Thermal Printer
DPU-D2/D3 Series
User’s Guide

INTRODUCTION

Thank you for purchasing DPU-D2/D3 series thermal perinter.
Please read through "SAFETY PRECAUTIONS" carefully and handle the printer.
Keep this guide at hand.
This guide targets the engineers who install the printer, not for end users.
Provide the manuals for end users as need arises in yourself.

SAFETY PRECAUTIONS

The following symbols are used in this User’s Guide in order to make use of the printer properly and prevent the printer from being damaged.
Follow the instructions marked with the symbol.

⚠ WARNING	Failure to follow the guidelines marked with this symbol could result in severe personal injury or death.
⚠ CAUTION	Failure to follow the guidelines marked with this symbol could result in minor personal injury or product and/or peripheral damage.

Symbol Examples

The symbol △ indicates caution (including danger and warning).
The example on the left indicates warning or caution.

The symbol ⃠ indicates prohibition.
The example on the left means prohibition of disassembling.

The symbol ● indicates requirement or what must be done.

⚠ WARNING

- Turn off the electricity of the printer to stop using it in any of the following cases:
  - The printer does not recover from an error.
  - Smoke, strange noise or smells erupt from the printer.
  - A piece of metal or any liquid touches the internal parts or slot of the printer.
  - Case is broken.

  Doing so may cause fire or electric shock. Please contact your vender to repair the products.
- DO NOT insert any foreign objects such as a piece of metal or any liquid in the internal parts or slot of the printer.
  Doing so may cause fire or electric shock.
- DO NOT disassemble or remodel the printer. DO NOT REPAIR THE PRINTER YOURSELF.
  Doing so may cause fire, a failure or other accidents.
- DO NOT touch the output terminal or metallic area of the connector to avoid short-circuiting.
  Doing so may cause fire, a failure or other accidents.
- DO NOT put the printer into water in a place where it could get wet.
  Doing so may cause fire, a failure or other accidents.
- DO NOT touch the printer by wet hand.
  If not, it might cause electric shock.

⚠CAUTION

- When cleaning the printer, turn off the electricity of the printer to stop using it.
  If not, it might cause fire or electric shock.
- DO NOT subject the printer to the following places as it may lead to fire, a failure or injury.
  - Places of direct sunlight or high temperature
  - Places of extreme humidity or any place where it can possibly be splashed by any liquids
  - Places with strong vibration or is inclined.
- DO NOT cover the printer with any clothes.
  Doing so may cause fire or a failure.
- NEVER touch the thermal head immediately after printing because it becomes very hot.
  Make sure that the thermal head is cool before clearing a paper jam or cleaning the thermal head.
  Doing so may cause injury.
- NEVER touch the portions such as the thermal head or the paper sensor or the platen roller directly while opening the paper cover to install the paper for example.
  Doing so may cause injury or other accidents.
- DO NOT touch the cutter.
  Doing so may cause injury.

For use in Turkey
Complies with Electrical and Electronic Equipment Directive.

Türkiye’ deki Kullanıcılar için
EEE Yönetmeliğine Uygundur.

1.OPERATING PRECAUTIONS

Please follow the precautions below to enjoy and maintain the full performance of the printer.

[] Using the Printer

- Be careful not to drop or bump the printer on a hard surface.
- DO NOT install the printer in direct sunlight or such areas. Suitable environment for the use of the printer is as follows:
  ·Ambient temperature: 14 to 122°F (-10 to 50°C)
  ·Relative humidity: 30 to 85%RH (noncondensing)
- DO NOT install the printer near devices that generate strong electromagnetic fields such as a copy machine.
- DO NOT install the printer in a location that is subject corrosive gas or siloxane and so on.
- DO NOT open the paper cover during printing.
- DO NOT remove or reinstall the connector cable during printing or transmission. DO NOT touch the connectors of the connector cable during printing.
- Prevent excessive stress to the paper cover when opening it. If the paper cover is removed with excessive stress, attach it again.
- Clean the printer using soft, lint-free cloth. DO NOT use alcohol or other solvent.
- Before use, always clean the terminals using a dry, soft, lint-free cloth. If the terminals are dirty, it may not be possible to obtain proper contact.
- When cleaning the thermal head, wipe the thermal head with a cotton swab or other soft material.
- High-print-rate printing or using the printer under low temperature condition might cause irregular printouts or generate loud noise. This is not a failure in the printer, but an inherent paper phenomenon.
- When handling this printer, be aware of static electricity. If the static electricity is discharged, this could case communication failure.
  When this problem occurs, disconnect the USB connector that is connected to the host device and wait few seconds before connect it again.

[] Thermal Paper Handling

- Store the thermal paper in a cool, dry, and dark place.
- DO NOT rub the paper with hard objects.
- DO NOT leave the paper near organic solvents.
- DO NOT allow plastic film, erasers, or adhesive tape to touch the paper for long periods.
- DO NOT stack the thermal paper with diazo copies immediately after copying or wettype copies.
- DO NOT use chemical glue.
- Always use the specified thermal paper.

[] Precautions on Discarding

When discarding used printers, discard them according to the disposal regulations and rules of each respective district.

2.PREPARATION

2.1 UNPACKING

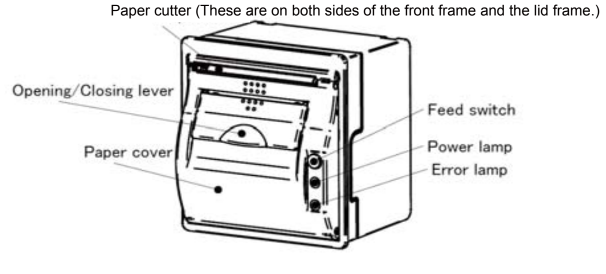
Once you have opened the carton, make sure it contains the printer and all accessories.

·Printer	1
·User's Guide (Japanese/English)	1
·Fixing plate	1
·Mounting screw for fixing plate	2
·Fixing spacer for fixing plate (0.2mm)	1
·Fixing spacer for fixing plate (0.5mm)	1
·Fixing spacer for fixing plate (1.0mm)	1

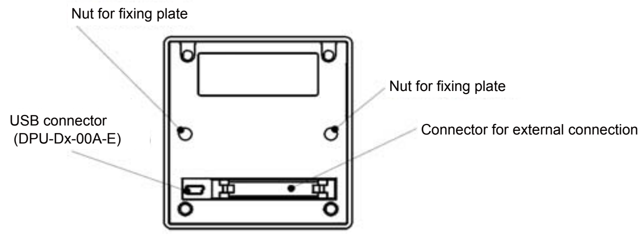
Orders for thermal paper will receive prompt attention by our company or vendors.

2.2 PART NAMES

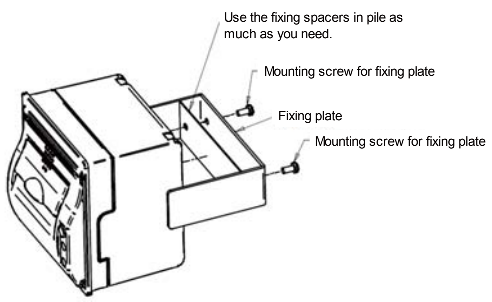
Front face



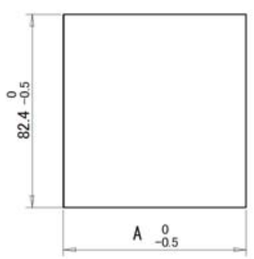
Back face



2.2 HOW TO INSTALL THE FIXING PLATE



Mounting hole dimensional drawing



Unit : mm

Dimensions A	
DPU−D2−0xA−E	76.9
DPU−D3−0xA−E	98.9

★Insert the printer from the front of panel and then fix the printer and the panel by using the fixing plate and the screws.

★To use the fixing spacers according to the panel thickness, see the following list.
Improperly using the printer may cause its deformation and resulted in hard-to-open the paper cover or print quality deteriorated.
Please consult us when using the panel which exceeds 2.2mm thickness.

(Unit: mm)

Panel thickness	Spacer thickness	Panel thickness	Spacer thickness
1.0	No	1.7 to 1.8	0.5 and 0.2
1.2	0.2	2.0	1.0
1.5 to 1.6	0.5	2.2	1.0 and 0.2

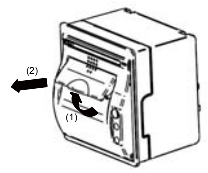
★The screw tightening torque is 49cN・m (5kgf・cm).

3.OPERATION

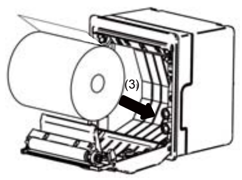
3.1 PAPER SETTING

(1) Pull the Opening/Closing lever up to release the paper cover lock and,

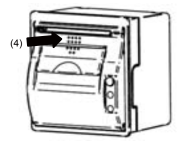
(2) Pull the Opening/Closing lever toward to open the paper cover.



(3) Set the thermal paper as shown below.



(4) Leave the thermal paper edge from the printer, press the center at the top face of the paper cover and close it.



⚠ Be careful not to cut the finger with the blade edge of the paper cutter.

3.2 MAINTENANCE

Wipe off the soiling on the printer surface with a dry soft cloth or a cloth with a weak neutral detergent after turn off the electricity. After that, wipe the printer with a dry cloth.

[ATTENTION]
·DO NOT use volatile chemicals such as thinner or benzine.
·DO NOT drop any liquid in the internal parts or slot of the printer.

3.3 TEST PRINT

The printer prints a test print, it can be shown the function settings and the character strings for test print.
To print the test print, turn on the printer while the feed switch is pushing.

3.4 HEX DUMP PRINT

In HEX dump mode, the printer prints data from the host device as hexadecimal number.
The printer shifts its mode to HEX dump mode after the test print completed.
To exit HEX dump mode, input RESET signal or turn off the electricity and then turn on it again.

3.5 STATUS

STATUS	Power lamp (Green)	Error lamp (Orange)
Initializing	○	○
FLASH memory rewriting	○	−
Thermal head error	−	○
Thermal head temperature error	−	○
Vp voltage error Vp Initialization error	−	○
Paper cover open error	−	○
Out-of-paper error	−	○
Printing	○	−
Print-ready	○	−

○: Light-on
−: Light-off

4.SPECIFICATIONS

4.1 GENERAL SPECIFICATIONS

·Model

DPU-Dx-0xA-E
- Interface
  - 0: USB/Serial
  - 1: Parallel
- Paper width
  - 2: 58mm
  - 3: 80mm

·General Specifications

Item	Specifications	
Model	DPU-Dx-00A-E（USB/Serial）	
	DPU-Dx-01A-E(Parallel)	
Printing method	Thermal dot line printing	
Number of characters per line*1	32 (DPU-D2-0xA-E)	
	48 (DPU-D3-0xA-E)	
Character configuration	1-byte character: 24dots x 12dots	
(H x W)	2-byte character: 24dots x 24dots	
Printable dots per line	384dots (DPU-D2-0xA-E)	
	576dots (DPU-D3-0xA-E)	
Resolution	W8 dots/mm × H8 dots/mm	
Print width/Paper width	48/58mm（DPU-D2-0xA-E）	
	72/80mm（DPU-D3-0xA-E）	
Outside diameter of paper roll	Φ50mm max. Φ18mm min.	
Maximum print speed	100mm/s（DPU-D2-0xA-E）	
	80mm/s（DPU-D3-0xA-E）	
Operating temperature	-10 to 50°C	
Humidity range	30 to 85%RH(Non condensing)	
Dimensions*2	W80mm x D69mm x H85.5mm（DPU-D2-0xA-E）	
	W102mm x D69mm x H85.5mm（DPU-D3-0xA-E）	
Mass	180g max. (DPU-D2-0xA-E)	
	210g max. (DPU-D3-0xA-E)	
Specified thermal paper	Nippon Paper	TF50KS-E2D
		TP50KJ-R
	Oji Paper	PD160R-N
	Mitsubishi Paper mills limited	P220VBB-1
	JUJO Thermal	AF50KS-E
		AP50KS-D
		AP50KS-FZ
	Mitsubishi Hi-Tech Paper	F5041
		P5045
	Papierfabrik August Koehler AG	KT55F20
	KSP	P350
	KANZAN	KF50
		KPR440

*1: 1-byte character, 0-dot character spacing.
*2: excluding convex part

4.2 CONNECTING TERMINALS

DPU-Dx-00A-E

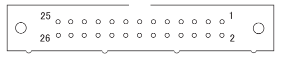
·Serial interface specifications

·Transmission Conditions

Baudrate	115200bps
Parity	None
Data control	Busy, Xon/Xoff (Simultaneous output)
Data length	8bits
Stop bit length	1bit

·Terminal Assignments

Connector[plug]: XG4A-2632 (OMRON)



No.	Signal Name	I/O	Function
1	Vp	−	Thermal head drive voltage(5-9V)
2	Vp	−	Thermal head drive voltage(5-9V)
3	GND	−	GND
4	GND	−	GND
5	ST1	O	Status signal 1
6	ST2	O	Status signal 2
7	ST3	O	Status signal 3
8	ST4	O	Status signal 4
9	!FEED	I	Feed signal
10	!RESET	I	Reset signal
11	TxD	O	Serial data transmission
12	RxD	I	Seria data reception
13	RTS	O	Serial RTS signal
14	CTS	I	Serial CTS signal
15	DTR	O	Serial DTR signal
16	DSR	I	Serial DSR signal
17	GND	−	GND
18	IF SELECT	I	Connect #18 to GND during serial communication. Open #18 during USB communication.
19	N.C.	−	No connection
20	N.C.	−	No connection
21	N.C.	−	No connection
22	FG	−	Frame GND
23	GND	−	GND
24	GND	−	GND
25	Vp	−	Thermal head drive voltage(5-9V)
26	Vp	−	Thermal head drive voltage(5-9V)

*: Input, O: Output
*: All of terminals Vp and GND should be connected.

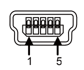
·USB interface specifications

·Transmission Conditions

Version	Ver2.0 compliance
Data transmission	Bulk transfer(12Mbps)

·Terminal Assignments

Connecor: 5000751517 (MOLEX)
Mini B type



No.	Signal Name	I/O	Function
1	Vbus	−	USB power supply
2	D-	I/O	USB data signal
3	D＋	I/O	USB data signal
4	N.C.	−	No connection
5	GND	−	GND

*: Input, O: Output

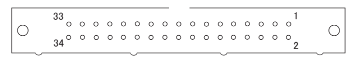
DPU-Dx-01A-E

·Parallel interface specifications

·Transmission Conditions
Centronics mode

·Terminal Assignments

Connector[plug]: XG4A-3432 (OMRON)



No.	Signal Name	I/O	Function
1	Vp	−	Thermal head drive voltage(5-9V)
2	Vp	−	Thermal head drive voltage(5-9V)
3	GND	−	GND
4	GND	−	GND
5	ST1	O	Status signal 1
6	ST2	O	Status signal 2
7	ST3	O	Status signal 3
8	ST4	O	Status signal 4
9	!FEED	I	Feed signal
10	!RESET	I	Reset signal
11	!STROBE	I	Strobe signal
12	DATA0	I	Data signal 0
13	DATA1	I	Data signal 1
14	DATA2	I	Data signal 2
15	DATA3	I	Data signal 3
16	DATA4	I	Data signal 4
17	DATA5	I	Data signal 5
18	DATA6	I	Data signal 6
19	DATA7	I	Data signal 7
20	!ACK	O	Acknowledge
21	PBUSY	O	Busy signal
22	PE	O	Out-of-paper signal
23	SELECT	O	Selection signal
24	!AUTO FEED XT	I	Auto feed signal
25	!ERROR	O	Error signal
26	!SELECT IN	I	Selection input signal
27	!INIT	I	INIT
28	5V	(O)	+5V (pulled up with the resister of 1.2 kΩ)
29	GND	−	GND
30	FG	−	Frame GND
31	GND	−	GND
32	GND	−	GND
33	Vp	−	Thermal head drive voltage(5-9V)
34	Vp	−	Thermal head drive voltage(5-9V)

*: Input, O: Output
*: All of terminals Vp and GND should be connected.

SII

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(Information in this document is subject to change without prior notice due to remodeling.)

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