FUJITSU THE POSSIBILITIES ARE INFINITE

24V DRIVE, FTP-609 SERIES
ULTRA HIGH SPEED (200mm/s)
# 2" TYPE MECHANISM (Cutter option)

FTP-629MCL103/383-R

■ OVERVIEW

The FTP-609MCL Series thermal printer (driven by 24VDC) provides ultra-high speed printing (200mm/s) for 2-inch and 3-inch wide paper.

This series is suitable for a variety of applications, such as POS/ECR, kiosk terminals, ticket machines, label printers, banking machines, measuring devices, medical equipment, etc.

■ HIGHLIGHTS

- **Ultra high speed printing**
  It can print at 200 mm/s (1600 dotlines/s) maximum by using Fujitsu Components' unique head drive control.

- **High resolution**
  8 dots/mm head provides clear print out.

- **ELM (Easy Loading Mechanism) with lock type**
  Fujitsu Components' unique platen release mechanism allows easy paper setting and easy head maintenance.

- **Auto Cutter**
  Printer with auto cutter (full cut/ partial cut) is available. It can be mounted on top of the mechanism.

- **Multi-featuring diecast frame**
  By application of multi-featuring diecast frame, continous print by function of heat-sink, high ESD stand by function of earth frame and shock/vibration stand by function of solid frame are valid.

- **Compact size**
  Depth: 40.5mm, width: 82.2mm, height: 20.5mm for the 2-inch model. The 3-inch model has a width of 104.2mm

- **RoHS compliant**
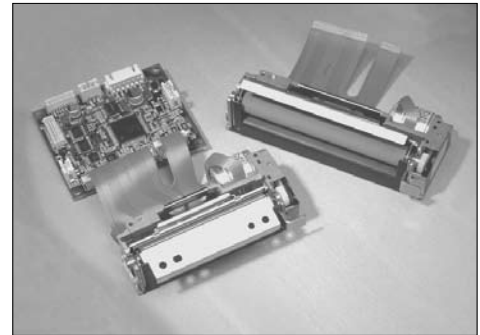
FTP-6x9MCL103R with FTP-629DCL014R

■ PART NUMBERS

Name		Part Number		
Printer mechanism	Detachable platen	FTP-629MCL103R	FTP-629MCL105R	FTP-629MCL103R
Mechanism with cutter	Detachable platen	FTP-629MCL383#01/#02-R	TBA	FTP-629MCL383#01/#02-R
LSI		FTP-629CU101R	FTP-629SR201	FTP-629CU301R
Interface board	Parallel	FTP-629DCL014R	FTP-629DSL181R*	
	Serial (RS232C)	FTP-629DSL034R	FTP-629DSL181R*	FTP-629DSL301R
	USB	---	FTP-629DSL112R	FTP-629DSL301R
Thermal head cable extension		---	FTP-629Y001	---
Interface cable (board to mechanism)	Parallel	FTP-628Y202		---
	Serial	FTP-628Y302	FTP-629Y302	
	USB	---	FTP-629Y301	
Power supply cable	Logic	FTP-629Y401	---	---
	Head, motor	FTP-629Y601		FTP-629Y602

*1: #01 is for full cut, #02 is for partial cut   *2: Interface is selectable by DIP switch

■ GENERAL SPECIFICATIONS

Item		Specifications		
Part number		FTP-629MCL103/105-R		FTP-629MCL383#01/#02-R
Printing method		Thermal sensitive line dot method		
Dot structure		432 dots/line		
Dot pitch (horizontal)		0.125mm (8dots/mm) - Dot density		
Dot ptich (vertical)		0.125mm (8dots/mm) - Line feed pitch		
Effective printing area		54 mm		
Number of columns		ANK 36 columns/line (12 x 24 dot font)		
Paper width		58mm +0/-1		
Paper thickness		60 to 150µm (there may be exceptions)		60 to 100µm
Cutting type		---		full or partial
Printing speed	FTP-629DCL/DSL series	80mm/sec. (640 dot lines/sec.) line mode 200mm/sec. (1600 dot lines/sec.) image mode		
	FTP-629DSL100 series FTP-629DSL300 series	125mm/sec. (1000 dot lines/sec.) line mode 200mm/sec. (1600 dot lines/sec.) page mode		
Character types	Alphanumeric, Kana: International JIS Kanji (Kanji CG loaded board) OCRI OCRIII OCRIV Extended numeric	159 types 195 types about 6,800 types		159 types 195 types about 6,800 types 103 types 23 types 103 types 11 types
Character, dimensions (WxH), number of columns	24x12 dots, (3.0x1.5mm) 16x16 dots, (2.0x2.0mm) 24x24 dots, (3.0x3.0mm) 8x16 dots, (1.0x4.0mm)	36 columns 18 columns 54 columns 27 columns		18 columns, OCRI 18 columns, OCRIII 12 columns, OCRIV 18 columns, extended numeric
Interface standard		Centronics / RS232C / USB		Serial/USB

(Continued)

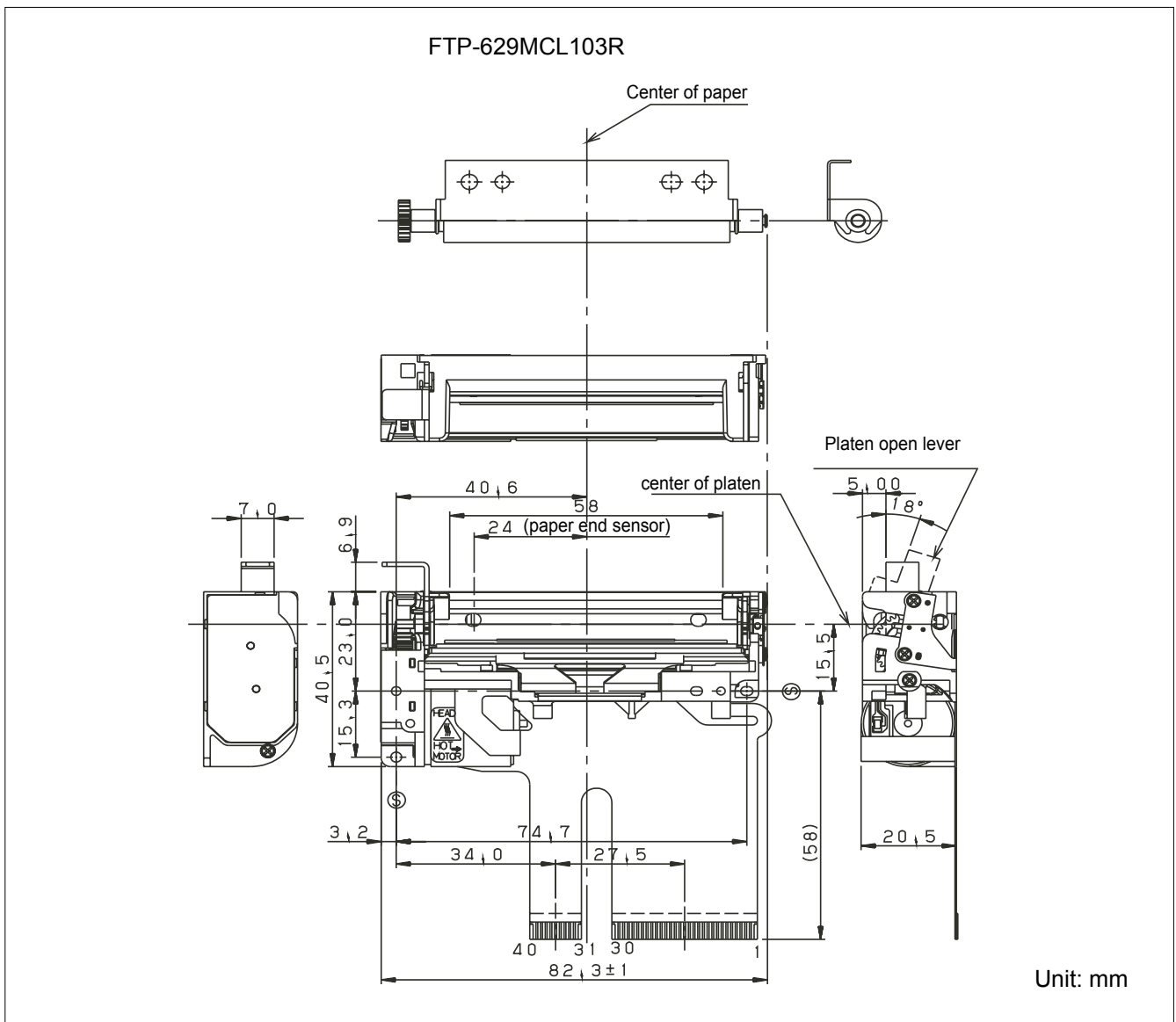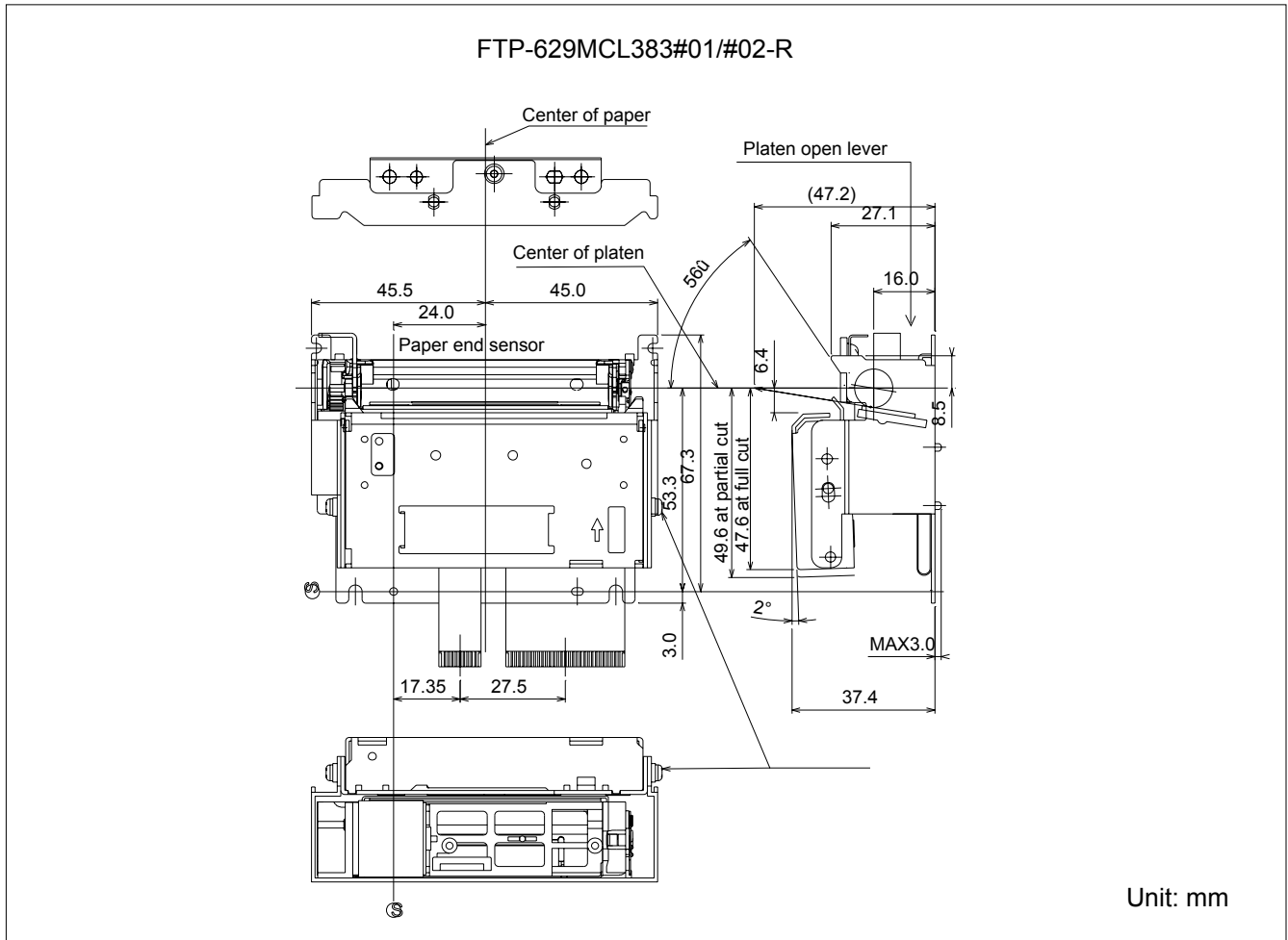| Item		Specifications	
Part number		FTP-629MCL103/105-R	FTP-629MCL383#01/#02-R
Power supply	For head	24 VDC ±5%, 1.4A (3A) (24V, 25% printing ratio)	
	For printer motor	24 VDC ±5% 1A maximum	
	For cutter motor	---	24 VDC ±5% 1A maximum
	For logic	5 VDC ±5% 0.2A maximum	
Dimension W x D x H	Printer mechanism	82.5 x 40.5 x 20.5mm	---
	Printer mechanism with cutter	---	90.5 x 70.3 x 37.4mm
	Interface board (standard speed)	70 x 60 x 24mm	
	Interface board (medium speed)	95.1 x 73.6 x 18.6mm	
	Interface board (high speed)	77 x 50 x 21.5mm	
Weight	Printer mechanism	Approximately 110g	---
	Printer mechanism with cutter	---	Approximately 300g
	Interface board (standard speed)	Approximately 30g	
	Interface board (medium speed)	Approximately 45 g	
	Interface board (high speed)	Approximately 22g	
Life	Head	Pulse durability: 1×10^8 pulse/dot (using Fujitsu's standard driving method) Wear resistance: 100km (at 12.5% print ratio)	
	Cutter	---	500,000 cuts minimum
	Platen	5,000 times (open/close)	
Environmental conditions	Operating temperature	-25ºC to +70ºC (guarantee)	0ºC to +50ºC
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	-40ºC to +85ºC	-20ºC to +60ºC
	Storage humidity	5 to 95% RH (no condensation)	
Detection	Head temperature	By thermistor	
	Paper out/Mark detect	By photointerruptor	
	Head release	By slide switch	
Recommended thermal sensitive paper	High sensitive paper	TF50KS-E4 (Nippon paper)	
	Standard paper	TF60KS-E2 (Nippon paper), FTP-020P0104 (58mm) PD150R (Oji paper), FTP-020P0701 (58mm)	
	Medium life storage paper	TF60KS-F1 (Nippon paper), FTP-020P0102 (58mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper) PD160R-N (Oji paper)	
	Long life storage paper	AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper)	

■ FUNCTION

|	ITEM			ITEM
1.	Test printing		8.	Cutter trouble detection
2.	Paper-out detection		9.	Motor power save
3.	Paper near end detection		10.	Mark detection
4.	Head-up detection		11.	MCU trouble detection
5.	Abnormal temp. of thermal head detection		12.	Power on/off sequence protection
6.	Blown fuse detection		13.	Motor protection
7.	Abnormal voltage detection of head		14.	Hardware timer

■ DIMENSIONS

1. Printer mechanism

FTP-629MCL103R

Unit: mm

2. Printer mechanism

FTP-629MCL383#01/#02-R

Center of paper

Platen open lever

(47.2)

27.1

Center of platen

16.0

45.5

45.0

560

24.0

Paper end sensor

6.4

8.5

67.3

53.3

49.6 at partial cut

47.6 at full cut

2°

3.0

MAX3.0

17.35

27.5

37.4

Unit: mm

Interface Board - FTP-629DCL/DSL0XX-R
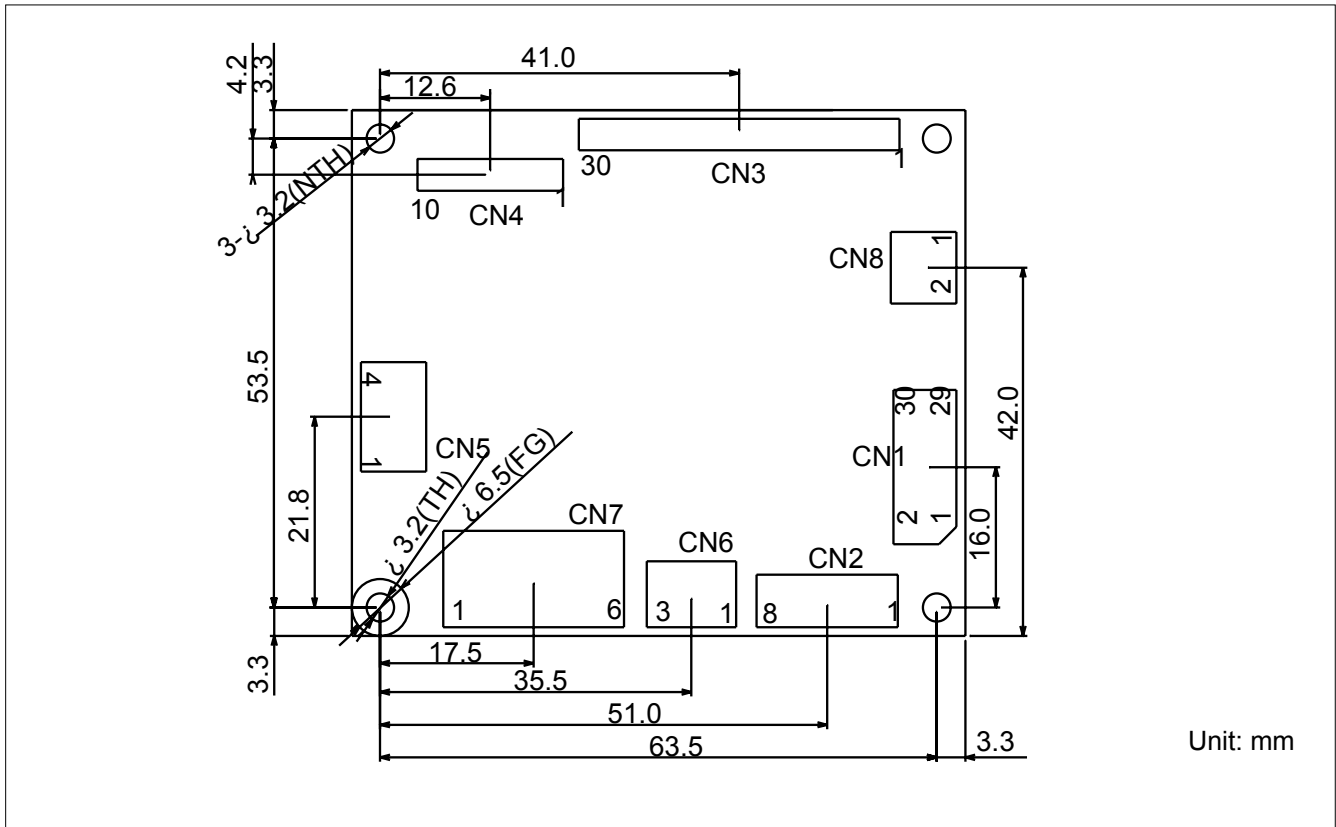
Connectors on Control Board - FTP-629DCL/DSL0XX-R

No.	Name	Function
CN1	Centro I/F Connector	Connection for Centronics Interface
CN2	RS-232C I/F Connector	Connection for RS-232C Interface
CN3	Thermal Head Connector	Connection for Thermal Head (FPC)
CN4	Printer Motor Connector	Connection for Printer Motor (FPC)
CN5	Cutter Connector	Connection for Paper Cutter
CN6	Logic Power Connector	Connection for +5V Power Supply
CN7	Head Motor Power Connector	Connection for +24V Power Supply
CN8	Near End Sensor Connector	Connection for Near End Sensor

3. Interface Board - FTP-629DCL/DSL100-R Series

Unit: mm
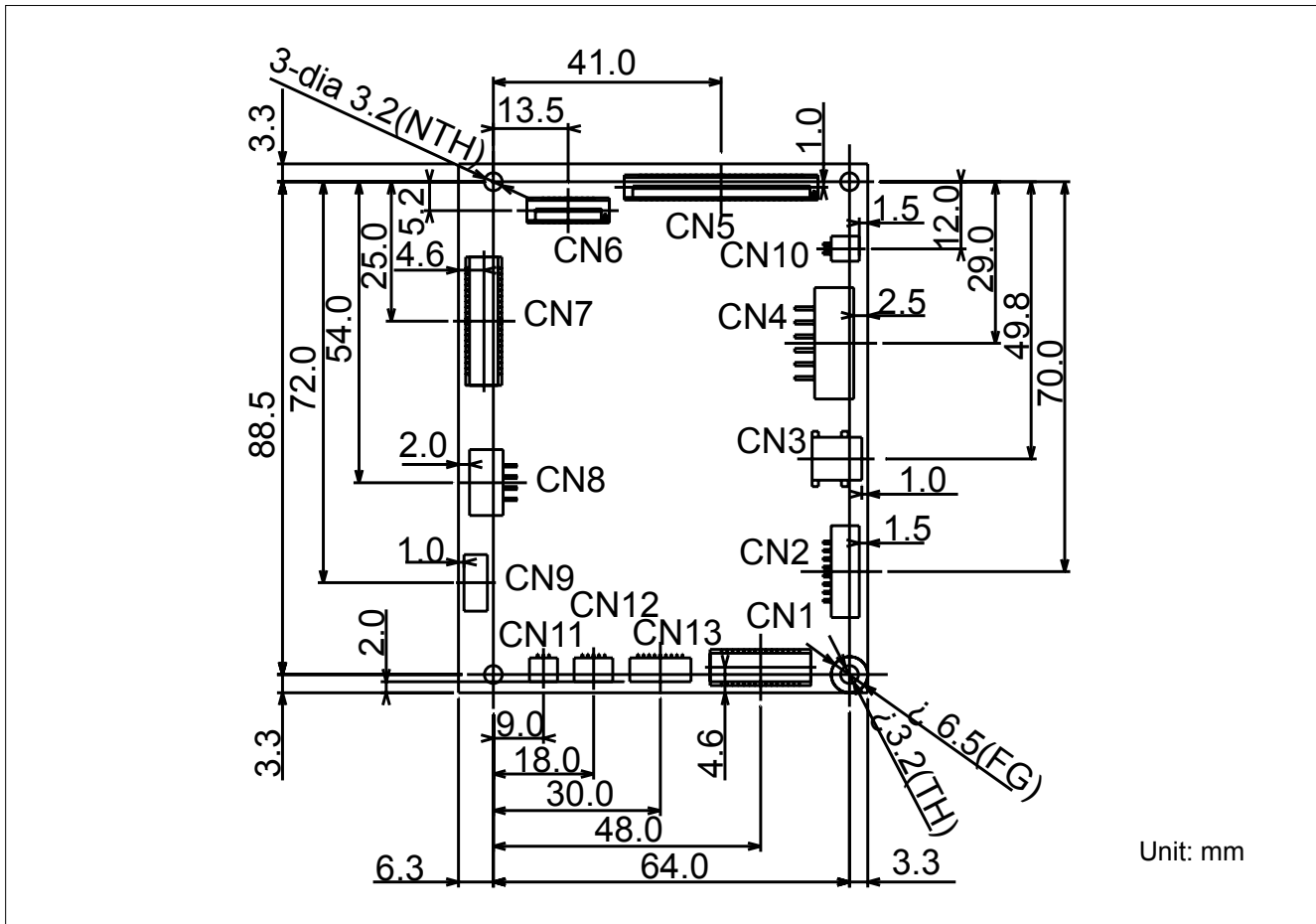
### Connectors on Control Board - FTP-629DCL/DSL100-R Series

No.	Name	Function	Remark
CN1	Centro I/F Connector	Connection for Centronics Interface	
CN2	RS-232C I/F Connector	Connection for RS-232C Interface	
CN3	USB I/F Connector	Connection for USB Interface	
CN4	Power Connector	Connection for +24V Power Supply	
CN5	Thermal Head Connector	Connection for Thermal Head (FPC)	*1
CN6	Printer Motor Connector	Connection for Printer Motor (FPC)	*1
CN7	Head/Motor Connector	Connection for Thermal Head/Printer Motor	*1
CN8	Cutter Connector	Connection for Paper Cutter	
CN9	Conveyance Motor Connector	Connection for Conveyance Motor	
CN10	Near End Sensor Connector	Connection for Near End Sensor	
CN12	Mecha-Tilte/Mark Sensor Connector	Connection for Mecha-Tilte/Mark Sensor	
CN13	Conveyance Motor Connector	Connection for Conveyance Motor	

*1: When CN5 and CN6 are mounted, CN7 is not mounted. When CN7 is mounted, CN5 and CN6 are not mounted.

Interface boards for FTP-629DSL300-R Series

■ EXTERNAL DIMENSION SPECIFICATIONS

1. External Dimension Chart of the Control Board
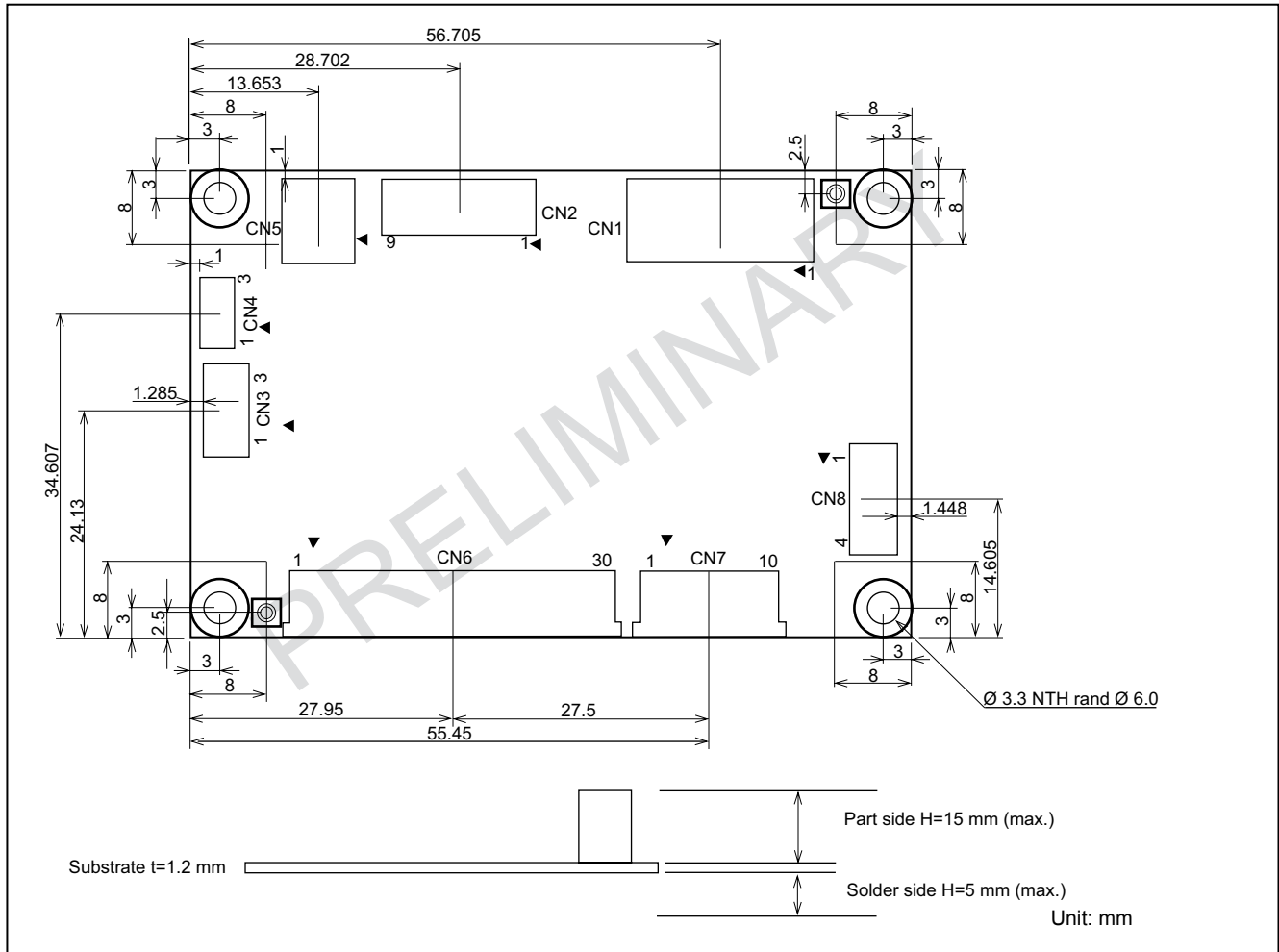
2. Connector Types on Control Board

No.	Name	Function	Remarks
CN1	Power connector	To connect +24V and +5V power supply	-
CN2	Connector for RS-232C interface control signal connection	To connect RS-232C interface and control signal	depends on models
CN3	Near end switch connector	To connect Near End detection switch	-
CN4	Reserved connector	-	
CN5	USB interface connector	To connect USB interfaces	depends on models
CN6	Head connector	To connect the head	
CN7	Transport motor connector	To connect the transport	
CN8	Cutter connector	To connect the cutter	depends on models

■ CONNECTOR PIN ASSIGNMENT OF PRINTER MECHANISM (FPC)

1. Thermal head control circuit side (CN3)

Part number : 52610-3090 (Molex) or equivalent

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	SW	O	Platen open switch	2	SW	-	Platen open switch
3	VH	-	Power for thermal head	4	VH	-	Power for thermal head
5	VH	-	Power for thermal head	6	VH	-	Power for thermal head
7	DI	I	Data in	8	$\overline{STB2}$	I	Print enable 2
9	$\overline{STB3}$	I	Print enable 3	10	VDD	-	Power for logic
11	TM	-	Thermistor	12	GND	-	Head GND
13	GND	-	Head GND	14	GND	-	Head GND
15	GND	-	Head GND	16	GND	-	Head GND
17	GND	-	Head GND	18	GND	-	Head GND
19	GND	-	Head GND	20	GND	-	Head GND
21	TH	O	Thermistor	22	$\overline{STB1}$	I	Print enable 1
23	NC	I	Not connected	24	$\overline{LAT}$	I	Print data latch
25	CLK	I	Clock	26	DO	O	Data output
27	VH	-	Power for thermal head	28	VH	-	Power for thermal head
29	VH	-	Power for thermal head	30	VH	-	Power for thermal head

2. Motor, Sensor (CN4)

Connector on circuit side : 52610-1090 (Molex) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	NC	-	Not connected	2	TM	O	Motor temperature sensor
3	TM	-	Motor temperature sensor	4	MT/A	I/O	Motor coil excitation /A
5	MTA	I/O	Motor coil excitation A	6	MT/B	I/O	Motor coil excitation /B
7	MTB	I/O	Motor coil excitation B	8	PHK	-	Paper out sensor cathode
9	VSEN	-	Power for paper sensor	10	$\overline{PHE}$	O	Paper out sensor emittor

3. Cutter (CN5)

Connector type: B4B-PH-SM3-TB (J.S.T.) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	SW1	O	Cutter home position switch	2	SW2	O	Cutter home position switch
3	M+	I/O	Cutter motor drive	4	M-	I/O	Cutter motor drive

■ INTERFACE, COMMAND, OPTIONS

Please refer to the FTP-629DCL/DSL or FTP-629DCL/DSL series datasheet.

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