

CME-COP01 CANopen Network Adapter

Instruction Sheet

Warning

- ✓ This instruction sheet only provides descriptions on electrical specifications, general specifications, installation and wiring and is only an introductory guide to CME-COP01. For more information on CANopen protocol, please refer to relevant literature.
- ✓ CME-COP01 is an OPEN TYPE controller and therefore should be installed in an enclosure free of airborne dust, humidity, electric shock and vibration. The enclosure should protect non-maintenance staff from operating the device (e.g. key or specific tools are required to open the enclosure) in case danger and damage on the device may occur.
- ✓ CME-COP01 is for controlling the machine and equipment in operation. In order not to damage it, please allow only qualified staff who is familiar with the structure and operation of it to install, operate, wire and maintain it.
- ✓ Please read this instruction carefully and follow this instruction to operation the device in order to prevent damages on the device or injuries to staff.
- ✓ DO NOT connect input AC power supply to any of the input/output terminals; otherwise serious damage may occur. Check all the wiring again before switching on the power and DO NOT touch any terminal when the power is switched on.

1 Introduction

1.1 Model Explanation

Thank you for choosing Delta CME-COP01 CANopen communication module. CME-COP01 is specifically for connecting to CANopen communication module of Delta VFD-E AC motor drive.

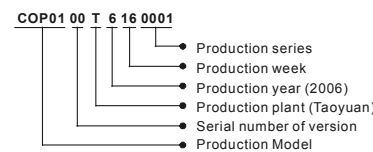
Functions of CME-COP01:

- ❖ Supports Process Data Objects (PDO) Protocol
- ❖ Supports Service Data Object (SDO) Protocol
- ❖ Supports Special Object Protocols (SOP)
- ❖ Supports Network Management (NMT) Protocol

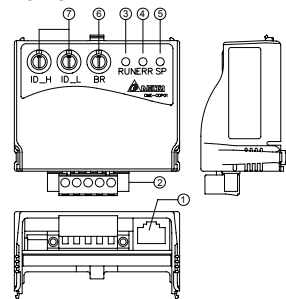
❖ Nameplate Explanation



❖ Serial No. Explanation



1.2 Product Profile



Unit: mm

- COM port
- CANopen connection port
- RUN indicator
- ERROR indicator
- SP (Scan Port) indicator
- Baud rate switch
- Address switch

2 Specifications

CANopen Connection

Interface	Pluggable connector (5.08mm)
Transmission method	CAN
Transmission cable	2-wire twisted shielded cable
Electrical isolation	500V DC

Communication

Message type	Process Data Objects (PDO)	Baud rate	10 Kbps
	Service Data Object (SDO)		20 Kbps
Message type	Synchronization (SYNC)	Baud rate	50 Kbps
	Emergency (EMCY)		125 Kbps
	Network Management (NMT)		250 Kbps
			500 Kbps
			800 Kbps
	1 Mbps		

Product code	Delta VFD-E AC motor drive	22
Device type	402	
Vendor ID	477	

Environmental Specifications

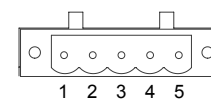
Noise Immunity	ESD(IEC 61131-2, IEC 61000-4-2): 8KV Air Discharge EFT(IEC 61131-2, IEC 61000-4-4): Power Line: 2KV, Digital I/O: 1KV, Analog & Communication I/O: 1KV Damped-Oscillatory Wave: Power Line: 1KV, Digital I/O: 1KV RS(IEC 61131-2, IEC 61000-4-3): 26MHz ~ 1GHz, 10V/m	
Environment	Operation: 0°C ~ 55°C (Temperature), 50 ~ 95% (Humidity), Pollution degree 2; Storage: -40°C ~ 70°C (Temperature), 5 ~ 95% (Humidity)	
Vibration / Shock Resistance	Standard: IEC1131-2, IEC 68-2-6 (TEST Fc/IEC1131-2 & IEC 68-2-27 (TEST Ea)	
Certifications	Standard: IEC 61131-2, UL508	

3 Components

3.1 Pin Definition on CANopen Connection Port

To connect with CANopen, use the connector enclosed with CME-COP01 or any connectors you can buy in the store for wiring.

Pin	Signal	Content
1	CAN_GND	Ground / 0 V / V-
2	CAN_L	Signal-
3	SHIELD	Shield
4	CAN_H	Signal+
5	-	Reserved



3.2 Baud Rate Setting

Rotary switch (BR) sets up the communication speed on CANopen network in hex. Setup range: 0 ~ 7 (8 ~ F are forbidden)



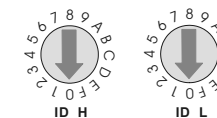
Example: If you need to set up the communication speed of CME-COP01 as 500K, simply switch BR to "5"

BR Value	Baud rate	BR Value	Baud rate
0	10K	4	250K
1	20K	5	500K
2	50K	6	800K
3	125K	7	1M

The changed communication speed of CANopen is only valid when CME-COP01 is re-powered. When CME-COP01 is operating, changing the set value of communication speed is invalid.

3.3 MAC ID Setting

Rotary switches (ID_L and ID_H) set up the Node-ID on CANopen network in hex. Setup range: 00 ~ 7F (80 ~ FF are forbidden)



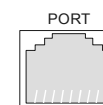
Example: If you need to set up the communication address of CME-COP01 as 26(1AH), simply switch ID_H to "1" and ID_L to "A".

Switch Setting	Content
0 ... 7F	Valid CANopen MAC ID setting
Other	Invalid CANopen MAC ID setting

The changed values on ID_H and ID_L are only valid when CME-COP01 is re-powered. When CME-COP01 is operating, changing the address is invalid.

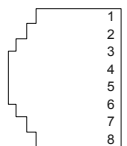
3.4 CME-COP01 Connector

The communication port of CME-COP01 is used for connecting with Delta VFD-E AC motor drive.



3.4.1 COM PORT

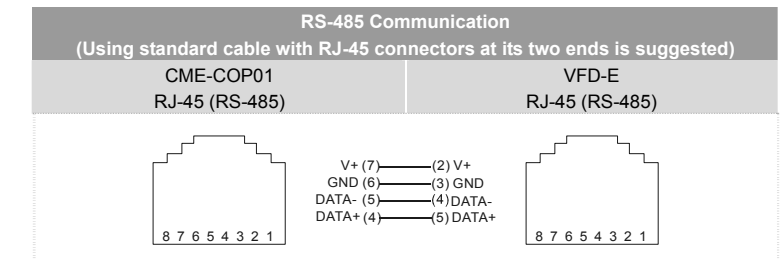
Port Pin Definition

PORT Sketch	Terminal No.	Description
	1	N.C.
	2	N.C.
	3	N.C.
	4	DATA+
	5	DATA-
	6	GND
	7	V+
	8	N.C.

The communication port supports RS-485/Modbus communication only.

4 Connecting CME-COP01 with VFD-E

When CME-COP01 communicates with VFD-E through PORT, the power of CME-COP01 is supplied by VFD-E. See the figure below for the wiring of connection.



5 LED Indicator Explanation & Troubleshooting

There are 3 LED indicators, RUN, ERROR and SP, on CME-COP01 to indicate the communication status of CME-COP01.

5.1 RUN LED

LED Status	State	Indication
OFF	No power	No power on CME-COP01 card
Single Flash (Green)	STOPPED	CME-COP01 is in STOPPED state
Blinking (Green)	PRE-OPERATIONAL	CME-COP01 is in the PRE-OPERATIONAL state
Green ON	OPERATIONAL	CME-COP01 is in the OPERATIONAL state
Red ON	Configuration error	Node-ID or Baud rate setting error

5.2 ERROR LED

LED Status	State	Indication
OFF	No error	CME-COP01 is working condition
Single Flash (Red)	Warning limit reached	At least one of error counter of the CANopen controller has reached or exceeded the warning level (too many error frames)
Double Flash (Red)	Error control event	A guard event or heartbeat event has occurred
Red ON	Bus-off	The CANopen controller is bus-off

5.3 SP LED

LED Status	State	Indication
OFF	No Power	No power on CME-COP01 card
LED Blinking (Red)	CRC check error	Check your communication setting in VFD-E drives (19200, <8,N,2>, RTU)
Red ON	Connection failure/No connection	1. Check the connection between VFD-E drive and CME-COP01 card is correct 2. Re-wire the VFD-E connection and ensure that the wire specification is correct
LED Blinking (Green)	CME-COP01 returns error code	Check the PLC program, ensure the index and sub-index is correct
Green ON	Normal	Communication is normal

5.4 LED Descriptions

State	Description
LED ON	Constantly on
LED OFF	Constantly off
LED blinking	Flash, on for 0.2s and off for 0.2s
LED single flash	On for 0.2s and off for 1s
LED double flash	On for 0.2s off for 0.2s, on for 0.2s and off for 1s