FUJITSU

24V DRIVE, RECEIPT PRINTER MICRO UNIT
2” HIGH SPEED THERMAL PRINTER

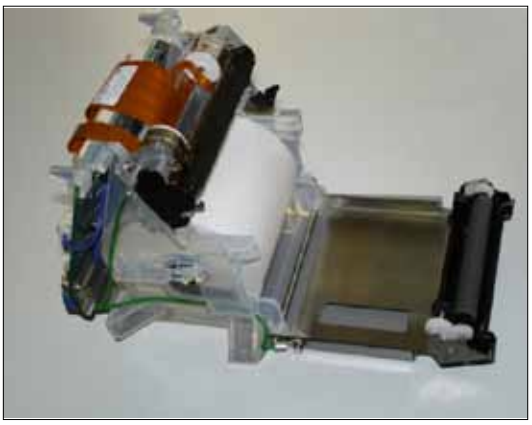
FTP-627USL401/402

■ OVERVIEW

The FTP-627 USL Series are 24V driven high-speed printers with a ultra low profile auto cutter and long life.
The FTP-627 USL Series can be used for a variety of applications, such as POS terminals, ticket vending machines, label printers, banking terminals, and measurement and medical equipment.



FTP-627USL401 platen/cutter closed



FTP-627USL401 platen/cutter open

■ HIGHLIGHTS

- **Ultra low profile**
  Height 108 mm, width 100 mm, depth 94 mm
- **High speed printing**
  It can print at 100 mm/s (800 dotlines/s) maximum by using Fujitsu's unique head drive control.
- Windows® 2000/XP, Linux and OPOS drivers
- **Auto Cutter**
  Long life and high reliable guilotine with dedicated motor.
- **Easy paper loading**
  Our lever platen release mechanism allows a wide paper route, so 60 mm diameter paper can be easily inserted.
- **Multifunctional die-cast frame**
  Wide operating temperature range, long continuous printing, high ESD absorbtion and discharge of static electricity vibration and shock resistant.
- **Barcodes**
  Prints standard, extended and 2-D types
- **RoHS compliant**

■ PART NUMBERS

		Part Number	Power
Printer mechanism with cutter and board		FTP-627USL401 (USB interface)	5V / 24V
		FTP-627USL402 (Serial interface)	5V / 24V
		FTP-627USL410 (USB/Serial)	24V only
			Length
Interface cables	Serial (RS-232)	FTP-628Y302	500mm
	USB (V.1.1)	FTP-629Y301	600mm
Power cables	Logic	FTP-629Y401	300mm
	Head, motor	FTP-629Y601	300mm

* Interface board is the : FTP-627DSL601 (Serial/ USB), FTP-627DSL603 (USB), FTP-627DSL605 (Serial)

■ SPECIFICATIONS

Item		Specifications
Part number		FTP-627USL401/402
Printing method		Thermal-line dot method
Dot structure		432 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		54 mm
Number of columns		ANK 36 columns/line (maximum 12 x 24 dot font)
Paper width		58 mm
Paper diameter		60 mm
Paper thickness		60 to 90 μ m (some paper in this range may not be used because of paper characteristics)
Printing Speed		Maximum 100mm/sec. (800 dot line/sec.) at 24V, 25^{O}C
Character types		Alphanumeric, kana: 159 types International characters: 195 types JIS Kanji (Kanji CG loaded board): about 6800 types
Character, dimensions (W×H), number of columns		12 × 24 dots, (1.5 × 3.0 mm), 36 columns: ANK 24 × 24 dots, (3.0 × 3.0 mm), 18 columns: ANK 8 × 16 dots, (1.0 × 2.0 mm), 54 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 27 columns: ANK
Barcodes	Standard	UPC-A, UPC-E, JAN (EAN) 13, JAN (EAN) 8, Code 39, 1TF CODABAR
	Extended	CODE128
	2-D	QR, Maxi , PDF417
Printing mode		Page mode, line mode

■ SPECIFICATIONS

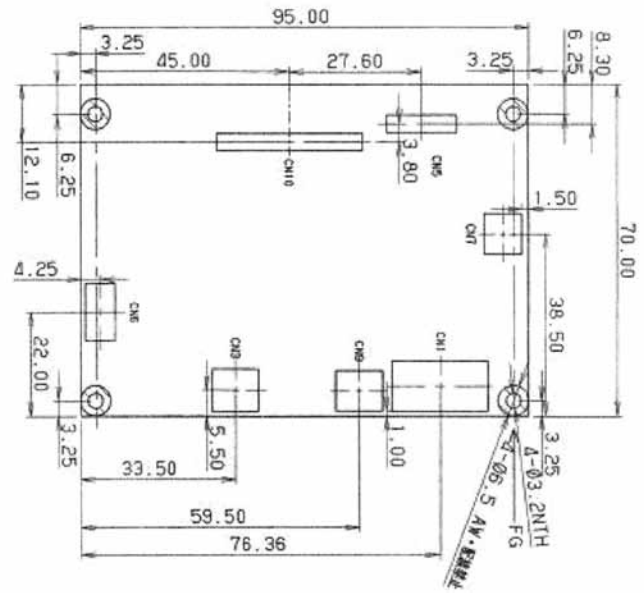
Item		Specification	
Iterface		Conforms to USB/Serial	
Power supply	For print head	24 VDC average current, 0.5A (0.9A peak) (print ratio: 12.5%, print speed 100mm/sec.)	
	For motor	24 VDC ±5%, 0.9 A maximum	
	For cutter	24 VDC ±5%, 1.1 A maximum	
	For logic	4.75 to 5.25VDC, 0.2 A maximum	
Dimensions	Mechanism and board	100 x 94 x 108 mm (WxDxH)	
Weight	Mechanism and board	Approximately 310g	
Life	Head	Pulse durability: 50 million pulses/dot (under our standard conditions); Abrasion resistance: paper traveling distance 50km (print ratio: 12.5% or less).	
	Cutter	500,000 cuts (20 cuts/minute)	
	Platen	5,000 (open/close)	
MTBF	Mechanism	3,000 hours	
	Circuit board	500,000 hours	
Operating environment	Operating temperature*	0ºC to +50ºC	
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	-20ºC to +60ºC (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-interruptor	
	Platen release	Detected by sliding switch	
Recommended thermal sensitive paper		High sensitive paper	TF50KS-E4 (Nippon paper)
		Standard paper	TF60KS-E (Nippon paper), FTP-020PU001 (58mm) PD105R (Oji paper) FTP-020P0701 (58mm)
		Medium life paper	TF60KS-F1 (Nippon paper) FTP-020P0102 (58mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper)
		Long life paper	PD160R (Oji paper) AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper)

*+5˚C to +40˚C printing density assurance range.

■ FUNCTION OF INTERFACE BOARD

	Item		Item
1.	Test print function	8.	Cutter trouble detect
2.	Paper out detection	9.	Motor power saving function
3.	Paper near end detection	10.	Mark detection function
4.	Platen open detection	11.	MCU operation abnormality detection
5.	Thermal head temperature abnormality detection	12.	Power ON/OFF sequence protection
6.	Blow-out fuse detection	13.	Motor over-current protection
7.	Head voltage abnormality detection	14.	Hardware timer

■ INTERFACE, COMMAND, OPTIONS



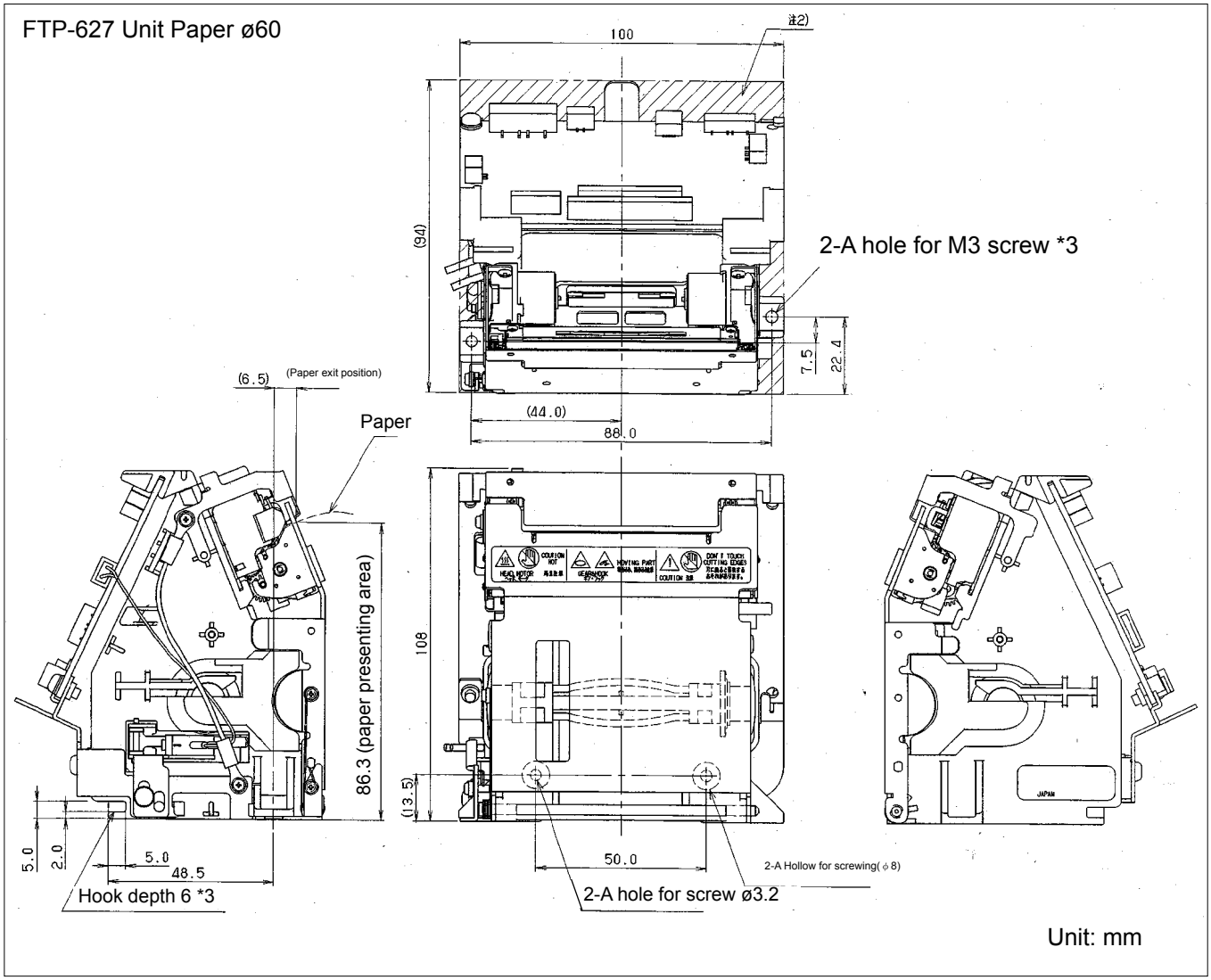
Connectors on Control Board

	Name	Functions	Remarks	Note
CN1	+24V power supply connector	Connection for +24V power supply		
CN2	RS-232C	Connection for serial interface		*2
CN3	USB I/F connector	Connection for USB interface		*2
CN4	-	-		
CN5	Cutter connector	Connection for paper cutter		
CN6	Operation panel connector	Connection for operation panel		*1
CN7	Near end sensor connector	Connection for near end switch		
CN8	-	-		
CN9	Logic power connector	Connection for +5V power Supply		*1
CN10	Head/motor connector	Connection for thermal head & paper feed motor	2-inch, 24 pin	

Note: *1: Option
*2: Depends on P/N

■ DIMENSIONS

1. Printer mechanism



Note: 1. The cable size and FPC are not included in this drawing.
2. Do not mount anything in the shaded area except the printer.
3. Connect to the body with 2 screws at 2 hooks.

■ COMMANDS

Command	Contents
HT	Moves print position to the next tab.
LF	Line feed.
FF	Feeds forms (new page).
ESC FF	Data printing in page printing mode.
ECS RS	Sets reverse printing.
ESC US	Resets reverse printing.
ESC SP+n	Character spacing setting.
ESC ! + n	Sets print mode.
ESC $+n1+n2	Absolute position spacing.
ESC % + n	External registration character specification/cancellation.
ESC & +y+c1+c2+x+d1to dn	External registration character definition.
ESC *+m+n1+n2+d1+dN	Sets bit image mode.
ESC - +n	Undeline setting.
ESC 2	Sets 1/6 inch line feed length.
ESC 3+n	Sets the line feed length.
ESC ? + n	External registration character deletion.
ESC @	Printer initialization.
ESC A+n	Sets the space between the line.
ESC C+n	Sets the page length by character line.
ESC D+d1+dN +NUL	Sets the tab position.
ESC E+n	Highlighted printing specification/cancellation
ESC J+n	Feeds paper in forward direction and prints.
ESC K+n	Reverse paper feed.
ESC L	Page printing mode selection.
ESC Q+n+!+j	Frame overlay function.
ESC R+n	Selects international character.
ESC S	Line printing mode.
ESC T+n	Print direction setting (only page mode).
ESC V+n	Right Rotation 90° specification / cancellation.

Commands continued

Command	Contents
ESC W+X1+X2+1+Y2+dX1+dX2+dX1+dY2	Page printing mode printing area setting.
ESC X+m+n	Setting the turning time of the motor excitation.
ESC Y+01h+ESC+x+a+m+d~	Program download.
ESCY+n1+n2	Relative position setting.
ESC a+n	Positional alignment.
ESC c+1+n	Sets internal processing.
ESC c+5+n	Panel switch enable/disable setting.
ESC d+n	Printing and n-line feeding.
ESC i	Full cut
ESC m	Partial cut
ECS s+n	Sets printing speed.
ECS t+n	Character code table selection.
ESC {+n	Sets/resets upside down printing.
ESC DEL+n	Flash memory delete.
FS !+n	Kanji printing mode collective specification.
FS &	Kanji printing mode specification.
FS_+n	Kanji underline specification/cancellation.
FS *+ m+n1+n2+d1 to dn	High speed collective image printing specified.
FS .	Kanji printing mode cancellation.
FS 2+c1+c2+d1 to dn	External character definition.
FS 9+n	Sets the detection functions.
FS C+n	Kanji code system selection.
FS E+n	Correction of impressed energy.
FS S+n+n1+n2	Kanji spacing setting.
FS W+n	Kanji double height adn width printing specification/cancellation.
FS r+n*[1]	Parameter transmission.
GS ! + n	Character size specification.

Commands continued

Command	Contents
GS $ + n1 + n2	Vertical absolute position specification in page printing mode.
GS & +m + x + y1 + y2 + d1 to dn	Registered bit image definition.
GS' + m + n	Registered bit image printing.
GS *+x+y1+y2 +d1+dn	Registered bit image definition.
GS/ +m	Registered bit image printing.
GS <	Line feeds to the next mark.
GS A+m+n	Sets the line feed length after mark detection.
GS B+m	Angle setting of bar code.
GS E+n	Sets print quality.
GS H+n	HRI character printing position selection.
GS L+n1+n2	Left margin position setting.
GS M+n	Printer ID demand.
GS W + n1 + n2	Printing area width setting.
GS Y +n1 + n2	Vertical relative position specification in page printing mode (vertical direction of characters).
GS e+n+m	Sets bar code width.
GS f + n	HRI character font selection.
GS h+n	Sets bar code height.
y) GS k+m +d1to dk + NUL x) GS k+m+n+ d1 to dn	Bar code printing.
GS k+m+k1+k2+k3+k4+{[p1][d(1,1)] ~ [d(1,i)} ~ {[pi][d(i,1)]~[d(i,j)} [00]16	Print of 2Dcode (QR).
GS k+m+k1+k2+k3+k4+k5+d1~dn	Print of 2 Dcode (maxi).
GS k+m+k1+k2+k3+k4+k5+k6+d1~dn	Print of 2 Dcode (PDF417).
GS w+n	Sets bar code length.
GS C+C+n1+n2+m+fn+b+d1~dn	Customize printer.

*1: These commands are valid with FTP-627DSL600 series.

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