HCFa

Q SERIES CPU UNIT

*Hardware Instruction*

# HCQ0-1200-D/1100-D CPU UNIT

Q0

| | |
|---|---|
| ManualNo. | HPPP1270000EN |
| Version | 1.0 |
| Date | October,2020 |

Thanks for purchasing HCFA Q series PLC main unit HCQ0-1200-D

Q series controllers include the functions of traditional PLCs and support the extension of multiple remote I/O modules. Users can realize various functions of motion control through SoftMotion provided by the controller. It is a device that integrates high-speed EtherCAT communication, vision, motion control, I/O functions and supports multiple bus communication (including Modbus TCP, CANopen, serial port communication, etc.)

For the users of HCFA Q series CPU units, refer to this manual to perform the wiring, installation, diagnosis and maintenance and requires the users to have the certain knowledge of electrical and automation. This manual describes the necessary information for using Q series CPU units. Please read this manual carefully before using it and operate it correctly based on a better understanding of safety precautions.

## 1. Safety precautions

### 1.1Safety icons

When using this product, please follow the following safety guidelines and strictly follow the instructions. Users can see more detailed and specific safety guidelines in sections such as DIN rail mounting, wiring, communication, etc.

In this manual, the following safety instructions must be observed.

**⚠ DANGER**

- Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury or significant property damage

**⚠ WARNING**

- ndicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

**⚠ CAUTION**

- Indicates that incorrect handling may cause slight injury or property damage.

**⚠ NOTE**

- Indicates that incorrect handling may cause damage to the environment / equipment or data loss.

NOTE: explanations to help better operate and use of the product

### 1.2 Safety rules

Startup And Maintenance Precautions

**⚠DANGER**

- Do not touch any terminal while the PLC's power is on. Doing so may cause electric shock or malfunctions.
- Before cleaning or retightening terminals externally cut off all phases of the power supply. Failure to do so may cause electric shock.
- Before modifying or disrupting the program in operation or Forced output, RUN, STOP etc., carefully read through this manual and the associated manuals and ensure the safety of the operation.
  An operation error may damage the machinery or cause accidents

Startup And Maintenance Precautions

**⚠CAUTION**

- Do not disassemble or modify the PLC. Doing so may cause fire, equipment failures, or malfunctions.For module repair, contact our HCFA distributor.
- Turn off the power to the PLC before connecting or disconnecting any extension cable. Failure to do so may cause equipment failures or malfunctions
- Turn off the power to the PLC before attaching or detaching the following devices. Failure to do so may cause equipment failures or malfunctions
  —Display module, peripheral devices, expansion boards
  —Extension blocks and special adapters
  —Battery, terminal block and memory cassette

Disposal Precautions

**⚠CAUTION**

- Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

Transport And Storage Precautions

**⚠CAUTION**

- The PLC is a precision instrument. During transportation, avoid impacts larger than those specified in Section 3.1. Failure to do so may cause failures in the PLC. After transportation, verify the operations of the PLC.

## 2. Product overview

### 2.1 Model name description

HC Q0 X - 1 2 0 0 - D

| Series name | |
|---|---|
| Q0 | Basic bus-type motion controller |
| Q1 | Standard bus-type motion controller |
| Q3 | Advanced bus-type motion controller |
| Q5 | Basic intelligent mechanical controller |
| Q7 | Standard intelligent mechanical controller |
| Q9 | Advanced intelligent mechanical controller |

| Product name | |
|---|---|
| HC | HCFA Controller |

| Series model | |
|---|---|
| N/A | Standard -type |
| S | Basic type |
| J | Modular type |

| Additional function software module | | | |
|---|---|---|---|
| 0 | Standard software | 2 | Edge computing |
| 1 | Machine vision | | |

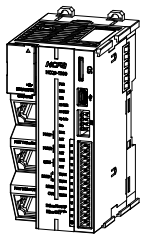
| Power type | | | |
|---|---|---|---|
| D | DC power | A | AC power |

| Control software | | | |
|---|---|---|---|
| 0 | CODESYS | 3 | CNC |
| 1 | HCPACS | 4 | MC |
| 2 | ROBOT | 9 | N/A |

| Number of motion control axis | |
|---|---|
| N(0~8) | $2^{n+1}$ |

| Operating system | | | |
|---|---|---|---|
| 1 | Linux | 3 | Windows7 |
| 2 | Windows10 | 4 | QNX |

NOTE: number of motion control axis: number of axis of controller with task period of 4ms.



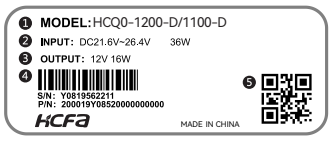



Figure 1 Model name and nameplate description

① Model name
② Voltage input and current required for normal operation
③ Output voltage and power
④ Bar code, S/N are the internal serial number, the first four bits of the PN code is the machine version number, example: Figure 1 is V2.000 version
⑤ QR code (model name, serial number)

| Models | Type | Description | Applicable module |
|---|---|---|---|
| HCQ0-1200-D | CPU units | 16MB user storage space (including program and data storage space); 2-ch RS485; 1-ch RS232; 1-ch CANOpen; Supporting Modbus TCP, EtherCAT, built-in 3-ch high-speed inputs and 2-ch high-speed outputs | Q series CPU units and all extension modules |

### 2.2 Part names

#### 2.2.1Parts on the frontside

HCQ0-1200-D/1100-D CPU unit viewed from the front side

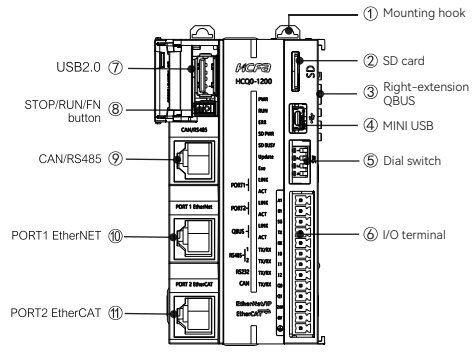



Figure 2 HCQ0-1200-D/1100-D CPU unit viewed from the front side

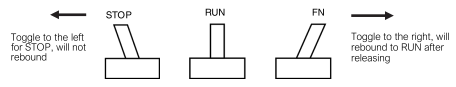
Table 1 Part names and function description -1

| Items | Name | Functions |
|---|---|---|
| 1 | Mounting hook | Install controller onto the DIN rail mounting hook |
| 2 | SD card | User data storage, program import , please refer to the description of the Q0 program import and export |
| 3 | Right-extension QBUS | Transmit QBUS signal and control circuit current |
| 4 | MINI USB | USB 2.0 interface, will supportthe connection with PLC to monitor and download user program |
| 5 | Dial switch | 4 digits. For thedetails, please refer to the description of the dial switch |
| 6 | I/O terminal | Communication portJ/O port and power supply port |
| 7 | USB2.0 | USB2.0 interface, supporting program import, please refer to the description of the Q0 program import and export |
| 8 | STOP/RUN/ FN button | Start or stop the CPU unit, long press FN for 2s or more to trigger the dial switch |
| 9 | CAN/RS485 (COM2) | Support CANopen and MODBUS RTU master station communication |
| 10 | PORT1 EtherNET | Gigabit Ethernetsupport Modbus TCP slave |
| 11 | PORT2 EtherCAT | Gigabit EthernetsupportEtherCAT |

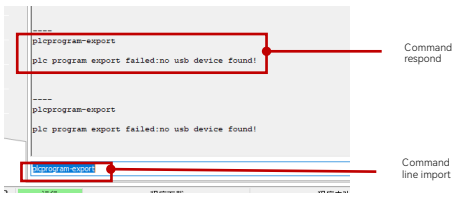
⚠ WARNING
- The STOP/RUN/FN button is a three-stage switch: the middle position is RUN. Toggle to the left for STOP, which will not rebound, and is used to switch the RUN/STOP state; Toggle to the right is the FN button, which is a rebound switch, and it bounces back to RUN after releasing it. Long-press FN means to turn the switch to FN and keep it above 2s. The diagram shows the following (elevation view)








- Description of Q0 program import and export: Importing program from U disk/SD card by dialing code trigger: According to PLC command in IDE, exporting PLC program to U-disk/SD card. The command is "plcprogram-export", which is used to export internal PLC program to SD card/ U-disk, and the export file is App.hcfa; when both of storage device are using at the same time, the program will be exported to the device which inserted first, and the old file which has the same name will be overwritten. Command execution result is given in PLC command interface,




- In order to ensure the security of the program, Q0 only supports the above exported files (suffix .hcfa) to do program import. Program import through the dip switch to achieve, please refer to the description of the dip switch for details.

- Refer to Q series hardware manual or Q0 brief debugging tutorial for detailed IDE interface operation instruction

I/O terminal description for HCQ0-1200-D/1100-D

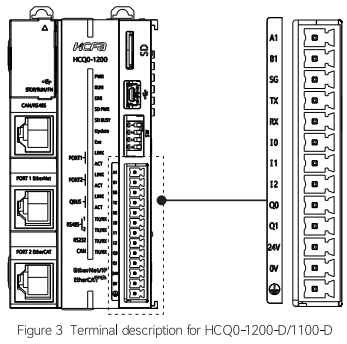


Figure 3 Terminal description for HCQ0-1200-D/1100-D

♦ Table 2 I/O terminal description

| Items | Name | Description |
|---|---|---|
| 1 | A1 | RS485-A |
| 2 | B1 | RS485-B |
| 3 | GND | GND for RS485 & RS232 |
| 4 | TX | RS232 to send |
| 5 | RX | RS232 to receive |
| 6 | I0 | Input point 0, only support PNP input |
| 7 | I1 | Input point 1, only support PNP input |
| 8 | I2 | Input point 2, only support PNP input |
| 9 | Q0 | Output point 0, only support NPN output |
| 10 | Q1 | Output point 1, only support NPN output |
| 11 | 24V | 24V DC power input |
| 12 | 0V | 0V power supply, COM port for IO terminal |
| 13 | FG | Grounding |

♦ Dial switch description for HCQ0-1200-D/1100-D

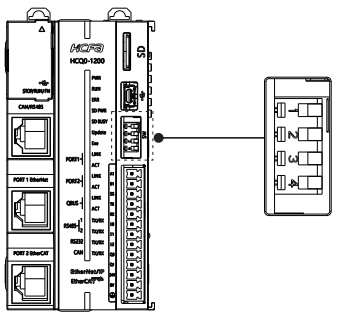


Figure 4 Dial switch description for HCQ0-1200-D/1100-D

♦Table 3 Dial switch description

| Dial switch | | Functions |
|---|---|---|
| SW2 | SW1 | |
| 0 | 0 | Long-press FN touninstallU disk/SD card |
| 0 | 1 | Long-press FN toreset IP address, and restart after completion |
| 1 | 0 | Long-press FN to importthe PLC program, and restart after completion |
| 1 | 1 | Reserved |
| SW3 | | Reserved |
| SW4 | | Terminal resistance switch |

⚠ WARNING
- Dial switch to the left to 1/ON, and to the right to 0/OFF

♦ Table 4 CAN/RS485 interface description

| Items | Description |
|---|---|
| 1 | CAN-H |
| 2 | CAN-L |
| 3 | Common grounding for RS485 master and CAN |
| 4 | RS485 master-A |
| 5 | RS485 master-B |
| 6 | N/C |
| 7 | N/C |
| 8 | N/C |

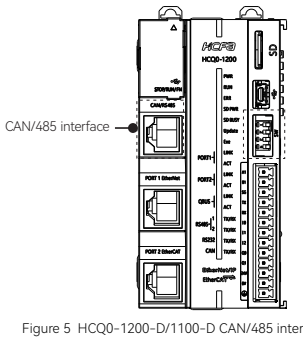



Figure 5 HCQ0-1200-D/1100-D CAN/485 interface description



⚠ WARNING
- Rs485 corresponds to COM2 in the program. The port has a built-in 120Ω terminal resistance and does not support MODBUS RTU slave station. If this port is used as a slave station, an error occurs and the red triangle displayed in device tree. The CAN interface also has a built-in 120Ω terminal resistance, which supports the CANopen master station.

#### 2.2.2 Top view description

♦ Top view for HCQ0-1200-D/1100-D CPUunit

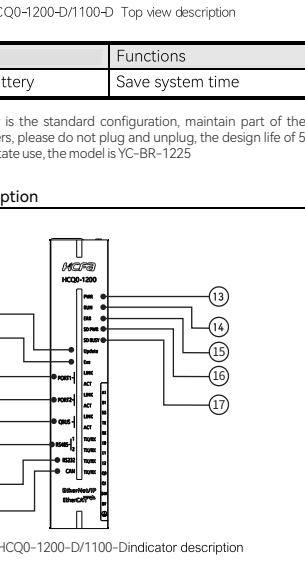



Figure 6 HCQ0-1200-D/1100-D Top view description

| Itmes | Name | Functions |
|---|---|---|
| (12) | RTC battery | Save system time |

NOTE: Coin cell battery is the standard configuration, maintain part of the system parameters, please do not plug and unplug, the design life of 5 years in normal state use, the model is YC-BR-1225

#### 2.2.3 Indicatordescription

♦ Indicator description



Figure 7 HCQ0-1200-D/1100-Dindicator description

⚠ WARNING
- Four LED status: ON: Lit ; OFF: Unlit; blink: Always blinking at a frequency of 5HZ; wink: blinking 10 times and then extinguished

Table 4 Part names and function description-4

| Items | Port | Color | Function |
|---|---|---|---|
| (13) | PWR | Green | Shows the current power supply of the module |
| (14) | RUN | Red | Running status, blink at operation; ON at stop; OFF at no program |
| (15) | ERR | Red | Fault indicator, ON when error occurs; OFF when reset or program is normal |
| (16) | SD_PWR | Green | SD card loading |
| (17) | SD_BUSY | Red | SD card is busy, ON after successfully loading U disk or SD card; OFF after safe unloading |
| (18) | Update | Red | Status update display ON after successfully importing the program; Click [Flash], the device winkwhen software is scanned;The device wink after successful resettingIP address; OFF when reset |
| (19) | Exe | Red | System heartbeat light |
| (19) (20) | PORT1 | Green | RJ45 Ethernet interfaceLINK indicator, green indicates communicationhas been established. |
| | | Orange | RJ45 Ethernet interfaceACT indicator, Orange flashing indicates data exchange on the network port |
| (20) (21) | PORT2 | Green | RJ45 Ethernet interfaceLINK indicator, green indicates communicationhas been established. |
| | | Orange | RJ45 Ethernet interfaceACT indicator, Orange flashing indicates data exchange on the network port |
| (21) (22) | QBUS | Green | QBUS communication LINK indicator, green indicates communicationhas been established. |
| | | Orange | QBUS communication ACT indicator, Orange flashing indicates data exchange on the network port |
| (23) | RS485-1 (COM1) | Green / Orange | Serial communication TX/RX communication indicatorGreen represents TX light, flashesat sending data;Orange represents RX light, flashesat receiving data |
| (24) | RS485-2 (COM2) | Green / Orange | Serial communicaton TX/RX communication indicatorGreen represents TX light, flashesat sending data;Orange represents RX light, flashesat receiving data |
| (25) | RS232 (CON3) | Green / Orange | Serial communication TX/RX communication indicator.Green represents TX light, flashesat sending data;Orange represents RX light, flashesat receiving data |
| (25) | CAN | Green / Orange | CANopencommunication TX/RX communication indicatorGreen represents TX light, flashesat sending data;Orange represents RX light, flashesat receiving data |
| (26) | Communicati -on protocol identification | N/A | Identifies that the current device supports communication protocols, where Ethernet IP has subsequently support. |

⚠ WARNING
- Rs485 port corresponds to COM1 in the program, and the RS485 main port (the 485 port of the network port) corresponds to COM2 in the program, and the RS232 port corresponds to COM3 in the program. The RS485 master port has a built-in 120Ω terminal resistance, which does not support MODBUS RTU slave station. When this port is used as a slave station, an error will occur and the red triangle displayed in device tree.

| Error code | Error name | Description |
|---|---|---|
| 0010 | RTSEXCPT_WATCHDOG | IEC-task watchdog overtime |
| 0011 | RTSEXCPT_HARDWARE WATCHDOG | System hardware watchdogovertime |
| 0012 | RTSEXCPT_IO_CONFIG_ ERROR | IO configuration error |
| 0013 | RTSEXCPT_PROGRAMC HECKSUM | IEC program download checksum error |
| 0014 | RTSEXCPT_FIELDBUS_ ERROR | Field bus error |
| 0015 | RTSEXCPT_IOUPDATE_E RROR | IO update error |
| 0016 | RISEXCPT_CYCLE_ TIME_EXCEED | Periodicity overtime |
| 0017 | RTSEXCPT_ONLCHANG E_PROGRAM_EXCEEDED | Program online change excessive |
| 0018 | RTSEXCPT_UNRESOLVE D_EXTREFS | Exist Unimplemented function blocks or functions in IEC program |
| 0019 | RTSEXCPT_DOWNLOAD _REJECTED | Current download operation rejected |
| 001A | RTSEXCPT_BOOTPROJE CT_REJECTED_DUE_RET AIN_ERROR | The boot project was not loaded due to the Retain variable could not be loaded |
| 001B | RTSEXCPT_LOADBOOTP ROJECT_FAILED | Start boot project failed, without loading or deleted |
| 001C | RTSEXCPT_OUT_OF_ME MORY | Memory overflow |
| 0021 | RTSEXCPT_BOOTPROJE CTTARGETMISMATCH | Boot project mismatch current device |
| 0022 | RTSEXCPT_SCHEDULEE RROR | Task scheduling error |
| 0024 | RTSEXCPT_RETAIN_IDE NTITY_MISMATCH | Retain Variables mismatch boot project |
| 0025 | RTSEXCPT_IEC_TASK_C ONFIG_ERROR | IEC tasks configure error |
| 0026 | RTSEXCPT_APP_TARGE T_MISMATCH | Application cannot operate on the current device |
| 0050 | RTSEXCPT_ILLEGAL_INS TRUCTION | Illegal command |
| 0100 | RTSEXCPT_MISALIGNMENT | Data type misalignment |
| 0101 | RTSEXCPT_ARRAYBOUNDS | Array out bounds |
| 0102 | RTSEXCPT_DIVIDEBYZERO | The application has a divide by 0 |
| 0150 | RTSEXCPT_FPU_ERROR | Floating point error |
| 0152 | RTSEXCPT_FP U_DIVIDE BYZERO | FPU has a divide by 0 |

## 2.4 Product dimensions

♦ Product dimensions

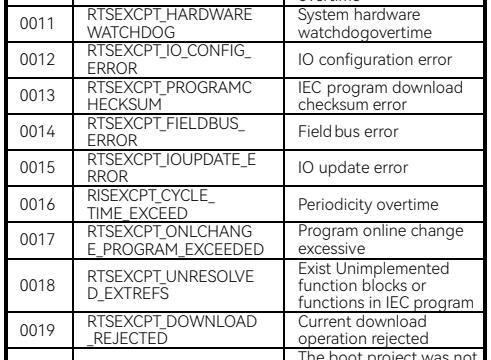



Figure 8 HCQ0-1200-D/1100-D CPU installation dimension (unit: mm)

# 3. Installation description

## 3.1 Electrical specifications

| Items | Specifications | | | | |
|---|---|---|---|---|---|
| Dielectric withstand voltage | 1000VAC for one minute, Between power terminals and input/output terminals and between external terminals and housing | | | | |
| Noise resistance | (IEc61000-4-2/3/4/6) By noise simulator at noise voltage of 1500 Vp-por more, noise width of 1 μs, rise time of 50ms. Conform to IEC standard (IEC61000-4-2/3/4/6) | | | | |
| Vibration resistance | Vibration resistance | Frequency (Hz) | Acceleration ($m/s^2$) | Single amplitude (mm) | Sweep Count for X, Y, Z: 10 times (80 min in each direction) |
| | When installed on DIN rail | 10~57 | —— | 0.035 | |
| | | 57~150 | 4.9 | —— | |
| Insulation resistance | 50MΩ or more (by 500V DC megger, Between power terminals and input/output terminals and between external terminals and housing) | | | | |
| IP protection level | IP20 | | | | |
| Ambient temperature | Max. 50℃, free fromdust and corrosive gas | | | | |
| Working altitude | 2000m (80kPa) | | | | |
| Pollution degree | 2, Normally there is only non-conductive pollution, but temporary conductivity caused by condensation should also be expected. | | | | |

## 3.2 Environmental specifications

| Classification | Types | Wording environment | Transport environment | Storage temperature |
|---|---|---|---|---|
| Environmental parameters (IEC60721-3) | Protection level | IE33 | IE22 | IE12 |
| | Temperature | 0~50℃ (free from freezing) | -40~75℃ | -25~75℃ |
| | Humidity | 5-95%RH (free from condensation) | | |
| | Impact | Acceleration 150m2, action time 11ms, 2 times in each direction of X, Y, and Z | | |
| | Altitude/ Pressure | Max.2000m | Max.3000m (>70kPa) | |

WARNING
- IEC60721-3 is the third part of the classification of environmental conditions: the classification of environmental parameter groups and their severity.
- Ambient temperature refers to the surrounding temperature of the module or unit, not the internal temperature of the module.

## 3.3 Power supply specification

| items | specificaition |
|---|---|
| Supply voltage | DC24V |
| Voltage fluctuation range | -15%~20% |
| Input power | 36W |
| Undervoltage alignment | 19V |
| Output voltage | 12V |
| Voltage fluctuation | ±5% |
| Output power | 16W |

## 3.4 Performance specifications

| Items | Specifications | | |
|---|---|---|---|
| Programming | Total program capacity | | 16MBytes |
| | Area I (%I) | | 128KBytes |
| | Area Q (%Q) | | 128KBytes |
| | Area M (%M) | | 512KBytes |
| | Power down protection zone | | 800KBytes |
| | Other Variables | | limitless |
| Units configuration | Number can be extended | Digital module | Calculated based on current consumption |
| | | Analog module | |
| | | External power supply | 12/16W |
| EtherCAT | Communication standard | | IEC 61158 Type12 |
| | EtherCAT master specifications | | Class B (compatible with function motion control) |
| | Physical layer | | 100BASE-TX |
| | Modulation | | Baseband |
| | Transmission speed | | 100Mbps (100Base-TX) |
| | Duplex mode | | Duplex all |
| | Topology | | Linear, daisy chain and branch |
| | Transmission medium | | Twisted-pair cable of category 5 or higher (aluminum foil + braided doubleshielded directconnect cable) |
| | Maximum transmission distance between nodes | | 100m |
| | Maximum process data | | Input: 5,736 bytes Output: 5,736 bytes (The maximum number of frames of process data is 4.) |
| | Maximum process data per slave | | Input 1,434 bytes Output 1,434 bytes |
| | Longest communication cycle | | 1,000 μs |
| CANOpen master station | Link layer | | CAN2.0A |
| | Terminal resistance | | Built-in 120Ω , not support disconnection |
| | Support baud rate | | 20K,50K,100K,125K,250K, 500K,800K and 1M |
| | Topology | | Linear, daisy chain and branch |
| | Transmission Media | | Twisted-pair cable of category 5 or higher |
| | Max transmission distance | | 2500 m (20Kbit/sh) |
| | Max. number of slaves | | 32 |
| | Communication period | | Minimum1ms |

| Items | Specifications | | |
|---|---|---|---|
| Serial port | Physical layer | COM1 | RS485 |
| | | COM2 | RS485 only support master |
| | | COM3 | RS232 |
| | Terminal resistance | COM1 | Built-in 120Ω, Supports toggleswitching |
| | | COM2 | Built-in 120Ω, not support disconnection |
| | Baud rate bps | | 4800~115200 |
| | Max communication distance | COM1,COM2 | 500m |
| | | COM3 | 15m |
| | Topology | COM1,COM2 | Linear, daisy chain and branch |
| | | COM3 | P2p |
| | Max. number of slaves | COM1,COM2 | 32 |
| | | COM3 | 1 |
| | Transmission Media | | Twisted-pair cable of category 5 or higher |

## 3.5 Generall Ospecification

♦ General input specifications

| items | specification |
|---|---|
| Signal name | Transistorized common input (I0-I2) |
| Rated input voltage | DC24V (+20%~-15%, Pulsation±10%) |
| Type of Input | Drain type input |
| Rated input Current | 3.65mA |
| ON current | >4.14mA |
| OFF current | <3.88mA |
| Input resistance | 1.5K |
| Max input frequency | 1KHz |
| Public Method | Shared with power supply 0V, internally shorted |

♦ General output specification

| items | specification |
|---|---|
| Signal name | Transistorized common input (Q0-Q1) |
| Output polarity | Drain type input (NPN) |
| Control circuit voltage | DC5V~24V |
| Rated load voltage | 50mA |
| ON Maximum voltage drop | 0.05V |
| OFF Leakage current | <0.1mA |
| Output frequency | Maximum 1KHz |
| Public method | Shared with power supply 0V, internally shorted |



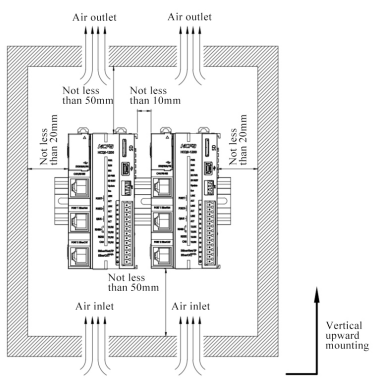


## 3.6 Installation instructions

### 3.6.1Cotrol cabinet installation

Carrying out the installation in the control cabinet of the equipment, please note the following points:

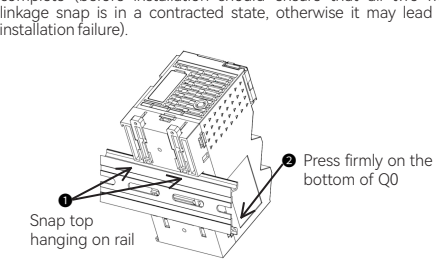
- Please ensure that the installation direction is perpendicular to the wall, use natural convection or a fan to cool the device and mount the controller firmly on the 35MM international rail by means of a two-way linkage clip.
- The top and bottom sides of the equipment or modules must be spaced at least 50 mm apart from the internal walls to allow for ventilation and replacement of the equipment or modules; the left and right sides of the equipment or modules must be spaced at least 20 mm apart from the internal walls.
- For side-by-side installation, a distance of 10mm or more is recommended between devices (if installation space is limited, no spacing is optional).



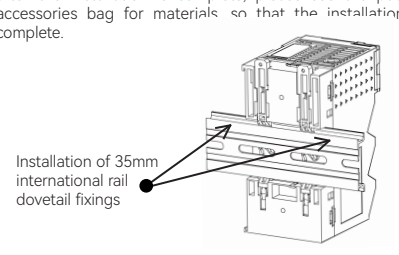

### 3.6.2 Mounting and dismounting of guide rails

■ Rails installation

1 Align the bottom part of Q0 with the 35MM international rail, make the upper part of the two-way linkage snap hang on the rail, then press the bottom of Q0, when you can obviously hear the "click" sound, indicating that the bottom of the two-way linkage snap has been snapped together with the rail, at this time Q0 installation is complete (before installation should ensure that all two-way linkage snap is in a contracted state, otherwise it may lead to installation failure).

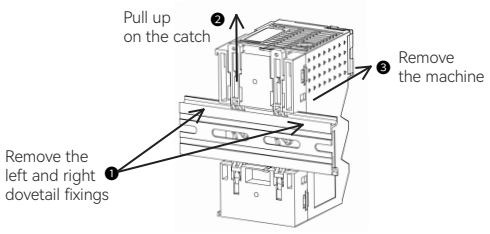



2 After the Q0 installation is complete, 35MM national rail dovetail fixings should be installed on the left and right side of the machine after the installation is complete, please see the packaging accessories bag for materials, so that the installation is all complete.



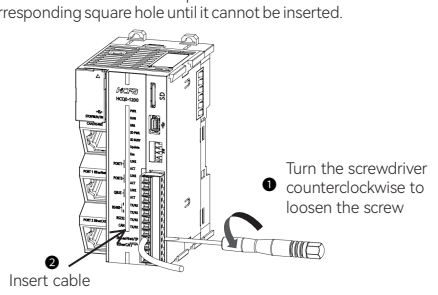

■ Rails dismounting

When disassembly is required, first remove the 35MM international guide dovetail fixings installed on the left and right sides of the machine, then pull the two-way linkage clasp upwards by a distance of about 5.8MM (when pulling upwards, you can clearly feel the "click" sound, representing the completion of the clasp pulling), at this point you can already directly remove the machine, complete the machine Disassembly (you can use auxiliary tools such as screwdrivers when pulling the two-way linkage clasp).

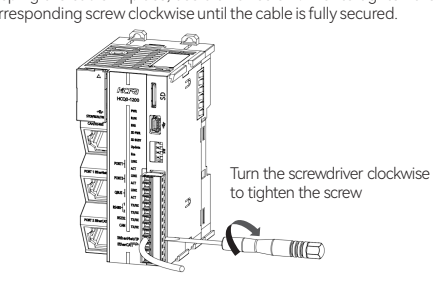



### 3.6.3 Terminal block wiring

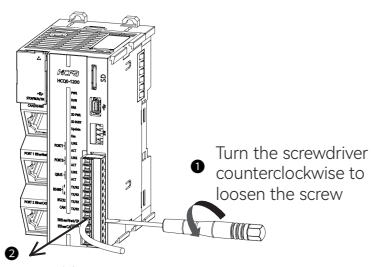
1 Insert the small screwdriver sideways at the screw on the right side of the row, turn it counterclockwise until the screw is completely loosened and insert the compliant cable from the front into the corresponding square hole until it cannot be inserted.




2 Keeping the cable in place, use a small screwdriver to tighten the corresponding screw clockwise until the cable is fully secured.




3 To remove the cable from the terminal block, simply loosen the screw counterclockwise and then pull the cable out.




## 3.7 Wiring description

### 3.7.1 Cables

| Items | | Specification |
|---|---|---|
| Mounting type | | Push-in |
| Push-in force(single contact) | | 10N |
| Cable type | | Copper wire only (do not use aluminum cable) |
| Cable length | | 7-9 $mm^2$ |
| Cross section of cables | Single strand | 0.08-1.50 $mm^2$/28-16 AWG |
| | Multiple strand | 0.25-1.50 $mm^2$/24-16 AWG |
| | Wiring sleeve | 0.25-0.75 $mm^2$/24-20 AWG |

### 3.7.2 Wiring

■ Local IO input wiring diagram

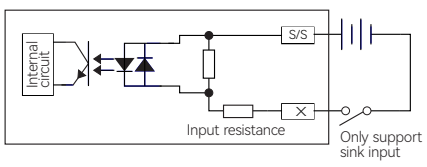



Figure 9 Local IO input wiring for HCQ0-1200-D/1100-D

■ Local IO output wiring diagram

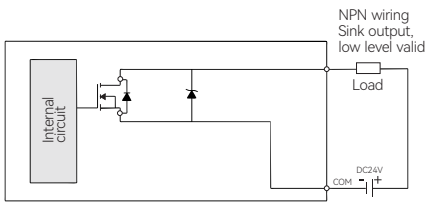



Figure 10 Local IO input wiring for HCQ0-1200-D/1100-D





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