP-628Y202                                                                                                                |
|                                  | Serial      | FTP-628Y302                                                                                                                |
|                                  | USB         | FTP-628Y301                                                                                                                |
| Power cable (head, motor, logic) |             | FTP-628Y402                                                                                                                |
| Platen replacement               |             | FTP-62DMP0221                                                                                                              |

## ■ SPECIFICATIONS

| Item                                           |        | Specifications                                                                                                                                                                                              |
|------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part number                                    |        | FTP-62DMCL101/111                                                                                                                                                                                           |
| Printing method                                |        | Thermal-line dot method                                                                                                                                                                                     |
| Dot structure                                  |        | 384 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                        |        | 48 mm                                                                                                                                                                                                       |
| Number of columns                              |        | ANK 32 columns/line (maximum 12x 24 dot font)                                                                                                                                                               |
| Paper width                                    |        | 58 mm <sup>+0</sup> <sub>-1</sub>                                                                                                                                                                           |
| Paper thickness                                |        | 60 to 85 μm (some paper in this range may not be used because of paper characteristics)                                                                                                                     |
| Printing Speed                                 | MCL101 | Maximum 100mm/sec. (800 dot line/sec.) at 9.5V                                                                                                                                                              |
|                                                | MCL111 | Maximum 75mm/sec. (600 dot line/sec.) at 7.2V                                                                                                                                                               |
| Character types                                |        | Alphanumeric, katakana: 159 types<br>International and special characters: 195 types<br>JIS Kanji level 1, level 2, non-Kanji (supported only when Kanji CG is mounted): about 6800 types                   |
| Character, dimensions (H×W), number of columns |        | 12 × 24 dots, (1.5 × 3.0mm), 32 columns: ANK<br>24 × 24 dots, (3.0 × 3.0mm), 16 columns: ANK, Kanji<br>8 × 16 dots, (1.0 × 2.0 mm), 48 columns: ANK<br>16 × 16 dots, (2.0 × 2.0 mm), 24 columns: ANK, Kanji |

## ■ SPECIFICATIONS

| Item                                |                            |            | Specification                                                                                                                                           |                                                                                                         |
|-------------------------------------|----------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|                                     |                            |            | FTP-62DMCL101/111                                                                                                                                       |                                                                                                         |
| Interface                           |                            |            | Conforms to RS232C / USB                                                                                                                                |                                                                                                         |
| Operating Voltage                   | For print head             | MCL101/111 | 4.2 VDC to 9.5 V, average current 0.87A (0.93),peak value<br>Printing ratio: 12.5%, printing speed 75mm/sec. at 7.2 V                                   |                                                                                                         |
|                                     | For motor                  | MCL101/111 | 4.2 to 9.5VDC, 1A maximum                                                                                                                               |                                                                                                         |
|                                     | For logic                  | MCL101/111 | 3.0 to 5.25VDC, 0.1 A maximum                                                                                                                           |                                                                                                         |
| Dimensions                          | Printer mechanism          |            | 69.5 x 46 x 19mm (WxDxH)                                                                                                                                |                                                                                                         |
|                                     | Interface board            |            | 40 x 41mm                                                                                                                                               |                                                                                                         |
| Weight                              | Printer mechanism          |            | Approximately 29 g                                                                                                                                      |                                                                                                         |
|                                     | Interface board            |            | TBA                                                                                                                                                     |                                                                                                         |
| Head life                           |                            |            | Pulse resistance: 100 million pulses/dot (under our standard conditions). Abrasion resistance: paper traveling distance 50km (print ratio: 25% or less) |                                                                                                         |
| 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-interrupter                                                                                                                           |                                                                                                         |
| Recommended thermal sensitive paper |                            |            | High sensitive paper:                                                                                                                                   | TF60KS-E4 (Nippon Paper)                                                                                |
|                                     |                            |            | Standard paper:                                                                                                                                         | TK50KS-E (Nippon Paper)<br>PD150R (Oji Paper)<br>FTP-020P0701 (58mm)                                    |
|                                     |                            |            | Medium life storage paper:                                                                                                                              | TK60KS-F1 (Nippon Paper)<br>FTP-020P0704 (58mm)<br>PD170R (Oji Paper)<br>P220VBB-1 (Mitsubishi Paper)   |
|                                     |                            |            | Long life storage paper:                                                                                                                                | PD160R-N (Oji Paper)<br>AFP-235 (Mitsubishi Paper)<br>TP50KJ-R (Nippon Paper)<br>HA220AA (Nippon Paper) |

\*+5°C to +40°C printing density assurance range (-25 to 70°C capability)

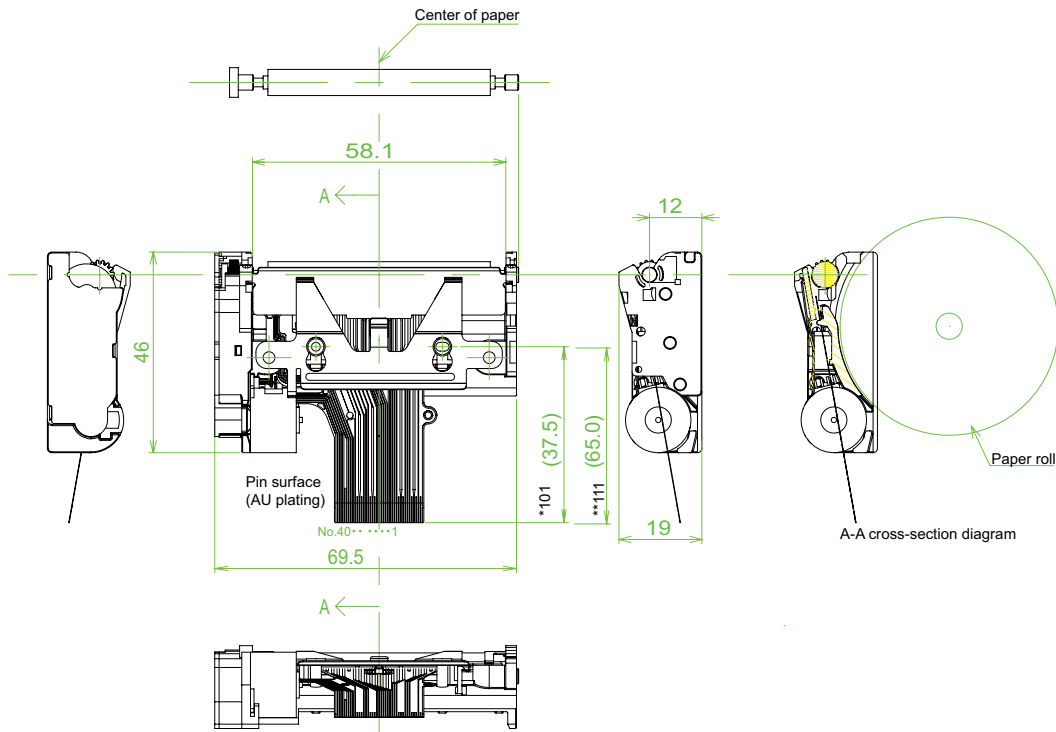
## ■ FUNCTION

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

## ■ DIMENSIONS

### 1. Printer mechanism: 2- inch

FTP-62DMCL101\*/111\*\*



Unit: mm

Note: 1. Dimensions are nominal value (tolerance  $\pm 0.5$  unless otherwise specified).  
2. Dimension listed in ( ) is for reference

## ■ PRINTER CONNECTOR (FLEXIBLE PT BOARD) PIN ARRAYS

### FTP-62DMCL101/111

Thermal head, control circuit side connector: 54104-4031 Molex or equivalent product

| No. | Symbol             | I/O | Signal Name                      |
|-----|--------------------|-----|----------------------------------|
| 1   | N.C.               | -   | No connection                    |
| 2   | N.C.               | -   |                                  |
| 3   | VH                 | I   | Head drive power                 |
| 4   | VH                 | I   |                                  |
| 5   | VH                 | I   |                                  |
| 6   | VH                 | I   |                                  |
| 7   | DI                 | I   | Data in                          |
| 8   | CLK                | I   | Clock                            |
| 9   | GND                | -   | Head ground                      |
| 10  | GND                | -   |                                  |
| 11  | GND                | -   |                                  |
| 12  | GND                | -   |                                  |
| 13  | STB6               | I   | Strobe 6                         |
| 14  | STB5               | I   | Strobe 5                         |
| 15  | STB4               | I   | Strobe 4                         |
| 16  | Vdd                | I   | Logic power                      |
| 17  | TM                 | O   | Thermistor                       |
| 18  | TM                 | O   |                                  |
| 19  | STB3               | I   | Strobe 3                         |
| 20  | STB2               | I   | Strobe 2                         |
| 21  | STB1               | I   | Strobe 1                         |
| 23  | GND                | -   | Head ground                      |
| 24  | GND                | -   |                                  |
| 25  | GND                | -   |                                  |
| 26  | /LAT               | I   | / Data latch                     |
| 27  | DO                 | O   | Data out                         |
| 28  | VH                 | I   | Head drive power                 |
| 29  | VH                 | I   |                                  |
| 30  | VH                 | I   |                                  |
| 31  | VH                 | I   |                                  |
| 32  | N.C.               | -   | No connection                    |
| 33  | PHK                | -   | Cathode for photo interrupter    |
| 34  | VSEN               | I   | Paper sensor power               |
| 35  | PHE                | O   | Emittor for photo interrupter    |
| 36  | N.C.               | -   | No connection                    |
| 37  | MT /A              | I   | Excitation signal A              |
| 38  | MT $\overline{/A}$ | I   | Excitation signal $\overline{A}$ |
| 39  | MT /B              | I   | Excitation signal B              |
| 40  | MT $\overline{/B}$ | I   | Excitation signal $\overline{B}$ |

Do not plug or unplug the FPC when power is on.

---

## Contact

### 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/

### 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: http://us.fujitsu.com/components/

### 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/

### 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@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### 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: fcal@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### 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@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### 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@sg.fujitsu.com  
www.fujitsu.com/sg/products/  
devices/components/

---

## Copyright

All trademarks or registered trademarks are the property of their respective owners. Fujitsu Components America or its affiliates do not warrant that the content of datasheet is error free. In a continuing effort to improve our products Fujitsu Components America, Inc. or its affiliates reserve the right to change specifications/datasheets without prior notice. Copyright ©2018 Fujitsu Components America, Inc. All rights reserved. Revised March 28, 2018.

---