CMC-*PD01*

Instruction Sheet
Bilgi Dökümani
安　装　說　明
安　装　说　明

PROFIBUS DP Communication Card
PROFIBUS DP Haberleşme Kartı
PROFIBUS DP 通訊卡
PROFIBUS DP 通讯卡

Thank you for choosing Delta CMC-PD01 network communication card. CMC-PD01 is a PROFIBUS DP network communication card for connecting Delta C2000 series, CH2000 series, CP2000, series, CT2000 series, and AFE2000 series AC motor drives to PROFIBUS DP network. No external power supply is required for CMC-PD01. The power will be supplied from the AC motor drive.

EN ✗ CMC-PD01 is an OPEN-TYPE device. It should be installed in a control cabinet free of airborne dust, humidity, electric shock and vibration. To prevent non-maintenance staff from operating CMC-PD01, or to prevent an accident from damaging CMC-PD01, the control cabinet in which CMC-PD01 is installed should be equipped with a safeguard. For example, the control cabinet in which CMC-PD01 is installed can be unlocked with a special tool or key.

EN ✗ DO NOT connect AC power to any of I/O terminals, otherwise serious damage may occur. Please check all wiring again before CMC-PD01 is powered up. After CMC-PD01 is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal ⏚ on CMC-PD01 is correctly grounded in order to prevent electromagnetic interference.
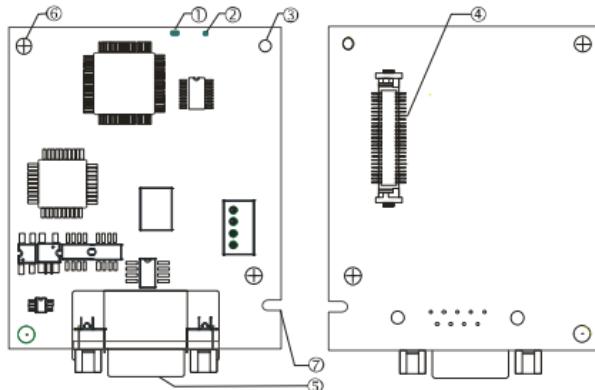
FR ✗ CMC-PD01 est un module OUVERT. Il doit être installé que dans une enceinte protectrice (boitier, armoire, etc.) saine, dépourvue de poussière, d'humidité, de vibrations et hors d'atteinte des chocs électriques. La protection doit éviter que les personnes non habilitées à la maintenance puissent accéder à l'appareil (par exemple, une clé ou un outil doivent être nécessaire pour ouvrir a protection).

FR ✗ Ne pas appliquer la tension secteur sur les bornes d'entrées/Sorties, ou l'appareil CMC-PD01 pourra être endommagé. Merci de vérifier encore une fois le câblage avant la mise sous tension du CMC-PD01. Lors de la déconnection de l'appareil, ne pas toucher les connecteurs dans la minute suivante. Vérifier que la terre est bien reliée au connecteur de terre ⏚ afin d'éviter toute interférence électromagnétique.

▪ Functions

1. Supports PZD control data exchange.
2. Supports PKW polling AC motor drive parameters.
3. Supports user diagnosis function.
4. Auto-detects baud rates; supports Max. 12M bps.

▪ Product Profile

[Figure 1]

1. NET indicator	5. PROFIBUS DP connection port
2. POWER indicator	6. Screw fixing hole
3. Positioning hole	7. Fool-proof groove
4. AC motor drive connection port	

▪ Specifications

◆ PROFIBUS DP Connector

Interface	DB9 connector
Transmission method	High-speed RS-485
Transmission cable	Shielded twisted pair cable
Electrical isolation	500 VDC

◆ Communication

Message type	Cyclic data exchange
Comm. Card name	CMC-PD01
GSD document	DELA08DB.GSD
Company ID	08DB (HEX)
Serial transmission speed supported (auto-detection)	9.6k, 19.2k, 93.75k, 187.5k, 500k, 1.5M, 3M, 6M, 12M bps (bits per second)

◆ Electrical Specification

Power supply voltage	5 VDC (supplied by AC motor drive)
Insulation voltage	500 VDC
Power consumption	1 W
Weight	28g

◆ Environment
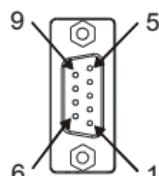
Noise immunity	ESD (IEC 61800-5-1,IEC 6100-4-2)
	EFT (IEC 61800-5-1,IEC 6100-4-4)
	Surge Test (IEC 61800-5-1,IEC 6100-4-5)
	Conducted Susceptibility Test (IEC 61800-5-1,IEC 6100-4-6)
Operation/storage	Operation: -10 to 50ºC (temperature), 90% (humidity), pollution degree 2
	Storage: -25 to 70ºC (temperature), 95% (humidity, non-condensing)
Shock/vibration resistance	International standards: IEC61131-2, IEC68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-27 (TEST Ea)

▪ Installation

Note: The contents below are about installing CMC-PD01 on C2000.

◆ PROFIBUS DP Connector

| PIN	PIN name	Definition
1	-	Not defined
2	-	Not defined
3	Rxd/Txd-P	Sending/receiving data P(B)
4	-	Not defined
5	DGND	Data reference ground
6	VP	Power voltage – positive
7	-	Not defined
8	Rxd/Txd-N	Sending/receiving data N(A)
9	-	Not defined
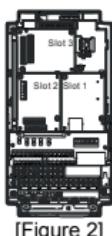
◆ Connecting CMC-PD01 to C2000
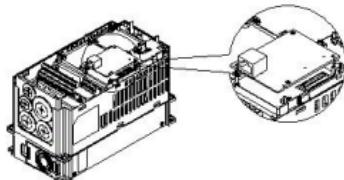
1. Switch off the power of C2000.
2. Open the front cover of C2000.
3. Place the insulation spacer into the positioning pin at Slot 1 (shown in Figure 2), and aim the two holes on the PCB at the positioning pin. Press the pin to clip the holes

with the PCB (see Figure 3).
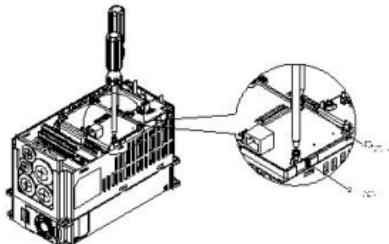
4. Screw up at torque 6 ~8 kg-cm (5.21 ~6.94 in-lbs) after the PCB is clipped with the holes (see Figure 4).


[Figure 2]
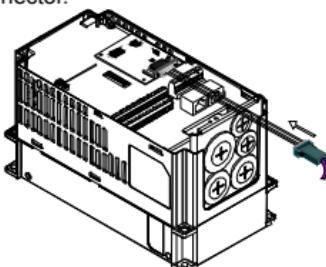
[Figure 3]

[Figure 4]

◆ Connecting to PROFIBUS DP Connector

Insert the connector to the connection port on CMC-PD01 (see Figure 5), and screw up the screws on the connector to ensure tight connection between CMC-PD01 and the PROFIBUS DP connector.

[Figure 5]

◆ Communication Parameters for C2000 Connected to PROFIBUS DP

When C2000 is connected to PROFIBUS DP, please set up the communication parameters for it according to the table below. The PROFIBUS DP master is only able to read/write the frequency word and control word of C2000 after the communication parameters are set.

Parameter	Function	Set value	Explanation
P00-20	Setting up source of frequency command	8	The frequency command is controlled by the communication card.
P00-21	Setting up source of operation command	5	The operation command is controlled by the communication card.
P09-30	Decoding method for communication	0/1	0: The old decoding method for the Delta AC motor drive (20XX). 1: The new decoding method for the Delta AC motor drive (60XX).
P09-70	Address of communication card	User defined	Address of C2000 on PROFIBUS DP network.

Note: The value of P09-70 is the address of C2000 in PROFIBUS DP network. The address has to be consistent with the address of C2000 during configuration. Changing the value is P09-70

when C2000 is working will be invalid. After the value in P09-70 is changed, please shut down C2000 and re-power it to make the parameter valid.

◆ Controlling and Using the I/O on an AC Motor Drive by a Communication Card

1. Controlling the setting by a control card

Multi-function output terminal	Parameter	Setting value
Relay1~Relay3*	02-13~02-15	52
MO1~MO2	02-16~02-17	52
MO10~MO15(RY10~RY15)	02-36~02-41	52
AFM1	03-20	22
AFM2	03-23	22

*Relay3 is for CP2000. MO1~MO2 are for C2000/CH2000.

2. Control addresses

Terminal	Address	R/W	Address length	Description
DI	2600h	R	b15~b0	Digital inputs b15~b0
DO	2640h	RW	b15~b0	Digital outputs b15~b0
AI	2660h	R	b15~b0	Percentage of AVI analog input signals
	2661h	R	b15~b0	Percentage of ACI analog input signals
	2662h	R	b15~b0	Percentage of AUI analog input signals
AO	26A0h	RW	b15~b0	Percentage of AFM1 analog output signals
	26A1h	RW	b15~b0	Percentage of AFM2 analog output signals

Correspondence for the address 2600:

Number	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
I/O on the control panel	FWD	REV	MI1	MI2	MI3	MI4	MI5	MI6
EMC-D611A	-	-	-	-	-	-	-	-
EMC-D42A	-	-	-	-	-	-	-	-

Number	Bit 8	Bit 9	Bit 10	Bit 11	Bit 12	Bit 13	Bit 14	Bit15
I/O on the control panel	MI7	MI8	-	-	-	-	-	-
EMC-D611A	-	-	MI10	MI11	MI12	MI13	MI14	MI15
EMC-D42A	-	-	MI10	MI11	MI12	MI13	-	-
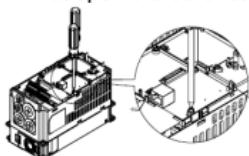
Correspondence for the address 2640:

Number	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
I/O on the control panel	RY1	RY2	-	MO1	MO2	-	-	-
EMC-D42A	-	-	-	-	-	MO10	MO11	-
EMC-R6AA	-	-	-	-	-	RY10	RY11	RY12
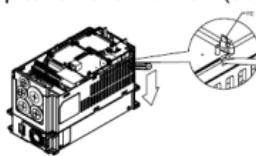
| Number	Bit 8	Bit 9	Bit 10	Bit 11	Bit 12	Bit 13	Bit 14	Bit15
I/O on the control panel	-	-	-	-	-	-	-	-
EMC-D42A	-	-	-	-	-	-	-	-
EMC-R6AA	RY13	RY14	RY15	-	-	-	-	-

◆ Disconnecting CMC-PD01 from C2000
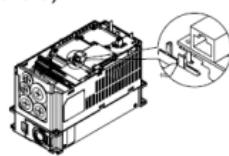
1. Switch off the power supply of C2000.
2. Remove the two screws (see Figure 6).
3. Twist open the card clip and insert the slot type screwdriver to the hollow to prize the PCB off the card clip (see Figure 7).
4. Twist open the other card clip to remove the PCB (see Figure 8).

[Figure 6]   [Figure 7]   [Figure 8]

▪ LED Indicator & Troubleshooting

There are 2 LED indicators on CMC-PD01. POWER LED displays the status of the working power. NET LED displays the connection status of the communication.

◆ POWER LED

LED status	Indication	How to correct
Green light on	Power supply in normal status.	--
Off	No power	Check if the connection between CMC-PD01 and C2000 is normal.

◆ NET LED

LED status	Indication	How to correct
Green light on	Normal status	--
Red light on	CMC-PD01 is not connected to PROFIBUS DP master.	1. Check if the configuration address of CMC-PD01 is consistent with the actual address. 2. Check if CMC-PD01 is normally connected to PROFIBUS DP bus. 3. Check if the communication cable between CMC-PD01and PROFIBUS DP master is working normally.
Red light flashes	Invalid PROFIBUS communication address	Set the PROFIBUS address of CMC-PD01 between 1 ~ 125 (decimal)
Orange light flashes	CMC-PD01 fails to communication with C2000.	Switch off the power and check whether CMC-PD01 is correctly and normally connected to C2000.