Thank you for choosing Coolmay CX2N series. This manual mainly explains the features, general specifications and wiring methods of CX2N series. Detailed programming information please refer to "Coolmay PLC Programming Manual".

Main features of CX2N(-HM) series:

1. Highly integration. At most 2 DI/2DO, 20AI/8AO can be customized. 1 Rs232 or 1 Rs485, or at most 2 Rs485s can be added.
2. Support high-speed detection and high-speed pulse. High-speed counting can be added to at most 6 single-phase, 3 AB(2) 15-100kHz. High-speed pulse can be added to 4 or 5 20-200kHz.
3. Support special acquisition. Scheduling 124ms/576 as password can thoroughly prevent the data from being read.
4. 80MM-wide terminals are adopted for easy wiring.
5. DIN-Rail installation (35 mm) and fixed hole installation.

CX2N(-HM) Series originate from CX2N by adding eight plastic keys and color text display. The text display adopts Ultra port as the programming port. The programming software and display functions are the same with HM-305, which can monitor the PLC.

CX2N series is the same with CX2N, but without the body case.

Product Information

◆ Naming Rule

CX2N: 48 MRT-10AD-4AO - V: A0 - 1C1 - 1F - 485P/232

1. Series


2. I/O Points

10-5DI/5DO  24-2DI/12DO  32-16DI/16DO  36-20DI/16DO  48-24DI/24DO  64-32DI/32DO  68-32DI/32DO  80-40DI/40DO

3. Module

Main module

4. DO type

Relay: T: Relay

5. AI

0-10V: 10 channels optional

6. AO

0-8 channels optional

7. AI type

E: 0V Thermocouple; S: S-type thermocouple

8. AO type

V: 0/10V

9. C1 and for single phase 100Hz high-speed counting, C2 for 100kHz AB phase counting, C3 for 100kHz ABZ counter, C10 for 10kHz. At most 6 single phase 100Hz (6C10) or 3 ABZ phase 10-100kHz can be customized.

10. Input power

For 100kHz high-speed pulse, for 200kHz.x for 20kHz.x for 40kHz.x for 80kHz.

11. Communication port

1 Rs232, or 8 Rs485, or at most 2 Rs485s ports can be added.

◆ Basic Specifications

<table>
<thead>
<tr>
<th>CX2N</th>
<th>Switching Value</th>
<th>Analog I/O</th>
<th>Digital I/O</th>
<th>Main module</th>
<th>High-speed counting</th>
<th>ABZ Phase</th>
<th>Total Phase</th>
<th>Open Screw 2-4</th>
<th>Overall Size (mm)</th>
<th>Cutout Size (mm)</th>
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</table>

III means transistor output, the max load is 100mA, RI means relay output, the max load is 5A, MR means both relay and transistor, 6 is up to customers.

Diagram 1: PLC Programming Port

Diagram 2: PLC Module

Diagram 3: Hardware Interface Diagram

Diagram 4: PLC Programming Port

Electrical design reference

1. Mounting hole

2. Terminal block for input signal of power supply

3. Terminal block of digital output

4. LED of Digital Input

5. LED of Digital Output

6. Power-up State

7. RUN: The light on when the PLC is in RUN.

EWR: There is a program error and the LED indicator will blink.

R: Power-off State

S: MT: Mitsubishi RS-485 interface protocol and ASCII protocol and RTU/ASCII protocol and MODBUS RTU/ASCII protocol are set in D8120, station number is set in D8121, can be used as master or slave.

3. Rs485 (A1 B1) port: support Mitsubishi programming port protocol.

4. Rs485 (A2) port: support Mitsubishi programming port protocol.

5. Rs485 serial protocol: Modbus (Modbus RTU/ASCII) parameters are set in D8102, station number is set in D8121, can be used as master or slave.

6. Rs485 (A1 B1) port: support Mitsubishi programming port protocol and Modbus (Modbus RTU/ASCII) parameters are set in D8110, station number is set in D8121, normally only be used as master or slave.

7. Rs485 x 2 (A1 B1 port): support Mitsubishi programming port protocol and Modbus (Modbus RTU/ASCII) parameters are set in D8110, normally only be used as master or slave.

8. Rs485 x 2 (A1 B1 port): support Mitsubishi programming port protocol and Modbus (Modbus RTU/ASCII) parameters are set in D8110, normally only be used as master or slave.

9. RUN/STOP

10. Analog Input

11. Analog Output

12. Rs232

13. DIN-Rail Slot

14. Terminal block of digital input

15. PLB USB prog-ramming port

Diagram 5: Optional COM Port

Diagram 6: PLC Module

Equivalent Circuit

There is a power supply (DC24V) inside PLC to test the state of the switch. The end user only need to put in the dry contact. DC output signal is needed if output signals of active crystal sensor should be connected.
Diagram 7 is an equivalent circuit diagram of relay output. There are several groups of input terminals, each group is electrical isolation and the output electric shock of different groups should be connected with different power circuit.

Diagram 8 is an equivalent circuit diagram of transistor output. As the diagram shows, there are several groups of input terminals, each group is electrical isolation and the output electric shock of different groups should be connected with different power circuit. The output of transistors can be only used for load circuit with DC24V.

As for inductive load connected with AC circuits, RC instantaneous voltage absorbing circuit should be considered to protect transistors. As for inductive load connected with DC circuits, free-wheeling diode should be added, shown as diagram 9.

Wiring diagram of stepping motor or servo motor is shown as diagram 10. DC24V of 5V Driver can be only used for load circuit with DC24V. Terminals, each group is electrical isolation and the output electric shock of different groups should be separated. The third connected with the ground wire. The power supply for sensor device with parallel resistance.

The negative terminals are respectively connected with +24V and the positive and negative poles of the power supply are connect with the transmitter’s positive and negative poles. The positive and negative poles of transmitter output are connect with AD and GND separately. When the analog is temperature, two wires should be connect with AD and GND separately.

As for three-wire PT100, it should be merged into two wire.

Anti-interference processing:
1. The strong current and the weak current should be wired separately and cannot connect with ground. When there is a strong current, please add a circular on the power port. Besides, proper grounding processing should be conducted according to the chassis.
2. When there is a interface, 104 ceramic chip can be added and effective grounding should be conducted.

Diagram 10 Pulse wiring

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**FX2NC PLC User Manual**

1. In cases of damage to the product, please confirm power supply range first (the regular power supply range is 20VDC-24VDC), the booster should be used only for devices with power supply voltage which output voltage is 18V or higher than 18V, and wiring correctly, then electricity is safe.
2. Before installing the product, please tighten the screw and clamp guide to avoid falling.
3. Please do not wire or plug cable when the power is on, otherwise it may cause electric shock or circuit damage. Disconnect power immediately when the product malfunctions or stops working. Do not drop in small objects and wires into the control unit to avoid the pressing of the button or wire, which may cause short circuit.
4. Please do not use the same power and communication cable together or let them too close, you should keep them for more than 10cm distance. This strong and weak-electricity should be separated and properly grounded. If the interference is serious, the communication and high frequency signal input and output cables should be shielded cables to improve anti-jamming performance. The grounding terminal FG on this unit must be properly grounded, which can improve the anti-interference ability.
5. The COM of the binary input/output (transistor) is common to the cathode. Do not plug the power product power supply, otherwise it may cause malfunction.
6. Please make sure to turn off the power when you install or dismantle the product, otherwise it may cause malfunction or break.

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