

# PM-PCC01

## INSTRUCTION SHEET

### 安裝說明

### 安装说明

- ▲ Program & Parameter Copy Card
- ▲ 程式及參數複製卡
- ▲ 程序及參數复制卡



DVP-1097630-01

## Warning

- ✓ Please set up the RD/WR switch before inserting PM-PCC01 into the COM port on DVP-PM.
- ✓ DO NOT disconnect or remove PM-PCC01 before the data transmission is completed; otherwise the data in PM-PCC01 may be lost.
- ✓ Changing modes (RD/WR) of PM-PCC01 will be invalid during the data transmission.

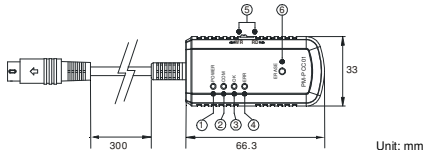
## Introduction

PM-PCC01 supports the copy of program, CAM data, parameter and password of DVP-PM series PLC. PM-PCC01 reads or writes the program and parameter in DVP-PM through COM port on it. PM-PCC01 supports password function, which is a safe tool for data transmission.

### Applicable Models & Read/Write Devices

Device type	Program block	DVP-PM parameter block	
	Program (steps)	D register	M device
DVP-PM	64k: program	D0 ~ D9999	M0 ~ M4095
	64k: (program + CAM data) *2.5		

### Product Profile



① Power indicator	④ Error LED
② Communication indicator	⑤ Read (RD)/write (WR) switch
③ Operation completed indicator	⑥ Data erasing button

### Specifications

Data retention	10 years
Write-in times	At least 10,000 times
Transmission speed	9,600/19,200 bps
Storage	-25°C ~ 70°C (temperature), 5 ~ 95% (humidity)
Operation	0°C ~ 55°C (temperature), 50 ~ 95% (humidity), pollution degree 2
Noise immunity	ESD: ±4KV Air Discharge; EFT: Power Line: 2KV RS: 0.15MHz ~ 80MHz, 10V/m; Surge: ±1KV

Vibration/shock resistance	International standard: IEC 61131-2, IEC 68-2-6 (TEST Fc)/IEC 61131-2 & IEC 68-2-27 (TEST Ea)
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## Functions

### Read/Write

Power DVP-PM before conducting the following steps.

Step	RD (DVP-PM → PM-PCC01)	WR (PM-PCC01 → DVP-PM)
1	Set the RD/WR switch to "RD"	Set the RD/WR switch to "WR" and check if DVP-PM is in STOP status
2	Insert PM-PCC01 to the COM port on DVP-PM and wait for 5 seconds.	Insert PM-PCC01 into the COM port on DVP-PM and wait for 5 seconds.
3	After the reading is completed, "OK" LED will be ON.	After the reading is completed, "OK" LED will be ON.
4	Remove PM-PCC01 from DVP-PM.	Remove PM-PCC01 from DVP-PM.

### Password Protection

Supposed PM-PCC01 is to write data into DVP-PM, and DVP-PM is already locked by a password, PM-PCC01 will compare the password in it with the password in DVP-PM for verification. The data can only be written into DVP-PM under a successful verification. See the explanation below for how to set up the password in PM-PCC01.

- Write the password to be set in PM-PCC01 into D1070 and D1073 in DVP-PM by PMSOft. Set M1086 to ON.
- Switch PM-PCC01 to RD and plug the communication port on PM-PCC01 into the COM port of DVP-PM. PM-PCC01 then starts to read the program, CAM data, and parameters in DVP-PM.
- After the reading, PM-PCC01 will check whether M1086 in DVP-PM is ON. If so, PM-PCC01 will then read the values in D1070 ~ D1073 and the values will be regarded as the password. After that, the "OK" LED on PM-PCC01 will be ON, indicating that all the reading has been completed. Next, remove PM-PCC01 from DVP-PM.

The password has to be 4 ~ 8 digits. Use D1070 ~ D1073 to set up the 4th ~ 8th digit of the password through PMSOft. Every digit represents an 8-digit value, corresponding to an ASCII code (only visible words are accepted). See the table below for the format. (Take entering password 12345 by PMSOft for example)

Password	D1070		D1071	
	High byte	Low byte	High byte	Low byte
Password setting	Digit 1	Digit 2	Digit 3	Digit 4
ASCII code (Hex)	1 (0x31 = H31)	2 (0x32 = H32)	3 (0x33 = H33)	4 (0x34 = H34)

Password	D1072		D1073	
	High byte	Low byte	High byte	Low byte
Password setting	Digit 5	Digit 6	Digit 7	Digit 8
ASCII code (Hex)	5 (0x35 = H35)	-(0x00=H00)	-(0x00=H00)	-(0x00=H00)

### Read/Write from PM-PCC01 to DVP-PM

DVP-PM	PM-PCC01	Read		Write	
		No password	With password	No password	With password
RUN	No password	Able to read	Incorrect password in verification	Unable to write	Unable to write
	With password	Unable to read	Unable to read	Unable to write	Unable to write
STOP	No password	Able to read	Incorrect password in verification	Able to write	Write in with the password
	With password	Unable to read	Unable to read	Incorrect password in verification	Able to write only after verification of correct password

### Read/Write CAM Data from PM-PCC01 to DVP-PM

PM-PCC01	Read	Write
No PEP password	Able to read	Able to write
With PEP password	Unable to read	Unable to write

### Clearing Data in PM-PCC01

Plug PM-PCC01 into the COM port of DVP-PM and wait for POWER LED to be ON for 5 seconds. Press ERASE button. When OK LED is constantly ON, the data will be completely cleared. Remove PM-PCC01 from DVP-PM.

### Copying Data

- When PM-PCC01 writes data into DVP-PM, you can choose either to copy the program and parameters or simply copying the program. To do so, you have to set up M1085 in DVP-PM before the copying. M1085 = OFF: PM-PCC01 copies the program and parameters. M1085 = ON: PM-PCC01 copies only the program.
- How to set up M1085
  1. Set M1085 to ON or OFF in DVP-PM (depending on the block you would like to copy)
  2. Switch PM-PCC01 to RD mode and plug the communication port of PM-PCC01 into the COM port on DVP-PM.
  3. PM-PCC01 will start to read M1085 in DVP-PM. After the reading is completed, OK LED on PM-PCC01 will be constantly ON, indicating the reading has been completed. Next, remove PM-PCC01 from DVP-PM.

### Maximum Read/Write Time

Model	M1085 = OFF		M1085 = ON	
	Read	Write	Read	Write
DVP-PM	5 min. 30 sec.	6 min. 10 sec.	4 min. 50 sec.	5 min. 30 sec.

## Error Messages

When the read/write violates the operation method, or problems occur during the communication, PM-PCC01 will not be able to continue reading/writing. "ERR" LED and "OK" LED combined in different ways to indicate different kinds of errors. See the table below for the error indication. Some errors have error codes (indicated by [x]) and can be read in D1086.

Error message	Indicator		Cause & how to correct
	ERR	OK	
Internal memory error; connection failure	✱	●	The hardware of PM-PCC01 may be malfunctioned. Please change it.
Incorrect DVP-PM model	✱	●	Make sure the program in PM-PCC01 is compatible with the connected DVP-PM model.
Operational error; unable to write	✱	✱	1. No data in PM-PCC01, but the writing is executed [11]. Make sure there is a program and RD/WR mode in PM-PCC01. 2. Whether DVP-PM is in STOP mode [0]. 3. If the communication formats of PM-PCC01 and DVP-PM are not compatible with each other, STOP DVP-PM and re-power it. Make sure the communication format of DVP-PM is ASCII 9,600, 7, E, 1. 4. The program in PM-PCC01 may be illegal [07]. Make sure the correctness of the program. 5. There are CAM data in PM-PCC01 program, but DVP-PM is protected by PEP [09]. 6. Problems occur during writing in data [13]. 7. Error occurs during the communication resulting in communication failure.
	Flashing at the same time		
Operational error; unable to read	✱	✱	1. DVP-PM is protected by password [02]. Unlock the password. 2. If the communication formats of PM-PCC01 and DVP-PM are not compatible with each other, STOP DVP-PM and re-power it. Make sure the communication format of DVP-PM is ASCII 9,600, 7, E, 1. 3. Problems occur during reading data [06]. 4. Error occurs during the communication resulting in communication failure. 5. Error occurs in D1070 ~ D1073 (password format or digit setup) [08].
	Flashing interchangeably		
Inconsistent password	✱	✱	1. PM-PCC01 is in RD mode, and DVP-PM is protected by password [04]. Clear data in PM-PCC01. 2. PM-PCC01 is in WR mode, and DVP-PM is protected by password [03]. Unlock the password in DVP-PM or set up PM-PCC01, giving it the same password as set in DVP-PM [5].
	ON	Flashing	
Error message	Indicator		Cause & how to correct
	ERR	OK	
ERASE completed	●	✱	1. Press ERASE button on PM-PCC01 to erase the memory in PM-PCC01. After this, OK LED will be constantly ON. 2. To conduct RD/WR function again in PM-PCC01, re-power the PM or remove PM-PCC01 and plug it in again.
	OFF	ON	

## Troubleshooting

When PM-PCC01 is reading/writing and "ERR" LED is constantly ON or flashing, please refer to ❶ to eliminate the error. The following two scenarios will occur if DVP-PM is suddenly shut down or unplugged from PM-PCC01 when PM-PCC01 is reading/writing.

1. While reading: The data in PM-PCC01 will be lost. Re-power the PM or plug PM-PCC01 into the PM again.
2. While writing: The data in the PM will be lost. Re-power the PM or plug PM-PCC01 into the PM again.

## ASCII Code Conversion

The password has to be 4 ~ 8 digits. Every digit represents an 8-digit value, corresponding to an ASCII code (only visible words 0 ~ 9, A ~ Z and a ~ z are accepted). Therefore, the digits in D1070 ~ D1073 have to be visible words; otherwise, PMSOft will not be able to unlock the password in DVP-PM.

Hex	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
ASCII	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
Hex	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
ASCII	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Hex	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
ASCII	P	Q	R	S	T	U	V	W	X	Y	Z					
Hex	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
ASCII	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
Hex	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
ASCII	p	q	r	s	t	u	v	w	x	y	z					

Note: '☒' represents invisible words. DO NOT use it.

## 注意事項

- ✓ 欲進行資料傳輸前，請預先設定所要使用的模式 (RD 或 WR)，再插入 DVP-PM 主機 COM 通訊口。
- ✓ PM-PCC01 讀取 DVP-PM 資料時，在未完成資料傳輸前，請勿中途斷電或拔除 PM-PCC01，以免造成 PM-PCC01 資料遺失。
- ✓ 當 PM-PCC01 在傳送接收過程中，改變 PM-PCC01 工作模式 (RD 或 WR) 並無作用。

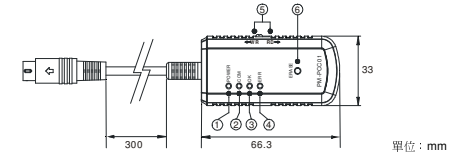
## 產品簡介

PM-PCC01 支援 DVP-PM 全系列 PLC 程式、CAM 資料、參數及密碼複製功能，操作原理係透過 DVP-PM 的 COM 通訊口，以通訊的方式對 DVP-PM 程式、參數執行寫入或讀出的動作，同時 PM-PCC01 亦支援密碼功能，提供安全的資料傳輸之工具。

### 支援機種及寫入元件種類

適用機種	資料區塊	程式區塊	PM 參數區塊	
	程式 (steps)	D 暫存器	M 元件	
DVP-PM	64k: 程式	D0 ~ D9999	M0 ~ M4095	
	64k: (程式+CAM 資料) *2.5			

### 外觀說明



- ❶ 電源指示燈
- ❷ 通訊中指示燈
- ❸ 動作完成指示燈
- ❹ 錯誤發生指示燈
- ❺ 操作模式：讀出、寫入功能選擇
- ❻ 內部資料全部清除按鈕

### 規格

保存期限	10 年
寫入次數	至少 1 萬次
傳輸速率	9,600/19,200 bps
儲存環境	-25°C ~ 70°C (溫度), 5 ~ 95% (濕度)
工作環境	0°C ~ 55°C (溫度), 50 ~ 95% (濕度), 污染等級 2
雜訊免疫力	ESD: ±4KV Air Discharge
	EFT: Power Line: 2KV
	RS: 0.15MHz ~ 80MHz, 10V/m
耐振動 / 衝擊	Surge: ±1KV
	國際標準規範 IEC 61131-2, IEC 68-2-6 (TEST Fc)/IEC 61131-2 & IEC 68-2-27 (TEST Ea)

## 功能規格

### 讀出/寫入動作方式

在進行以下動作順序之前須先將 DVP-PM 上電。

動作順序	RD 讀出 (DVP-PM → PM-PCC01)	WR 寫入 (PM-PCC01 → DVP-PM)
1	將 PM-PCC01 讀出/寫入開關旋至 RD	將 PM-PCC01 讀出/寫入開關旋至 WR，同時確認 DVP-PM 為 STOP 狀態。
2	將 PM-PCC01 插入 DVP-PM COM 通訊口，等待 5 秒。	將 PM-PCC01 插入 DVP-PM COM 通訊口，等待 5 秒。
3	讀取完畢 "OK" 燈號長亮	寫入完畢 "OK" 燈號長亮
4	拔除 PM-PCC01 完成讀取動作	拔除 PM-PCC01 完成寫入動作

### 密碼保護功能

當 PM-PCC01 要對 DVP-PM 進行資料寫入時，若 DVP-PM 已有密碼鎖，PM-PCC01 會以設定於 PM-PCC01 內部的密碼與 DVP-PM 的密碼作比對驗證，若驗證成功，才能進行資料寫入的動作，PM-PCC01 密碼鎖設定方式如下：

1. 將預備設定於 PM-PCC01 的密碼，以 PMSOft 寫入 DVP-PM 的 D1070 ~ D1073，並將 M1086 設為 ON。
2. 將 PM-PCC01 的讀出/寫入開關旋至 RD，然後將 PM-PCC01 通訊線插入 DVP-PM 的 COM 通訊口，PM-PCC01 開始讀取 DVP-PM 的密碼、CAM 資料、參數。
3. 當讀取完成後，PM-PCC01 會判斷 M1086 是否 ON，若 M1086 = ON，則 PM-PCC01 會接著讀取 D1070 ~ D1073 的值，並當成是設定於 PM-PCC01 密碼鎖，完成之後 PM-PCC01 "OK" 燈號會長亮，代表完成所有讀取的動作，接著拔除 PM-PCC01。

密碼鎖要設定四至八位數，透過 PMSOft 監控表，使用 D1070 ~ D1073 依序設定編碼的四至八位數，每一位數代表一個 8 位數值，可對應到一個 ASCII 碼 (僅接受可視字元)，其格式如下：(以 PMSOft 輸入密碼 12345 為例)

密碼設定值	密碼鎖		D1070		D1071	
	高位元組	低位元組	高位元組	低位元組	高位元組	低位元組
ASCII 碼 (Hex)	位數 1		位數 2		位數 3	
	1 (0x31 = H31)		2 (0x32 = H32)		3 (0x33 = H33)	
	位數 4		位數 5		位數 6	
	4 (0x34 = H34)		5 (0x35 = H35)		-(0x00=H00)	

