

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 Synchronous method Handshake Parity Input/output level:	9.6k, 19.2k, 38.4k, 115.2k, 230.4k bps** Asynchronous RTS (DTR) / CTS (DSR) control, XON/XOFF control Non, even, odd** RS-232C level
USB V2.0	Data speed USB interface class Endpoint	USB ver 2.0 full speed (12Mbps max.) 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

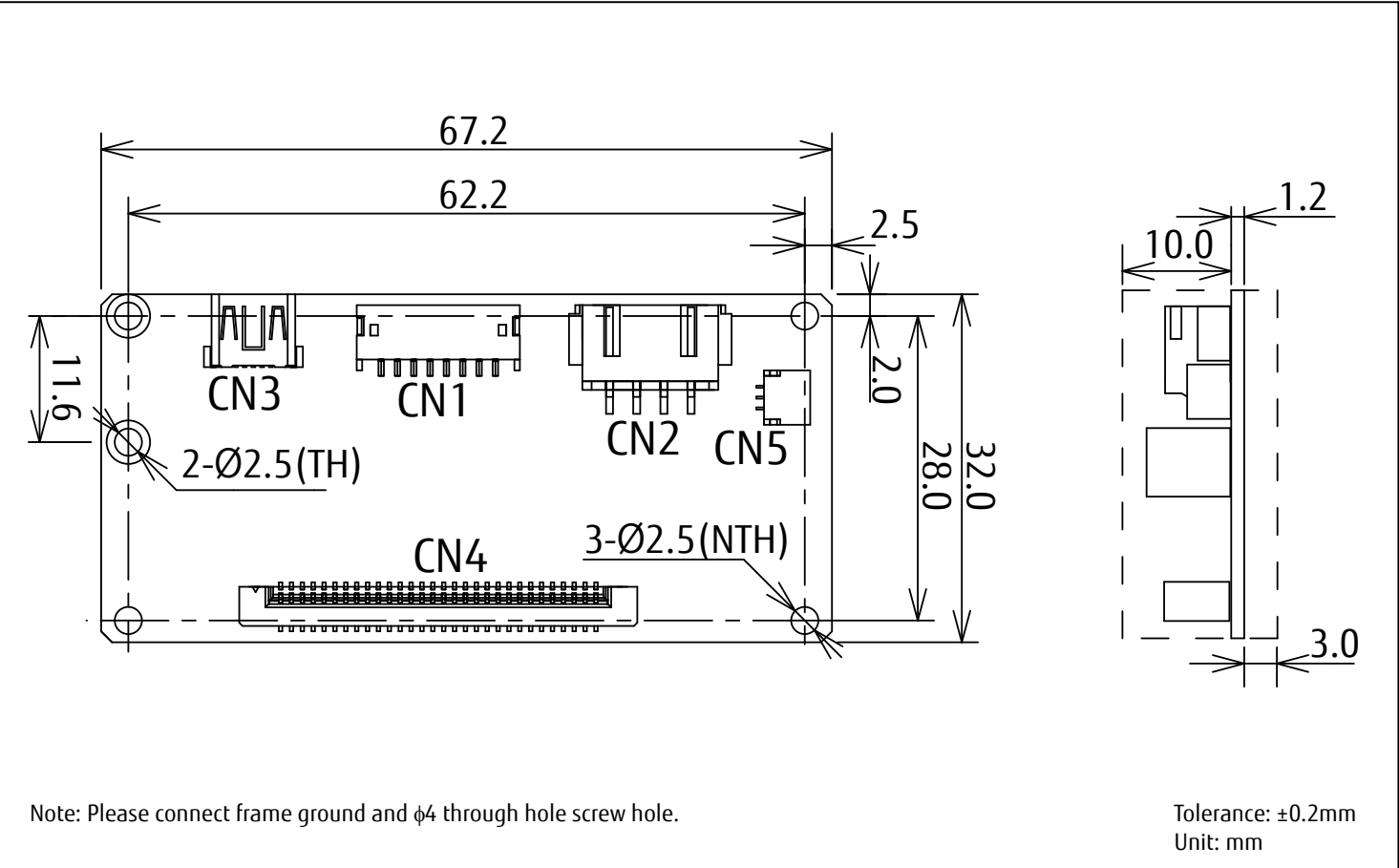
1.2 Print/paper feed specifications

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#28 to 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

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/	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/	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/	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/
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/	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/	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/	

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 ©2019 Fujitsu Components America, Inc. All rights reserved. Revised July 26, 2019.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[FCL Components:](#)

[FTP-628DSL312-R](#) [FTP-628DSL311-R](#)