

Programmable Controller CPM1A-series

Replacement Guide From CPM1A to CP1E

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**Replace
Guide**

About this document

This document provides the reference information for replacing CPM1A PLC systems with CP1E series PLC.

This document does not include precautions and reminders ;please read and understand the important precautions and reminders described on the manuals of PLCs (both of PLC used in the existing system and PLC you will use to replace the existing PLC) before attempting to start operation.

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■ Related Manuals

• CPM1A

Man. No.	Model	Manual
W317	CPM1A-□□CD□-□-V1	CPM1A Operation Manual
W353	CPM1A-□□CD□-□-V1	CPM1/CPM1A/CPM2A/CPM2C/SRM1(-V2) Programming Manual

• CP1E

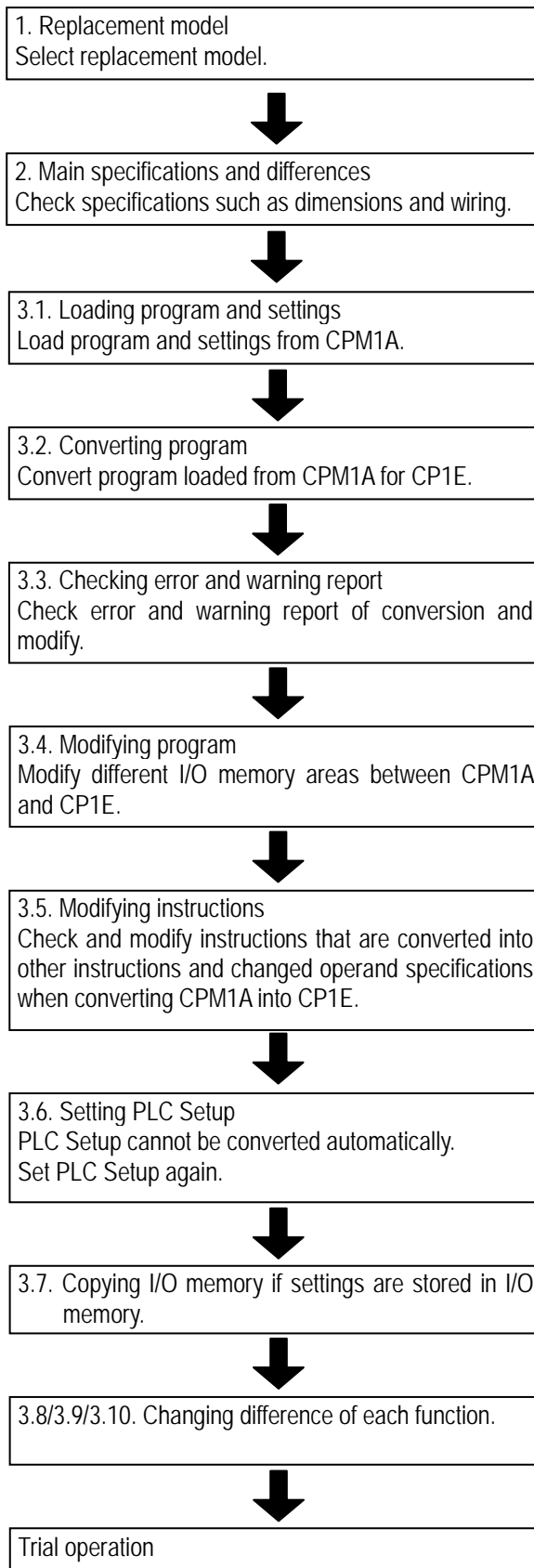
Man. No.	Model	Manual
W479	CP1E-E□□SD□-□ CP1E-N□□S□D□-□ CP1E-E□□D□-□ CP1E-N□□D□-□ CP1E-NA□□D□-□	CP1E CPU Unit Hardware User's Manual
W480	CP1E-E□□SD□-□ CP1E-N□□S□D□-□ CP1E-E□□D□-□ CP1E-N□□D□-□ CP1E-NA□□D□-□	CP1E CPU Unit Software User's Manual
W483	CP1E-E□□SD□-□ CP1E-N□□S□D□-□ CP1E-E□□D□-□ CP1E-N□□D□-□ CP1E-NA□□D□-□	CP1E CPU Unit Instructions Reference Manual

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Replacement flow

The procedure to replace the CPM1A with the CP1E is as follows. (Each number shows the number of the section)



Note

After replacement, please perform trial operation before starting actual operation and check that the system operates correctly. This guide does not include sufficient specifications for replacement. Please refer to the manuals listed on the Related Manuals page and check the specifications before converting.

1. Replacement model

< Precaution for replacement >

The dimensions, specifications, program, settings, terminal arrangements and others are changed by replacing the CPM1A with the CP1E. Please refer to this replacement guide and the manuals of the CPM1A and CP1E for details.

Note:

This guide provides the procedure to replace the CPM1A with the CP1E. However, there are some differences in the functions and performance between the CPM1A and the CP1E, and all CPM1A cannot be replaced with the CP1E. Please refer to this guide and the manuals to examine replacement carefully.

Replacement configuration (example)

Using the only CPM1A CPU Unit without using the CPM1-CIF01 or CPM1-CIF11



RS-232C Communications (example)

Using the CPM1A CPU Unit in combination with the CPM1-CIF01



RS-422A/485 Communications (example)

Using the CPM1A CPU Unit in combination with the CPM1-CIF11

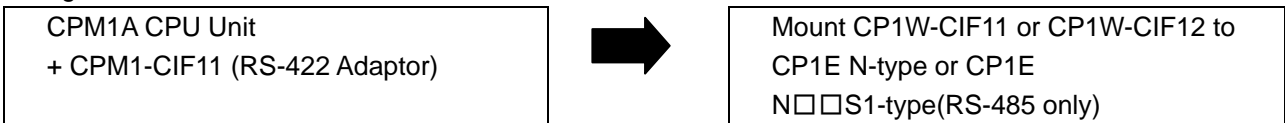


Table of replacement models (example)

Power supply type	Output type	I/O points	Original Unit	Replacement Unit	
			CPM1A-V1	CP1E E-type	CP1E N-type N□□S: Built-in RS-232C N□□S1: Built-in RS-232C/RS-485 N□□S: RS-232C + Option Board slot
AC type	Relay output	10	CPM1A-10CDR-A-V1	CP1E-E10DR-A	-
		20	CPM1A-20CDR-A-V1	CP1E-E20SDR-A CP1E-E20DR-A	CP1E-N20DR-A
		30	CPM1A-30CDR-A-V1	CP1E-E30SDR-A CP1E-E30DR-A	CP1E-N30SDR-A CP1E-N301SDR-A CP1E-N30DR-A
		40	CPM1A-40CDR-A-V1	CP1E-E40SDR-A CP1E-E40DR-A	CP1E-N40SDR-A CP1E-N401SDR-A CP1E-N40DR-A
	Transistor output (sinking)	10	CPM1A-10CDT-A-V1	CP1E-E10DT-A	-
		20	CPM1A-20CDT-A-V1	-	CP1E-N20DT-A
		30	CPM1A-30CDT-A-V1	-	CP1E-N30SDT-D CP1E-N30S1DT-D CP1E-N30DT-A
		40	CPM1A-40CDT-A-V1	-	CP1E-N40SDT-D CP1E-N40S1DT-D CP1E-N40DT-A

	Transistor output (sourcing)	10	CPM1A-10CDT1-A-V1	CP1E-E10DT1-A	-
		20	CPM1A-20CDT1-A-V1	-	CP1E-N20DT1-A
		30	CPM1A-30CDT1-A-V1	-	CP1E-N30DT1-A
		40	CPM1A-40CDT1-A-V1	-	CP1E-N40DT1-A
DC type	Relay output	10	CPM1A-10CDR-D-V1	CP1E-E10DR-D	-
		20	CPM1A-20CDR-D-V1	-	CP1E-N20DR-D
		30	CPM1A-30CDR-D-V1	-	CP1E-N30DR-D
		40	CPM1A-40CDR-D-V1	-	CP1E-N40DR-D
	Transistor output (sinking)	10	CPM1A-10CDT-D-V1	CP1E-E10DT-D	-
		20	CPM1A-20CDT-D-V1	-	CP1E-N20DT-D
		30	CPM1A-30CDT-D-V1	-	CP1E-N30DT-D
		40	CPM1A-40CDT-D-V1	-	CP1E-N40DT-D
	Transistor output (sourcing)	10	CPM1A-10CDT1-D-V1	CP1E-E10DT1-D	-
		20	CPM1A-20CDT1-D-V1	-	CP1E-N20DT1-D
		30	CPM1A-30CDT1-D-V1	-	CP1E-N30SDT-D CP1E-N30S1DT-D CP1E-N30DT1-D
		40	CPM1A-40CDT1-D-V1	-	CP1E-N40SDT-D CP1E-N40S1DT-D CP1E-N40DT1-D

2. Main specifications and differences between CP1E and CPM1A

2.1. Dimensions

The dimensions of the CP1E are different from that of the CPM1A. Secure the depth of the control panel because the depth of the CPU Unit will increase. Dimension comparison table

Power supply type	I/O	Dimensions (W x H x D)		
		CPM1A-V1	CP1E-E□□ CP1E-N□□ Normal-type	CP1E-E□□S CP1E-N□□S(1) Renewal-type
DC type	10 points	66 x 90 x 50	66 x 90 x 85	-
	20 points	86 x 90 x 50	86 x 90 x 85	86x90x79
	30 points	130 x 90 x 50	130 x 90 x 85	130x90x79
	40 points	150 x 90 x 50	150 x 90 x 85	150x90x79
AC type	10 points	66 x 90 x 70	66 x 90 x 85	-
	20 points	86 x 90 x 70	86 x 90 x 85	86x90x79
	30 points	130 x 90 x 70	130 x 90 x 85	130x90x79
	40 points	150 x 90 x 70	150 x 90 x 85	150x90x79

2.2. Mounting

The DIN Track and mounting hole pitch of the CP1E are the same as those of the CPM1A though the depth is different.

2.3. Expansion Units

The Expansion Units that can be connected to the CPM1A are the CPM1A Expansion (I/O) Units, and the Expansion Units for the CP1E is the CP1W Expansion (I/O) Units. Refer to the **Appendix 7. Expansion Units** for the Expansion (I/O) Units to replace.

The Expansion Units cannot be used for the CPM1A CPU Units with 10 and 20 I/O points or the CP1E CPU Units with 10, 14 and 20 I/O points CPU Units.

2.4. Supply voltage

The power consumption depends on the model though the power supply voltage and operating voltage range of the CP1E and CPM1A are the same.

Change to an appropriate power supply if power supply capacity is insufficient.

Refer to the **Appendix 1. Specification and performance comparison between CPM1A and CP1E** for the current consumption specifications.

2.5. External power supply

The CP1E CPU Units with 10 and 20 I/O points do not provide an external power supply.

When the external power supply is used for the CPM1A CPU Unit with 10 or 20 I/O points, another 24 VDC power supply is required.

Power supply type	I/O	External power supply specification	
		CPM1A-V1	CP1E
DC type	10 points	Not provided	Not provided
	20 points		
	30 points		
	40 points		
AC type	10 points	24VDC 200mA max.	Not provided When using, another 24 VDC Power Supply is required.
	20 points		
	30 points	24VDC 300mA max.	24VDC 300mA max.
	40 points		

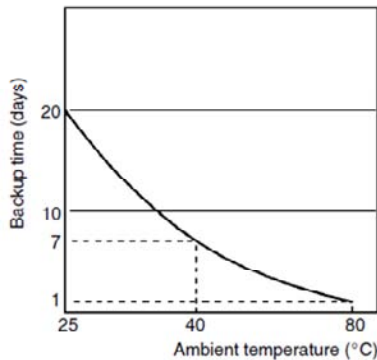
2.6. I/O memory backup time

The I/O memory backup time (to retain the contents of the DM Area and Holding Area, and Counter values) of the CP1E is shorter than that of the CPM1A.

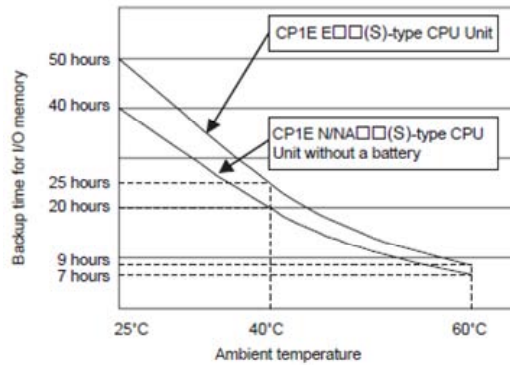
Use the CP1E N-type CPU Unit with an optional Battery (CP1W-BAT01) mounted if the backup time of the CP1E is insufficient.

Note: The DM Area, Holding Area, and Counter Flags/PVs become unstable when power is interrupted for longer than the I/O memory backup time, which may cause the system to malfunction.

I/O memory backup time



Capacitor backup time of CPM1A



Capacitor backup time of CP1E

2.7. Wiring

Wire to the same I/O when the I/O is used as a normal I/O.

Note: Because both terminal blocks of the CPM1A-V1 and CP1E are fixed, rewiring is required. Review the wiring as the terminal arrangement is changed.

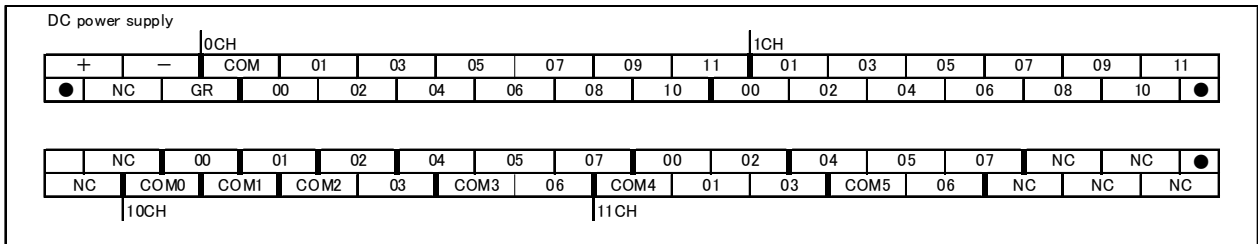
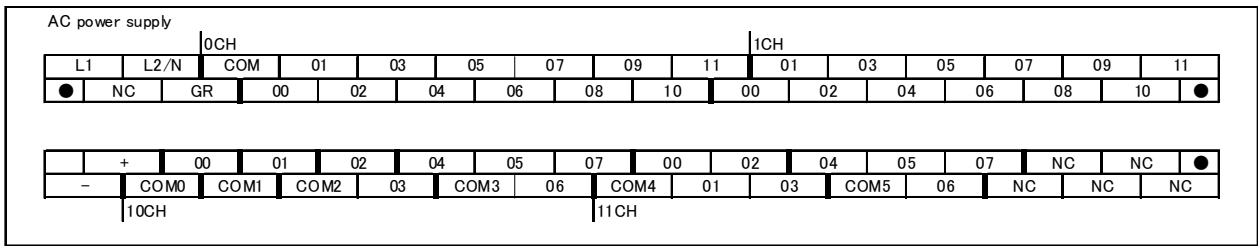
Method of terminal block and change in terminal arrangement

I/O	Terminal block		Change in terminal arrangement by replacing CPM1A with CP1E
	CPM1A	CP1E	
10 points	Fixed	Fixed	Changed
20 points	Fixed	Fixed	Changed
30 points	Fixed	Fixed	Changed
40 points	Fixed	Fixed	Changed

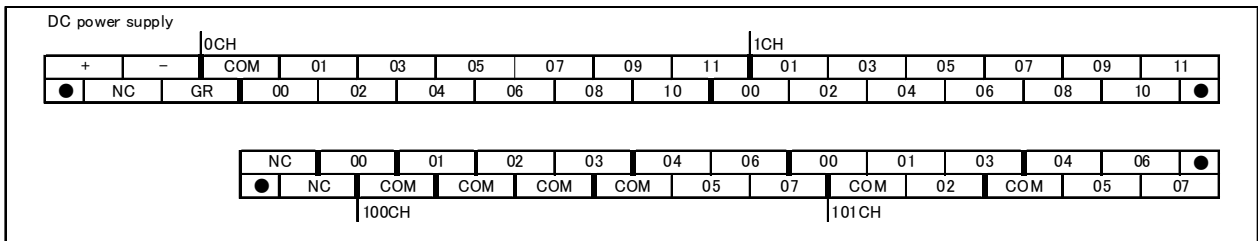
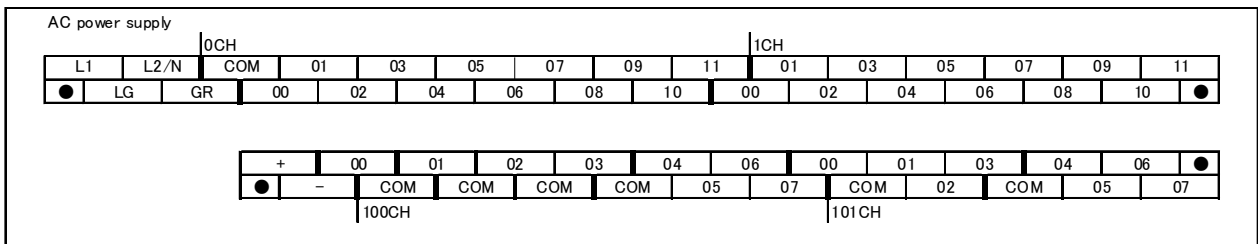
Terminal arrangements

- Terminal arrangements for CPU Units with 40 I/O points

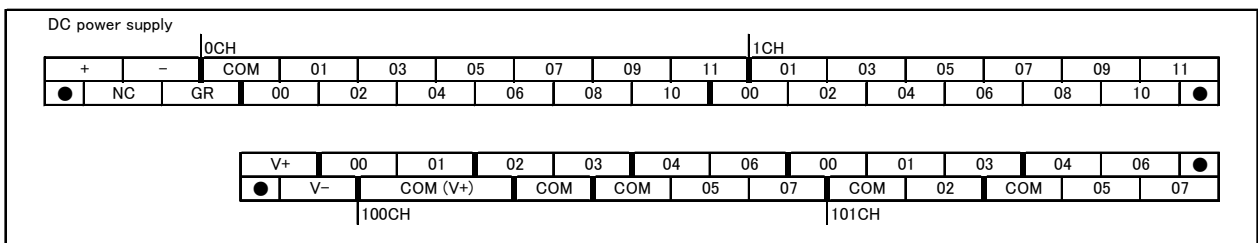
CPM1A-40D□□-□-V1



CP1E-□40(S□)D□□-□ (Except CP1E-N40S(1)DT-D, CP1E-N40S(1)DT1-D)



CP1E-N40S(1)DT-D



CP1E-N40S(1)DT1-D

