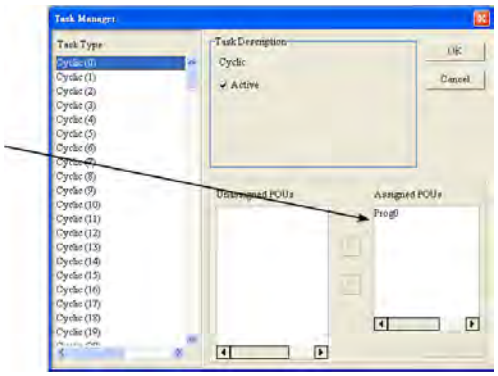
1

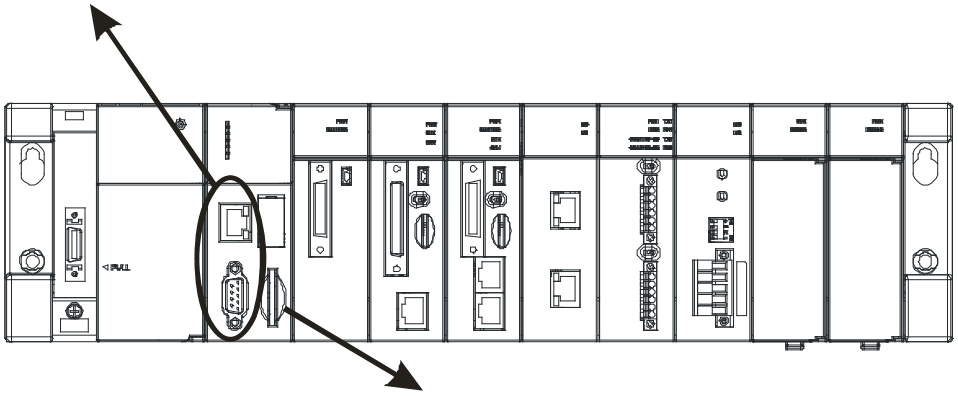
1.2 Overview

An AH500 series CPU module is a medium type of advanced controller with built-in communication ports. It provides a strong network function for users, and users can create connection among devices on the network through software. An AH500 series CPU module also provides structured programming. Users can assign programs to different tasks, and write a program which is frequently executed in a function block. Besides, users can choose different programming languages (instruction lists (IL), structured texts (ST), ladder diagrams (LD), sequential function charts (SFC), and function block diagrams (FBD)) dealt with by IEC 61131-3 according to their needs when writing programs. They can create the AH500 hardware configuration by means of hardware configuration software. They can also restore or back up a system rapidly through the built-in SD interface in an AH500 series CPU module. This manual introduces the basic operation of an AH500 system, and help users familiarize themselves with the AH500 system.

An AH500 series CPU module also provides structured programming. Users can assign programs to different tasks, and write a program which is frequently executed in a function block.

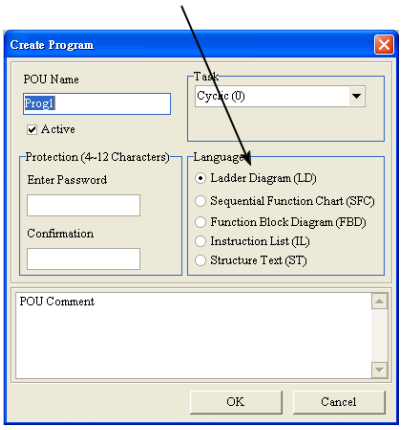


An AH500 series CPU module is a medium type of advanced controller with built-in communication ports. It provides a strong network function for users, and users can create connection among devices in the network through software.

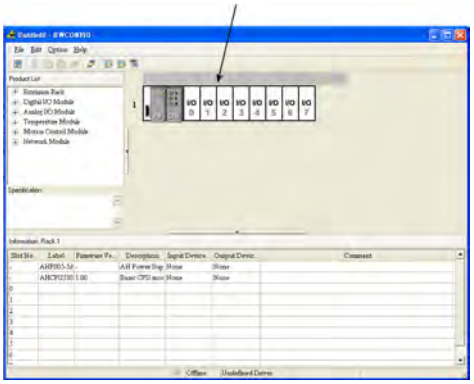


Users can restore or back up a system rapidly through the built-in SD interface in an AH500 series CPU module.

With ISPSoft, users can choose different programming languages (instruction lists (IL), structured texts (ST), ladder diagrams (LD), sequential function charts (SFC), and function block diagrams (FBD) dealt with by IEC 61131-3 according to their needs when writing program.



Users can create an AH500 hardware configuration by means of the hardware configuration software.



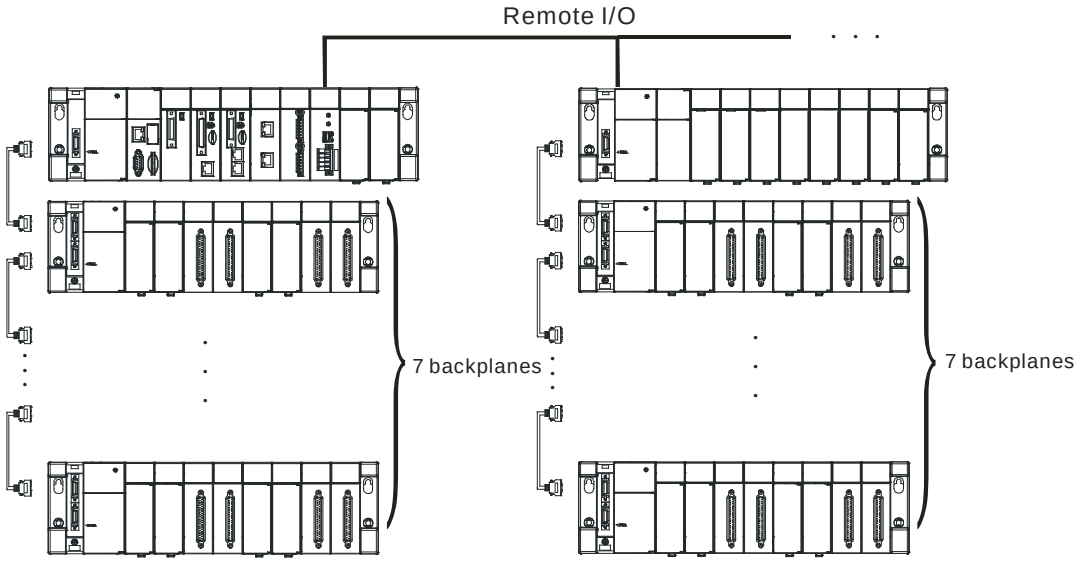
1.3 Characteristics

1. High efficiency

- AH500 basic series CPU module: A 32-bit high-speed processor is used. The instructions are executed at a speed of 3K steps/ms. (Fifty percent of the instructions are basic instructions, and fifty percent of the instructions are applied instructions.)
- AH500 advance series CPU module: A 32-bit high-speed processor is used. The instructions are executed at a speed of 12K steps/ms. (Fifty percent of the instructions are basic instructions, and fifty percent of the instructions are applied instructions.)

2. Supporting more inputs and outputs

- The AH500 series CPU module supports up to 4,352 local digital I/O or 544 analog I/O.
- A complete AH500 system consists of eight backplanes at most, including a main backplane. Twelve I/O modules at most can be installed on a main backplane, and eight I/O modules at most can be installed on an extension backplane. Therefore, for the AH500 series CPU, sixty-eight digital input/output modules at most or sixty-eight analog input/output modules at most can be installed.
- Eight RTU modules at most can be installed on the main backplane.



3. Multiple I/O modules

- The I/O modules supported by the AH500 series CPU module are digital input/output modules, analog input/output modules, temperature measurement modules, network modules, motion control modules, and RTU modules.

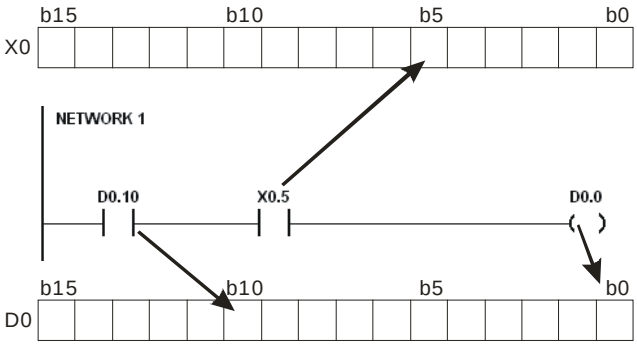
Module	Description
Digital input/output module	Digital input/output AH16AM10N-5A, AH32AM10N-5A, AH32AM10N-5B, AH32AM10N-5C, AH64AM10N-5C, AH16AM30N-5A, AH16AN01R-5A, AH16AN01T-5A, AH16AN01P-5A, AH32AN02T-5A, AH32AN02T-5B, AH32AN02T-5C, AH32AN02P-5A, AH32AN02P-5B, AH32AN02P-5C, AH64AN02T-5C, AH64AN02P-5C, AH16AN01S-5A, AH16AP11R-5A, AH16AP11T-5A, AH16AP11P-5A. and AH16AR10N-5A
Analog input/output module	Analog input/output AH04AD-5A, AH08AD-5A , AH08AD-5B, AH08AD-5C, AH04DA-5A, AH08DA-5A AH08DA-5B, AH08DA-5C, and AH06XA-5A
Temperature measurement module	Measuring the temperature AH04PT-5A, AH08PTG-5A, AH04TC-5A, and AH08TC-5A
Motion control module	Controlling the motion AH02HC-5A, AH04HC-5A, AH05PM-5A, AH10PM-5A, AH15PM-5A, and AH20MC-5A
Network module	Extending the communication interface (*There are multiple interfaces. All network modules can be installed on the main backplane except AH10SCM-5A and AH15SCM-5A.) AH10EN-5A, AH10SCM-5A, AH15SCM-5A, AH10DNET-5A, AH10PFBS-5A, AH10PFBM-5A, and AH10COPM-5A
Remote I/O module	It is installed on the main backplane as a remote terminal unit. (*It supports multiple communication interfaces.) AHRTU-DNET-5A , AHRTU-PFBS-5A, and AHRTU-ETHN-5A.

4. Larger program capacity and memory

- Program capacity
  AH500 basic series CPU module (AHCPU500/510/520/530): 32/64/128/256K steps.
  AH500 advanced series CPU module (AHCPU511/521/531): 96/192/384K steps.
  Providing with a wider module selection for users to select a suitable CPU module according to their program capacity needs.
- Memory
  AH500 basic series CPU module (AHCPU500/510/520/530): 16/32/64K words of memory and 64/256/512/1024 function blocks to be declared.
  AH500 advanced series CPU module (AHCPU511/521/531): 48/96/128K words of memory and 1024/2048/4096 function blocks to be declared.

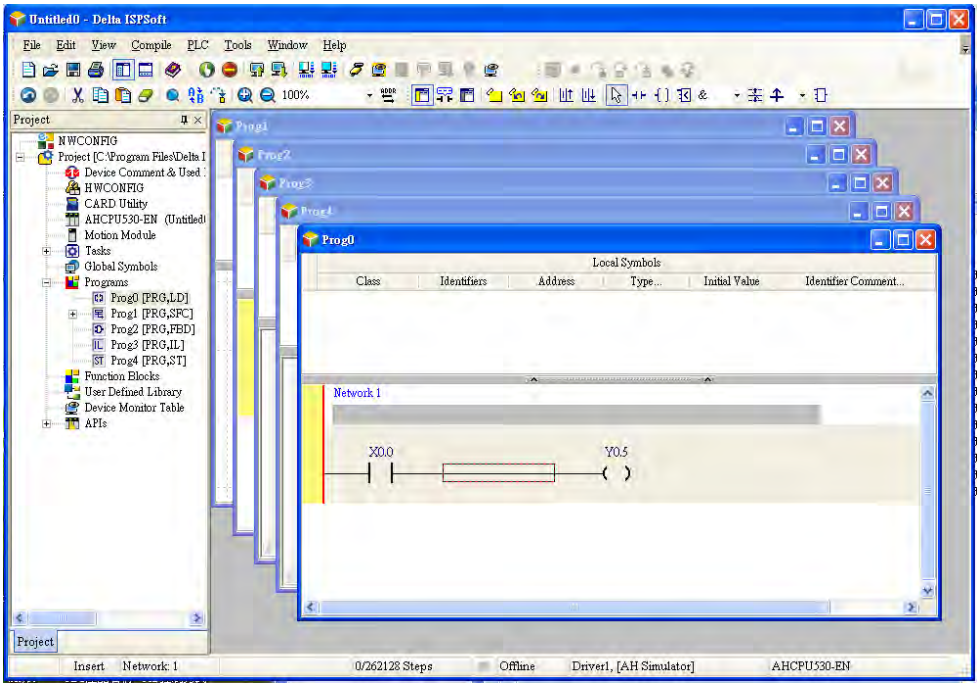
5. Devices which can be used conveniently in a program

- An AH500 series CPU module is equipped with devices which can be used conveniently in a program. Users can flexibly specify a bit in a word device, e.g. D0.0, X0.0, and Y0.0. Owing to that bits in a word device can be specified, these bits can function as contacts and coils.

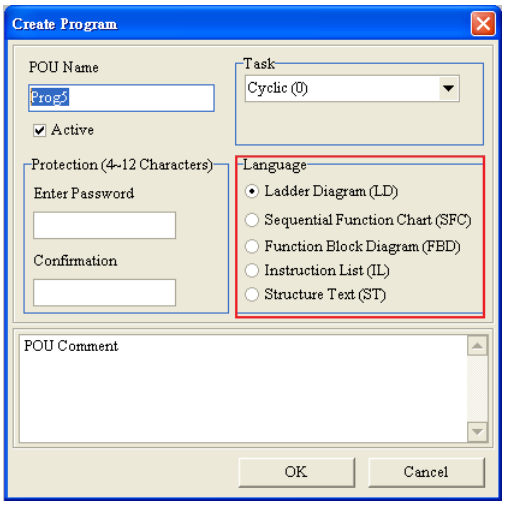


- Users can access the state of DX0.0 and that of DY0.0 in a program. The state of DX0.0 and that of DY0.0 are not limited by scan time. They are refreshed immediately in a program.

6. Supporting IEC 61131-3



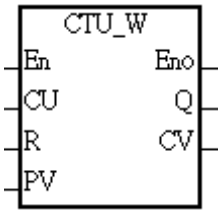
- The AH500 series CPU module supports IEC 61131-3.
- The programming languages which are supported are instruction lists (IL), structured texts (ST), ladder diagrams (LD), sequential function charts (SFC), and function block diagrams (FBD).



- Users can select a programming language according to their preference and the convenience. The programming languages support one another so that the programs written by different users are related.

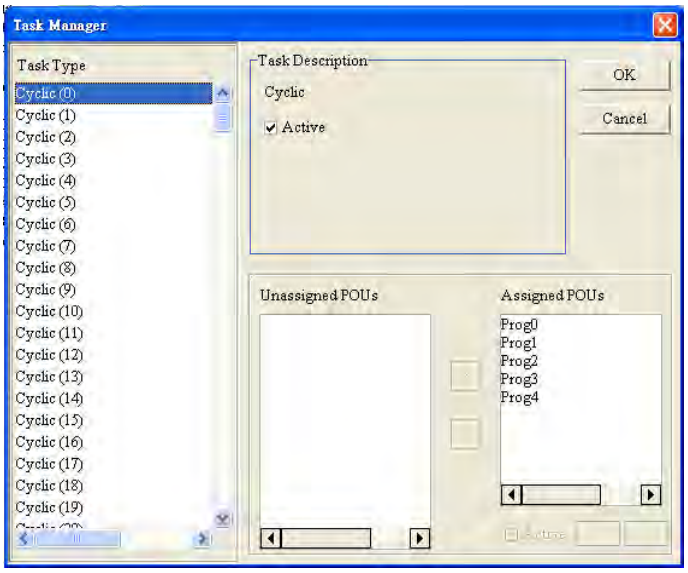
7. Strong function block

- Not only the standard IEC61131-3 function blocks are supported, but also the convenient function blocks provided by Delta Electronics, Inc. are supported. Users can write the program frequently executed in a function block so that the program becomes more structured and can be executed more conveniently.
- The symbol for a function block in a ladder diagram is like an Integrated circuit (IC) in a circuit diagram. Owing to the fact that the ladder diagram is based on the traditional circuit diagram, the operation of a function block is quite similar to the function of an integrated circuit. Users only need to send the signal to the corresponding input of the function block, and they can receive the signal or state which is required. During the whole process, users do not need to consider the processing procedure inside the function block.



- A function block is a program element equipped with the operation function. It is similar to a subroutine, and is a type of POU (Program Organization Unit). It can not operate by itself, and has to be called through the program POU. After the related parameters are transmitted, the function defined by a function block is executed. Besides, the final operation result can be sent to the device or variable used in the superior POU after the execution of the function block is complete.
- The setting of passwords by means of ISPSoft provides the secrecy of function blocks for special businesses. The program inside a function block can not be learned, and the patent of a business will not be infringed.

8. Task

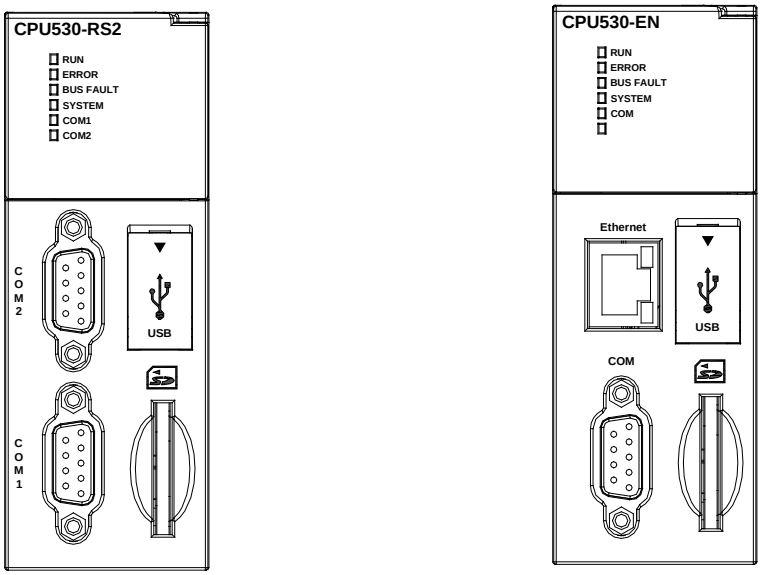


- The programs can be assigned to 283 tasks at most. Among the 288 tasks, 32 tasks are cyclic tasks, 32 tasks are I/O interrupts, 4 tasks are timer interrupts, 2 tasks are communication interrupts, 1 task is an external 24 V low-voltage interrupt, and 212 tasks are user-defined tasks.
- Users can enable and disable a task during the execution of a program by means of TKON and TKOFF.

9. Increasing the efficiency of configuring the hardware through an USB cable and ISPSoft

- The AH500 series CPU module provides a standard USB 2.0 interface. USB 2.0 increases the data transfer rate, and decreases the time it takes to download the program, monitor the program and configure the hardware. Besides, users do not need to buy a communication cable for the CPU module. They can use a general USB cable to connect to the AH500 series CPU module.

10. Serial control interface with multiple functions



- AHCPU500/510/511/520/530-RS2 provides two DB9 serial control interfaces, i.e. COM1 and COM2.
- AHCPU500/510/511/520/521/530/531-EN provides one DB9 serial control interface, i.e. COM.
- Users can set the DB9 serial control interface to RS-232, RS-485, or RS-422 according to the application environment. The data transfer rate can be increased from 9600 bps to 1 Mbps.
- AH500 basic series CPU module (AHCPU500/510/520/530): After users set the PLC Link in NWCONIFG in ISPSoft, they can exchange the data with a device through the RS-485 serial control interface, and do not need to write any program.
- AH500 advanced series CPU module (AHCPU511/521/531): After users set the PLC Link in HWCONIFG in ISPSoft, they can exchange the data with a device through the RS-485 serial control interface, and do not need to write any program.

11. High-speed Ethernet communication interface

- AHCPU500/510/511/520/521/530/531-EN is equipped with a 10/100 M Ethernet communication interface, and supports emails, webs, and socket services.
- AH500 basic series CPU module (AHCPU500/510/520/530): After users set the PLC Link in NWCONIFG in ISPSoft, they can exchange the data with a device network through the Ethernet communication interface, and do not need to write any program.
- AH500 advanced series CPU module (AHCPU511/521/531): After users set the PLC Link in HWCONIFG in ISPSoft, they can exchange the data with a device through the Ethernet communication interface, and do not need to write any program.
- The status or the error message related to the system is sent to users' email boxes immediately. Users do not need to be on the spot to understand the problem.

12. Memory card

- The memory card has the following functions.

  System backup: The user program, the CPU parameters, the module table, the setting value in the device

  System recovery: The user program, the CPU parameters, the module table, and the setting value in the device

  Parameter storage: The value in the device

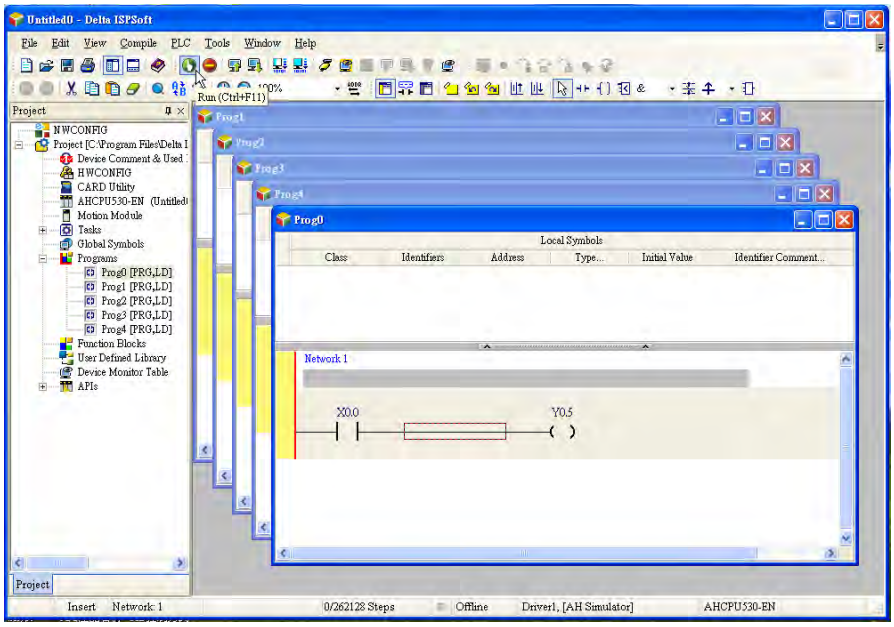
  Log storage: The system error log and the system status log

13. Hot swap

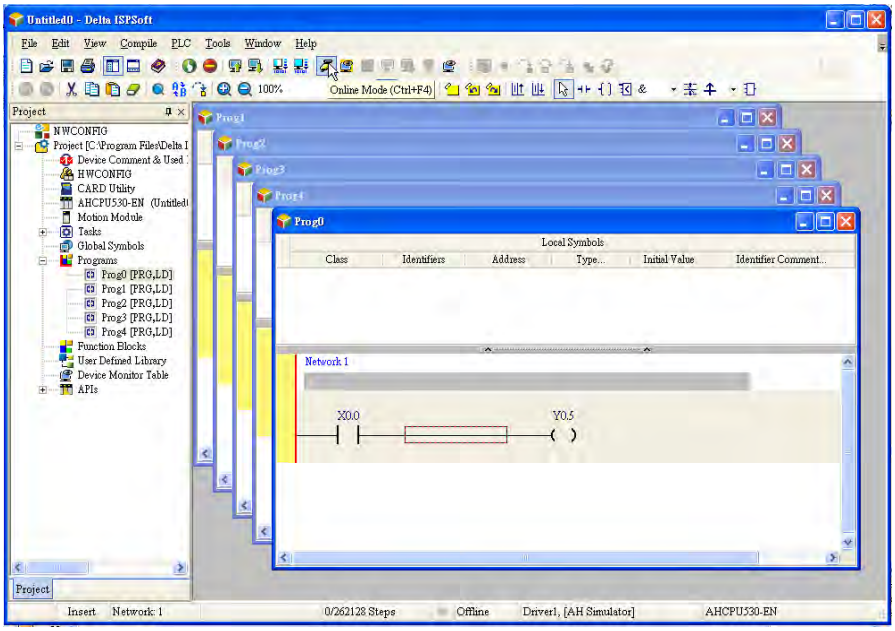
- The AH500 series I/O modules support the on-line uninterruptible hot swap. When the system runs, users can replace the module which breaks down without disconnecting the module. After the module is replaced, the new module runs normally. Users do not need to set the module manually or switch the state.

14. Supporting the on-line debugging mode

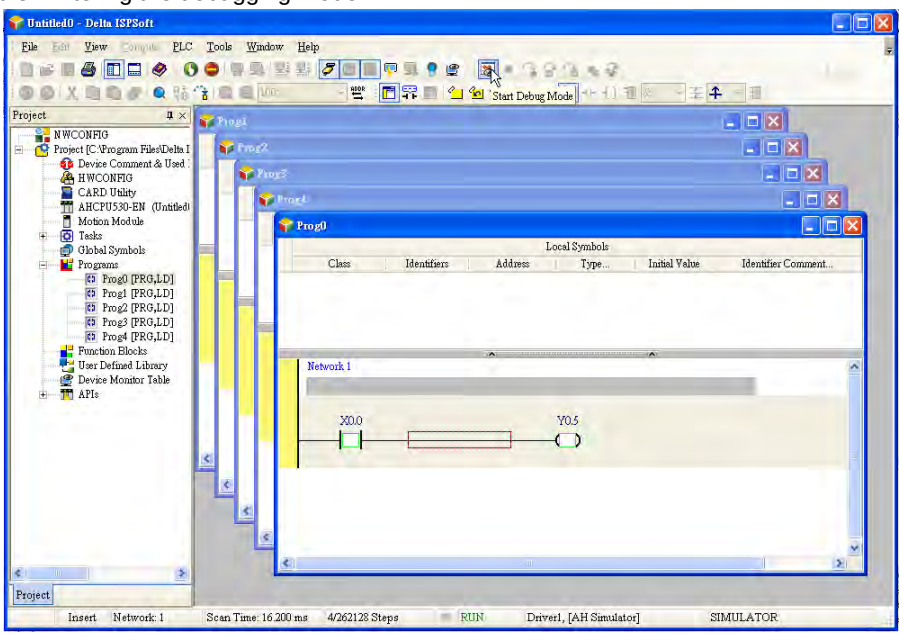
- After a single instruction step has been complete, or after a breakpoint is specified, users can easily find the bug in the program by means of the on-line debugging mode supported by the AH500 series CPU module.
- If users want to enter the debugging mode, the CPU module must run. After users enable the on-line monitoring function, they have to click  . The debugging screen varies from programming language to programming language, but the same operation applies to these programming languages. For the AH500 series PLC, structured texts do not support the debugging mode, and sequential function charts support the debugging mode during the action and the transition.
  Step 1: Setting the PLC to RUN



Step 2: Entering the on-line mode

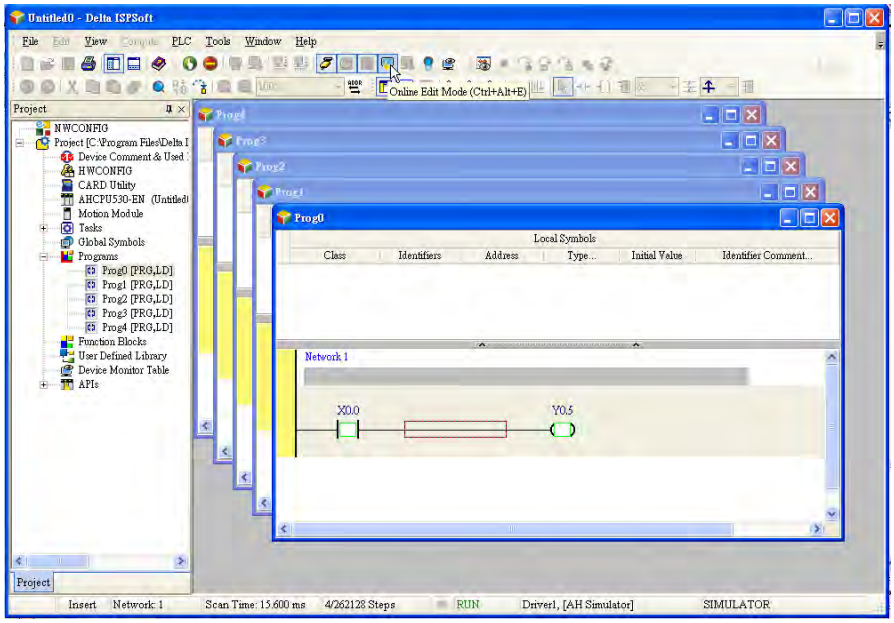


Step 3: Entering the debugging mode

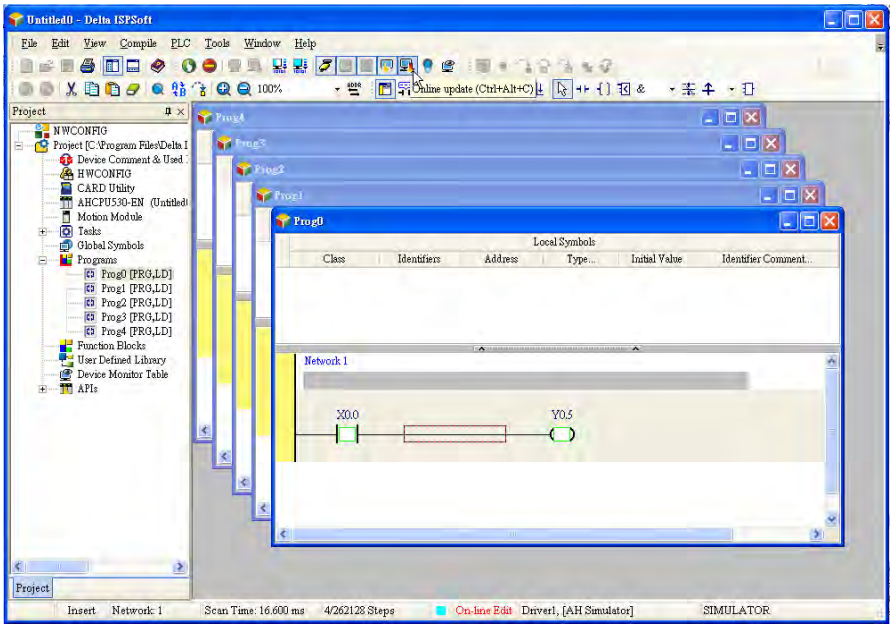


15. Supporting the on-line editing mode

- When the system runs, users can make use of the on-line editing mode to update the program without affecting the operation of the system.
- When the system is in the on-line monitoring mode, users can enter the on-line editing mode by clicking  .



- After the program is modified and compiled, users can update the program in the CPU module by clicking  .



2.1 General Specifications

Item	Specifications
Operating temperature	-20~60°C
Storage temperature	-40~70°C
Operating humidity	5~95% No condensation
Storage humidity	5~95% No condensation
Vibration/Shock resistance	International standards IEC 61131-2, IEC 68-2-6 (TEST Fc)/ IEC 61131-2 & IEC 68-2-27 (TEST Ea)
Work environment	No corrosive gas exists.
Installation location	In a control box
Pollution degree	2

2.2 Specifications for CPU Modules

2.2.1 Performance Specifications of AH500 basic series

Item	AHCPU500/510/520/530-RS2	AHCPU500/510/520/530-EN	Remark
Execution	The program is executed cyclically.		
Input/Output control	Regenerated inputs/outputs Direct inputs/outputs		The inputs and outputs can be controlled through the direct inputs and direct outputs.
Programming language	IEC 61131-3		
	Ladder diagrams, function block diagrams, instruction lists, structured texts, and sequential function charts		
Instruction execution speed	3K Steps/ms		
Number of instructions	Approximately 666 instructions		
Constant scan cycle (ms)	1-32000 (The scan cycle can be increased by one millisecond.)		Setting the parameter
Program capacity (step)	32K steps (AHCPU500) 64K steps (AHCPU510) 128K steps (AHCPU520) 256K steps (AHCPU530)		
Installation	DIN rails or screws		
Installation of a module	A module is installed directly on a backplane.		
Connection between two backplanes	An extension cable connects two backplanes.		
Maximum number of modules which can be installed	12 (AHCPU500) 20 (AHCPU510) 36 (AHCPU520) 68 (AHCPU530)		
Maximum number of backplanes which can be connected	AHCPU500: 1 backplane (1 main backplane) AHCPU510: 2 backplanes (1 main backplane+1 extension backplane) AHCPU520: 4 backplanes (1 main backplane+3 extension backplanes) AHCPU530: 8 backplanes (1 main backplane+7 extension backplanes)		
Number of tasks	283 tasks (32 cyclic tasks; 32 I/O interrupts; 4 timed interrupts; 2 communication interrupts; 1		

Item	AHCPU500/510/520/530 -RS2	AHCPU500/510/520/530 -EN	Remark
	external 24 V low-voltage interrupt; 212 external interrupts)		
Number of inputs/outputs	AHCPU500: 768 AHCPU510: 1280 AHCPU520: 2304 AHCPU530: 4352		Number of inputs/outputs accessible to an actual input/output module
Input relays [X]	AHCPU500: 1024 (X0.0~X63.15) AHCPU510: 2048 (X0.0~X127.15) AHCPU520: 4096 (X0.0~X255.15) AHCPU530: 8192 (X0.0~X511.15)		
Output relays [Y]	AHCPU500: 1024 (Y0.0~Y63.15) AHCPU510: 2048 (Y0.0~Y127.15) AHCPU520: 4096 (Y0.0~Y255.15) AHCPU530: 8192 (Y0.0~Y511.15)		
Internal relays [M]	8192 (M0~M8191)		
Link registers [L]	AHCPU500: 16384 (L0~L16383) AHCPU510: 32768 (L0~L32767) AHCPU520: 65536 (L0~L65535) AHCPU530: 65536 (L0~L65535)		
Timers [T]	2048 (T0~T2047)		
Counters [C]	2048 (C0~C2047)		
32-bit counter [HC]	64 (HC0~HC63)		
Data register [D]	AHCPU500:16384 (D0~D16383) AHCPU510: 32768 (D0~D32767) AHCPU520: 65536 (D0~D65535) AHCPU530: 65536 (D0~D65535)		
Stepping relay [S]	2048 (S0~S2047)		
Index register [E]	32 (E0~E31)		
Special auxiliary relay [SM]	2048 (SM0~SM2047)		
Special data register [SR]	2048 (SR0~SR2047)		
Serial communication port	Two RS-232/RS-485/RS-422 communication ports	One RS-232/RS-485/RS-422 communication port	
Ethernet port	-	10/100 M	
USB port	Mini USB		
Storage interface	SD Card (SD 1.0)		
Remote RUN/STOP	The setting range is X0.0~X511.15.		
Real-time clock	Years, months, days, hours, minutes, seconds, and weeks		

2.2.2 Performance Specifications of AH500 advanced series

Item	AHCPU511-RS2	AHCPU511/521/531 -EN	Remark
Execution	The program is executed cyclically.		
Input/Output control	Regenerated inputs/outputs Direct inputs/outputs		The inputs and outputs can be controlled through the direct inputs and direct outputs.
Programming language	IEC 61131-3		
	Ladder diagrams, function block diagrams, instruction lists, structured texts, and sequential function charts		

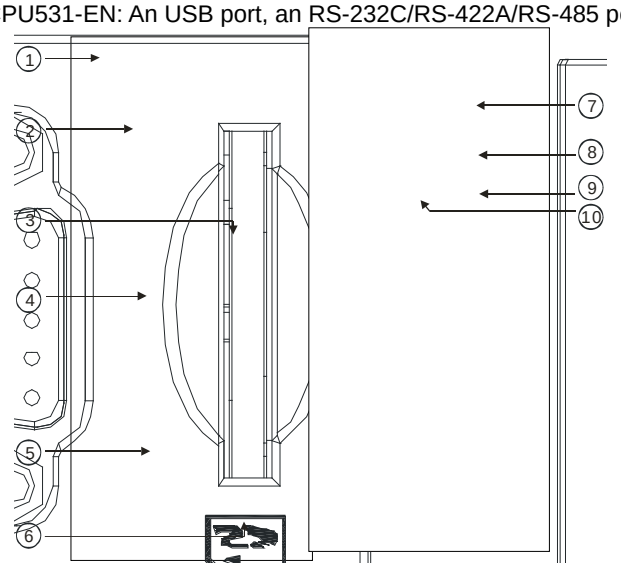
Item	AHCPU511-RS2	AHCPU511/521/531 -EN	Remark
Instruction execution speed	12K Steps/ms		
Number of instructions	Approximately 666 instructions		
Constant scan cycle (ms)	1-32000 (The scan cycle can be increased by one millisecond.)		Setting the parameter
Program capacity (step)	96K Steps (AHCPU511) 192K Steps (AHCPU521) 384K Steps (AHCPU531)		
Installation	DIN rails or screws		
Installation of a module	A module is installed directly on a backplane.		
Connection between two backplanes	An extension cable connects two backplanes.		
Maximum number of modules which can be installed	20 (AHCPU511) 36 (AHCPU521) 68 (AHCPU531)		
Maximum number of backplanes which can be connected	AHCPU511: 2 backplanes (1 main backplane+1 extension backplane) AHCPU521: 4 backplanes (1 main backplane+3 extension backplanes) AHCPU531: 8 backplanes (1 main backplane+7 extension backplanes)		
Number of tasks	283 tasks (32 cyclic tasks; 32 I/O interrupts; 4 timed interrupts; 2 communication interrupts; 1 external 24 V low-voltage interrupt; 212 external interrupts)		
Number of inputs/outputs	AHCPU511: 1280 AHCPU521: 2304 AHCPU531: 4352		Number of inputs/outputs accessible to an actual input/output module
Input relays [X]	AHCPU511: 4096 (X0.0~X255.15) AHCPU521: 8192 (X0.0~X511.15) AHCPU531: 8192 (X0.0~X1023.15)		
Output relays [Y]	AHCPU511: 4096 (Y0.0~Y255.15) AHCPU521: 8192 (Y0.0~Y511.15) AHCPU531: 8192 (Y0.0~Y1023.15)		
Internal relays [M]	8192 (M0~M8191)		
Link registers [L]	AHCPU511: 49152 (L0~L49151) AHCPU521: 98304 (L0~L98303) AHCPU531: 131072 (L0~L131071)		
Timers [T]	2048 (T0~T2047)		
Counters [C]	2048 (C0~C2047)		
32-bit counter [HC]	64 (HC0~HC63)		
Data register [D]	AHCPU500:16384 (D0~D16383) AHCPU510: 32768 (D0~D32767) AHCPU520: 65536 (D0~D65535) AHCPU530: 65536 (D0~D65535)		
Stepping relay [S]	2048 (S0~S2047)		
Index register [E]	32 (E0~E31)		
Special auxiliary relay [SM]	AHCPU511/521/531-EN : 2048 (SM0~SM2047) AHCPU511-RS2: 4096 (SM0~SM4095)		
Special data register [SR]	AHCPU511/521/531-EN: 2048 (SR0~SR2047) AHCPU511-RS2: 4096 (SR0~SR4095)		
Serial communication port	Two RS-232/RS-485/RS-422	One RS-232/RS-485/RS-422	

Item	AHCPU511-RS2	AHCPU511/521/531 -EN	Remark
	communication ports	communication port	
Ethernet port	-	10/100 M	
USB port	Mini USB		
Storage interface	SD Card (SD 2.0)		
Remote RUN/STOP	The setting range is X0.0~X511.15.		
Real-time clock	Years, months, days, hours, minutes, seconds, and weeks		

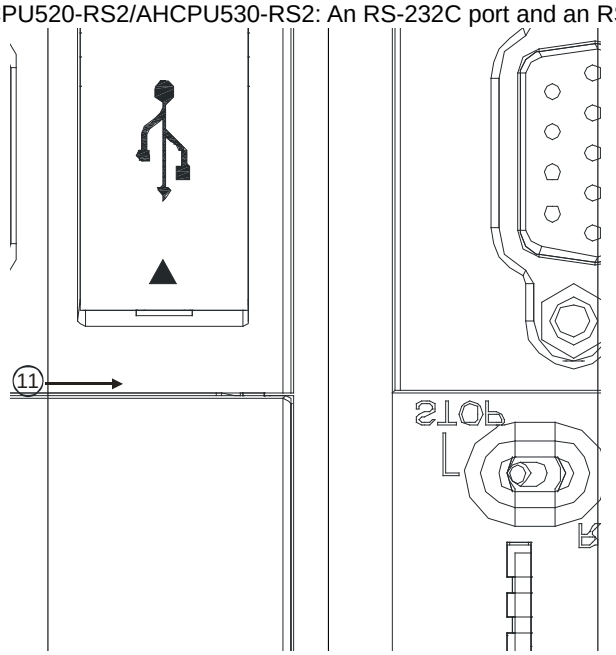
2.2.3 Profiles

An AH500 system can be configured by setting the following communication ports.

- Three built-in communication ports in AHCPU500-EN/AHCPU510-EN/AHCPU511-EN/AHCPU520-EN/AHCPU521-EN /AHCPU530-EN/AHCPU531-EN: An USB port, an RS-232C/RS-422A/RS-485 port, and an Ethernet port



- Two built-in communication ports in AHCPU500-RS2/AHCPU510-RS2/ AHCPU511-RS2/AHCPU520-RS2/AHCPU530-RS2: An RS-232C port and an RS-422A/RS-485 port



1. Model name	2. LED indicator	3. USB port
4. Ethernet port (for AHCPU5xx-EN)	5. COM	6. SD slot

7. DIP switch	8. RST button	9. CLR button
10. RUN/STOP switch	11. COM2 (for AHCPU5xx-RS2)	

Number	Name	Description	
1	Model name	Model name of the CPU module	
2	RUN LED indicator	Operating status of the CPU module ON: The user program is being executed. OFF: The execution of the user program stops. Blinking: The user program is in a debugging mode.	
	ERROR LED indicator	Error status of the CPU module ON: A serious error occurs in the system. OFF: The system is normal. Blinking: A slight error occurs in the system.	
	BUS FAULT LED indicator	Error status of the I/O bus ON: A serious error occurs in the I/O bus. OFF: The I/O bus is normal. Blinking: A slight error occurs in the I/O bus.	
	SYSTEM LED indicator	System status of the CPU module ON: The external input/output is forced ON/OFF. OFF: The system is in a default status. Blinking: The CPU module is being reset./The value in the device is being cleared.	
	COM LED indicator COM1 LED indicator COM2 LED indicator	Communication status of the communication port OFF: There is no communication through the communication port. Blinking: There is communication through the communication port.	
3	USB port	Providing the mini USB communication interface	
4	Ethernet port	Providing the Ethernet communication interface (for AHCPU5xx-EN)	
5	COM	Providing the RS-232/RS-485/RS-422 communication interface	
6	SD slot	Providing the SD interface	
7	DIP switch	Function which the system executes	
		SW1	OFF: No action (default) ON: Write protection
		SW2	OFF: No action (default) ON: The system is restored when the CPU module is supplied with powered. (The user program, the CPU paramter, the module table, and the setting values in the devices are restored from the memory card to the CPU module.)
		SW3	OFF: No action (default) ON: It is used with the CLR button to backup the system. (The user program, the CPU paramter, the module table, and the setting values in the devices are backupped from the memory card to the CPU module.)
		SW4	It is used with SW3. OFF: When the system is backed up, the values in the devices are backed up. ON: When the system is backed up, the values in the devices are not backed up.
8	RST button	Resetting the CPU module, and restoring it to the default factory value P.S. After the CPU module is reset, the ERROR LED indicator is ON, and the error code 16#1402 is shown. To make the PLC operate normally, users need to execute ISPSOFT.exe to set the module table in HWCONFIG.	
9	CLR button	Clearing the value in the latched device	

Number	Name	Description
10	RUN/STOP switch	RUN: The user program is executed. STOP: The execution of the user program stops.
11	COM1/COM2	Providing the RS-232/RS-485/RS-422 communication interface (for AHCPU5xx-RS2)

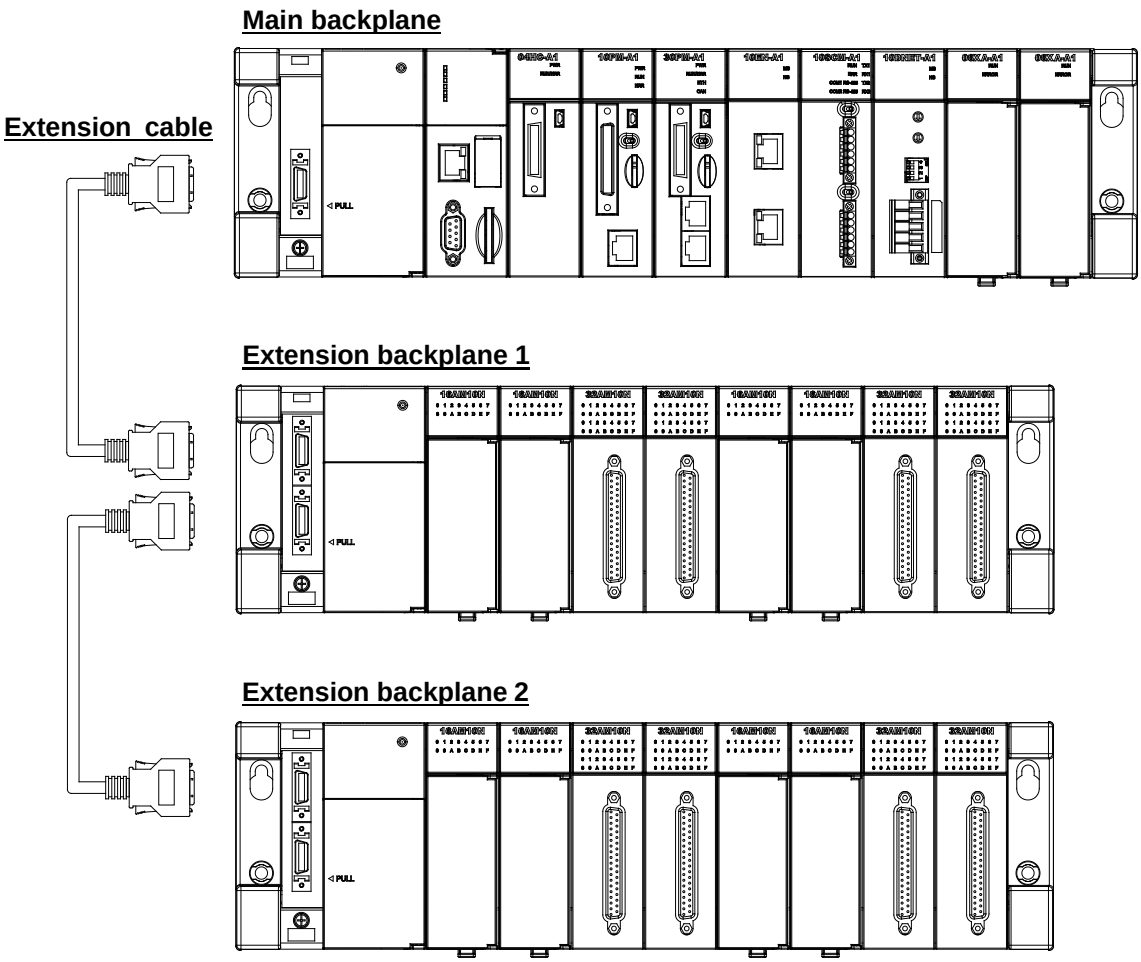
2.3 Basic System Configuration

2.3.1 Introduction

The AH500 system configuration is composed of a CPU module, power supply modules, digital input/output modules, analog input/output modules, temperature measurement modules, network modules, motion control modules, a main backplane, extension cables, and extension backplanes. Besides, an SD card is optionally used.

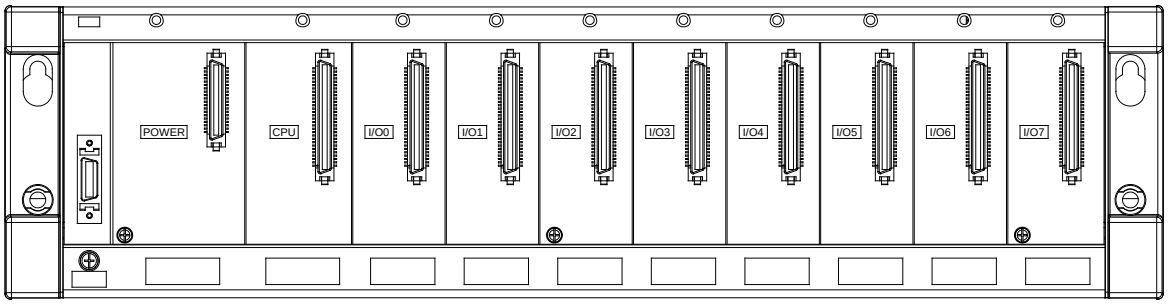
A main backplane can be connected to an extension backplane through the interface on the left side of the main backplane, the interface on the left side of the extension backplane, and a Delta extension cable. For a CPU module or a RTU, a main backplane can be connected to seven extension backplanes at most through the interfaces on the backplanes. Therefore, if there is a CPU module and there are several RTUs, not only the CPU module can be connected to seven extension backplanes, but also every RTU can connect to seven extension backplanes.

There are two ports on an extension backplane. The upper port is used to connect to a superior backplane, and the lower port is used to connect to an inferior backplane.



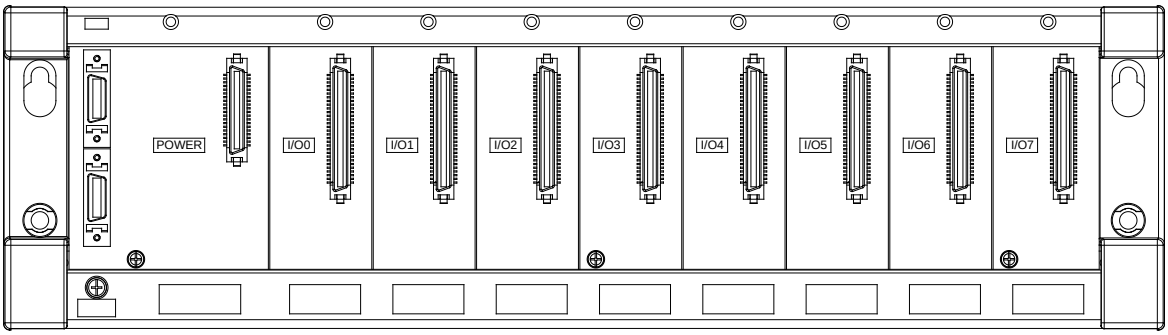
2.3.2 Configuring a Main Backplane

A CPU module, a power supply module, and I/O modules are installed on a main backplane. Twelve I/O modules at most can be installed on a main backplane.



2.3.3 Configuring an Extension Backplane

An extension backplane can be connected to a main backplane to increase the number of I/O modules. Eight I/O modules at most can be installed on an extension cable, and seven extension backplanes at most can be connected to a main backplane.



2.3.4 Maximum Extension

Twelve I/O modules at most can be installed on a main backplane. (There are four types of main backplanes. These four types are four-slot main backplanes, six-slot main backplanes, eight-slot main backplanes, and twelve-slot main backplanes.) Eight I/O modules at most can be installed on an extension backplane, and seven extension backplanes at most can be connected to a main backplane. (There are two types of extension backplanes. These two types are six-slot extension backplanes, and eight-slot extension backplanes.)
Sixty-eight I/O modules at most can be installed on backplanes. Eight AH10EN-5A modules at most can be installed on a main backplane, and eight AH10DNET-5A modules at most can be installed on a main backplane. The other I/O modules can be installed on a main backplane unlimitedly. Besides, digital input/output modules, analog input/output modules, temperature measurement modules, and AH10SCM-5A modules can be installed on an extension backplane. The other I/O modules can not be installed on an extension backplane.

Extension	Maximum Extension	Description
A main backplane is connected to extension backplanes	One main backplane and seven extension backplanes (There are four types of main backplanes. These four types are four-slot main backplanes, six-slot main backplanes, eight-slot main backplanes, and twelve-slot main backplanes. There are two types of extension backplanes. These two types are six-slot extension backplanes, and eight-slot extension backplanes.)	Sixty-eight I/O modules at most can be installed on backplanes.

- AH500 system configuration

Configuration	Description
Main backplane	There is one main backplane in an AH500 system. Four-slot main backplane: AHBP04M1-5A Six-slot main backplane: AHBP06M1-5A Eight-slot main backplane: AHBP08M1-5A Twelve-slot main backplane: AHBP12M1-5A
Extension backplane	There are seven extension backplanes at most in an AH500 system. Six-slot extension backplanes: AHBP06E1-5A Eight-slot extension backplanes: AHBP08E1-5A
Extension cable	There are four types of lengths. AHACAB06-5: 60 cm AHACAB10-5A: 1 m AHACAB15-5A: 1.5 m AHACAB30-5A: 3 m
Power supply module	Every backplane needs a power supply module. (The voltages of the alternating currents which can flow into AHPS05-5A range from 85 V to 264 V, and the direct currents which can flow from AHPS05-5A are 5 A. AHPS05-5A is used with a backplane. The voltages of the direct currents which can flow into AHPS15-5A are 24 V, and the direct currents which can flow form AHPS15-5A are 1.5 A.)
CPU module	There is one CPU module in an AH500 system. AHCPU530-RS2 and AHCPU530-EN CPU modules.
Digital I/O module	Digital I/O modules, analog I/O modules, and temperature measurement modules can be installed in an AH500 system unlimitedly.
Analog I/O module	
Temperature measurement module	
Motion control module	Motion control modules can only be installed on a main backplane.
Network module	Network modules can only be installed on a main backplanes. Eight AH10EN-5A modules at most can be installed on a main backplane, and eight AH10DNET-5A modules at most can be installed on a main backplane. However, AHSCM-5A modules can be installed on a main backplane unlimitedly.

2.4 Specifications for Digital Input/Output Modules

2.4.1 General Specifications

- **Electrical specifications for the inputs on digital input/output modules (The signals passing through the inputs are 24 V DC signals.)**

Item \ Model		AH16AM10N-5A	AH32AM10N-5A	AH32AM10N-5B	AH32AM10N-5C	AH64AM10N-5C	AH16AP11R-5A	AH16AP11T-5A	AH16AP11P-5A
Number of inputs		16	32	32	32	64	8	8	8
Connector type		Removable terminal block		DB37 connector	Latch connector		Removable terminal block		
Input type		Digital input							
Input form		Direct current (sinking or sourcing)							
Input current		24 V DC 5 mA				24 V DC 3.2 mA	24 V DC 5 mA		
Action level	**OFF→ON**	>15 V DC							
	ON→OFF	<5 V DC							
Response time	**OFF→ON**	10 ms±10%							
	ON→OFF	15 ms±10%							
Maximum input frequency		50 Hz							

Item \ Model	AH16AM10N-5A	AH32AM10N-5A	AH32AM10N-5B	AH32AM10N-5C	AH64AM10N-5C	AH16AP11R-5A	AH16AP11T-5A	AH16AP11P-5A
Input impedance	4.7 kΩ				7.5 kΩ	4.7 kΩ		
Input signal	Voltage input Sinking: The inputs are NPN transistors whose collectors are open collectors. Sourcing: The inputs are PNP transistors whose collectors are open collectors.							
Electrical isolation	Optocoupler							
Input display	When the optocoupler is driven, the input LED indicator is ON.							

- **Electrical specifications for the inputs on a digital input/output module (The signals passing through the inputs are alternating current signals ranging in voltage from 120 V to 240 V.)**

Item \ Model		AH16AM30N-5A
Number of inputs		16
Connector type		Removable terminal block
Input type		Digital input
Input form		Alternating current
Input current		120 V AC and 4.5 mA; 240 V AC and 9 mA
Action level	**OFF→ON**	>79 V AC
	ON→OFF	<40 V AC
Response time	**OFF→ON**	15 ms
	ON→OFF	30 ms
Electrical isolation		Optocoupler
Input display		When the optocoupler is driven, the input LED indicator is ON.

- **Electrical specifications for the inputs on a digital input/output module which supports I/O interrupts (The signals passing through the inputs are 24 V DC signals.)**

Item \ Model		AH16AR10N-5A				
Number of inputs		16				
Input power form		Direct current				
Connector type		Removable terminal block				
Input type		Digital input				
Input form		Direct current (sinking or sourcing)				
Input current		24 V DC, 5 mA				
Action level	**OFF→ON**	>15 V DC				
	ON→OFF	<5 V DC				
Response time	**Filtering cycle**	0.1 ms	0.5 ms	3 ms	15 ms	20 ms
	OFF→ON (Typical)	0.11 ms	0.51 ms	3.01 ms	15.01 ms	20.01 ms
	OFF→ON (Maximum)	0.12 ms	0.52 ms	3.02 ms	15.02 ms	20.02 ms
	ON→OFF (Typical)	0.11 ms	0.51 ms	3.01 ms	15.01 ms	20.01 ms
	ON→OFF (Maximum)	0.15 ms	0.55 ms	3.05 ms	15.05 ms	20.05 ms
Input impedance		ON→OFF				
Input signal		Voltage input Sinking: The inputs are NPN transistors whose collectors are open collectors. Sourcing: The inputs are PNP transistors whose collectors are open collectors.				
Electrical isolation		Optocoupler				
Input display		When the optocoupler is driven, the input LED indicator is ON.				
Trigger for an interrupt		An interrupt is triggered when there is a transition in a signal from low to high/from high to low/from low to high or from high to low.				

Item \ Model	AH16AR10N-5A
Interrupt service routine	The interrupt service routine numbers which can be set are in the range of 0 to 31.
Filtering cycle which can be set for an input channel	0.1 ms, 0.5 ms, 3 ms (default), 15 ms, or 20 ms

- **Electrical specifications for the outputs on digital input/output modules**

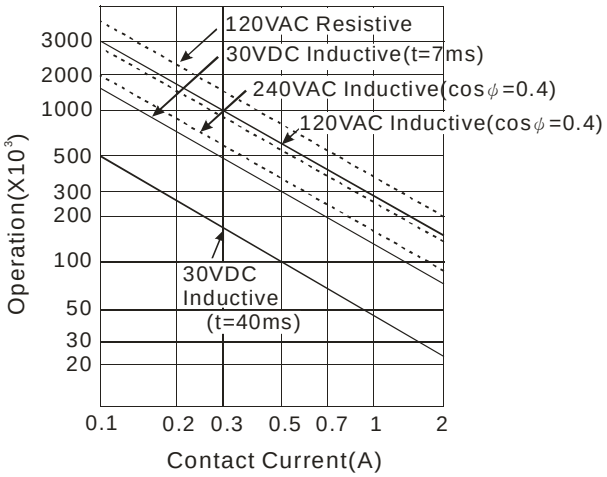
Item \ Model		AH16AN01R-5A	AH16AP11R-5A	AH16AN01T-5A	AH16AP11T-5A	AH16AN01P-5A	AH16AP11P-5A	AH16AN01S-5A
Number of outputs		16	8	16	8	16	8	16
Connector type		Removable terminal block						
Output type		Relay-R		Transistor-T (sinking)		Transistor-P (sourcing)		TRIAC-S
Voltage specifications		250 V AC, and below 30 V DC		12~30 V DC*2		12~30 V DC*2		120/240 V AC
Maximum load	Resistance	2 A/output (5 A/COM)		0.5 A/output (4 A/COM)		0.5 A/output (4 A/COM)		0.5 A/output (2 A/COM)
	Inductance	Life cycle curve*3		12 W (24 V DC)		12 W (24 V DC)		Not applicable
	Bulb	20 W (24 V DC) 100 W (230 V AC)		2 W (24 V DC)		2 W (24 V DC)		60 W AC
Maximum output frequency*1	Resistance	1 Hz		100 Hz		100 Hz		10 Hz
	Inductance	0.5 Hz		0.5 Hz		0.5 Hz		-
	Bulb	1 Hz		10 Hz		10 Hz		10 Hz
Maximum Response time	OFF→ON	10 ms		0.5 ms		0.5 ms		1 ms+0.5 AC cycles
	ON→OFF							

Item \ Model		AH32AN02T-5A	AH32AN02P-5A	AH32AN02T-5B	AH32AN02P-5B	AH32AN02T-5C	AH32AN02P-5C	AH64AN02T-5C	AH64AN02P-5C
Number of outputs		32	32	32	32	32	32	64	64
Connector type		Removable terminal block		DB37 connector		Latch connector			
Output type		Transistor–T (sinking) Transistor-P (sourcing)							
Voltage specifications		12~30 V DC*2							
Maximum load	Resistance	0.1 A/output (1 A/COM)							
	Inductance	Not applicable							
	Bulb	Not applicable							
Maximum output frequency*1	Resistance	100 Hz							
	Inductance	-							
	Bulb	-							
Maximum Response time	OFF→ON	0.5 ms							
	ON→OFF								

*1: The scan cycle affects the frequency.

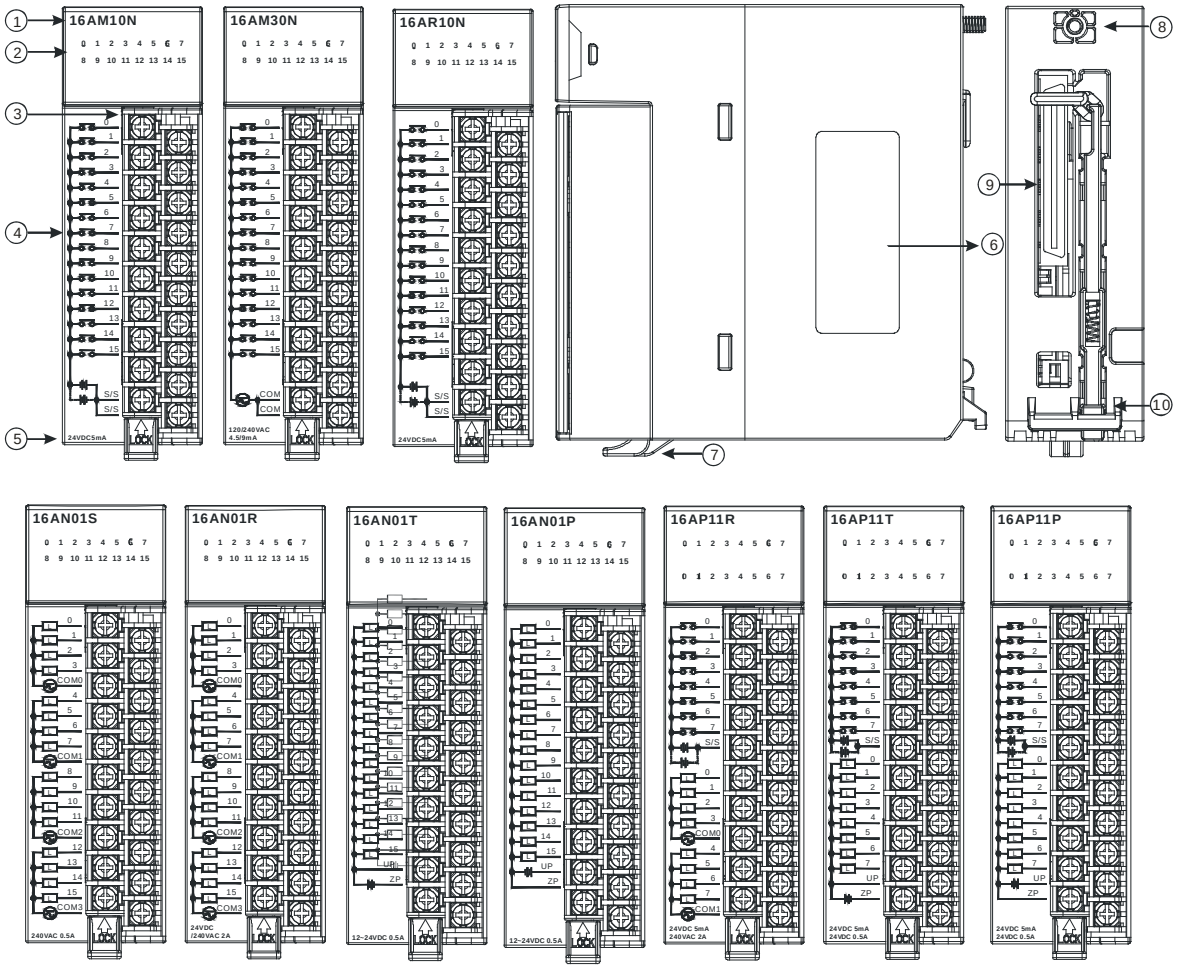
*2: The terminals UP and ZP needs to be connected to the 24 V DC auxiliary power supply (-15%~+20%), and the rated current consumption is 1 mA/output.

*3: The life cycle curve is shown below.



2.4.2 Profiles

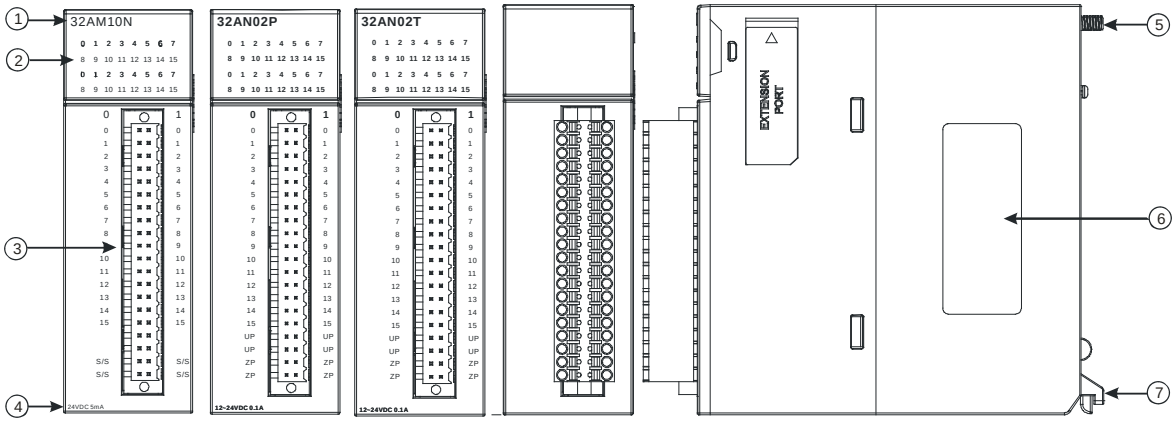
- **AH16AM10N-5A/AH16AM30N-5A/AH16AR10N-5A/AH16AN01S-5A/AH16AN01R-5A/AH16AN01T-5A/ AH16AN01P-5A/AH16AP11R-5A/AH16AP11T-5A/AH16AP11P-5A**



Number	Name	Description
1	Model name	Model name of the module
2	Input/Output LED indicator	If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON.
3	Removable	The inputs are connected to a switch or a sensor.

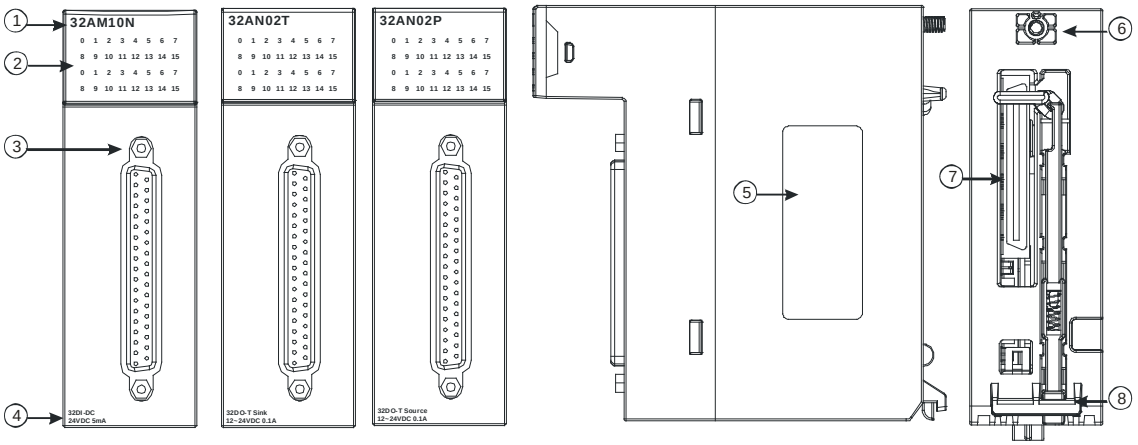
Number	Name	Description
	terminal block	The outputs are connected to a load which will be driven, e.g. a contact, or a solenoid valve.
4	Arrangement of the input/output terminals	Arrangement of the terminals
5	Description of the inputs/outputs	Number of inputs/outputs and specifications
6	Label	Nameplate
7	Clip	Fixing the removable terminal block
8	Set screw	Fixing the module
9	Connector	Connecting the module and a backplane
10	Projection	Fixing the module

- **AH32AM10N-5A/AH32AN02T-5A/AH32AN02P-5A**



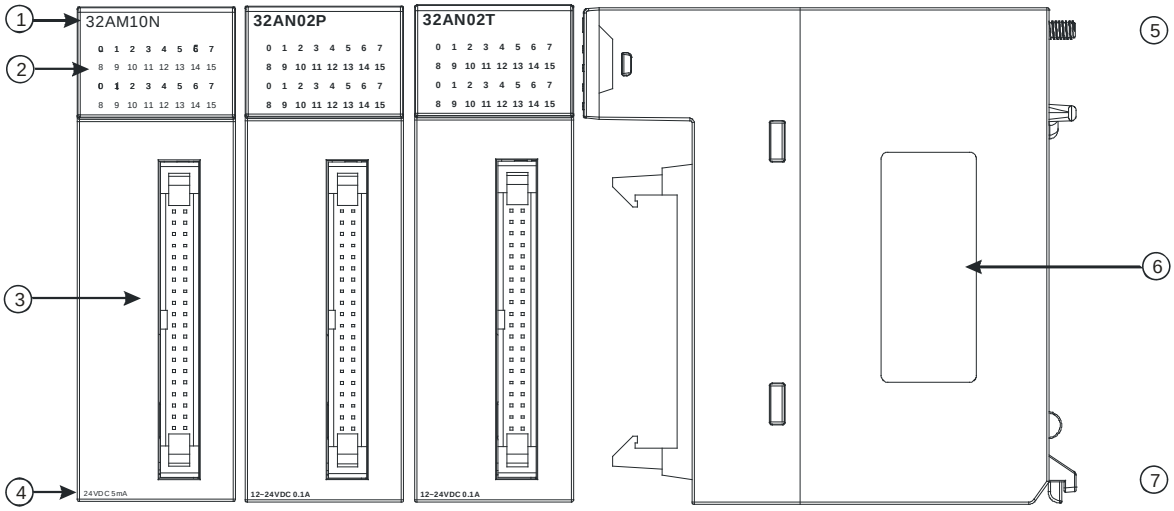
Number	Name	Description
1	Model name	Model name of the module
2	Input/Output LED indicator	If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON.
3	Removable terminal block	The inputs are connected to a switch or a sensor. The outputs are connected to a load which will be driven, e.g. a contact, or a solenoid valve.
4	Description of the inputs/outputs	Number of inputs/outputs and specifications
5	Set screw	Fixing the module
6	Label	Nameplate
7	Projection	Fixing the module

- **AH32AM10N-5B/AH32AN02T-5B/AH32AN02P-5B**



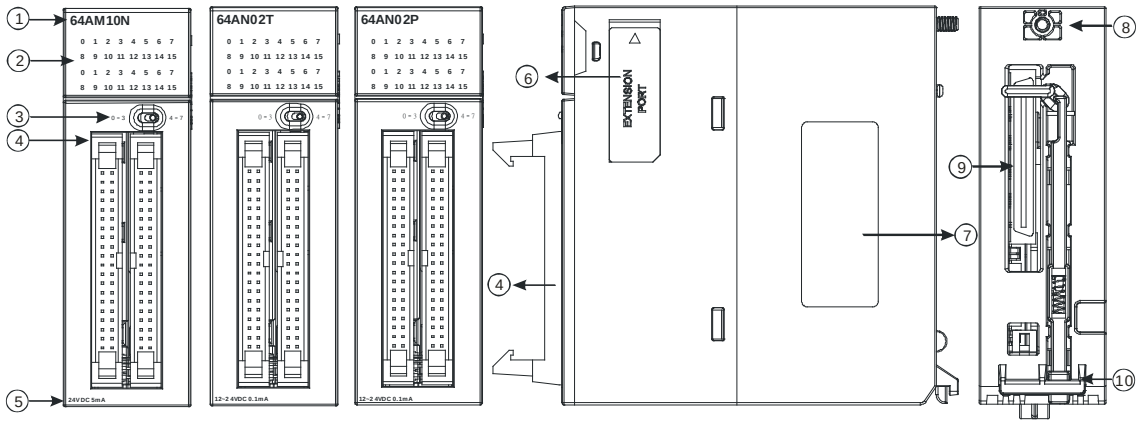
Number	Name	Description
1	Model name	Model name of the module
2	Input/Output LED indicator	If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON.
3	DB37 connector	It is connected to the I/O extension cable UC-ET010-33B.
4	Description of the inputs/outputs	Number of inputs/outputs and specifications
5	Label	Nameplate
6	Set screw	Fixing the module
7	Connector	Connecting the module and a backplane
8	Projection	Fixing the module

- **AH32AM10N-5C/AH32AN02T-5C/AH32AN02P-5C**



Number	Name	Description
1	Model name	Model name of the module
2	Input/Output LED indicator	If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON.
3	Latch connector	It is connected to the I/O extension cable UC-ET010-24A/UC-ET010-24C.
4	Description of the inputs/outputs	Number of inputs/outputs and specifications
5	Set screw	Fixing the module
6	Label	Nameplate
7	Projection	Fixing the module

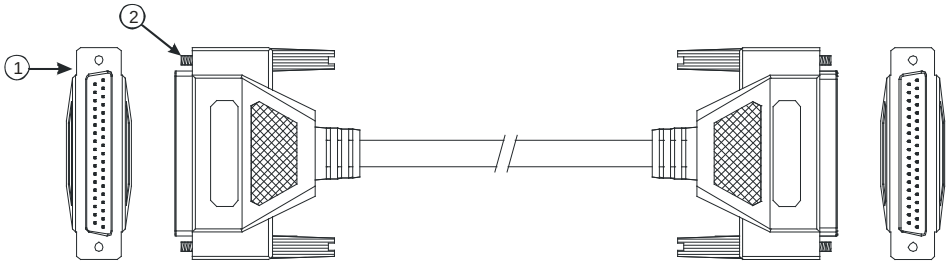
- **AH64AM10N-5C/AH64AN02T-5C/AH64AN02P-5C**



Number	Name	Description
1	Model name	Model name of the module
2	Input/Output LED indicator	If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON.
3	LED indicator switch	Left: High 32 bits Right: Low 32 bits
4	Latch connector	It is connected to the I/O extension cable UC-ET010-24A/UC-ET010-24C.
5	Description of the inputs/outputs	Number of inputs/outputs and specifications
6	Extension port	Updating the firmware
7	Label	Nameplate
8	Set screw	Fixing the module
9	Connector	It connects the module and a backplane.
10	Projection	Fixing the module

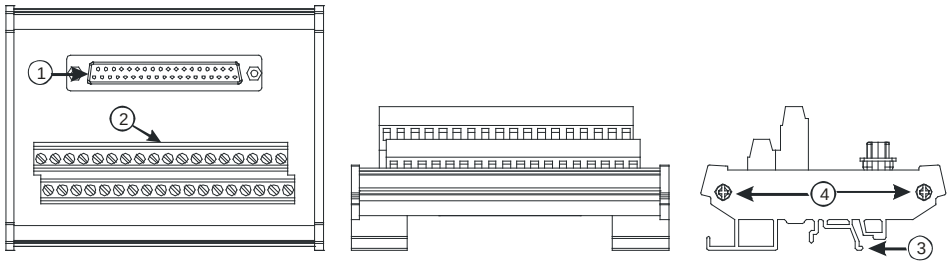
- **DB37 connector, I/O extension cable, and external terminal module**

1. I/O extension cable UC-ET010-33B



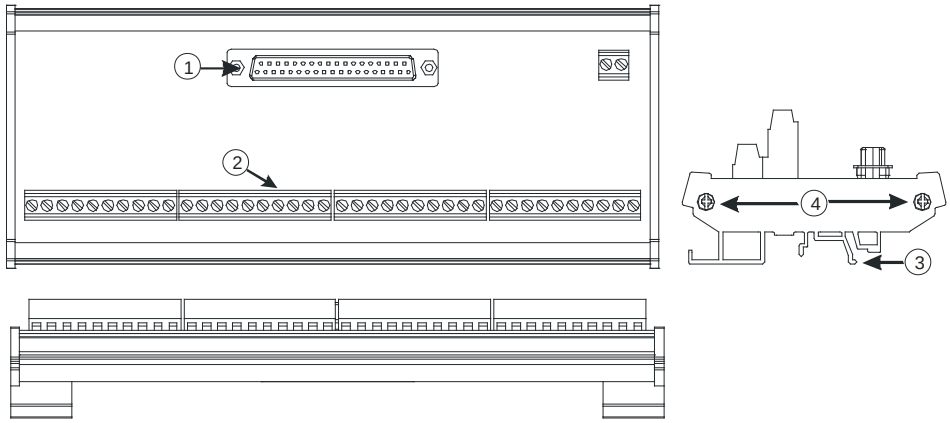
Number	Name	Description
1	DB37 connector	Connecting a digital input/output module and an external terminal module.
2	Set screw	Fixing the connector

2. External terminal module for AH32AM10N-5B: UB-10-ID32B

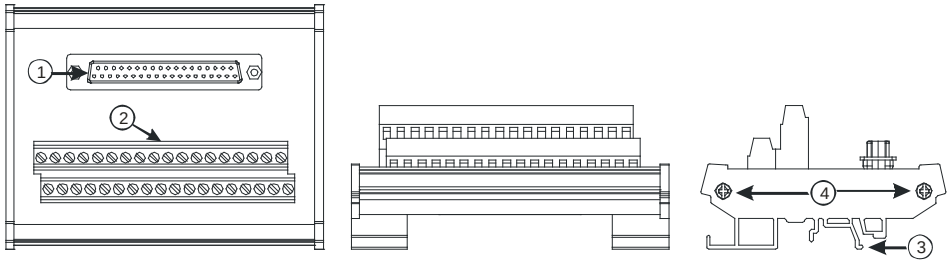


3. External terminal modules for AH32AN02T-5B

◆ UB-10-OR32A

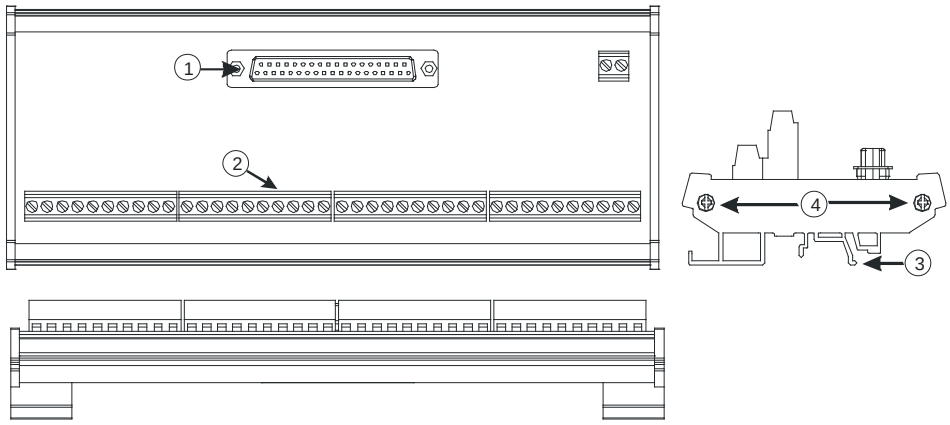


◆ UB-10-OT32B

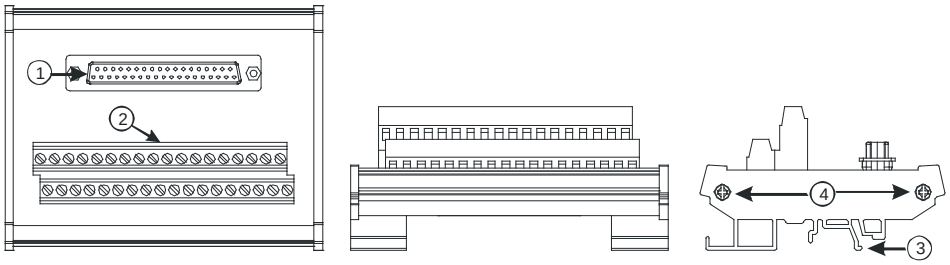


4. External terminal modules for AH32AN02P-5B

◆ UB-10-OR32B



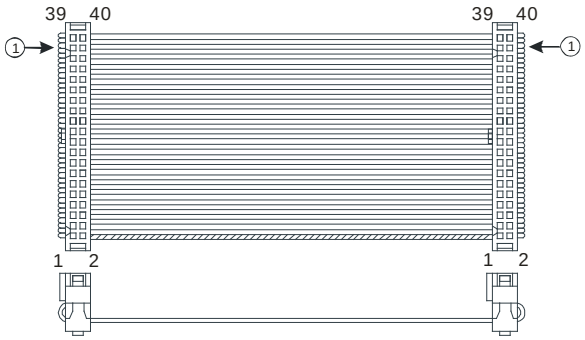
◆ UB-10-OT32B



Number	Name	Description
1	DB37 connector	Connecting the external terminal module and a digital input/output module
2	Terminals	Input/Output terminals for wiring
3	Clip	Hanging the external terminal module on a DIN rail
4	Set screw	Fixing the base

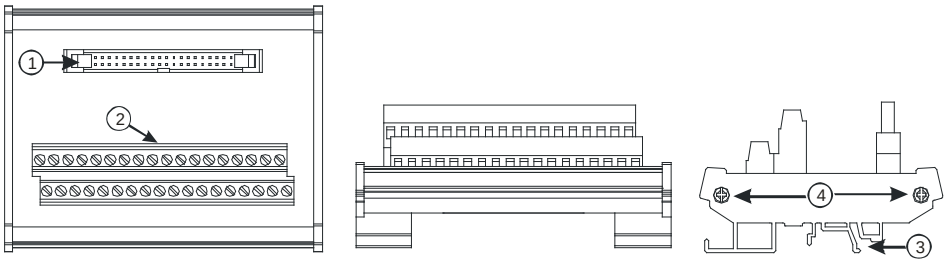
- **Latch connector, I/O extension cable, and external terminal module**

1. I/O extension cable UC-ET010-24A



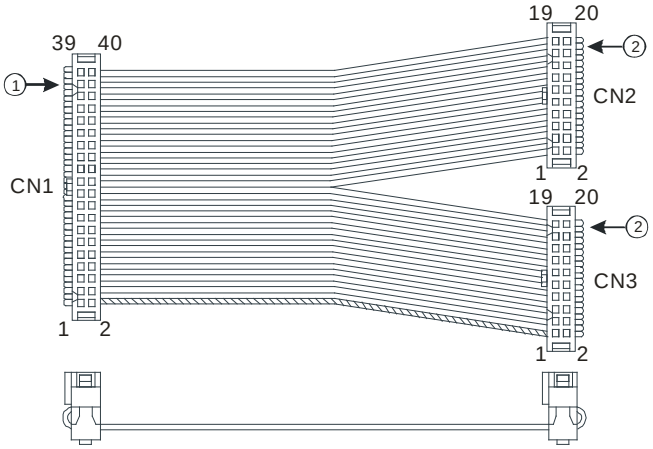
Number	Name	Description
1	40-pin IDC connector	Connecting a digital input/output module and the external terminal module UB-10-ID32A

2. External terminal module for AH32AM10N-5C/AH64AM10N-5C: UB-10-ID32A



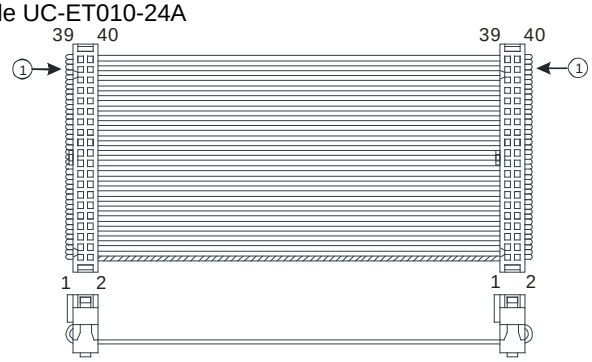
Number	Name	Description
1	40-pin latch connector	Connecting the external terminal module and a digital input/output module
2	Terminals	Input/Output terminals for wiring
3	Clip □	Hanging the external terminal module on a DIN rail
4	Set screw	Fixing the base

3. I/O extension cable UC-ET010-24C



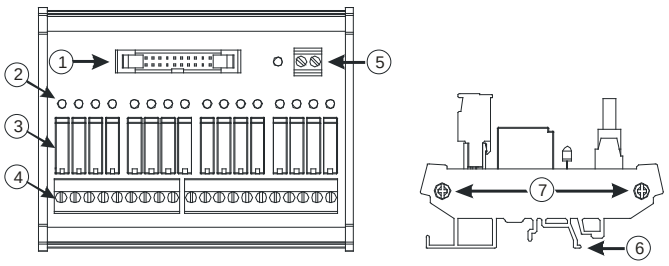
Number	Name	Description
1	40-pin IDC connector	Connecting a digital input/output module and an external terminal module.
2	20-pin IDC connector	Connecting a digital input/output module and the external terminal module UB-10-OR16A or UB-10-OR16B

4. I/O extension cable UC-ET010-24A

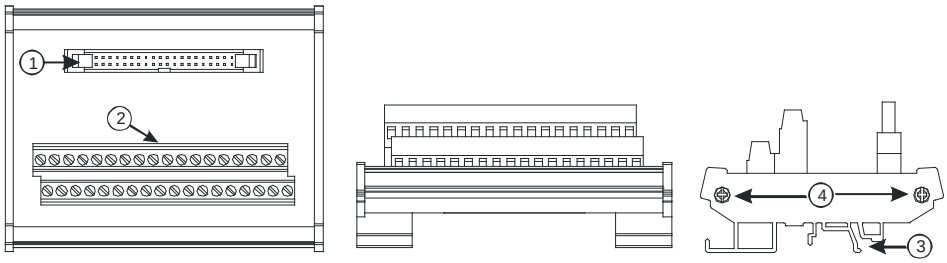


Number	Name	Description
1	40-pin IDC connector	Connecting a digital input/output module and the external terminal module UB-10-OT32A

5. External terminal modules for AH32AN02T-5C/AH64AN02T-5C
   - ◆ UB-10-OR16A

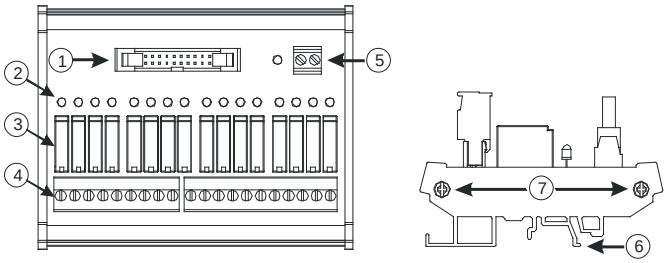


◆ UB-10-OT32A

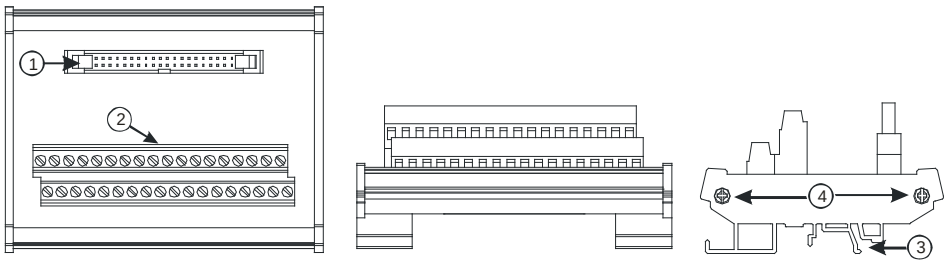


6. External terminal module for AH32AN02P-5C/AH64AN02P-5C

◆ UB-10-OR16B



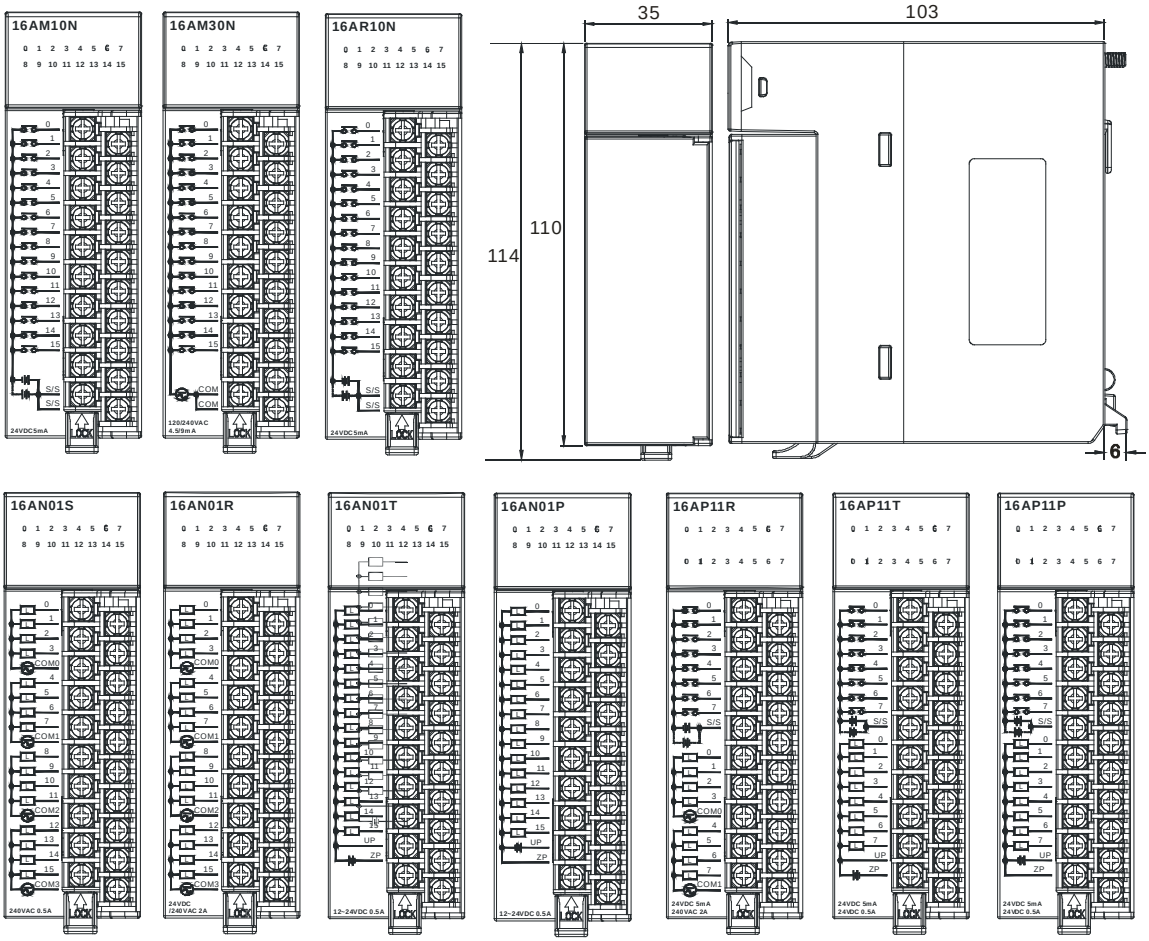
◆ UB-10-OT32A



Number	Name	Description
1	20-pin latch connector	Connecting the external terminal module and a digital input/output module
2	Output LED indicator	If there is an output signal, the output LED indicator is ON.
3	Output relay	Output relay
4	Output terminal	Output terminal for wiring
5	Power input terminal	Power input terminal for wiring
6	Clip □	Hanging the external terminal module on a DIN rail
7	Set screw	Fixing the base

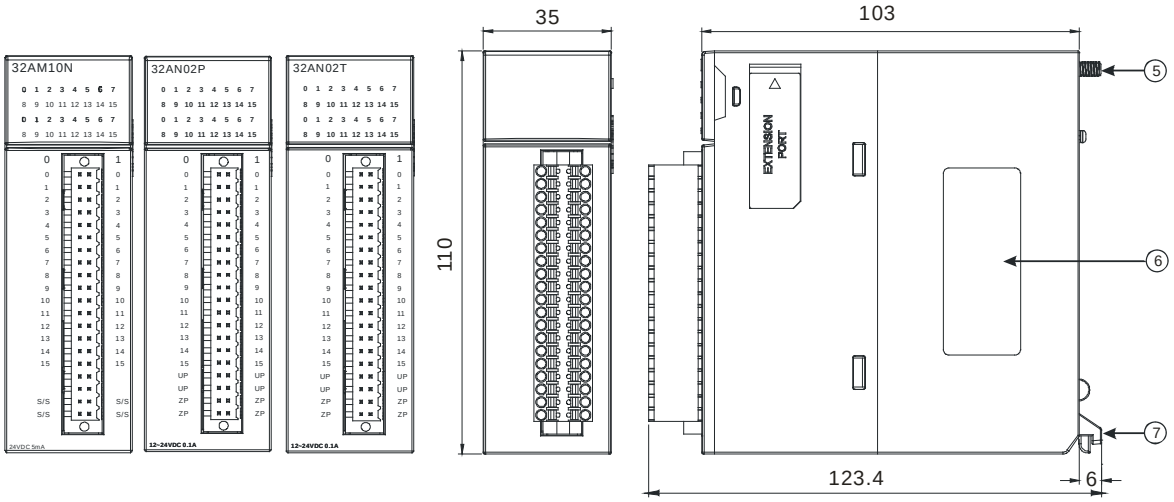
2.4.3 Dimensions

- **AH16AM10N-5A/AH16AM30N-5A/AH16AR10N-5A/AH16AN01S-5A/AH16AN01R-5A/AH16AN01T-5A/ AH16AN01P-5A/AH16AP11R-5A/AH16AP11T-5A/AH16AP11P-5A**



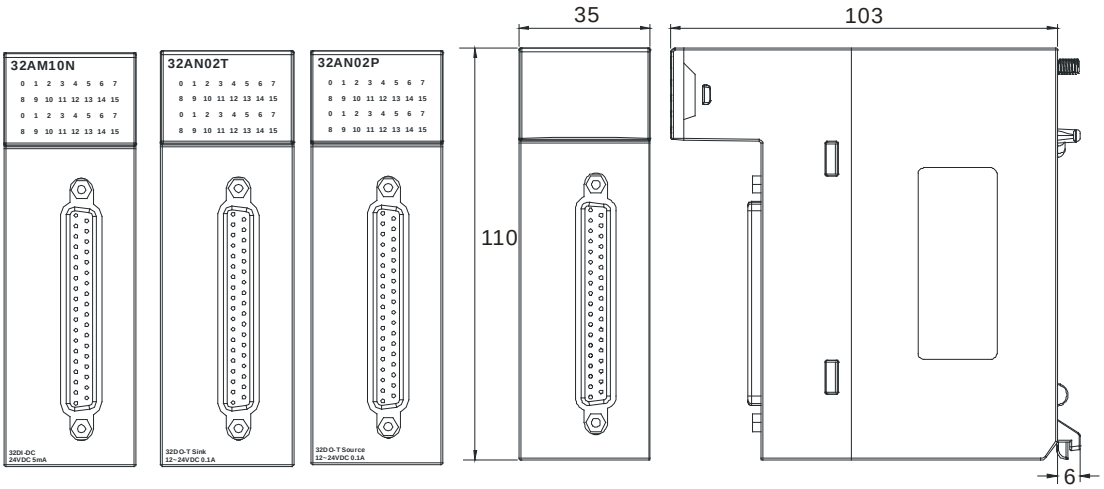
Unit: mm

- **AH32AM10N-5A/AH32AN02T-5A/AH32AN02P-5A**



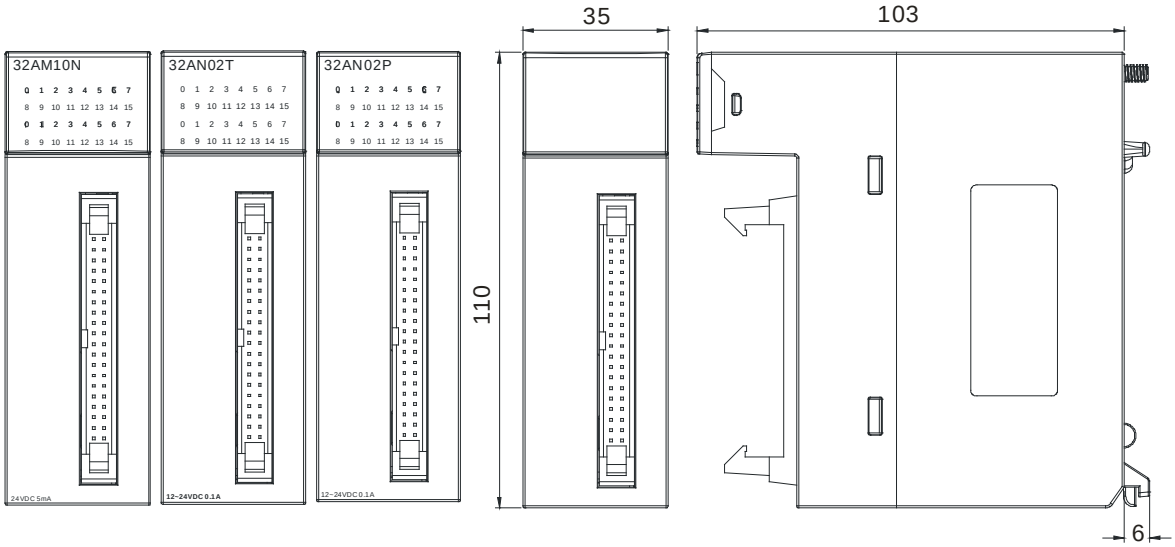
Unit: mm

- **AH32AM10N-5B/AH32AN02T-5B/AH32AN02P-5B**



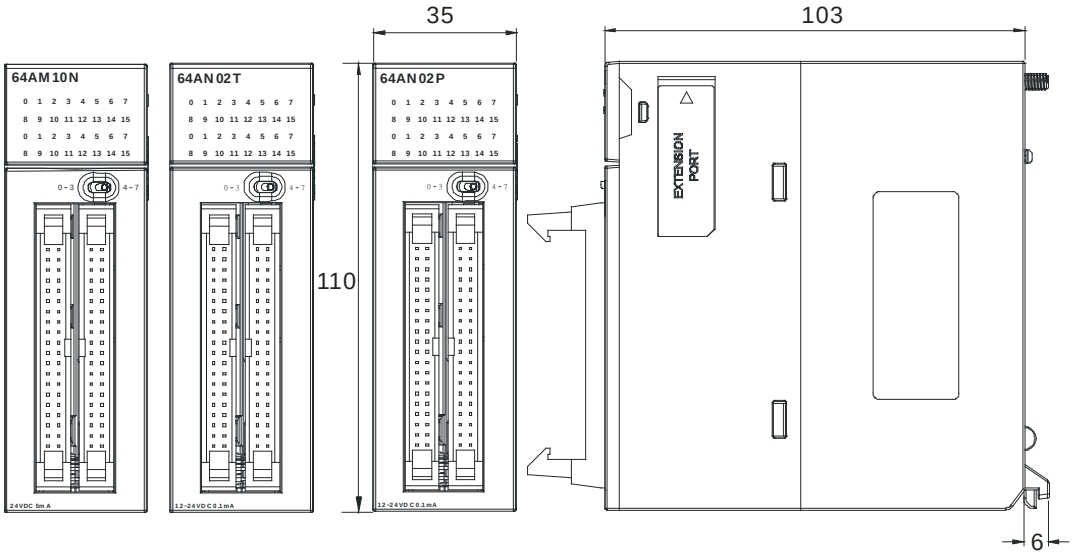
Unit: mm

- **AH32AM10N-5C/AH32AN02T-5C/AH32AN02P-5C**



Unit: mm

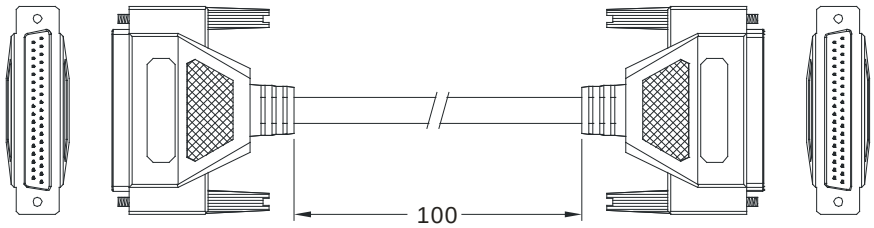
- **AH64AM10N-5C/AH64AN02T-5C/AH64AN02P-5C**



Unit: mm

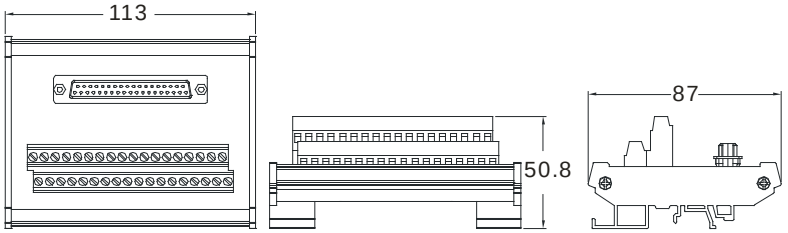
- **DB37 connector, I/O extension cable, and external terminal module**

1. I/O extension cable UC-ET010-33B



Unit: cm

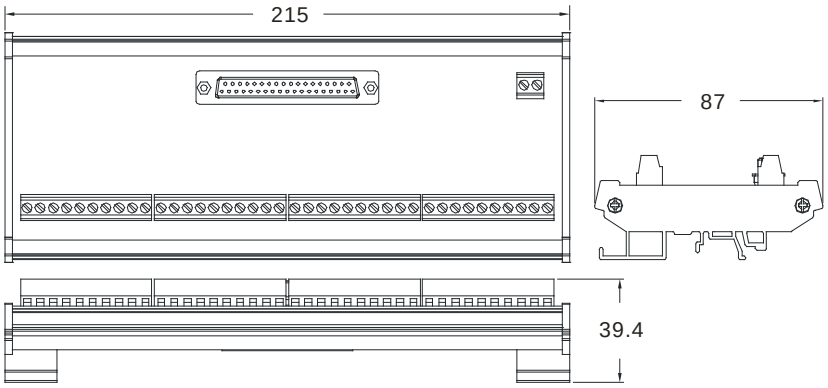
2. External terminal module for AH32AM10N-5B: UB-10-ID32B



Unit: mm

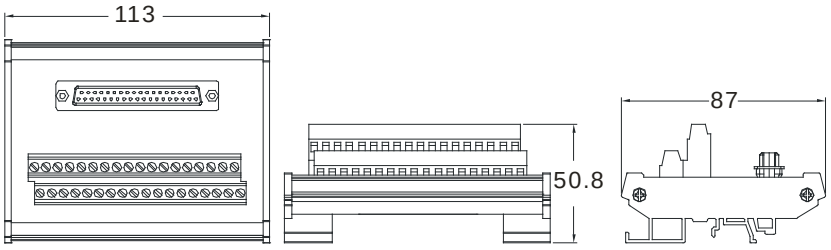
3. External terminal modules for AH32AN02T-5B

◆ UB-10-OR32A



Unit: mm

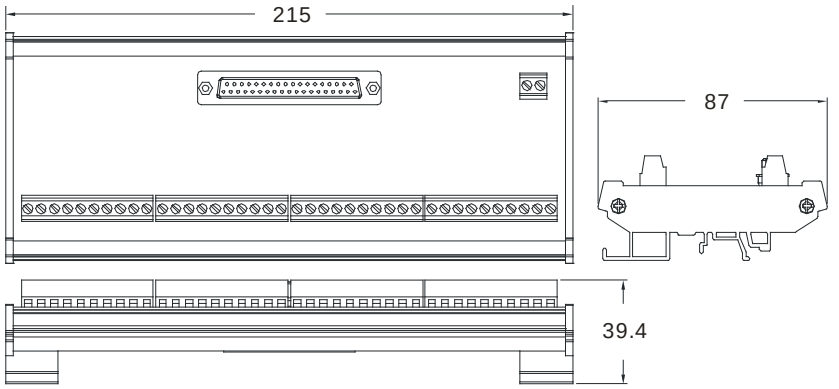
◆ UB-10-OT32B



Unit: mm

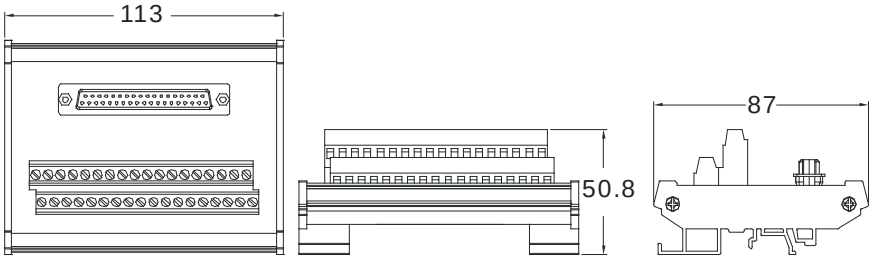
4. External terminal modules for AH32AN02P-5B

◆ UB-10-OR32B



Unit: mm

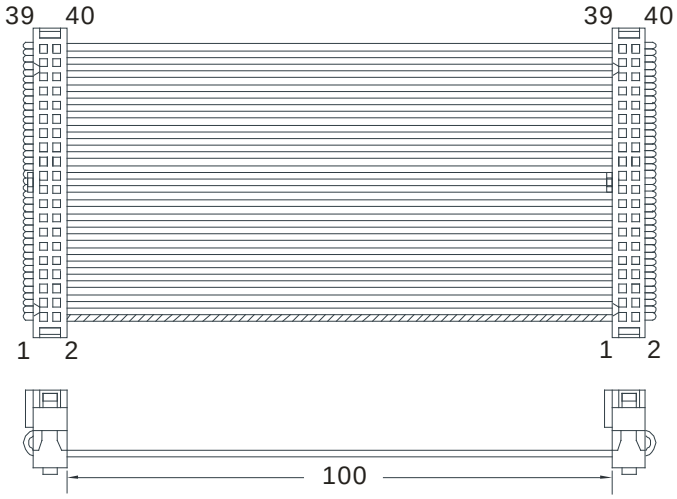
◆ UB-10-OT32B



Unit: mm

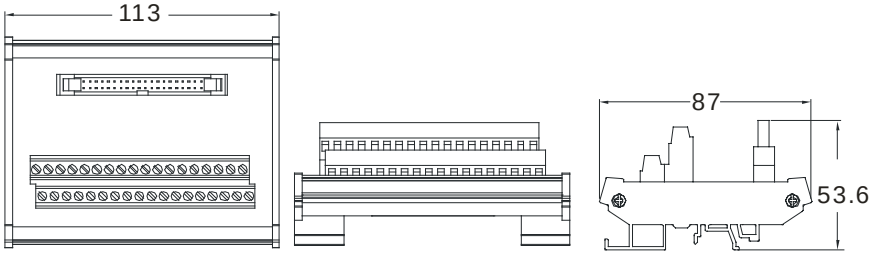
● **Latch connector, I/O extension cable, and external terminal module**

1. I/O extension cable UC-ET010-24A



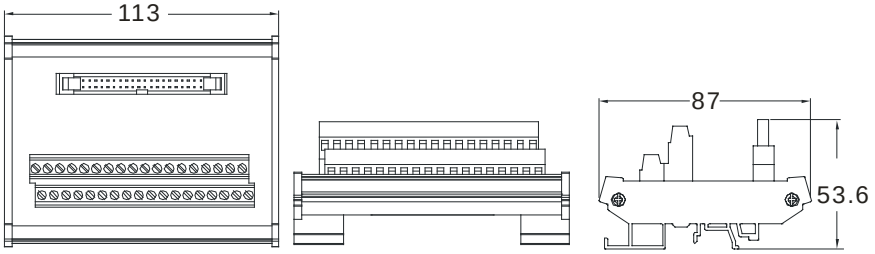
Unit: cm

2. External terminal module for AH32AM10N-5C/AH64AM10N-5C: UB-10-ID32A



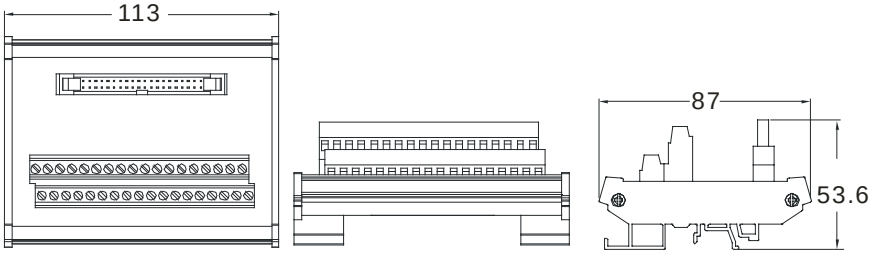
Unit: mm

3. External terminal module for AH32AN02T-5C/AH64AN02T-5C: UB-10-OT32A



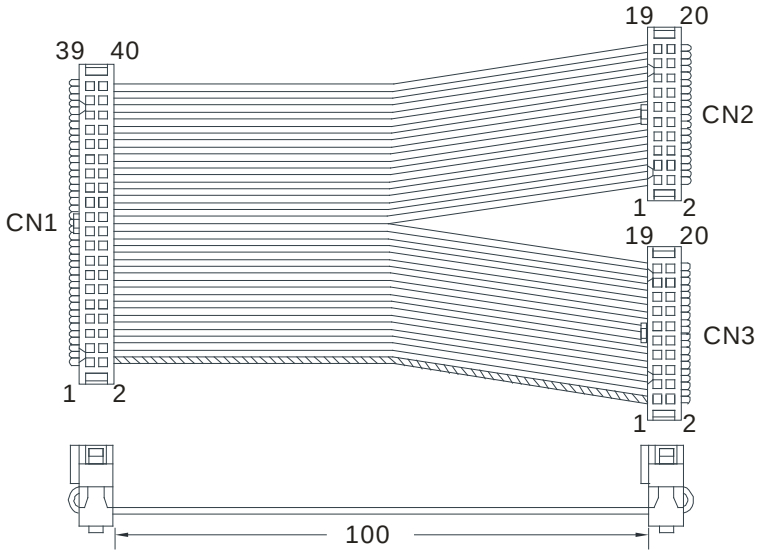
Unit: mm

4. External terminal module for AH32AN02P-5C/AH64AN02P-5C: UB-10-OT32A



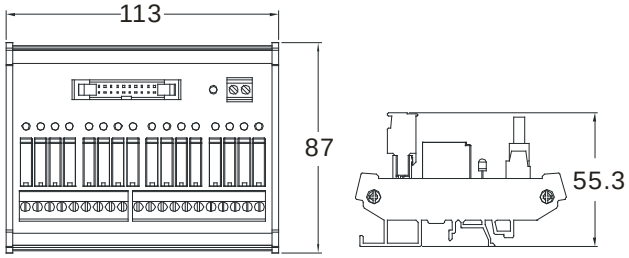
Unit: mm

5. I/O extension cable UC-ET010-24C



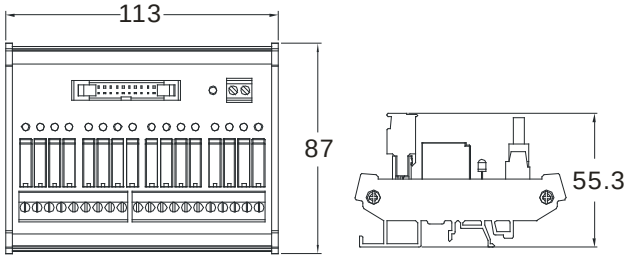
Unit: cm

◆ External terminal module for AH32AN02T-5C/AH64AN02T-5C: UB-10-OR16A



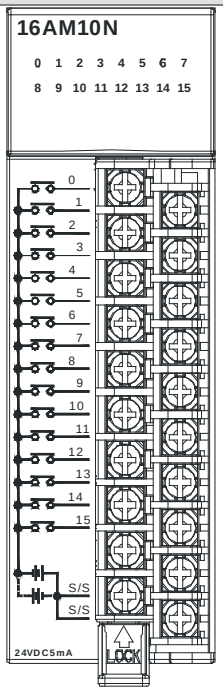
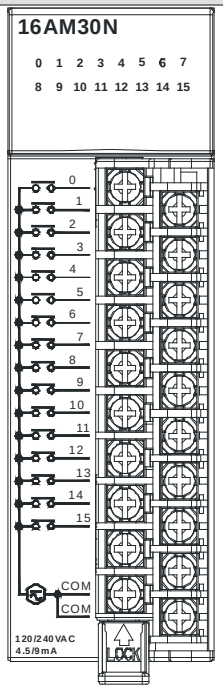
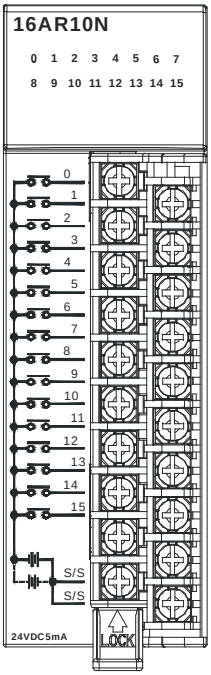
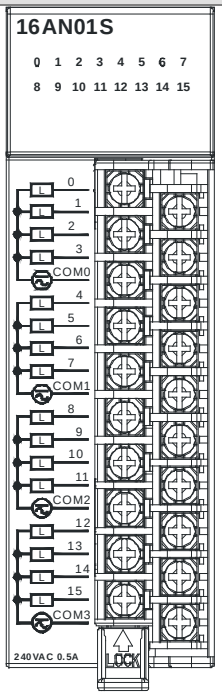
Unit: mm

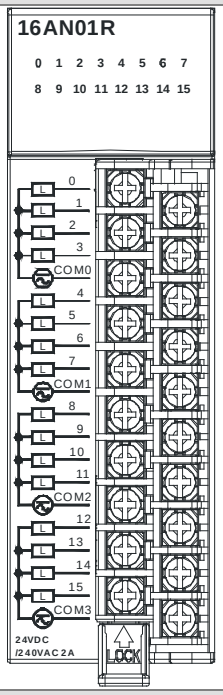
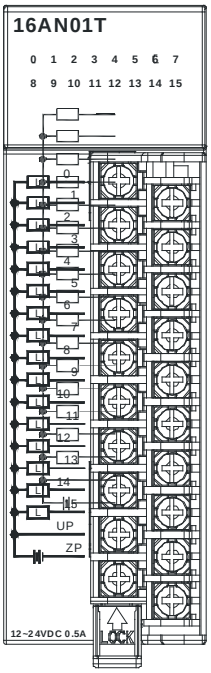
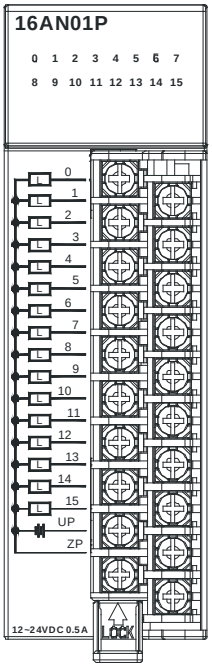
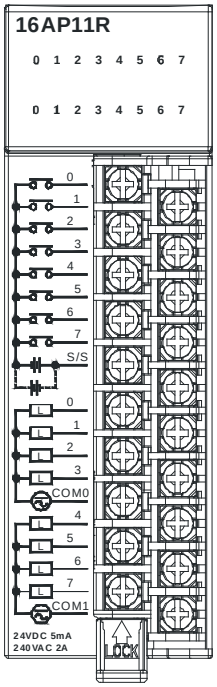
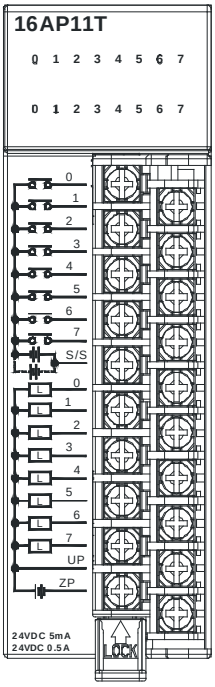
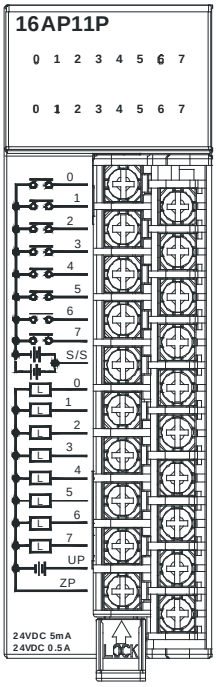
◆ External terminal module for AH32AN02P-5C/AH64AN02P-5C: UB-10-OR16B

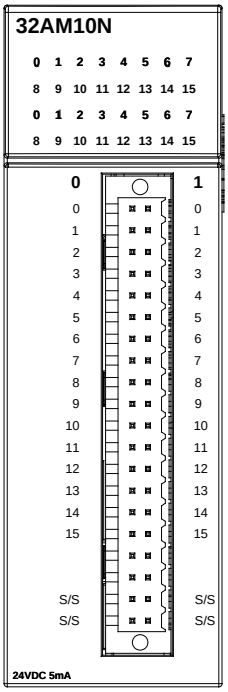
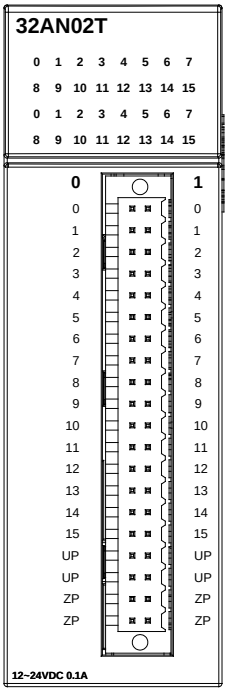


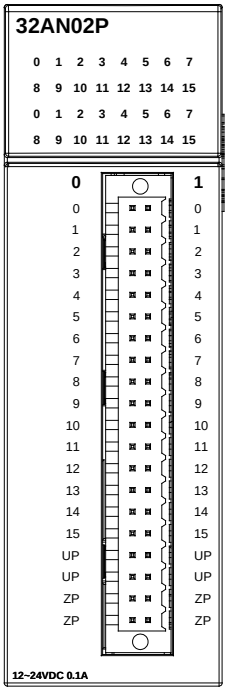
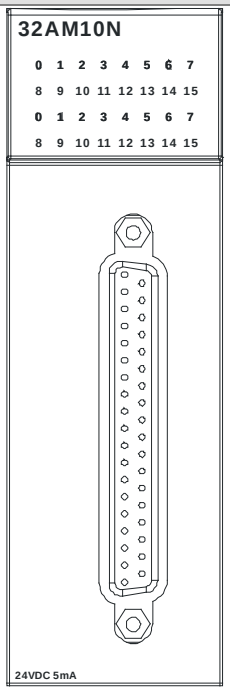
Unit: mm

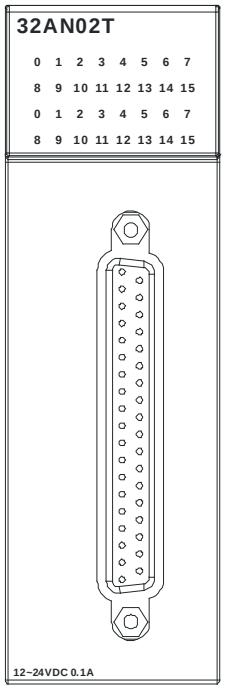
2.4.4 Arrangement of Input/Output Terminals

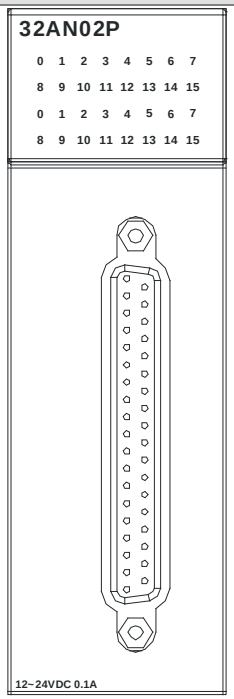
AH16AM10N-5A	AH16AM30N-5A	AH16AR10N-5A	AH16AN01S-5A
			

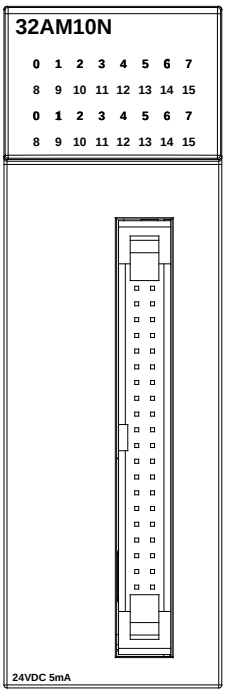
AH16AN01R-5A	AH16AN01T-5A	AH16AN01P-5A
		
AH16AP11R-5A	**AH16AP11T-5A**	**AH16AP11P-5A**
		

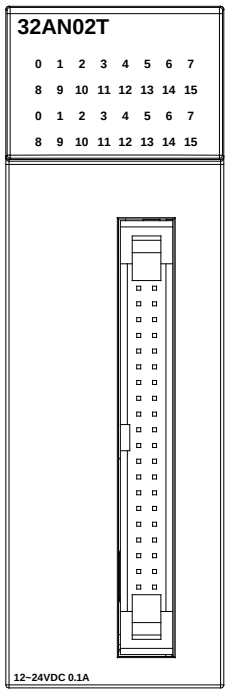
AH32AM10N-5A			AH32AN02T-5A		
	0.0	1.0		0.0	1.0
	0.1	1.1		0.1	1.1
	0.2	1.2		0.2	1.2
	0.3	1.3		0.3	1.3
	0.4	1.4		0.4	1.4
	0.5	1.5		0.5	1.5
	0.6	1.6		0.6	1.6
	0.7	1.7		0.7	1.7
	0.8	1.8		0.8	1.8
	0.9	1.9		0.9	1.9
	0.10	1.10		0.10	1.10
	0.11	1.11		0.11	1.11
	0.12	1.12		0.12	1.12
	0.13	1.13		0.13	1.13
	0.14	1.14		0.14	1.14
	0.15	1.15		0.15	1.15
	-	-		UP	UP
	-	-		UP	UP
	S/S	S/S		ZP	ZP
	S/S	S/S		ZP	ZP

AH32AN02P-5A			AH32AM10N-5B		
	0.0	1.0		0.0	0.1
	0.1	1.1		0.2	0.3
	0.2	1.2		0.4	0.5
	0.3	1.3		0.6	0.7
	0.4	1.4		0.8	0.9
	0.5	1.5		0.10	0.11
	0.6	1.6		0.12	0.13
	0.7	1.7		0.14	0.15
	0.8	1.8		S/S	S/S
	0.9	1.9		NC	1.0
	0.10	1.10		1.1	1.2
	0.11	1.11		1.3	1.4
	0.12	1.12		1.5	1.6
	0.13	1.13		1.7	1.8
	0.14	1.14		1.9	1.10
	0.15	1.15		1.11	1.12
	UP	UP		1.13	1.14
	UP	UP		1.15	S/S
	ZP	ZP		S/S	
	ZP	ZP			

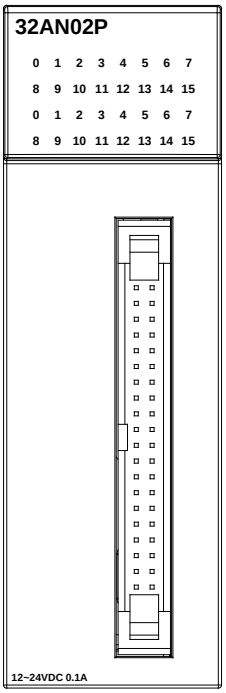
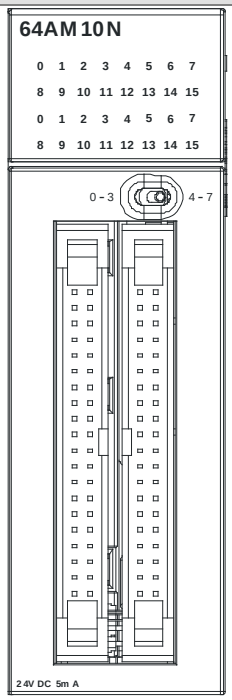
AH32AN02T-5B		
	0.0	0.1
	0.2	0.3
	0.4	0.5
	0.6	0.7
	0.8	0.9
	0.10	0.11
	0.12	0.13
	0.14	0.15
	ZP	ZP
	UP	1.0
	1.1	1.2
	1.3	1.4
	1.5	1.6
	1.7	1.8
	1.9	1.10
	1.11	1.12
	1.13	1.14
	1.15	ZP
	UP	

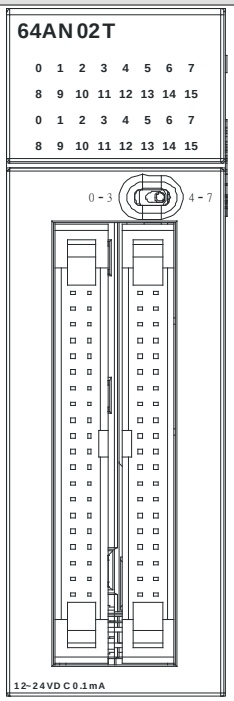
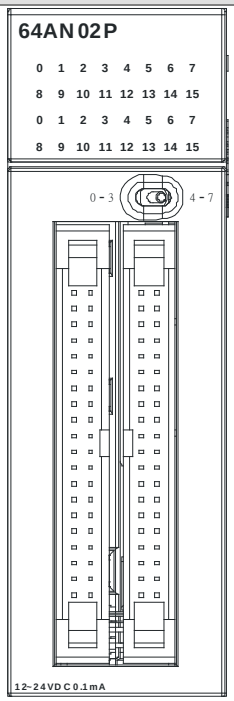
AH32AN02P-5B		
	0.0	0.1
	0.2	0.3
	0.4	0.5
	0.6	0.7
	0.8	0.9
	0.10	0.11
	0.12	0.13
	0.14	0.15
	ZP	UP
	UP	1.0
	1.1	1.2
	1.3	1.4
	1.5	1.6
	1.7	1.8
	1.9	1.10
	1.11	1.12
	1.13	1.14
	1.15	ZP
	UP	

AH32AM10N-5C		
	0.0	0.1
	0.2	0.3
	0.4	0.5
	0.6	0.7
	0.8	0.9
	0.10	0.11
	0.12	0.13
	0.14	0.15
	S/S	S/S
	1.0	1.1
	1.2	1.3
	1.4	1.5
	1.6	1.7
	1.8	1.9
	1.10	1.11
	1.12	1.13
	1.14	1.15
	S/S	S/S

AH32AN02T-5C		
	0.0	0.1
	0.2	0.3
	0.4	0.5
	0.6	0.7
	0.8	0.9
	0.10	0.11
	0.12	0.13
	0.14	0.15
	ZP	ZP
	UP	UP
	1.0	1.1
	1.2	1.3
	1.4	1.5
	1.6	1.7
	1.8	1.9
	1.10	1.11
	1.12	1.13
	1.14	1.15
	ZP	ZP
	UP	UP

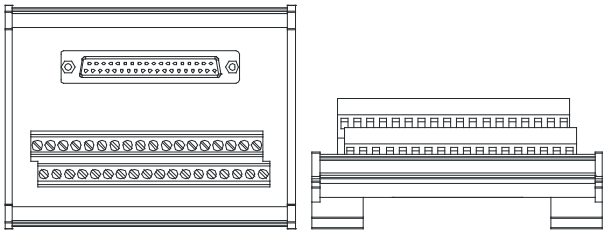
2

AH32AN02P-5C			AH64AM10N-5C				
	0.0	0.1		NC	NC	NC	NC
	0.2	0.3		S/S	S/S	2.0	2.1
	0.4	0.5		1.15	1.14	2.2	2.3
	0.6	0.7		1.13	1.12	2.4	2.5
	0.8	0.9		1.11	1.10	2.6	2.7
	0.10	0.11		1.9	1.8	2.8	2.9
	0.12	0.13		1.7	1.6	2.10	2.11
	0.14	0.15		1.5	1.4	2.12	2.13
	ZP	ZP		1.3	1.2	2.14	2.15
	UP	UP		1.1	1.0	S/S	S/S
	1.0	1.1		NC	NC	NC	NC
	1.2	1.3		S/S	S/S	3.0	3.1
	1.4	1.5		0.15	0.14	3.2	3.3
	1.6	1.7		0.13	0.12	3.4	3.5
	1.8	1.9		0.11	0.10	3.6	3.7
	1.10	1.11		0.9	0.8	3.8	3.9
	1.12	1.13		0.7	0.6	3.10	3.11
	1.14	1.15		0.5	0.4	3.12	3.13
	ZP	ZP		0.3	0.2	3.14	3.15
	UP	UP		0.1	0.0	S/S	S/S

AH64AN02T-5C					AH64AN02P-5C				
	UP	UP	2.0	2.1		UP	UP	2.0	2.1
	ZP	ZP	2.2	2.3		ZP	ZP	2.2	2.3
	1.15	1.14	2.4	2.5		1.15	1.14	2.4	2.5
	1.13	1.12	2.6	2.7		1.13	1.12	2.6	2.7
	1.11	1.10	2.8	2.9		1.11	1.10	2.8	2.9
	1.9	1.8	2.10	2.11		1.9	1.8	2.10	2.11
	1.7	1.6	2.12	2.13		1.7	1.6	2.12	2.13
	1.5	1.4	2.14	2.15		1.5	1.4	2.14	2.15
	1.3	1.2	ZP	ZP		1.3	1.2	ZP	ZP
	1.1	1.0	UP	UP		1.1	1.0	UP	UP
	UP	UP	3.0	3.1		UP	UP	3.0	3.1
	ZP	ZP	3.2	3.3		ZP	ZP	3.2	3.3
	0.15	0.14	3.4	3.5		0.15	0.14	3.4	3.5
	0.13	0.12	3.6	3.7		0.13	0.12	3.6	3.7
	0.11	0.10	3.8	3.9		0.11	0.10	3.8	3.9
	0.9	0.8	3.10	3.11		0.9	0.8	3.10	3.11
	0.7	0.6	3.12	3.13		0.7	0.6	3.12	3.13
	0.5	0.4	3.14	3.15		0.5	0.4	3.14	3.15
	0.3	0.2	ZP	ZP		0.3	0.2	ZP	ZP
	0.1	0.0	UP	UP		0.1	0.0	UP	UP

- **DB37 connector and the external terminal module**

1. External terminal module for AH32AM10N-5B: UB-10-ID32B

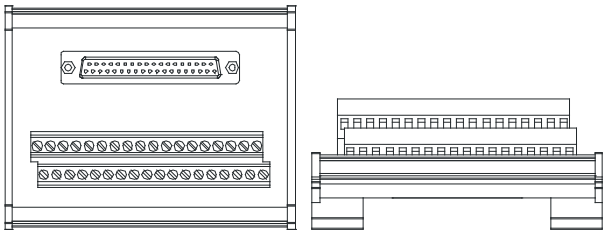


AH series terminals: (only applicable for AH series)

Upper row	X0.0	X0.2	X0.4	X0.6	X0.8	X0.10	X0.12	X0.14	X1.0	X1.2	X1.4	X1.6	X1.8	X1.10	X1.12	X1.14	S/S	S/S
Lower row	X0.1	X0.3	X0.5	X0.7	X0.9	X0.11	X0.13	X0.15	X1.1	X1.3	X1.5	X1.7	X1.9	X1.11	X1.13	X1.15	S/S	S/S

2. External terminal modules for AH32AN02T-5B

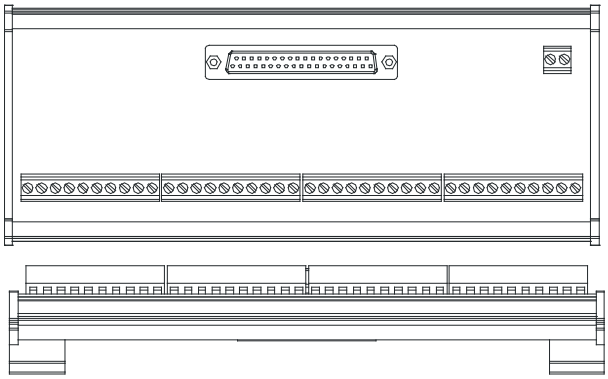
◆ UB-10-OT32B



AH series terminals: (only applicable for AH series)

Upper row	Y0.0	Y0.2	Y0.4	Y0.6	Y0.8	Y0.10	Y0.12	Y0.14	Y1.0	Y1.2	Y1.4	Y1.6	Y1.8	Y1.10	Y1.12	Y1.14	UP	UP
Lower row	Y0.1	Y0.3	Y0.5	Y0.7	Y0.9	Y0.11	Y0.13	Y0.15	Y1.1	Y1.3	Y1.5	Y1.7	Y1.9	Y1.11	Y1.13	Y1.15	ZP	ZP

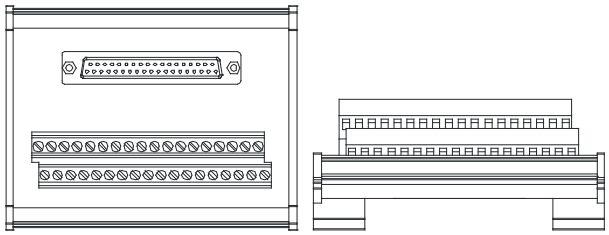
◆ UB-10-OR32A



AH series terminals: (only applicable for AH series)

																			GND	+24V
1st from the left	C0	Y0.0	Y0.1	Y0.2	Y0.3	C1	Y0.4	Y0.5	Y0.6	Y0.7	C2	Y0.8	Y0.9	Y0.10	Y0.11	C3	Y0.12	Y0.13	Y0.14	Y0.15
21st from the left	C4	Y1.0	Y1.1	Y1.2	Y1.3	C5	Y1.4	Y1.5	Y1.6	Y1.7	C6	Y1.8	Y1.9	Y1.10	Y1.11	C7	Y1.12	Y1.13	Y1.14	Y1.15

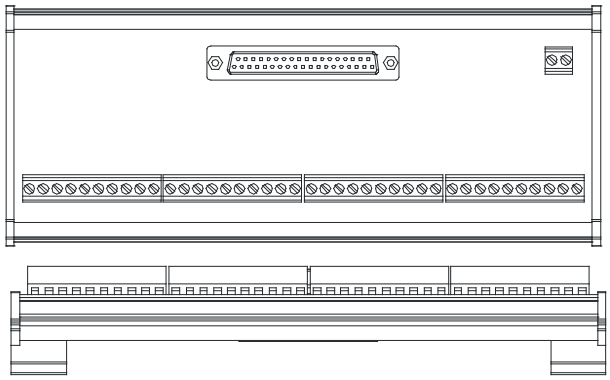
3. External terminal modules for AH32AN02P-5B
   - ◆ UB-10-OT32B



AH series terminals: (only applicable for AH series)

Upper row	Y0.0	Y0.2	Y0.4	Y0.6	Y0.8	Y0.10	Y0.12	Y0.14	Y1.0	Y1.2	Y1.4	Y1.6	Y1.8	Y1.10	Y1.12	Y1.14	UP	UP
Lower row	Y0.1	Y0.3	Y0.5	Y0.7	Y0.9	Y0.11	Y0.13	Y0.15	Y1.1	Y1.3	Y1.5	Y1.7	Y1.9	Y1.11	Y1.13	Y1.15	ZP	ZP

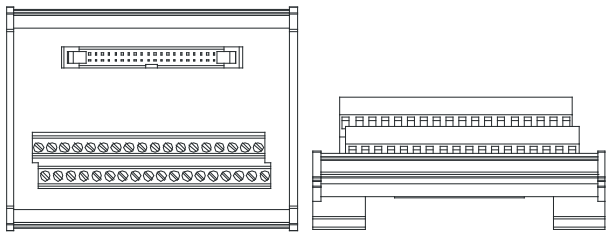
   - ◆ UB-10-OR32B



AH series terminals: (only applicable for AH series)

																			GND	+24V
1st from the left	C0	Y0.0	Y0.1	Y0.2	Y0.3	C1	Y0.4	Y0.5	Y0.6	Y0.7	C2	Y0.8	Y0.9	Y0.10	Y0.11	C3	Y0.12	Y0.13	Y0.14	Y0.15
21st from the left	C4	Y1.0	Y1.1	Y1.2	Y1.3	C5	Y1.4	Y1.5	Y1.6	Y1.7	C6	Y1.8	Y1.9	Y1.10	Y1.11	C7	Y1.12	Y1.13	Y1.14	Y1.15

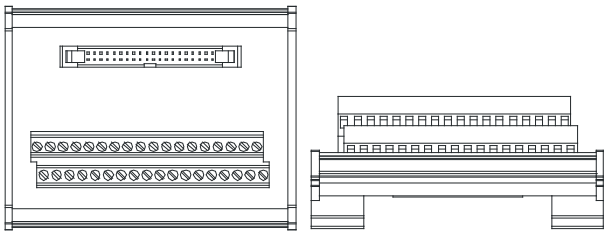
- **Latch connector and external terminal module**
  1. External terminal module for AH32AM10N-5C/AH64AM10N-5C: UB-10-ID32A



AH series terminals: (only applicable for AH series)

Upper row	X0.0	X0.2	X0.4	X0.6	X0.8	X0.10	X0.12	X0.14	X1.0	X1.2	X1.4	X1.6	X1.8	X1.10	X1.12	X1.14	S/S	S/S
Lower row	X0.1	X0.3	X0.5	X0.7	X0.9	X0.11	X0.13	X0.15	X1.1	X1.3	X1.5	X1.7	X1.9	X1.11	X1.13	X1.15	S/S	S/S

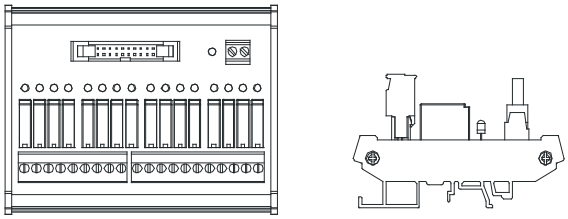
2. External terminal modules for AH32AN02T-5C/AH64AN02T-5C:
   - ◆ UB-10-OT32A



AH series terminals: (only applicable for AH series)

Upper row	Y0.0	Y0.2	Y0.4	Y0.6	Y0.8	Y0.10	Y0.12	Y0.14	Y1.0	Y1.2	Y1.4	Y1.6	Y1.8	Y1.10	Y1.12	Y1.14	+24V	+24V
Lower row	Y0.1	Y0.3	Y0.5	Y0.7	Y0.9	Y0.11	Y0.13	Y0.15	Y1.1	Y1.3	Y1.5	Y1.7	Y1.9	Y1.11	Y1.13	Y1.15	GND	GND

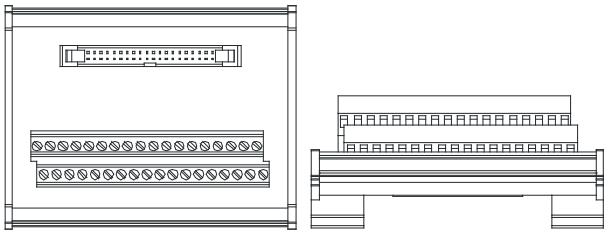
   - ◆ UB-10-OR16A



AH series terminals: (only applicable for AH series)

																		GND	+24V
C0	Y0.0	Y0.1	Y0.2	Y0.3	C1	Y0.4	Y0.5	Y0.6	Y0.7	C2	Y0.8	Y0.9	Y0.10	Y0.11	C3	Y0.12	Y0.13	Y0.14	Y0.15

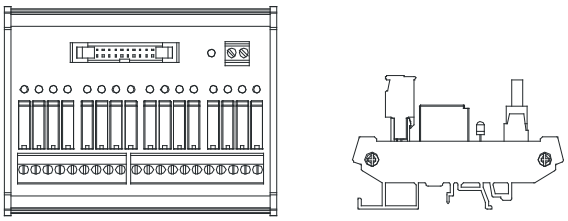
3. External terminal module for AH32AN02P-5C/AH64AN02P-5C:
   - ◆ UB-10-OT32A



AH series terminals: (only applicable for AH series)

Upper row	Y0.0	Y0.2	Y0.4	Y0.6	Y0.8	Y0.10	Y0.12	Y0.14	Y1.0	Y1.2	Y1.4	Y1.6	Y1.8	Y1.10	Y1.12	Y1.14	+24V	+24V
Lower row	Y0.1	Y0.3	Y0.5	Y0.7	Y0.9	Y0.11	Y0.13	Y0.15	Y1.1	Y1.3	Y1.5	Y1.7	Y1.9	Y1.11	Y1.13	Y1.15	GND	GND

   - ◆ UB-10-OR16B



AH series terminals: (only applicable for AH series)

																		GND	+24V
C0	Y0.0	Y0.1	Y0.2	Y0.3	C1	Y0.4	Y0.5	Y0.6	Y0.7	C2	Y0.8	Y0.9	Y0.10	Y0.11	C3	Y0.12	Y0.13	Y0.14	Y0.15

2.5 Specifications for Analog Input/Output Modules

2.5.1 General Specifications

- **AH04AD-5A/ AH08AD-5A/AH08AD-5B/AH08AD-5C**

Electrical specifications

Module name	AH04AD-5A	AH08AD-5B	AH08AD-5B	AH08AD-5C
Number of inputs	4	8	8	8
Analog-to-digital conversion	Voltage input/Current input	Voltage input/Current input	Voltage input	Current input
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)			
Connector type	Removable terminal block			
Conversion time	150 μs/channel			
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit/an optocoupler, but the analog channels are not isolated from one another. Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC			
Weight	200g			

Functional specifications

Analog-to-digital conversion	Voltage input				
Rated input range	-10 V~10 V	0 V~10 V	±5 V	0 V~5 V	1 V~5 V
Hardware input range	-10.1 V~10.1 V	-0.1 V~10.1 V	-5.05 V~5.05 V	-0.05 V~5.05 V	0.95 V~5.05 V
Fiducial error (Room temperature) (The umber of input voltages which are averaged is 100.)	±0.1%				
Fiducial error (Full temperature range) (The number of input voltages which are averaged is 100.)	±0.45%				
Linearity error (Room temperature)	±0.07%				
Linearity error (Full temperature range)	±0.12%				
Hardware resolution	16 bits				
Input impedance	>200 kΩ				
Absolute input range	±15 V				

Analog-to-digital conversion	Current input		
Rated input range	±20 mA	0 mA~20 mA	4 mA~20 mA
Hardware input	-20.2 mA~20.2 mA	-0.2 mA~20.2 mA	3.8 mA~20.2 mA

Analog-to-digital conversion	Current input		
range			
Fiducial error (Room temperature) (The number of input currents which are averaged is 100.)	±0.1%		
Fiducial error (Full temperature range) (The number of input currents which are averaged is 100.)	±0.2%		
Linearity error (Room temperature) (Full temperature range)	±0.05%		
Linearity error	±0.23%		
Hardware resolution	16 bits		
Input impedance	250 Ω		
Absolute input range	±32 mA		

- **AH04DA-5A/ AH08DA-5A /AH08DA-5B/AH08DA-5C**

Electrical specifications

Module name	AH04DA-5A	AH08DA-5A	AH08DA-5B	AH08DA-5C
Number of outputs	4	8	8	8
Analog-to-digital conversion	Voltage output/Current output	Voltage output/Current	Voltage output	Current output
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)			
Connector type	Removable terminal block			
Conversion time	150 μs/channel			
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit/an optocoupler, but the analog channels are not isolated from one another. Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC			
Weight	210g			

Functional specifications

Analog-to-digital conversion	Voltage output				
Rated output range	±10 V	0 V~10 V	±5 V	0 V~5 V	1 V~5 V
Hardware output range	-10.1 V~10.1 V	-0.1 V~10.1 V	-5.05 V~5.05 V	-0.05 V~5.05 V	0.95 V~5.05 V
Fiducial error (Room	±0.02%				

Analog-to-digital conversion	Voltage output
temperature) (The number of output voltages which are averaged is 100.)	
Fiducial error (Full temperature range) (The number of output voltages which are averaged is 100.)	±0.04%
Linearity error (Room temperature)	±0.004%
Linearity error (Full temperature range)	±0.004%
Hardware resolution	16 bits
Permissible load impedance	1 kΩ~2 MΩ: ±10 V and 0 V~10 V ≧500 Ω: 1 V~5 V

Analog-to-digital conversion	Current output	
Rated output range	0 mA~20 mA	4 mA~20 mA
Hardware output range	-0.2 mA~20.2 mA	3.8 mA~20.2 mA
Fiducial error (Room temperature) (The number of output currents which are averaged is 100.)	±0.06%	
Fiducial error (Full temperature range) (The number of output currents which are averaged is 100.)	±0.07%	
Linearity error (Room temperature)	±0.01%	
Linearity error (Full temperature range)	±0.01%	
Hardware resolution	16 bits	
Permissible load impedance	≦550 Ω	

- **AH06XA-5A**

Electrical specifications

Module name	AH06XA-5A
Number of analog inputs	4 inputs
Number of analog outputs	2 outputs
Analog-to-digital conversion	Voltage input/Current input/Voltage output/Current output
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)
Connector type	Removable terminal block
Conversion time	150 us/channel
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit/an optocoupler, but the analog channels are not isolated from one another. Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC
Weight	210g

Functional specifications for the analog-to-digital conversion

Analog-to-digital conversion	Voltage input				
Rated input range	-10 V~10 V	0 V~10 V	±5 V	0 V~5 V	1 V~5 V
Hardware input range	-10.1 V~10.1 V	-0.1 V~10.1 V	-5.05 V~5.05 V	-0.05 V~5.05 V	0.95 V~5.05 V
Fiducial error (Room temperature) (The number of input voltages which are averaged is 100.)	±0.1%				
Fiducial error (Full temperature range) (The number of input voltages which are averaged is 100.)	±0.45%				
Linearity error (Room temperature)	±0.07%				
Linearity error (Full temperature range)	±0.12%				
Hardware resolution	16 bits				
Input impedance	>200 kΩ				
Absolute input range	±15 V				

Analog-to-digital conversion	Current input		
Rated input range	±20 mA	0 mA~20 mA	4 mA~20 mA
Hardware input range	-20.2 mA~20.2 mA	-0.2 mA~20.2 mA	3.8 mA~20.2 mA

Analog-to-digital conversion	Current input
Fiducial error (Room temperature) (The number of input currents which are averaged is 100.)	±0.1%
Fiducial error (Full temperature range) (The number of input currents which are averaged is 100.)	±0.2%
Linearity error (Room temperature)	±0.05%
Linearity error (Full temperature range)	±0.23%
Hardware resolution	16 bits
Input impedance	250 Ω
Absolute input range	±32 mA

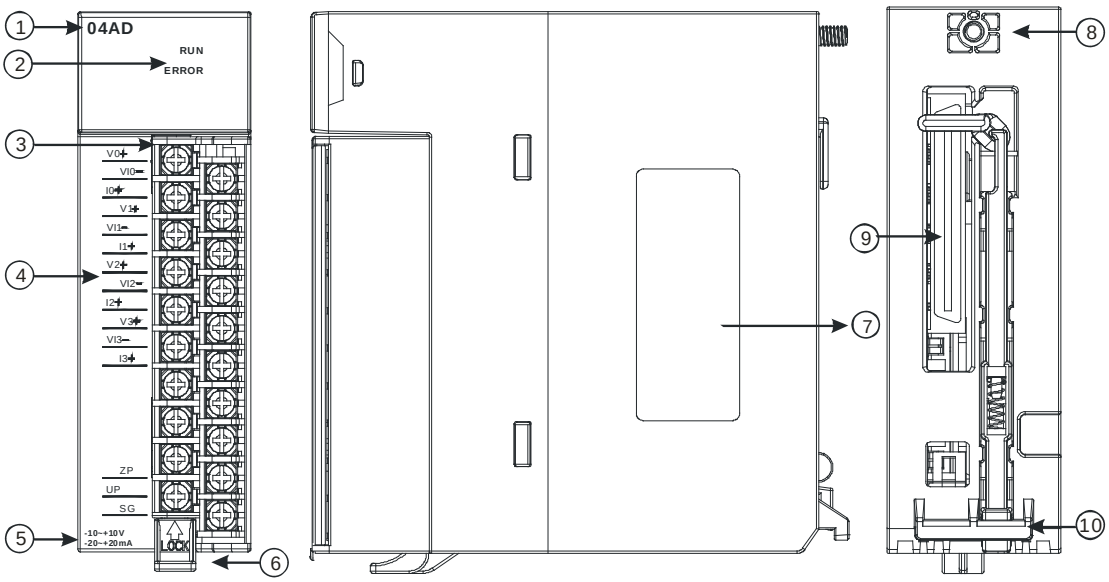
Functional specifications for the digital-to-analog conversion

Digital-to-analog conversion	Voltage output				
Rated output range	±10 V	0 V~10 V	±5 V	0 V~5 V	1 V~5 V
Hardware output range	-10.1 V~10.1 V	-0.1 V~10.1 V	-5.05 V~5.05 V	-0.05 V~5.05 V	0.95 V~5.05 V
Fiducial error (Room temperature) (The number of output voltages which are averaged is 100.)	±0.02%				
Fiducial error (Full temperature range) (The number of output voltages which are averaged is 100.)	±0.04%				
Linearity error (Room temperature)	±0.004%				
Linearity error (Full temperature range)	±0.004%				
Hardware resolution	16 bits				
Permissible load impedance	1 kΩ~2 MΩ: ±10 V and 0 V~10 V ≧500 Ω: 1 V~5 V				

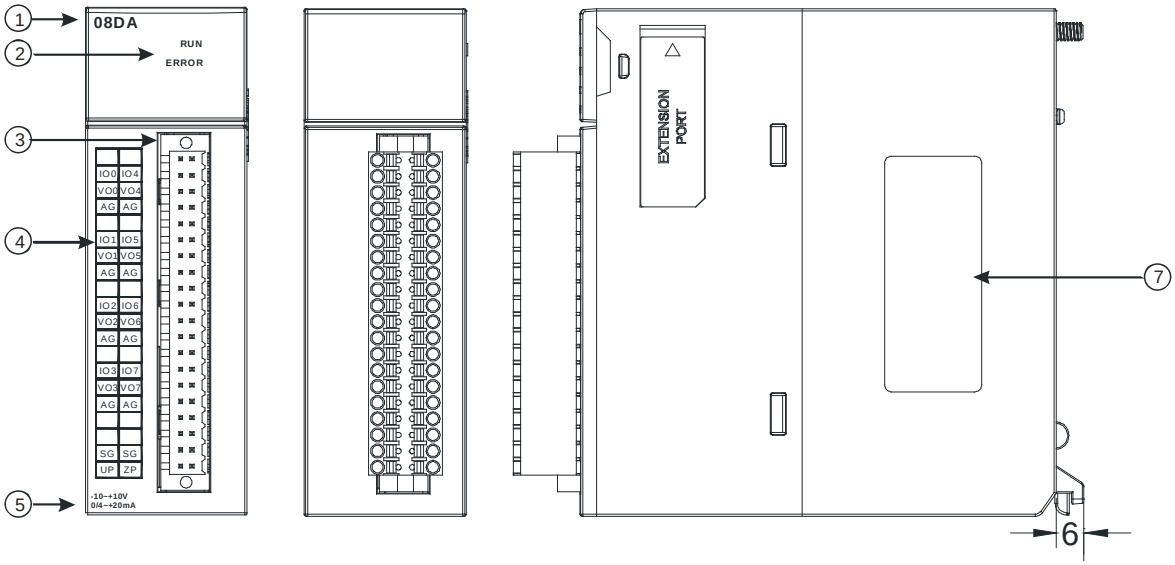
Digital-to-analog conversion	Current output	
Rated output range	0 mA~20 mA	4 mA~20 mA
Hardware output range	-0.2 mA~20.2 mA	3.8 mA~20.2 mA
Fiducial error (Room temperature) (The number of output currents which are averaged is 100.)	±0.06%	
Fiducial error (Full temperature range) (The number of output currents which are averaged is 100.)	±0.07%	
Linearity error (Room temperature)	±0.01%	
Linearity error (Full temperature range)	±0.01%	
Hardware resolution	16 bits	
Permissible load impedance	≦550 Ω	

2.5.2 Profiles

- **AH04AD-5A/AH08AD-5B/AH08AD-5C/AH04DA-5A/AH08DA-5B/AH08DA-5C/AH06XA-5A**



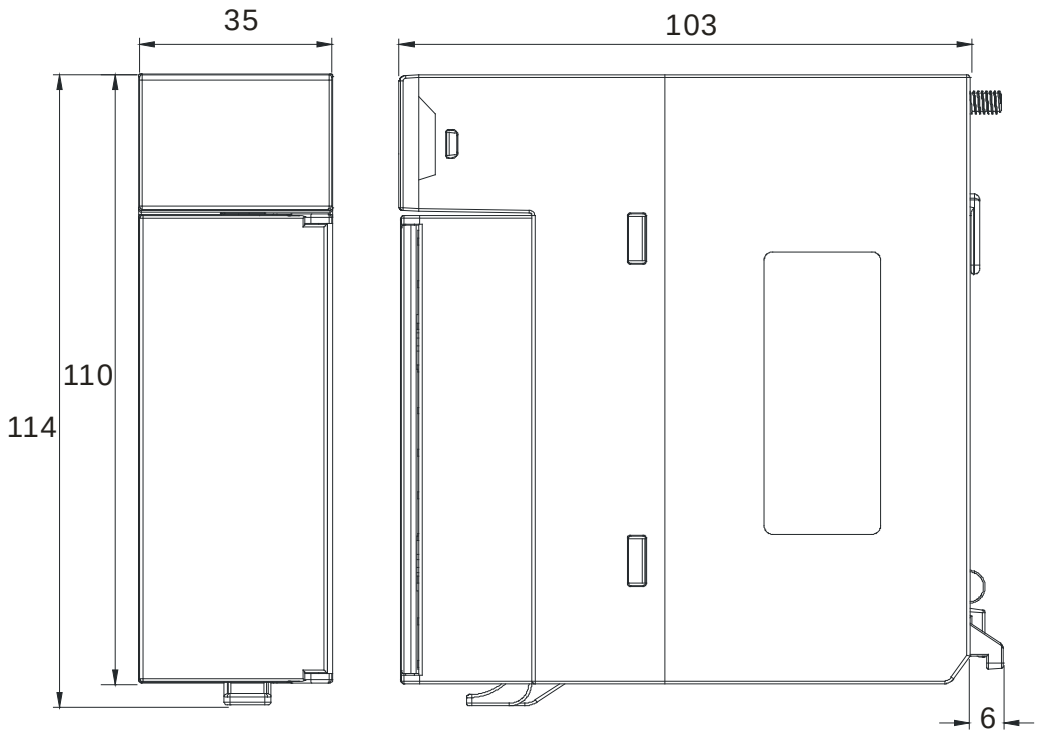
- **AH08AD-5A/AH08DA-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator	Operating status of the module ON: The module is running. OFF: The module stops running.
	ERROR LED indicator	Error status of the module ON: A serious error occurs in the module. OFF: The module is normal. Blinking: A slight error occurs in the module.
3	Removable terminal block	The inputs are connected to a sensor. The outputs are connected to a load which will be driven.
4	Arrangement of the input/output terminals	Arrangement of the terminals
5	Description of the inputs/outputs	Simple specifications for the module
6	Clip	Removing the terminal block
7	Label	Nameplate
8	Set screw	Fixing the module
9	Connector	Connecting the module and a backplane
10	Projection	Fixing the module

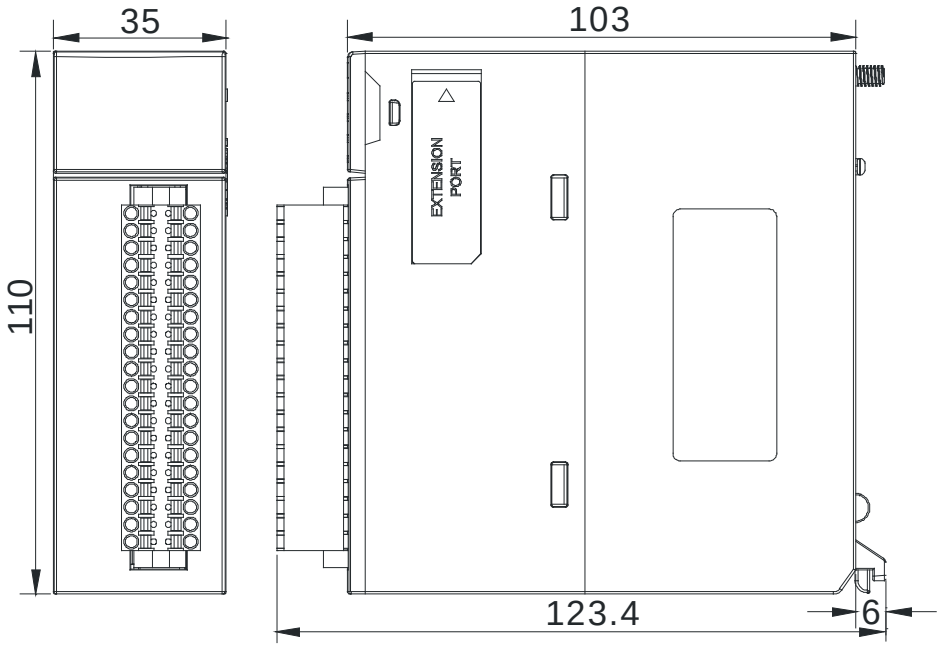
2.5.3 Dimensions

- **AH04AD-5A/AH08AD-5B/AH08AD-5C/AH04DA-5A/AH08DA-5B/AH08DA-5C/AH06XA-5A**



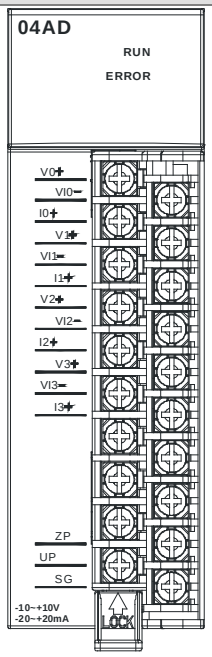
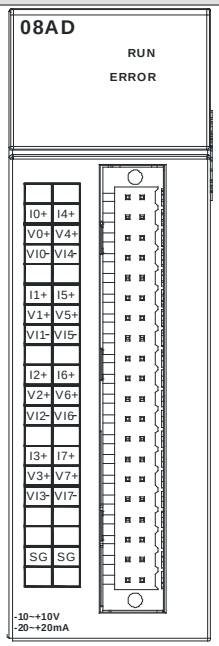
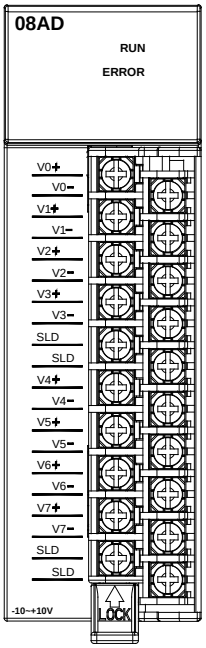
Unit: mm

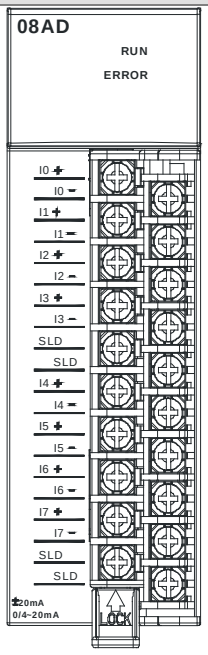
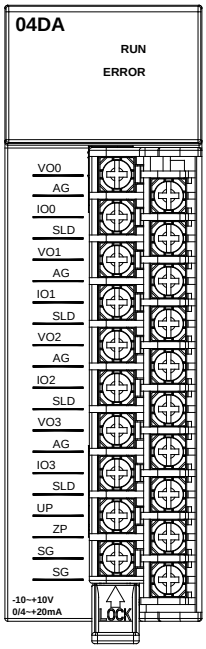
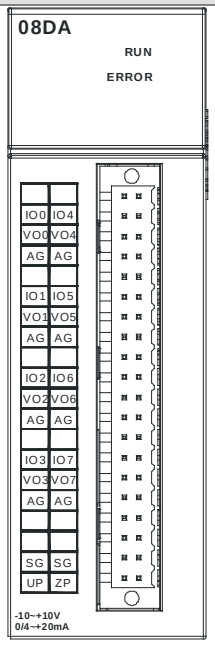
- **AH08AD-5A/AH08DA-5A**



Unit: mm

2.5.4 Arrangement of Input/Output Terminals

AH04AD-5A	AH08AD-5A	AH08AD-5B
		

AH08AD-5C	AH04DA-5A	AH08DA-5A
		

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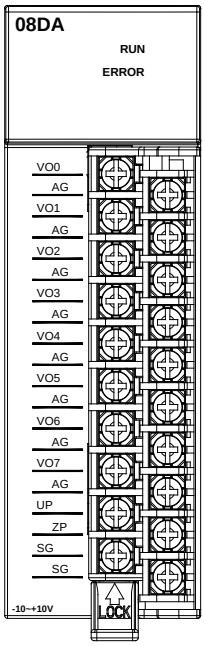	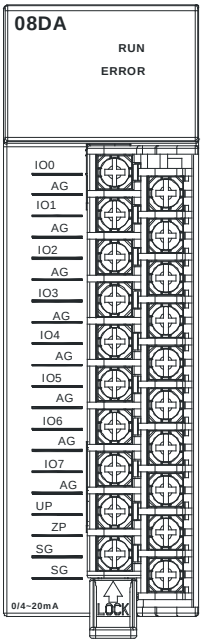	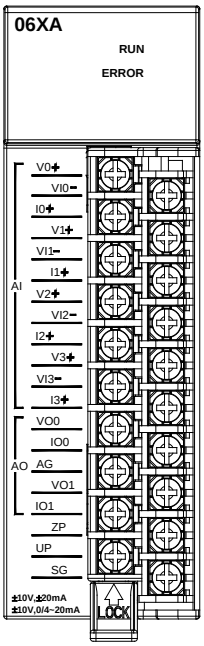

2.5.5 Setting Parameters

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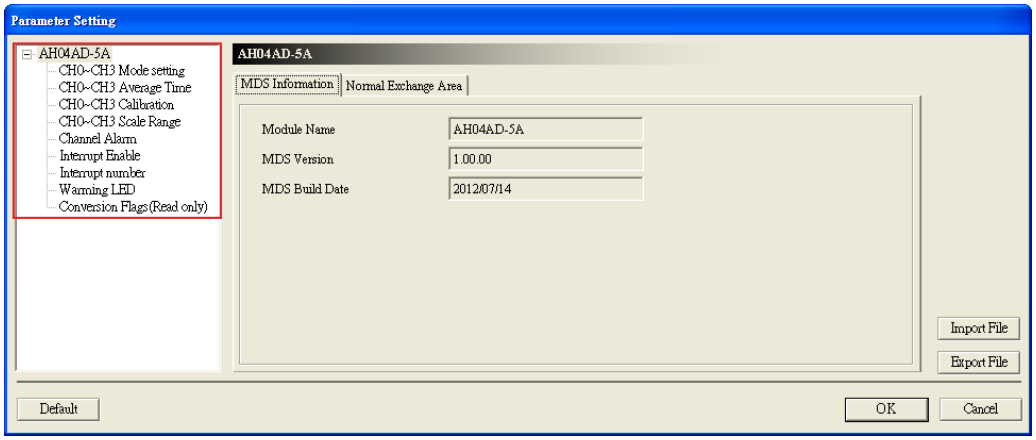

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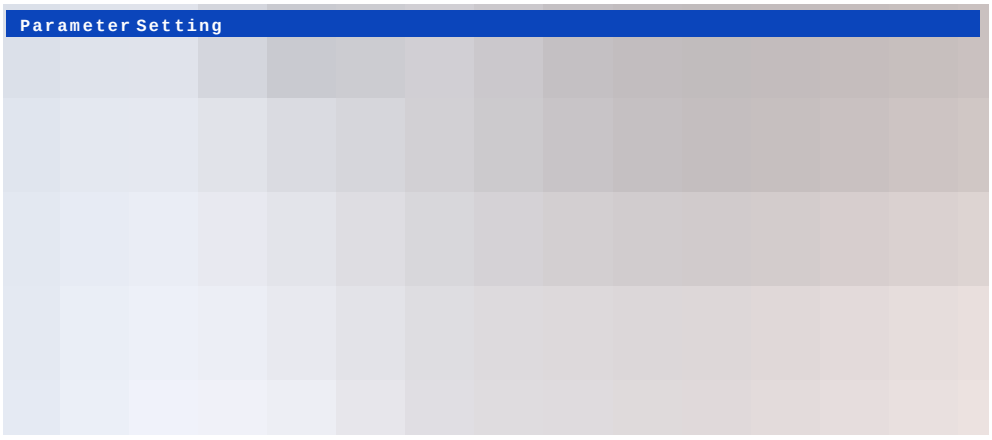

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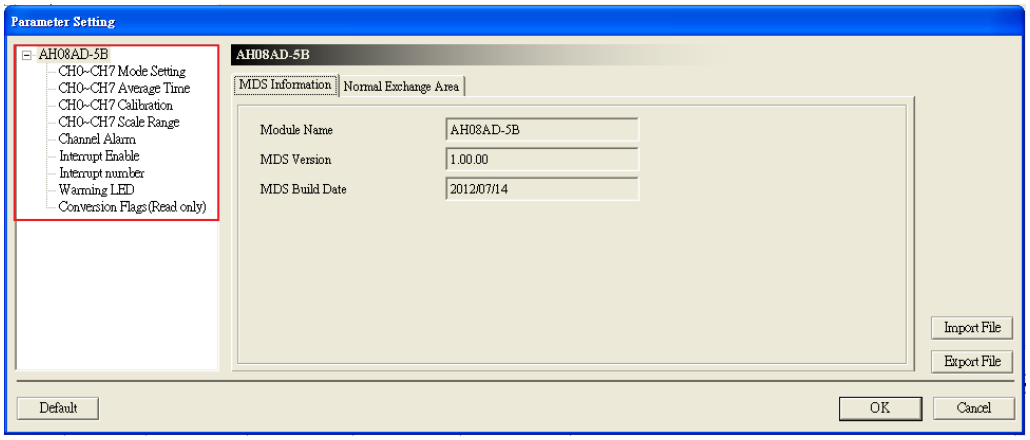

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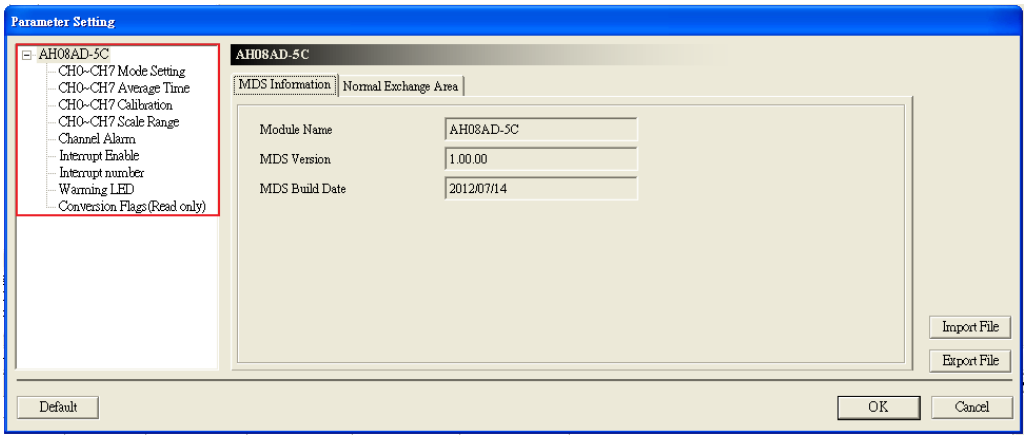

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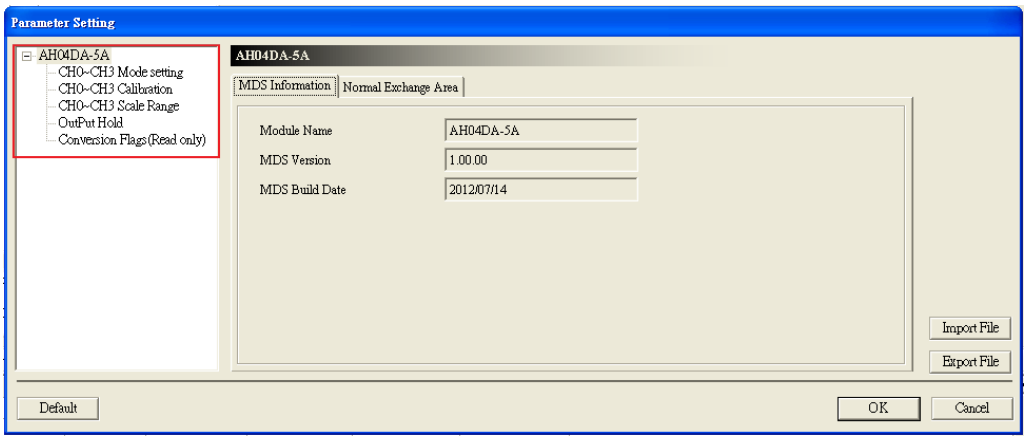

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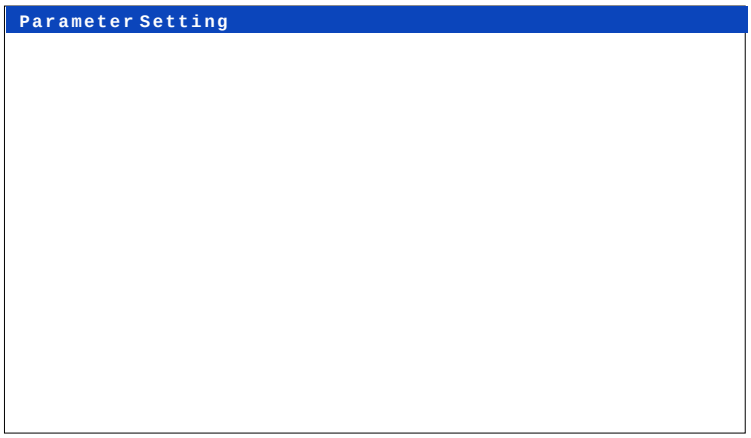

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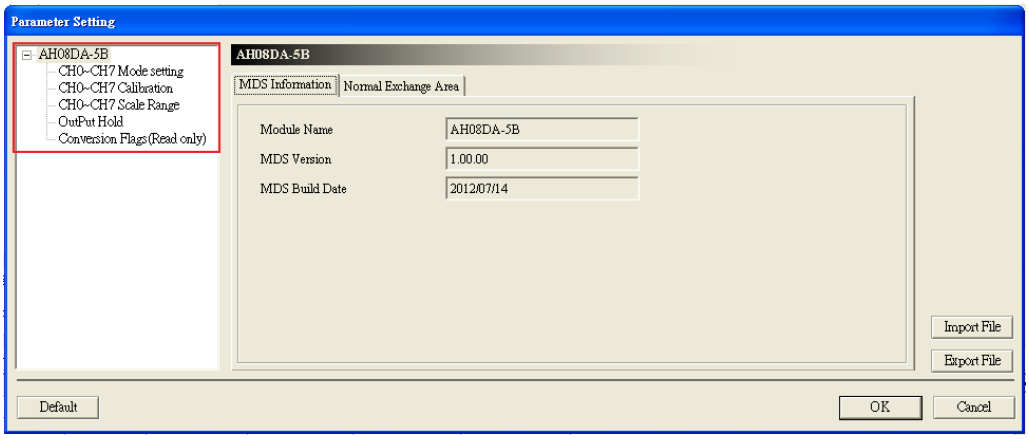

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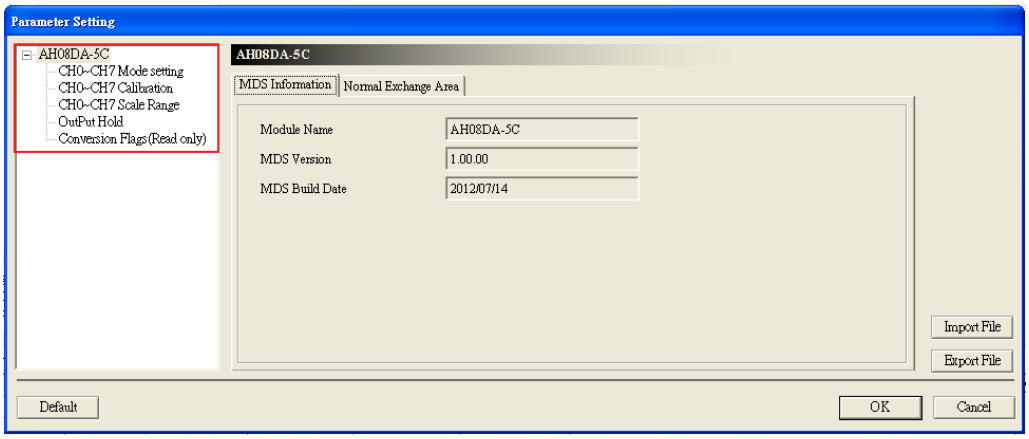

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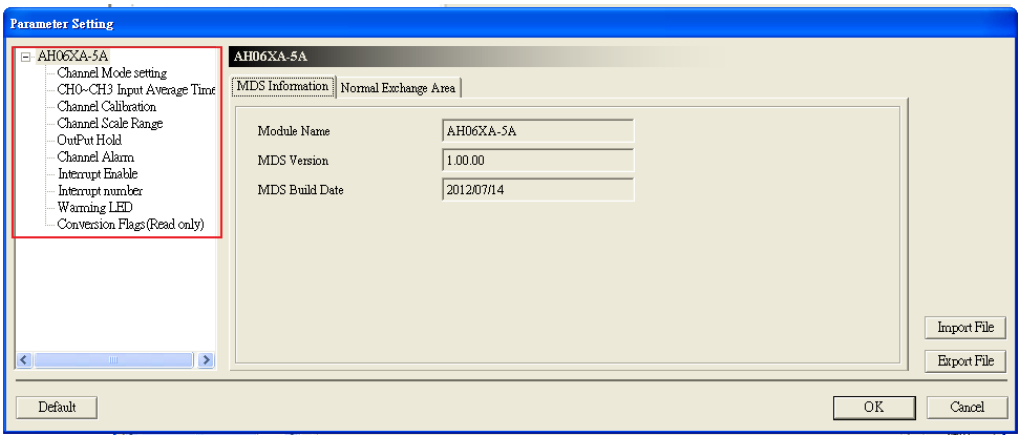


Please refer to AH500 Module Manual for more information about setting parameters.

2.6 Specifications for Temperature Measurement Modules

2.6.1 General Specifications

- **AH04PT-5A**

Electrical specifications

Number of analog inputs	4
Applicable sensor	Three-wire configuration: Pt100/Ni100/Pt1000/Ni1000 sensor, and 0~300 Ω input impedance Two-wire/Four-wire configuration: Pt100/Ni100/Pt1000/Ni1000 sensor, and 0~300 Ω input impedance Pt100: DIN 43760-1980 JIS C1604-1989; 100 Ω 3850 PPM/°C Pt1000: DIN EN60751; 1 kΩ 3850 PPM/°C Ni100/Ni1000: DIN 43760
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)
Connector type	Removable terminal block
Overall accuracy	25°C/77°F: The error is ±0.5% of the input within the range. -20~60°C/-4~140°F: The error is ±1% of the input within the range.
Conversion time	Two-wire/Four-wire Four-wire configuration: 150 ms/channel Three-wire configuration: 300 ms/channel
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit/an optocoupler, and the analog channels are isolated from one another by optocouplers. Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC
Weight	195g

Functional specifications

Analog-to-digital conversion	**Centigrade (°C)**	**Fahrenheit (°F)**	**Input impedance**
Rated input range	Pt100: -180°C~800°C Ni100: -80°C~170°C Pt1000: -180°C~800°C Ni1000: -80°C~170°C	Pt100: -292°F~1,472°F Ni100: -112°F~338°F Pt1000: -292°F~1,472°F Ni1000: -112°F~338°F	0~300 Ω
Average function	Range: 1~100		
Self-diagnosis	Disconnection detection		

- **AH08PTG-5A**

Electrical specifications

Number of analog inputs	8
Applicable sensor	Three-wire configuration: Pt100/Ni100/Pt1000/Ni1000 sensor, and 0~300 Ω input impedance Two-wire/Four-wire configuration: Pt100/Ni100/Pt1000/Ni1000 sensor, and 0~300 Ω input impedance Pt100: DIN 43760-1980 JIS C1604-1989; 100 Ω 3850 PPM/°C Pt1000: DIN EN60751; 1 kΩ 3850 PPM/°C Ni100/Ni1000: DIN 43760
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)
Connector type	Removable terminal block
Overall accuracy	The error is ±1°C of a Pt100/Pt1000/Ni100/Ni1000 sensor's temperature. The error is ±0.1% of a resistance in the range of 0 Ω to 300 Ω.
Conversion time	● Quick mode: Four-wire/Two-wire configuration: 20 ms/channel Three-wire configuration: 200 ms/channel ● General mode: A conversion time will be gotten after the conversion time of the two channels in a group is added up. Four-wire/Two-wire configuration: 200 ms/channel Three-wire configuration: 400 ms/channel
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit, and the analog channels are isolated from one another by optocouplers. Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between two group circuits: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC
Weight	255g

Functional specifications

Analog-to-digital conversion	Centigrade (°C)	Fahrenheit (°F)	Input impedance
Rated input range	Pt100: -180°C~800°C Ni100: -80°C~170°C Pt1000: -180°C~800°C Ni1000: -80°C~170°C	Pt100: -292°F~1,472°F Ni100: -112°F~338°F Pt1000: -292°F~1,472°F Ni1000: -112°F~338°F	0~300 Ω
Average function	Range: 1~100		
Self-diagnosis	Disconnection detection		

- **AH04TC-5A/AH08TC-5A**

Electrical specifications

Module name	AH04TC-5A	AH08TC-5A
Number of analog inputs	4	8
Applicable sensor	Type J, type K, type R, type S, type T, type E, and type N thermocouples ±150 mV voltage inputs	
Supply voltage	24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%)	
Connector type	Removable terminal block	
Overall accuracy	25°C/77°F: The error is ±0.5% of the input within the range. -20~60°C/-4~140°F: The error is ±1% of the input within the range.	
Conversion time	200 ms/channel	
Isolation	An analog circuit is isolated from a digital circuit by a digital integrated circuit/an optocoupler, and the analog channels are isolated from one another by optocouplers.	

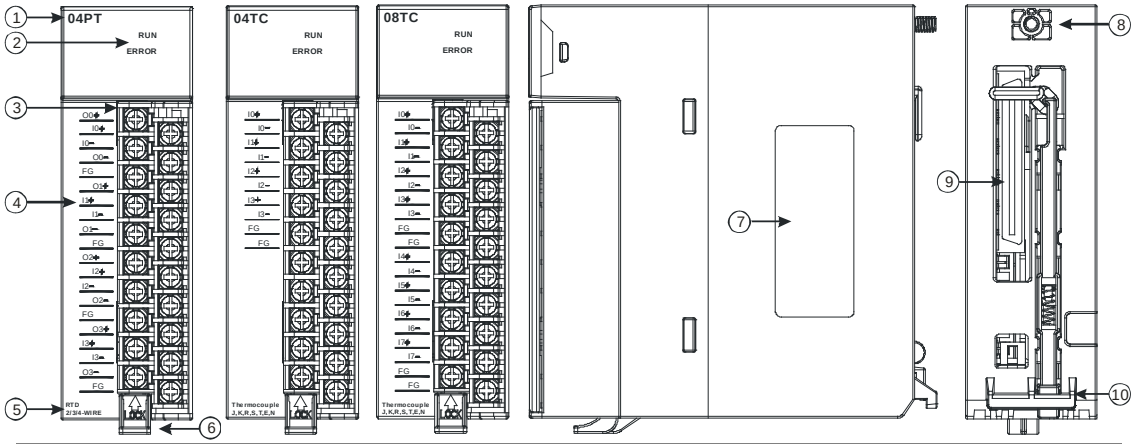
Module name	AH04TC-5A	AH08TC-5A
	Isolation between a digital circuit and a ground: 500 V DC Isolation between an analog circuit and a ground: 500 V DC Isolation between an analog circuit and a digital circuit: 500 V DC Isolation between the 24 V DC and a ground: 500 V DC Isolation between analog channels: 120 V AC	
Weight	190g	

Functional specifications

Analog-to-digital conversion	Centigrade (°C)	Fahrenheit (°F)	Voltage input
Rated input range	Type J: -100°C~1,150°C Type K: -100°C~1,350°C Type R: 0°C~1,750°C Type S: 0°C~1,750°C Type T: -150°C~390°C Type E: -150°C~980°C Type N: -150°C~1,280°C	Type J: -148°F~2,102°F Type K: -148°F~2,462°F Type R: 32°F~3,182°F Type S: 32°F~3,182°F Type T: -238°F~734°F Type E: -238°F~1,796°F Type N: -238°F~2,336°F	±150 mV
Average function	Range: 1~100		
Self-diagnosis	Disconnection detection		

2.6.2 Profiles

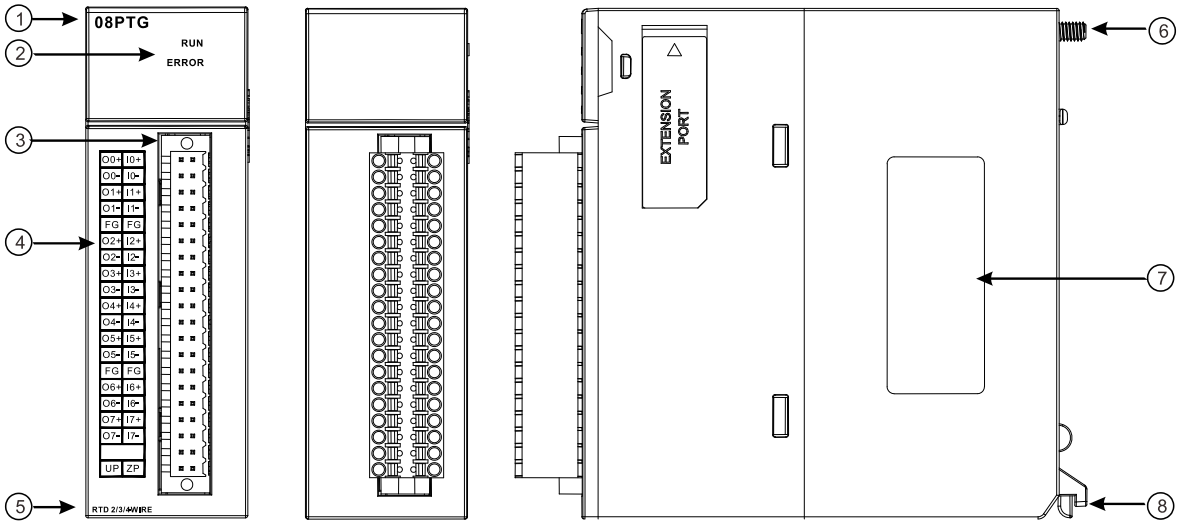
- **AH04PT-5A/AH04TC-5A/AH08TC-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator	Operating status of the module ON: The module is running. OFF: The module stops running.
	ERROR LED indicator	Error status of the module ON: A serious error occurs in the module. OFF: The module is normal. Blinking: A slight error occurs in the module.
3	Removable terminal block	The inputs are connected to a sensor.
4	Arrangement of the input/output terminals	Arrangement of the terminals
5	Description of the inputs/outputs	Simple specifications for the module
6	Clip	Removing the terminal block
7	Label	Nameplate

Number	Name	Description
8	Set screw	Fixing the module
9	Connector	Connecting the module and a backplane
10	Projection	Fixing the module

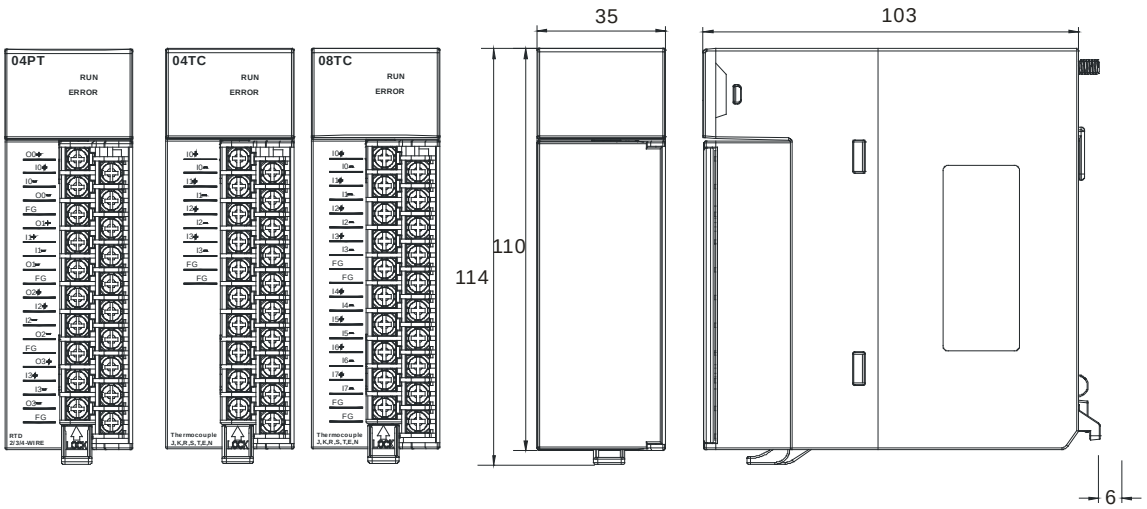
- **AH08PTG-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator	Operating status of the module ON: The module is running. OFF: The module stops running.
2	ERROR LED indicator	Error status of the module ON: A serious error occurs in the module. OFF: The module is normal. Blinking: A slight error occurs in the module.
3	Removable terminal block	The inputs are connected to a sensor.
4	Arrangement of the input terminals	Arrangement of the terminals
5	Description of the inputs	Simple specifications for the module
6	Set screw	Fixing the module
7	Label	Nameplate
8	Projection	Fixing the module

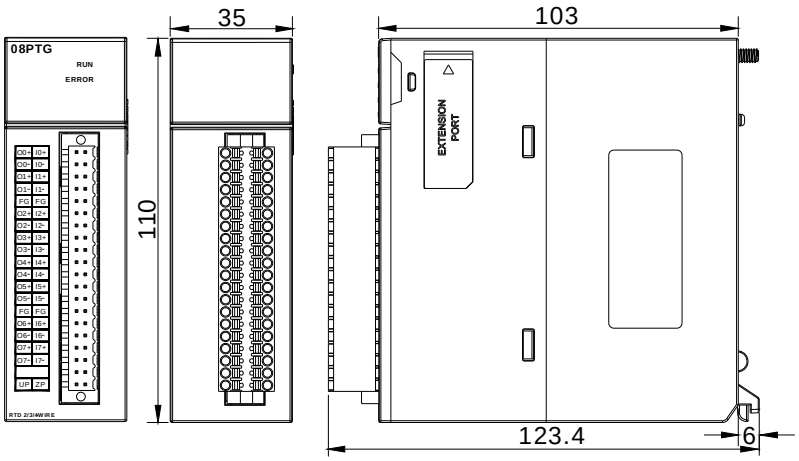
2.6.3 Dimensions

- **AH04PT-5A/AH04TC-5A/AH08TC-5A**



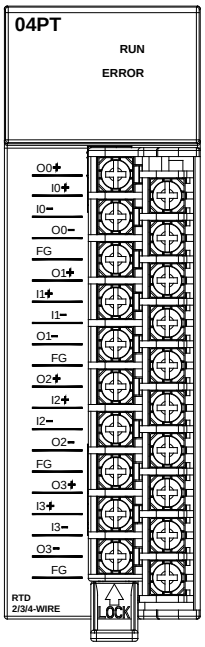
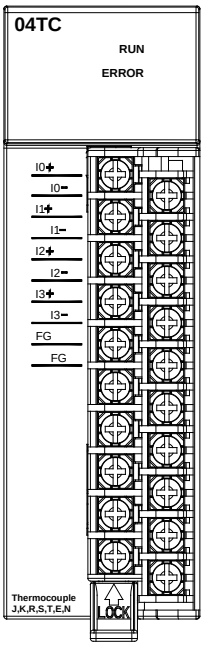
Unit: mm

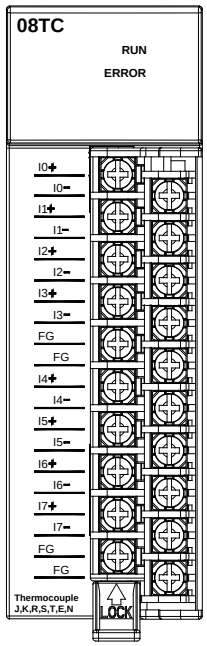
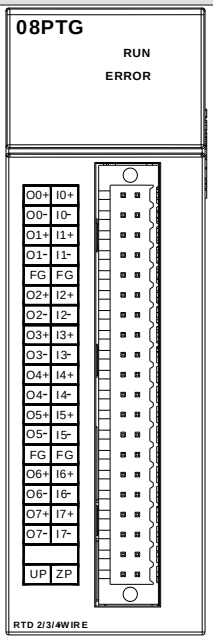
- **AH08PTG-5A**



Unit: mm

2.6.4 Arrangement of Input/Output Terminals

AH04PT-5A	AH04TC-5A
	

AH08TC-5A	AH08PTG-5A
	

2.6.5 Setting Parameters

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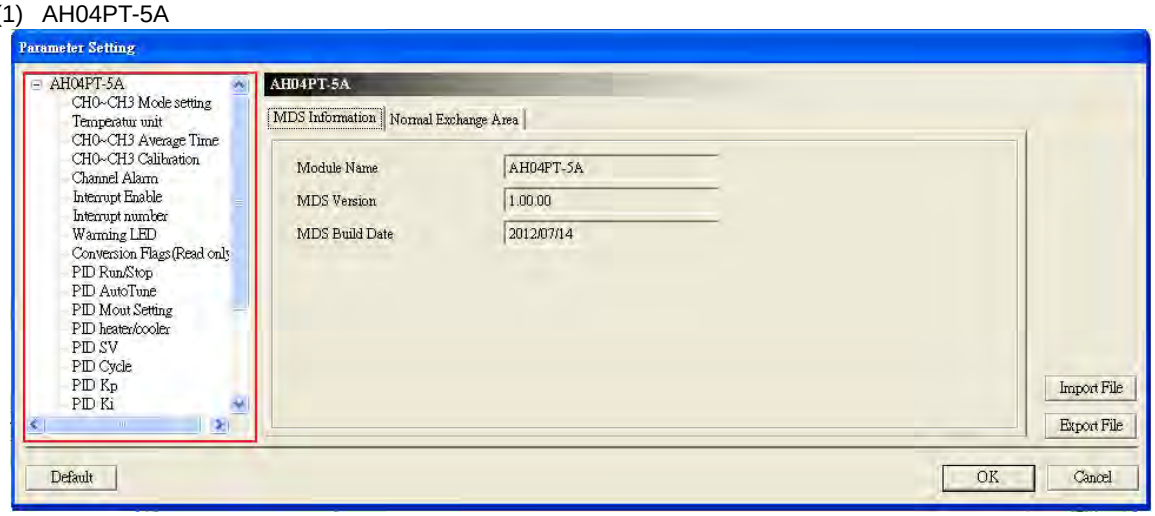

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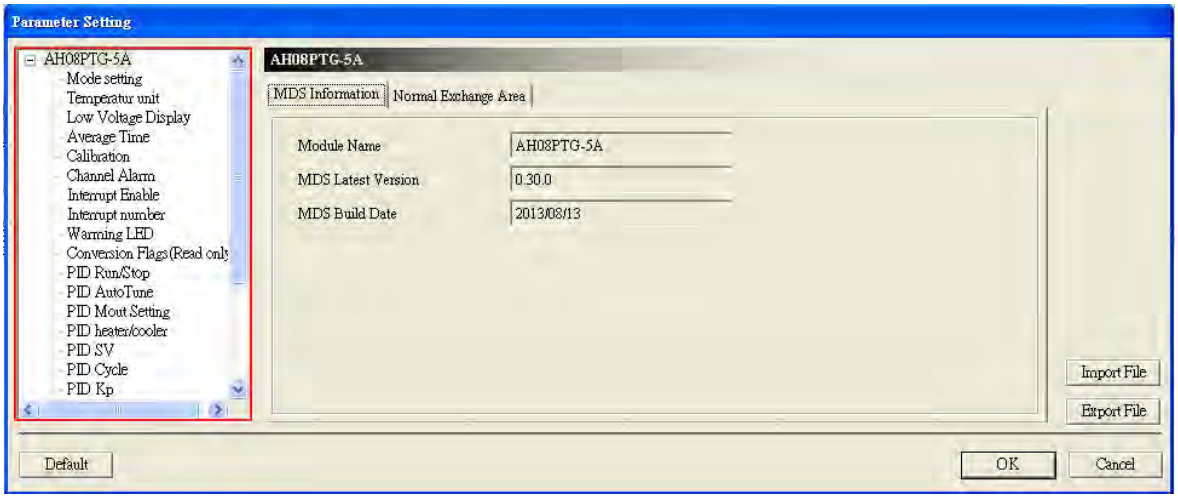
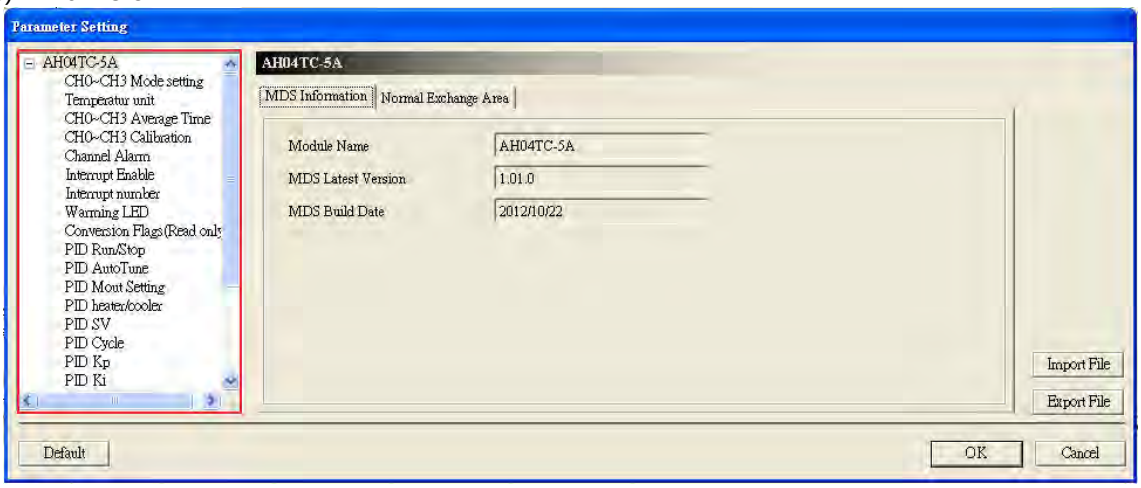
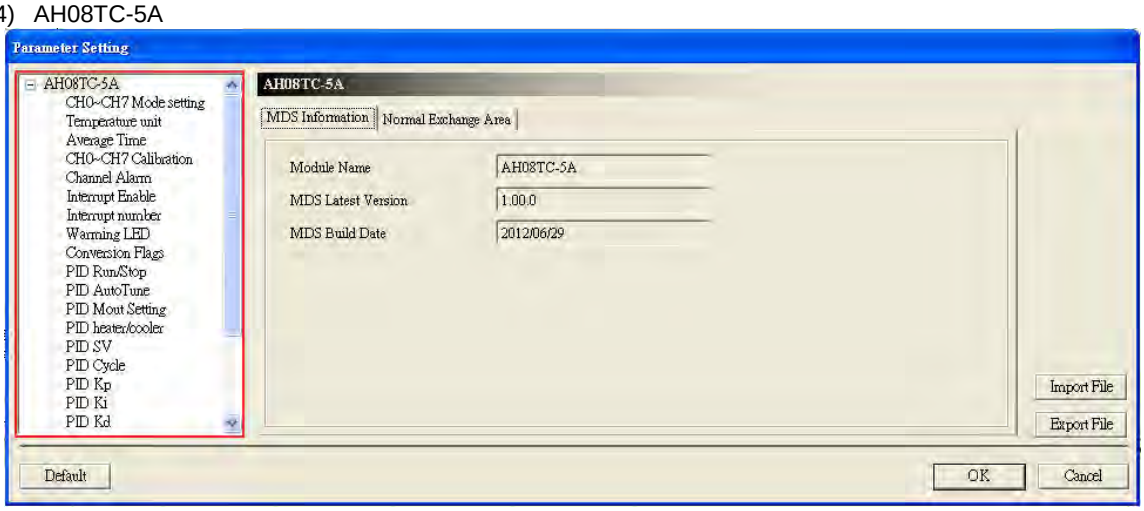


(3) AH04TC-5A



(4) AH08TC-5A



Please refer to AH500 Module Manual for more information about setting parameters.

2.7 Specifications for Network Modules

2.7.1 General Specifications

- **AH10SCM-5A**

  Functional specifications

  - **RS-485/RS-422 communication interface**

Item	Specifications
Connector type	European-style terminal block
Transmission speed	1,200, 2,400, 4,800, 9,600, 19,200, 38,400, 57,600, 76,800, 115,200, 230,400, and 460,800 bps (bit/seconds)
Communication format	Stop bit: 1 stop bit or 2 stop bits Parity bit: none, an odd parity bit, or an even parity bit Data bit: 7 data bits or 8 data bits
Communication protocol	Modbus ASCII/RTU UD Link BACnet MS/TP slave stations

  - **Electrical specifications**

Item	Specifications
Supply voltage	5 V DC
Electric energy consumption	1.5 W
Insulation voltage	2,500 V DC
Weight	131 g

- **AH15SCM-5A**

  RS-232 communication interface

Item	Specifications
Connector type	DB9 connector
Transmission speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 76800 and 115200 bps
Communication format	Stop bit: 1 stop bit or 2 stop bits Parity bit: none, an odd parity bit, or an even parity bit Data bit: 7 data bits or 8 data bits
Communication protocol	Modbus ASCII/RTU UD Link BACnet MS/TP slave stations

  Electrical specifications

Item	Specifications
Supply voltage	5 VDC
Electric energy consumption	1.5 W
Insulation voltage	2,500 VDC
Weight	150g

- **AH10EN-5A**

  - **Network interface**

Item	Specifications
Connector type	RJ-45 with auto-MDI/MDIX
Transmission interface	802.3 and 802.3u
Transmission cable	Category 5e cable The maximum length is 100 meters.
Transmission speed	10/100 Mbps auto-detection

Communication protocol	ICMP, IP, TCP, UDP, DHCP, NTP, Modbus TCP, SNMP, and SMTP

■ **Electrical specifications**

Item	Specifications
Supply voltage	5 V DC
Electric energy consumption	1.5 W
Insulation voltage	2,500 V DC
Weight	139 g

- **AH10DNET-5A**
  - ■ **AH500 series CPU modules which are supported**

Item	Specifications
Model name	AH500 series PLCs

■ **DeviceNet interface**

Item	Specifications
Transmission method	CAN
Electrical isolation	500 V DC
Connector	Removable connector (5.08 mm)
Communication cable	The Delta standard cables UC-DN01Z-01A and UC-DN01Z-02A are recommended. The communication cable should be away from the power cable and the shielded cable should be connected to the ground.
Voltage	DeviceNet network provides 11~25 V direct current. e.g. 28 mA (Typical value), 125 mA impulse current (24 V DC).

■ **DeviceNet Communication**

Item	Specifications
Message type	Master mode: Supporting explicit messages, and all kinds of I/O connections with the slave such as I/O polled connections, bit-strobed connections, state changing connections, and cyclic connections Slave mode: Supporting explicit messages and a group 2 only server
Transmission speed	Standard: 125 kbps, 250 kbps and 500 kbps Extension: 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps and 1M bps
Weight	135g

- **AH10PFBM-5A**
  - ■ **AH500 series CPU module supported**

Item	Specifications
Model name	AH500 series PLCs

■ **PROFIBUS-DP interface**

Item	Specifications
Interface	DB9 connector
Transmission method	High-speed RS-485
Transmission cable	Two-wire twisted shielded cable
Electrical isolation	500 V DC

■ **PROFIBUS-DP communication**

Item	Specifications
Message type	Cyclic data exchange

Module name	AH10PFBM-5A
Product ID	0B49
Serial transmission speed supported (auto-detection)	9.6 kbps; 19.2 kbps; 31.25 kpbs; 45.45 kbps; 93.75 kbps; 187.5 kbps; 500 kbps; 1.5 Mbps; 3 Mbps; 6 Mbps; 12 Mbps

■ **Electrical specification**

Item	Specifications
Power supply voltage	5 V DC
Insulation voltage	500 V DC
Power consumption	2 W
Weight	190 g

- **AH10PFBS-5A**
  - ■ **PROFIBUS-DP port**

Interface	DB9 connector
Transmission method	High-speed RS-485
Transmission cable	Shielded twisted pair cable
Electrical isolation	500 V DC

■ **Communication**

Message type	Cyclic data exchange
Module name	AH10PFBS-5A
GSD file	DELA0AFE.GSD
Product ID	0AFE
Serial transmission speed supported (auto-detection)	9.6 kbps; 19.2 kbps; 45.45 (31.25) kbps; 93.75 kbps; 187.5 kbps; 500 kbps; 1.5 Mbps; 3 Mbps; 6 Mbps; 12 Mbps

■ **Electrical specification**

Power supply voltage	5 V DC
Insulation voltage	500 V DC
Power consumption	2 W
Weight	115 g

- **AH10COPM-5A**
  - ■ **CANopen interface**

Item	Specifications
Transmission method	CAN
Electrical isolation	500 V DC
Connector	Removable connector (5.08 mm)
Communication cable	It is suggested that users should use the Delta standard cables UC-DN01Z-01A and UC-DN01Z-02A. The communication cable used should be away from the power cable used, and the shielded cables used should be connected to the ground.

■ **CANopen communication**

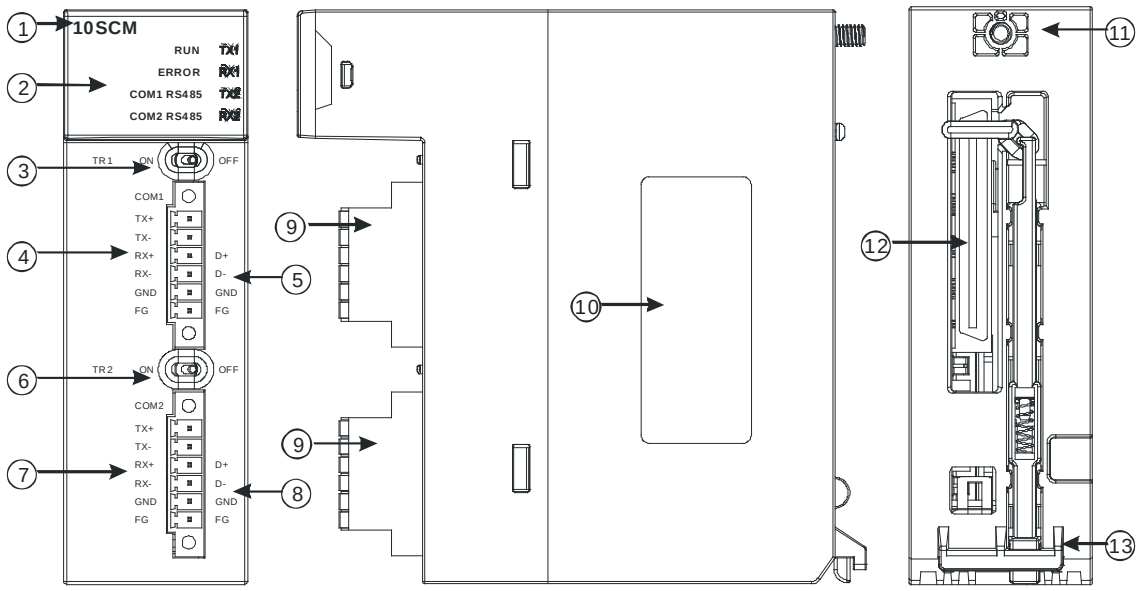
Item	Specifications
Message type	PDO, SDO, SYNC, EMCY, NMT
Transmission speed	10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, 1 Mbps

■ **Electrical specifications**

Item	Specifications
Supply voltage	A CPU module supplies 24 V DC (-15%~20%) power through an internal bus.
Electric energy consumption	1.7 W
Insulation voltage	500 V
Weight	150g

2.7.2 Profiles

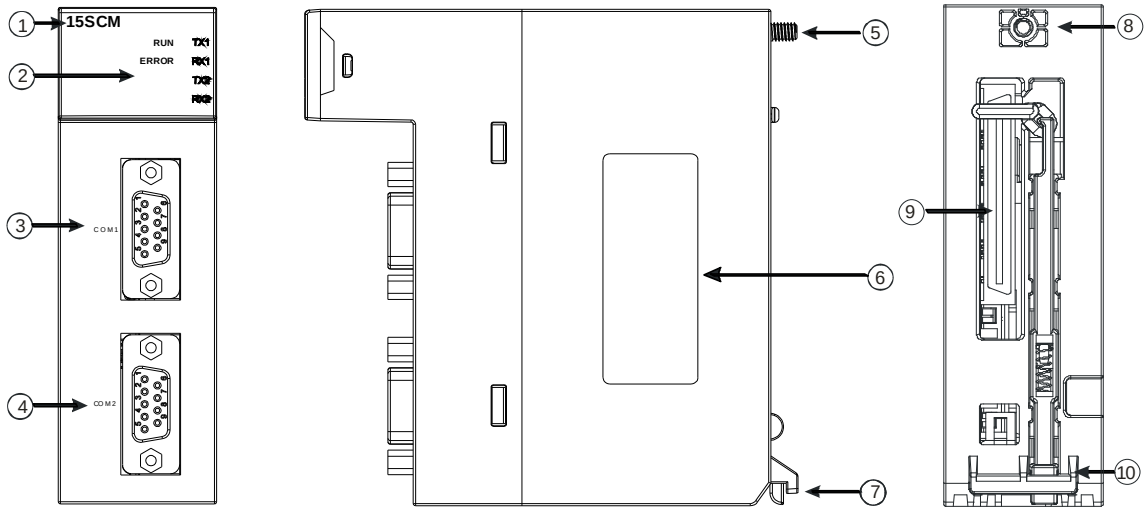
● **AH10SCM-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
	ERROR LED indicator (red)	Error status of the module ON: There is a hardware error. OFF: The module is normal. Blinking: 1. The setting of the module is incorrect, or there is a communication error. 2. Restoring the module to the default factory value
	COM1 (RS-485) LED indicator (green)	ON: RS-485 mode OFF: RS-422 mode
	COM2 (RS-485) LED indicator (green)	ON: RS-485 mode OFF: RS-422 mode
	TX1/TX2 LED indicator (orange)	Blinking: The data is being transmitted through the RS-485/RS422 port. OFF: The data is not being transmitted through the RS-485/RS422 port.
	RX1/RX2 LED indicator (orange)	Blinking: The data is being reveived through the RS-485/RS422 port. OFF: The data is not being reveived through the RS-485/RS422 port.
3	Switch of terminal resistor 1	Switching terminal resistor 1 ON/OFF
4	Terminals	Terminals for COM1 (RS-422)

Number	Name	Description
5	Terminals	Terminals for COM1 (RS-485)
6	Switch of terminal resistor 2	Switching terminal resistor 2 ON/OFF
7	Terminals	Terminals for COM2 (RS-422)
8	Terminals	Terminals for COM2 (RS-485)
9	European-style terminal block	Terminals for wiring
10	Label	Nameplate
11	Set screw	Fixing the module
12	Connector	Connecting the module and a backplane
13	Projection	Fixing the module

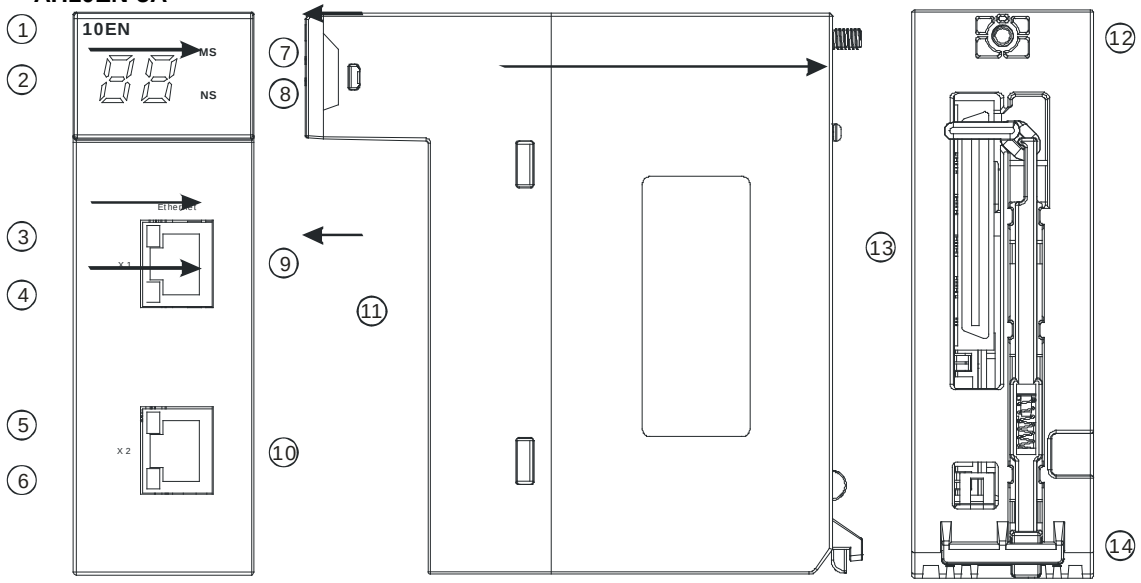
- **AH15SCM-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
	ERROR LED indicator (red)	Error status of the module ON: There is a hardware error. OFF: The module is normal. Blinking: 1. The setting of the module is incorrect, or there is a communication error. 2. Restoring the module to the default factory value
	COM1 (RS-485) LED indicator (green)	ON: RS-485 mode OFF: RS-422 mode
	COM2 (RS-485) LED indicator (green)	ON: RS-485 mode OFF: RS-422 mode
	TX1/TX2 LED indicator (orange)	Blinking: The data is being transmitted through the RS-232 port. OFF: The data is not being transmitted through the RS-232 port.
	RX1/RX2 LED indicator (orange)	Blinking: The data is being reveived through the RS-232 port. OFF: The data is not being reveived through the RS-232 port.
3	Terminals	Terminals for COM1 (RS-232)
4	Terminals	Terminals for COM2 (RS-232)

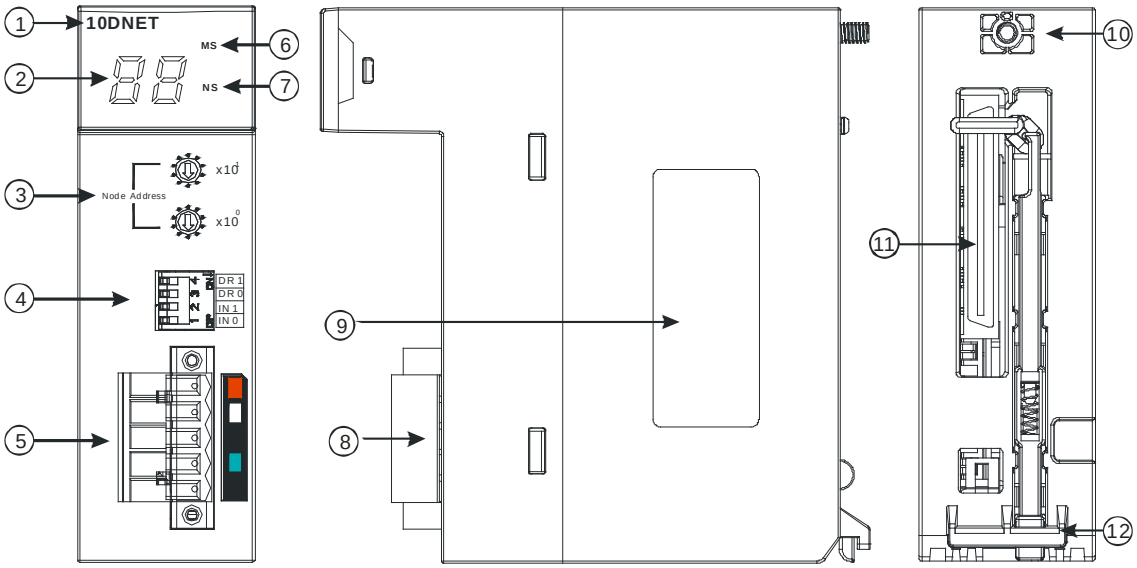
Number	Name	Description
5	Set screw	Fixing the module
6	Label	Nameplate
7	Projection	Fixing the module
8	Set screw	Fixing the module
9	Connector	Connecting the module and a backplane
10	Projection	Fixing the module

- **AH10EN-5A**



Number	Name	Description
1	Model name	Model name of the module
2	Seven-segment display	Display
3	LINK LED indicator	LINK LED indicator for RJ45 port 1
4	ACK LED indicator	ACK LED indicator for RJ45 port 1
5	LINK LED indicator	LINK LED indicator for RJ45 port 2
6	ACK LED indicator	ACK LED indicator for RJ45 port 2
7	NS LED indicator	LED indicator
8	MS LED indicator	LED indicator
9	RJ45 port 1	RJ45 port 1
10	RJ45 port 2	RJ45 port 2
11	Label	Nameplate
12	Set screw	Fixing the module
13	Connector	Connecting the module and a backplane
14	Projection	Fixing the module

- **AH10DNET-5A**

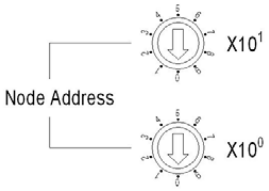


Number	Name	Description
1	Model name	Model name of the module
2	Seven-segment display	Display
3	Address knob	Setting the address
4	Function switch	Setting the functions
5	DeviceNet connector	DeviceNet is used to interconnect control devices for data exchange.
6	MS LED indicator	Indicating the status of the module
7	NS LED indicator	Indicating the status of the network
8	Removable terminal block	Terminals for wiring
9	Label	Nameplate
10	Set screw	Fixing the module
11	Connector	Connecting the module and a backplane.
12	Projection	Fixing the module

1. Address knobs

It is used to set the node address of AH10DNET-5A on a DeviceNet network. (Node addresses range from 0 to 63.)

Setting	Description
0…63	Available nodes on a DeviceNet network
64…99	Unavailable nodes on a DeviceNet network



Example: If users want to set the communication address of AH10DNET-5A to 26, they can turn the knob corresponding to $x10^1$ to 2, and turn the knob corresponding to $x10^0$ to 6.

Points for attention:

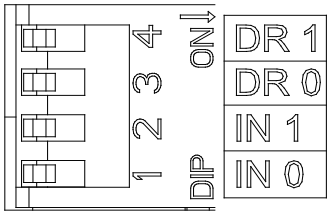
- After the station address of AH10DNET-5A is changed, users have to power AH10DNET-5A again, otherwise the change will not take effect.
- Please use a slotted screwdriver to turn the knobs with care, and do not scrape them.

2. Function switch

The function switch provides the following functions:

- Setting the working mode (IN 0)
- Setting the transmission speed of a DeviceNet network (DR 0~DR 1)

DR 1	DR 0	Transmission speed
OFF	OFF	125 kbps
OFF	ON	250 kbps
ON	OFF	500 kbps
ON	ON	Entering the extendable serial transmission speed mode
IN 1	Reserved	
IN 0	ON	If the slave is disconnected, the previous I/O data is retained.
	OFF	If the slave is disconnected, the previous I/O data is cleared.

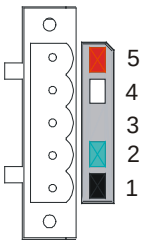


Points for attention:

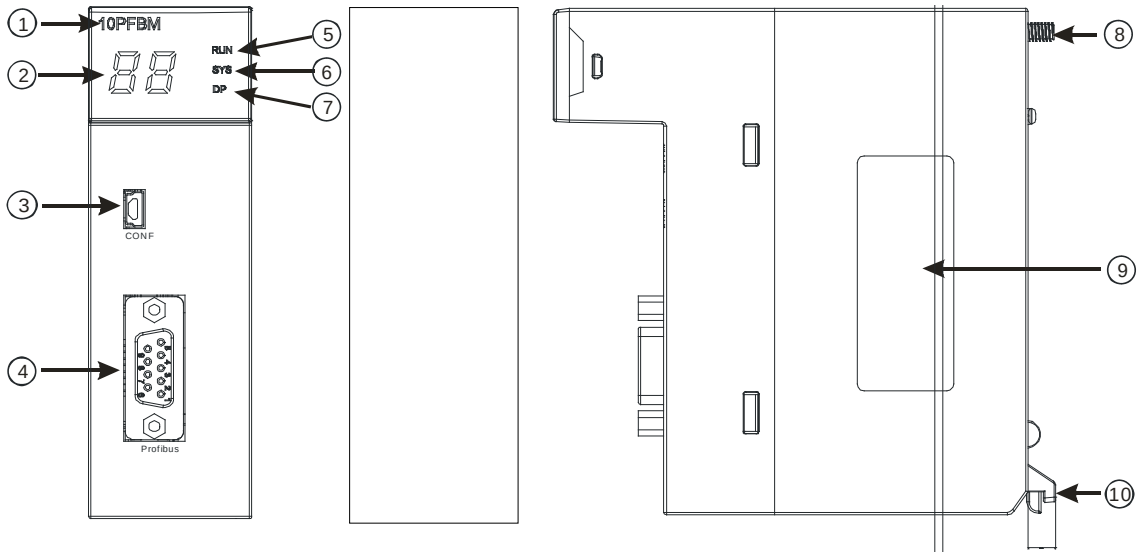
- After the setting of the function switch of AH10DNET-5A is changed, users have to power AH10DNET-5A again, otherwise the change will not take effect.
- Please use a slotted screwdriver to adjust the DIP switch with care, and do not scrape them.

3. DeviceNet connector

Pin	Signal	Color	Description
5	V+	Red	24 V DC
4	CAN_H	White	Signal (positive pole)
3	SHIELD	-	It is connected to a shielded cable.
2	CAN_L	Blue	Signal (negative pole)
1	V-	Black	0 V DC



- **AH10PFBM-5A**



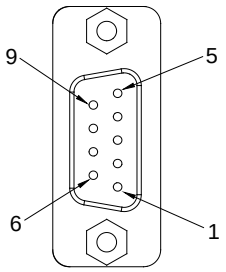
Number	Name	Description
1	Model name	Model name of the module
2	Seven-segment display	Display
3	CONF interface	The interface where the hardware configuration is downloaded
4	PROFIBUS-DP interface	PROFIBUS-DP connection
5	RUN LED indicator	LED indicator
6	SYS LED indicator	LED indicator
7	DP LED indicator	LED indicator

Number	Name	Description
8	Set screw	Fixing the module
9	Label	Nameplate
10	Projection	Fixing the module

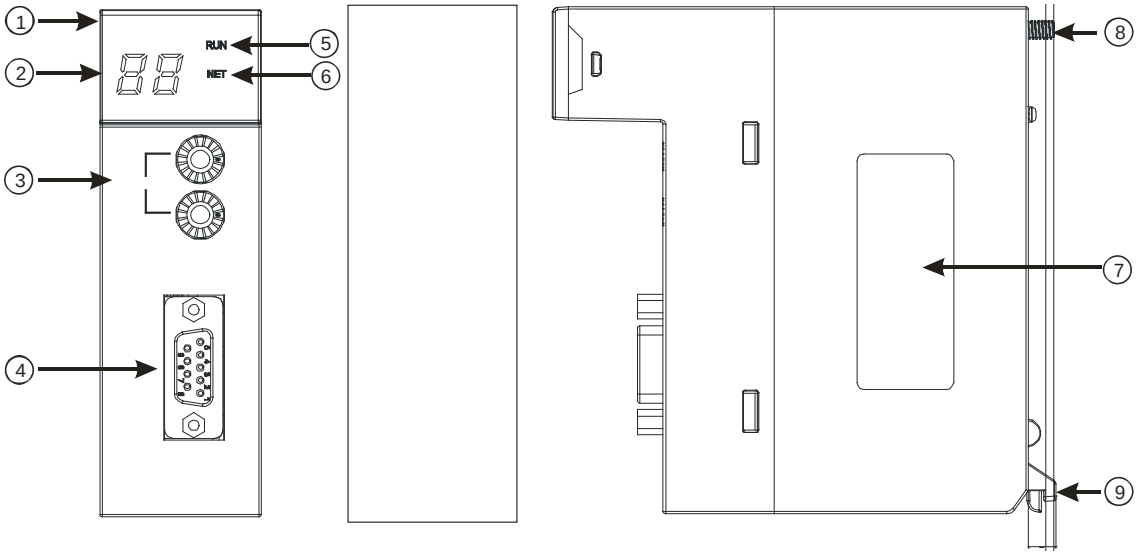
1. PROFIBUS-DP port

A PROFIBUS-DP port is used to connect a module to a PROFIBUS-DP network. Users can wire AH10PFBM-5A by using the connector attached to AH10PFBM-5A.

Pin	PIN name	Description
1	--	N/C
2	--	N/C
3	RxD/TxD-P	Receiving/Sending data (P (B))
4	--	N/C
5	DGND	Data reference potential (C)
6	VP	Supplying positive voltage
7	--	N/C
8	RxD/TxD-N	Receiving/Sending data (N (A))
9	--	N/C



- **AH10PFBS-5A**



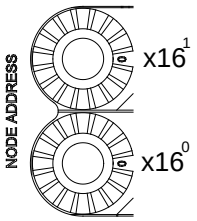
Number	Name	Description
1	Model name	Model name of the module
2	Seven-segment display	Display
3	Address knobs	Setting the address
4	PROFIBUS-DP interface	PROFIBUS-DP connection
5	RUN LED indicator	Operating status of the module
6	NET LED indicator	Status of a network
7	Label	Nameplate
8	Set screw	Fixing the module
9	Projection	Fixing the module

1. Setting a PROFIBUS node address

The address knobs of AH10PFBS-5A are used for setting the node address of AH10PFBS-5A on a PROFIBUS-DP network. There are two address knobs. They are a knob corresponding to $x16^0$, and a knob corresponding to $x16^1$. The range for one address knob is 0~F.

The range for setting the node address is described below.

Address	Definition
H'1~H'7D	Valid PROFIBUS address
H'0 or H'7E~H'FF	Invalid PROFIBUS address



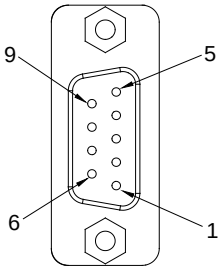
Example: If users need to set the node address of AH10PFBS-5A to 26 (decimal value), they have to turn the knob corresponding to $x16^1$ to "1", and the knob corresponding to $x16^0$ to "A".
26 (decimal value)=1A (hexadecimal value)=$1x16^1+Ax16^0$.

Points for attention:

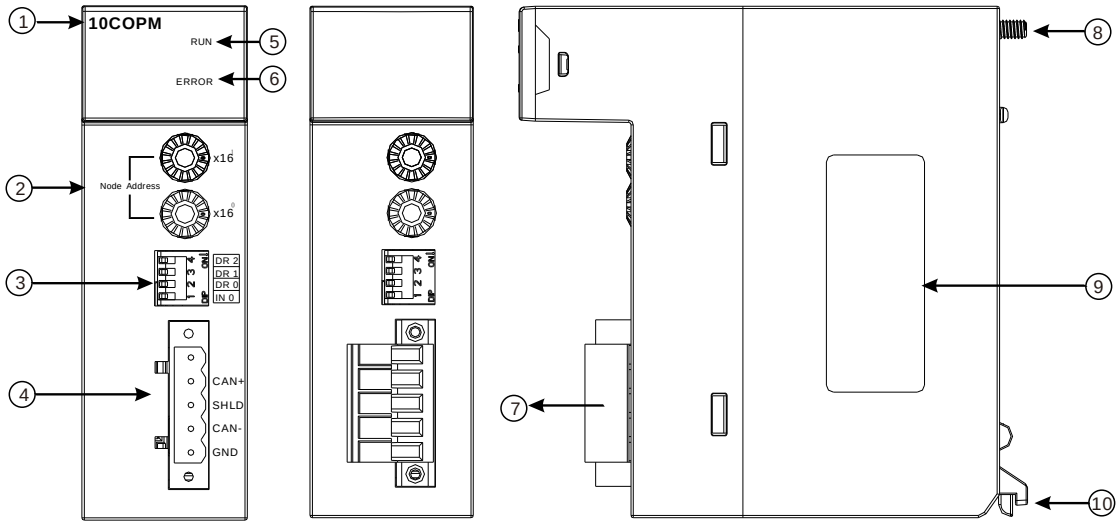
- If users set the node address of AH10PFBS-5A when AH10PFBS-5A is not supplied with power, they have to power AH10PFBS-5A after the node address of AH10PFBS-5A is set.
- If users change the node address of AH10PFBS-5A when AH10PFBS-5A is powered, the change will not take effect immediately after the node address of AH10PFBS-5A is changed, and it will take effect after the users cut off the power supplied to AH10PFBS-5A and then power AH10PFBS-5A again.
- To prevent the address knobs on AH10PFBS-5A from being scratched, please carefully use a slotted screwdriver to rotate the address knobs on AH10PFBS-5A.

2. Definitions of the pins in the PROFIBUS-DP port

Pin	PIN name	Description
1	--	N/C
2	--	N/C
3	RxD/TxD-P	Sending/receiving data (P (B))
4	--	N/C
5	DGND	Data reference potential (C)
6	VP	Supplying positive voltage
7	--	N/C
8	RxD/TxD-N	Sending/receiving data (N (A))
9	--	N/C



- **AH10COPM-5A**



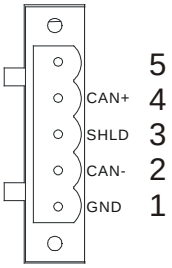
Number	Name	Description
1	Model name	Model name of the module
2	Address knobs	For setting an address
3	Function switch	For setting a function
4	CANopen connector	For a CANopen connection
5	RUN LED indicator	Operating status of the module

Number	Name	Description
6	ERROR LED indicator	Error status of the module
7	Removable terminal block	Terminals
8	Set screw	Fixing the module
9	Label	Nameplate
10	Projection	Fixing the module

1. CANopen communication connector

A CANopen connector is connected to a CANopen network. Please wire AH10COPM-5A by using the connector attached to AH10COPM-5A.

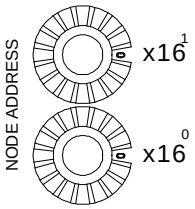
Pin	Signal	Description
5	-	Reserved
4	CAN+	CAN_H
3	SHLD	Shielded cable
2	CAN-	CAN_L
1	GND	0 V DC



2. Address knobs

The address knobs on AH10COPM-5A are used to set the node address of AH10COPM-5A on a CANopen network. Setting range: 1~7F (0 and 80~FF can not be used.)

Setting	Description
1~7F	Valid CANopen node address
0, 80~FF	Invalid CANopen node address



Example: If the station address of AH10COPM-5A is 16#26, users have to turn the knob corresponding to $x16^1$ to position 2, and turn the knob corresponding to $x16^0$ to position 6.

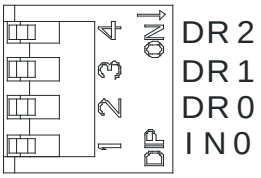
Points for attention:

- After the station address of AH10COPM-5A is changed, users have to power AH10COPM-5A again, otherwise the change will not take effect.
- To prevent the address knobs on AH10COPM-5A from being scratched, please carefully use a slotted screwdriver to rotate the address knobs on AH10COPM-5A.

3. Function switch

The function switch on AH10COPM-5A is used to set the communication speed at which AH10COPM-5A is connected to a CANopen network. There is a limit on the maximum communication distance to which a communication speed corresponds.

DR 2	DR 1	DR 0	Communication speed	Maximum communication distance
OFF	OFF	OFF	10 kbps	5000 m
OFF	OFF	ON	20 kbps	2500 m
OFF	ON	OFF	50 kbps	1000 m
OFF	ON	ON	125 kbps	500 m
ON	OFF	OFF	250 kbps	250 m
ON	OFF	ON	500 kbps	100 m
ON	ON	OFF	800 kbps	50 m
ON	ON	ON	1 Mbps	25 m
IN 0				Reserved

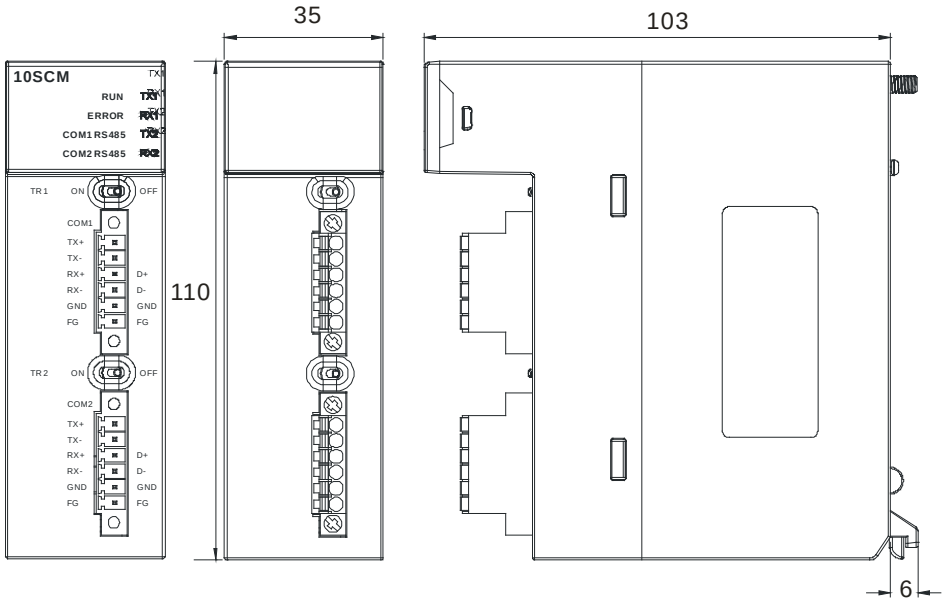


Points for attention:

- After users change the communication speed at which AH10COPM-5A is connected to a CANopen network, they have to power AH10COPM-5A again, otherwise the change will not take effect.
- To prevent the DIP switch on AH10COPM-5A from being scratched, please carefully use a slotted screwdriver to rotate the DIP switch on AH10COPM-5A.

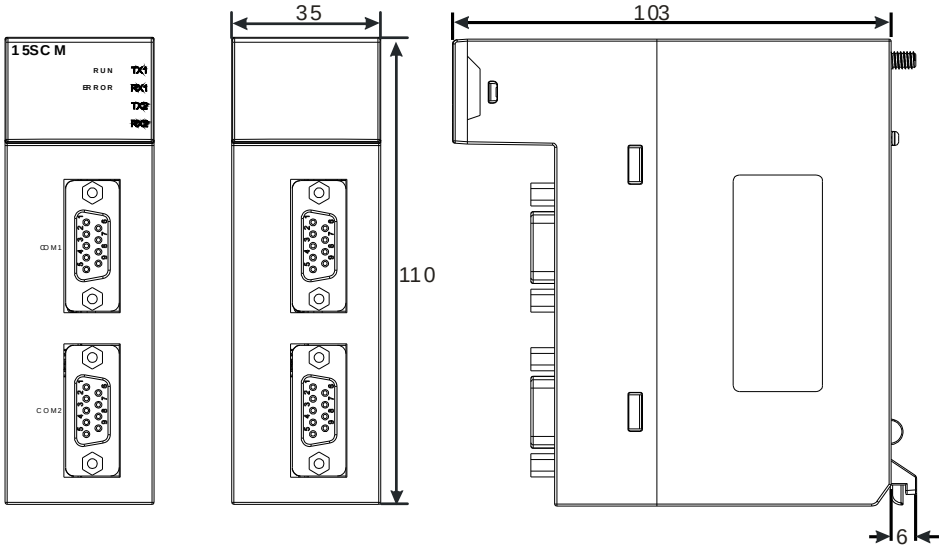
2.7.3 Dimensions

- **AH10SCM-5A**



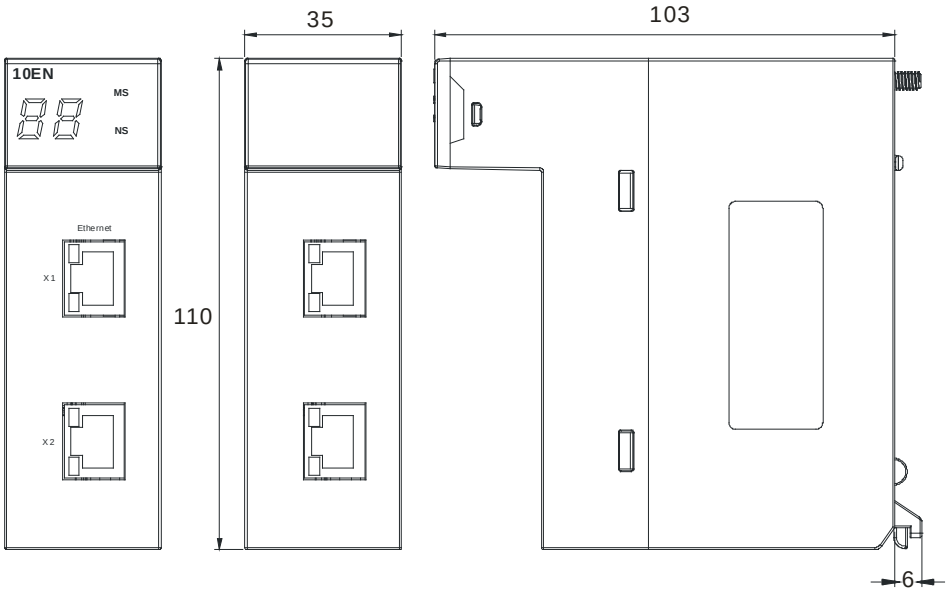
Unit: mm

- **AH15SCM-5A**



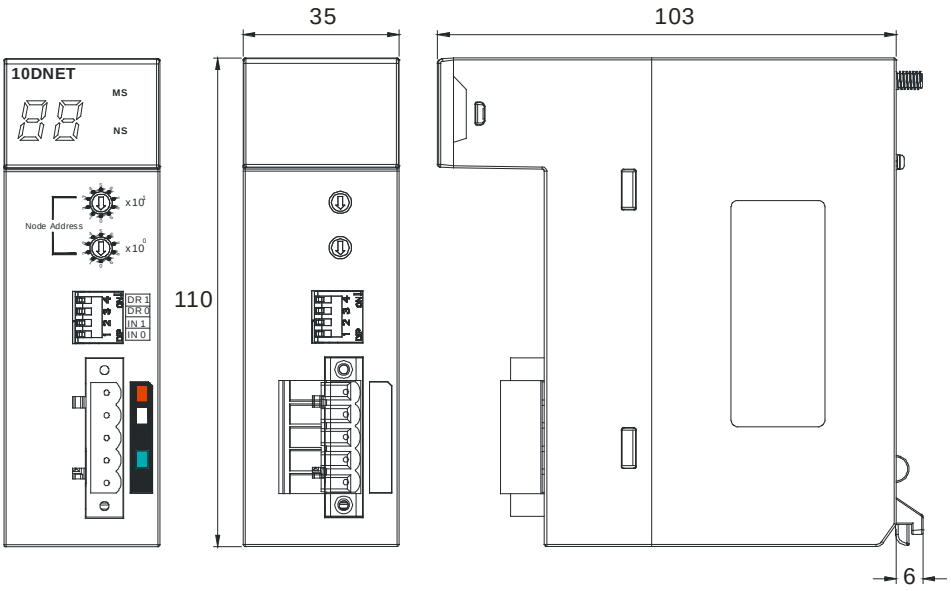
Unit: mm

- **AH10EN-5A**



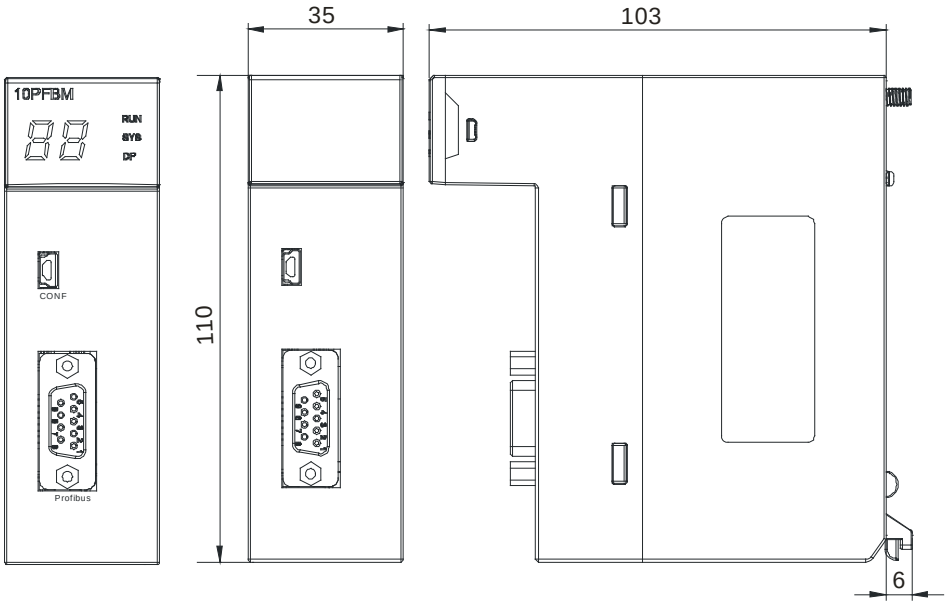
Unit: mm

- **AH10DNET-5A**



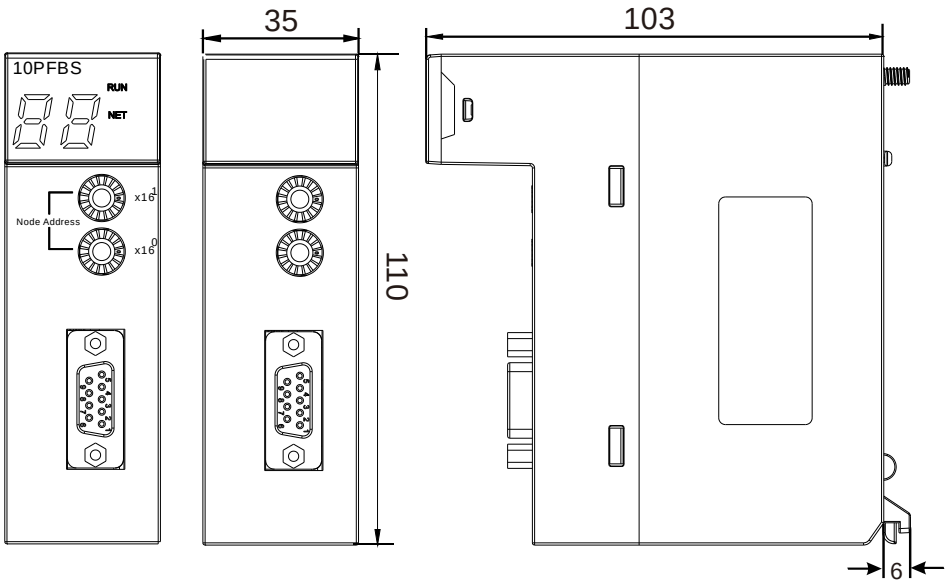
Unit: mm

- **AH10PFBM-5A**



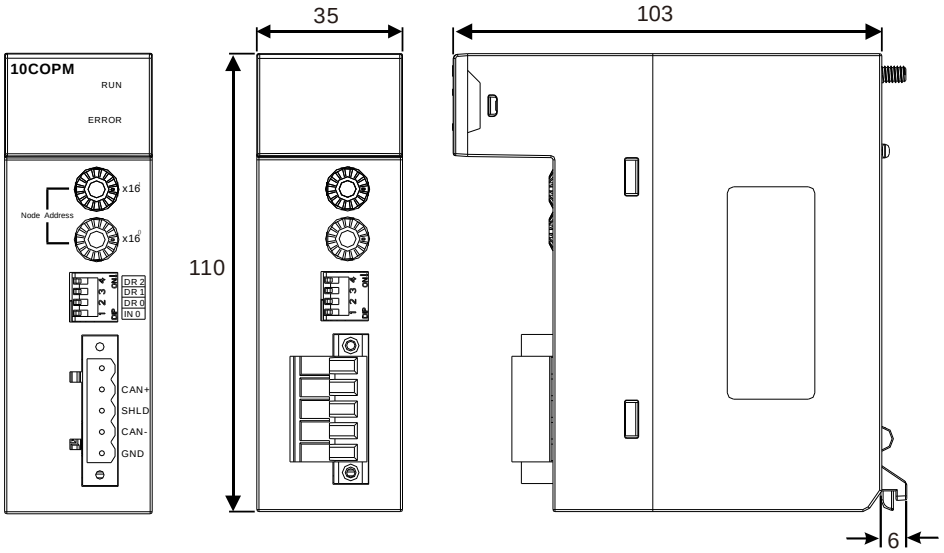
Unit: mm

- **AH10PFBS-5A**



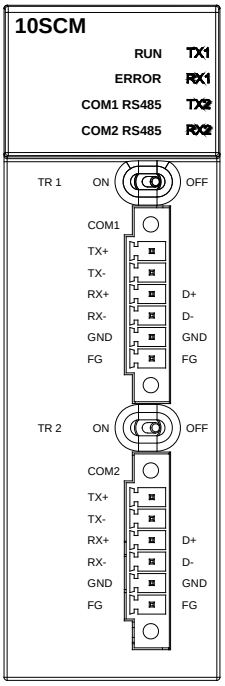
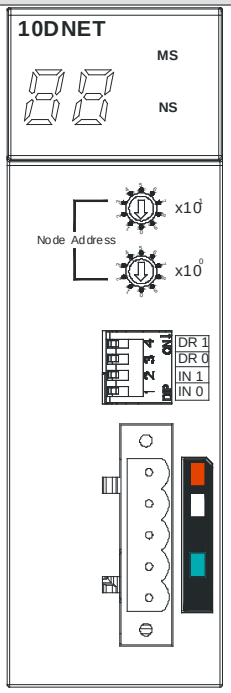
Unit: mm

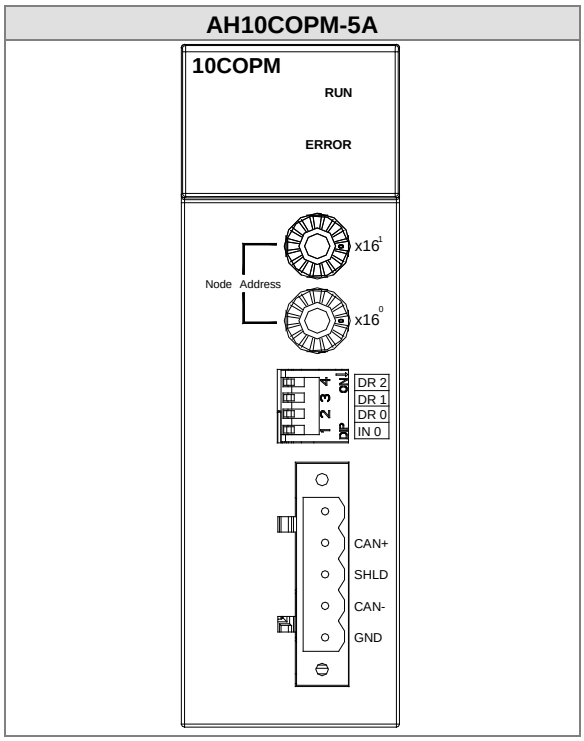
- **AH10COPM-5A**



Unit: mm

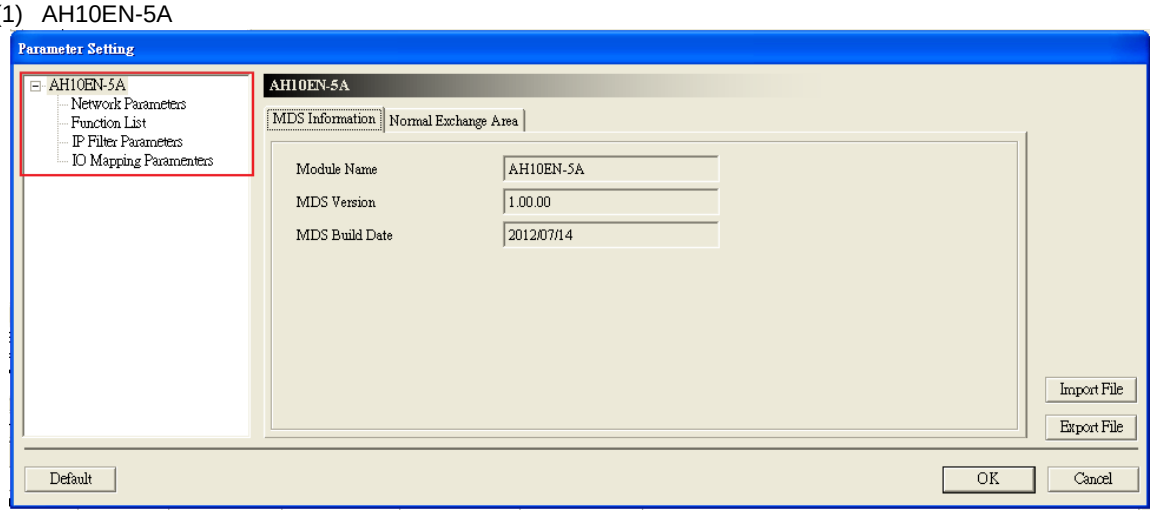
2.7.4 Arrangement of Input/Output Terminals

AH10SCM-5A	AH10DNET-5A
	



2.7.5 Setting Parameters

(1) AH10EN-5A



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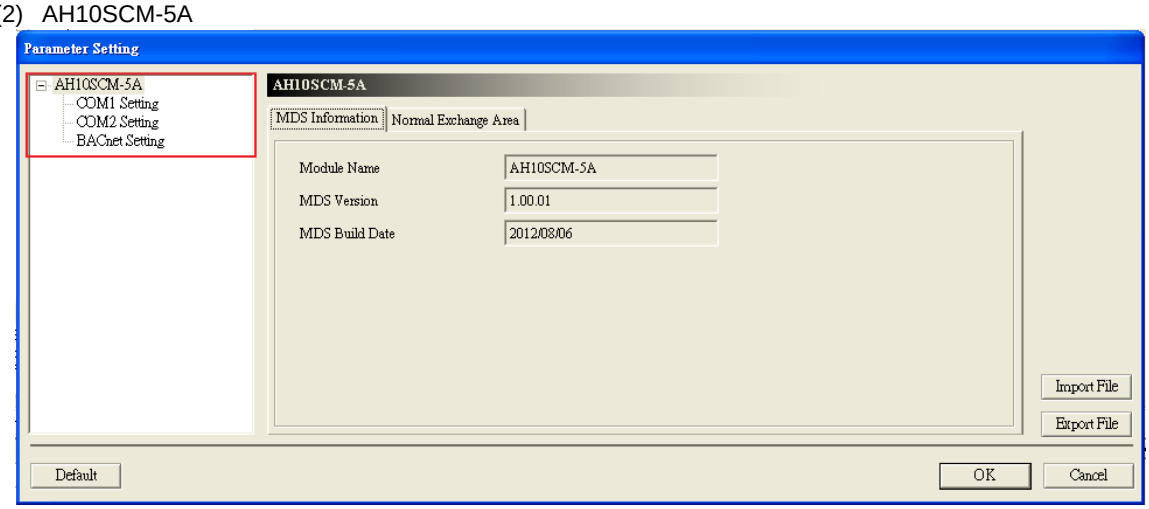
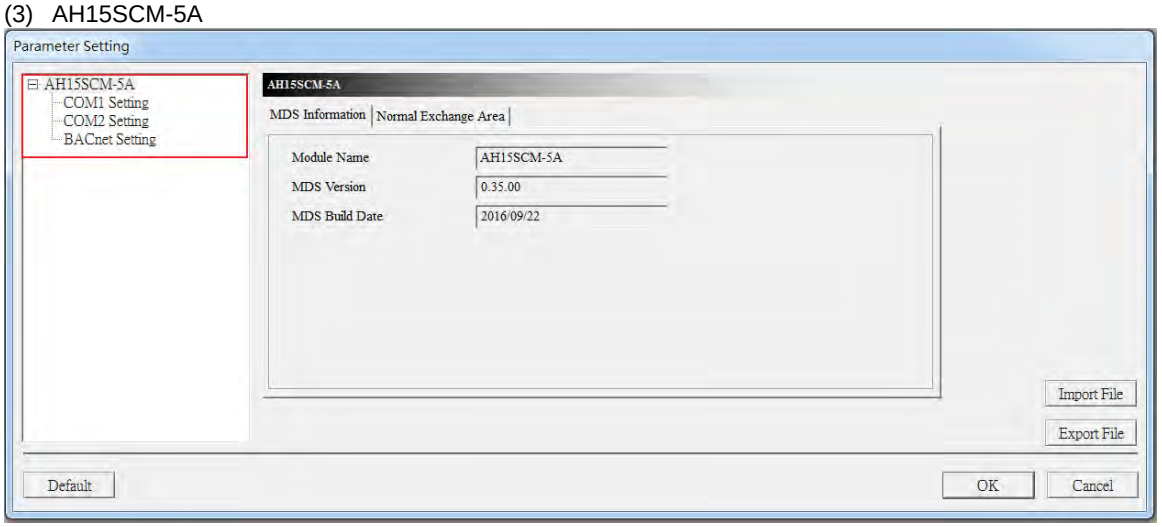
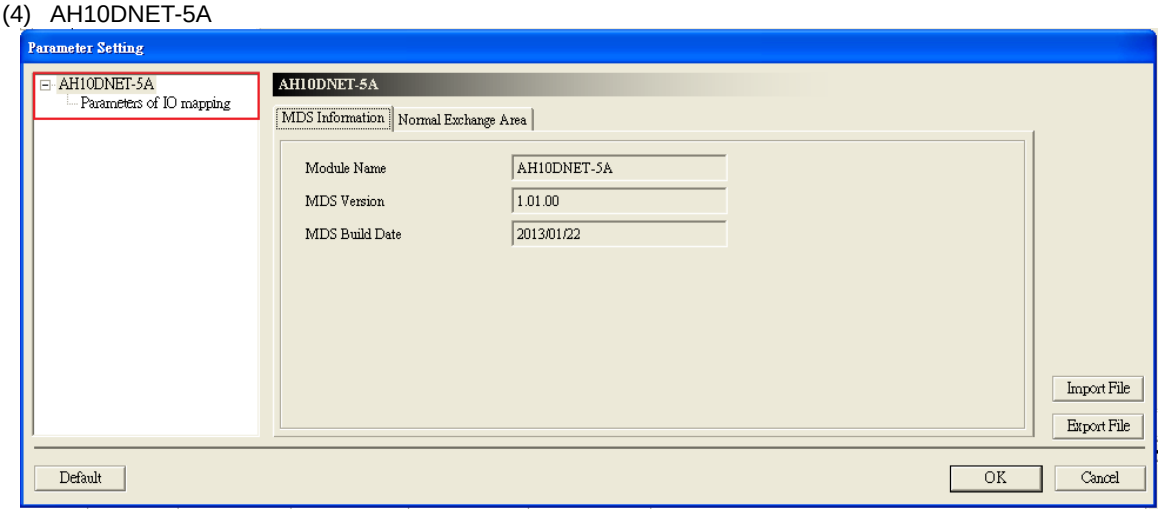


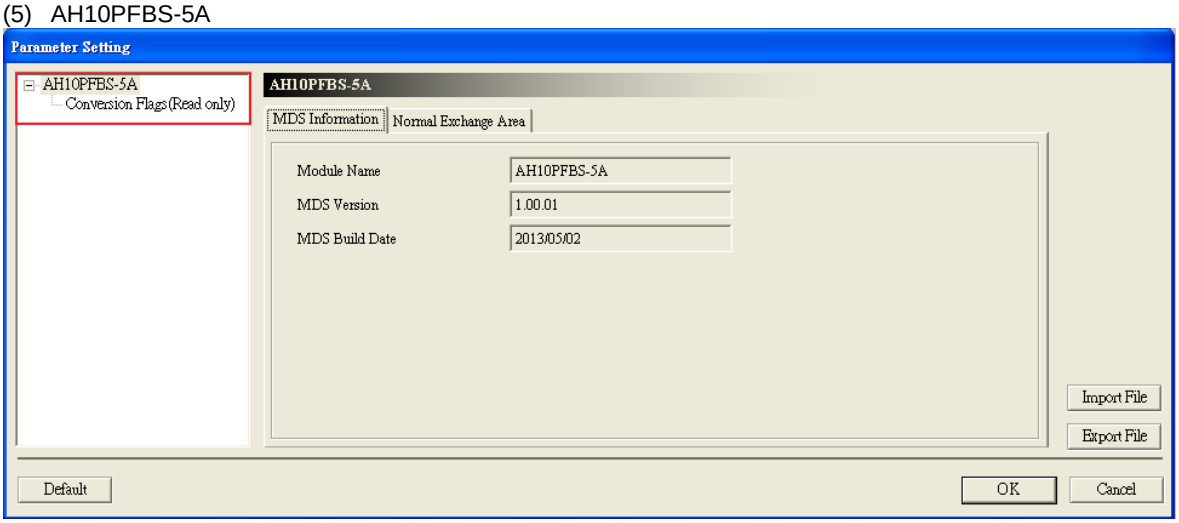
(3) AH15SCM-5A



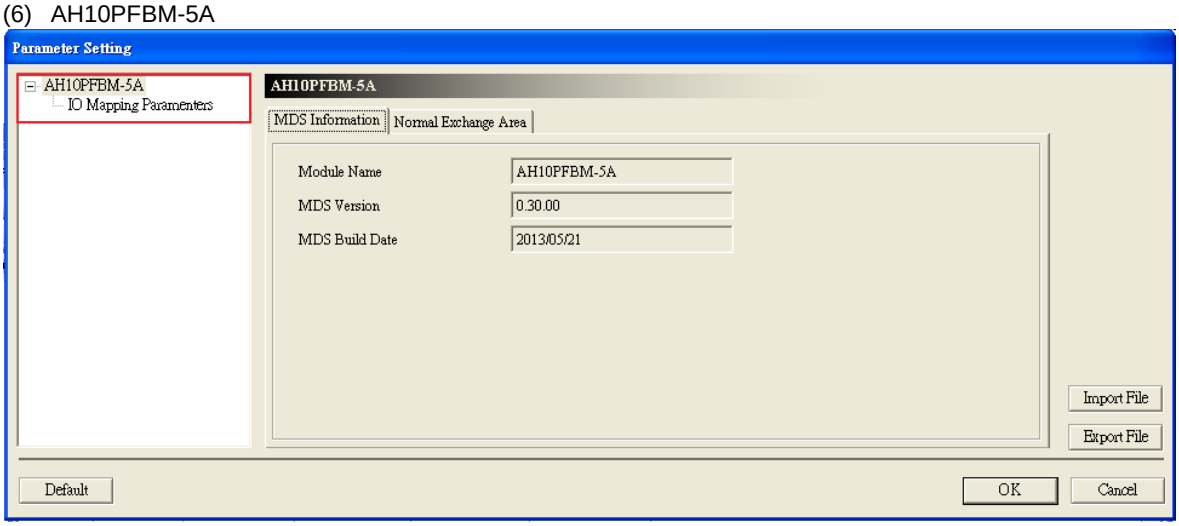
(4) AH10DNET-5A



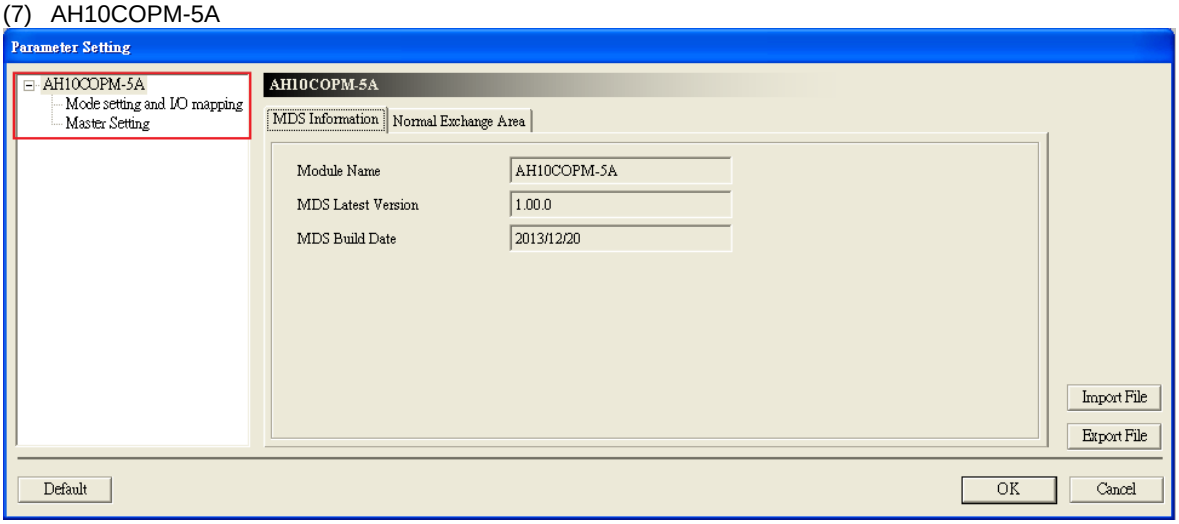
(5) AH10PFBS-5A



(6) AH10PFBM-5A



(7) AH10COPM-5A



Please refer to AH500 Module Manual for more information about setting parameters.

2.8 Specifications for Motion Control Modules

2.8.1 General Specifications

- **AH02HC-5A**

Item		Specifications
Number of channels		2 channels
Input signal	**Input (differential input)**	CH0: X0.8+, X0.8-, X0.9+, and X0.9- CH1: X0.10+, X0.10-, X0.11+, and X0.11-
	Pulse format	Pulse/Direction (one phase and one input) Counting up/Counting down (one phase and two inputs) One time the frequency of A/B-phase inputs (two phases and two inputs) Four times the frequency of A/B-phase inputs (two phases and two inputs)
	Signal level	5~24 V DC
Specifications	**Maximum frequency of counting**	The maximum frequency is 200 kHz.
	Range	The number of sampled pulses is in the range of -200000 to 200000. The number of accumulated pulses is in the range of -999999999 to 999999999. The number of input pulses is in the range of -2147483648 to 2147483648.
	Type	General count Circular count
RESET input	**Input (differential input)**	CH0: X0.0+ and X0.0- CH1: X0.1+ and X0.1-
	Signal level	5~24 V DC
	Maximum current	15 mA
Comparison output	**Output type**	Channel 0: The high-speed pulse output Y0.8 is a transistor whose collector is an open collector. Channel 1: The high-speed pulse output Y0.9 is a transistor whose collector is an open collector.
	Signal level	24 V DC
	Maximum current	15 mA
Weight		200g

- **AH04HC-5A**

Item		Specifications
Connector		A connector made with great precision is used. It has to be connected to an external terminal module.
Number of channels		4 channels
Input signal	**Input (differential signal)**	Channel 0: X0.8+, X0.8-, X0.9+, and X0.9- Channel 1: X0.10+, X0.10-, X0.11+, and X0.11- Channel 2: X0.12+, X0.12-, X0.13+, and X0.13- Channel 3: X0.14+, X0.14-, X0.15+, and X0.15-
	Pulse format	Pulse/Direction (one phase and one input) Counting up/Counting up (one phase and two inputs) One time the frequency of A/B-phase inputs (two phases and two inputs) Four times the frequency of A/B-phase inputs (two phases and two inputs)
	Signal level	5~24 V DC
Specifications	**Maximum frequency of counting**	The maximum frequency is 200 kHz.
	Range	The number of sampled pulses is in the range of -200000 to 200000. The number of accumulated pulses is in the range of -999999999 to 999999999. The number of input pulses is in the range of -2147483648 to 2147483648.
	Type	Linear count Circular count
RESET input	**Input (differential signal)**	Channel 0: X0.0+ and X0.0- Channel 1: X0.1+ and X0.1- Channel 2: X0.2+ and X0.2- Channel 3: X0.3+ and X0.3-
	Signal level	5~24 V DC
	Maximum current	15 mA
Comparison output	**Output type**	Channel 0: The high-speed pulse output Y0.8 is a transistor whose collector is an open collector. Channel 1: The high-speed pulse output Y0.9 is a transistor whose collector is an open collector. Channel 2: The high-speed pulse output Y0.10 is a transistor whose collector is an open collector. Channel 3: The high-speed pulse output Y0.11 is a transistor whose collector is an open collector.
	Signal level	24 V DC
	Maximum current	15 mA
Weight		200g

- **AH05PM-5A**

Item		Specifications		
		AH05PM-5A		
Number of axes		2 axes		
Storage		The capacity of the built-in storage is 64K steps.		
Unit		Motor unit	Compound unit	Mechanical unit
Connection with a CPU module		Users can set the initial register involved in the data exchange in a CPU module, and the number of registers involved in the data exchange in the CPU module. Four hundred data registers at most can be involved in the data exchange.		
Motor control		There are three types of pulse output modes. These modes adopt the differential output. 1. Pulse/Direction 2. Counting up/Counting down 3. A/B-phase output		
Maximum speed		Single axis: 1M PPS Multi-axis interpolation: 1M PPS		
Input signal	**Detector**	X0.0, X0.1, X0.8, X0.9, X0.12, and X0.13		
Output signal	**Servo output signal**	Y0.0+, Y0.0-, Y0.2+, Y0.2-, Y0.1+, Y0.1-, Y0.3+, Y0.3-, Y0.8, and Y0.9		
External communication port		Mini USB port		
Number of basic instructions		27		
Number of applied instructions		130		
M-code		● OX0~99 (motion subroutine/positioning program): M02 (The execution of the program stops. (END)) ● M00~M01, M03~M101, and M103~M65535: The execution of the program pauses. (WAIT) Users can use them freely.		
G-code		G0 (rapid positioning), G1 (linear interpolation), G2 (circular interpolation, clockwise), G3 (circular interpolation, counterclockwise), G4 (dwell), G17 (XY plane selection), G90 (absolute programming), and G91 (incremental programming)		
Weight		200g		

Description of the terminals

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
X0.0, X0.1, X0.8, X0.9, X0.12, and X0.13	1. They are single/A/B-phase input terminals. 2. The functions of the terminals: ● Motion control: ◆ X0.0 is the PG input for axis 1, and X0.1 is the PG input for axis 2. ◆ X0.12 is the DOG input for axis 1, and X0.13 is the DOG input for axis 2. ◆ X0.8 and X0.9 are for a manual pulse generator. ● High-speed count: ◆ X0.0 is the RESET input for counter 0. ◆ X0.8 is the A-phase input for counter 0, and X0.9 is the B-phase input for counter 0. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals: X0.8, X0.9, X0.12, X0.13	100 kHz (*1)	15 mA	24 V
Y0.8 and Y0.9	1. The high-speed pulse output terminals are transistors whose collectors are open collectors. 2. The functions of the terminals: ● Motion control: Y0.8 is the CLEAR output for axis 1, and Y0.9 is the CLEAR output for axis 2. ● High-speed comparison and catch: The high-speed comparison output terminals provide the PWM function.	200 kHz	15 mA	24 V
Y0.0+, Y0.0-, Y0.1+, Y0.1-, Y0.2+, Y0.2-, Y0.3+, and Y0.3-	1. They are differential output terminals. 2. The function of the terminals: ● Motion control: ◆ Y0.0+ and Y0.0- are the A-phase output terminals for axis 1. Y0.2+ and Y0.2- are the A-phase output terminals for axis 2. ◆ Y0.1+ and Y0.1- are the B-phase output terminals for axis 1. Y0.3+ and Y0.3- are the B-phase output terminals for axis 2.	1 MHz	5 mA	5 V

*1. If the frequency of input signals received by an input terminal must be 200 kHz, the input terminal must be connected to a 1 kΩ (2 W) resistor in parallel.

- **AH10PM-5A**

Item		Specifications		
		AH10PM-5A		
Number of axes		6 axes		
Storage		The capacity of the built-in storage is 64K steps.		
Unit		Motor unit	Compound unit	Mechanical unit
Connection with a CPU module		Users can set the initial register involved in the data exchange in a CPU module, and the number of registers involved in the data exchange in the CPU module. Four hundred data registers at most can be involved in the data exchange.		
Motor control		There are three types of pulse output modes. These modes adopt the differential output. 1. Pulse/Direction 2. Counting up/Counting down 3. A/B-phase output		
Maximum speed		Single axis: 1M PPS Multi-axis interpolation: 1M PPS		
Input signal	**Operating switch**	STOP/RUN (automatic/manual switch)		
	Detector	X0.8, X0.9, X0.10, X0.11, X0.12, X0.13, X0.14, X0.15, X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3-		
Output signal	**Servo output signal**	Y0.0+, Y0.0-, Y0.2+, Y0.2-, Y0.4+, Y0.4-, Y0.6+, Y0.6-, Y0.1+, Y0.1-, Y0.3+, Y0.3-, Y0.5+, Y0.5-, Y0.7+, Y0.7-, Y0.8, Y0.9, Y0.10, and Y0.11		
External communication port		Mini USB port Ethernet port		
Expansion storage device		Mini SD card The maximum capacity is 32 GB.		
Number of basic instructions		27		
Number of applied instructions		130		
M-code		● OX0~99 (motion subroutine/positioning program): M02 (The execution of the program stops. (END)) ● M00~M01, M03~M101, and M103~M65535: The execution of the program pauses. (WAIT) Users can use them freely.		
G-code		G0 (rapid positioning), G1 (linear interpolation), G2 (circular interpolation, clockwise), G3 (circular interpolation, counterclockwise), G4 (dwell), G17 (XY plane selection), G18 (ZX plane selection), G19 (YZ plane selection), G90 (absolute programming), and G91 (incremental programming)		
Weight		220g		

Description of the terminals

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3-	1. They are differential input terminals. 2. The functions of the terminals: ● Motion control: They are the PG input terminals for axis 1~axis 4. ● High-speed counter: X0.0+ and X0.0- are the RESET input terminals for counter 0. X0.1+ and X0.1- are the RESET input terminals for counter 1. X0.2+ and X0.2- are the RESET input terminals for counter 2 and counter 4. X0.3+ and X0.3- are the RESET input terminals for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches.	200 kHz	15 mA	5~24 V
X0.8 and X0.9	1. They are single/A/B-phase input terminals. 2. The functions of the terminals: ● Motion control: The terminals are for a manual pulse generator. ● High-speed count: ◆ The terminals are for counter 0. ◆ X0.8 is the A-phase input for counter 0, and X0.9 is the B-phase input for counter 0. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	100 kHz (*1)	15 mA	24 V
X0.10, X0.11, X0.12, X0.13, X0.14, and X0.15	1 They are single/A/B-phase input terminals. 2 The functions of the terminals: ● Motion control: They are the DOG input terminals for axis 1~axis 6. ● High-speed counter: ◆ The terminals are for counter 1~counter 5. ◆ X0.10 is the A-phase input for counter 1, X0.12 is the A-phase input for counter 2 and counter 4, and X0.14 is the A-phase input for counter 3 and counter 5. ◆ X0.11 is the B-phase input for counter 1, X0.13 is the B-phase input for counter 2 and counter 4, and X0.15 is the B-phase input for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	100 kHz (*1)	15 mA	24 V
Y0.8, Y0.9, Y0.10, and Y0.11	1. The high-speed pulse output terminals are transistors whose collectors are open collectors. 2. The functions of the terminals: ● Motion control: ◆ The terminals are the CLEAR output terminals for axis 1~axis 4, and provide the PWM function.	200 kHz	15 mA	24 V

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
	◆ Y0.8 and Y0.9 are for axis 5. Y0.10 and Y0.11 are for axis 6. Y0.8 is the A-phase output for axis 5, and Y0.10 is the A-phase output for axis 6. Y0.9 is the B-phase output for axis 5, and Y0.11 is the B-phase output for axis 6. ● High-speed comparison and catch: The terminals can function as high-speed comparison output terminals.			
Y0.0+, Y0.0-, Y0.1+, Y0.1-, Y0.2+, Y0.2-, Y0.3+, Y0.3-, Y0.4+, Y0.4-, Y0.5+, Y0.5-, Y0.6+, Y0.6-, Y0.7+, and Y0.7-	1. They are differential output terminals. 2. The function of the terminals: ● Motion control: ◆ The terminals are for axis 1~axis 4. ◆ Y0.0+ and Y0.0- are the A-phase output terminals for axis 1. Y0.2+ and Y0.2- are the A-phase output terminals for axis 2. Y0.4+ and Y0.4- are the A-phase output terminals for axis 3. Y0.6+ and Y0.6- are the A-phase output terminals for axis 4. ◆ Y0.1+ and Y0.1- are the B-phase output terminals for axis 1. Y0.3+ and Y0.3- are the B-phase output terminals for axis 2. Y0.5+ and Y0.5- are the B-phase output terminals for axis 3. Y0.7+ and Y0.7- are the B-phase output terminals for axis 4. ◆ Y0.0+ and Y0.0- are the CLEAR output terminals for axis 5. Y0.1+ and Y0.1- are the CLEAR output terminals for axis 6.	1 MHz	5 mA	5 V

*1. If the frequency of input signals received by an input terminal must be 200 kHz, the input terminal must be connected to a 1 kΩ (2 W) resistor in parallel.

- **AH15PM-5A**

Item		AH15PM-5A		
Number of actual axes		4 axes		
Storage		The capacity of the built-in storage is 64K steps.		
Unit		Motor unit	Compound unit	Mechanical unit
Connection with a CPU module		Users can set the initial register involved in the data exchange in a CPU module, and the number of registers involved in the data exchange in the CPU module. Four hundred data registers at most can be involved in the data exchange.		
Motor control		There are three types of pulse output modes. These modes adopt the differential output. 1. Pulse/Direction 2. Counting up/Counting down 3. A/B-phase output		
Maximum speed		Single axis: 1M PPS Multi-axis interpolation: 1M PPS		
Input signal	**Operating switch**	STOP/RUN (automatic/manual switch)		
	Detector	X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, X0.3-, X0.4, X0.5, X0.6, X0.7, X0.10, X0.11, X0.12, X0.13, X0.14, X0.15, X1.0, X1.1, X1.2, X1.3, X1.4, and X1.5		
Output signal	**Servo output signal**	Y0.0+, Y0.0-, Y0.2+, Y0.2-, Y0.4+, Y0.4-, Y0.6+, Y0.6-, Y0.1+, Y0.1-, Y0.3+, Y0.3-, Y0.5+, Y0.5-, Y0.7+, Y0.7-, Y0.8, Y0.9, Y0.10, and Y0.11		

Item	AH15PM-5A
External communication port	Mini USB port Ethernet port
Expansion storage device	Mini SD card The maximum capacity is 32 GB.
Number of basic instructions	27
Number of applied instructions	130
M-code	1. OX0~OX99 (motion subroutine/positioning program): M02 (The execution of the program stops. (END)) 2. M00~M01, M03~M101, and M103~M65535: The execution of the program pauses. (WAIT) Users can use them freely.
G-code	G0 (rapid positioning), G1 (linear interpolation), G2 (circular interpolation, clockwise), G3 (circular interpolation, counterclockwise), G4 (dwell), G17 (XY plane selection), G18 (ZX plane selection), G19 (YZ plane selection), G90 (absolute programming), and G91 (incremental programming)
Weight	220g

Description of the terminals

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3-	1. They are differential input terminals. 2. The functions of the terminals: ● Motion control: They are the PG input terminals for axis 1~axis 4. ● High-speed counter: X0.0+ and X0.0- are the RESET input terminals for counter 0. X0.1+ and X0.1- are the RESET input terminals for counter 1. X0.2+ and X0.2- are the RESET input terminals for counter 2 and counter 4. X0.3+ and X0.3- are the RESET input terminals for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	200 kHz	15 mA	5~24 V
X0.4, X0.5, X0.6, and X0.7	1 They are single/A/B-phase input terminals. 2 The functions of the terminals: ● Motion control: They are the DOG input terminals for axis 1~axis 4.	100 kHz (*1)	15 mA	24 V
X0.8+, X0.8-, X0.9+, and X0.9-	1. They are differential input terminals. 2. The functions of the terminals: ● Motion control: The terminals are for a manual pulse generator. ● High-speed count: ◆ The terminals are for counter 0. ◆ X0.8+ and X0.8- are the A-phase input terminals for counter 0, and X0.9+ and X0.9- are the B-phase input terminals for counter 0. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	200 kHz	15 mA	5~24 V

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
X0.10, X0.11, X0.12, X0.13, X0.14, X0.15, X1.0, and X1.1	1 They are differential input terminals. 2 The functions of the terminals: ● Motion control: X0.10 is LSP0, X0.11 is LSN0, X0.12 is LSP1, X0.13 is LSN1, X0.14 is LSP2, X0.15 is LSN2, X1.0 is LSP3, and X1.1 is LSN3. ● High-speed count: ◆ The terminals are for counter 1~counter 5. ◆ X0.10 is the A-phase input for counter 1. X0.12 is the A-phase input for counter 2 and counter 4. X0.14 is the A-phase input for counter 3 and counter 5. ◆ X0.11is the B-phase input for counter 1. X0.13 is the B-phase input for counter 2 and counter 4. X0.15 is the B-phase input for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals: X0.10~X0.15	100 kHz (*1)	15 mA	24 V
X1.2, X1.3, X1.4, and X1.5	1. They are single/A/B-phase input terminals.	100 kHz (*1)	15 mA	24 V
Y0.8, Y0.9, Y0.10, and Y0.11	1. The high-speed pulse output terminals are transistors whose collectors are open collector. 2. The function of the terminals: ● Motion control: The terminals are the CLEAR output terminals for axis 1~axis 4. ● High-speed comparison and catch: The terminals can function as high-speed comparison output terminals.	200 kHz	15 mA	24 V
Y0.0+, Y0.0-, Y0.1+, Y0.1-, Y0.2+, Y0.2-, Y0.3+, Y0.3-, Y0.4+, Y0.4-, Y0.5+, Y0.5-, Y0.6+, Y0.6-, Y0.7+, and Y0.7-	1. They are differential output terminals. 2. The function of the terminals: ● Motion control: ◆ The terminals are for axis 1~axis 4. ◆ Y0.0+ and Y0.0- are the A-phase output terminals for axis 1. Y0.2+ and Y0.2- are the A-phase the output terminals for axis 2. Y0.4+ and Y0.4- are the A-phase output terminals for axis 3. Y0.6+ and Y0.6- are the A-phase output terminals for axis 4. ◆ Y0.1+ and Y0.1- are the B-phase output terminals for axis 1. Y0.3+ and Y0.3- are the B-phase output terminals for axis 2. Y0.5+ and Y0.5- are the B-phase output terminals for axis 3. Y0.7+ and Y0.7- are the B-phase output terminals for axis 4. ◆ Y0.0+ and Y0.0- are the CLEAR output terminals for axis 5. Y0.1+ and Y0.1- are the CLEAR output terminals	1 MHz	5 mA	5 V

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
	for axis 6.			

*1. If the frequency of input signals received by an input terminal must be 200 kHz, the input terminal must be connected to a 1 kΩ (2 W) resistor in parallel.

- **AH20MC-5A**

Item		Specifications		
		AH20MC-5A		
Number of axes		12 axes		
Storage		The capacity of the built-in storage is 64K steps.		
Unit		Motor unit	Compound unit	Mechanical unit
Connection with a CPU module		Users can set the initial register involved in the data exchange in a CPU module, and the number of registers involved in the data exchange in the CPU module. Four hundred data registers at most can be involved in the data exchange.		
Motor control		Delta high-speed motion control system DMCNET (Delta Motion Control Network) The response time is one millisecond.		
Maximum speed		Single axis: 1M PPS Two-axis interpolation: 1M PPS		
Input signal	**Operating switch**	STOP/RUN (automatic/manual switch)		
	Detector	X0.10+, X0.10-, X0.11+, X0.11-, X0.12+, X0.12-, X0.13+, X0.13-, X0.14+, X0.14-, X0.15+, X0.15-, X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3-, X0.8+, X0.8-, X0.9+, X0.9-		
Output signal	**Servo output signal**	Y0.8, Y0.9, Y0.10, Y0.11		
External communication port		Mini USB port Ethernet port DMCNET port		
Expansion storage device		Mini SD card The maximum capacity is 32 GB.		
Number of basic instructions		27		
Number of applied instructions		130		
M-code		● OX0~99 (motion subroutine/positioning program): M02 (The execution of the program stops. (END)) ● M00~M01, M03~M101, and M103~M65535: The execution of the program pauses. (WAIT) Users can use them freely.		
G-code		G0 (rapid positioning), G1 (linear interpolation), G2 (circular interpolation, clockwise), G3 (circular interpolation, counterclockwise), G4 (dwell), G17 (XY plane selection), G18 (ZX plane selection), G19 (YZ plane selection), G90 (absolute programming), and G91 (incremental programming)		
Weight		220g		

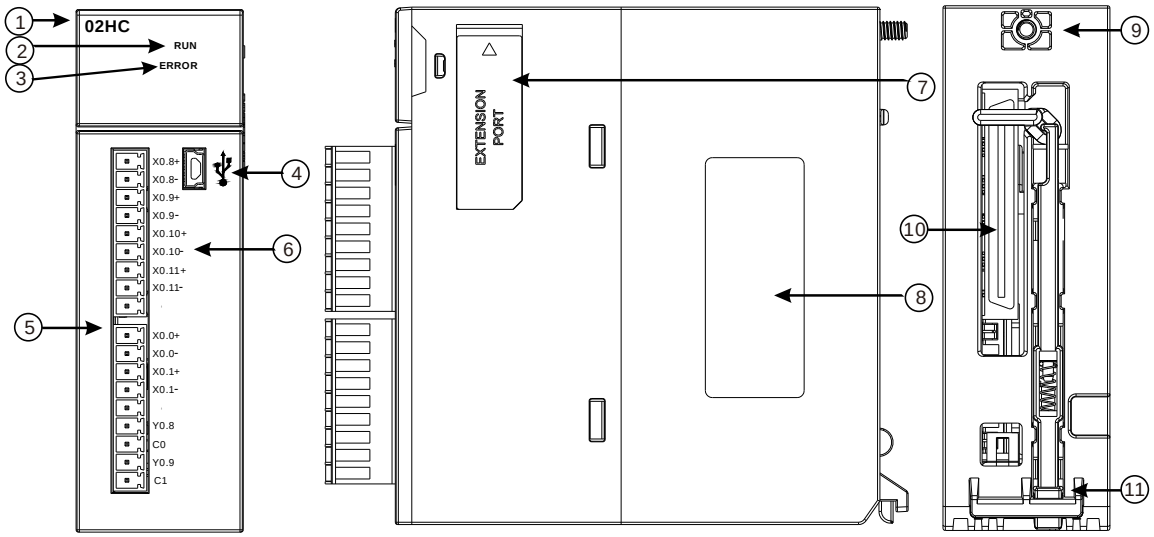
Description of the terminals

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3-	1. They are differential input terminals. 2. The functions of the terminals: ● High-speed count: ◆ The terminals are the RESET input terminals for counter 0~counter 5. ◆ X0.0+ and X0.0- are for counter 0. X0.1+ and X0.1- are for counter 1. X0.2+ and X0.2- are for counter 2 and counter 4. X0.3+ and X0.3- are for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches.	200 kHz	15 mA	5~24 V
X0.8+, X0.8-, X0.9+, and X0.9-	1. They are differential input terminals. 2. The functions of the terminals: ● Motion control: The terminals are for a manual pulse generator. ● High-speed count: ◆ The terminals are for counter 0. ◆ X0.8+ and X0.8- are the A-phase input terminals for counter 0. X0.9+ and X0.9- are the B-phase input terminals for counter 0. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	200 kHz	15 mA	5~24 V
X0.10+, X0.10-, X0.11+, X0.11-, X0.12+, X0.12-, X0.13+, X0.13, X0.14+, X0.14-, X0.15+, and X0.15-	1. They are differential input terminals. 2. The functions of the terminals: ● Motion control: Dog inputs are for Axis1~Axis 6 and for the motion of the single-axis inputting. ● High-speed count: ◆ The terminals are for counter 1~counter 5. ◆ X0.10+ and X0.10- are the A-phase input terminals for counter 1. X0.12+ and X0.12- are the A-phase input terminals for counter 2 and counter 4. X0.14+ and X0.14- are the A-phase input terminals for counter 3 and counter 5. ◆ X0.11+ and X0.11- are the B-phase input terminals for counter 1. X0.13+ and X0.13- are the B-phase input terminals for counter 2 and counter 4. X0.15+ and X0.15- are the B-phase input terminals for counter 3 and counter 5. ● High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. ● Interrupt input terminals	200 kHz	15 mA	5~24 V

Terminal	Description	Response characteristic	Maximum input	
			Current	Voltage
Y0.8, Y0.9, Y0.10, and Y0.11	1. The high-speed pulse output terminals are transistors whose collectors are open collectors. 2. The function of the terminals: ● High-speed comparison and catch: The terminals can function as high-speed comparison output terminals.	200 kHz	15 mA	24 V

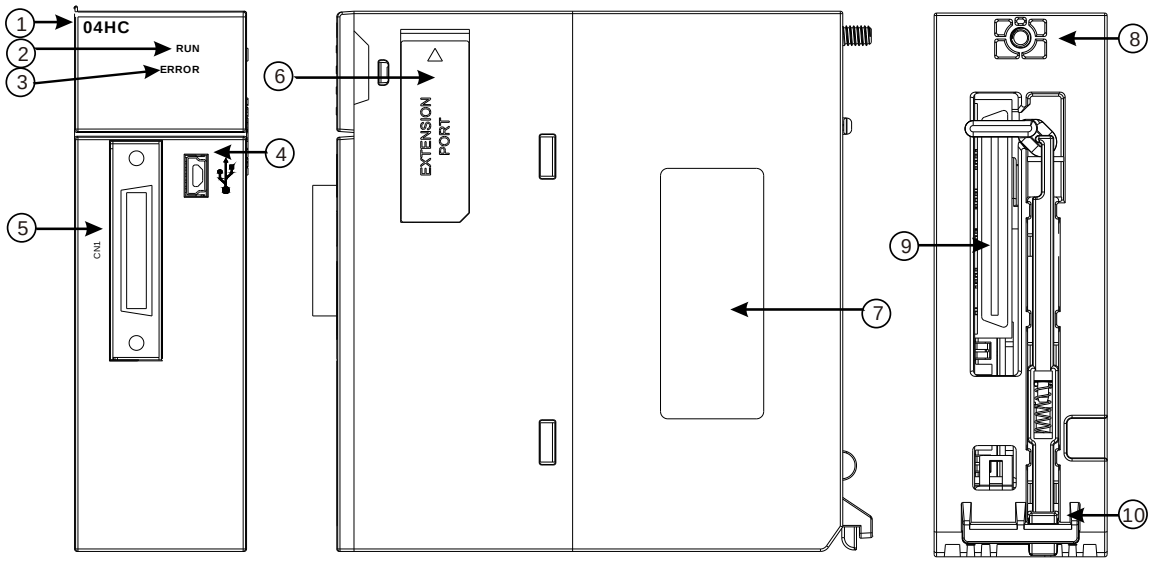
2.8.2 Profiles

● **AH02HC-5A**



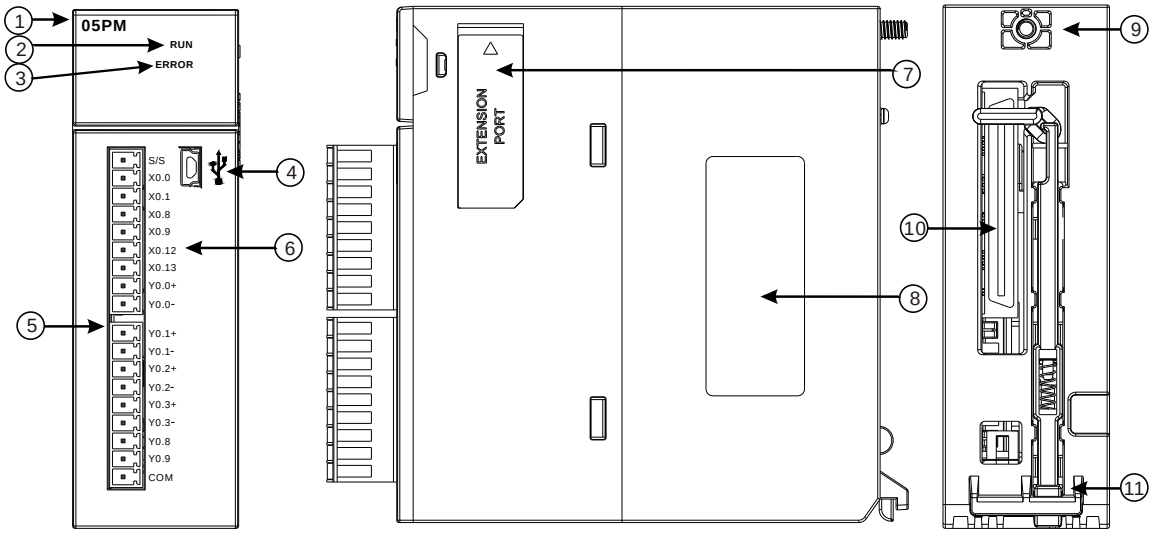
Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	USB port	Providing the mini USB communication interface
5	Terminals	Input/Output terminals
6	Arrangement of the input/output terminals	Arrangement of the terminals
7	Extension port	Updating the firmware
8	Label	Nameplate
9	Set screw	Fixing the module
10	Connector	Connecting the module and a backplane
11	Projection	Fixing the module

- **AH04HC-5A**



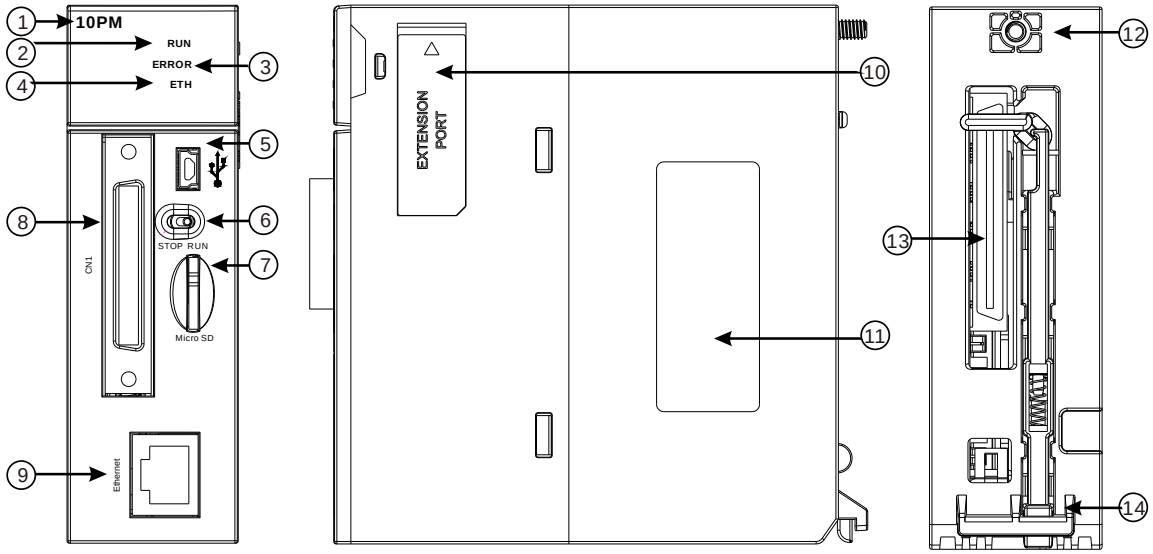
Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	USB port	Providing the mini USB communication interface
5	Connector	Connecting the module and an I/O extension cable
6	Extension port	Updating the firmware
7	Label	Nameplate
8	Set screw	Fixing the module
9	Connector	Connecting the module and a backplane
10	Projection	Fixing the module

- **AH05PM-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	USB port	Providing the mini USB communication interface
5	Terminals	Input/Output terminals
6	Arrangement of the input/output terminals	Arrangement of the terminals
7	Extension port	Updating the firmware
8	Label	Nameplate
9	Set screw	Fixing the module
10	Connector	Connecting the module and a backplane
11	Projection	Fixing the module

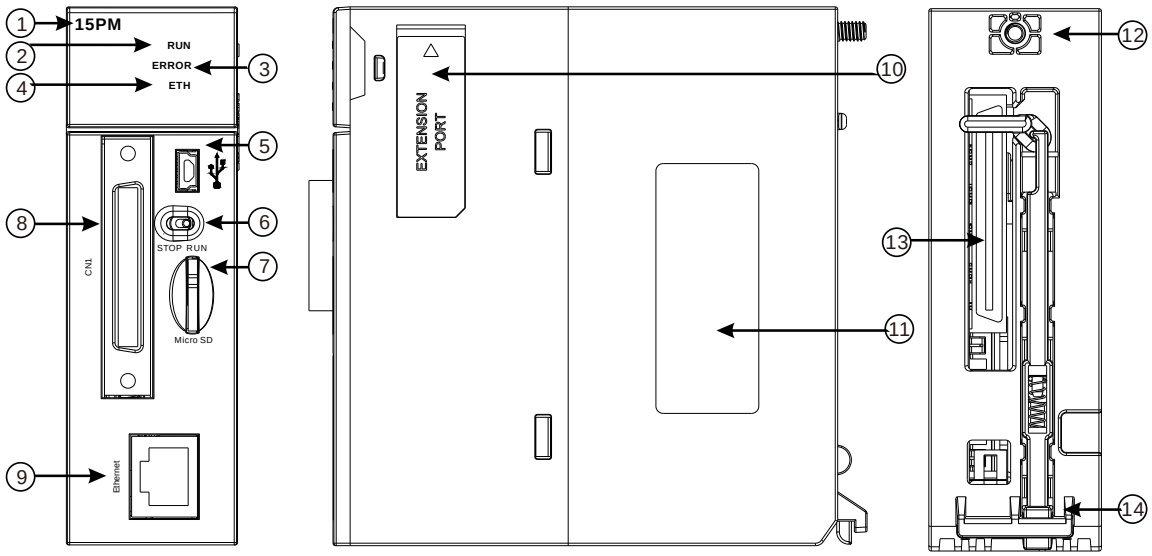
- **AH10PM-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	Ethernet connection LED indicator (green)	Status of the Ethernet connection ON: The Ethernet connection is being connected. OFF: The Ethernet connection is disconnected.
5	USB port	Providing the mini USB communication interface
6	RUN/STOP switch	RUN: The user program is executed. STOP: The execution of the user program stops.
7	SD slot	Providing the SD interface
8	Connector	Connecting the module and an I/O extension cable
9	Ethernet port	Providing the Ethernet communication interface
10	Extension port	Updating the firmware
11	Label	Nameplate
12	Set screw	Fixing the module

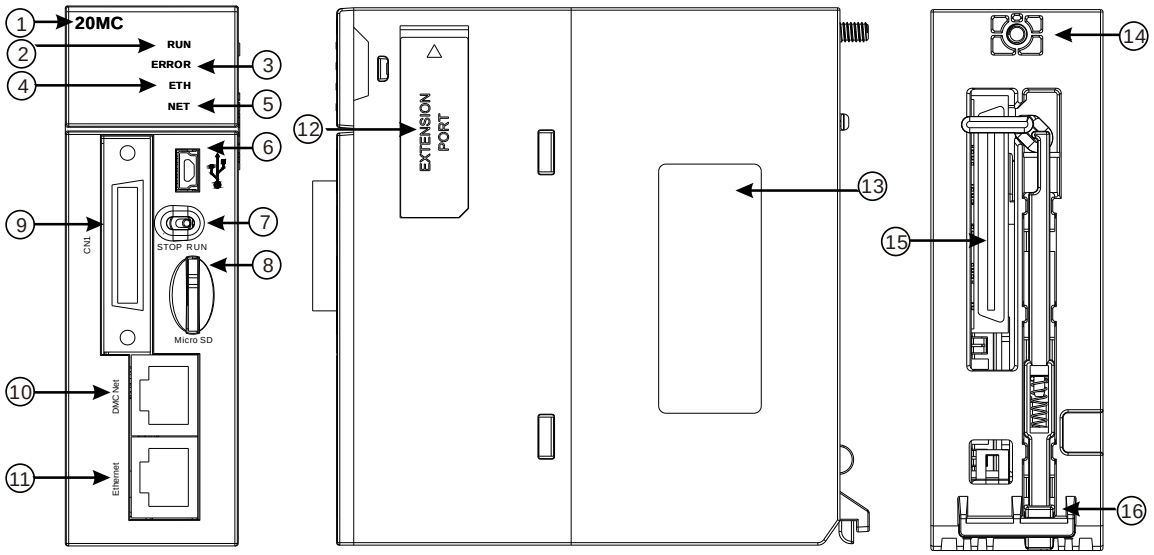
Number	Name	Description
13	Connector	Connecting the module and a backplane
14	Projection	Fixing the module

- **AH15PM-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	Ethernet connection LED indicator (green)	Status of the Ethernet connection ON: The Ethernet connection is being connected. OFF: The Ethernet connection is disconnected.
5	USB port	Providing the mini USB communication interface
6	RUN/STOP switch	RUN: The user program is executed. STOP: The execution of the user program stops.
7	SD slot	Providing the SD interface
8	Connector	Connecting the module and an I/O extension cable
9	Ethernet port	Providing the Ethernet communication interface
10	Extension port	Updating the firmware
11	Label	Nameplate
12	Set screw	Fixing the module
13	Connector	Connecting the module and a backplane
14	Projection	Fixing the module

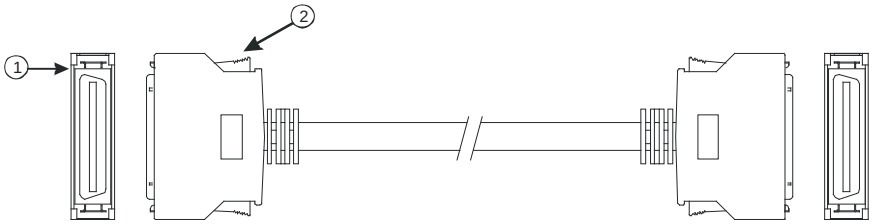
- **AH20MC-5A**



Number	Name	Description
1	Model name	Model name of the module
2	RUN LED indicator (green)	Operating status of the module ON: The module is running. OFF: The module stops running.
3	ERROR LED indicator (red)	Error status of the module Blinking: The module is abnormal.
4	Ethernet connection LED indicator (green)	Status of the Ethernet connection ON: The Ethernet connection is being connected. OFF: The Ethernet connection is disconnected.
5	DMCNET connection LED indicator (green)	Status of the DMCNET connection ON: The DMCNET connection is being connected. OFF: The DMCNET connection is disconnected.
6	USB port	Providing the mini USB communication interface
7	RUN/STOP switch	RUN: The user program is executed. STOP: The execution of the user program stops.
8	SD slot	Providing the SD interface
9	Connector	Connecting the module and an I/O extension cable.
10	DMCNET port	Providing the DMCNET communication interface
11	Ethernet port	Providing the Ethernet communication interface
12	Extension port	For updating the firmware
13	Label	Nameplate
14	Set screw	Fixing the module
15	Connector	Connecting the module and a backplane
16	Projection	Fixing the module

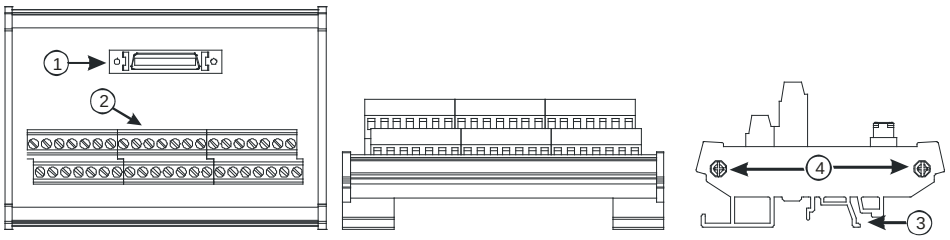
- **I/O extension cable, and external terminal module**

1. I/O extension cable UC-ET010-13B/UC-ET010-15B

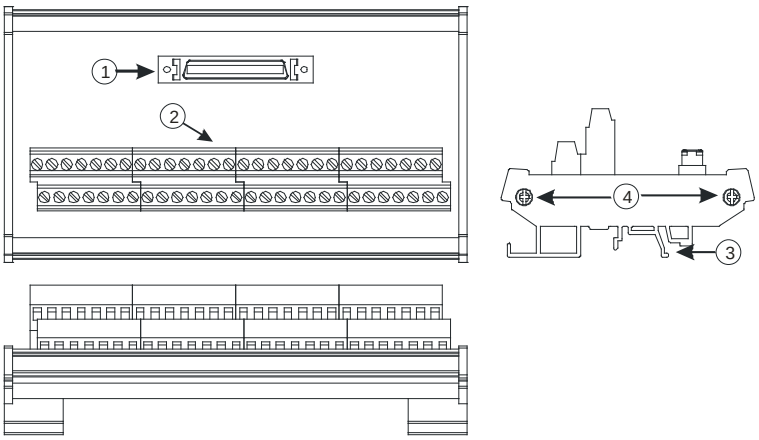


Number	Name	Description
1	Connector	Connecting a motion control module and an external terminal module UC-ET010-13B is a 36-pin I/O extension cable for AH04HC-5A and AH20MC-5A. UC-ET010-15B is a 50-pin I/O extension cable for AH10PM-5A and AH15PM-5A.
2	Clip	Fixing the connector

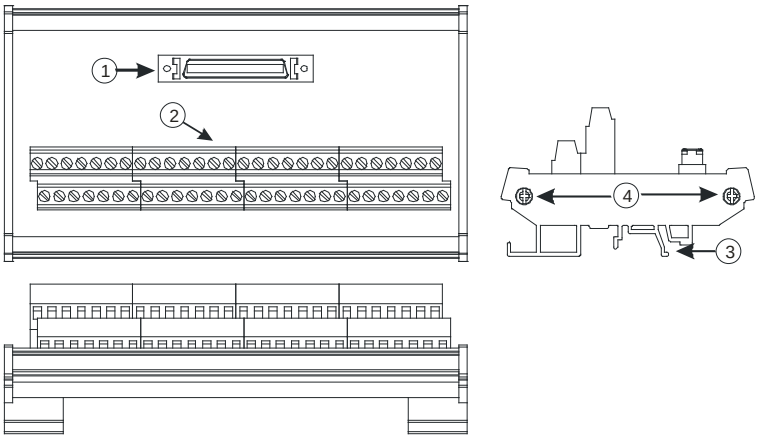
2. External terminal module for AH04HC-5A and AH20MC-5A: UB-10-IO16C



3. External terminal module for AH10PM-5A: UB-10-IO24CC



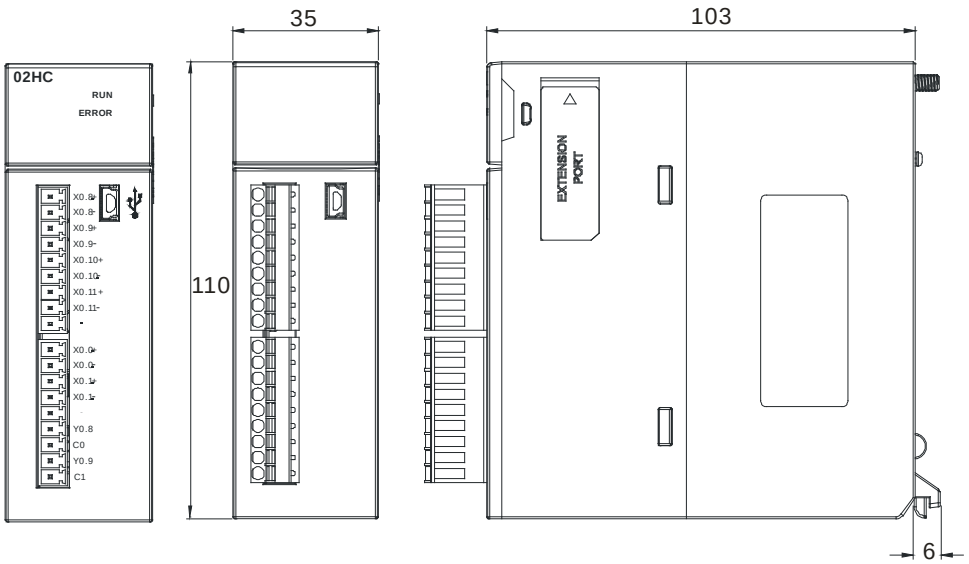
4. External terminal module for AH15PM-5A: UB-10-IO34CC



Number	Name	Description
1	Connector	Connecting the external terminal module and a motion control module
2	Terminals	Input/Output terminals for wiring
3	Clip	Hanging the external terminal module on a DIN rail
4	Set screw	Fixing the base

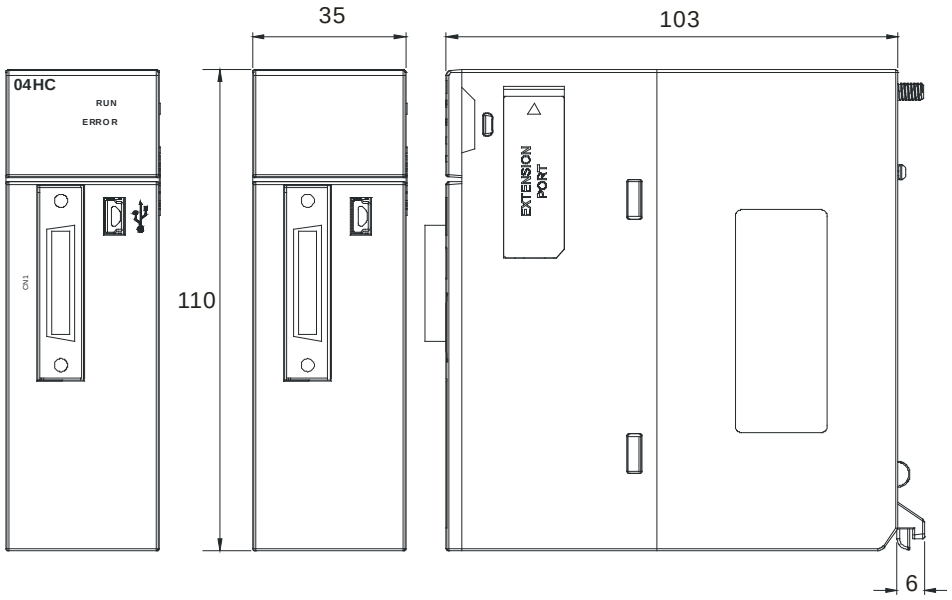
2.8.3 Dimensions

- **AH02HC-5A**



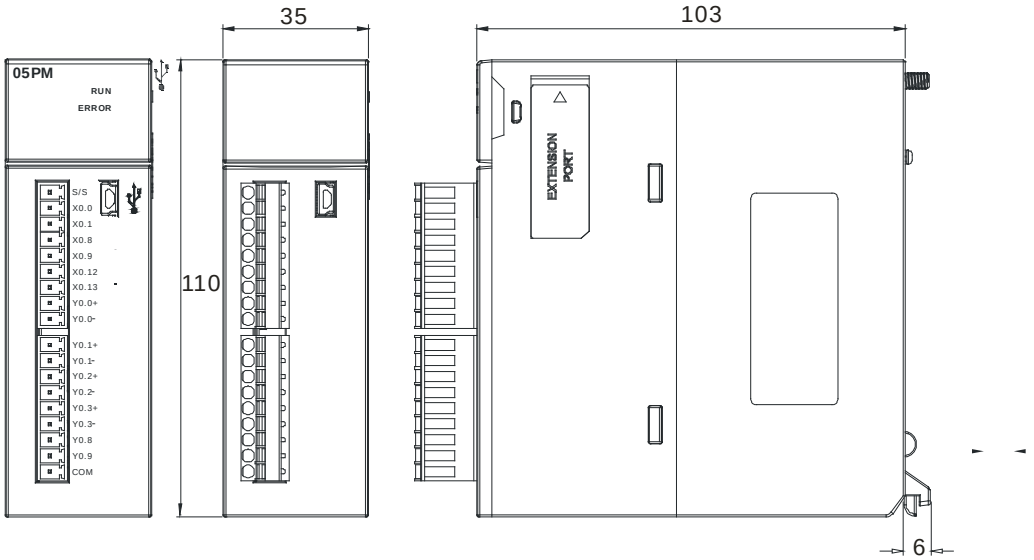
Unit: mm

- **AH04HC-5A**



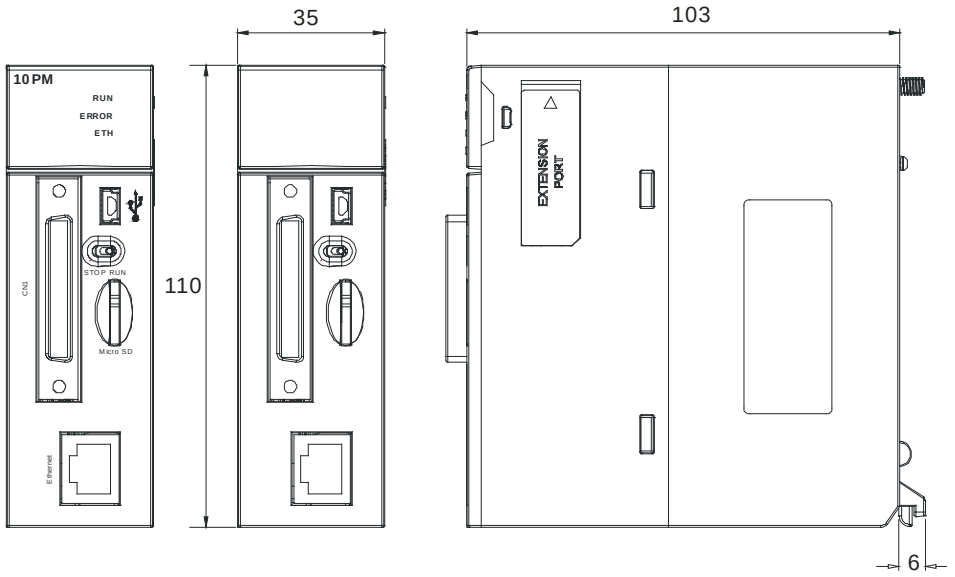
Unit: mm

- **AH05PM-5A**



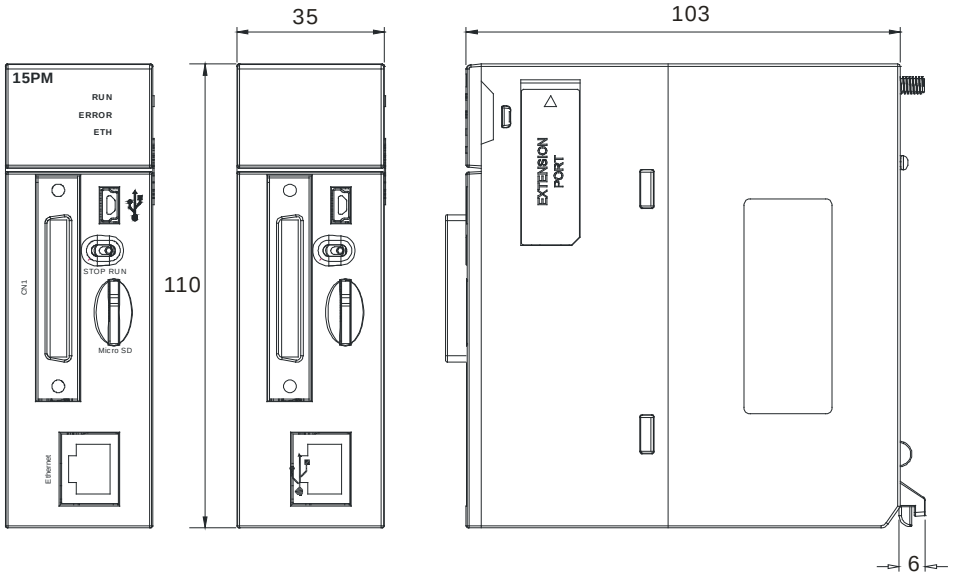
Unit: mm

- **AH10PM-5A**



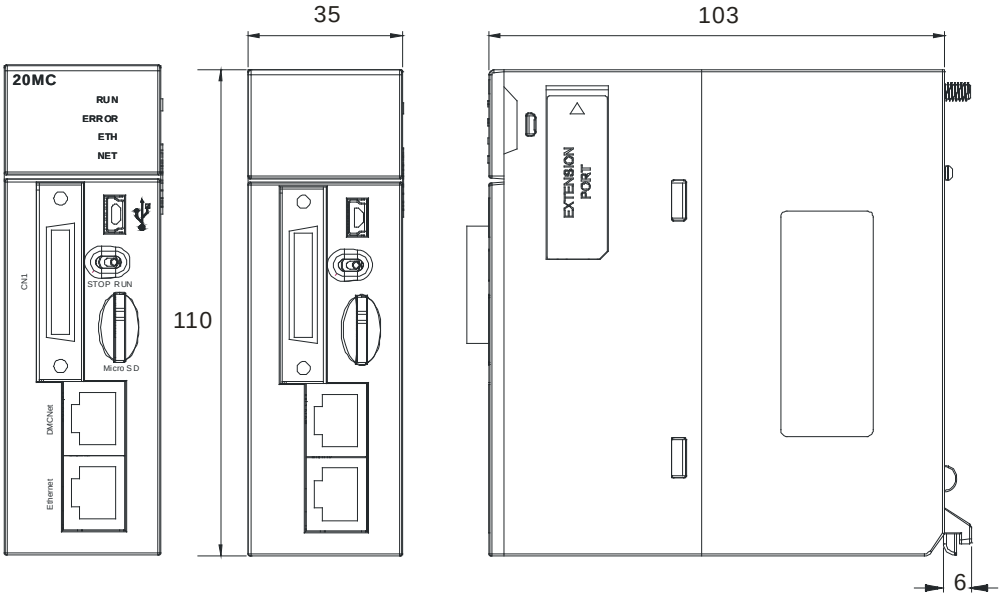
Unit: mm

- **AH15PM-5A**



Unit: mm

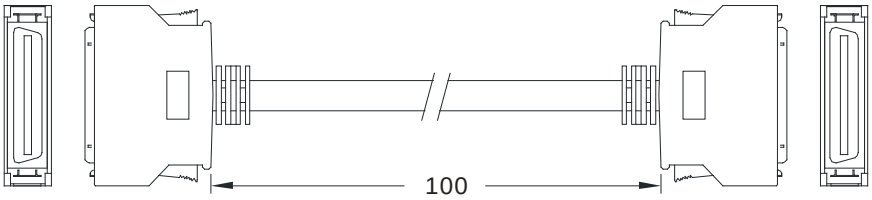
- **AH20MC-5A**



Unit: mm

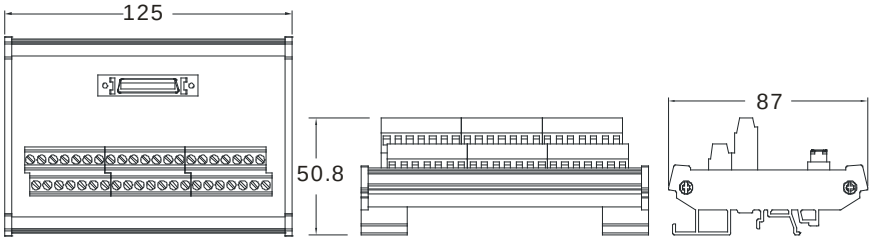
- **I/O extension cable, and external terminal module**

1. 36-pin I/O extension cable for AH04HC-5A and AH20MC-5: UC-ET010-13B



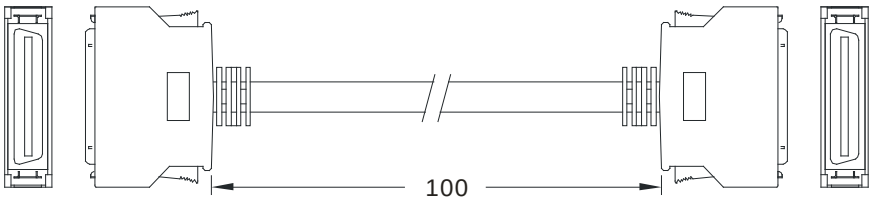
Unit: cm

2. External terminal module for AH04HC-5A and AH20MC-5A: UB-10-IO16C



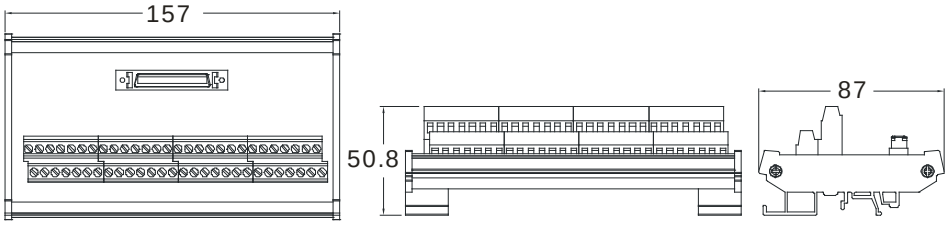
Unit: mm

3. 50-pin I/O extension cable for AH10PM-5A and AH15PM-5A: UC-ET010-15B



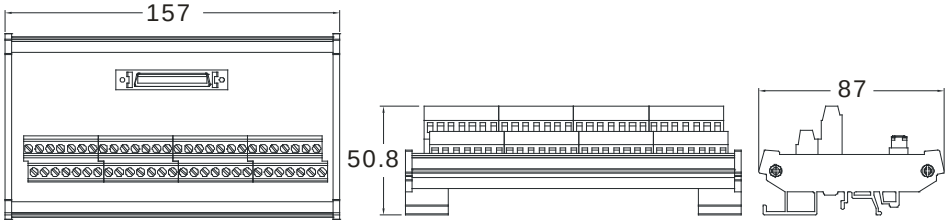
Unit: cm

4. External terminal module for AH10PM-5A: UB-10-IO24CC



Unit: mm

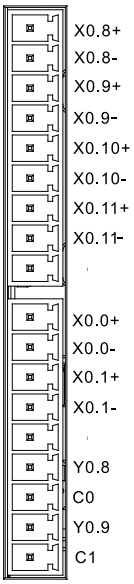
5. External terminal module for AH15PM-5A: UB-10-IO34CC



Unit: mm

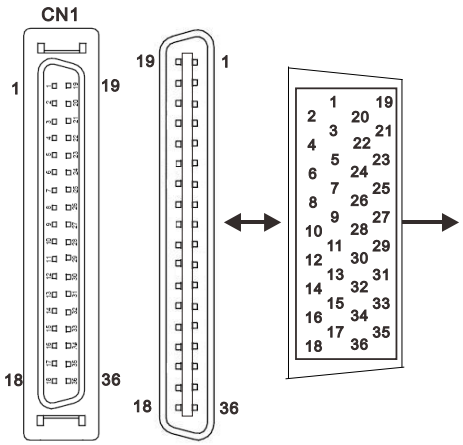
2.8.4 Arrangement of Input/Output Terminals

- AH02HC-5A



Terminal	Function / Count	Terminal	Function / Count
X0.8+	CntA0+	X0.0+	Rst0+
X0.8-	CntA0-	X0.0-	Rst0-
X0.9+	CntB0+	X0.1+	Rst1+
X0.9-	CntB0-	X0.1-	Rst1-
X0.10+	CntA1+	Y0.8	Out0
X0.10-	CntA1-	C0	COM0
X0.11+	CntB1+	Y0.9	Out1
X0.11-	CntB1-	C1	COM1

- **AH04HC-5A**

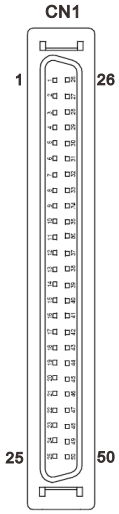


Pin	Terminal	Function Count	Pin	Terminal	Function Count
1	C3	COM3	19	Y0.11	Out3
2	C2	COM2	20	Y0.10	Out2
3	C1	COM1	21	Y0.9	Out1
4	C0	COM0	22	Y0.8	Out0
5	-	-	23	-	-
6	-	-	24	-	-
7	X0.3-	Rst3-	25	X0.3+	Rst3+
8	X0.15-	CntB3-	26	X0.15+	CntB3+
9	X0.14-	CntA3-	27	X0.14+	CntA3+
10	X0.2-	Rst2-	28	X0.2+	Rst2+
11	X0.13-	CntB2-	29	X0.13+	CntB2+
12	X0.12-	CntA2-	30	X0.12+	CntA2+
13	X0.1-	Rst1-	31	X0.1+	Rst1+
14	X0.11-	CntB1-	32	X0.11+	CntB1+
15	X0.10-	CntA1-	33	X0.10+	CntA1+
16	X0.0-	Rst0-	34	X0.0+	Rst0+
17	X0.9-	CntB0-	35	X0.9+	CntB0+
18	X0.8-	CntA0-	36	X0.8+	CntA0+

- **AH05PM-5A**

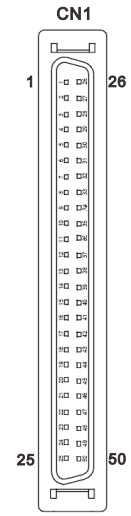
Terminal	Function		Terminal	Function	
	Pulse	Count		Pulse	Count
S/S	S/S	S/S	Y0.1+	B0+	-
X0.0	PG0	Rst0	Y0.1-	B0-	-
X0.1	PG1	-	Y0.2+	A1+	-
X0.8	MPGA	CntA0	Y0.2-	A1-	-
X0.9	MPGB	CntB0	Y0.3+	B1+	-
X0.12	DOG0	-	Y0.3-	B1-	-
X0.13	DOG1	-	Y0.8	CLR0	-
Y0.0+	A0+	-	Y0.9	CLR1	-
Y0.0-	A0-	-	COM	-	-

- **AH10PM-5A**



Pin	Terminal	Function		Pin	Terminal	Function	
		Pulse	Count			Pulse	Count
1	C3	COM3	-	26	Y0.11	CLR3/B5	-
2	C2	COM2	-	27	Y0.10	CLR2/A5	-
3	C1	COM1	-	28	Y0.9	CLR1/B4	-
4	C0	COM0	-	29	Y0.8	CLR0/A4	-
5	NC	-	. -	30	NC	-	-
6	Y0.7-	B3-	-	31	Y0.7+	B3+	-
7	Y0.6-	A3-	-	32	Y0.6+	A3+	-
8	Y0.5-	B2-	-	33	Y0.5+	B2+	-
9	Y0.4-	A2-	-	34	Y0.4+	A2+	-
10	Y0.3-	B1-	-	35	Y0.3+	B1+	-
11	Y0.2-	A1-	-	36	Y0.2+	A1+	-
12	Y0.1-	B0-/CLR5-	-	37	Y0.1+	B0+/CLR5+	-
13	Y0.0-	A0-/CLR4-	-	38	Y0.0+	A0+/CLR4+	-
14	NC	-	-	39	NC	-	-
15	NC	-	-	40	S/S	S/S	S/S
16	X0.15	DOG3	CntB3/CntB5	41	X0.14	DOG2	CntB3/CntA5
17	X0.13	DOG1	CntB2/CntB4	42	X0.12	DOG0	CntA2/CntA4
18	X0.11	DOG5	CntB1	43	X0.10	DOG4	CntA1
19	X0.9	MPGB	CntB0	44	X0.8	MPGA	CntA0
20	NC	-	-	45	NC	-	-
21	NC	-	-	46	NC	-	-
22	X0.3-	Pg3-	Rst3-/Rst5-	47	X0.3+	Pg3+	Rst3+/Rst5+
23	X0.2-	Pg2-	Rst2-/Rst4-	48	X0.2+	Pg2+	Rst2+/Rst4+
24	X0.1-	Pg1-	Rst1-	49	X0.1+	Pg1+	Rst1+
25	X0.0-	Pg0-	Rst0-	50	X0.0+	Pg0+	Rst0+

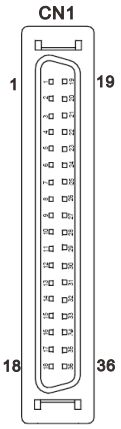
- **AH15PM-5A**



Pin	Terminal	Function		Pin	Terminal	Function	
		Pulse	Count			Pulse	Count
1	Y0.11	CLR3	-	26	Y0.10	CLR2	-
2	Y0.9	CLR1	-	27	Y0.8	CLR0	
3	COM	COM	-	28	Y0.7+	B3+	-
4	Y0.7-	B3-	-	29	Y0.6+	A3+	-
5	Y0.6-	A3-	. -	30	Y0.5+	B2+	-
6	Y0.5-	B2-	-	31	Y0.4+	A2+	-
7	Y0.4-	A2-	-	32	Y0.3+	B1+	-
8	Y0.3-	B1-	-	33	Y0.2+	A1+	-
9	Y0.2-	A1-	-	34	Y0.1+	B0+	-
10	Y0.1-	B0-	-	35	Y0.0+	A0+	-
11	Y0.0-	A0-	-	36	S/S	S/S	S/S
12	X1.5	CHG3	-	37	X1.4	CHG2	-
13	X1.3	CHG1	-	38	X1.2	CHG0	-
14	X1.1	LSN3	-	39	X1.0	LSP3	-
15	X0.15	LSN2	CntB3/CntB5	40	X0.14	LSP2	CntB3/CntA5
16	X0.13	LSN1	CntB2/CntB4	41	X0.12	LSP1	CntA2/CntA4
17	X0.11	LSN0	CntB1	42	X0.10	LSP0	CntA1
18	X0.9-	MPGB-	CntB0-	43	X0.9+	MPGB+	CntB0+
19	X0.8-	MPGA-	CntA0-	44	X0.8+	MPGA+	CntA0+
20	X0.7	DOG3	-	45	X0.6	DOG2	-
21	X0.5	DOG1	-	46	X0.4	DOG0	-
22	X0.3-	Pg3-	Rst3-/Rst5-	47	X0.3+	Pg3+	Rst3+/Rst5+
23	X0.2-	Pg2-	Rst2-/ Rst4-	48	X0.2+	Pg2+	Rst2+/Rst4+

24	X0.1-	Pg1-	Rst1-	49	X0.1+	Pg1+	Rst1+
25	X0.0-	Pg0-	Rst0-	50	X0.0+	Pg0+	Rst0+

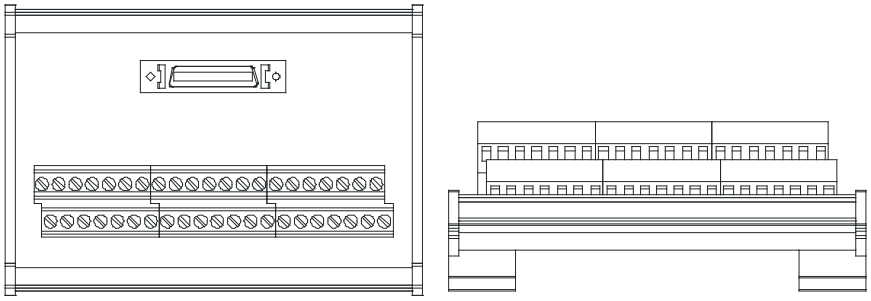
- **AH20MC-5A**



Pin	Terminal	Function		Pin	Terminal	Function	
		Pulse	Count			Pulse	Count
1	C3	-	COM3	19	Y0.11	-	Out3
2	C2	-	COM2	20	Y0.10	-	Out2
3	C1	-	COM1	21	Y0.9	-	Out1
4	C0	-	COM0	22	Y0.8	-	Out0
5	NC	-	-	23	NC	-	-
6	NC	-	-	24	NC	-	-
7	X0.3-	-	Rst3-/Rst5-	25	X0.3+	-	Rst3+/Rst5+
8	X0.15-	DOG3-	CntB3-/ CntB5+	26	X0.15+	DOG3+	CntB3+/CntB5+
9	X0.14-	DOG2-	CntA3-/ CntA5+	27	X0.14+	DOG2+	CntA3+/CntA5+
10	X0.2-	-	Rst2-/Rst4-	28	X0.2+	-	Rst2+/Rst4+
11	X0.13-	DOG1-	CntB2-/ CntB4-	29	X0.13+	DOG1+	CntB2+/CntB4+
12	X0.12-	DOG0-	CntA2-/ CntA4-	30	X0.12+	DOG0+	CntA2+/CntA4+
13	X0.1-	-	Rst1-	31	X0.1+	-	Rst1+
14	X0.11-	DOG5-	CntB1-	32	X0.11+	DOG5+	CntB1+
15	X0.10-	DOG4-	CntA1-	33	X0.10+	DOG4+	CntA1+
16	X0.0-	-	Rst0-	34	X0.0+	-	Rst0+
17	X0.9-	MPGB-	CntB0-	35	X0.9+	MPGB+	CntB0+
18	X0.8-	MPGA-	CntA0-	36	X0.8+	MPGA+	CntA0+

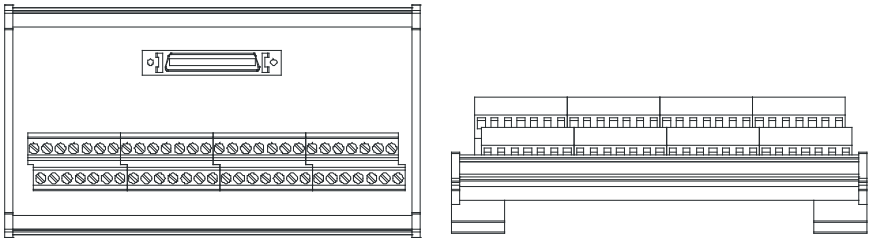
- **External terminal module**

1. External terminal module for AH04HC-5A: UB-10-IO16C



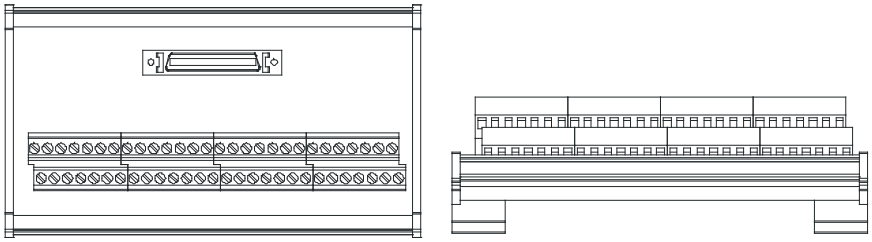
C3	C2	C1	C0	N/C	N/C	X0.3-	X0.15-	X0.14-	X0.2-	X0.13-	X0.12-	X0.1-	X0.11-	X0.10-	X0.0-	X0.9-	X0.8-	24G	24G	FE
Y0.11	Y0.10	Y0.9	Y0.8	N/C	N/C	X0.3+	X0.15+	X0.14+	X0.2+	X0.13+	X0.12+	X0.1+	X0.11+	X0.10+	X0.0+	X0.9+	X0.8+	N/C	24V	24V

2. External terminal module for AH10PM-5A: UB-10-IO24CC



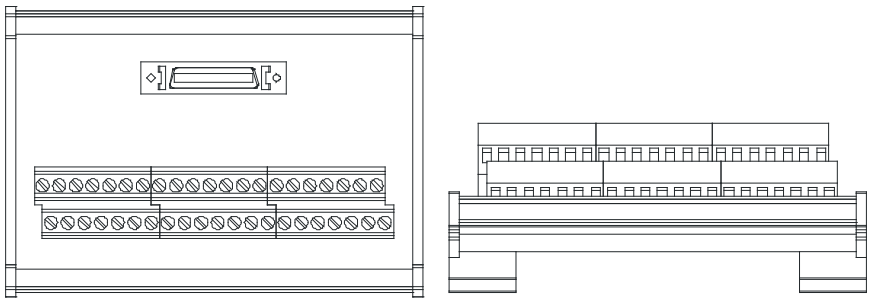
1st from the upper left	C3	C2	C1	C0	N/C	Y0.7-	Y0.6-	Y0.5-	Y0.4-	Y0.3-	Y0.2-	Y0.1-	Y0.0-	N/C
15th from the upper left	N/C	X0.15	X0.13	X0.11	X0.9	N/C	N/C	X0.3-	X0.2-	X0.1-	X0.0-	24G	24G	FE
1st from the lower left	Y0.11	Y0.10	Y0.9	Y0.8	N/C	Y0.7+	Y0.6+	Y0.5+	Y0.4+	Y0.3+	Y0.2+	Y0.1+	Y0.0+	N/C
15th from the lower left	S/S	X0.14	X0.12	X0.10	X0.8	N/C	N/C	X0.3+	X0.2+	X0.1+	X0.0+	N/C	24V	24V

3. External terminal module for AH15PM-5A: UB-10-IO34CC



1st from the upper left	Y0.11	Y0.9	COM	Y0.7-	Y0.6-	Y0.5-	Y0.4-	Y0.3-	Y0.2-	Y0.1-	Y0.0-	X1.5	X1.3	X1.1
15th from the upper left	X0.15	X0.13	X0.11	X0.9-	X0.8-	X0.7	X0.5	X0.3-	X0.2-	X0.1-	X0.0-	24G	24G	FE
1st from the lower left	Y0.10	Y0.8	Y0.7+	Y0.6+	Y0.5+	Y0.4+	Y0.3+	Y0.2+	Y0.1+	Y0.0+	S/S	X1.4	X1.2	X1.0
15th from the lower left	X0.14	X0.12	X0.10	X0.9+	X0.8+	X0.6	X0.4	X0.3+	X0.2+	X0.1+	X0.0+	N/C	24V	24V

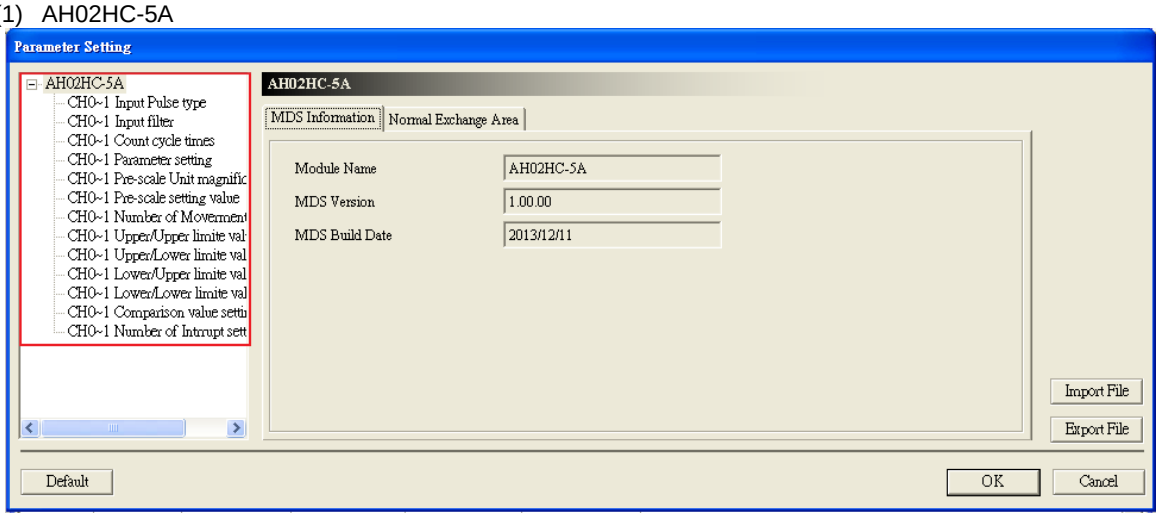
4. External terminal module for AH20MC-5A: UB-10-IO16C



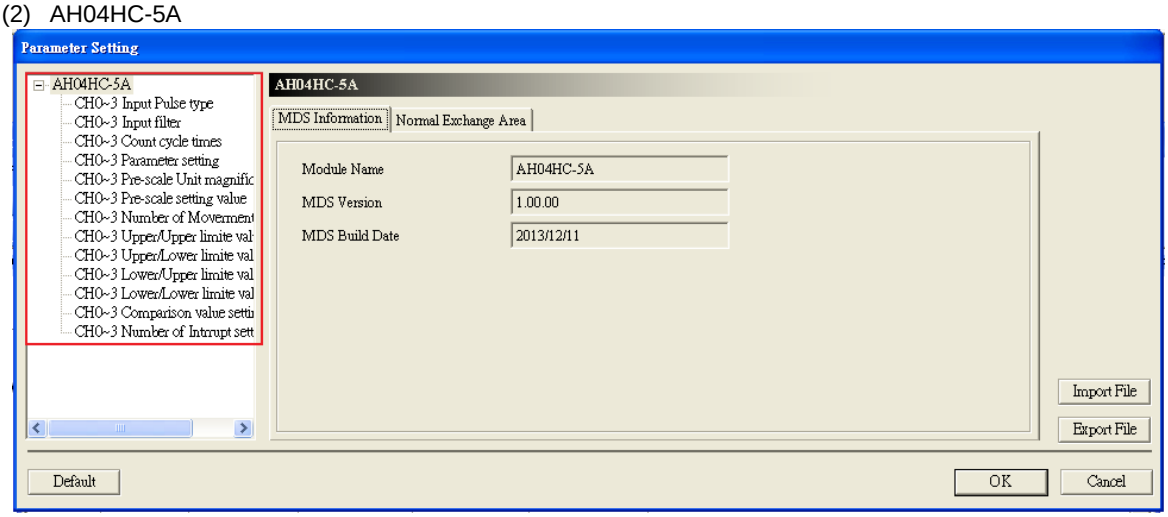
C3	C2	C1	C0	N/C	N/C	X0.3-	X0.15-	X0.14-	X0.2-	X0.13-	X0.12-	X0.1-	X0.11-	X0.10-	X0.0-	X0.9-	X0.8-	24G	24G	FE
Y0.11	Y0.10	Y0.9	Y0.8	N/C	N/C	X0.3+	X0.15+	X0.14+	X0.2+	X0.13+	X0.12+	X0.1+	X0.11+	X0.10+	X0.0+	X0.9+	X0.8+	N/C	24V	24V

2.8.5 Setting Parameters

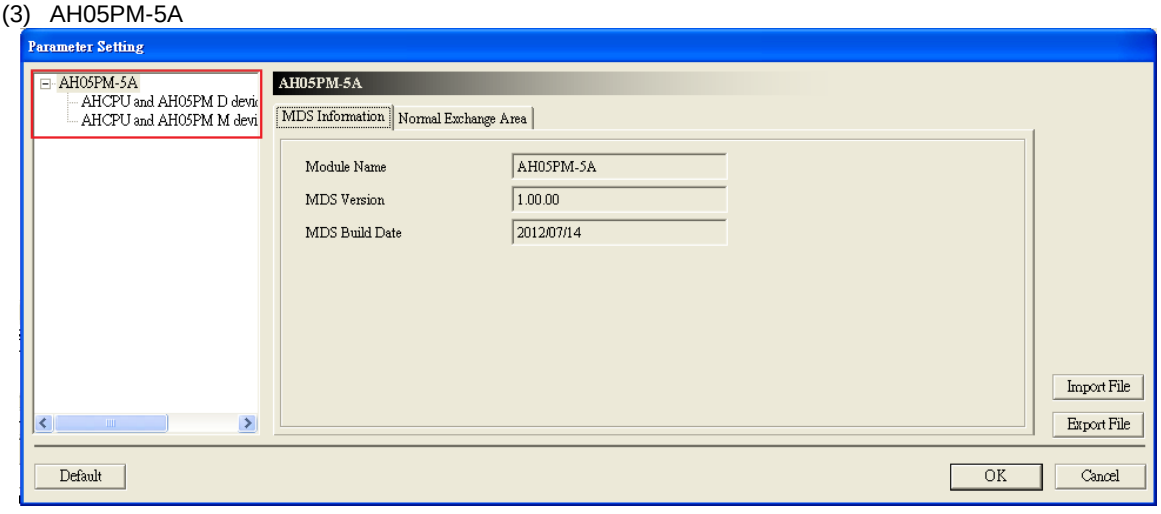
(1) AH02HC-5A



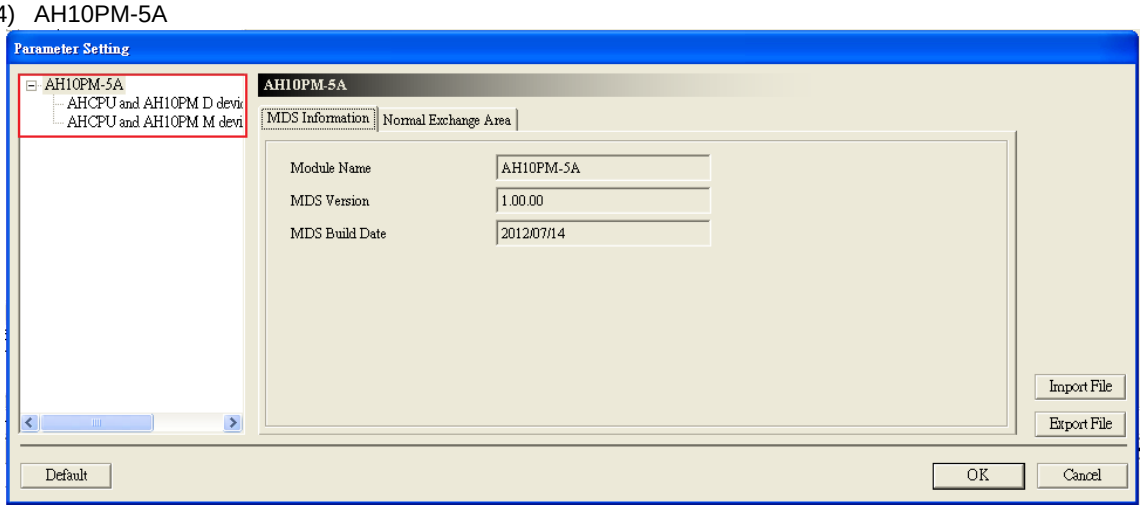
(2) AH04HC-5A



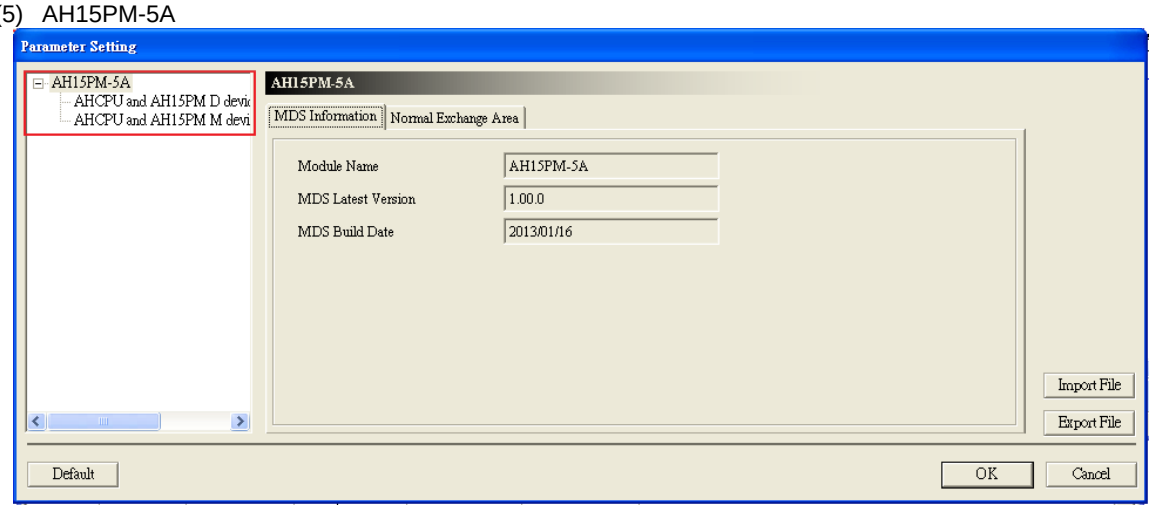
(3) AH05PM-5A



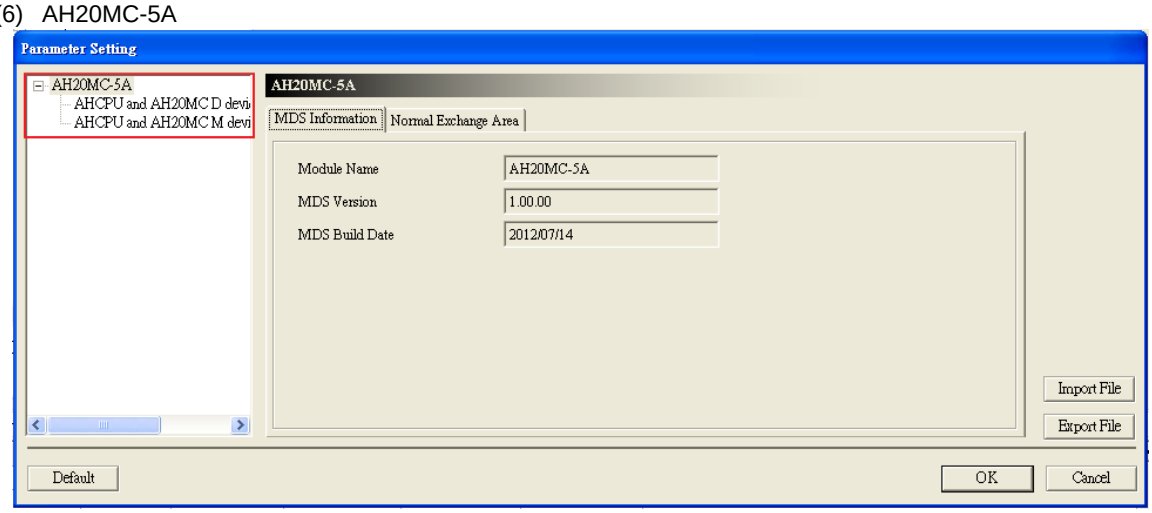
(4) AH10PM-5A



(5) AH15PM-5A



(6) AH20MC-5A



Please refer to AH500 Module Manual for more information about setting parameters.

2.9 Specifications for Remote Input/Output Modules

2.9.1 General Specifications

- **AHRTU-DNET-5A**

Item	Specifications
Communication type	CAN
Electrical isolation	500 V DC
Connector type	Removable connector (5.08 mm)
Data type	I/O polled, and explicit
Communication speed	Standard mode: 125 kbps, 250 kbps, and 500 kbps Extended mode: 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, and 1 Mbps
Communication cable	Delta shielded twisted pair (Two communication cables, two power cables, and one shielded cable)
Weight	150g

- **AHRTU-PFBS-5A**

Item	Specifications
Communication type	High-speed RS-485
Electrical isolation	500 V DC
Connector type	DB9 connector
Data type	Cyclic data exchange
Communication speed	9.6 kbps, 19.2 kbps, 45.45 kbps, 93.75 kbps, 187.5 kbps, 500 kbps, 1.5 Mbps, 3 Mbps, 6 Mbps, and 12 Mbps are supported.
Communication cable	Shielded twisted pair cable
Weight	200g

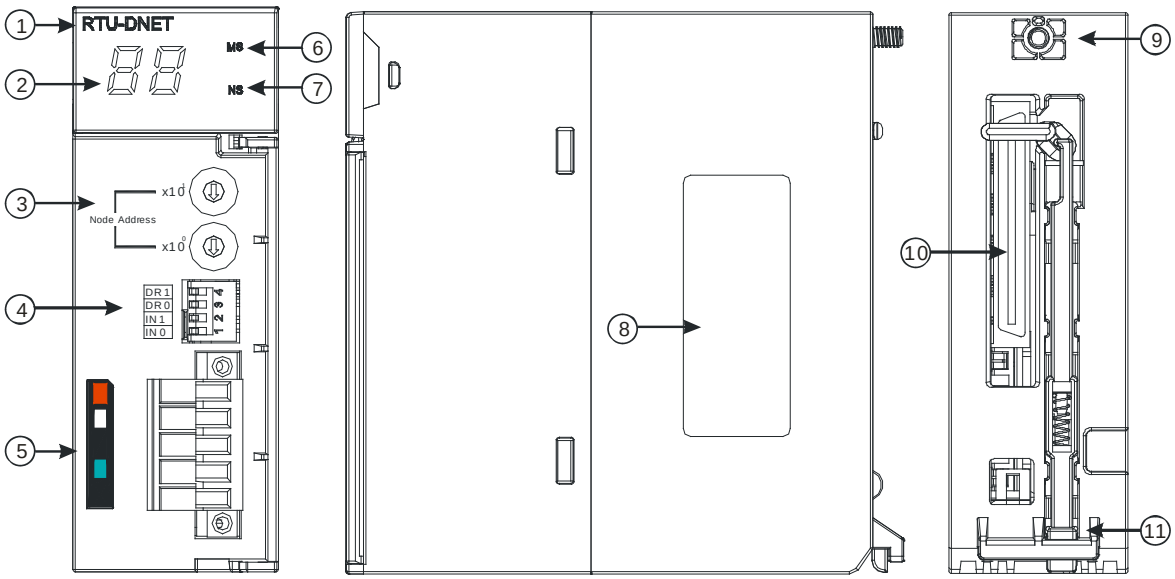
- **AHRTU-ETHN-5A**

Item	Specifications
Communication type	EtherNet/IP, MODBUS TCP
Protocol	BOOTP, DHCP, NTP
Communication speed	10/100 Mbps Auto-Detection
Communication Interface	RJ-45 with Auto MDI/MDIX
Numbers of the Ethernet Communication Port	2 (X1, X2)
Weight	177g

2.9.2 Profiles

- **AHRTU-DNET-5A**

1. Profile

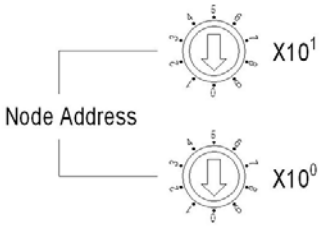


Number	Name	Description
1	Model name	Model name of the module
2	Seven-segment display	Display
3	Address knob	Setting the address
4	Function switch	Setting the functions
5	DeviceNet connector	DeviceNet is used to interconnect control devices for data exchange.
6	MS LED indicator	Indicating the status of the module
7	NS LED indicator	Indicating the status of the network
8	Label	Nameplate
9	Set screw	Fixing the module
10	Connector	Connecting the module and a backplane
11	Projection	Fixing the module

2. Address knobs

It is used to set the node address of AHRTU-DNET-5A on a DeviceNet network. (Node addresses range from 0 to 63.)

Setting	Description
0…63	Available nodes on a DeviceNet network
64…99	Unavailable nodes on a DeviceNet network



Example: If users want to set the communication address of AHRTU-DNET-5A to 26, they can turn the knob corresponding to $x10^1$ to 2, and turn the knob corresponding to $x10^0$ to 6.

Points for attention:

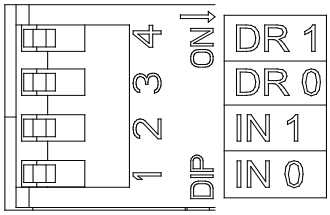
- When the power supply is cut off, the node address is set. After the setting of the node address is complete, AHRTU-DNET-5A can be supplied with power.
- If AHRTU-DNET-5A is running, changing the node address is unavailable.
- Please use a slotted screwdriver to turn the knobs with care, and do not scrape them.

3. Function switch

The function switch provides the following functions:

- Setting the working mode (IN 0)
- Setting the transmission speed of a DeviceNet network (DR 0~DR 1)

DR 1	DR 0	Transmission speed
OFF	OFF	125 kbps
OFF	ON	250 kbps
ON	OFF	500 kbps
ON	ON	Extended transmission speed



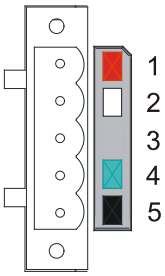
IN 1	Reserved	
IN 0	ON	Clearing the data in the internal storage in AHRTU-DNET-5A
	OFF	No action

Points for attention:

- When the power supply is cut off, the functions are set. After the setting of the functions is complete, AHRTU-DNET-5A can be supplied with power.
- If AHRTU-DNET-5A is running, changing the functions is unavailable.
- Please use a slotted screwdriver to adjust the DIP switch with care, and do not scrape them.

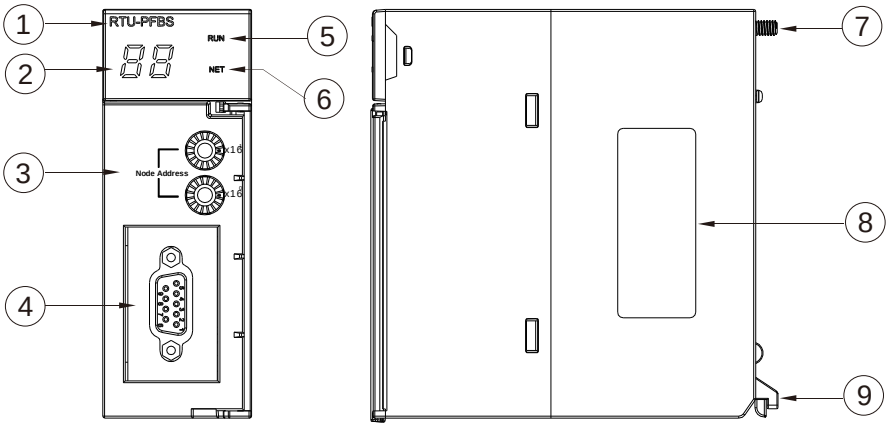
4. **DeviceNet connector**

Pin	Signal	Color	Description
1	V+	Red	24 V DC
2	CAN_H	White	Signal (positive pole)
3	SHIELD	-	It is connected to a shielded cable.
4	CAN_L	Blue	Signal (negative pole)
5	V-	Black	0 V DC



- **AHRTU-PFBS-5A**

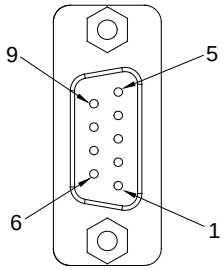
1. Profile



1. Model name	2. Seven-segment display	3. Address knobs
4. PROFIBUS-DP port	5. RUN LED indicator	6. NET LED indicator
7. Set screw	8. Label	9. Projection

2. Definitions of the pins in the PROFIBUS-DP port

PIN	PIN name	Description
1	--	N/C
2	--	N/C
3	RxD/TxD-P	Receiving/Sending data (P (B))
4	--	N/C
5	DGND	Data reference potential (C)
6	VP	Supply positive voltage
7	--	N/C
8	RxD/TxD-N	Receiving/Sending data (N (A))
9	--	N/C

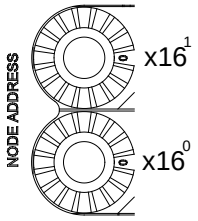


3. Setting a PROFIBUS node address by means of the address knobs

The address knobs of AHRTU-PFBS-5A are used for setting the node address of AH10PFBS-5A on a PROFIBUS-DP network. There are two address knobs. They are a knob corresponding to $x16^0$, and a knob corresponding to $x16^1$. The range for one address knob is 0~F.

The range for setting the node address is described below.

Address	Definition
H'1~H'7D	Valid PROFIBUS address
H'0 or H'7E~H'FF	Invalid PROFIBUS address



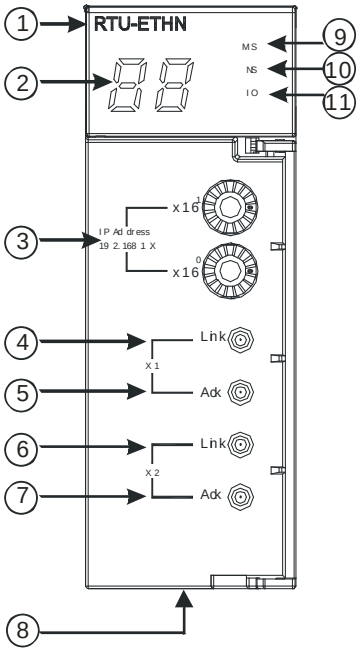
Example: If users need to set the node address of AHRTU-PFBS-5A to 26 (decimal value), they have to turn the knob corresponding to $x16^1$ to "1" and the knob corresponding to $x16^0$ to "A".
26 (decimal value)=1A (hexadecimal value)=$1x16^1+Ax16^0$.

Points for attention:

- If users set the node address of AHRTU-PFBS-5A when AHRTU-PFBS-5A is not supplied with power, they have to power AHRTU-PFBS-5A after the node address of AHRTU-PFBS-5A is set.
- If users change the node address of AHRTU-PFBS-5A when AHRTU-PFBS-5A is powered, the change will not take effect immediately after the node address of AHRTU-PFBS-5A is changed, and it will take effect after the users cut off the power supplied to AHRTU-PFBS-5A and then power AHRTU-PFBS-5A again.
- To prevent the address knobs on AHRTU-PFBS-5A from being scratched, please carefully use a slotted screwdriver to rotate the address knobs on AHRTU-PFBS-5A.

- **AHRTU-ETHN-5A**

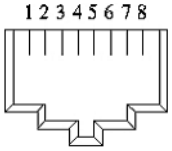
1. **Profile**



Number	Name
1	Model name
2	Seven-segment display
3	Address knobs
4	X1 Link indicator
5	X1 Ack indicator
6	X2 Link indicator
7	X2 Ack indicator
8	RJ45 port x1 / x2
9	MS LED indicator
10	NS LED indicator
11	I/O indicator

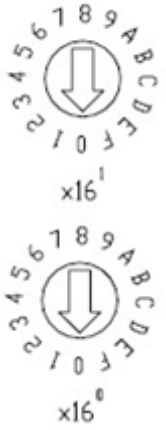
2. Ethernet Port

Pin definition for the Ethernet port

Pin	Signal	Description	RJ-45
1	TX+	Transmitting data (positive pole)	
2	TX-	Transmitting data (negative pole)	
3	RX+	Receiving data (positive pole)	
4	-	-	
5	-	-	
6	RX-	Receiving data (negative pole)	
7	-	-	
8	-	-	

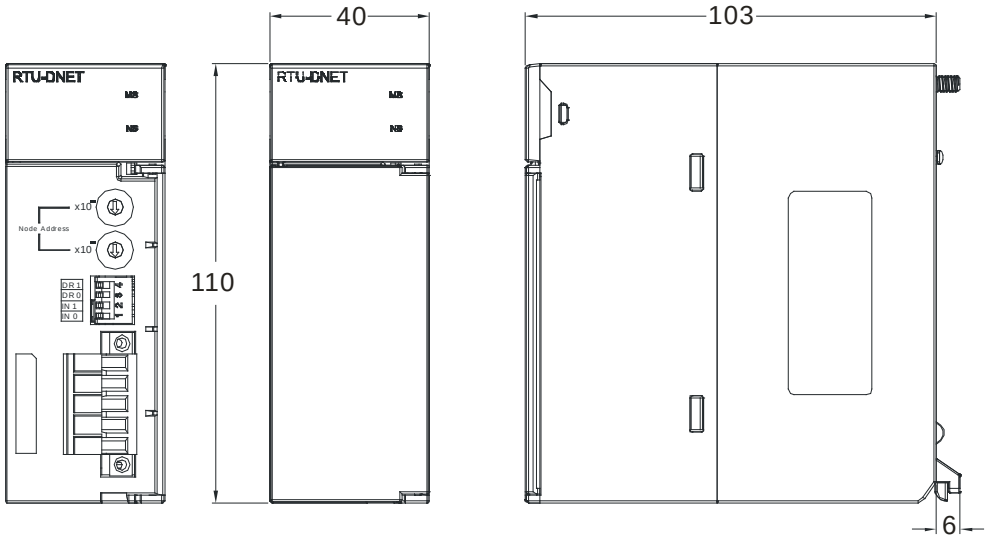
3. Address knobs

The IP address of the AHRTU-ETHN-5A series can be set via the address knobs; the default address range is 192.168.1.x and x should be set from 00 to FF.

Address	Description	
00 ~ 0xFD	1. Valid IP address: 192.168.1.x, x = 1 ~ FD, (1~253) 2. 0x00: set up via EIP Builder	
0xFE	Go to the firmware update mode	
0xFF	Restore to factory defaults and reboot to have the defaults to take effect.	

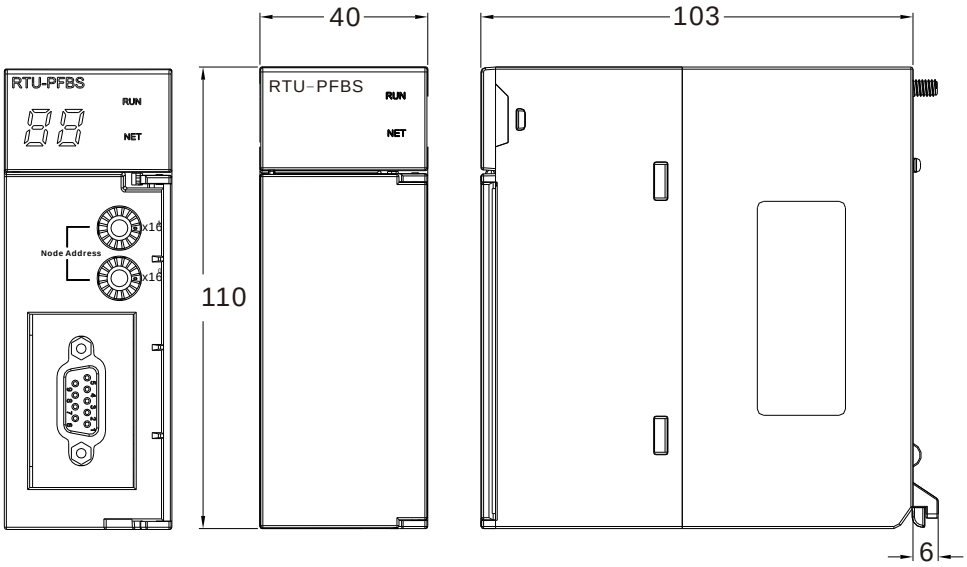
2.9.3 Dimensions

■ **AHRTU-DNET-5A**



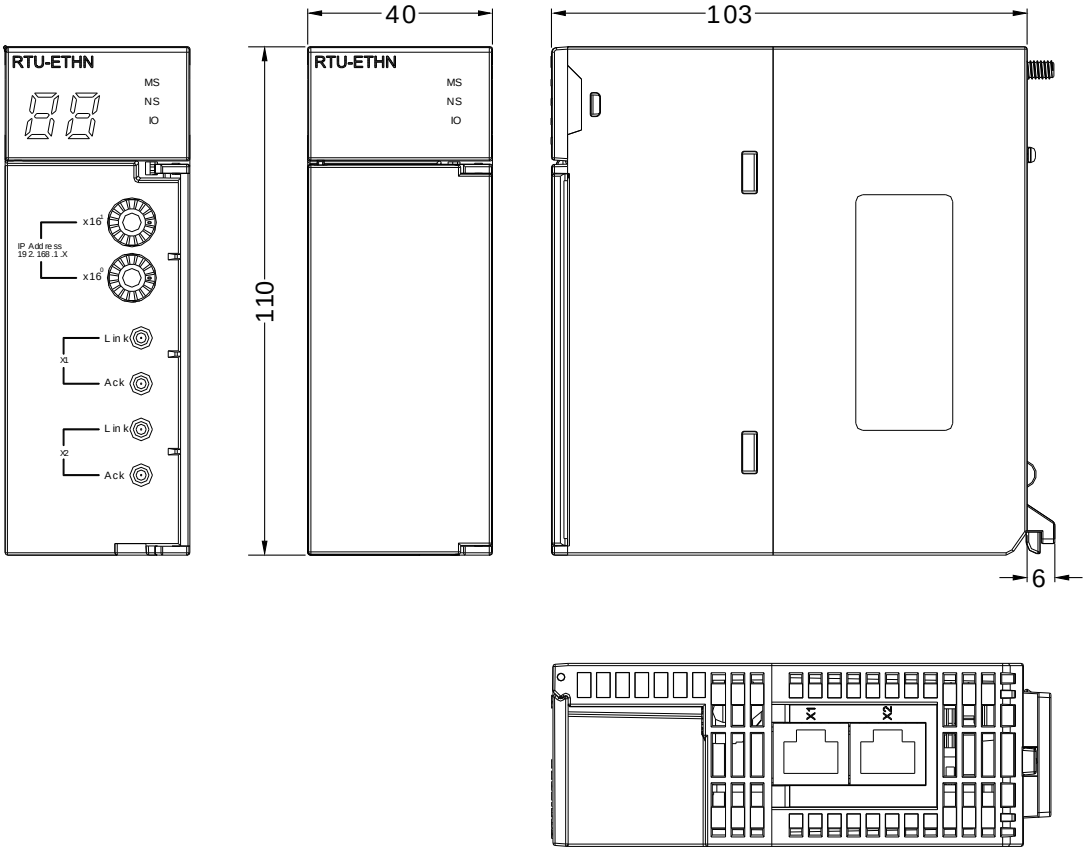
Unit: mm

■ AHRTU-PFBS-5A



Unit: mm

● AHRTU-ETHN-5A



Unit: mm

2.10 Specifications for Power Supply Modules

2.10.1 General Specifications

■ **AHPS05-5A**

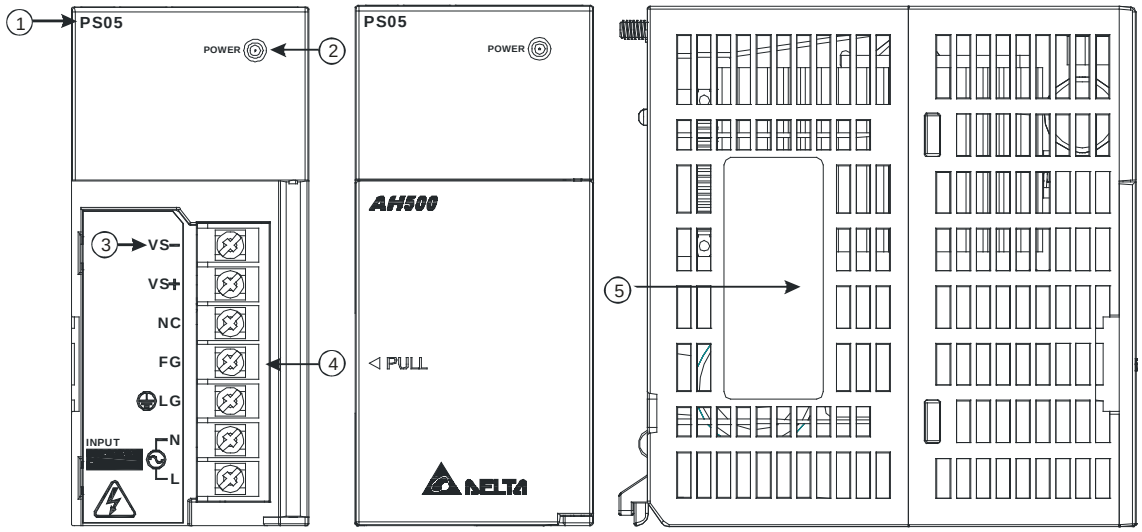
Item	Specifications
Supply voltage	100~240 V AC (-15%~10%) 50/60 Hz±5%
Action specifications	If the input power supply is larger than 85 V AC, the power supply module can function normally.
Allowable instantaneous power failure time	If the instantaneous power failure time is within ten milliseconds, the power supply module keeps running.
Fuse	4 A/250 V AC
Inrush current	45 A within 1 millisecond at 115 V AC
24 V DC output	The maximum current is 2.5 A. It is only for a backplane.
Power protection	The 24 V DC output is equipped with the short circuit protection and the overcurrent protection.
Surge voltage withstand level	1,500 V AC (Primary-secondary), 1,500 V AC (Primary-PE), 500 V AC (Secondary-PE)
Insulation voltage	Above 5 MΩ (The voltage between all inputs/outputs and the ground is 500 V DC.)
Ground	The diameter of the ground should not be less than the diameters of the cables connected to the terminals L and N.

■ **AHPS15-5A**

Item	Specifications
Supply voltage	24 V DC (-35%, +30%)
Allowable instantaneous power failure time	10 milliseconds
Fuse	6.3 A/250 V AC
Inrush current	30 A within 100 milliseconds
24 V DC output	1.5 A
Maximum output power	36 W
Power protection	The 24 V DC output is equipped with the short circuit protection, the overcurrent protection, and the overvoltage protection.
Surge voltage withstand level	500 V AC
Ground	The diameter of the ground should be greater than 1.6 mm^2.
Weight	400g

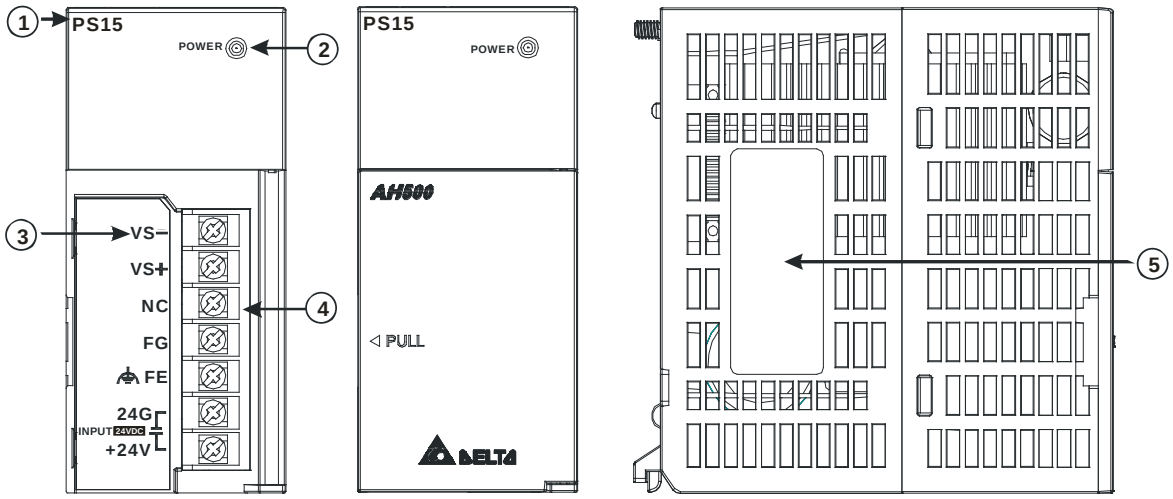
2.10.2 Profiles

■ **AHPS05-5A**



Number	Name	Description
1	Model name	Model name of the power supply module
2	POWER LED indicator (green)	Indicating the status of the power supply
3	Arrangement of the terminals	VS-: It is connected to the negative 24 V DC power supply. VS+: It is connected to the positive 24 V DC power supply. NC: No connection FG: Functional ground LG: Line ground L/N: AC power input
4	Terminal	Terminal for wiring
5	Label	Nameplate

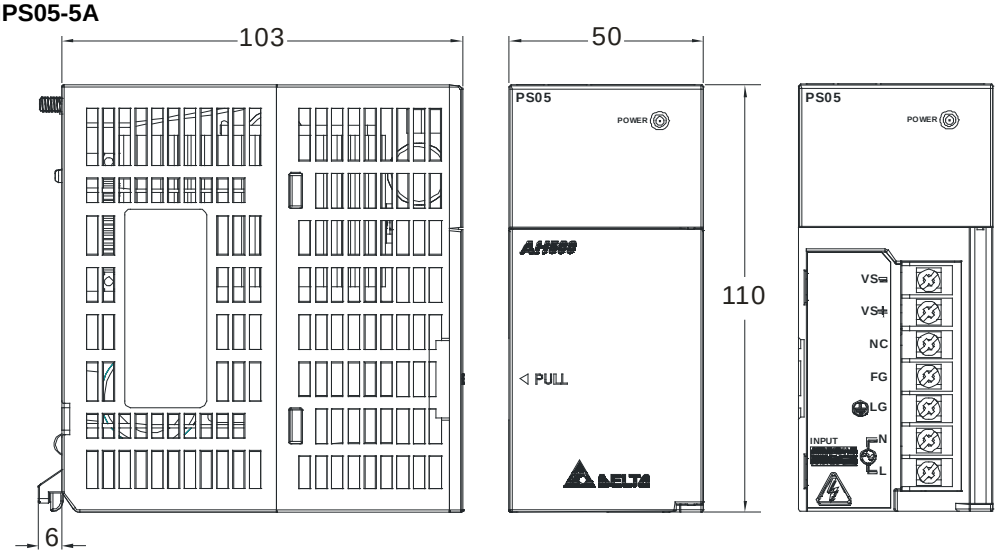
■ **AHPS15-5A**



Number	Name	Description
1	Model name	Model name of the power supply module
2	POWER LED indicator (green)	Indicating the status of the power supply
3	Arrangement of the terminals	VS-: It is connected to the negative 24 V DC power supply. VS+: It is connected to the positive 24 V DC power supply. NC: No connection FG: Functional ground FE: Line ground 24G/+24V: DC power input
4	Terminal	Terminal for wiring
5	Label	Nameplate

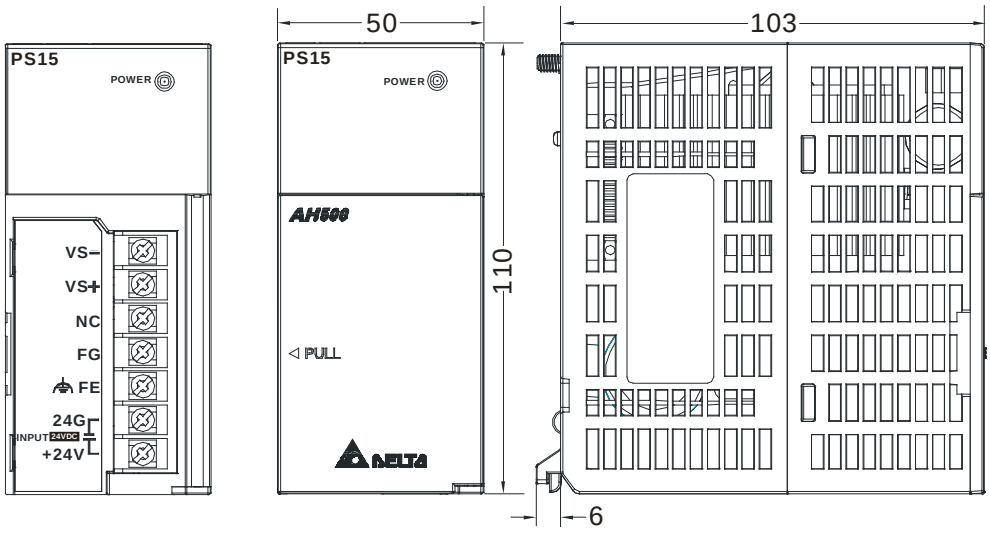
2.10.3 Dimensions

■ **AHPS05-5A**



Unit: mm

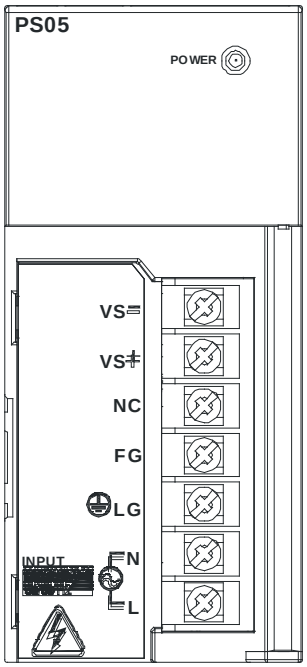
■ **AHPS15-5A**



Unit: mm

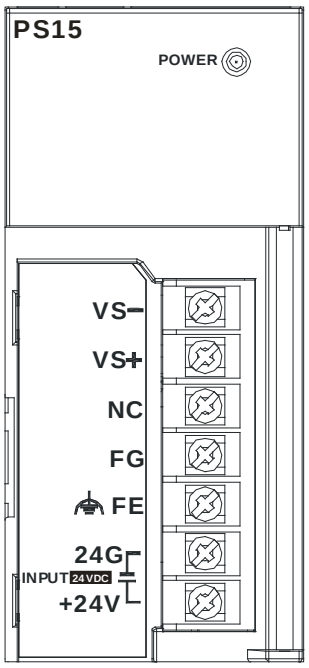
2.10.4 Arrangement of Terminals

■ **AHPS05-5A**



- VS-: It is connected to the negative 24 V DC power supply, and used to detect the external power supply.
- VS+: It is connected to the positive 24 V DC power supply, and used to detect the external power supply.
- NC: No connection
- FG: Functional ground
- LG: Line ground
- L/N: AC power input

- **AHPS15-5A**



- VS-: It is connected to the negative 24 V DC power supply, and used to detect the external power supply.
- VS+: It is connected to the positive 24 V DC power supply, and used to detect the external power supply.
- NC: No connection
- FG: Functional ground
- FE: Line ground
- 24G/+24V: DC power input

2.11 Space Module, Backplanes, and Extension Cables

2.11.1 General Specifications

- **Specifications for main backplanes**

Item \ Model	AHBP04M1-5A	AHBP06M1-5A	AHBP08M1-5A	AHBP12M1-5A
Number of slots	4	6	8	12
Applicable power supply module	AHPS05-5A and AHPS15-5A			
Applicable input/output module	The AH500 series input/output modules can be installed.			

- **Specifications for extension backplanes**

Item \ Model	AHBP06E1-5A	AHBP08E1-5A
Number of slots	6	8
Applicable power supply module	AHPS05-5A and AHPS15-5A	
Applicable input/output module	Digital input/output modules, analog input/output modules, temperature measurement module, AH10SCM-5A and AH15SCM-5A	

- **AHAADP01EF-5A/AHAADP02EF-5A**

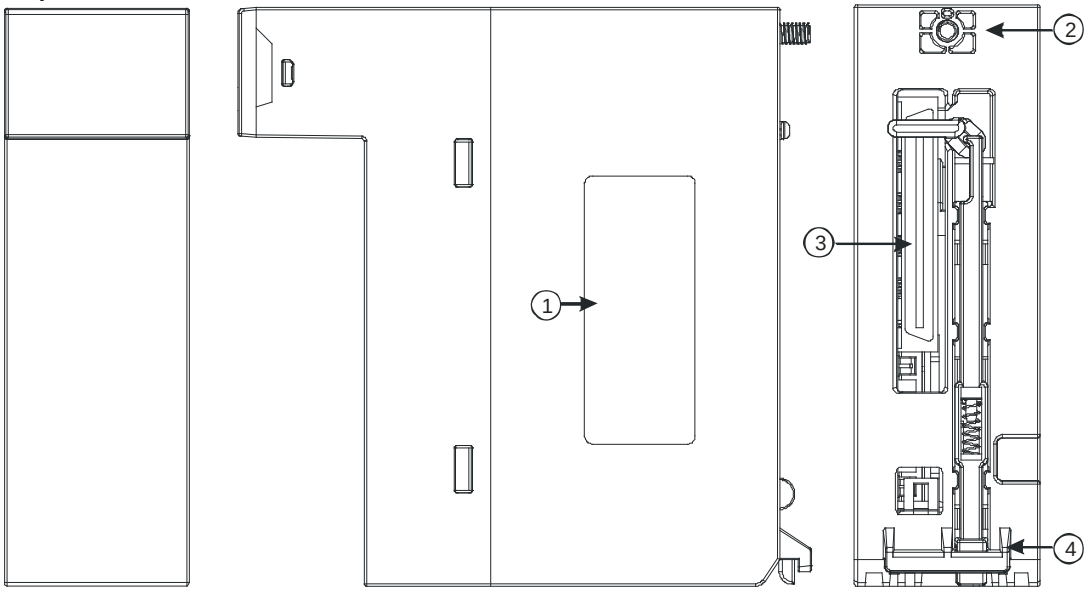
Item	Specifications
Connector type	155 Mbps 1*9 SC full-duplex optical fiber transceiver
Transmission interface	Optical fiber
Transmission speed	100 Mbps
Transmission distance	2 KM
Electric energy consumption	1.5 W
Insulation voltage	2,500 V DC

- **Dust cover AHASP01-5A**

Item	Specifications
Weight	85g

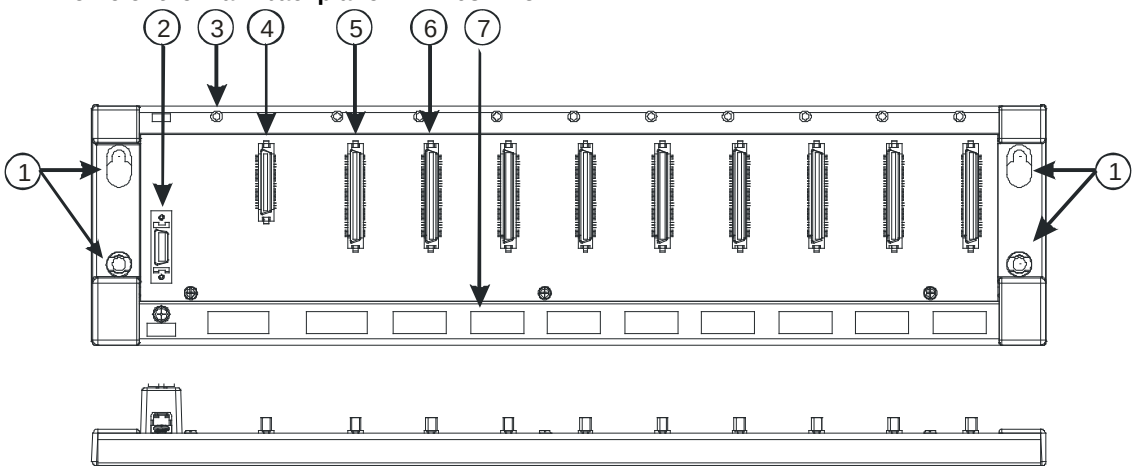
2.11.2 Profiles

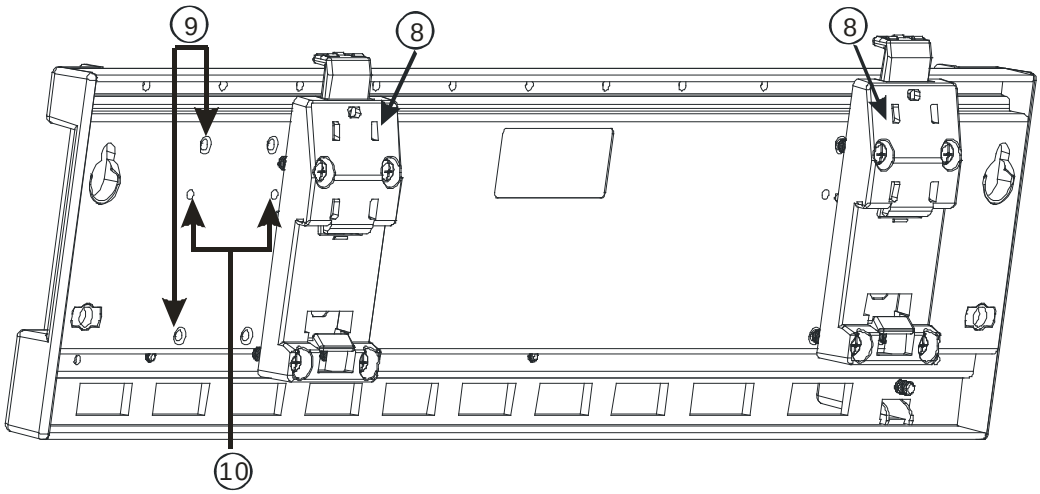
■ **Space module AHASP01-5A**



Number	Name	Description
1	Label	Nameplate
2	Set screw	Fixing the module
3	Connector	Connecting the module and a backplane
4	Projection	Fixing the module

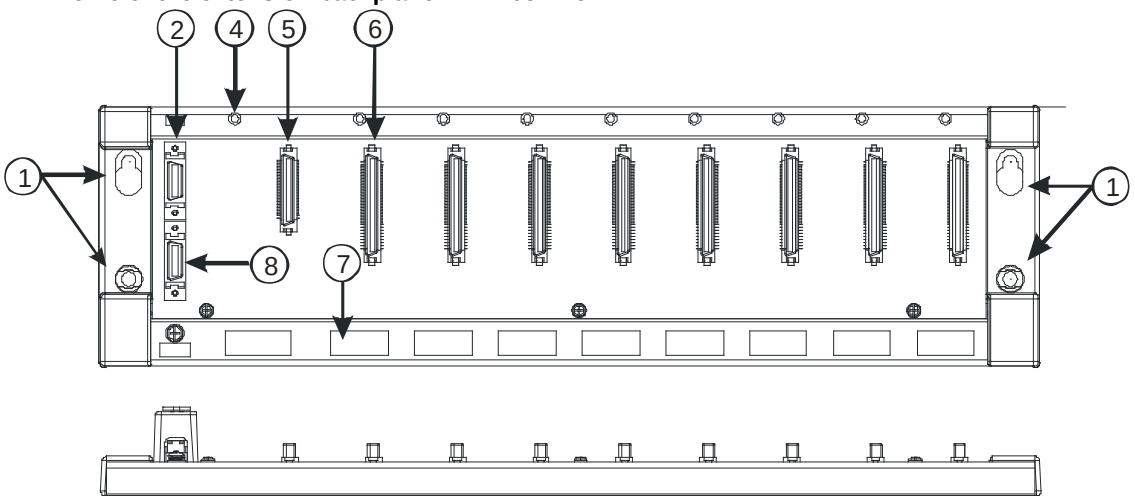
■ **Profile of the main backplane AHBP08M1-5A**

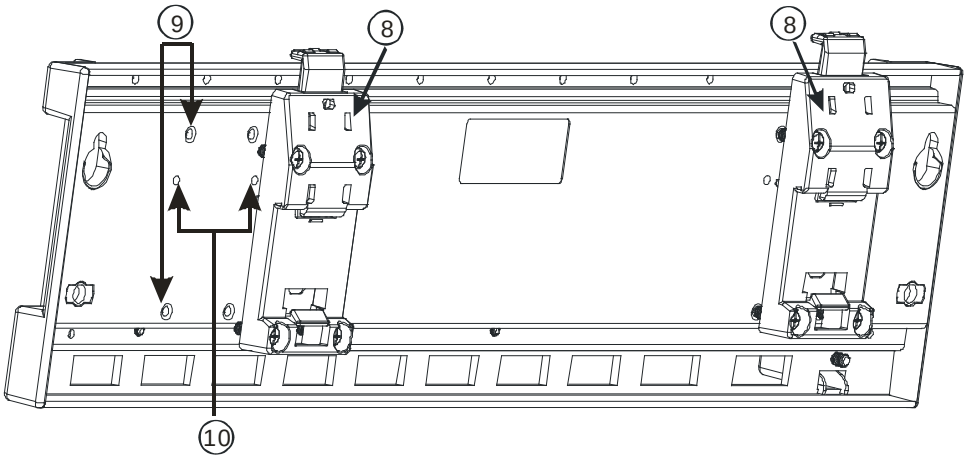




Number	Name	Description
1	Mounting hole	Fixing the backplane
2	Extension port	It is connected to an inferior backplane.
3	Mounting hole	After a module is installed, it is fixed by a screw.
4	Connector	Connecting the backplane and a power supply module
5	Connector	Connecting the backplane and a CPU module
6	Connector	Connecting the backplane and an input/output module
7	Hole	The projection under a module is inserted into this hole.
8	Mounting clip	Hanging a backplane on a DIN rail
9	Mounting hole	After a mounting clip is installed, it is fixed by screws.
10	Locating hole	A mounting clip is pressed into these locating holes.

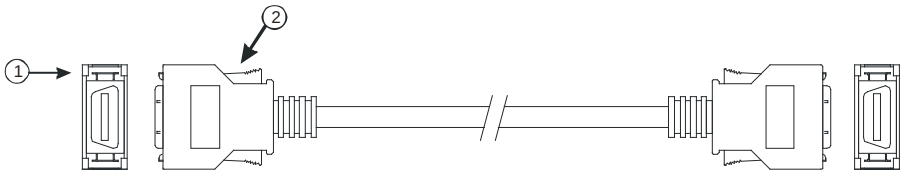
■ **Profile of the extension backplane AHBP08E1-5A**





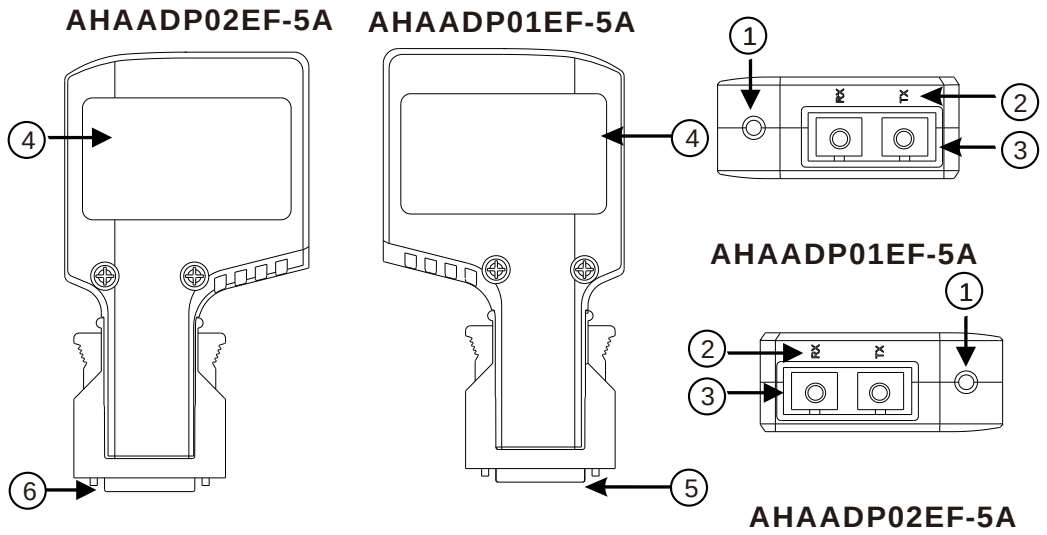
Number	Name	Description
1	Mounting hole	Fixing the backplane
2	Extension port 1	It is connected to a superior backplane.
3	Extension port 2	It is connected to an inferior backplane.
4	Connector	Connecting the backplane and a power supply module
5	Connector	Connecting the backplane and an input/output module
6	Mounting hole	After a module is installed, it is fixed by a screw.
7	Hole	The projection under a module is inserted into this hole.
8	Mounting clip	Hanging a backplane on a DIN rail
9	Mounting hole	After a mounting clip is installed, it is fixed by screws.
10	Locating hole	A mounting clip is pressed into these locating holes.

■ **Extension cable**



Number	Name	Description
1	Connector	Connecting backplanes 1. AHACAB06-5A 2. AHACAB10-5A 3. AHACAB15-5A 4. AHACAB30-5A
2	Clip	Fixing the connector

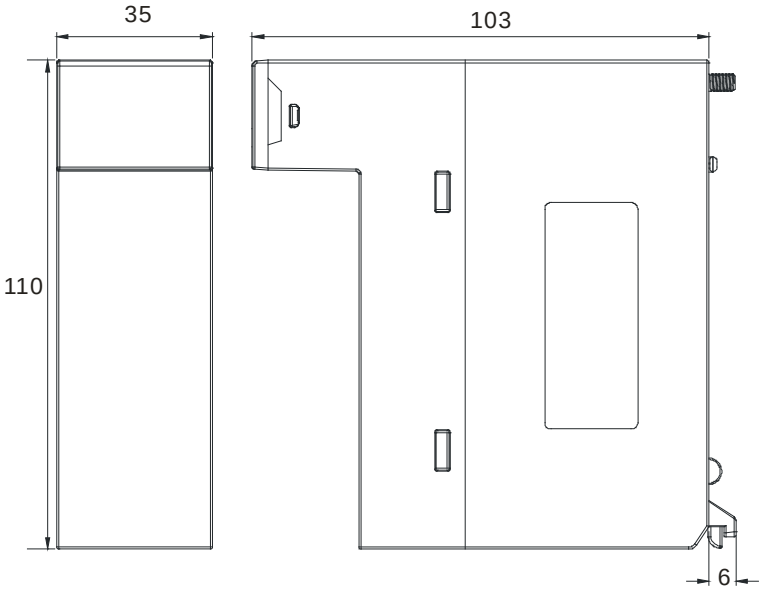
■ **AHAADP01EF-5A/AHAADP02EF-5A**



Number	Name
1	Connection/Communication LED indicator
2	Descritions of the optical fiber ports (TX/RX)
3	Optical fiber ports
4	Label
5	Connector

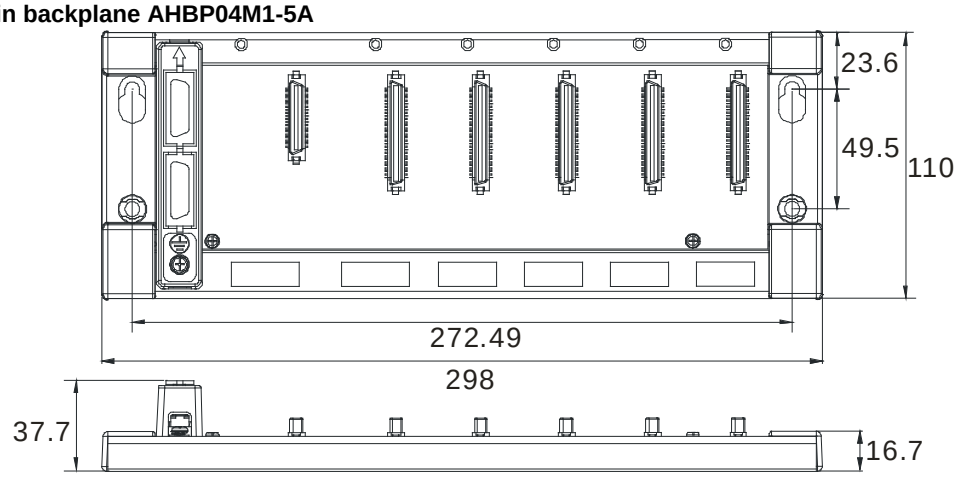
2.11.3 Dimensions

■ **Space module AHASP01-5A**



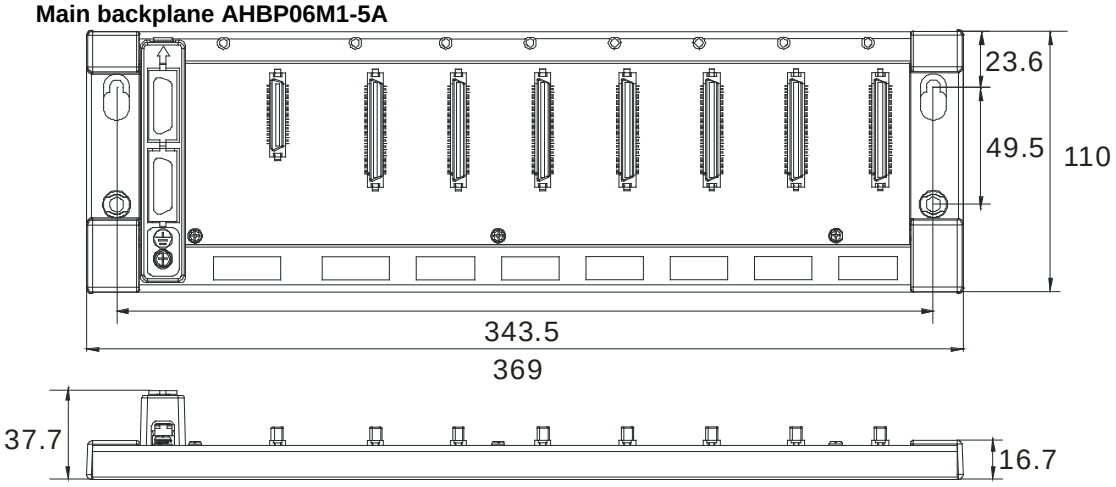
Unit: mm

■ **Main backplane AHBP04M1-5A**



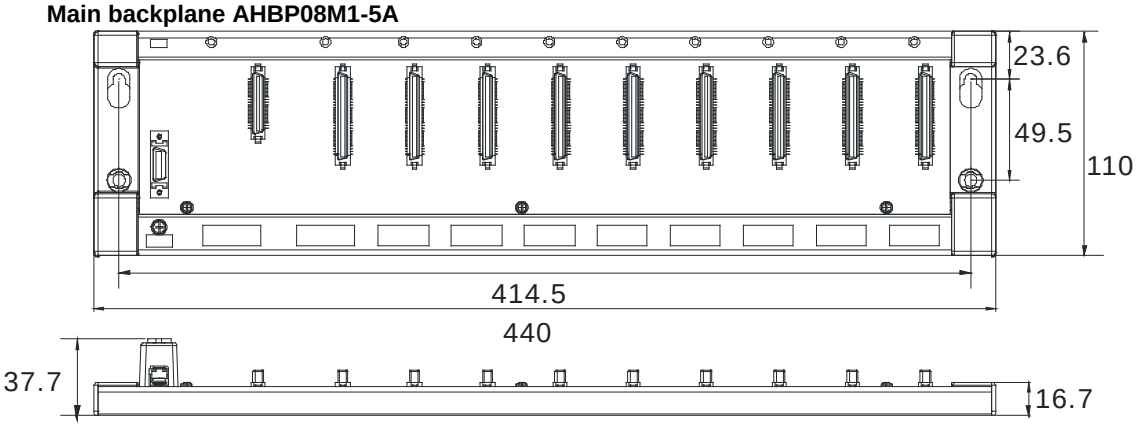
Unit: mm

■ **Main backplane AHBP06M1-5A**



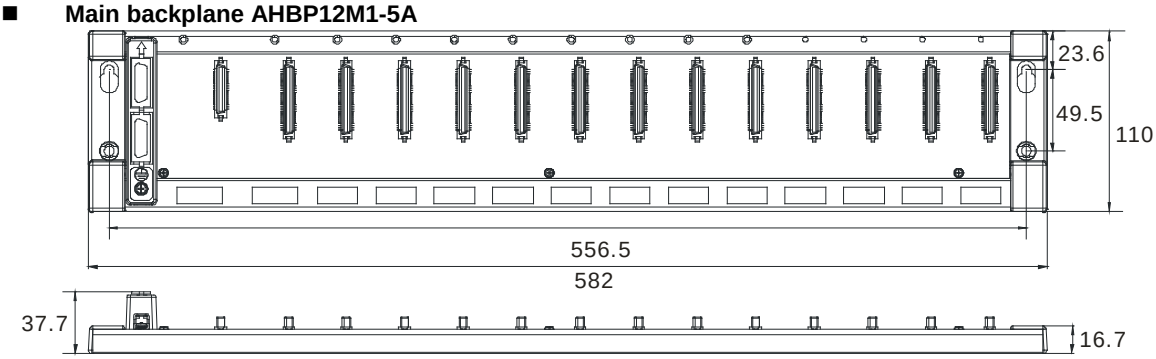
Unit: mm

■ **Main backplane AHBP08M1-5A**



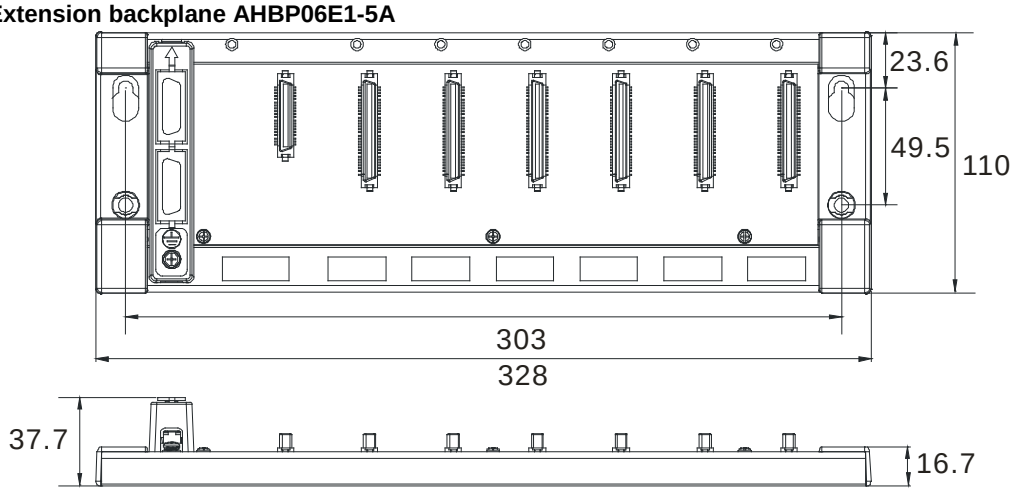
Unit: mm

■ **Main backplane AHBP12M1-5A**



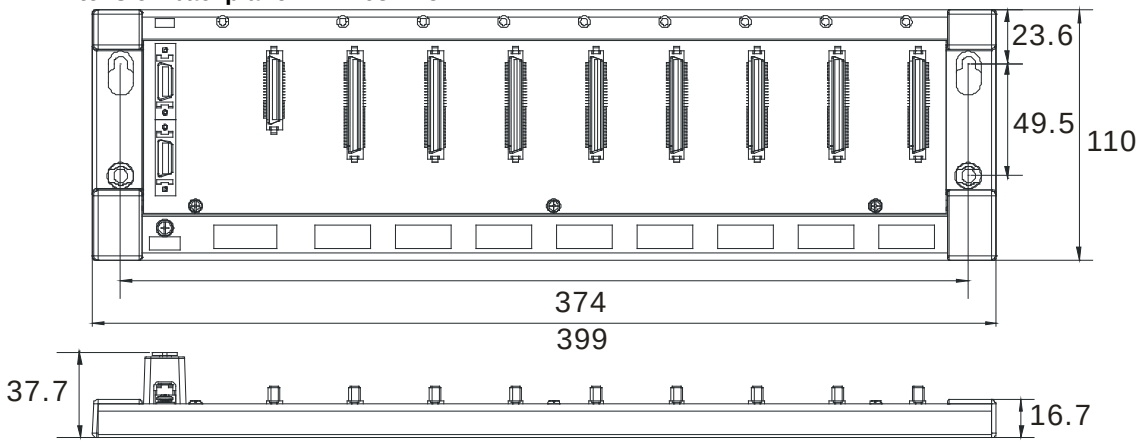
Unit: mm

■ **Extension backplane AHBP06E1-5A**



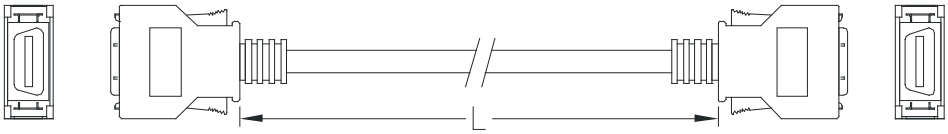
Unit: mm

■ **Extension backplane AHBP08E1-5A**



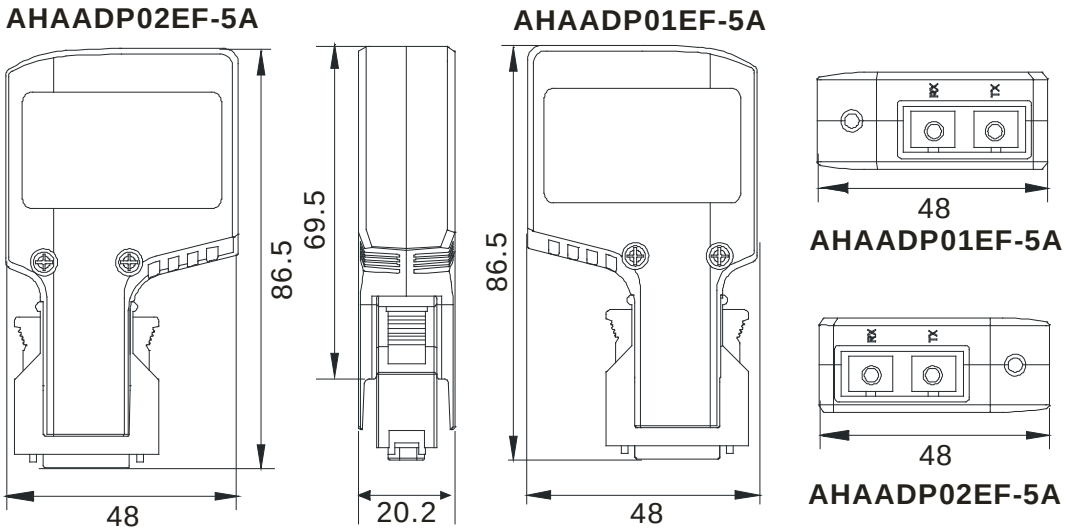
Unit: mm

■ **Extension cable**



Extension cable	Length
AHACAB06-5A	0.6 m
AHACAB10-5A	1.0 m
AHACAB15-5A	1.5 m
AHACAB30-5A	3.0 m

■ **AHAADP01EF-5A/AHAADP02EF-5A**



Unit: mm