

Confidential

EPSON

Energy saving power supply unit

PS-180

Specification

STANDARD	
Rev. No.	D
Notes	

Copied Date	
Copied by	

SEIKO EPSON CORPORATION

MATSUMOTO MINAMI PLANT

2070 KOTOBUKI KOAKA, MATSUMOTO-SHI, NAGANO, 399-8702 JAPAN

PHONE+81-263-86-5353 FAX+81-263-86-9925

REVISION SHEET

Sheet 1 of 2

The table below indicates which pages in this specification have been revised. Before reading this specification, be sure you have the correct version of each page.

Revisions		Design Section			Sheet Rev. No.					
Rev.	Document	WRT	CHK	APL	Sheet	Rev.	Sheet	Rev.	Sheet	Rev.
A	Enactment	Imaizumi	Inakoshi	Ito	I	D				
B	Change	Imaizumi	Yamaji	Ogasawara	II	D				
C	Change	Yamada	Hirai	Inakoshi						
D	Change	Hirai	Yamada	Inakoshi						
					1	D				
					2	D				
					3	D				
TITLE PS-180 Specification (STANDARD)			Front Part					Contents	Appendix	Total
			Cover	Rev. Sheet	Scope	General Description	Table of Contents			
			1	2	--	1	1			
								3	--	8

REVISION SHEET

Sheet 2 of 2

REV.	SHEET	CHANGED CONTENTS
B	II	Features: Added the following: TM-T88III, TM-L90, TM-U210, TM-L60II, TM-U375, TM-U950, TM-U295, TM-U925, TM-H5000II, TM-H5200, TM-H6000, TM-U675, TM-U590, DM-D110, DM-D210, DM-D500
C	II	Features Changed “• Can save energy by reducing the power loss when it is operated with low load” to “• Can save energy by reducing the power loss.” Changed “• Can be used with most commercial voltage in the world with the proper optional AC cable, since it has a universal power input.” to “• Can be used with most commercial voltage in the world, since it has a universal power input.” Deleted the following sentences. <ul style="list-style-type: none">• Is small and lightweight, about 50% less than the previous Epson model• Is highly efficient• Can be connected to the following products: TM-T88III, TM-L90, TM-U210, TM-L60II, TM-U375, TM-U950, TM-U295, TM-U925, TM-H5000II, TM-H5200, TM-H6000, TM-U675, TM-U590, DM-D110, DM-D210, DM-D500
	1	1. Electrical Characteristics Input voltage (rating): Changed “90 to 264 VAC (100 VAC -10% to 230 VAC +15%)” to “AC 90 V to 264 V (AC 100 V – 240 V).” Frequency (rating): Changed “47 Hz to 63 Hz” to “47 Hz to 63 Hz (50 Hz – 60 Hz).” Input current (rating): Changed “100VA” to “1.3 A.” Output voltage (rating): Changed “24 VDC ± 5%” to “DC 24V ± 5% (DC 24 V).”
	2	3. EMI and Safety Standards Applied 1) North America: Safety Standards: Changed “UL1950-2TH-D3,0 C-UL” to “Safety Standards: UL/cUL 60950-1.” 2) Europe: Safety Standards: Changed “EN60950” to “EN60950-1.” 3) Japan: Safety Standards: Safety Standards: Safety Standards: Changed “Electrical Appliance and Material Control Law of Japan” to “Electrical Appliance and Material Safety Law of Japan.” Changed Figure 4.1.
	3	Deleted 5. Material. 7. Usage Precautions Added 3) Appliance product.
D	3	5. DC Cable Added Figure 5.2.
TITLE		
PS-180 Specification (STANDARD)		

CONFIDENTIALITY AGREEMENT

BY USING THIS DOCUMENT, YOU AGREE TO ABIDE BY THE TERMS OF THIS AGREEMENT.

PLEASE RETURN THIS DOCUMENT IMMEDIATELY IF YOU DO NOT AGREE TO THESE TERMS.

1. This document contains confidential, proprietary information of Seiko Epson Corporation or its affiliates. You must keep such information confidential. If the user is a business entity or organization, you must limit disclosure to those of your employees, agents, and contractors who have a need to know and who are also bound by obligations of confidentiality.
2. On the earlier of (a) termination of your relationship with Seiko Epson, or (b) Seiko Epson's request, you must stop using the confidential information. You must then return or destroy the information, as directed by Seiko Epson.
3. If a court, arbitrator, government agency, or the like orders you to disclose any confidential information, you must immediately notify Seiko Epson. You agree to give Seiko Epson reasonable cooperation and assistance in the negotiation.
4. You may use confidential information only for the purpose of operating or servicing the products to which the document relates, unless you obtain the prior written consent of Seiko Epson for some other use.
5. Seiko Epson warrants that it has the right to disclose the confidential information. SEIKO EPSON MAKES NO OTHER WARRANTIES CONCERNING THE CONFIDENTIAL INFORMATION OR ANY OTHER INFORMATION IN THE DOCUMENT, INCLUDING (WITHOUT LIMITATION) ANY WARRANTY OF TITLE OR NON-INFRINGEMENT. Seiko Epson has no liability for loss or damage arising from or relating to your use of or reliance on the information in the document.
6. You may not reproduce, store, or transmit the confidential information in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the prior written permission of Seiko Epson.
7. Your obligations under this Agreement are in addition to any other legal obligations. Seiko Epson does not waive any right under this Agreement by failing to exercise it. The laws of Japan apply to this Agreement.

Cautions

1. This document shall apply only to the product(s) identified herein.
2. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Seiko Epson Corporation.
3. The contents of this document are subject to change without notice. Please contact us for the latest information.
4. While every precaution has been taken in the preparation of this document, Seiko Epson Corporation assumes no responsibility for errors or omissions.
5. Neither is any liability assumed for damages resulting from the use of the information contained herein.
6. Neither Seiko Epson Corporation nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by the purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product, or (excluding the U. S.) failure to strictly comply with Seiko Epson Corporation's operating and maintenance instructions.
7. Seiko Epson Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original EPSON Products or EPSON Approved Products by Seiko Epson Corporation.

Trademarks

EPSON® is a registered trademark of Seiko Epson Corporation in the United States and/or in other countries. General Notice: Other product and company names used herein are for identification purposes only and may be trademarks of their respective companies.

EPSON	TITLE PS-180 Specification (STANDARD)	SHEET REVISION D	NO	
			NEXT II	SHEET I

GENERAL DESCRIPTION

Application

- This specification applies to the power supply unit PS-180.

Features

The PS-180 is a switching power supply which is designed exclusively for the Epson products has the following features:

- Can save energy by reducing the power loss.
- Can be used with most commercial voltage in the world, since it has a universal power input.

TABLE OF CONTENTS

1. Electrical Characteristics	1
2. Environmental Conditions.....	1
3. EMI and Safety Standards Applied	2
4. Case Specification.....	2
5. DC cable	3
6. Accessory.....	3
7. Usage Cautions	3

EPSON	TITLE PS-180 Specification (STANDARD)	SHEET REVISION D	NO	
			NEXT 1	SHEET II

1. Electrical Characteristics

1) Input Conditions

Input voltage (rating):	AC 90 V to 264 V (AC 100 V – 240 V)
Frequency (rating):	47 Hz to 63 Hz (50 Hz – 60 Hz)
Input current (rating):	1.3 A
AC switch	None
Energizing LED	None

2) Output Conditions

Output voltage (rating):	DC 24 V \pm 5 % (DC 24 V)
Output Current (rating):	2.0 A
Output electric power (rating):	48 W
Output peak current:	4.5 A (within 300 ms on 1/6 duty)

2. Environmental Conditions

Temperature:	Storage:	-25 to 70 °C {-13 °F to 158 °F}
	Operating:	-10 to 50 °C {14 °F to 122 °F}
Humidity:	Storage:	10 to 90 %
	Operating:	10 to 90 %
Vibration resistance:		
When packed:		After exposure to vibration in the x, y, and z directions, no external or internal damage should be found.
	Frequency:	5 to 55 Hz
	Acceleration:	29.4 m/s ² {3G}
	Sweep:	10 min. (half cycle)
	Duration:	1 hour for each direction (3 cycle)
Impact resistance:		
When unpacked:	Height:	30 mm {1.18"}
	Drop procedure:	Lift only one edge and release it.
		The unit should not be damaged after it is dropped. The same procedure can be performed for the other three edges.
When packed:	Package:	EPSON standard package
	Height:	900 mm {35.43"}
	Drop procedure:	1 corner, 3 edge, 6 surfaces
		No external or internal damage should be found after the drop test, and the unit should operate normally.

EPSON	TITLE PS-180 Specification (STANDARD)	SHEET REVISION D	NO	
			NEXT 2	SHEET 1

3. EMI and Safety Standards Applied

1) North America: EMI: FCC Class A

Safety Standards: UL/cUL 60950-1

2) Europe:

CE marking

Directive 89/336/EEC EN55022 Class B

EN55024

IEC61000-4-2

IEC61000-4-3

IEC61000-4-4

IEC61000-4-5

IEC61000-4-6

IEC61000-4-11

Safety Standard: EN60950-1

3) Japan:

EMI: VCCI Class A

Safety Standards: Electrical Appliance and Material Safety Law of Japan

This unit meets EMI and EMC Standards, whether or not it is connected to an EPSON product.

Refer to the specifications of the Appliance Products for details of the standards.

4. Case Specification

Size: Approximately $33 \times 136 \times 68$ mm { $1.30 \times 5.35 \times 2.68$ " } (H \times W \times D)
(excluding projections)

See Figure 4.1.

Mass: Approx. 0.4kg {0.88 lb} (excluding the AC cable)

Material: Flame-resistance grade: 94 V – 0

Color: Black (mat)

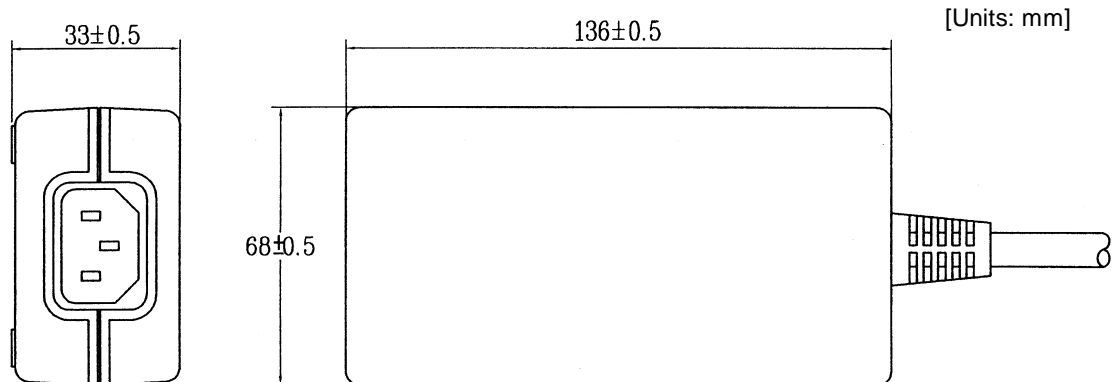


Figure 4.1

EPSON	TITLE PS-180 Specification (STANDARD)	SHEET REVISION D	NO	
			NEXT 3	SHEET 2

5. DC Cable

Connector:	TCP8927-63-1110 (HOSHIDEN) equivalent product
Cable:	2-wire shielded (AWG 18)
Length:	Approximately 1500 mm {59.06"}
Pin assignment	No.1: +24 V No.2: GND No.3: N.C. SHELL: Shielded (F.G.)

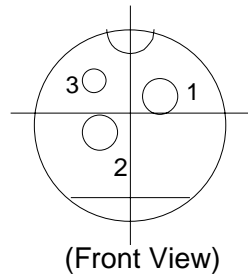


Figure 5.1 Connector Pin Assignments

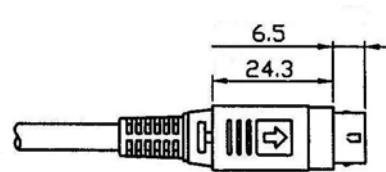


Figure 5.2 Connector details

6. Accessory

Accessory	Not included
-----------	--------------

7. Usage Cautions

- 1) AC cable
An AC cable is not packed with this power supply unit.
Select an AC cable that satisfies following conditions:
 - Safety Standards product
 - Plug with P.E. terminal
- 2) Ground connection
Ground certainly for safety
- 3) Appliance product
This power supply unit can be used for Epson TM and DM series products.
For details, see the specification of each product. If you need more information, please contact us.

EPSON	TITLE PS-180 Specification (STANDARD)	SHEET REVISION D	NO	
			NEXT END	SHEET 3