CM-OP

Offline Programming Module

User Manual

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Introduction

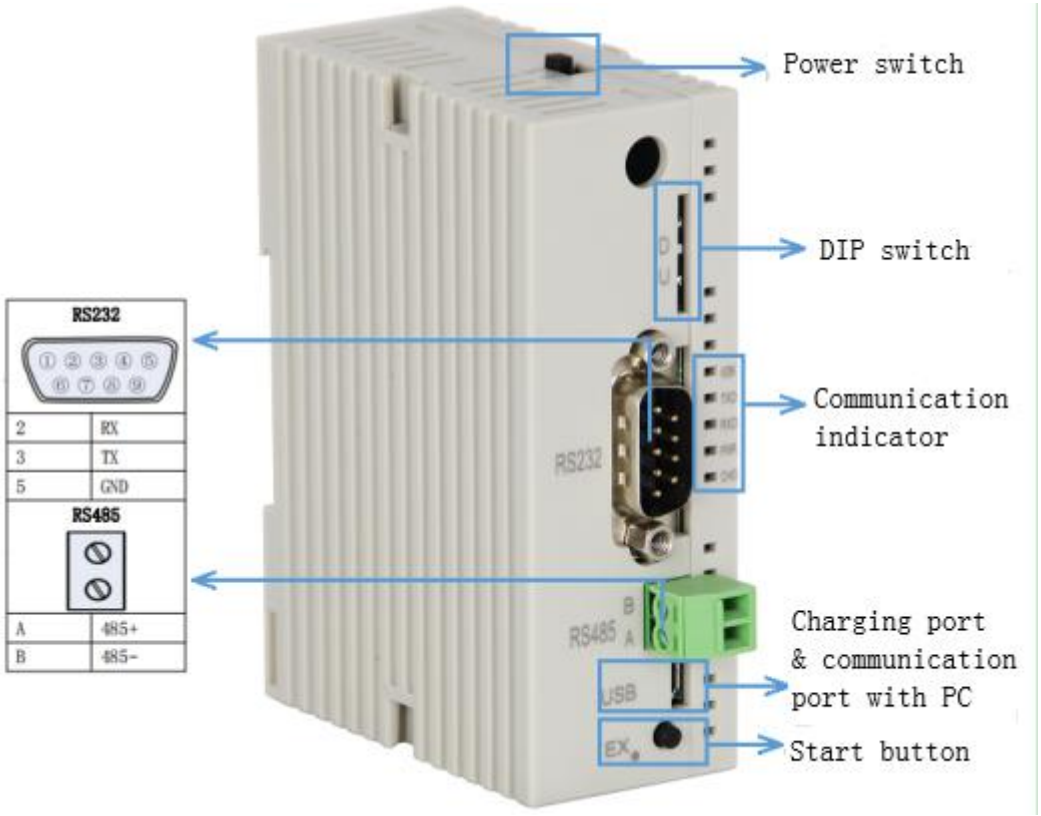
CM-OP offline programming module, as a wired data transmission module, applies RS485 and RS232 communication mode to realize the communication between the module and PLC directly to upload and download the program. It makes program downloading easier especially for the automation equipment of the production line, Keeps engineers away from noises, improving the working environment and greatly improved work efficiency. It is with multiple functions and easy to operate, which is good for the workers to learn.





I. Hardware

1.1 Appearance



1.2 Indicator status and functions

Name	Functions	Status
WORK	Indicator of communication between the module and PLC	Lit while not communicating. Flash once approx. every second while communicating successfully. Flash while uploading or downloading data.
TXD	Indicator of transmit data	U: Flicker D: Quick flash
RXD	Indicator of receiving data	U: Quick flash D: Flicker
PWR	Power indicator	Lit while power on
CHG	Charging indicator	Flicker while USB charging

1.3 Product advantages

1. Reduce equipment downtime. When programming the next task, the previous equipment program can still work on the production line.

2. It makes the programmer stay away from heavy handling work and improves the environment with the module to download PLC program for the automation equipment on the production line

3. Offline programming has a wide range of applications, not only can read and write programs of Coolmay 2N series, 3G series and other PLCs, but also can do those with genuine Mitsubishi 2N or 3G series PLCs.

4. Can easily achieve optimal programming.

5. It is convenient to change the PLC program and improve work efficiency.

6. No need of parameter setting, plug and play, easy to use.

7. Built-in rechargeable battery, and can be used continuously for more than 5 hours on a single charge.

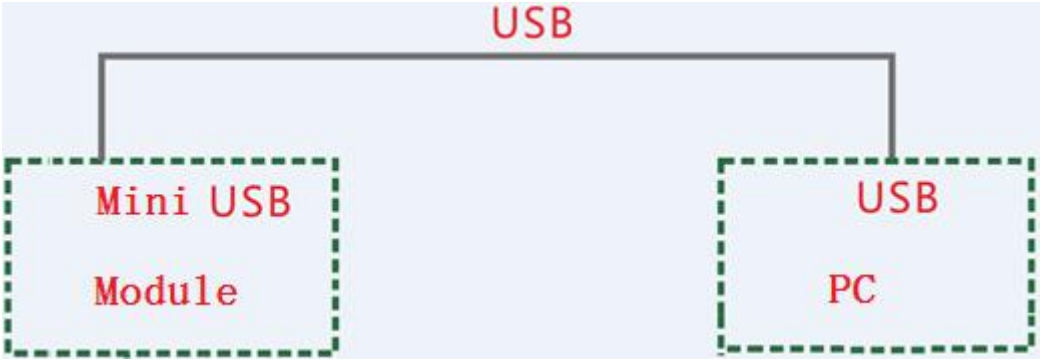
1.4 Product parameters

Model type		CM-OP module
Pictures	Front	
	Side	
Installation		35MM standard guide rail installation, handheld device
Connection		MICRO USB & RS485/RS232
Communication protocol		Mitsubish program protocol
Power voltage		Built-in 2000mAH chargeable Li-ion battery
Charging voltage		5V
Max current		50mA
Static power		<0.5W
Net weight		50g
Dimension		90mm*64mm*33mm
Environment temperature		-20℃~85℃
Program software		Compatible with Mitsubish PLC program software GX8.52 and WORKS 2
Download manuals at http://www.coolmay.net		

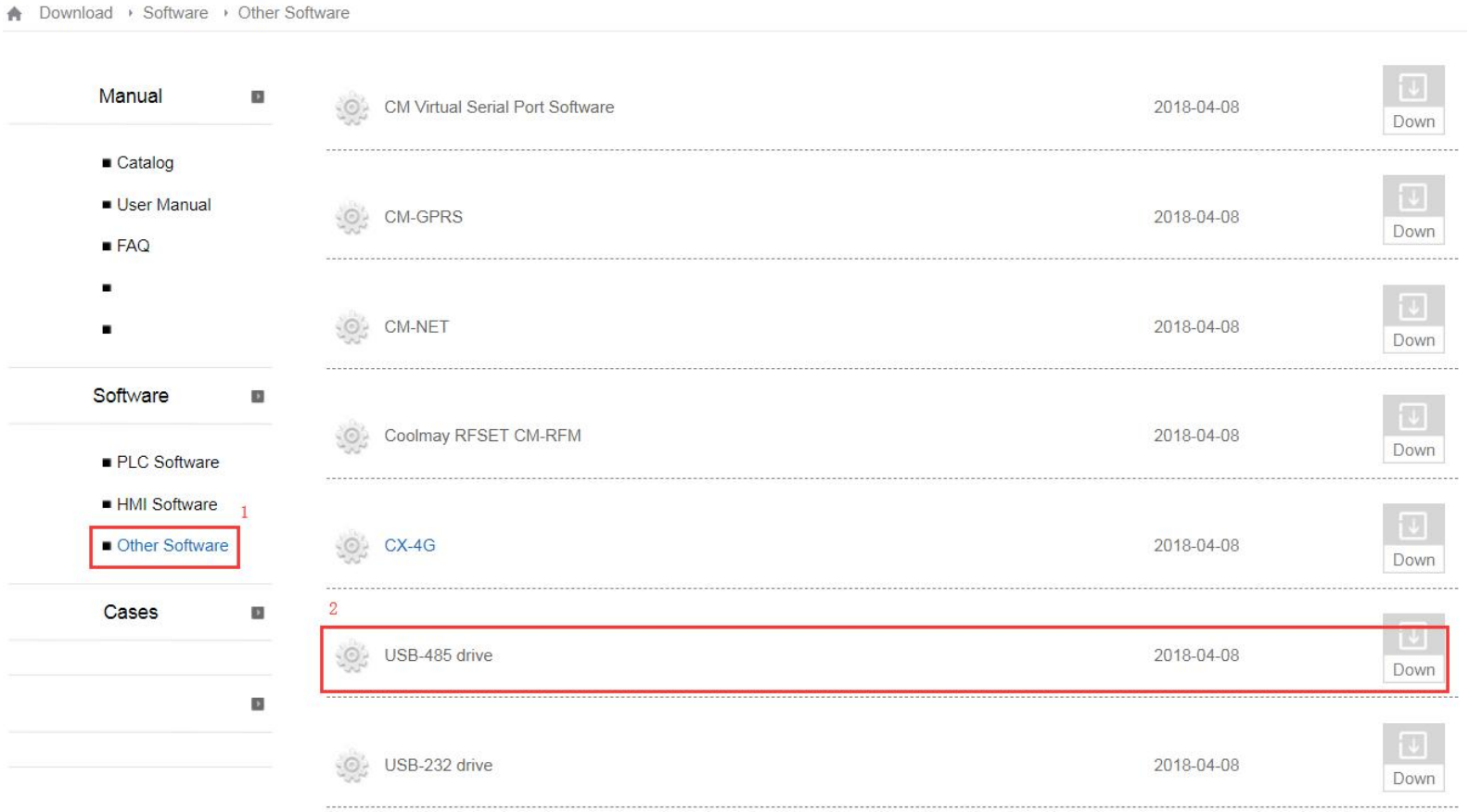
II. Operation modes

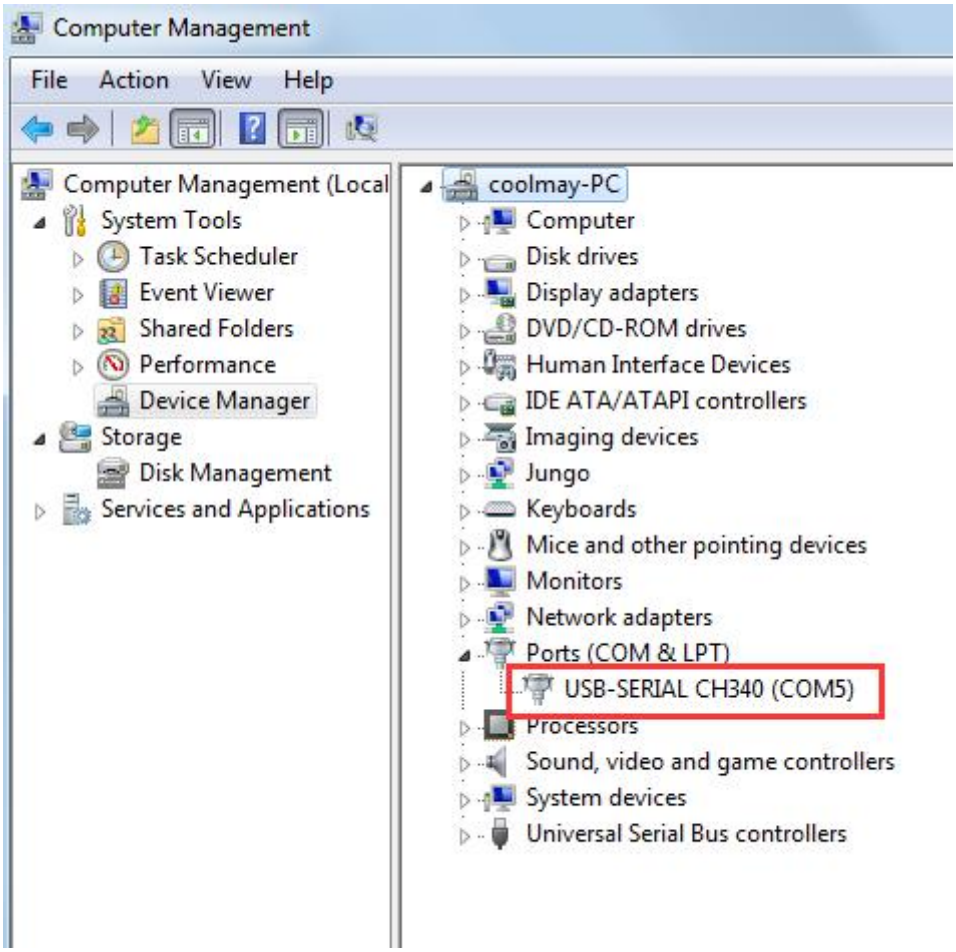
2.1 Communication with PC

1. The module connects with PC by USB. The connection method is shown as below.



There will come a corresponding serial port in the computer device manager (the PC needs to be installed with USB to serial port driver, which can be downloaded at www.coolmay.com) . E.g. COM 5.

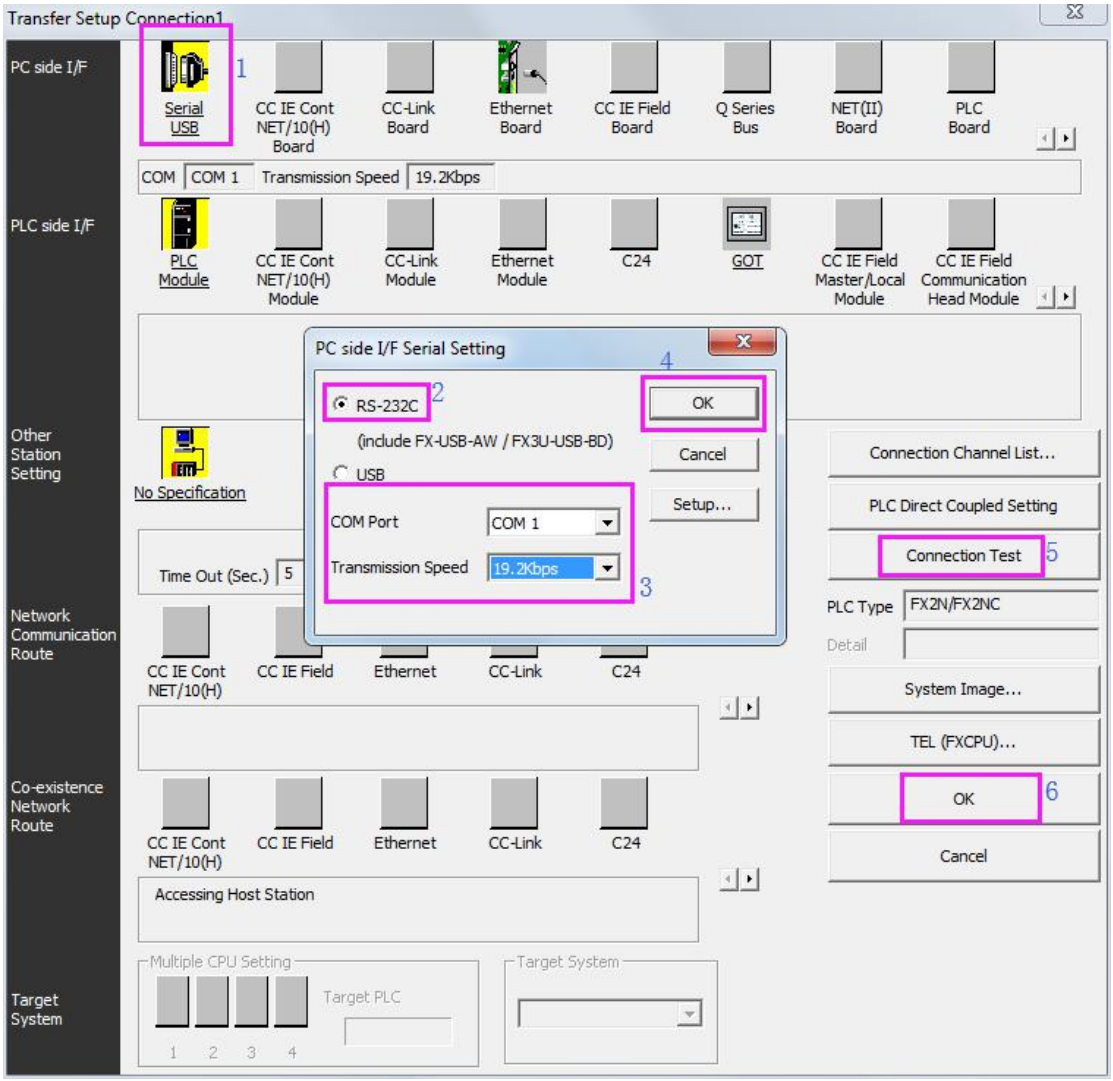




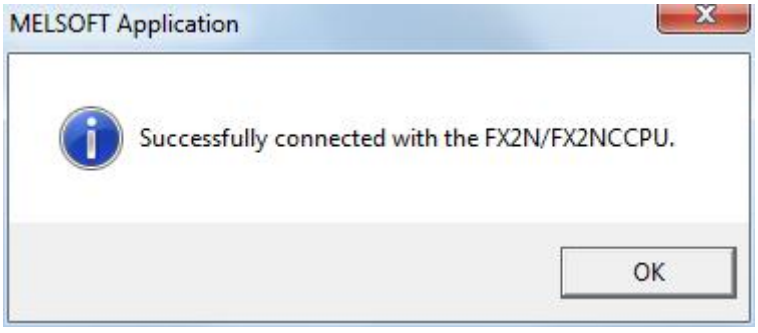
2. Power the module on by connecting the DC24V power supply.

3. The module can be regarded as a 2N PLC.

4. Establish FX2N program with GX Works2 or GX developer 8.52 software, and test the module communication with the computer. The specific operation is shown as follows.



5. Click the “Test” button in the last step, and it will pop up a dialogue box if communication successfully. It is shown as below.



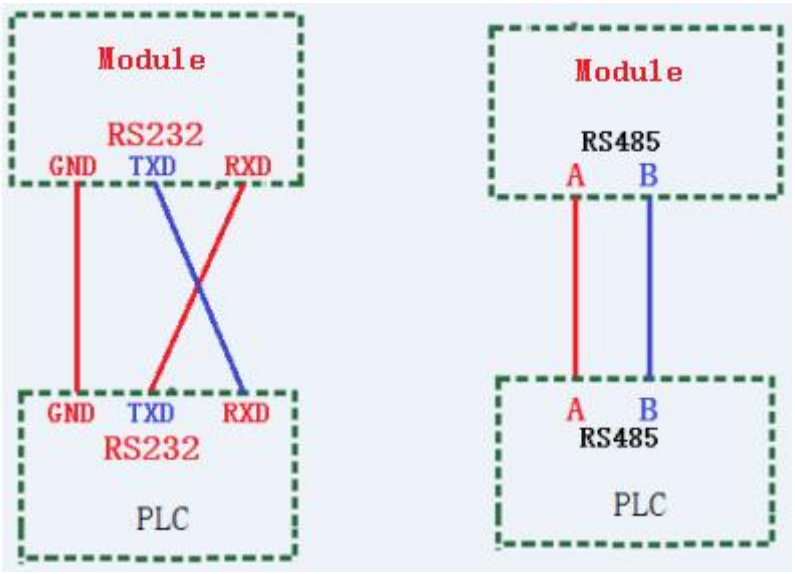
6. The program can be written into the CM-OP offline programming module after the module and the computer communicate successfully. And the program can be also read from the module to the computer.

Double click the PLC icon  in the toolbar, or select [Online]->[PLC Write] in the menu to write the 2N program to the module.

Double click the PLC icon in the toolbar, or select [Online]->[PLC Read] in the menu to read the 2N program from the module to the computer.

2.2 Communication with PLC

The module communicates with PLC by RS485 or RS232, and the connections method is as below.



The data can be transferred after the module and PLC communicate successfully, i.e., the program can be written to the PLC or read programs from the PLC to the module. The specific operations are as follows.

Write programs from the module to the PLC

1. Power on the PLC. Keep it as STOP.
2. Keep it as D(download).
3. The module and PLC are connected by RS232 or RS485.
4. Power on the module. Keep the power switch as ON.
5. Approx. 2 seconds later, the WORK lamp flashes, and it indicates that it communicates with the PLC successfully.
6. Press the EX. button (start working).
7. At this time, the module RXD light flickers, the TXD light flashes quickly, and the WORK

light flashes normally.

8. Wait until the RXD light stops flashing, i.e., the program downloading is complete while the RXD and TXD lights are off.

Read programs from PLC to the module

1. Power on PLC.

2. Keep the module as U (uploading).

3. Connect the module with PLC by RS232 or RS485.

4. Power on the module, i.e. keep power switch as ON.

5. It indicated that the module communicates with PLC successfully while the WORK lamp flickers approx. 2 seconds later.

6. Press the EX. Button (start working).

7. At this time, TXD light flickers, RXD light quickly flashes and WORK light flickers normally.

8. Wait till the TXD light stops flickering, i.e. it indicates the programs uploading complete.

Introduction to DIP switch while writing and reading

Name	PLC written	PLC read
PLC status	STOP status	STOP or RUN
Module D/U status	D	U

2.3 Other instructions

1. When the module and plc are connected for communication, the module needs to be powered off and restarted to take effect.

2. When the module communicates with PC, you should change the PLC type to 2N while writing 3G program to the module.

3. It is temporarily not supported to read the 3G PLC program from the module to the computer. If read, you can first write the program in the module to the 3G PLC, and then read from the PLC.

4. PLC must be in STOP status while downloading programs to PLC in D status.

5. The maximum program steps currently is 16K.