Coolmay®
Automation Expert

L02S Series DIO Module User Manual

Thank you for purchasing Coolmay L02S series DIO module. This manual mainly describes the product characteristics, general specifications and wiring methods of the module. For detailed usage, please refer to "Coolmay L02S Series PLC Programming Manual".

The L02S series DIO module has the following characteristics:
1. Used with Coolmay L02S series CPU, the address is automatically assigned.
2. Standard DIN rail (35mm width) and Snap-in buckle installation, easy to install and unload.
3. Adopts push-type terminals, convenient for wiring.

◆ Product Structure

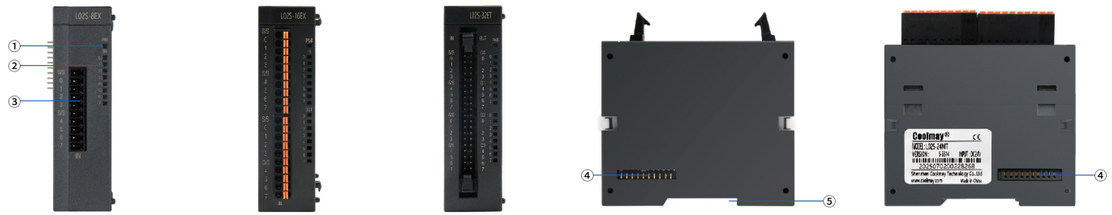


Figure 1 Product structure

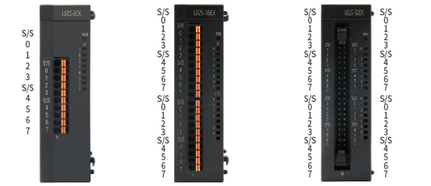
1. PWR: Power indicator

2. Input and output indicators
(Among them: L02S-32ET: X input: LED is red; Y output: LED is green; XY mix: LED is orange; L02S-32EX: Left input: LED is red; right input: LED is green; left and right mixed: LED is orange; L02S-32EYT: Left output: LED is red; right output: LED is green; left and right mixed: LED is orange)

3. Digital input and output terminal block
4. Expansion interface
5. Standard DIN rail installation

◆ Hardware Interface

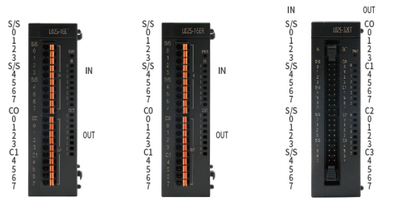
Input module



8 point	16 point	32 point
Quick wiring terminal block	Quick wiring terminal block	High density horn scoket terminal block
L02S-8EX	L02S-16EX	L02S-32EX

Rated input voltage 5 ~ 24 VDC
Reaction time 1 ms
Filter function 1 ~ 20 ms

Input/output module



16 point	16 point	32 point
Quick wiring terminal block 8 point input 8-point transistor output	Quick wiring terminal block 8 point input 8-point relay output	High density horn scoket terminal block 16 point input 16-point transistor output
L02S-16ET	L02S-16ER	L02S-32ET

Reaction time 1 ms (transistor) 10 ms (relay)

Output module



8 point	8 point	16 point	16point	16 point	32 point
Quick wiring terminal block Transistor output	Quick wiring terminal block Relay output	Quick wiring terminal block Transistor output	Quick wiring terminal block Transistor (PNP)output	Quick wiring terminal block Relay output	High density horn scoket terminal block Transistor output
L02S-8EYT	L02S-8EYR	L02S-16EYT	L02S-16EYP	L02S-16EYR	L02S-32EYT

Reaction time 1 ms (transistor) 10 ms (relay)

Figure 2 DIO module

Note: S/S is the common terminal of digital input; Cx is the common terminal of digital output.

DIO Module size

L02S-8EX, L02S-16EX, L02S-32EX
L02S-16ET, L02S-16ER, L02S-32ET
L02S-8EYT, L02S-8EYR, L02S-16EYT, L02S-16EYP, L02S-16EYR, L02S-32EYT

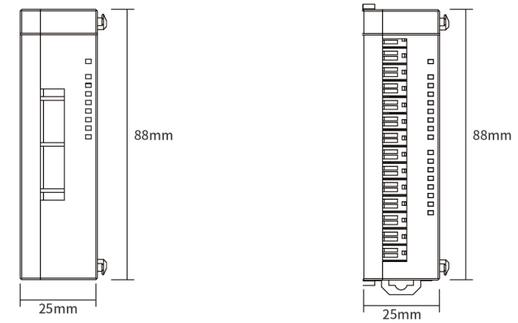


Figure 3 DIO module size diagram

◆ Installation Notes

Install the snap-in buckle

Open the white buckle, align the expansion interface and push the module directly in, press the white buckle at both ends to complete the installation.

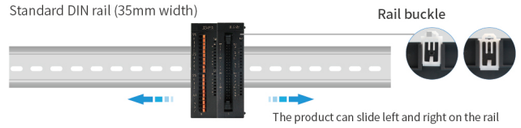


Sort modules neatly　Push module　Press the buckle

Figure 4 Snap-in buckle installation

Rail installation method

The CPU module and the expansion modules can be directly installed on the standard rail DIN35mm without a backplane; press the rail buckle to directly lock the product on the rail.



Put the module into the rail card slot and press the rail buckle to complete the installation.

Figure 5 Rail installation

◆ Equivalent Circuit

The input of L02S series is dual-phase optocoupler, users can choose NPN or PNP connection. Note: The common ends of the input points are all intercommunication, a module or a host can only have one wiring method, and cannot be mixed.

PLC input (X) is external power supply DC24V sink type (passive NPN), the input signal is isolated from the power supply. When using, the S/S must be connected to the 24V positive of the external power supply.

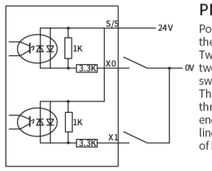


Figure 6 Input wiring diagram

PLC switch quantity NPN input wiring:

Port short connection: The S/S of the PLC input terminal is connected to 24V, and the X terminal is connected to the power supply 0V, that is, the input has a signal;
Two-wire system (magnetic control switch): PLC switch input is connected to a two-wire magnetic control switch, the positive pole of the magnetic control switch is connected to the X terminal, and the negative pole is connected to 0V;
Three-wire system (photoelectric sensor or encoder): PLC switch is connected to a three-wire photoelectric sensor or encoder, the power supply of the sensor or encoder is connected to the positive electrode of the power supply, and the signal line is connected to the X terminal; the encoder and photoelectric sensor must be of NPN type.

PLC input (X) is an external power supply DC24V source type (passive PNP), and the input signal is isolated from the power supply. When using, the S/S must be connected to the 0V of the external power supply.

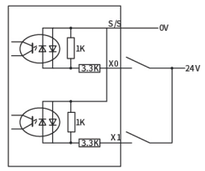


Figure 7 Input wiring diagram

PLC switch PNP input wiring:

Port short connection: The S/S of the PLC input terminal is connected to 0V, and the X terminal is connected to the power supply 24V, that is, the input has a signal;
Two-wire system (magnetic control switch): PLC switch input is connected to a two-wire magnetic control switch, the negative pole of the magnetic control switch is connected to the X terminal, and the positive pole is connected to 24V;
Three-wire system (photoelectric sensor or encoder): PLC switch is connected to a three-wire photoelectric sensor or encoder, the power supply of the sensor or encoder is connected to the positive electrode of the power supply, and the signal line is connected to the X terminal; the encoder and photoelectric sensor are required to be PNP type.

Figure 8 shows the equivalent circuit diagram of the relay output module. The output terminals are in several groups, and each group is electrically isolated. The output contacts of different groups are connected to different power circuits.

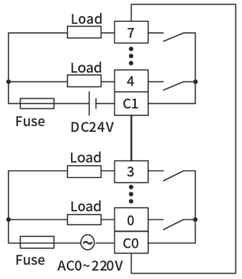


Figure 8 Relay output equivalent circuit

Figure 9 shows transistor NPN, Cx common cathode output type, and Figure 10 shows transistor PNP output equivalent circuit xL+common anode output; It is also known from the figure that there are several groups of output terminals, each group is electrically isolated, and different groups of output contacts can be connected to different power circuits; The transistor output can only be used for DC 24V load circuit.

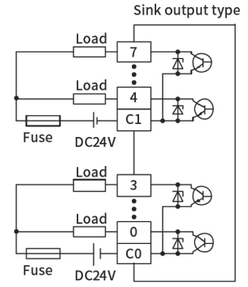


Figure 9 Transistor output equivalent circuit

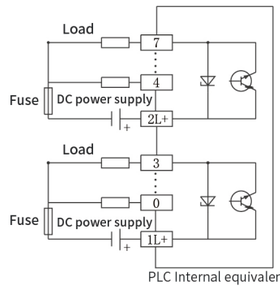


Figure 10 Transistor Output Equivalent Circuit

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The model specifications and information of the products in this manual are subject to change without prior notice